ENVIRONMENTAL & REGULATORY SERVICES
PECFA
P.O. Box 530
Park Falls, Wisconsin 54552-0530

Wisconsin
Department of Commerce

Tommy G. Thompson, Governor
Brenda J. Blanchard, Secretary

October 19, 2000

Mr. Norm Argetsinger
PO Box 145
Couderay, WI 54828

RE: **COMMERCE # 54828-0145-70**; WDNR # 03-58-170214
Argetsinger's IGA, Couderay
Case Closure

Dear Mr.Argetsinger:

On behalf of the Wisconsin Department of Commerce, I have reviewed this case for closure. Based on the information available, the Department considers that no further investigation or remedial action is necessary.

If, in the future, site conditions indicate that any contamination that might remain poses a threat, the need for further remediation would be determined and required if necessary.

In the event that any petroleum-impacted subsurface soil is encountered in the future, it would have to be managed according to all applicable State of Wisconsin regulations and standards. According to the April 2000 Closure request groundwater containing some contamination above the NR 140 Preventative Action Level (PAL) and below the NR 140 Enforcement Standard (ES). The Department may grant an exemption for lead if the criteria indicated in NR 140.28(3) [or NR 140.28(2)] are met. Pursuant to NR 140.28 an exemption for the PAL is granted for this site. This letter serves as your exemption.

Thank you for your efforts in the protection of the environment. If you have any questions, you can reach me at 715-762-5557.

Sincerely,

Shanna L. Laube, P.G.
Hydrogeologist
PECFA Site Review Section

cc:

CASE SUMMARY AND CLOSE-OUT FORM INSTRUCTIONS

The Close Out Form and attachments should provide sufficient information to determine closure.

Item:

A. - Enter the eleven digit Commerce number. Please use this number on any correspondence with the department. The DNR BRRTS# is optional.

B. - Enter the responsible party or owner name.

C. - Enter the responsible party or owner phone number.

D. - Enter the responsible party or owner mailing address, city, state and zip code.

E. - Enter the remedial action site name, address (PO Box # not accepted), city and zip code.

The following items should be included as attachments to the form

- Justification for Closure.
- Background Information (as appropriate for the site)
  - ✓ * Site location map (USGS topographic map, 1:24,000 scale or plat map).
  - ✓ * Site layout map depicting; buildings, property boundaries, roads, utilities, potential receptors (water supply wells and surface water features, and land uses on adjacent properties.
  - * Site layout map depicting; source location(s), pre and post remediation levels, sample locations and extent of excavation.
  - * Number of tank(s), size of tank, product contained, tank status (removed or in place).
  - * Geologic cross section depicting the stratigraphy of the site, including sample locations and results.
  - * A description of the sequence of activities.
  - * Description of remedial action taken.
  - * List of previous reports.
- Remedial Results (as appropriate for the site)
  - * Table(s) depicting analytical soil results (pre and post remediation). Clearly indicate the units of measurement.
  - * Table(s) depicting analytical groundwater results (if applicable).
  - * Chain of custody forms.
- Site Specific Soil Standards Supporting Documentation (as appropriate for the site)

---

* This form is intended to be a stand alone document containing the items listed above. **Do not refer to previously submitted reports**.
* Submit only one copy.
* **Forms that are not completed correctly may be returned.**

COMMERCE
CASE SUMMARY AND CLOSE OUT

Personal information you provide may be used for secondary purposes [Privacy Act, s. 15.04(1)(M)].

Date Received (office use only)

SEE INSTRUCTIONS ON THE BACK OF THIS PAGE

A. COMMERCE NUMBER: 54828-0145-70

DNR BRRTS NUMBER (optional): 03-58-170214

B. Responsible Party or Owner Name	C. Responsible Party or Owner Phone Number
Mr. Norm Argetsinger	(715) 945-2721
D. Responsible Party or Owner Address, City, State and Zip Code	**E. Remedial Action Site Name, Address, City and Zip Code**
P.O. Box 145 Couderay, WI 54828	Argetsinger's IGA P.O. Box 145 Couderay, WI 54828

Enforcement Actions or Permits Closed Out? ____ Y ____ N Contaminant Type(s): Petroleum

Quantity Released: ____ Potential Receptors: ____

Status of water supply wells within 1200 feet of the site?

no impact.

♦ SOIL

Soil Type: Course sand Depth to Bedrock: NA feet

Site Specific Soil Standards (NR 720.19)? ____ Y ____ N Final Confirmation Sampling Method: ____

Remedial Action Taken: Excavation ('Hot Spot') Were Soils Excavated? X Y ____ N Quantity: 834.65 Tons

Treatment/Disposal Method: Land Fill Treatment/Disposal Location: Timberline Trail RDF

♦ GROUNDWATER (if applicable)

Groundwater Encountered? X Y ____ N Monitoring Well(s) Installed? X Y ____ N

Depth to Groundwater & Flow Direction: 14-18 ft / East Perched Water? ____ Y X N Depth: NA feet

Preventive Action Limit exceeded at this time? X Y ____ N (If yes, location) mw-10 (source monitoring well)

Enforcement Standard exceeded at this time? ____ Y X N (If yes, location) ____

Environmental Consultant Name and Phone Number	Environmental Consultant Address, City, State and Zip Code
Envirogen Inc. and Travis Peterson (262) 549-6898	2835 N. Grandview Blvd. P.O. Box 90 Pewaukee, WI 53072-0090

I, the environmental consultant, certify with my signature that the information presented is true and accurate and recommend that no further action be required at this site.

Consultant Signature: Travis Peterson Date: February, 2000

ERS-10XXX (2/97)
c:\temp\closefrm.doc

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William H. Smith, Regional Director

Northern Region Headquarters
107 Sutliff Ave.
Rhinelander, Wisconsin 54501-0818
Telephone 715-365-8900
FAX 715-365-8932
TDD 715-365-8957

June 1, 2000

Norman Argetsinger
Argetsinger's IGA
PO Box 145
Couderay, WI 54828

Subject: Argetsinger's IGA, NW corner of the Junction of CTH CC & Hwys 27 & 70, Couderay, WI
BRRTS # 03-58-170214 PECFA # 54828-0145-70

Dear Mr. Argetsinger:

The Department of Natural Resources – Remediation and Redevelopment program has recently received a request from your consultant, Envirogen, to transfer the above-referenced case to the authority of the Wisconsin Department of Commerce.

Your consultant states that no high risk factors are present at the site. The case files for this site, therefore, have been transferred to Shanna Laube at the Department of Commerce at the address listed below. Her phone number is 715-762-5557. Please address all future inquiries to her.

If you have any questions, please call me at 715-365-8990.

Sincerely,
NORTHERN REGION

Janet Kazda

Janet Kazda
Remediation and Redevelopment Program

Cc: File
County File

Travis W. Peterson
Envirogen
2835 N Grandview Blvd.
PO Box 90
Pewaukee, WI 53072-0090

Shanna Laube
Wisconsin Dept of Commerce
PO Box 530
Park Falls, WI 54552-0530

BRR Tracking System - Activity Action Report

Activity: 03-58-170214 ARGETSINGERS IGA

Activity Type: LUST

Start Date: 08/19/1997 **End Date:** OPEN **VPLE:** ☐ **Gen Prop:** ☐

Co-Contamination: ☐ **Transferred DCom:** ☑ **Pecfa Eligible:** ☑

Tracked by DCom: ☑ **Pecfa 80k:** ☐

Pecfa 80k Failure: ☐

Location: ARGETSINGERS IGA
NWCORNER CTH CC & HWY27/70
COUDERAY

Code	Action Name	Action Date
1	Notification	08/19/1997
35	Site Investigation Workplan Received (w/out Fee)	11/06/1997
37	SI Report Received (w/out Fee)	04/03/1998
99	Miscellaneous	05/22/1998
GRO = 4000 PPM		
76	Activity Transferred to DCOM	06/01/2000
REQUEST BY CONSULTANT. REVIEW BY KENDZIERSKI. LETTER TO RP. FILE TO LAUBE.		

Kendzierski, Thomas J

From: Kazda, Janet L
Sent: Friday, May 05, 2000 1:49 PM
To: Kendzierski, Thomas J
Cc: Kazda, Janet L
Subject: Transfer Request

Hi, Tom.

Travis Peterson of Envirogen has requested that we transfer the file for

Argetsinger's IGA # 03-58-170214

to the Dept of Commerce. Please review the file and send it to me if you concur.

Janet

NOTE: NO SI IN FILE. WELL RECEPTOR SURVEY AND SAMPLING NOT SPECIFICALLY MENTIONED IN THE SI WORKPLAN.
COVERAGE IS SMALL AND EITHER IS ON PRIVATE WELLS OR THE MUNI WELL IS NEARBY.

Tom Kendzierski

Kazda, Janet L

From: Kazda, Janet L
Sent: Friday, May 05, 2000 1:48 PM
To: Kendzierski, Thomas J
Cc: Kazda, Janet L
Subject: Transfer Request

Hi, Tom.

Travis Peterson of Envirogen has requested that we transfer the file for

Argetsinger's IGA # 03-58-170214

to the Dept of Commerce. Please review the file and send it to me if you concur.

Janet

ENVIROGEN

2835 N. Grandview Blvd.
Post Office Box 90
Pewaukee, Wisconsin 53072-0090

Tel: (414) 549-6898
Fax: (414) 549-6938
www.envirogen.com

May 1, 2000

Janet Kazda
Wisconsin Department of Natural Resources
Northern Region CO-Headquarters
107 Sutliff Avenue, P.O. Box 818
Rhinelander, Wisconsin 54501

RECEIVED
MAY - 5 2000
WIS. DEPT. OF NATURAL RESOURCES
RHINELANDER

Re: Case File Transfer for:
Argetsinger's IGA Site
P.O. Box 145, Couderay, Wisconsin 54828
WDNR LUST ID No. 03-58-170214
PECFA Claim No. 54828-0145-70
Envirogen Project No. P970353

Dear Ms. Kazda:

The purpose of this letter is to request transfer of the file for the above mentioned site from the Wisconsin Department of Natural Resources (WDNR) to the Wisconsin Department of Commerce (COMM). Envirogen, Inc. has completed site investigation activities at the Argetsinger's IGA site. The results of the groundwater investigation are as follows:

- **no expansion of the contaminant plume has been identified**
- **no private or public well has been impacted**
- **no contamination was encountered within 1 meter of bedrock**
- **no free product has been encountered**

The latest round of groundwater analytical results indicate no groundwater contamination above NR 140 ES guidelines has been detected and closure will be requested.

If you have any questions or require additional information, please feel free to contact me at (262) 549-6898.

Sincerely,
ENVIROGEN, INC.

Travis W. Peterson

Travis W. Peterson
Staff Scientist

TWP:ltc

Q:\Projects95_99\PROJ1997\970353\LETTERS\Twp01.doc

ENVIROGEN

CLOSURE REQUEST

ARGETSINGER'S IGA SITE
Couderay, Wisconsin

April 2000
Project No. P970353

ENVIROGEN

2835 N. Grandview Blvd.
Post Office Box 90
Pewaukee, Wisconsin 53072-0090

Tel: (414) 549-6898
Fax: (414) 549-6938
www.envirogen.com

April 10, 2000

Ms. Shanna Laube
Wisconsin Department of Commerce
214 North 4th Avenue
P.O. Box 530
Park Falls, Wisconsin 54552-0530

Re: Closure Request
Argetsinger's IGA Site, Couderay, Wisconsin
Envirogen Project No. P970353
WDNR File Ref. No. 03-58-170214
PECFA ID No. 54828-0145-70

Dear Ms. Laube:

Please find enclosed Envirogen, Inc.'s Closure Request for the above referenced site. **Based on the latest groundwater analytical results, which indicate no groundwater contamination exists above NR 140 Enforcement Standards (ES), and removal of the contaminant source, Envirogen recommends that no further action be required at the site and that closure be granted.** The sequence of environmental activities that occurred at the Argetsinger's IGA site follows. A site location map and site plan view are included as Figure 1 and Figure 2 respectively.

List of Previous Reports Submitted

- Site Investigation Work Plan, October 1997
- Site Investigation Report, April 1998
- Remedial Options Report, October 1998

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Site Characteristics

Site geology consists of clay overlaying a coarse sand with occasional clay lenses to a maximum boring depth of 27.5 feet below land surface (bls). Bedrock was not encountered during drilling activities.

Site hydrogeology has the following characteristics:

- Depth to groundwater in the monitoring wells was between 15 and 17 feet bls across the site.
- Hydraulic conductivity (K) is estimated to be approximately 50 ft/day (Freeze and Cherry 1979).
- Measurements taken in the monitoring wells indicated groundwater flow to be toward the east under a hydraulic gradient of 7.7×10^{-4} ft/ft.
- Groundwater flow velocity is estimated to be 40 ft/year.

Pre-Remedial Soil Sample Activities

Petroleum contamination was discovered during an initial site assessment (ISA) performed on August 7, 1997. The results of the ISA were detailed in the Argetsinger's SIWP (FMI 1997) report. One geoprobe soil boring was advanced and a soil sample, GP-1, was collected for laboratory analysis. The laboratory results indicated concentrations of gasoline range organics (GRO) and petroleum volatile organic compounds (PVOC's) above the Wisconsin Department of Natural Resources (WDNR) Site Investigation Trigger Level. Table 1 contains the soil sample results. Figure 3 shows the soil sample location.

As part of the site investigation on November 17-18, 1997 five monitoring wells, MW-1 through MW-5, were installed on and off-site. The soil samples collected, indicated the presence of petroleum contamination in MW-1 above the NR 720 generic soil standard for GRO, benzene, ethylbenzene, toluene and xylenes. The soil sample analytical results are summarized in Table 2. Figure 3 shows the monitoring well configuration. Figure 4 shows the pre-remedial benzene distribution and Figure 5 shows cross sections in plan view. Figures 6 and 7 illustrate the geologic cross-sections A-A' and B-B' respectively.

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Pre-Remedial Groundwater Sampling Activities

Groundwater samples and elevations were collected, from the five monitoring wells, on December 4, 1997 and July 1, 1998. Both sampling events indicated several PVOC concentrations in MW-1 above the NR 140 ES. Table 3 shows the groundwater sampling results for both sampling events. Figure 8 and Figure 9 show the pre-remedial groundwater benzene distribution and potentiometric surface, for February 19,1998, respectively. Table 8 shows the groundwater elevation data for all sampling events on site.

Tank Removal Results

On December 9, 1998, Envirogen performed the removal of the underground storage tank (UST) system, on site, consisting of a 2,000-gallon and 550-gallon gasoline UST, pump dispenser island, and all associated piping. A UST inventory and status is found in Table 4. During the removal, Envirogen performed the UST closure assessment activities, odors and petroleum contamination were observed during the UST system removal. Four soil samples, SA-1 through SA-4, were collected beneath the UST system and submitted for laboratory analysis. Soil sample SA-1 indicated a GRO concentration of 1,870 parts per million (ppm). Soil sample analytical results, for the UST system closure assessment, are found in Table 5. Figure 10 shows the layout of the UST system and closure assessment sample locations. The soil sample laboratory analytical report is included as Attachment D.

Remedial Soil Excavation Activities

Between December 9 and 11, 1998, approximately 834.65 tons of petroleum-contaminated soil was excavated and removed from the site. The excavated area encompassed the former UST cavity and pump dispenser island. The excavated soil was transported to Timberline Trail RDF, a Waste Management Company, for bioremediation. The size of the excavation was approximately 36 feet by 30 feet by 18 feet in depth. Floor, sidewall, and confirmation samples were collected beneath the former UST's and pump island during excavation. The excavation was limited by the presence of existing structures, utilities, and roadways. Figure 10 shows the extent of excavation and sample locations. The WDNR Form 4500-168, notification to dispose of petroleum contaminated soil is provided in Attachment E.

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Remedial Soil Excavation Results

During the excavation a photoionization detector (PID) was used to field-screen and select soil samples to be submitted for laboratory analysis. PID results are listed in Table 6. Twelve soil samples, samples A through L, were collected and submitted to a laboratory for analysis of PVOC's. Of these twelve two samples, A and K, were obtained from soil being loaded onto the trucks for disposal and were submitted for laboratory analysis in order to confirm the excavation of contaminated soil. Samples A and K were collected as confirmation of the excavation of contaminated soil. Sample K, having a PID reading of <10, was submitted for laboratory analysis to confirm the PID reading, and signaled the end of excavation activities. Sample L was taken from the backfill used in the excavation cavity to verify no contaminants were being transported back into the excavation. The remaining nine soil samples analyzed were collected from the sidewalls and floor of the excavation. Table 6 summarizes the laboratory analytical results for the contaminant confirmation (truck), sidewall, floor, and backfill soil samples that were submitted for laboratory analysis.

Six of the nine-sidewall and floor samples (samples B, C, D, E, G and H) showed detections of contamination above the NR 720 generic soil standard. Samples B, C, E, G and H represent inaccessible soil near the Argetsinger's IGA building, and the right-of-ways for county highway (CTH) CC and state highway (STH) 27-70. Floor samples, D and J, were collected from soils above the water table. The volume of inaccessible petroleum contaminated soils remaining both on and off site is estimated at 360 tons (200 cubic yards). The laboratory analytical report for the excavation samples is included in Appendix F.

Post-Remedial Groundwater Sampling Results

One monitoring well, MW-1, was abandoned during the remedial excavation and was replaced by monitoring well MW-10 which was installed on February 5, 1999. A WDNR Well Abandonment Form for MW-1 and Well Construction Form for monitoring well MW-10 are included in Attachment A.

Groundwater samples were collected from the five monitoring wells on February 23, May 20, August 25, 1999 and January 26, 2000, to assess groundwater contamination following the excavation. These subsequent groundwater sampling events indicated a NR 140 ES exceedance for benzene in monitoring well MW-10. The latest groundwater sampling event on January 26, 2000 showed the concentrations in MW-10 were only above NR 140 preventive action limits (PAL). An

overall declining trend can be observed in the benzene concentration in MW-10 since the remedial excavation. Figure 11 shows the post-remedial groundwater benzene distribution for August 25, 1999.

Figure 12 shows the potentiometric surface for the May 20, 1999 sampling event. Table 7 summarizes the analytical results of the site investigation and four rounds of post-excavation groundwater monitoring. Table 8 contains groundwater elevations for all on site sampling events. Copies of the groundwater analytical reports are included in Attachment G.

Risk Assessment

A risk assessment (RA) has been performed to assess the potential risk to human health based on the residual soil contamination remaining on site. The RA evaluates three exposure pathways of risk due to: ingestion of soil, inhalation of particulates, and inhalation of vapors from surface soil. Results from the RA, show an excess risk due to benzene contaminated soil through inhalation of vapors from surface soil. This RA assumes that the excavated area has only a gravel- covered surface. On March 13, 2000 Mr. Norman Argetsinger, responsible party and site owner, informed Envirogen that the area defined by the remedial excavation has since been covered with asphalt. This asphalt covering effectively eliminates the risk to human health from direct contact of vapor inhalation from surface soils. The detailed RA, including calculations, data, and results is included as Attachment H.

Based on the hydraulic conductivity, gradient, and porosity of the site's soils, the site specific groundwater flow velocity is 40 feet per year and the immediate down-gradient well, MW-2, is less than 75 feet to the east of the excavation site (MW-10). Based on this data, MW-2 should have revealed contamination from a migrating plume within 2 years if the residual soil contamination had leached to the groundwater and migrated with groundwater flow. However, MW-2 has not detected any contaminants, at any time, indicating that natural attenuation (NA) is retarding any migration of contaminants. Therefore, it is believed that the rate at which contaminants are attenuating is greater than the contaminant loading rate to groundwater.

Residual soil benzene contamination exists above the COMM 46 Table 1 values, however, these soils are deeper than the four-foot direct contact standard. The only potential receptors on the site are the potable well in the on-site building's basement. The potable well was sampled, on November 21, 1997 for petroleum contaminants, and laboratory analysis revealed no detections. The potable well sample laboratory analytical report is included as Attachment I. Another potable

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well, a hand-pump water well, is located across State Highway 27-70 to the south. The pump is broken, and is currently not in use. No samples were obtained from the well. Local contaminant pathways and receptors are further discussed in the Argetsinger's IGA SIR (Envirogen, 1998). The residual soil and groundwater contamination does not pose a risk to human health or the environment.

Justification For Closure

Envirogen requests that the site be closed as the risk criteria of COMM 46.06 have been satisfied as follows:

- **No environmental factors as listed in s.COMM 47.337 (3) are present at the site**
- **Residual site soil contamination does not present a risk to human health, per COMM 46 Table 1 values**
- **No groundwater contamination exceeds the COMM 46 Table 1 values**
- **No groundwater contamination exceeded the NR 140 Enforcement Standards**
- **Potential receptors (nearby potable wells) have not been contaminated**

Based on the latest groundwater sampling event showing the concentrations in MW-10 had declined beneath the NR 140 ES, closure for the Argetsinger's IGA site is requested.

Your approval of this application for site closure is requested. If you have any questions or require further information please contact me at (262) 549-6898.

Sincerely,
ENVIROGEN, INC.

I, Travis Peterson, hereby certify that I am a Scientist as that term is defined in s. NR 712.03(3), Wis. Adm. Code, and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

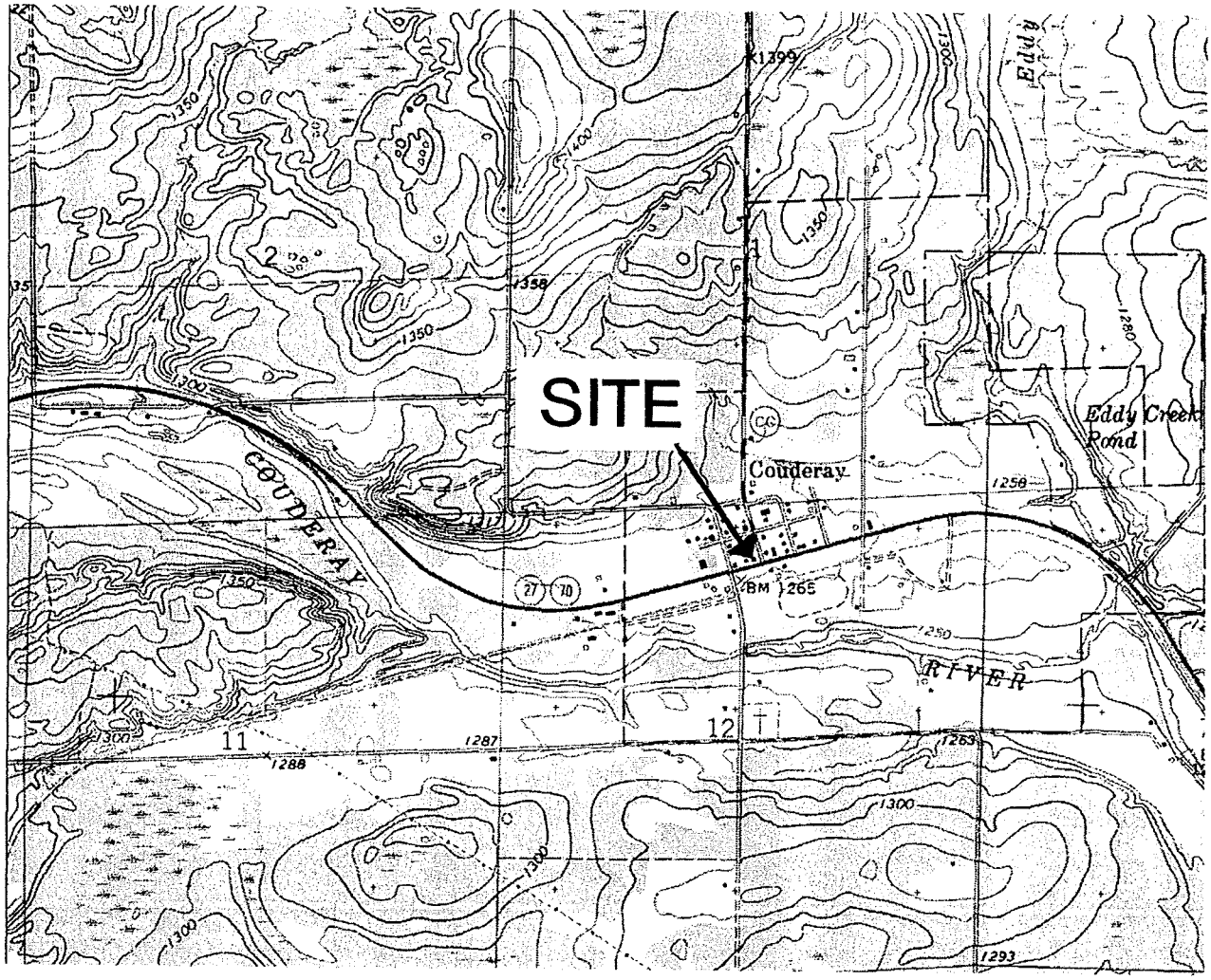
Travis W. Peterson
Staff Scientist / Report Preparer

Kenneth W. Brown, CHMM
Senior Environmental Scientist

TWP/KWB:ltc

cc: Norm Argetsinger, Argetsinger's IGA

FIGURES



(USGS 1971)
COUDERAY QUADRANGLE

SCALE
1:24000

1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

N

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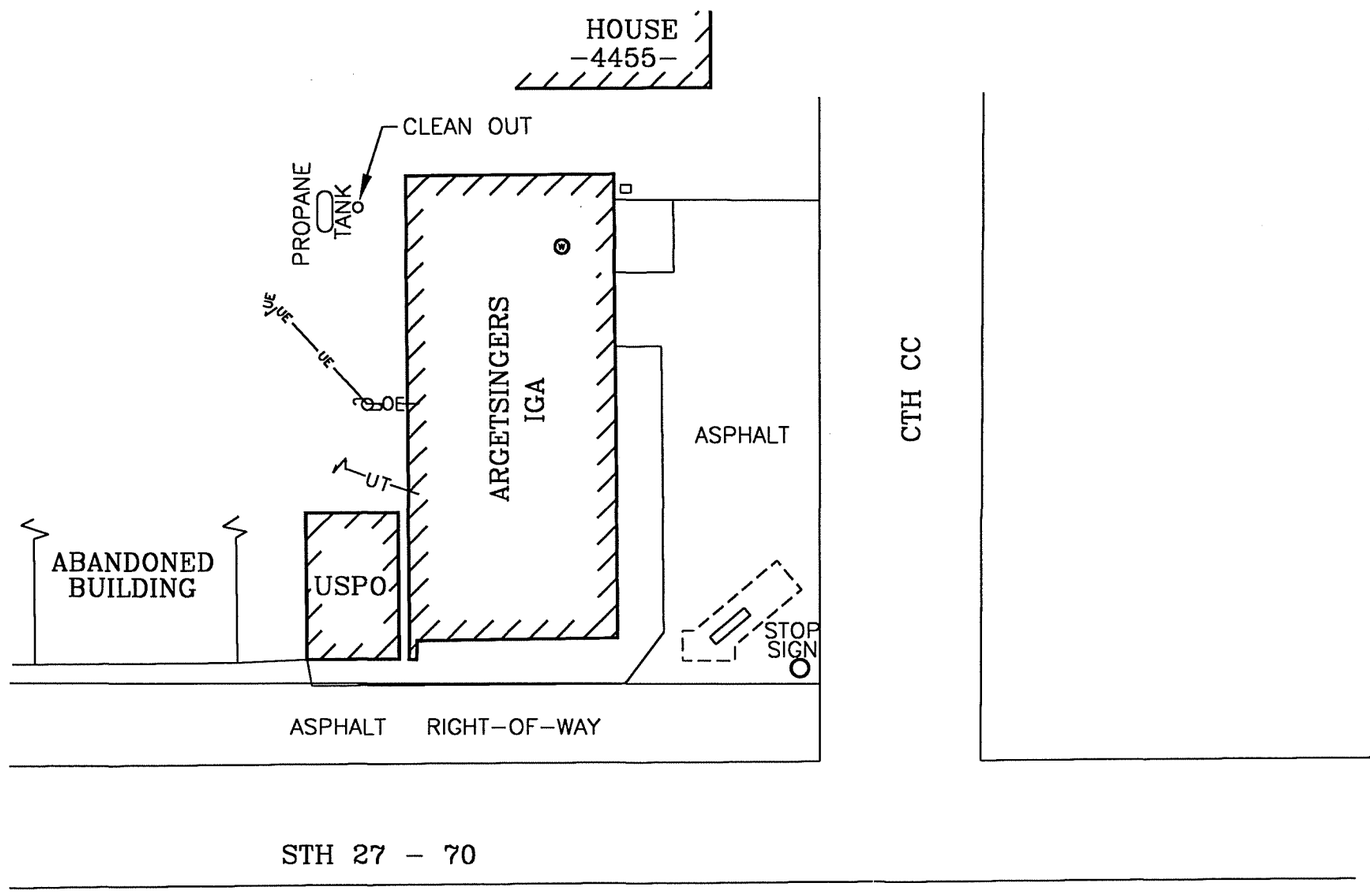
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT

2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

LOCATION

SITE LOCATION MAP ARGETSINGER'S IGA SITE COUDERAY, WISCONSIN	FIGURE NO. 1

DRAWING NO.	97.353L1
DRAWN BY:	RRT
	02/11/00
CHECKED BY:	TMD
	4/10/00
APPROVED BY:	
REVISIONS:	
ENGINEER	DATE
ENGINEER	DATE



LEGEND

- FORMER UST CAVITY
- FORMER PUMP ISLAND
- POTABLE WELL
- POWER POLE
- — OE — OVERHEAD ELECTRIC
- — UE — UNDERGROUND ELECTRIC

N

(W) HAND PUMP, WATER WELL (NOT IN USE)

SCALE

0 30'

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COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT

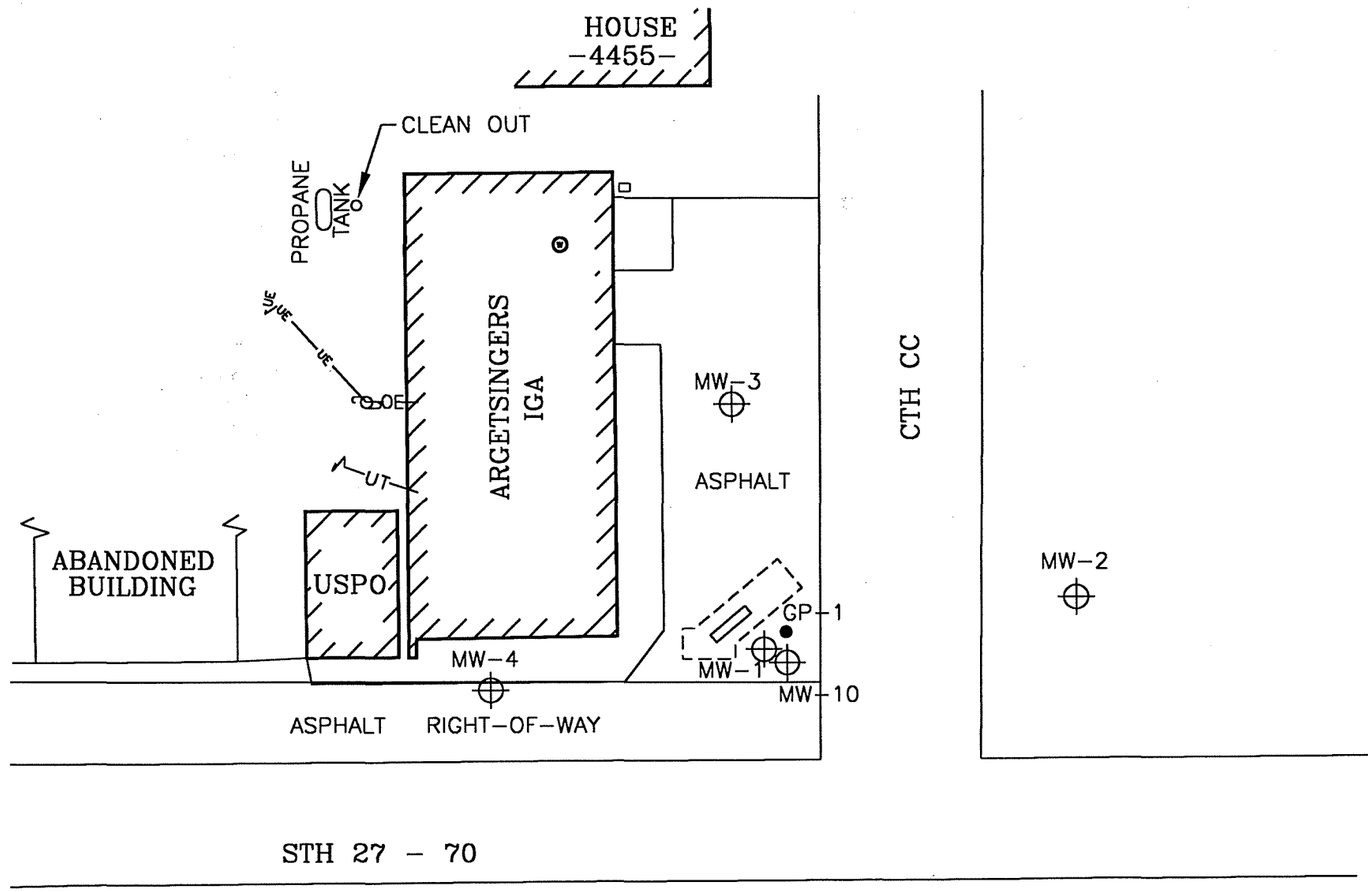
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

SITE PLAN VIEW

ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 2

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE
97.353L2	RRT	02/11/00	4/10/00					



LEGEND

- FORMER UST CAVITY
- FORMER PUMP ISLAND
- POTABLE WELL
- MONITORING WELL
- ISA SOIL SAMPLE
- POWER POLE
- — OE — OVERHEAD ELECTRIC
- — UE — UNDERGROUND ELECTRIC

N

NOTE:

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

W HAND PUMP, WATER WELL (NOT IN USE)

SCALE

0 30'

ENVIROGEN

COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT

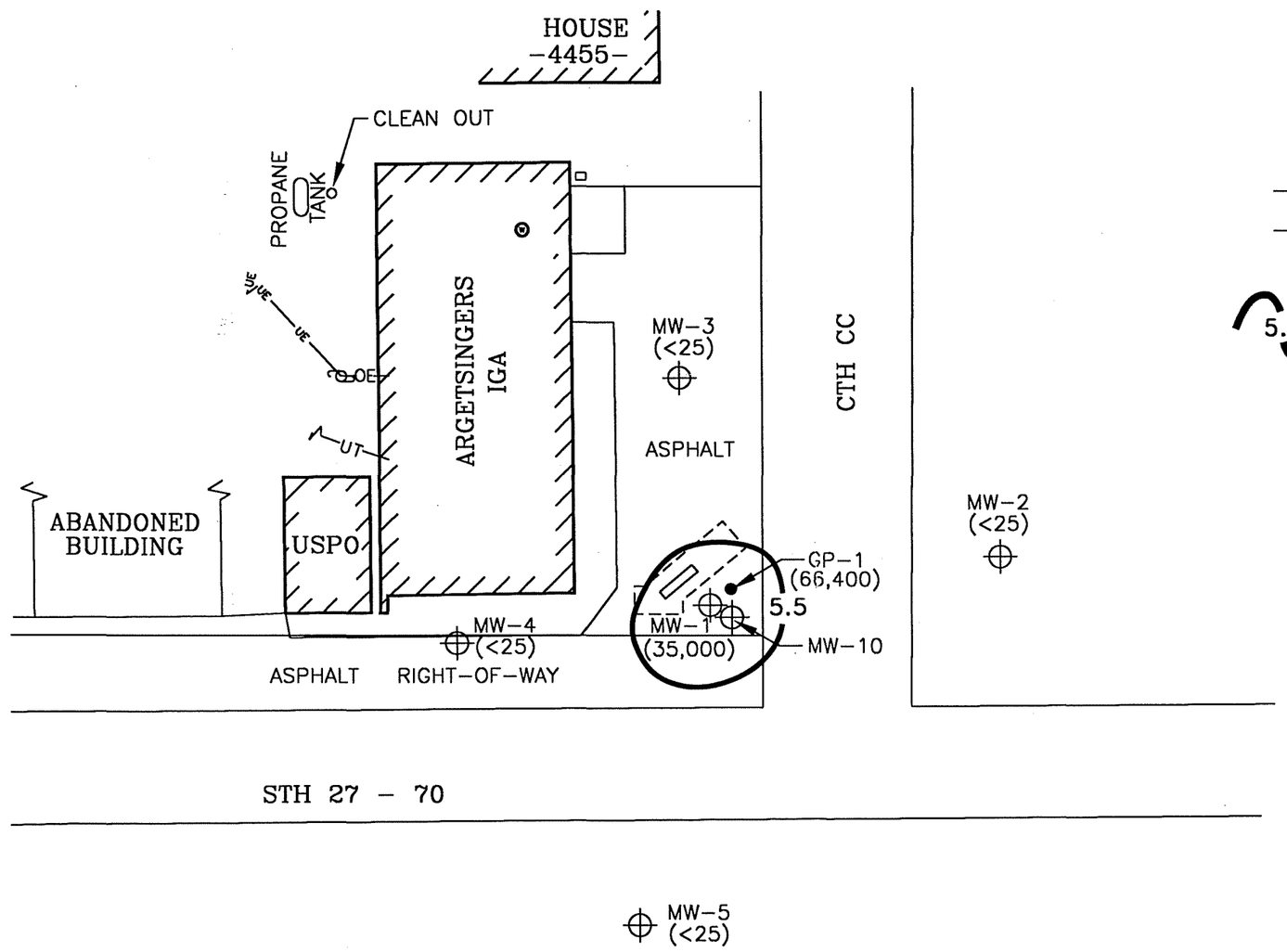
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

MONITORING WELL CONFIGURATION

ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 3

DRAWING NO.	97.353L3	DRAWN BY:	RRT	02/11/00	CHECKED BY:	MWD	4/19/01	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE



HAND PUMP, WATER WELL (NOT IN USE)

LEGEND

- FORMER UST CAVITY
- FORMER PUMP ISLAND
- POTABLE WELL
- MONITORING WELL
- ISA SOIL SAMPLE LOCATION
- POWER POLE
- OE — OVERHEAD ELECTRIC
- UE — UNDERGROUND ELECTRIC
- ( ) BENZENE CONCENTRATION IN ppb
- 5.5 ISOCONCENTRATION CONTOUR

NOTES:

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

THE NR720 GENERIC SOIL STANDARD FOR BENZENE IS 5.5 ppb.

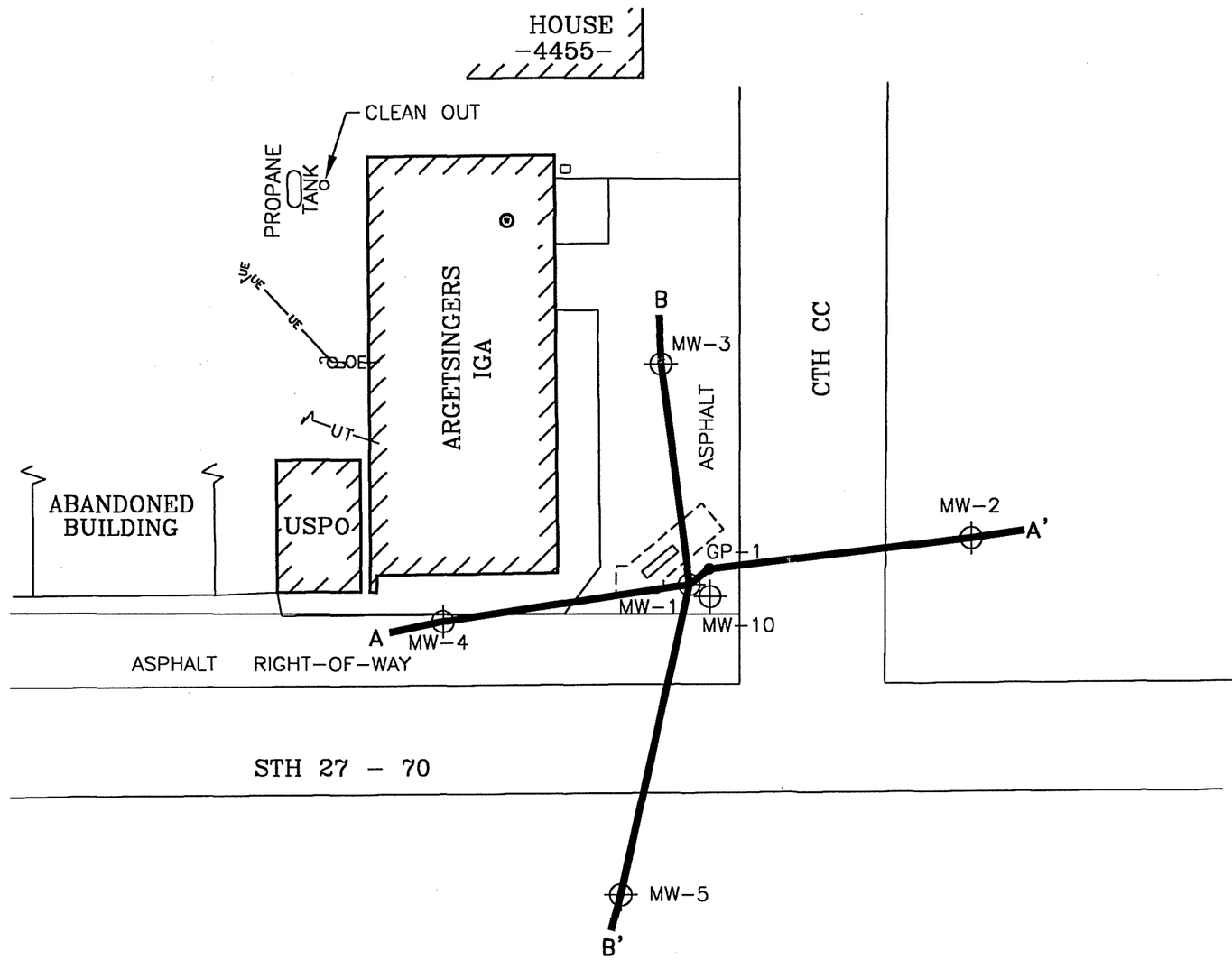
SCALE 0 30'

ENVIROGEN
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

PRE-REMEDIAL SOIL BENZENE DISTRIBUTION
(11/17-18/97)
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 4

DRAWING NO.	97.3531.4	DRAWN BY:	RRT	03/17/00	CHECKED BY:	TWP	4/10/00	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE



HAND PUMP, WATER WELL (NOT IN USE)

LEGEND

- FORMER UST CAVITY
- FORMER GAS PUMP ISLAND
- POTABLE WELL
- MONITORING WELL
- ISA SOIL SAMPLE
- POWER POLE
- OE — OVERHEAD ELECTRIC
- UE — UNDERGROUND ELECTRIC

N

NOTE:

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

SCALE

0 30'

ENVIROGEN

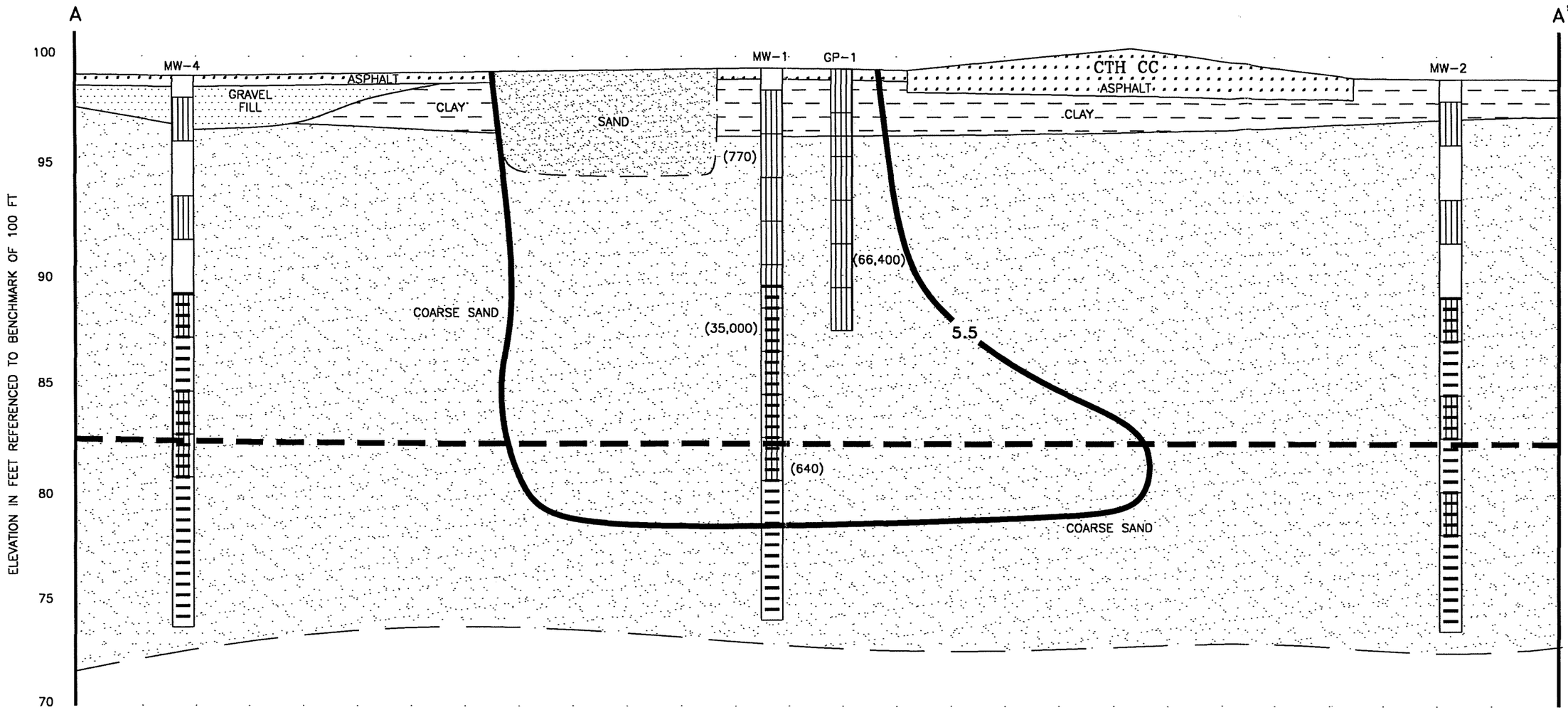
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT

2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

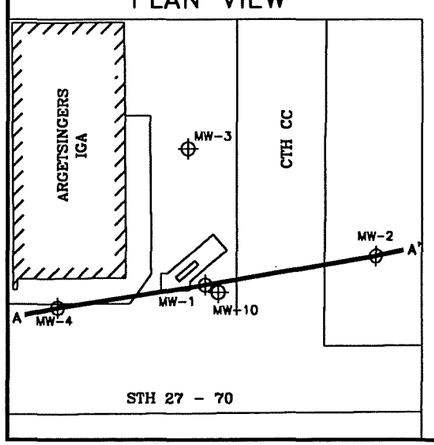
CROSS-SECTION
PLAN VIEW
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 5

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE
97.353L5	RRT	03/17/00	4/10/00					



PLAN VIEW



LEGEND

SAMPLE INTERVAL

SCREENED INTERVAL

GROUNDWATER TABLE (2/10/98)

( ) BENZENE CONCENTRATION IN ppb

5.5 ISOCONCENTRATION CONTOUR

SCALE

HORIZONTAL: 1" = 10'

VERTICAL: 1" = 5'

ENVIROGEN

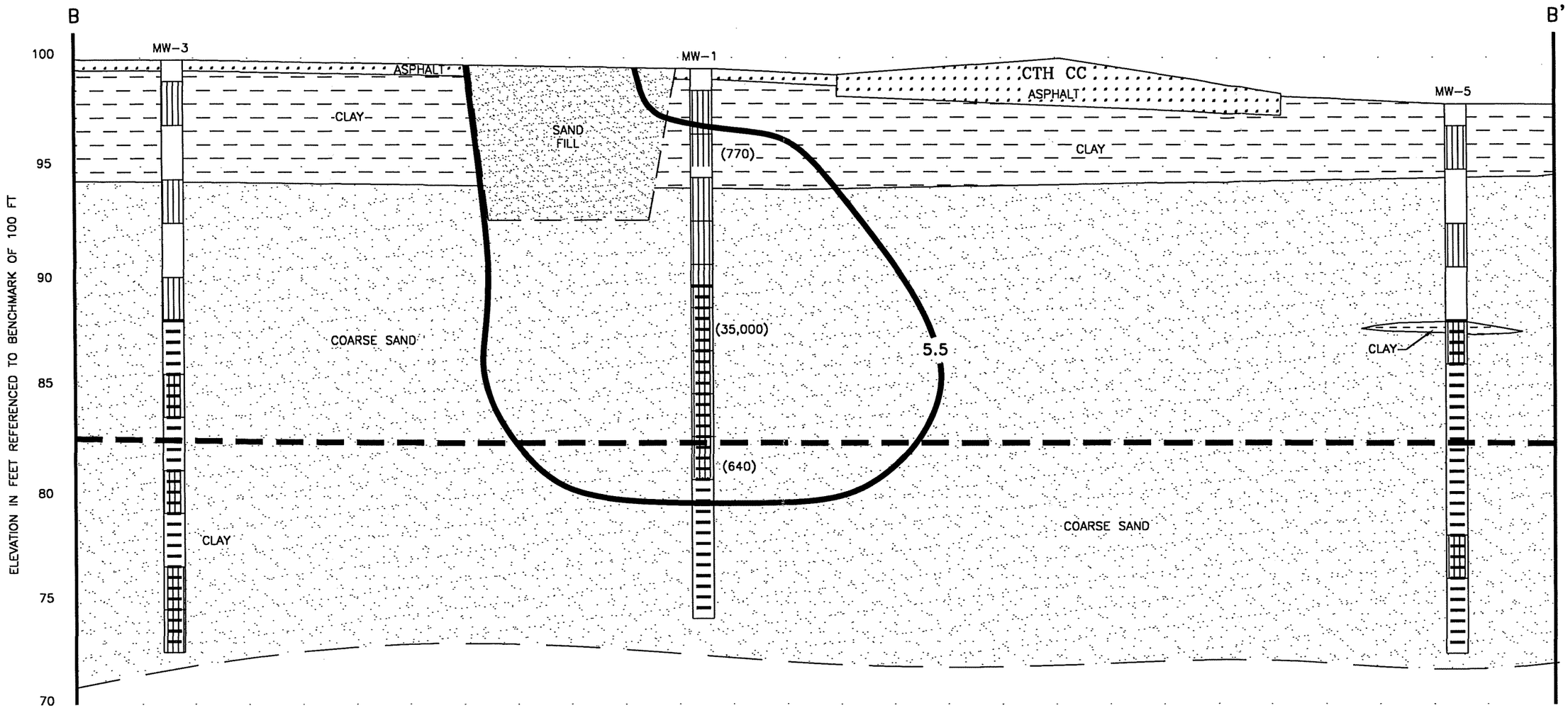
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT

2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

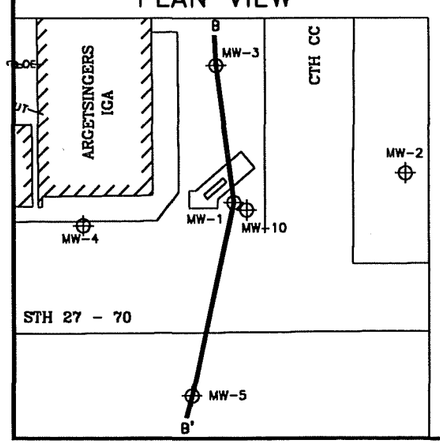
PRE-REMEDIAL SOIL BENZENE DISTRIBUTION
GEOLOGIC CROSS-SECTION A-A'
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 6

DRAWING NO.	97.353L6
DRAWN BY:	RRT
	03/17/00
CHECKED BY:	TWP
	4/19/00
APPROVED BY:	KDS
	7/11/00
REVISIONS:	
ENGINEER	
DATE	
ENGINEER	
DATE	



PLAN VIEW



LEGEND

SAMPLE INTERVAL

SCREENED INTERVAL

GROUNDWATER TABLE (2/10/98)

( ) BENZENE CONCENTRATION IN ppb

5.5 ISOCONCENTRATION CONTOUR

SCALE

HORIZONTAL: 1" = 10'

VERTICAL: 1" = 5'

ENVIROGEN

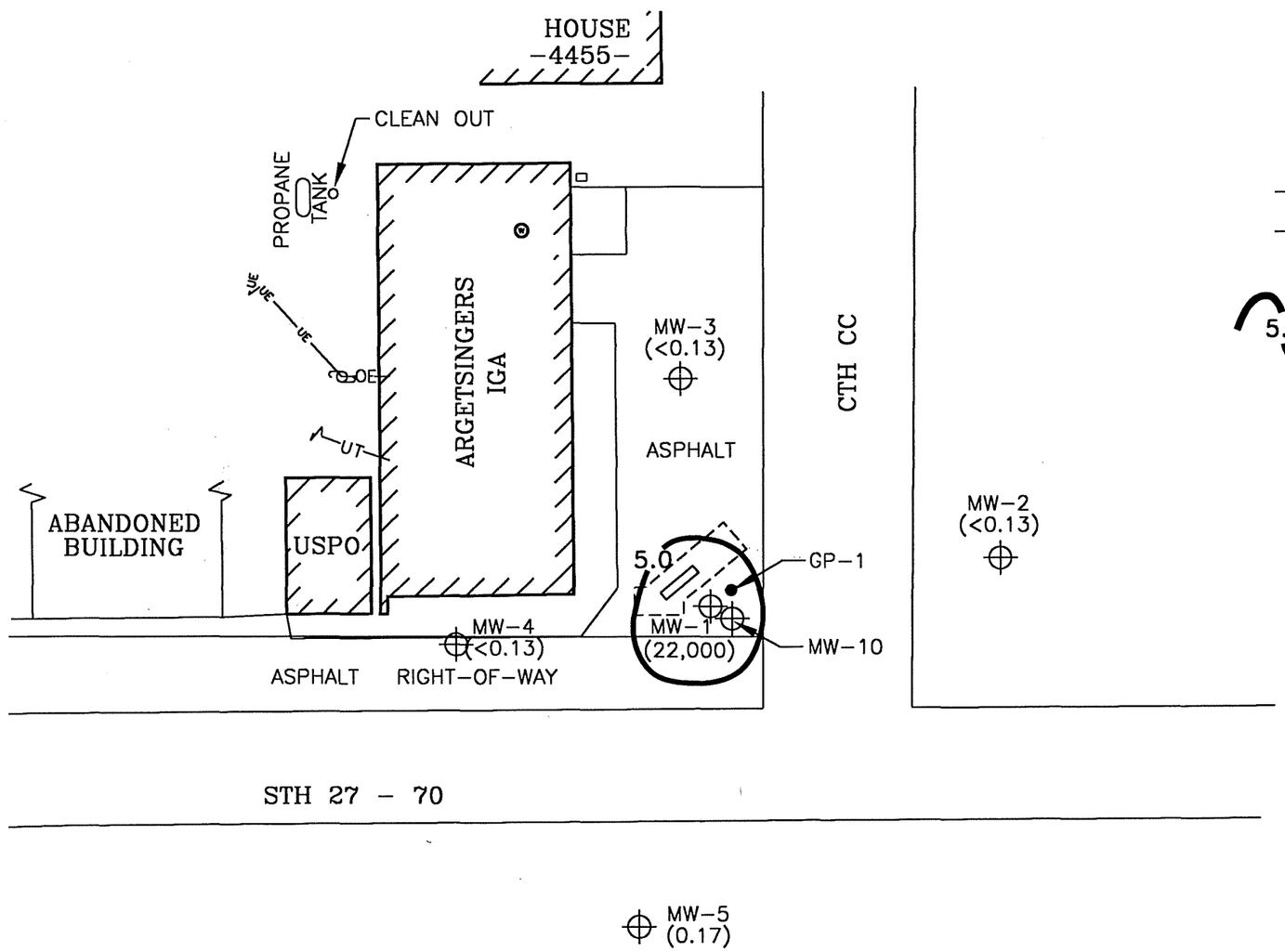
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT

2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

PRE-REMEDIAL SOIL BENZENE DISTRIBUTION
GEOLOGIC CROSS-SECTION B-B'
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 7

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE
97.353L7	RRT	TWP	KJD					
	03/17/00	4/19/00	4/19/00					



HAND PUMP, WATER WELL (NOT IN USE)

LEGEND

- FORMER UST CAVITY
- FORMER PUMP ISLAND
- POTABLE WELL
- MONITORING WELL
- ISA SOIL SAMPLE LOCATION
- POWER POLE
- — OE — OVERHEAD ELECTRIC
- — UE — UNDERGROUND ELECTRIC
- ( ) BENZENE CONCENTRATION IN ppb
- 5.0 ISOCONCENTRATION CONTOUR

NOTES:

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

THE NR140 ENFORCEMENT STANDARD FOR BENZENE IS 5.0 ppb.

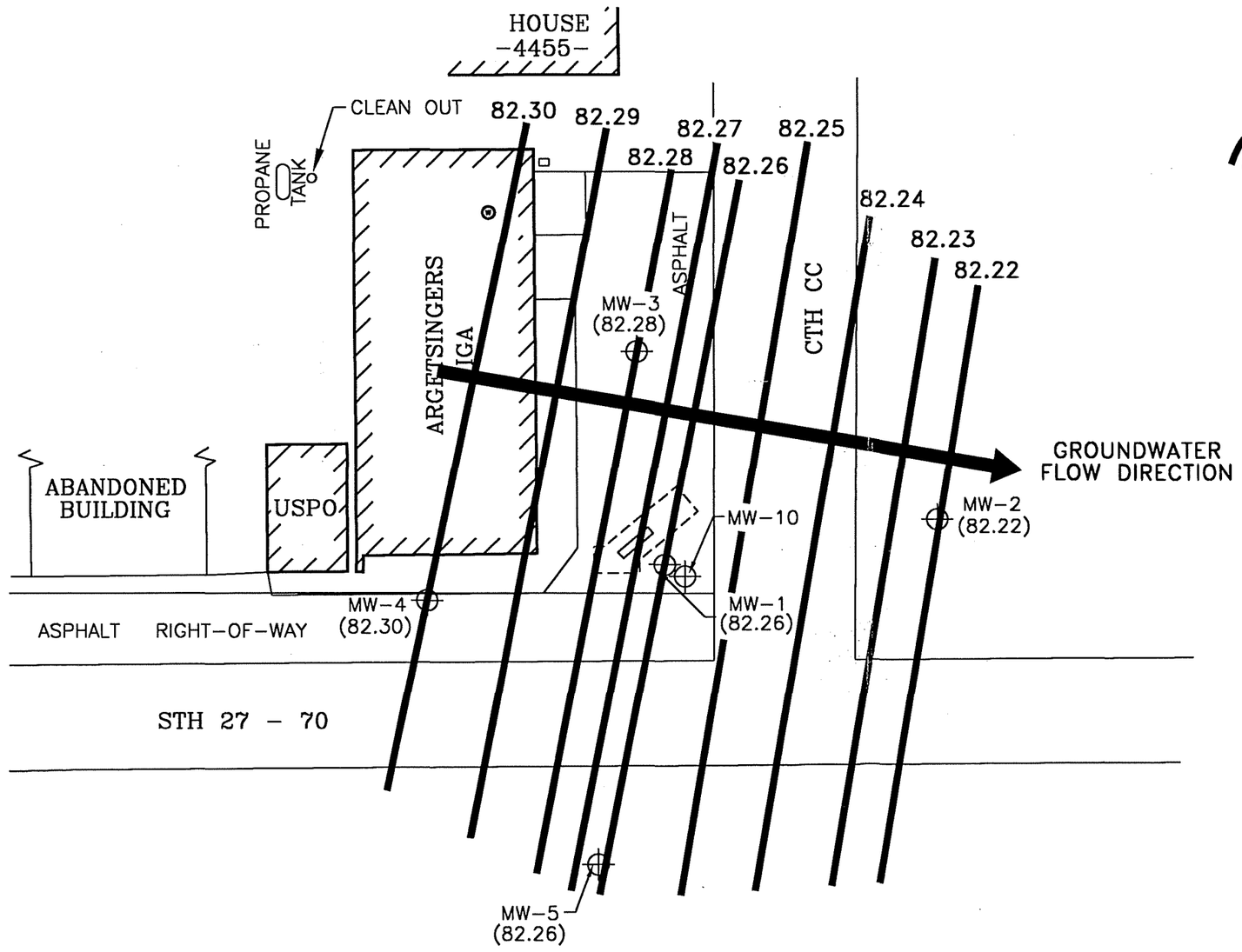
SCALE 0 30'

ENVIROGEN
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

PRE-REMEDIAL GROUNDWATER BENZENE DISTRIBUTION (07/01/98)
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 8

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE
97.353L8	RRT	03/17/00	4/10/00					



HAND PUMP, WATER WELL

LEGEND

- POTABLE WELL
- MONITORING WELL
- ( ) GROUNDWATER ELEVATION IN FEET
- 82.22 ISOELEVATION CONTOUR
- FORMER PUMP ISLAND
- FORMER UST CAVITY

NOTE:

ELEVATIONS ARE REFERENCED TO AN ON SITE BENCHMARK WITH AN ARBITRARY 100 FOOT ELEVATION.

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

N

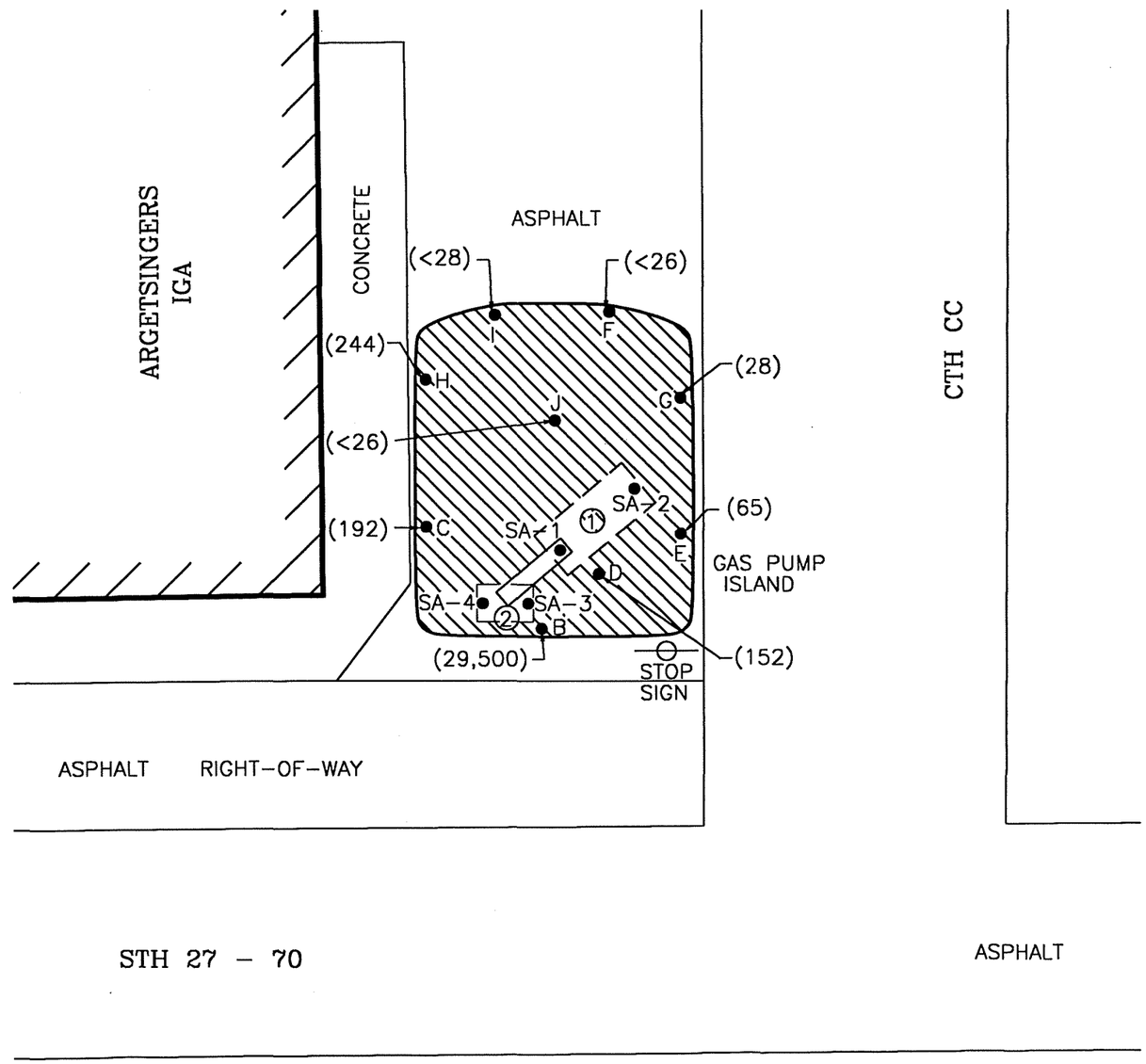
SCALE
0 30'

ENVIROGEN
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

PRE-REMEDIAL POTENTIOMETRIC SURFACE
(02/10/98)
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 9

DRAWING NO.	97.353L9	DRAWN BY:	RRT	03/17/00	CHECKED BY:	MJP	4/10/00	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE



TANK LEGEND

① 2,000-GALLON UNLEADED UST
② 550-GALLON UNLEADED UST

LEGEND

PUMP DISPENSER ISLAND
SAMPLE LOCATION
REMEDIAL EXCAVATION
( ) BENZENE RESULTS (ppb)
SA-1 UST CLOSURE ASSESSMENT SAMPLE

NOTE:

CLOSURE ASSESSMENT SAMPLES WERE NOT ANALYZED (NA) FOR BENZENE.

N

SCALE

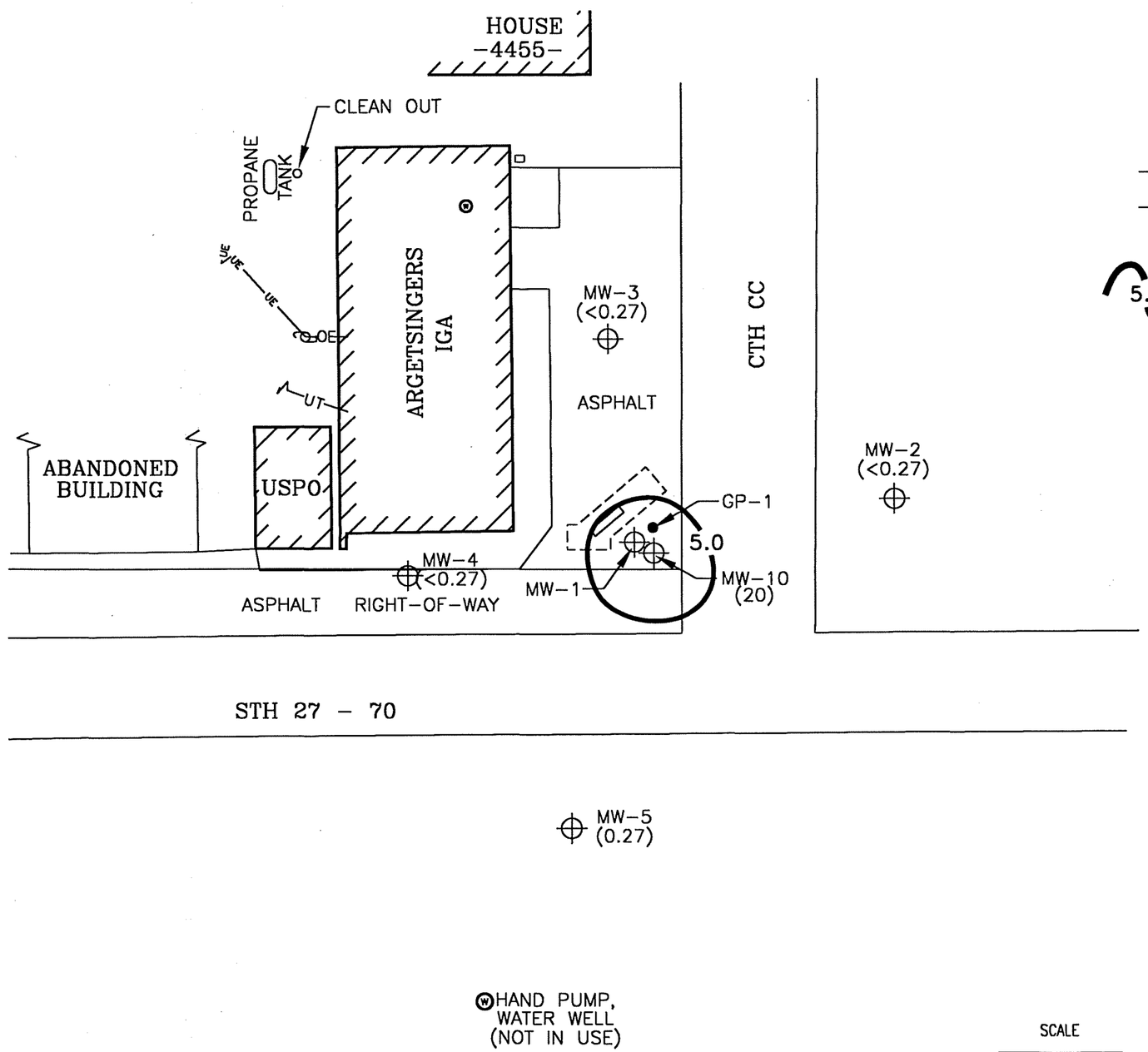
0 5' 10' 15'

ENVIROGEN
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

UST CLOSURE ASSESSMENT/EXTENT OF REMEDIAL EXCAVATION AND SAMPLE LOCATIONS (12/9-10/98)
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 10

DRAWING NO.	97.353L10	DRAWN BY:	RRT	03/17/00	CHECKED BY:	TWP	4/19/00	APPROVED BY:	KWB	4/19/00	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE



LEGEND

- FORMER UST CAVITY
- FORMER PUMP ISLAND
- POTABLE WELL
- MONITORING WELL
- ISA SOIL SAMPLE LOCATION
- POWER POLE
- — OE — OVERHEAD ELECTRIC
- — UE — UNDERGROUND ELECTRIC
- ( ) BENZENE CONCENTRATION IN ppb
- 5.0 ISOCONCENTRATION CONTOUR

NOTES:

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

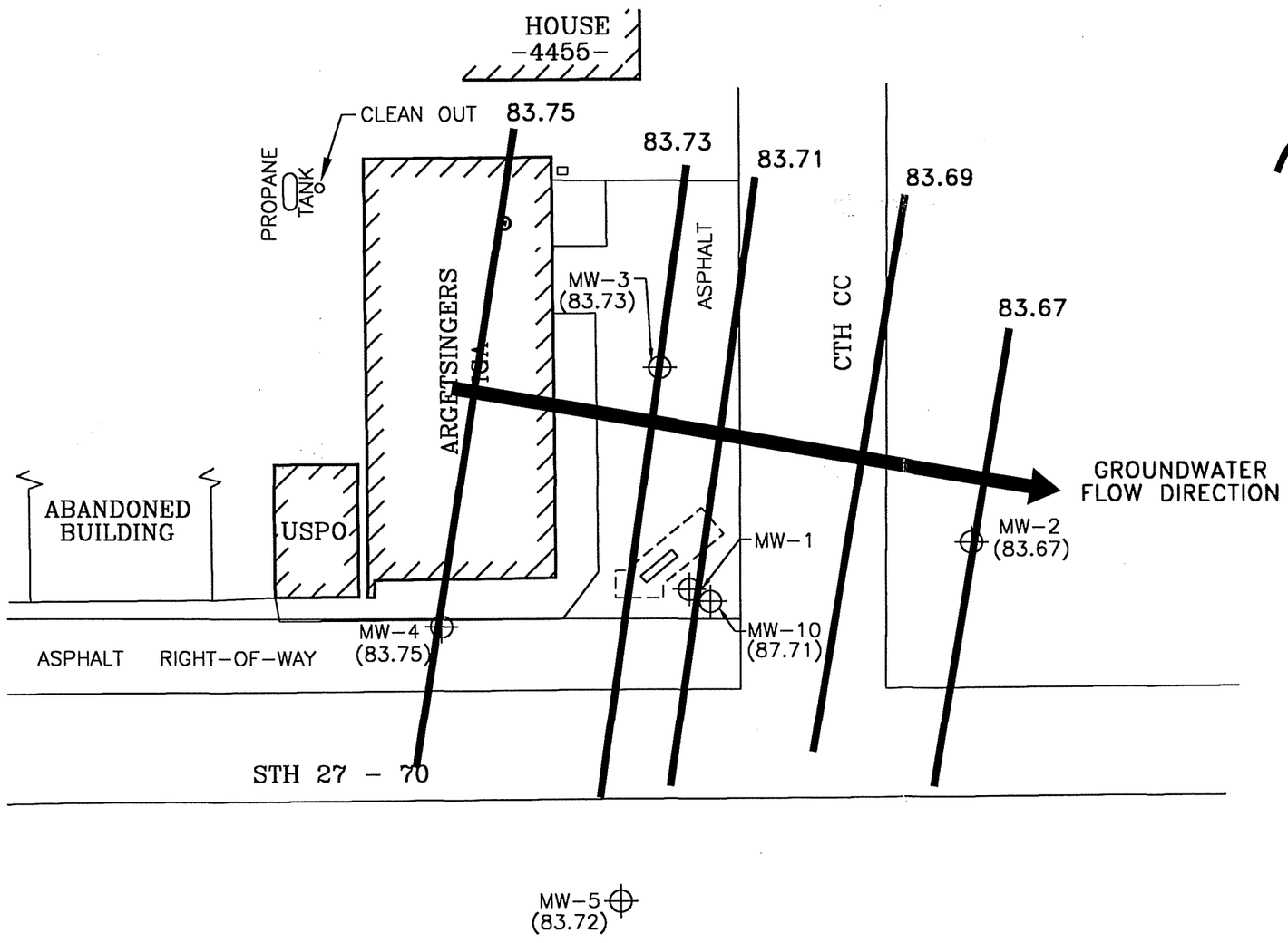
THE NR140 ENFORCEMENT STANDARD FOR BENZENE IS 5.0 ppb.

ENVIROGEN
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

POST-REMEDIAL GROUNDWATER BENZENE DISTRIBUTION
(08/25/99)
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 11

DRAWING NO.	97.355L11	DRAWN BY:	RRT	CHECKED BY:	TWP	APPROVED BY:	4/19/00	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE



LEGEND

- POTABLE WELL
- MONITORING WELL
- ( ) GROUNDWATER ELEVATION IN FEET
- 82.22 ISOELEVATION CONTOUR
- FORMER PUMP ISLAND
- FORMER UST CAVITY

NOTE: HYDRAULIC GRADIENT = 7.7 x 10^{-4} ft/ft

ELEVATIONS ARE REFERENCED TO AN ON SITE BENCHMARK WITH AN ARBITRARY 100 FOOT ELEVATION.

MONITORING WELL MW-1 WAS ABANDONED DURING REMEDIAL EXCAVATION AND REPLACED WITH MONITORING WELL MW-10.

HAND PUMP, WATER WELL

SCALE 0 30'

ENVIROGEN
COST EFFECTIVE LEADERSHIP FOR A CLEANER ENVIRONMENT
2835 North Grandview Blvd.
Pewaukee, Wisconsin 53072-0090

POST-REMEDIAL POTENTIOMETRIC SURFACE
(5/20/99)
ARGETSINGER'S IGA SITE
COUDERAY, WISCONSIN

FIGURE NO. 12

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:	REVISIONS:	ENGINEER	DATE	ENGINEER	DATE
97.353L12	RRT	03/17/00	4/19/00					

TABLES

TABLE 1

Initial Site Assessment Soil Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin
August 7, 1997

Sampling Location	Sample Depth (feet bls)	GRO (ppm)	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE	1,2,4-TMB	1,3,5-TMB
GP-1	8-10	**2,610**	66,400	81,700	358,000	434,000	<6,540	173,000	56,000
WDNR Site Investigation Trigger Level		10	NS	NS	NS	NS	NS	NS	NS

Notes:

All results in ppb unless otherwise noted.

Shading indicates value exceeds the WDNR site investigation trigger level

bls: below land surface
DRO: Diesel range organics
GRO: Gasoline range organics
MTBE: Methyl tert-butyl ether
TMB: Trimethylbenzene
NS: No standard
WDNR: Wisconsin Department of Natural Resources
ppm: parts per million
ppb: parts per billion

Checked by: TWP
Approved by: KWB

TABLE 2

Pre-Remedial Soil Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin

Sample (in feet bls)	Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	MTBE	Naph-thalene	1,2-DCA	GRO (ppm)	Total Lead (ppm)
MW-1 (1-3')	11/18/97	770	1,500	180	1,600	4,000	11,000	<130	4,300	<130	NA	NA
MW-1 (11-13')	11/18/97	35,000	58,000	230,000	316,000	140,000	44,000	<630	17,000	<630	4,000	<3.4
MW-1 (17-19')	11/18/97	640	800	2,800	4,400	2,500	860	<25	490	<25	20	<3.5
MW-2 (5.5-7.5')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<2.7	<3.4
MW-2 (10-12')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<2.7	<3.5
MW-3 (1-3')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<3.0	6.6
MW-3 (14.5-16.5')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<3.1	<3.9
MW-4 (14.5-16.5')	11/18/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<2.7	<3.4
MW-4 (16.5-18.5')	11/18/97	<25	<25	49	<50	<25	<25	<25	<25	<25	<3.0	<3.6
MW-5 (5.5-7.5')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<2.7	<3.4
MW-5 (10-12')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<25	<2.9	<3.6
NR 720 Generic Soil Standard		5.5	2,900	1,500	4,100	NS	NS	NS	NS	4.9	100	50
COMM 46 Table 1 Standards		1,100	400,000	670,000	470,000	NS	NS	NS	NS	540	NS	NS

Notes: All results in ppb unless otherwise noted.

Light shading indicates value exceeds the NR 720 Generic Soil Standard

Dark shading indicates value equal or exceeds the NR 140 Enforcement Standard

COMM 46: Wisconsin Administrative Code ch. COMM 46.06 Table 1 standards

DCA: Dichloroethane
GRO: Gasoline range organics
MTBE: Methyl tert-butyl ether
TMB: Trimethylbenzene
NA: Not analyzed
NS: No standard
bls: below land surface

Checked by: TWP Approved by: KWB

TABLE 3

Pre-Remedial Groundwater Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin

Monitoring Well	Date	Benzene	MTBE	Ethyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Xylenes	Naph-thalene	n-Butyl-benzene	Isopropyl-benzene	n-Propyl-benzene	GRO	Lead
MW-1	12/4/97	**780**	**17**	**70**	**850**	**98**	**31**	**500**	**12**	**6.3**	**3.8**	**12**	**4,900**	<0.00089
	7/1/98	**22,000**	**<80**	**4,000**	**49,000**	**62,000**	**14,000**	**30,000**	NA	NA	NA	NA	**1,120,000**	NA
	12/9/98	ABD												
MW-2	12/4/97	<0.10	<0.25	<0.25	**0.11**	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.25	<50	<0.00089
	7/1/98	<0.13	<0.16	**0.25**	**0.55**	**2.1**	**0.60**	**2.1**	NA	NA	NA	NA	<50	NA
MW-3	12/4/97	**0.19**	<0.25	**<0.25**	**0.37**	**0.22**	<0.10	**0.33**	<0.10	<0.25	<0.25	<0.25	<50	<0.00089
	7/1/98	<0.13	<0.16	<0.22	<0.20	**0.29**	<0.29	<0.23	NA	NA	NA	NA	<50	NA
MW-4	12/4/97	<0.10	<0.25	<0.25	**0.34**	**0.17**	<0.10	**0.28**	<0.10	<0.25	<0.25	<0.25	<50	<0.00089
	7/1/98	<0.13	<0.16	<0.22	**0.46**	<0.22	<0.29	<0.23	NA	NA	NA	NA	NA	NA
MW-5	12/4/97	<0.10	<0.25	<0.25	**0.13**	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.25	<50	<0.00089
	7/1/98	**0.17**	<0.16	<0.22	**0.31**	<0.22	<0.29	<0.23	NA	NA	NA	NA	<50	NA
NR 140 Enforcement Standard		5	60	700	343	96		620	40	NS	NS	NS	NS	18
NR 140 Preventive Action Limit		0.5	12	140	68.6	480		124	8	NS	NS	NS	NS	1.5
COMM 46		1,500	NS	NS	20,000	NS		7,800	7,100	NS	NS	NS	NS	NS

Notes:

All results in ppb unless otherwise noted.

Dark shading indicates value equals or exceeds the NR 140 enforcement standard

Light shading indicates value equals or exceeds the NR 140 preventive action limit

COMM 46: Wisconsin Administrative Code ch. COMM 46.06 Table 1 standards
GRO: Gasoline range organics
MTBE: Methyl tert-butyl ether
TMB: Trimethylbenzene
NA: Not analyzed
NS: No standard
ADB: Abandoned

Checked by: TWP Approved by: KWB

TABLE 4

UST Inventory
Argetsinger's Site
Couderay, Wisconsin

COMM Registration Number	Product	UST Size (gallons)	Composition	Installation Date	Status
571000045	Unleaded Gasoline	2,000	Steel	Unknown	Removed 12/9/98
571000046	Unleaded Gasoline	550	Steel	Unknown	Removed 12/9/98

Notes:

UST: Underground storage tank
COMM: Department of Commerce

Checked by: TWP
Approved by: KWB

TABLE 5

UST Closure Soil Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin
December 9, 1998

Sample	GRO
SA-1	**1,870**
SA-2	**<5.4**
SA-3	**6.6**
SA-4	**<5.3**
NR 720 Trigger Level	10

Notes:

All results reported in ppm unless otherwise noted.

Dark shading indicates value equals or exceeds the NR 720 Trigger Level

GRO: Gasoline range organics

Checked by: TWP

Approved by: KWD

TABLE 6

Remedial Excavation Soil Sample PID Field Screening and Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin
December 9, 10, and 11, 1998

Sample (feet bls)	Benzene	Ethylbenzene	MTBE	Toluene	1,2,4-TMB	1,3,5-TMB	Xylenes	PID (ppmv)
A (Confirmation)	7,800	11,000	<140	38,500	26,400	8,350	58,200	952
B (11-13')	29,500	72,100	<540	220,000	167,000	52,500	384,000	682
C (9-11')	192	1,920	<27	2,130	10,600	3,300	11,700	700
D (18.0')	152	76	<27	368	195	64	476	270
E (9-11')	65	68	<26	300	228	70	486	43
F (9-11')	<26	<26	<26	<26	<26	<26	<78	<10
G (11-13')	28	<27	<27	67	34	<27	91	223
H (18.0')	244	<28	<28	<28	<28	<28	<83	58
I (18.0')	<28	<28	<28	<28	<28	<28	<83	11
J (18.0')	<26	<26	<26	<26	<26	<26	<78	<10
K (Confirmation)	<28	<28	<28	<28	<28	<28	<84	<10
L (Backfill)	<29	<29	<29	<29	<29	<29	<87	NA
NR 720 Generic Soil Standard	5.5	2,900	NS	1,500	NS	NS	4,100	NS
COMM 46	1,100	400,000	NS	670,000	NS	NS	470,000	NS

Notes:

All results in ppb unless otherwise noted.

Shading indicates value equals or exceeds the NR 720 generic soil standard

COMM 46: Wisconsin Administrative Code ch. COMM 46.06 Table 1 standards

MTBE: Methyl tert-butyl ether

TMB: Trimethylbenzene

NS: No standard

PID: Photoionization detector

ppmv: parts per million by volume

bls: below land surface

(11-13'): Depths are estimated

Checked by: TWP Approved by: KaB

TABLE 7

Post-Remedial Groundwater Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin

Monitoring Well	Date	Benzene	MTBE	Ethyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Xylenes	Naphthalene
MW-2	2/23/99	<0.13	<0.16	<0.27	<0.20	<0.22	<0.29	<0.23	<0.46
	5/20/99	<0.26	<0.22	<0.24	<0.21	<0.86	<0.54	<1.34	<0.89
	8/25/99	<0.26	<0.22	<0.24	<0.21	<0.86	<0.54	<1.34	<0.89
MW-3	2/23/99	<0.13	<0.16	<0.22	<0.20	<0.22	<0.29	<0.23	<0.46
	5/20/99	<0.26	<0.22	<0.24	<0.21	<0.86	<0.54	<1.34	<0.89
	8/25/99	<0.27	<0.32	<0.32	<0.27	<0.22	<0.27	<0.67	<0.35
MW-4	2/23/99	<0.13	<0.16	<0.22	<0.20	<0.22	<0.29	<0.23	<0.46
	5/20/99	<0.26	<0.22	<0.24	<0.21	<0.86	<0.54	<1.34	<0.89
	8/25/99	<0.27	<0.32	<0.32	<0.27	<0.22	<0.27	<0.67	<0.35
MW-5	2/23/99	<0.13	<0.16	<0.22	<0.20	<0.22	<0.29	<0.23	<0.46
	5/20/99	<0.26	<0.22	<0.24	<0.21	<0.86	<0.54	<1.34	<0.89
	8/25/99	<0.27	<0.32	<0.32	<0.27	<0.22	<0.27	<0.67	<0.35
MW-10	2/5/99	MW Installation							
	2/23/99	**78**	**7.2**	9.3	**22**	**13**	**9.7**	**130**	**9.6**
	5/20/99	<0.26	<0.22	<0.24	<0.21	<0.86	<0.54	<1.34	<0.89
	8/25/99	**20**	**0.46**	0.57	**0.45**	**6.8**	**0.48**	**14.8**	**2.5**
	1/26/00	**2.9**	**0.28**	<0.50	<0.50	<1.0	<1.0	**0.70**	**2.2**
NR 140 Enforcement Standard		5	60	700	343	96		620	40
NR 140 Preventive Action Limit		0.5	12	140	68.6	480		124	8
COMM 46		1,500	NS	NS	20,000	NS		7,800	7,100

Notes:

Al l results in ppb unless otherwise noted.

Dark shading indicates value equals or exceeds the NR 140 enforcement standard

Light shading indicates value equals or exceeds the NR 140 preventive action limit

COMM 46: Wisconsin Administrative Code ch. COMM 46.06 Table 1 standards.
MTBE: Methyl tert-butyl ether
TMB: Trimethylbenzene
NS: No standard

Checked by: JWP Approved by: KWB

TABLE 8

Groundwater Elevation Data
Argetsinger's IGA Site
Couderay, Wisconsin

Date	MW-1		MW-2		MW-3		MW-4		MW-5		MW-10	
	TOC Elevation = 98.10		TOC Elevation = 98.62		TOC Elevation = 99.48		TOC Elevation = 98.60		TOC Elevation = 97.47		TOC Elevation = 98.79	
	Feet to Water	Groundwater Elevation	Feet to Water	Groundwater Elevation	Feet to Water	Groundwater Elevation	Feet to Water	Groundwater Elevation	Feet to Water	Groundwater Elevation	Feet to Water	Groundwater Elevation
12/4/97	16.42	82.49	61.17	82.45	16.96	82.52	16.08	82.52	14.99	82.48	NI	NI
2/10/98	16.65	82.26	16.40	82.22	17.20	82.28	16.30	82.30	15.21	82.26	NI	NI
7/1/98	15.94	82.97	15.34	83.28	16.18	83.30	15.29	83.31	14.18	83.29	NI	NI
Remedial Excavation (12/09 – 12/11/98)												
5/20/99	ABD	ABD	14.95	83.67	15.75	83.73	14.85	83.75	13.75	83.72	15.08	83.71
8/25/99	ABD	ABD	14.26	84.36	15.09	84.39	14.22	84.38	13.07	84.40	14.42	84.37
1/26/00	ABD	ABD	NM	NM	NM	NM	NM	NM	NM	NM	16.46	82.33

Notes:

MW-10 was installed on February 5, 1999
Elevations are relevant to a benchmark of 100 feet
Feet to water are measured from the TOC

TOC: top-of-casing
NM: Not measured
NI: Not installed
ABD: Abandoned

Checked by: TWP
Approved by: KWB

ATTACHMENT A

Soil Boring Logs, Well Construction and Development Forms, and Abandonment Forms

ate of Wisconsin
epartment of Natural Resources

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

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name: Araetsinger's IGA	License/Permit/Monitoring Number: — — — — — — —	Boring Number: MW-1
Boring Drilled By (Firm name and name of crew chief): FM: Brian Bjodstrup; ES: Eric & Joe	Date Drilling Started: 11/18/97 (M M D D Y Y)	Date Drilling Completed: 11/18/97 (M M D D Y Y)
Drilling Method: HSA		
DNR Facility Well No.:	WI Unique Well No.:	Common Well Name: MW-1
Final Static Water Level: ____ Feet MSL	Surface Elevation: ____ Feet MSL	Borehole Diameter: 8.25 inches
Boring Location: State Plane ____ N, ____ E S/C/N; Lat ° ' "; Long ° ' "	Local Grid Location (If applicable): ____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W	
W 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W		
County: Sawyer	DNR County Code: 58	Civil Town/City/ or Village: Couderay

Sample: Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
	6"	6 3 4 6	2	Brown clay, moist, petroleum odor	CL			86						
	12"	7 15 12 14	4	Top 4" clay, moist. Bottom 8" coarse sand, moist	SP			54						
	16"	6 11 9 10	6	Gravelly sand, dry, petroleum odor	SW			213						
	20"	9 8 12 12	8	Gravelly coarse sand, moist, petroleum odor	SW			387						
	20"	9 7 8 8	10	Coarse sand, moist, petroleum odor	SP			420						
	20"	5 4 16 10	12	Coarse sand, moist, petroleum odor	SP			495						
	8"	19 18 24 28	14	Coarse sand, moist, slight petroleum odor	SP			313						
	12"	11 15 17 17	16	Coarse sand with rocks, wet, slight petroleum odor	SP			302						
	14"	7 6 6 7	18	Coarse sand with rocks, wet, slight petroleum odor	SP			322						
	—	—	20	Blind drill	—	—		—						

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

Signature: Brian Bergman

Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Araetsinger's IGA	— — — — — — —	MW-1

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup MES: Eric & Joe	11/18/97 (M M D D Y Y)	11/18/97 (M M D D Y Y)	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-1	_____ Feet MSL	_____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

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

County	DNR County Code	Civil Town/City/ or Village
Sawyer	58	Couderay

Sample: Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
			26	EOB @ 25.5'										

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

Signature: Bryan Bergman

Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Aragetsinger's IGA	— — — — — — —	MW-2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup IES: Eric & Joe	11/17/97 (M M D D Y Y)	11/17/97 (M M D D Y Y)	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-2	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

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

County: Sawyer
DNR County Code: 58
Civil Town/City/ or Village: Couderay

Sample Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
	14"	1 2 6 4	2	Top 4" brown clay, moist Bottom 10" coarse gravelly sand, moist	SW			1.5						
	—	—	4	Blind drill	—	—		—						
	20"	5 10 11 11	6	Coarse sand, moist	SP			2.0						
	—	—	8 10	Blind drill	—	—		—						
	20"	11 13 9 9	12	Coarse sand, moist	SP			1.5						
	—	—	14	Blind drill	—	—		—						
	20"	13 12 14 14	16	Top 4" silty coarse sand Bottom 14" Coarse sand	SP			1.5						
	—	—	18	Blind drill	—	—		—						
	20"	—	20	Coarse sand	SP			1.5						
	—	—	22 24	Blind drill	—	—		—						

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Arnetsinger's IGA	— — — — — — —	MW-2

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup MES: Eric & Joe	11/17/97 (M M / D D / Y Y)	11/17/97 (M M / D D / Y Y)	HSA

DNR Facility Well No.	W.U. Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-2	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

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

County	DNR County Code	Civil Town/City/ or Village
Sawyer	58	Couderay

Sample Number and Type	Length Att. & Recovered (in)	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	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
			26	EOB @ 25.5'										

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

Signature	Firm
Bryan Bergman	Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Araetsinger's IGA	— — — — — — — —	MW-3

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started (M M D D Y Y)	Date Drilling Completed (M M D D Y Y)	Drilling Method
FMI: Brian Bjodstrup IEs: Eric & Joe	11/17/97	11/17/97	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-3	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane ____ N, ____ E S/C/N
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
SW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

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

County: Sawyer
DNR County Code: 58
Civil Town/City/ or Village: Couderay

Sample Number and Type	Length Att. & Recovered (in)	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	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		4" Asphalt	—	—		—						
	22"	6 6 7 7	2	Top 4" fill, moist Bottom 18" Brown clay, moist	CL			0.3						
	—	—	4	Blind drill	—	—		—						
	22"	6 9 11 11	6	Top 2" brown clay, dry Bottom 20" Coarse sand, dry	SP			0.3						
	—	—	8	Blind drill	—	—		—						
	20"	17 12 12 10	10	Coarse gravelly sand, dry	SW			0.3						
	—	—	12	Blind drill	—	—		—						
	18"	12 10 9 13	14	Top 2" Sandy clay, dry Bottom 16" medium red sand, dry.	SP			0.3						
	—	—	16	Blind drill	—	—		—						
	20"	15 9 4 5	18	Top 4" silty clay, wet Bottom 16" coarse sand, wet	SP			0.9						
	—	—	20	Blind drill	—	—		—						
	16"	9 3 3 3	22	Coase sand, wet	SP			0.3						
			24											

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Arget singer's IGA	— — — — — — —	MW-3

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup MES: Eric & Joe	1/1/97 (M M D D Y Y)	1/1/97 (M M D D Y Y)	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-3	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

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

County	DNR County Code	Civil Town/City/ or Village
Sawyer	58	Couderay

Sample Number and Type	Length Att. & Recovered (in)	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	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	16"	9 3 3 3		Coarse sand, wet	SP			0.3						
	16"	4 9 3 2	26	Coarse sand, wet	SP			0.3						
			28	EOB @ 27.5'										

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

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Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
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- ☐ Superfund
- ☐ Haz. Waste
- ■ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Araetsinger's 16A	— — — — — — — —	MW-4

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup ES: Eric & Joe	11/18/97 (M M D D Y Y)	11/18/97 (M M D D Y Y)	HSA

DNR Facility Well No.	W.R. Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-4	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane ____ N, ____ E S/C/N
SW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ° ' "
Long ° ' "

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

County: Sawyer
DNR County Code: 58
Civil Town/City/ or Village: Couderay

Sample Length Att. & Recovered (In)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
—	—		Blind drill	—	—		—						
2"	8 3 4 4	2	Gravel fill, dry	FILL			—						
—	—	4	Blind drill	—	—		—						
18"	11 11 12 20	6	Coarse sand, dry	SP			0.2						
—	—	8	Blind drill	—	—		—						
12"	7 17 11 9	10	Coarse sand with rocks, dry	SP			0.2						
—	—	12	Blind drilled	—	—		—						
16"	4 5 12 12	14	Coarse sand, dry	SP			2.1						
20"	6 3 3 5	16	Top 2" medium sand, wet Bottom 18" coarse sand, wet	SP			2.1						
—	—	18	Blind drill	—	—		—						
		20											
		22											
		24											

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Signature: Brian Bergman
Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
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- ☐ Wastewater
- ☐ Superfund
- ☐ Haz. Waste
- ☒ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Arpetsinger's IGA	— — — — — — — —	MW-4

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup MES: Eric & Joe	11/18/97 (M M D D Y Y)	11/18/97 (M M D D Y Y)	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-4	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N. R 8 E/W

Lat ° ' "
Long ° ' "

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

County	DNR County Code	Civil Town/City/ or Village
Sawyer	58	Couderay

Sample Number and Type	Length Att. & Recovered (in)	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	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
			26	EOB @ 25.5'										

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

Signature: Bryan Bergman

Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Araetsinger's IGA	— — — — — — —	MW-5

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup IES: Eric & Joe	11/17/97 (M M D D Y Y)	11/17/97 (M M D D Y Y)	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-5	____ Feet MSL	____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
SW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

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

County: Sawyer
DNR County Code: 58
Civil Town/City/ or Village: Couderay

Sample: Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
	15"	5 7 10 10	2	Top 6" silty brown clay, moist Bottom 9" coarse sand, moist				0.9						
	—	—	4	Blind drill	—	—		—						
	12"	7 11 14 17	6	Top 3" brown clay, moist Bottom 9" coarse sand, moist				0.3						
	—	—	8	Blind drill	—	—		—						
	18"	17 8 7 11	10	Top 4" clay, moist Bottom 14" medium sand, moist				0.9						
	—	—	12	Blind drill	—	—		—						
	0"	—	14	No recovery	—	—		—						
	—	—	16	Blind drill	—	—		—						
	16"	4 4 3 6	18	Coarse sand, wet				1.5						
	—	—	20	Blind drill	—	—		—						
			22											
			24											

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

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State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
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- ☐ Wastewater
- ☐ Superfund
- ☐ Haz. Waste
- ☒ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Araetsinger's IGA	— — — — — — —	MW-5

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
FMI: Brian Bjodstrup MES: Eric & Joe	11/17/97 (M M D D Y Y)	11/17/97 (M M D D Y Y)	HSA

DNR Facility Well No.	Wi. Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-5	_____ Feet MSL	_____ Feet MSL	8.25 inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

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

County	DNR County Code	Civil Town/City/ or Village
Sawyer	58	Couderay

Sample Number and Type	Length Att. & Recovered (in)	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	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
	—	—		Blind drill	—	—		—						
			26	EOB @ 25.5'										

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

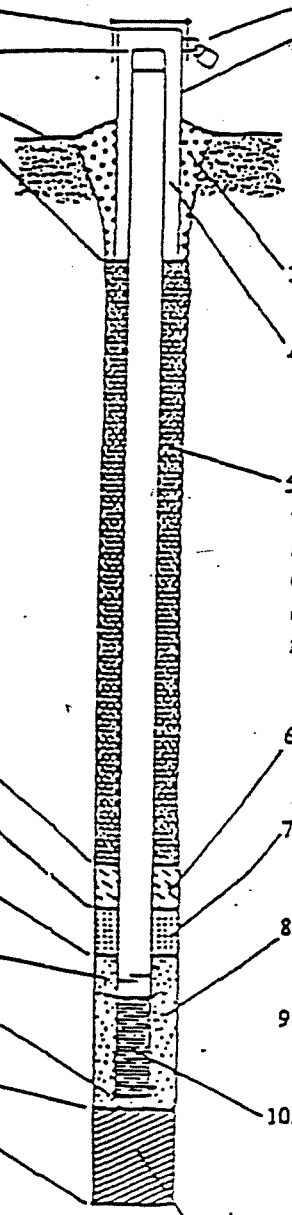
This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-9

Facility/Project Name: Argetsinger's IGA	Local Grid Location of Well: ft. ☐N ☐S ft. ☐E ☐W	Well Name: MW-1
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. ___ Long. ___ or	Wis. Unique Well Number / DNR Well Number
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12	St. Plane ___ ft. N. ___ ft. E.	Date Well Installed: 11/18/97 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: ft.	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 12, T. 38 N, R. 8 ☐E ■W	Well Installed By: (Person's Name and Firm) FMI: Brian Bjindstrup MES: Eric & Joe
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	



. Protective pipe, top elevation _____ ft. MSL
. Well casing, top elevation _____ ft. MSL
. Land surface elevation _____ ft. MSL
. Surface seal, bottom _____ ft. MSL or 1.0 ft.

2. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

3. Sieve analysis attached? ☐ Yes ■ No

4. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ ___

5. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

6. Drilling additives used? ☐ Yes ■ No

Describe _____

7. Source of water (attach analysis): _____

Bentonite seal, top _____ ft. MSL or 1.0 ft.
Fine sand, top _____ ft. MSL or 7.0 ft.
Filter pack, top _____ ft. MSL or 8.0 ft.
Screen joint, top _____ ft. MSL or 10.0 ft.
Well bottom _____ ft. MSL or 25.0 ft.
Filter pack, bottom _____ ft. MSL or 25.5 ft.
Borehole, bottom _____ ft. MSL or 25.5 ft.
Borehole, diameter 8.25 in.
O.D. well casing 2.38 in.
I.D. well casing 2.07 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ■ 04; Other ☐ ___
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ ___
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ ___; Other ☐ ___
5. Annular space seal: a. Granular Bentonite ■ 33
b. ___ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ___ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 2.04 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. ___ Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #45-55
b. Volume added 0.34 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5.97 ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ___
10. Screen material: ___
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ■ 14; Other ☐ ___

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

Signature: Bryan Bergmann | Firm: Fluid Management, Inc.

Use complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., ch. NR 149, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $100 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. ___ for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-9

Facility/Project Name: Argetsinger's IGA

Local Grid Location of Well: _____ ft. ☐ N ☐ S _____ ft. ☐ E ☐ W

Well Name: MW-2

Facility License, Permit or Monitoring Number: _____

Grid Origin Location: Lat. _____ Long. _____ or

WIS: Unique well number DNR well number

Type of Well: Water Table Observation Well ■ 11
Piezometer ☐ 12

St. Plane _____ ft. N. _____ ft. E.

Date Well Installed: 11/17/97 (m m / d d / y y)

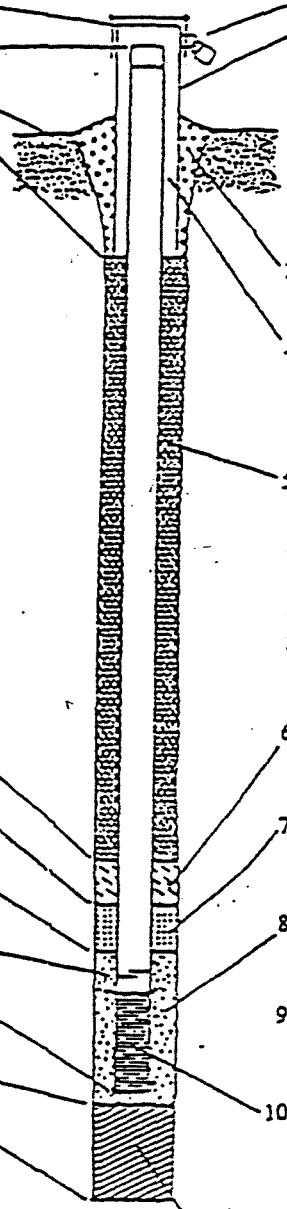
Distance Well Is From Waste/Source Boundary: _____ ft.

Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 12, T. 38 N, R. 8 ☐ E ■ W

Well installed by: (Person's Name and Firm)
FMI: Brian Bjodstrup
MES: Eric & Joe

Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known



A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ■
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ■ 41
Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ■ 99

16. Drilling additives used? ☐ Yes ■ No

Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.

F. Fine sand, top _____ ft. MSL or 7.0 ft.

G. Filter pack, top _____ ft. MSL or 8.0 ft.

H. Screen joint, top _____ ft. MSL or 10.0 ft.

I. Well bottom _____ ft. MSL or 25.0 ft.

J. Filter pack, bottom _____ ft. MSL or 25.5 ft.

K. Borehole, bottom _____ ft. MSL or 25.5 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.07 in.

1. Cap and lock? ■ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ■ 04
Other ☐ _____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30
Concrete ■ 01
Other ☐ _____

4. Material between well casing and protective pipe:
Bentonite ■ 30
Annular space seal ☐ _____
Other ☐ _____

5. Annular space seal: a. Granular Bentonite ■ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 2.04 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ■ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ _____

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #45-55
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5.97 ft^3

9. Well casing: Flush threaded PVC schedule 40 ■ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ _____

10. Screen material: PVC schedule 40
a. Screen type: Factory cut ■ 11
Continuous slot ☐ 01
Other ☐ _____
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.

11. Backfill material (below filter pack): None ■ 14
Other ☐ _____

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

Name: Bryan Bergman
Firm: Fluid Management, Inc.

Complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., ch. NR 140, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $100 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each violation. [illegible] for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-9

Facility/Project Name: Argetsinger's IGA	Local Grid Location of Well: ____ ft. ☐N ☐S ____ ft. ☐E ☐W	Well Name: MW-3
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. ____ Long. ____ or St. Plane ____ ft. N. ____ ft. E.	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12		Date Well Installed: 11/17/97 (m m d d y y)
Distance Well Is From Waste/Source Boundary: ____ ft.	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 12, T. 38 N, R. 8 ☐E ■W	Well Installed By: (Person's Name and Firm) FMI: Brian Bjodstrup MES: Eric & Joe
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ■
SM ☐ SC ☐ ML ☐ MH ☐ CL ■ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

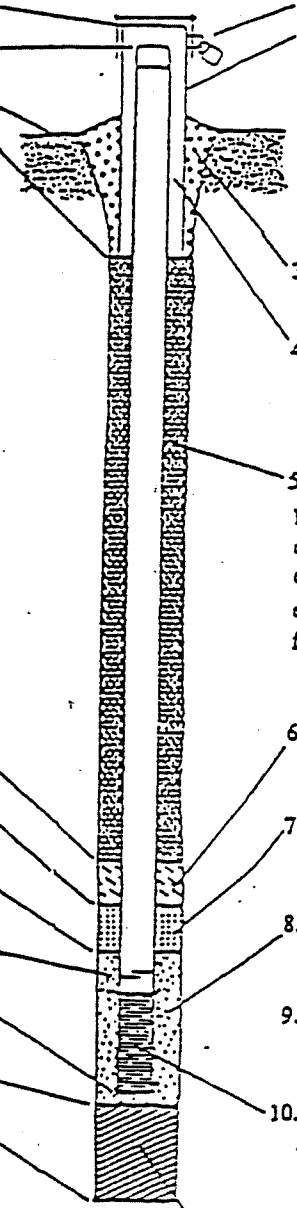
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No
Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 9.0 ft.
G. Filter pack, top _____ ft. MSL or 10.0 ft.
H. Screen joint, top _____ ft. MSL or 12.0 ft.
I. Well bottom _____ ft. MSL or 27.0 ft.
J. Filter pack, bottom _____ ft. MSL or 27.0 ft.
K. Borehole, bottom _____ ft. MSL or 27.5 ft.
L. Borehole, diameter 8.25 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.07 in.



1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ■ 04; Other ☐ ____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ ____; Other ☐ ____
5. Annular space seal: a. Granular Bentonite ■ 33
b. ____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 2.72 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ■3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #45-55
b. Volume added 0.34 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5.97 ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____
10. Screen material: PVC schedule 40
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ■ 14; Other ☐ ____

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

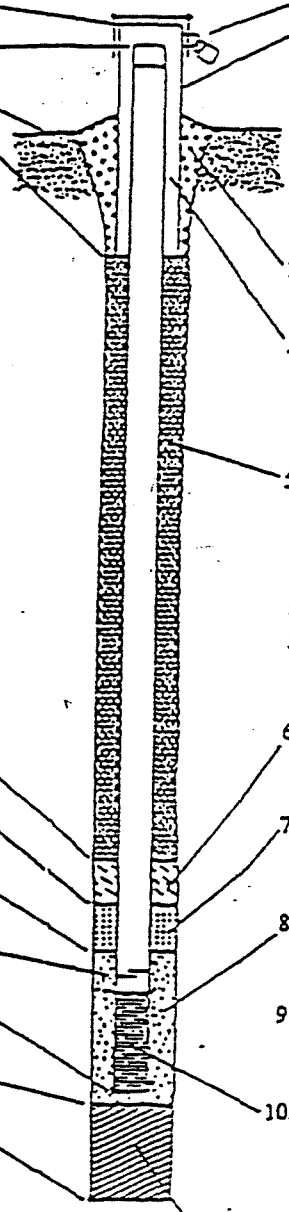
Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 149, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $1,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-9

Facility/Project Name: Argetsinger's IGA	Local Grid Location of Well: ☐N ☐S _____ ft. ☐E ☐W _____ ft.	Well Name: MW-4
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 11/18/97 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 12, T. 38 N, R. 8 ☐E ■W.	Well Installed By: (Person's Name and Firm) FMI: Brian Bjodstrup MES: Eric & Joe
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	



A. Protective pipe, top elevation _____ ft. MSL

B. Well casing, top elevation _____ ft. MSL

C. Land surface elevation _____ ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No

Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.

F. Fine sand, top _____ ft. MSL or 7.0 ft.

G. Filter pack, top _____ ft. MSL or 8.0 ft.

H. Screen joint, top _____ ft. MSL or 10.0 ft.

I. Well bottom _____ ft. MSL or 25.0 ft.

J. Filter pack, bottom _____ ft. MSL or 25.5 ft.

K. Borehole, bottom _____ ft. MSL or 25.5 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.07 in.

1. Cap and lock? ■ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ■ 04; Other ☐ _____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ _____

4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ _____; Other ☐ _____

5. Annular space seal: a. Granular Bentonite ■ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 2.04 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ■3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ _____

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #45-55
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5.97 ft^3

9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ _____

10. Screen material: _____
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ _____
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.

11. Backfill material (below filter pack): None ■ 14; Other ☐ _____

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

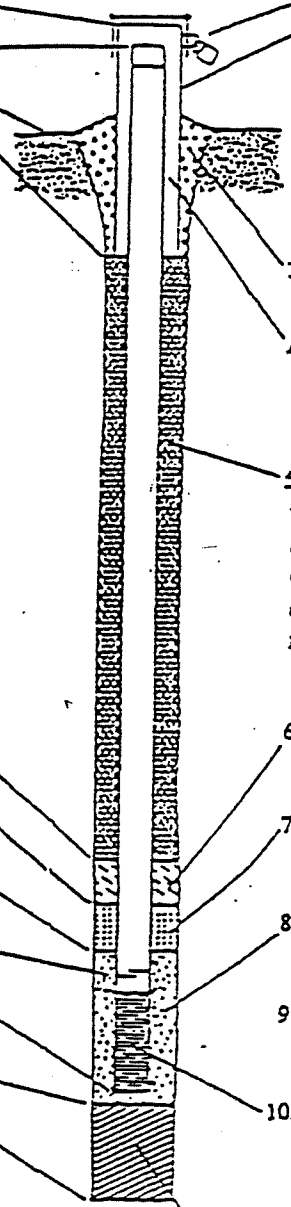
Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 140, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $1,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each violation. For DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-9

Facility/Project Name: Argetsinger's IGA	Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W	Well Name: MW-5
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E	Date Well Installed: 11/17/97 (m m d d y y)
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste/Source: NW 1/4 of NE 1/4 of Sec. 12, T. 38 N, R. 8 ☐E ■W	Well Installed By: (Person's Name and Firm) FMI: Brian Bjodstrup MES: Eric & Joe
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient; d ☐ Downgradient; s ☐ Sidegradient; n ☐ Not Known	



A. Protective pipe, top elevation _____ ft. MSL
B. Well casing, top elevation _____ ft. MSL
C. Land surface elevation _____ ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ■
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No
Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 7.0 ft.
G. Filter pack, top _____ ft. MSL or 8.0 ft.
H. Screen joint, top _____ ft. MSL or 10.0 ft.
Well bottom _____ ft. MSL or 25.0 ft.
Filter pack, bottom _____ ft. MSL or 25.5 ft.
I. Borehole, bottom _____ ft. MSL or 25.5 ft.
Borehole, diameter 8.25 in.
J. O.D. well casing 2.38 in.
I.D. well casing 2.07 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ■ 04; Other ☐ ____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ ____; Other ☐ ____
5. Annular space seal: a. Granular Bentonite ■ 33
b. ____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. ____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. 2.04 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ■3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. ____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #45-55
b. Volume added 0.34 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint #30
b. Volume added 5.97 ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____
10. Screen material: PVC schedule 40
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer: Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.
11. Backfill material (below filter pack): None ■ 14; Other ☐ ____

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

Signature: Bryan Bergman
Firm: Fluid Management, Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 140, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $1,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
Aragetsinger's IGA	Sawyer	MW-1
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number / DNR Well Number**
_____	58	

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☐ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ■ 51
- pumped slowly ☐ 50
- Other _____ ☐

3. Time spent developing well 15 min.

4. Depth of well (from top of well casing) 24.6 ft.

5. Inside diameter of well 2.07 in.

6. Volume of water in filter pack and well casing 11.0 gal.

7. Volume of water removed from well 22.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 16.42 ft.	16.42 ft.
Date	b. 12/04/97 (m m d d y y)	12/04/97 (m m d d y y)
Time	c. 9:45 ■ a.m. ☐ p.m.	10:00 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 Turbid ☐ 15 (Describe)	Clear ■ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Brian Bjodstrup

Firm: Fluid Management, Inc.

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

Signature: Brian Bjodstrup

Print Initials: B J B

Firm: Fluid Management, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
Aragetsinger's IGA	Sawyer	MW-2
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number / DNR Well Number**
_____	58	

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ■ 51
   - pumped slowly ☐ 50
   - Other _____ ☐

3. Time spent developing well 15 min.

4. Depth of well (from top of well casing) 24.6 ft.

5. Inside diameter of well 2.07 in.

6. Volume of water in filter pack and well casing 11.3 gal.

7. Volume of water removed from well 30.0 gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 16.17 ft.	16.17 ft.
Date	b. 12/04/97 (m m d d y y)	12/04/97 (m m d d y y)
Time	c. 9:15 ■ a.m. ☐ p.m.	9:30 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 Turbid ☐ 15 (Describe)	Clear ■ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Brian Bjodstrup

Firm: Fluid Management, Inc.

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

Signature: Bryan Bjorgman

Print Initials: B J B

Firm: Fluid Management, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
Aragetsinger's IGA	Sawyer	MW-3
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number / DNR Well Number**
_____	58	

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ■ 51
   - pumped slowly ☐ 50
   - Other _____ ☐

3. Time spent developing well 15 min.

4. Depth of well (from top of well casing) 26.4 ft.

5. Inside diameter of well 2.07 in.

6. Volume of water in filter pack and well casing 12.7 gal.

7. Volume of water removed from well 27.0 gal.

8. Volume of water added (if any) ___.__ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 16.96 ft.	16.96 ft.
Date	b. 12/04/97 (m m d d y y)	12/04/97 (m m d d y y)
Time	c. 9:00 ■ a.m. ☐ p.m.	9:15 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 Turbid ☐ 15 (Describe)	Clear ■ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___.__ mg/l	___.__ mg/l
15. COD	___.__ mg/l	___.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Brian Biodstrup

Firm: Fluid Management Inc.

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

Signature: Brian Biodstrup

Print Initials: B J B

Firm: Fluid Management, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
Aragetsinger's IGA	Sawyer	MW-4
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	58	

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ■ 51
   - pumped slowly ☐ 50
   - Other _____ ☐

3. Time spent developing well 15 min

4. Depth of well (from top of well casing) 24.2 ft

5. Inside diameter of well 2.07 in

6. Volume of water in filter pack and well casing 11.0 gal

7. Volume of water removed from well 27.0 gal

8. Volume of water added (if any) ____.__ gal

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 16.08 ft	16.08 ft
Date	b. 12/04/97 (mm dd yy)	12/04/97 (mm dd yy)
Time	c. 8:45 ■ a.m. ☐ p.m.	9:00 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 / Turbid ☐ 15 (Describe)	Clear ■ 20 / Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Brian Bjodstrup

Firm: Fluid Management, Inc.

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

Signature: Brian Bjodstrup

Print Initials: B J B

Firm: Fluid Management, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
Araetsinaer's IGA	Sawyer	MW-5
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number / DNR Well Number**
_____	58	

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ■ 51
   - pumped slowly ☐ 50
   - Other _____ ☐

3. Time spent developing well 15 min.

4. Depth of well (from top of well casing) 24.9 ft.

5. Inside diameter of well 2.07 in.

6. Volume of water in filter pack and well casing 13.4 gal.

7. Volume of water removed from well 27.0 gal.

8. Volume of water added (if any) ___.__ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 14.99 ft.	14.99 ft.
Date	b. 12/04/97 (mm dd yy)	12/04/97 (mm dd yy)
Time	c. 9:30 ■ a.m. ☐ p.m.	9:45 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear ■ 10 / Turbid ☐ 15 (Describe)	Clear ■ 20 / Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	___.__ mg/l	___.__ mg/l
15. COD	___.__ mg/l	___.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Brian Bjodstrup

Firm: Fluid Management Inc.

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

Signature: Brian Bjodstrup

Print Initials: B J B

Firm: Fluid Management, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 4-97

All abandonment work shall be performed in accordance with the provisions of Chapters NR 811, NR 812 or NR 141, Wis. Adm. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location — County: Sawyer

NW 1/4 of NE 1/4 of Sec. 12 ; T. 38 N; R. 8 ☐ E ■ W

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

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

Civil Town Name

Street Address of Well: Junction of Hwy 27 and City Road CC

City, Village: Couderay

(2) FACILITY NAME

Original Well Owner (If Known): Mr. Norman Argetsinger

Present Well Owner: Norman Argetsinger

Street or Route: P.O. Box 145

City, State, Zip Code: Couderay, WI 54828

Facility Well No. and/or Name (If Applicable): MW-1

WI Unique Well No. _____

Reason For Abandonment: Remedial Excavation

Date of Abandonment: Dec 9th 1998

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 11/18/97

■ 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.) 25' (From groundsurface)

Casing Diameter (in.) NA
Casing Depth (ft.) NA

Lower Drillhole Diameter (in.) NA

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

(4) Depth to Water (Feet) _____

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
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
■ Granular Bentonite
☐ Bentonite - Cement Grout

(7) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite	Surface	25	30 lbs	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: Envirogen Inc.

Signature of Person Doing Work: Travis Peterson

Date Signed _____

Street or Route: 2835 N. Grandview Blvd

Telephone Number: (262) 549-6898

City, State, Zip Code: Pewaukee, WI 53072

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☒ Other ☐ _____

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Argetsingers IGA	_ _ _ _ _ _ _	MW-10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Dean / Rick ~~[illegible]~~ Brian Bjodstrup Firm: Badger State Drilling FMI	02/05/1999 (m m d d y y y y)	02/05/1999 (m m d d y y y y)	HSA

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _ _ _ _	_ _ _	MW-10	_____ Feet MSL	_____ Feet MSL	8.25 inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E S/C/N
NW 1/4 of NE 1/4 of Section 12, T 38 N, R 8 E/W

Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "

Local Grid Location
_____ Feet ☐ N ☐ S _____ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Sawyer	58	Couderay

Sample: Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			2	Blind Drill Course sand in Cuttings										
			24	EOB										

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

Signature	Firm
f. Brian Bjodstrup [signature]	Envirogen Inc. (Formerly FMI)

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Argetsinger's IGA	Local Grid Location of Well: ____ ft. ☐N. ☐S. ____ ft. ☐E. ☐W.	Well Name: MW-10
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___° ___' ___" Long. ___° ___' ___" or	Wis. Unique Well No. / DNR Well ID No.
Facility ID	St. Plane ____ ft. N. ____ ft. E. S/C/N	Date Well Installed: 02/05/1999 (m m d d y y y y)
Type of Well: Well Code ___/___	Section Location of Waste/Source: ___1/4 of ___ 1/4 of Sec. ___, T. ___ N, R. ___ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Matt Aleva, Envirogen Inc; Dean & Rick, Badger State Drilling
Distance from Waste/Source ____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known; Gov. Lot Number ____	

A. Protective pipe, top elevation ____ ft. MSL

B. Well casing, top elevation ____ ft. MSL

C. Land surface elevation ____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or ____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ■
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No

Describe ____

17. Source of water (attach analysis, if required): ____

E. Bentonite seal, top ____ ft. MSL or 1.0 ft.

F. Fine sand, top ____ ft. MSL or 7.0 ft.

G. Filter pack, top ____ ft. MSL or 8.0 ft.

H. Screen joint, top ____ ft. MSL or 9.0 ft.

I. Well bottom ____ ft. MSL or 24.0 ft.

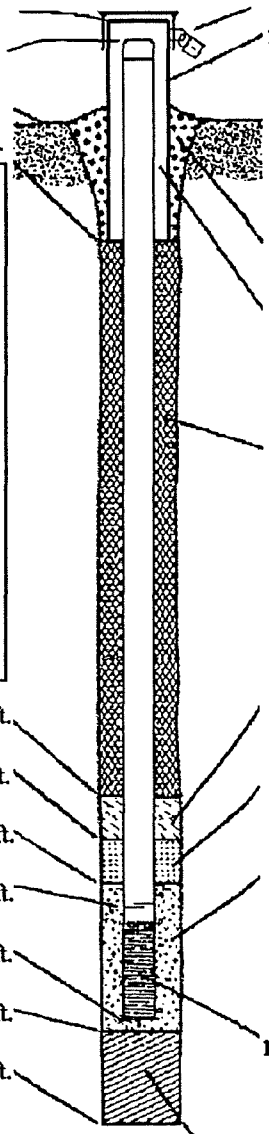
J. Filter pack, bottom ____ ft. MSL or 24.5 ft.

K. Borehole, bottom ____ ft. MSL or 24.5 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.07 in.



1. Cap and lock? ■ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ■ 04; Other ☐ ____
d. Additional protection? ☐ Yes ■ No
If yes, describe: ____

3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ■ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ■ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 2.04 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ■3/8 in. ☐1/2 in. Bentonite chips ☐ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. Red Flint #45-55
b. Volume added 0.34 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint #30
b. Volume added 5.97 ft^3

9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____

10. Screen material: ____
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer Diedrich
c. Slot size: 0.010 in.
d. Slotted length: 15.0 ft.

11. Backfill material (below filter pack): None ■ 14; Other ☐ ____

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

Signature	Firm
f. Matt Aleva Travis Peterson	Envirogen Inc

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Argetsingers IGA	Sawyer	MW-10

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	58	_____	___

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method
   - surged with bailer and bailed ☐ 41
   - surged with bailer and pumped ☐ 61
   - surged with block and bailed ☐ 42
   - surged with block and pumped ☐ 62
   - surged with block, bailed and pumped ☐ 70
   - compressed air ☐ 20
   - bailed only ☐ 10
   - pumped only ■ 51
   - pumped slowly ☐ 50
   - Other _____ ☐

3. Time spent developing well __15 min.

4. Depth of well (from top of well casisng) __24.0 ft.

5. Inside diameter of well __2.07 in.

6. Volume of water in filter pack and well casing __11.0 gal.

7. Volume of water removed from well __22.0 gal.

8. Volume of water added (if any) ___.__ gal.

9. Source of water added NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. __15.08 ft.	__15.08 ft.
Date	b. 05/20/1999 (m m d d y y y y)	05/20/1999 (m m d d y y y y)
Time	c. 11:30 ■ a.m. ☐ p.m.	11:45 ■ a.m. ☐ p.m.
12. Sediment in well bottom	__0.0 inches	__0.0 inches
13. Water clarity	Clear ■ 10 Turbid ☐ 15 (Describe)	Clear ■ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Last Name:
Firm:

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Brian Last Name: Bjodstrup
Facility/Firm: Envirogen Inc
Street: 2835 N. Grandview Blvd
City/State/Zip: Pewaukee, WI 53072

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: f. Brian Bjodstrup Trav[illegible]
Print Name: Brian Bjodstrup
Firm: Envirogen, Inc

NOTE: See instructions for more information including a list of county codes and well type codes.

ATTACHMENT B

Pre-Remedial Soil Sample Laboratory Analytical Report

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

RECEIVED
AUG 18 1997

ANALYTICAL AND QUALITY CONTROL REPORT

Ms. Evelyn Hicks
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

08/14/1997

Job No: 97.07561

Enclosed are the Analytical and Quality Control reports for the following samples submitted for analysis:

Sample Number	Sample Description	Date Taken	Date Received
260808	GP-1 97.0353	08/07/1997	08/09/1997

All soil samples are reported on a dry weight basis. DNR Guidance for soil suggests uncertainty for volatiles results between 25 and 60 ug/kg. The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

A = Analyzed/extracted past hold time
C = Standard outside of control limits
G = Received past hold time
I = Improperly handled sample
L = Common lab solvent and contaminant
P = Improperly preserved sample
T = Does not match typical pattern
Z = Internal standard outside limits
B = Blank is contaminated
D = Diluted for analysis
H = Late eluting hydrocarbons present
J = Estimated concentration
M = Matrix interference
Q = Result confirmed via re-analysis
X = Unidentified compound(s) present

Project Manager

QA Coordinator

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Ms. Evelyn Hicks
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

08/14/1997
Job No: 97.07561
Sample No: 260808
Account No: 28500
Page 2

JOB DESCRIPTION: 97.0353
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: GP-1 97.0353
Recv'd On Ice

Date Taken: 08/07/1997 08:00 Date Received: 08/09/1997

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Solids, Total		91.8	%	n/a	S-5030	08/13/1997	1908
PVOC - NONAQUEOUS							
Benzene		66,400	ug/kg	10	S-8020	08/13/1997	1714
Ethylbenzene		81,700	ug/kg	25	S-8020	08/13/1997	1714
Methyl-t-butyl ether	M	<6,540	ug/kg	25	S-8020	08/13/1997	1714
Toluene		358,000	ug/kg	25	S-8020	08/13/1997	1714
1,2,4-Trimethylbenzene		173,000	ug/kg	25	S-8020	08/13/1997	1714
1,3,5-Trimethylbenzene		56,600	ug/kg	25	S-8020	08/13/1997	1714
Xylenes, Total		434,000	ug/kg	75	S-8020	08/13/1997	1714
GRO	H	2,610	mg/kg	5.0	WDNR	08/13/1997	1714
Surr: Bromofluorobenzene		101.0	%	n/a	S-8020	08/13/1997	1714

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WDNR No. 128053530

QUALITY CONTROL REPORT

BLANKS

08/14/1997

Ms. Evelyn Hicks
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.07561
Account No: 28500

Page 3

Job Description: 97.0353

Parameter	Prep Batch	Run Batch	Blank Result	Reporting Limit	Units
PVOC - NONAQUEOUS					
Benzene		1714	<10	10	ug/kg
Ethylbenzene		1714	<25	25	ug/kg
Methyl-t-butyl ether		1714	<25	25	ug/kg
Toluene		1714	<25	25	ug/kg
1,2,4-Trimethylbenzene		1714	<25	25	ug/kg
1,3,5-Trimethylbenzene		1714	<25	25	ug/kg
Xylenes, Total		1714	<75	75	ug/kg
GRO		1714	<5.0	5.0	mg/kg
Surr: Bromofluorobenzene		1714	110.5	n/a	%

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

08/14/1997

Ms. Evelyn Hicks
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.07561
Account No: 28500

Page 4

Job Description: 97.0353

Analyte	Prep Batch Number	Run Batch Number	LCS Amount	Units	LCS Result	Percent Recovery	LCSD Result	Percent Recovery	Relative Percent Difference
PVOC - NONAQUEOUS									
Benzene		1714	5000	ug/kg	5,290	105.8	5,560	111.2	5.0
Ethylbenzene		1714	5000	ug/kg	5,430	108.6	5,680	113.6	4.5
Methyl-t-butyl ether		1714	5000	ug/kg	4,960	99.2	5,690	113.8	13.6
Toluene		1714	5000	ug/kg	5,360	107.2	5,640	112.8	5.1
1,2,4-Trimethylbenzene		1714	5000	ug/kg	5,460	109.2	5,640	112.8	3.2
1,3,5-Trimethylbenzene		1714	5000	ug/kg	5,430	108.6	5,660	113.2	4.1
Xylenes, Total		1714	15000	ug/kg	15,400	102.7	16,100	107.3	4.4
GRO		1714	50.0	mg/kg	56.2	112.4	58.8	117.6	4.5
Surr: Bromofluorobenzene		1714	20.0	%	22.6	113.0	20.8	104.0	8.3

4707561

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY: FMT
ADDRESS: P.O. Box 90
PHONE: 414/549-6898 FAX:
PROJECT NAME/LOCATION: Argetsingers
PROJECT NUMBER: 970353
PROJECT MANAGER: Dum

REPORT TO:
INVOICE TO:
P.O. NO.
NET QUOTE NO.

SAMPLED BY: Peter W. Molling (PRINT NAME) — SIGNATURE
(PRINT NAME) — SIGNATURE

ANALYSES: PVOC, GRO

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___
Is this work being conducted for regulatory enforcement action? Yes ___ No ___
Which regulations apply: RCRA ___ NPDES Wastewater ___ UST ___ Drinking Water ___ Other ___ None ___

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers: HCl	NaOH	HNO_3	H_2SO_4	OTHER	PVOC, GRO	COMMENTS
8/7/97	0800	GP-1	S	X					MeOH		X	

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO; FIELD FILTERED? YES / NO; COC SEALS PRESENT AND INTACT? YES / NO; VOLATILES FREE OF HEADSPACE? YES / NO

TEMPERATURE UPON RECEIPT: on ice
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ___
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS ___ DATE ___

SAV 8/9/97 1245

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
PW Molling	8/7/97	1830	Kellie A. Watson	Kellie A. Watson	8/8	1:22	8/12/97

METHOD OF SHIPMENT:

REMARKS: Sarah A. Voigt 8/9/97 1:45

AUG 19 '97 02:14PM FLUID MAN 549 4741 P.42/53

9K
12/9/97

#1874627

EN CHEM INC.
1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

REC'D DEC 8 - 1997

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

WI DNR LAB ID : 405132750

Client: FLUID MANAGEMENT INC

Report Date : 12/8/97

Sample No.	Field ID	Collection Date	Sample No.	Field ID	Collection Date
874627-001	MW-3 1-3	11/17/97			
874627-002	MW-3 14.5-16.5	11/17/97			
874627-003	MW-2 5.5-7.5	11/17/97			
874627-004	MW-2 10-12	11/17/97			
874627-005	MW-5 5.5-7.5	11/17/97			
874627-006	MW-5 10-12	11/17/97			
874627-007	MEOH BLANK	11/17/97			

The "Q" flag is present when a parameter has been detected below the LOQ. This indicates the results are qualified due to the uncertainty of the parameter concentration between the LOD and the LOQ.

Soil VOC detects are corrected for the total solids, unless otherwise noted.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.

Nitin Mehta — 12/08/97
Approval Signature — Date

Tom Trainor — 12/8/97
Project Manager — Date

EN CHEM INC.
1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

VOC Methanol Blanks
Anal by:RJN MS#5
Anal date:11/26/97
Blank #:511-32
BS/BSD:429-39-13/429-39-14

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,1-Trichloroethane	25	60	ND	ug/Kg	
1,1,2,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,2-Trichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethene	25	60	ND	ug/Kg	
1,1-Dichloropropene	25	60	ND	ug/Kg	
1,2,3-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,3-Trichloropropane	25	60	ND	ug/Kg	
1,2,4-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,4-Trimethylbenzene	25	60	ND	ug/Kg	
1,2-Dibromo-3chloropropane	25	60	ND	ug/Kg	
1,2-Dibromoethane	25	60	ND	ug/Kg	
1,2-Dichlorobenzene	25	60	ND	ug/Kg	
1,2-Dichloroethane	25	60	ND	ug/Kg	
1,2-Dichloropropane	25	60	ND	ug/Kg	
1,3,5-Trimethylbenzene	25	60	ND	ug/Kg	
1,3-Dichlorobenzene	25	60	ND	ug/Kg	
1,3-Dichloropropane	25	60	ND	ug/Kg	
1,4-Dichlorobenzene	25	60	ND	ug/Kg	
2,2-Dichloropropane	25	60	ND	ug/Kg	
2-Chlorotoluene	25	60	ND	ug/Kg	
4-Chlorotoluene	25	60	ND	ug/Kg	
Benzene	25	60	ND	ug/Kg	
Bromobenzene	25	60	ND	ug/Kg	
Bromochloromethane	25	60	ND	ug/Kg	
Bromodichloromethane	25	60	ND	ug/Kg	
Bromoform	25	60	ND	ug/Kg	
Bromomethane	25	60	ND	ug/Kg	
Carbon Tetrachloride	25	60	ND	ug/Kg	
Chlorobenzene	25	60	ND	ug/Kg	
Chlorodibromomethane	25	60	ND	ug/Kg	
Chloroethane	25	60	ND	ug/Kg	
Chloroform	25	60	ND	ug/Kg	
Chloromethane	25	60	ND	ug/Kg	
cis-1,2-Dichloroethene	25	60	ND	ug/Kg	
cis-1,3-Dichloropropene	25	60	ND	ug/Kg	
Di-isopropyl ether	25	60	ND	ug/Kg	
Dibromomethane	25	60	ND	ug/Kg	

EN CHEM INC.
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800-7-ENCHEM
FAX: 920-469-8827

Dichlorodifluoromethane	25	60	ND	ug/Kg	
Ethylbenzene	25	60	ND	ug/Kg	
Hexachlorobutadiene	25	60	ND	ug/Kg	
Isopropylbenzene	25	60	ND	ug/Kg	
m/p-Xylene	25	60	ND	ug/Kg	
Methyl tert-butyl ether	25	60	ND	ug/Kg	
Methylene Chloride	25	60	ND	ug/Kg	
n-Butylbenzene	25	60	ND	ug/Kg	
n-Propylbenzene	25	60	ND	ug/Kg	
Naphthalene	25	60	ND	ug/Kg	
o-Xylene	25	60	ND	ug/Kg	
p-Isopropyltoluene	25	60	ND	ug/Kg	
sec-Butylbenzene	25	60	ND	ug/Kg	
Styrene	25	60	ND	ug/Kg	
tert-Butylbenzene	25	60	ND	ug/Kg	
Tetrachloroethene	25	60	ND	ug/Kg	
Toluene	25	60	ND	ug/Kg	
trans-1,2-Dichloroethene	25	60	ND	ug/Kg	
trans-1,3-Dichloropropene	25	60	ND	ug/Kg	
Trichloroethene	25	60	ND	ug/Kg	
Trichlorofluoromethane	25	60	ND	ug/Kg	
Vinyl Chloride	25	60	ND	ug/Kg	
Dibromofluoromethane			94.66	% recov	
Toluene-d8			93.44	% recov	
4-Bromofluorobenzene			91.18	% recov	

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\ALLM1111.M
Title : SW846 Method 8260 Volatiles-Methanol Extracts
Last Update : Tue Nov 25 14:58:02 1997
Response via : Initial Calibration

EBK 511-32

Non-Spiked Sample: 11269705.D

	Spike Sample	Spike Duplicate Sample
File ID :	11269726.D	11269727.D
Sample :	BS 429-39-13	BSD 429-39-14
Acq Time:	26 Nov 97 9:42 pm	26 Nov 97 10:10 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.1	50	33	34	66	68	3	14	52-138
Bromomethane	0.3	50	45	46	89	91	2	20	71-111
Dichlorodifluorometh	0.0	50	23	24	46	48	5	19	24-137
Vinyl Chloride	0.0	50	39	40	77	81	4	13	67-126
Chloroethane	0.0	50	46	48	93	95	2	13	72-126
Methylene Chloride	-1.0	50	51	52	104	105	2	15	81-116
Trichlorofluorometha	0.0	50	52	52	105	104	1	16	66-125
Acetone	4.8	50	97	99	184#	189#	3	25	50-150
1,1-Dichloroethene	0.0	50	55	55	110	111	1	17	73-133
trans-1,2-Dichloroet	0.0	50	52	53	104	107	3	15	82-118
Methyl tert-butyl et	0.0	50	49	51	97	102	5	13	76-120
1,1-Dichloroethane	0.0	50	50	51	100	102	2	17	80-119
2-Butanone	0.0	50	85	88	169#	175#	3	25	50-150
Di-isopropyl ether	0.0	50	50	50	99	101	2	14	79-119
cis-1,2-Dichloroethe	0.0	50	50	51	101	102	1	16	80-117
2,2-Dichloropropane	0.0	50	42	41	83	83	1	15	29-104
Bromochloromethane	0.0	50	51	52	103	104	1	13	75-123
Chloroform	0.0	50	51	52	102	103	1	16	83-115
1,1,1-Trichloroethan	0.0	50	53	54	107	108	2	16	79-120
Carbon Tetrachloride	0.0	50	54	54	109	108	0	19	76-124
1,1-Dichloropropene	0.0	50	52	53	105	106	1	12	90-122
Bromodichloromethane	0.0	50	50	49	100	99	1	15	79-118
1,2-Dichloropropane	0.0	50	50	49	99	98	2	16	84-118
Dibromomethane	0.0	50	49	50	98	100	1	13	79-122
Trichloroethene	0.0	50	53	52	105	103	2	16	83-127
Benzene	0.0	50	51	51	102	101	1	13	84-117
1,2-Dichloroethane	0.0	50	51	50	101	101	1	16	72-127
1,1,2-Trichloroethan	0.0	50	49	50	97	99	2	15	81-118
1,2-Dibromoethane	0.0	50	49	50	98	100	2	13	78-121
Toluene	0.0	50	51	50	102	101	1	14	84-117
Chlorobenzene	0.0	50	50	52	101	104	3	15	83-114
1,1,1,2-Tetrachloroe	0.0	50	50	52	100	104	3	18	79-118
cis-1,3-Dichloroprop	0.0	50	47	48	93	96	3	20	75-125
trans-1,3-Dichloropr	0.0	50	47	48	93	95	2	20	75-125
Tetrachloroethene	0.0	50	52	54	104	108	4	15	84-114
1,3-Dichloropropane	0.0	50	49	51	98	103	4	13	82-117
Dibromochloromethane	0.0	50	48	51	97	102	5	14	78-117
Ethylbenzene	0.0	50	51	52	102	104	2	14	85-114
Styrene	0.0	50	50	51	99	103	3	17	83-114
Bromoform	0.0	50	46	50	93	100	7	16	72-122
m/p-Xylene	0.0	100	103	104	103	104	1	16	85-114
o-Xylene	0.0	50	51	52	102	104	2	14	86-113
Isopropylbenzene	0.0	50	53	53	107	106	1	13	78-118

Bromobenzene	0.0	50	51	51	101	102	0	14	79-116
1,2,3-Trichloropropa	0.0	50	48	51	96	103	6	13	65-129
1,1,2,2-Tetrachloroe	0.0	50	46	49	93	97	5	16	57-125
2-Chlorotoluene	0.0	50	52	52	103	104	0	12	75-119
n-Propylbenzene	0.0	50	54	53	107	106	2	10	76-120
4-Chlorotoluene	0.0	50	51	51	102	102	0	24	77-115
1,3,5-Trimethylbenze	0.0	50	53	53	107	106	1	13	78-116
tert-Butylbenzene	0.0	50	53	53	107	107	0	12	77-119
1,2,4-Trimethylbenze	0.0	50	52	52	104	103	1	11	80-114
sec-Butylbenzene	0.0	50	54	54	109	108	1	13	73-120
1,3-Dichlorobenzene	0.0	50	51	50	102	99	3	15	78-116
1,4-Dichlorobenzene	0.0	50	50	50	101	100	0	16	75-118
p-Isopropyltoluene	0.0	50	55	54	109	108	1	11	75-119
1,2-Dichlorobenzene	0.0	50	50	50	100	100	1	15	77-116
n-Butylbenzene	0.0	50	53	52	105	104	2	13	76-115
1,2-Dibromo-3-chloro	0.0	50	45	50	90	100	11	13	47-142
1,2,4-Trichlorobenze	0.0	50	48	49	96	99	2	15	69-120
Naphthalene	0.1	50	48	50	95	100	5	15	54-145
Hexachlorobutadiene	0.0	50	51	50	102	101	1	17	52-129
1,2,3-Trichlorobenze	0.0	50	49	50	98	99	1	18	60-133

ALLM1111.M Mon Dec 01 10:08:23 1997

EN CHEM INC.
1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

VOC Methanol Blanks
Anal by:HW MS#4
Anal date:11/25/97
Blank #:511-31
BS/BSD:429-39-11/429-39-12

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,1-Trichloroethane	25	60	ND	ug/Kg	
1,1,2,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,2-Trichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethene	25	60	ND	ug/Kg	
1,1-Dichloropropene	25	60	ND	ug/Kg	
1,2,3-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,3-Trichloropropane	25	60	ND	ug/Kg	
1,2,4-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,4-Trimethylbenzene	25	60	ND	ug/Kg	
1,2-Dibromo-3chloropropane	25	60	ND	ug/Kg	
1,2-Dibromoethane	25	60	ND	ug/Kg	
1,2-Dichlorobenzene	25	60	ND	ug/Kg	
1,2-Dichloroethane	25	60	ND	ug/Kg	
1,2-Dichloropropane	25	60	ND	ug/Kg	
1,3,5-Trimethylbenzene	25	60	ND	ug/Kg	
1,3-Dichlorobenzene	25	60	ND	ug/Kg	
1,3-Dichloropropane	25	60	ND	ug/Kg	
1,4-Dichlorobenzene	25	60	ND	ug/Kg	
2,2-Dichloropropane	25	60	ND	ug/Kg	
2-Chlorotoluene	25	60	ND	ug/Kg	
4-Chlorotoluene	25	60	ND	ug/Kg	
Benzene	25	60	ND	ug/Kg	
Bromobenzene	25	60	ND	ug/Kg	
Bromochloromethane	25	60	ND	ug/Kg	
Bromodichloromethane	25	60	ND	ug/Kg	
Bromoform	25	60	ND	ug/Kg	
Bromomethane	25	60	ND	ug/Kg	
Carbon Tetrachloride	25	60	ND	ug/Kg	
Chlorobenzene	25	60	ND	ug/Kg	
Chlorodibromomethane	25	60	ND	ug/Kg	
Chloroethane	25	60	ND	ug/Kg	
Chloroform	25	60	ND	ug/Kg	
Chloromethane	25	60	ND	ug/Kg	
cis-1,2-Dichloroethene	25	60	ND	ug/Kg	
cis-1,3-Dichloropropene	25	60	ND	ug/Kg	
Di-isopropyl ether	25	60	ND	ug/Kg	
Dibromomethane	25	60	ND	ug/Kg	

EN CHEM INC.
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Green Bay, WI 54302
920-469-2436
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FAX: 920-469-8827

Dichlorodifluoromethane	25	60	ND	ug/Kg	
Ethylbenzene	25	60	ND	ug/Kg	
Hexachlorobutadiene	25	60	ND	ug/Kg	
Isopropylbenzene	25	60	ND	ug/Kg	
m/p-Xylene	25	60	ND	ug/Kg	
Methyl tert-butyl ether	25	60	ND	ug/Kg	
Methylene Chloride	25	60	ND	ug/Kg	
n-Butylbenzene	25	60	ND	ug/Kg	
n-Propylbenzene	25	60	ND	ug/Kg	
Naphthalene	25	60	ND	ug/Kg	
o-Xylene	25	60	ND	ug/Kg	
p-Isopropyltoluene	25	60	ND	ug/Kg	
sec-Butylbenzene	25	60	ND	ug/Kg	
Styrene	25	60	ND	ug/Kg	
tert-Butylbenzene	25	60	ND	ug/Kg	
Tetrachloroethene	25	60	ND	ug/Kg	
Toluene	25	60	ND	ug/Kg	
trans-1,2-Dichloroethene	25	60	ND	ug/Kg	
trans-1,3-Dichloropropene	25	60	ND	ug/Kg	
Trichloroethene	25	60	ND	ug/Kg	
Trichlorofluoromethane	25	60	ND	ug/Kg	
Vinyl Chloride	25	60	ND	ug/Kg	
Dibromofluoromethane			93.7	% recov	
Toluene-d8			97.64	% recov	
4-Bromofluorobenzene			96.26	% recov	

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\ALLM1105.M
Title : SW846 Method 8260 Volatiles-Methanol Extracts
Last Update : Thu Nov 13 11:07:06 1997
Response via : Initial Calibration

EB1K 511-31

Non-Spiked Sample: 11259705.D

	Spike Sample	Spike Duplicate Sample
File ID :	11259726.D	11259727.D
Sample :	BS 429-39-11	BSD 429-39-12
Acq Time:	25 Nov 97 11:29 pm	25 Nov 97 11:57 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.0	50	27	26	54	52	5	29	38-116
Bromomethane	0.0	50	42	48	85	95	11	55	30-105
Dichlorodifluorometh	0.0	50	17	17	34	34	1	35	13-114
Vinyl Chloride	0.0	50	30	30	60	59	2	27	48-115
Chloroethane	0.2	50	46	50	92	99	7	28	57-127
Methylene Chloride	0.0	50	44	44	88	88	0	35	67-115
Trichlorofluorometha	0.0	50	43	42	86	83	3	33	66-128
Acetone	0.0	50	29	28	59	56	5	25	50-150
1,1-Dichloroethene	0.0	50	46	46	92	92	0	38	59-144
trans-1,2-Dichloroet	0.0	50	47	47	94	94	0	36	66-122
Methyl tert-butyl et	0.0	50	44	43	89	87	2	24	67-111
1,1-Dichloroethane	0.0	50	43	44	87	87	0	36	68-122
2-Butanone	0.0	50	30	31	59	61	3	25	50-150
Di-isopropyl ether	0.0	50	47	47	93	95	2	27	70-120
cis-1,2-Dichloroethe	0.0	50	49	48	97	96	2	40	61-135
2,2-Dichloropropane	0.0	50	41	41	81	81	0	68	25-118
Bromochloromethane	0.0	50	51	51	102	101	1	34	71-115
Chloroform	0.0	50	48	49	96	97	1	36	72-118
1,1,1-Trichloroethan	0.0	50	51	51	103	101	2	38	69-119
Carbon Tetrachloride	0.0	50	50	50	100	100	0	33	69-136
1,1-Dichloropropene	0.0	50	46	46	91	91	0	26	70-124
Bromodichloromethane	0.0	50	48	48	96	96	1	24	73-109
1,2-Dichloropropane	0.0	50	43	43	86	85	0	22	71-113
Dibromomethane	0.0	50	52	51	103	102	1	22	76-115
Trichloroethene	0.0	50	55	52	109	105	4	24	75-116
Benzene	0.0	50	46	45	91	91	1	21	72-121
1,2-Dichloroethane	0.0	50	50	49	100	99	1	23	77-115
1,1,2-Trichloroethan	0.0	50	50	48	100	96	4	22	74-108
1,2-Dibromoethane	0.0	50	51	50	103	100	3	21	74-109
Toluene	0.0	50	49	49	98	97	0	24	72-109
Chlorobenzene	0.0	50	52	52	104	104	1	22	76-108
1,1,1,2-Tetrachloroe	0.0	50	54	53	107	105	2	24	72-112
cis-1,3-Dichloroprop	0.0	50	43	44	87	88	1	20	75-125
trans-1,3-Dichloropr	0.0	50	46	45	92	90	2	20	75-125
Tetrachloroethene	0.0	50	52	51	103	102	1	25	73-114
1,3-Dichloropropane	0.0	50	46	45	92	90	1	23	76-108
Dibromochloromethane	0.0	50	52	52	104	104	0	22	75-106
Ethylbenzene	0.0	50	51	50	102	100	2	23	74-112
Styrene	0.0	50	52	51	104	103	1	23	73-109
Bromoform	0.0	50	51	50	102	100	1	22	70-109
m/p-Xylene	0.0	100	101	102	101	102	2	24	72-113
o-Xylene	0.0	50	51	50	103	101	2	23	74-112
Isopropylbenzene	0.0	50	50	49	101	99	2	23	79-112

Bromobenzene	0.0	50	50	51	101	103	2	21	79-111
1,2,3-Trichloropropa	0.0	50	44	43	87	86	1	22	66-118
1,1,2,2-Tetrachloroe	0.0	50	45	45	89	91	1	21	63-112
2-Chlorotoluene	0.0	50	50	51	101	101	1	23	79-110
n-Propylbenzene	0.0	50	49	50	98	100	2	22	79-110
4-Chlorotoluene	0.0	50	47	48	95	96	1	24	76-110
1,3,5-Trimethylbenze	0.0	50	49	50	97	99	2	23	80-113
tert-Butylbenzene	0.0	50	49	50	99	101	2	24	79-113
1,2,4-Trimethylbenze	0.0	50	49	49	98	99	1	23	79-116
sec-Butylbenzene	0.0	50	48	48	95	96	1	26	78-113
1,3-Dichlorobenzene	0.0	50	49	50	98	100	1	23	80-110
1,4-Dichlorobenzene	0.0	50	52	54	104	107	3	23	78-116
p-Isopropyltoluene	0.0	50	49	50	98	100	2	24	79-114
1,2-Dichlorobenzene	0.0	50	49	49	98	98	0	22	80-111
n-Butylbenzene	0.0	50	46	46	92	93	0	24	74-115
1,2-Dibromo-3-chloro	0.0	50	45	48	91	95	5	24	53-120
1,2,4-Trichlorobenze	0.0	50	46	47	92	94	2	23	73-120
Naphthalene	0.1	50	49	49	99	97	1	22	67-136
Hexachlorobutadiene	0.0	50	45	47	90	94	4	29	63-117
1,2,3-Trichlorobenze	0.0	50	44	46	88	91	4	25	76-116

ALLM1105.M Wed Nov 26 14:34:14 1997 MS 4

EN CHEM INC.

1795 Industrial Drive
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FAX: 920-469-8827

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-3 1-3

Lab Sample Number : 874627-001

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	6.6	3.8	12		mg/kg	Q	12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	84.6				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 3.0			3.0	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	97				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	95				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	99				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-3 1-3

Report Date : 12/2/97

Lab Sample Number : 874627-001

Collection Date : 11/17/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Xylene, -o	< 25	25	60	ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-3 14.5-16.5

Lab Sample Number : 874627-002

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.9	3.9	12		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	80.6				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 3.1			3.1	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	94				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	96				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	96				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-3 14.5-16.5

Report Date : 12/2/97

Lab Sample Number : 874627-002

Collection Date : 11/17/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Xylene, -o	< 25	25	60	ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-2 5.5-7.5

Lab Sample Number : 874627-003

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.4	3.4	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	92.1				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.7			2.7	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	91				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	90				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	91				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-2 5.5-7.5

Lab Sample Number : 874627-003

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : SOIL

Xylene, -o	< 25	25	60	ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-2 10-12

Lab Sample Number : 874627-004

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.5	3.5	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	91.7				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.7			2.7	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	95				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	92				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	95				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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FAX: 920-469-8827

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-2 10-12

Report Date : 12/2/97

Lab Sample Number : 874627-004

Collection Date : 11/17/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Xylene, -o	< 25	25	60	ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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FAX: 920-469-8827

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-5 5.5-7.5

Lab Sample Number : 874627-005

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.4	3.4	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	92.4				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL **Prep Method:** WI MOD.GRO **Prep Date:** 11/24/97 **Analyst:** EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.7			2.7	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	89				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	89				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	94				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-5 5.5-7.5

Report Date : 12/2/97

Lab Sample Number : 874627-005

Collection Date : 11/17/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Xylene, -o	< 25	25	60	ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-5 10-12

Lab Sample Number : 874627-006

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/5/97

Collection Date : 11/17/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.6	3.6	11		mg/kg		12/4/97	SW846 3051	SW846 7421	SAC
Solids, percent	86.8				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.9			2.9	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	89				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	88				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	89				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97.353
Field ID : MW-5 10-12
Lab Sample Number : 874627-006
WI DNR LAB ID : 405132750
Client : FLUID MANAGEMENT INC
Report Date : 12/5/97
Collection Date : 11/17/97
Matrix Type : SOIL

Xylene, -o	< 25	25	60		ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MEOH BLANK

Report Date : 12/2/97

Lab Sample Number : 874627-007

Collection Date : 11/17/97

WI DNR LAB ID : 405132750

Matrix Type : METHANOL

Organic Results

GASOLINE RANGE ORGANICS - METHANOL **Prep Method:** WI MOD.GRO **Prep Date:** 11/24/97 **Analyst:** EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2500			2500	ug/L		11/28/97	WDNR MOD GRO
Blank Spike	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	101			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 50			50	ug/L		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - METHANOL **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	85				%Recov		11/25/97	SW846 8260
4-Bromofluorobenzene	90				%Recov		11/25/97	SW846 8260
Dibromofluoromethane	86				%Recov		11/25/97	SW846 8260
Benzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/L		11/25/97	SW846 8260
Toluene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/L		11/25/97	SW846 8260
Naphthalene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/L		11/25/97	SW846 8260
Xylene, -o	< 25	25	60		ug/L		11/25/97	SW846 8260

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MEOH BLANK

Lab Sample Number : 874627-007

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/17/97

Matrix Type : METHANOL

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-31						11/25/97	SW846 8260

Company Name: FMI
Branch or Location: PEWAUKEE
Project Contact: MTA
Telephone: 549-6898
Project Number: 97353
Project Name: ARGET SINGER S
Project Location:
Sampled By (Print): BRIAN BSODSTRUP

Regulatory Program (circle): UST RCRA CLP SDWA NPDES/WPDES CAA NR____ Other

NR720 Confirmation Analysis Required? (circle): Y N
(En Chem will not confirm unless otherwise instructed.)

EN CHEM INC.

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FAX 715-392-5843

CHAIN OF CUSTODY

14845

Page 1 of 1
P.O. #
Quote #
Mail Report To: SHK
Company: FMI - PEWAUKEE
Address:
Invoice To: SF 97353 0001 005
Company:
Address:
Mail Invoice To: FMI - PEWAUKEE

FILTERED? (YES/NO)
PRESERVATION (CODE)* F A E F A

ANALYSES REQUESTED: PVOC + 1,2 DCA + NAPTH; DRY WEIGHT; PRO; GRO; TOTAL LEAD

FIELD ID	SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	PVOC + 1,2 DCA + NAPTH	DRY WEIGHT	PRO	GRO	TOTAL LEAD	FIELD SCREEN	MATRIX	GOOD COND.	TOTAL BOTTLES	COMMENTS	LABORATORY NUMBER
MW-3	1-3	11/17/97	9:00 AM	X	X	X	X	X	0	Soil	X	1-5oz 3-2oz		001
MW-3	14.5-16.5		9:10 AM						.3					002
MW-2	5.5-7.5		10:30 AM						2					003
MW-2	10-12		11:40 AM						1.5					004
MW-5	5.5-7.5		1:15 PM						.3					005
MW-5	10-12		1:20 PM						.9					006
DLANK	MeOH		9:00 PM							MeOH		1-2oz		007

SHADED AREA FOR LABORATORY USE ONLY

*Preservation Code
A=None B=HCL C=H2SO4
D=HN03 E=EnCore F=Methanol**
G=NaOH O=Other (Indicate)

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By:	Date/Time:	Received By:	Date/Time:
[illegible]	11/21/97 8:30	Tom Nelsing/Jane Stone	11/21/97 1010
Jane Stone	11/21/97	A Wecker	11/21/97 1220
A Wecker	11/21/97 1550		
		Received By (En Chem): [illegible]	11/21/97 10:00

En Chem Project No. 874627
Sample Receipt Temp. 20I
Sample Receipt pH (Wet/Metals)

1874616

REC'D DEC 8 - 1997

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12/19/97

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

WI DNR LAB ID : 405132750

Client: FLUID MANAGEMENT INC

Report Date : 12/3/97

Sample No.	Field ID	Collection Date	Sample No.	Field ID	Collection Date
874616-001	MW-4 14.5-16.5	11/18/97			
874616-002	MW-4 16.5-18.5	11/18/97			
874616-003	MW-1 1-3	11/18/97			
874616-004	MW-1 1-13	11/18/97			
874616-005	MW-1 17-19	11/18/97			
874616-006	MEOH BLANK	11/18/97			

The "Q" flag is present when a parameter has been detected below the LOQ. This indicates the results are qualified due to the uncertainty of the parameter concentration between the LOD and the LOQ.

Soil VOC detects are corrected for the total solids, unless otherwise noted.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.

Mike Melberg — 12/03/97
Approval Signature — Date

Tom Trainor — 12/3/97
Project Manager — Date

EN CHEM INC.

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Lab#:	TestGroupID:	Comment:
874616-003	PVOC+N-S-ME	Sample exhibits hydrocarbon pattern resembling gasoline. Early and late peaks were present.
874616-004	GRO-S-ME	Sample exhibits hydrocarbon pattern resembling gasoline. Early and late peaks were present outside of window.
874616-005	GRO-S-ME	Sample exhibits hydrocarbon pattern resembling gasoline. Early and late peaks were present outside of window.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-4 14.5-16.5

Lab Sample Number : 874616-001

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/18/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.4	3.4	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	92.7				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: CAR

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2.7			2.7	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	107			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	90				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	90				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	91				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.
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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97.353
Field ID : MW-4 14.5-16.5
Lab Sample Number : 874616-001
WI DNR LAB ID : 405132750
Client : FLUID MANAGEMENT INC
Report Date : 12/2/97
Collection Date : 11/18/97
Matrix Type : SOIL

Xylene, -o	< 25	25	60	ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-4 16.5-18.5

Lab Sample Number : 874616-002

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/18/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.6	3.6	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	84.3				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: CAR

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 3.0			3.0	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	107			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	92				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	90				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	93				%Recov		11/26/97	SW846 8260
Benzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Ethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 25	25	60		ug/kg		11/26/97	SW846 8260
Toluene	49	30	72		ug/kg	Q	11/26/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/kg		11/26/97	SW846 8260
Naphthalene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	< 25	25	60		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	< 25	25	60		ug/kg		11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-4 16.5-18.5

Report Date : 12/2/97

Lab Sample Number : 874616-002

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Xylene, -o	< 25	25	60		ug/kg	11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MEOH BLANK

Lab Sample Number : 874616-006

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/18/97

Matrix Type : METHANOL

Organic Results

EPA 8260 VOLATILE LIST - METHANOL **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Bromobenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/L		11/25/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/L		11/25/97	SW846 8260
Bromoform	< 25	25	60		ug/L		11/25/97	SW846 8260
Bromomethane	< 25	25	60		ug/L		11/25/97	SW846 8260
s-Butylbenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
n-Butylbenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/L		11/25/97	SW846 8260
Chloroform	< 25	25	60		ug/L		11/25/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/L		11/25/97	SW846 8260
Chloroethane	< 25	25	60		ug/L		11/25/97	SW846 8260
Chloromethane	< 25	25	60		ug/L		11/25/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/L		11/25/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/L		11/25/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/L		11/25/97	SW846 8260
Dibromomethane	< 25	25	60		ug/L		11/25/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,2-Dichloroethane	< 25	25	60		ug/L		11/25/97	SW846 8260
1,2-Dichlorobenzene	< 25	25	60		ug/L		11/25/97	SW846 8260
1,1-Dichloroethene	< 25	25	60		ug/L		11/25/97	SW846 8260
cis-1,2-Dichloroethene	< 25	25	60		ug/L		11/25/97	SW846 8260
Dichlorodifluoromethane	< 25	25	60		ug/L		11/25/97	SW846 8260
trans-1,2-Dichloroethene	< 25	25	60		ug/L		11/25/97	SW846 8260

EN CHEM INC.

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Green Bay, WI 54302
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FAX: 920-469-8827

- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MEOH BLANK

Report Date : 12/2/97

Lab Sample Number : 874616-006

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : METHANOL

1,2-Dichloropropane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,1-Dichloroethane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,3-Dichloropropane	<	25	25	60	ug/L	11/25/97	SW846 8260
2,2-Dichloropropane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,1-Dichloropropene	<	25	25	60	ug/L	11/25/97	SW846 8260
cis-1,3-Dichloropropene	<	25	25	60	ug/L	11/25/97	SW846 8260
trans-1,3-Dichloropropene	<	25	25	60	ug/L	11/25/97	SW846 8260
Diisopropyl ether	<	25	25	60	ug/L	11/25/97	SW846 8260
Ethylbenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
Fluorotrichloromethane	<	25	25	60	ug/L	11/25/97	SW846 8260
Hexachlorobutadiene	<	25	25	60	ug/L	11/25/97	SW846 8260
Isopropylbenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
p-Isopropyltoluene	<	25	25	60	ug/L	11/25/97	SW846 8260
Methylene chloride	<	25	25	60	ug/L	11/25/97	SW846 8260
Methyl-tert-butyl-ether	<	25	25	60	ug/L	11/25/97	SW846 8260
Naphthalene	<	25	25	60	ug/L	11/25/97	SW846 8260
n-Propylbenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
Styrene	<	25	25	60	ug/L	11/25/97	SW846 8260
1,1,2,2-Tetrachloroethane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,1,1,2-Tetrachloroethane	<	25	25	60	ug/L	11/25/97	SW846 8260
Tetrachloroethene	<	25	25	60	ug/L	11/25/97	SW846 8260
Toluene	<	25	25	60	ug/L	11/25/97	SW846 8260
1,2,3-Trichlorobenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
1,2,4-Trichlorobenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
1,1,1-Trichloroethane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,1,2-Trichloroethane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,2,4-Trimethylbenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
Trichloroethene	<	25	25	60	ug/L	11/25/97	SW846 8260
1,2,3-Trichloropropane	<	25	25	60	ug/L	11/25/97	SW846 8260
1,3,5-Trimethylbenzene	<	25	25	60	ug/L	11/25/97	SW846 8260
Vinyl chloride	<	25	25	60	ug/L	11/25/97	SW846 8260
Xylenes, -m, -p	<	25	25	60	ug/L	11/25/97	SW846 8260
Xylene, -o	<	25	25	60	ug/L	11/25/97	SW846 8260
4-Bromofluorobenzene		90			%Recov	11/25/97	SW846 8260
Dibromofluoromethane		88			%Recov	11/25/97	SW846 8260

EN CHEM INC.
1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97.353
Client : FLUID MANAGEMENT INC
Field ID : MEOH BLANK
Report Date : 12/2/97
Lab Sample Number : 874616-006
Collection Date : 11/18/97
WI DNR LAB ID : 405132750
Matrix Type : METHANOL

Toluene-d8	86		%Recov	11/25/97	SW846 8260

Organic Results

GASOLINE RANGE ORGANICS - METHANOL Prep Method: WI MOD.GRO Prep Date: 11/24/97 Analyst: CAR

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	< 2500			2500	ug/L		11/28/97	WDNR MOD GRO
Blank Spike	107			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 50			50	ug/L		11/28/97	WDNR MOD GRO

Organic Results

VOC-BLK Prep Method: SW846 5030 Prep Date: 11/25/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-28						11/24/97	SW846 8260

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\ALLM1105.M
Title : SW846 Method 8260 Volatiles-Methanol Extracts
Last Update : Thu Nov 13 11:07:06 1997
Response via : Initial Calibration

EBIK 511-28

Non-Spiked Sample: 11249705.D

	Spike Sample	Spike Duplicate Sample
File ID :	11249726.D	11249727.D
Sample :	BS 429-39-05	BSD 429-39-06
Acq Time:	24 Nov 97 11:05 pm	24 Nov 97 11:32 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.0	50	32	31	65	62	4	29	38-116
Bromomethane	0.0	50	41	47	83	95	13	55	30-105
Dichlorodifluorometh	0.0	50	25	26	50	52	2	35	13-114
Vinyl Chloride	0.0	50	36	35	72	71	1	27	48-115
Chloroethane	0.0	50	54	53	107	107	0	28	57-127
Methylene Chloride	0.0	50	46	46	92	91	1	35	67-115
Trichlorofluorometha	0.0	50	48	49	95	97	2	33	66-128
Acetone	0.0	50	30	31	60	62	4	25	50-150
1,1-Dichloroethene	0.0	50	48	49	96	97	1	38	59-144
trans-1,2-Dichloroet	0.0	50	50	49	99	99	0	36	66-122
Methyl tert-butyl et	0.0	50	46	46	91	92	1	24	67-111
1,1-Dichloroethane	0.0	50	44	44	88	88	0	36	68-122
2-Butanone	0.0	50	32	35	65	69	7	25	50-150
Di-isopropyl ether	0.0	50	48	47	96	94	2	27	70-120
cis-1,2-Dichloroethe	0.0	50	50	50	100	99	1	40	61-135
2,2-Dichloropropane	0.0	50	43	42	86	85	1	68	25-118
Bromochloromethane	0.0	50	51	52	103	105	2	34	71-115
Chloroform	0.0	50	49	50	97	100	3	36	72-118
1,1,1-Trichloroethan	0.0	50	52	53	105	105	0	38	69-119
Carbon Tetrachloride	0.0	50	52	54	104	107	3	33	69-136
1,1-Dichloropropene	0.0	50	48	49	96	98	2	26	70-124
Bromodichloromethane	0.0	50	49	49	97	99	2	24	73-109
1,2-Dichloropropane	0.0	50	44	44	89	88	0	22	71-113
Dibromomethane	0.0	50	53	53	107	106	1	22	76-115
Trichloroethene	0.0	50	56	57	111	114	2	24	75-116
Benzene	0.0	50	47	47	95	93	2	21	72-121
1,2-Dichloroethane	0.0	50	52	51	103	103	0	23	77-115
1,1,2-Trichloroethan	0.0	50	50	50	100	101	1	22	74-108
1,2-Dibromoethane	0.0	50	52	53	104	106	2	21	74-109
Toluene	0.0	50	51	50	102	100	2	24	72-109
Chlorobenzene	0.0	50	52	53	103	106	3	22	76-108
1,1,1,2-Tetrachloroe	0.0	50	52	54	104	107	3	24	72-112
cis-1,3-Dichloroprop	0.0	50	43	45	87	90	4	20	75-125
trans-1,3-Dichloropr	0.0	50	45	47	90	94	4	20	75-125
Tetrachloroethene	0.0	50	52	54	103	108	5	25	73-114
1,3-Dichloropropane	0.0	50	45	47	90	94	4	23	76-108
Dibromochloromethane	0.0	50	51	52	101	105	3	22	75-106
Ethylbenzene	0.0	50	51	52	102	105	3	23	74-112
Styrene	0.0	50	52	53	103	106	3	23	73-109
Bromoform	0.0	50	50	53	99	106	6	22	70-109
m/p-Xylene	0.0	100	102	105	102	105	3	24	72-113
o-Xylene	0.0	50	52	53	104	106	2	23	74-112
Isopropylbenzene	0.0	50	51	51	101	101	0	23	79-112

Bromobenzene	0.0	50	52	53	103	105	2	21	79-111
1,2,3-Trichloropropa	0.1	50	44	46	89	92	3	22	66-118
1,1,2,2-Tetrachloroe	0.0	50	42	43	85	85	0	21	63-112
2-Chlorotoluene	0.0	50	52	52	105	104	1	23	79-110
n-Propylbenzene	0.0	50	50	52	100	104	3	22	79-110
4-Chlorotoluene	0.0	50	49	49	98	98	0	24	76-110
1,3,5-Trimethylbenze	0.0	50	51	51	101	102	0	23	80-113
tert-Butylbenzene	0.0	50	52	52	103	104	0	24	79-113
1,2,4-Trimethylbenze	0.0	50	50	51	100	102	1	23	79-116
sec-Butylbenzene	0.0	50	49	51	99	101	2	26	78-113
1,3-Dichlorobenzene	0.0	50	50	51	100	102	2	23	80-110
1,4-Dichlorobenzene	0.0	50	54	55	108	110	2	23	78-116
p-Isopropyltoluene	0.0	50	50	52	100	104	3	24	79-114
1,2-Dichlorobenzene	0.0	50	50	51	99	102	3	22	80-111
n-Butylbenzene	0.0	50	49	49	97	99	1	24	74-115
1,2-Dibromo-3-chloro	0.0	50	48	52	95	104	9	24	53-120
1,2,4-Trichlorobenze	0.0	50	48	50	95	100	4	23	73-120
Naphthalene	0.0	50	51	52	101	104	3	22	67-136
Hexachlorobutadiene	0.0	50	49	51	98	101	4	29	63-117
1,2,3-Trichlorobenze	0.0	50	46	49	92	99	7	25	76-116

ALLM1105.M Tue Nov 25 10:48:44 1997 MS 4

VOC Methanol Blanks
Anal by:HW MS#4
Anal date:11/24/97
Blank #:511-28
BS/BSD:429-39-05/429-39-06

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,1-Trichloroethane	25	60	ND	ug/Kg	
1,1,2,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,2-Trichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethene	25	60	ND	ug/Kg	
1,1-Dichloropropene	25	60	ND	ug/Kg	
1,2,3-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,3-Trichloropropane	25	60	ND	ug/Kg	
1,2,4-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,4-Trimethylbenzene	25	60	ND	ug/Kg	
1,2-Dibromo-3chloropropane	25	60	ND	ug/Kg	
1,2-Dibromoethane	25	60	ND	ug/Kg	
1,2-Dichlorobenzene	25	60	ND	ug/Kg	
1,2-Dichloroethane	25	60	ND	ug/Kg	
1,2-Dichloropropane	25	60	ND	ug/Kg	
1,3,5-Trimethylbenzene	25	60	ND	ug/Kg	
1,3-Dichlorobenzene	25	60	ND	ug/Kg	
1,3-Dichloropropane	25	60	ND	ug/Kg	
1,4-Dichlorobenzene	25	60	ND	ug/Kg	
2,2-Dichloropropane	25	60	ND	ug/Kg	
2-Chlorotoluene	25	60	ND	ug/Kg	
4-Chlorotoluene	25	60	ND	ug/Kg	
Benzene	25	60	ND	ug/Kg	
Bromobenzene	25	60	ND	ug/Kg	
Bromochloromethane	25	60	ND	ug/Kg	
Bromodichloromethane	25	60	ND	ug/Kg	
Bromoform	25	60	ND	ug/Kg	
Bromomethane	25	60	ND	ug/Kg	
Carbon Tetrachloride	25	60	ND	ug/Kg	
Chlorobenzene	25	60	ND	ug/Kg	
Chlorodibromomethane	25	60	ND	ug/Kg	
Chloroethane	25	60	ND	ug/Kg	
Chloroform	25	60	ND	ug/Kg	
Chloromethane	25	60	ND	ug/Kg	
cis-1,2-Dichloroethene	25	60	ND	ug/Kg	
cis-1,3-Dichloropropene	25	60	ND	ug/Kg	
Di-isopropyl ether	25	60	ND	ug/Kg	
Dibromomethane	25	60	ND	ug/Kg	

Dichlorodifluoromethane	25	60	ND	ug/Kg	
Ethylbenzene	25	60	ND	ug/Kg	
Hexachlorobutadiene	25	60	ND	ug/Kg	
Isopropylbenzene	25	60	ND	ug/Kg	
m/p-Xylene	25	60	ND	ug/Kg	
Methyl tert-butyl ether	25	60	ND	ug/Kg	
Methylene Chloride	25	60	ND	ug/Kg	
n-Butylbenzene	25	60	ND	ug/Kg	
n-Propylbenzene	25	60	ND	ug/Kg	
Naphthalene	25	60	ND	ug/Kg	
o-Xylene	25	60	ND	ug/Kg	
p-Isopropyltoluene	25	60	ND	ug/Kg	
sec-Butylbenzene	25	60	ND	ug/Kg	
Styrene	25	60	ND	ug/Kg	
tert-Butylbenzene	25	60	ND	ug/Kg	
Tetrachloroethene	25	60	ND	ug/Kg	
Toluene	25	60	ND	ug/Kg	
trans-1,2-Dichloroethene	25	60	ND	ug/Kg	
trans-1,3-Dichloropropene	25	60	ND	ug/Kg	
Trichloroethene	25	60	ND	ug/Kg	
Trichlorofluoromethane	25	60	ND	ug/Kg	
Vinyl Chloride	25	60	ND	ug/Kg	
Dibromofluoromethane			101.52	% recov	
Toluene-d8			100.98	% recov	
4-Bromofluorobenzene			102.42	% recov	

Bromobenzene	0.0	50	51	51	101	102	0	14	79-116
1,2,3-Trichloropropa	0.0	50	48	51	96	103	6	13	65-129
1,1,2,2-Tetrachloroe	0.0	50	46	49	93	97	5	16	57-125
2-Chlorotoluene	0.0	50	52	52	103	104	0	12	75-119
n-Propylbenzene	0.0	50	54	53	107	106	2	10	76-120
4-Chlorotoluene	0.0	50	51	51	102	102	0	24	77-115
1,3,5-Trimethylbenze	0.0	50	53	53	107	106	1	13	78-116
tert-Butylbenzene	0.0	50	53	53	107	107	0	12	77-119
1,2,4-Trimethylbenze	0.0	50	52	52	104	103	1	11	80-114
sec-Butylbenzene	0.0	50	54	54	109	108	1	13	73-120
1,3-Dichlorobenzene	0.0	50	51	50	102	99	3	15	78-116
1,4-Dichlorobenzene	0.0	50	50	50	101	100	0	16	75-118
p-Isopropyltoluene	0.0	50	55	54	109	108	1	11	75-119
1,2-Dichlorobenzene	0.0	50	50	50	100	100	1	15	77-116
n-Butylbenzene	0.0	50	53	52	105	104	2	13	76-115
1,2-Dibromo-3-chloro	0.0	50	45	50	90	100	11	13	47-142
1,2,4-Trichlorobenze	0.0	50	48	49	96	99	2	15	69-120
Naphthalene	0.1	50	48	50	95	100	5	15	54-145
Hexachlorobutadiene	0.0	50	51	50	102	101	1	17	52-129
1,2,3-Trichlorobenze	0.0	50	49	50	98	99	1	18	60-133

ALLM1111.M Mon Dec 01 10:08:23 1997

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\ALLM1111.M
Title : SW846 Method 8260 Volatiles-Methanol Extracts
Last Update : Tue Nov 25 14:58:02 1997
Response via : Initial Calibration

EBK 511-32

Non-Spiked Sample: 11269705.D

	Spike Sample	Spike Duplicate Sample
File ID :	11269726.D	11269727.D
Sample :	BS 429-39-13	BSD 429-39-14
Acq Time:	26 Nov 97 9:42 pm	26 Nov 97 10:10 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.1	50	33	34	66	68	3	14	52-138
Bromomethane	0.3	50	45	46	89	91	2	20	71-111
Dichlorodifluorometh	0.0	50	23	24	46	48	5	19	24-137
Vinyl Chloride	0.0	50	39	40	77	81	4	13	67-126
Chloroethane	0.0	50	46	48	93	95	2	13	72-126
Methylene Chloride	-1.0	50	51	52	104	105	2	15	81-116
Trichlorofluorometha	0.0	50	52	52	105	104	1	16	66-125
Acetone	4.8	50	97	99	184#	189#	3	25	50-150
1,1-Dichloroethene	0.0	50	55	55	110	111	1	17	73-133
trans-1,2-Dichloroet	0.0	50	52	53	104	107	3	15	82-118
Methyl tert-butyl et	0.0	50	49	51	97	102	5	13	76-120
1,1-Dichloroethane	0.0	50	50	51	100	102	2	17	80-119
2-Butanone	0.0	50	85	88	169#	175#	3	25	50-150
Di-isopropyl ether	0.0	50	50	50	99	101	2	14	79-119
cis-1,2-Dichloroethe	0.0	50	50	51	101	102	1	16	80-117
2,2-Dichloropropane	0.0	50	42	41	83	83	1	15	29-104
Bromochloromethane	0.0	50	51	52	103	104	1	13	75-123
Chloroform	0.0	50	51	52	102	103	1	16	83-115
1,1,1-Trichloroethan	0.0	50	53	54	107	108	2	16	79-120
Carbon Tetrachloride	0.0	50	54	54	109	108	0	19	76-124
1,1-Dichloropropene	0.0	50	52	53	105	106	1	12	90-122
Bromodichloromethane	0.0	50	50	49	100	99	1	15	79-118
1,2-Dichloropropane	0.0	50	50	49	99	98	2	16	84-118
Dibromomethane	0.0	50	49	50	98	100	1	13	79-122
Trichloroethene	0.0	50	53	52	105	103	2	16	83-127
Benzene	0.0	50	51	51	102	101	1	13	84-117
1,2-Dichloroethane	0.0	50	51	50	101	101	1	16	72-127
1,1,2-Trichloroethan	0.0	50	49	50	97	99	2	15	81-118
1,2-Dibromoethane	0.0	50	49	50	98	100	2	13	78-121
Toluene	0.0	50	51	50	102	101	1	14	84-117
Chlorobenzene	0.0	50	50	52	101	104	3	15	83-114
1,1,1,2-Tetrachloroe	0.0	50	50	52	100	104	3	18	79-118
cis-1,3-Dichloroprop	0.0	50	47	48	93	96	3	20	75-125
trans-1,3-Dichloropr	0.0	50	47	48	93	95	2	20	75-125
Tetrachloroethene	0.0	50	52	54	104	108	4	15	84-114
1,3-Dichloropropane	0.0	50	49	51	98	103	4	13	82-117
Dibromochloromethane	0.0	50	48	51	97	102	5	14	78-117
Ethylbenzene	0.0	50	51	52	102	104	2	14	85-114
Styrene	0.0	50	50	51	99	103	3	17	83-114
Bromoform	0.0	50	46	50	93	100	7	16	72-122
m/p-Xylene	0.0	100	103	104	103	104	1	16	85-114
o-Xylene	0.0	50	51	52	102	104	2	14	86-113
Isopropylbenzene	0.0	50	53	53	107	106	1	13	78-118

VOC Methanol Blanks
Anal by:RJN MS#5
Anal date:11/26/97
Blank #:511-32
BS/BSD:429-39-13/429-39-14

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,1-Trichloroethane	25	60	ND	ug/Kg	
1,1,2,2-Tetrachloroethane	25	60	ND	ug/Kg	
1,1,2-Trichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethane	25	60	ND	ug/Kg	
1,1-Dichloroethene	25	60	ND	ug/Kg	
1,1-Dichloropropene	25	60	ND	ug/Kg	
1,2,3-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,3-Trichloropropane	25	60	ND	ug/Kg	
1,2,4-Trichlorobenzene	25	60	ND	ug/Kg	
1,2,4-Trimethylbenzene	25	60	ND	ug/Kg	
1,2-Dibromo-3chloropropane	25	60	ND	ug/Kg	
1,2-Dibromoethane	25	60	ND	ug/Kg	
1,2-Dichlorobenzene	25	60	ND	ug/Kg	
1,2-Dichloroethane	25	60	ND	ug/Kg	
1,2-Dichloropropane	25	60	ND	ug/Kg	
1,3,5-Trimethylbenzene	25	60	ND	ug/Kg	
1,3-Dichlorobenzene	25	60	ND	ug/Kg	
1,3-Dichloropropane	25	60	ND	ug/Kg	
1,4-Dichlorobenzene	25	60	ND	ug/Kg	
2,2-Dichloropropane	25	60	ND	ug/Kg	
2-Chlorotoluene	25	60	ND	ug/Kg	
4-Chlorotoluene	25	60	ND	ug/Kg	
Benzene	25	60	ND	ug/Kg	
Bromobenzene	25	60	ND	ug/Kg	
Bromochloromethane	25	60	ND	ug/Kg	
Bromodichloromethane	25	60	ND	ug/Kg	
Bromoform	25	60	ND	ug/Kg	
Bromomethane	25	60	ND	ug/Kg	
Carbon Tetrachloride	25	60	ND	ug/Kg	
Chlorobenzene	25	60	ND	ug/Kg	
Chlorodibromomethane	25	60	ND	ug/Kg	
Chloroethane	25	60	ND	ug/Kg	
Chloroform	25	60	ND	ug/Kg	
Chloromethane	25	60	ND	ug/Kg	
cis-1,2-Dichloroethene	25	60	ND	ug/Kg	
cis-1,3-Dichloropropene	25	60	ND	ug/Kg	
Di-isopropyl ether	25	60	ND	ug/Kg	
Dibromomethane	25	60	ND	ug/Kg	

Dichlorodifluoromethane	25	60	ND	ug/Kg	
Ethylbenzene	25	60	ND	ug/Kg	
Hexachlorobutadiene	25	60	ND	ug/Kg	
Isopropylbenzene	25	60	ND	ug/Kg	
m/p-Xylene	25	60	ND	ug/Kg	
Methyl tert-butyl ether	25	60	ND	ug/Kg	
Methylene Chloride	25	60	ND	ug/Kg	
n-Butylbenzene	25	60	ND	ug/Kg	
n-Propylbenzene	25	60	ND	ug/Kg	
Naphthalene	25	60	ND	ug/Kg	
o-Xylene	25	60	ND	ug/Kg	
p-Isopropyltoluene	25	60	ND	ug/Kg	
sec-Butylbenzene	25	60	ND	ug/Kg	
Styrene	25	60	ND	ug/Kg	
tert-Butylbenzene	25	60	ND	ug/Kg	
Tetrachloroethene	25	60	ND	ug/Kg	
Toluene	25	60	ND	ug/Kg	
trans-1,2-Dichloroethene	25	60	ND	ug/Kg	
trans-1,3-Dichloropropene	25	60	ND	ug/Kg	
Trichloroethene	25	60	ND	ug/Kg	
Trichlorofluoromethane	25	60	ND	ug/Kg	
Vinyl Chloride	25	60	ND	ug/Kg	
Dibromofluoromethane			94.66	% recov	
Toluene-d8			93.44	% recov	
4-Bromofluorobenzene			91.18	% recov	

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-1 1-3

Lab Sample Number : 874616-003

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/18/97

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Solids, percent	82.1				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

PVOC + NAPHTHALENE - SOIL/METHANOL **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	96				%Recov		11/26/97	SW846 8260
Dibromofluoromethane	87				%Recov		11/26/97	SW846 8260
4-Bromofluorobenzene	98				%Recov		11/26/97	SW846 8260
Benzene	770	150	360		ug/kg		11/26/97	SW846 8260
Ethylbenzene	1500	150	360		ug/kg		11/26/97	SW846 8260
Methyl-tert-butyl-ether	< 130	130	310		ug/kg		11/26/97	SW846 8260
Toluene	180	150	360		ug/kg	Q	11/26/97	SW846 8260
1,2-Dichloroethane	< 130	130	310		ug/kg		11/26/97	SW846 8260
Naphthalene	4300	150	360		ug/kg		11/26/97	SW846 8260
1,2,4-Trimethylbenzene	4000	150	360		ug/kg		11/26/97	SW846 8260
1,3,5-Trimethylbenzene	11000	150	360		ug/kg		11/26/97	SW846 8260
Xylenes, -m, -p	1600	150	360		ug/kg		11/26/97	SW846 8260
Xylene, -o	< 130	130	310		ug/kg		11/26/97	SW846 8260

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/25/97 **Analyst:** RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-32						11/26/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Field ID : MW-1 1-13

Lab Sample Number : 874616-004

WI DNR LAB ID : 405132750

Client : FLUID MANAGEMENT INC

Report Date : 12/2/97

Collection Date : 11/18/97

Matrix Type : SOIL

Inorganic Results

Test		Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	<	3.4	3.4	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent		90.3				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL **Prep Method:** SW846 5030 **Prep Date:** 11/24/97 **Analyst:** HW

Analyte		Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene		35000	690	1700		ug/kg		11/24/97	SW846 8260
Bromobenzene	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Bromochloromethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Bromodichloromethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Bromoform	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Bromomethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
s-Butylbenzene		2700	690	1700		ug/kg		11/24/97	SW846 8260
t-Butylbenzene	<	630	630	1500		ug/kg		11/24/97	SW846 8260
n-Butylbenzene		11000	690	1700		ug/kg		11/24/97	SW846 8260
Carbon tetrachloride	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Chloroform	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Chlorobenzene	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Chlorodibromomethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Chloroethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Chloromethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
2-Chlorotoluene	<	630	630	1500		ug/kg		11/24/97	SW846 8260
4-Chlorotoluene	<	630	630	1500		ug/kg		11/24/97	SW846 8260
1,2-Dibromo-3-chloropropane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
1,2-Dibromoethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
Dibromomethane	<	630	630	1500		ug/kg		11/24/97	SW846 8260
1,3-Dichlorobenzene	<	630	630	1500		ug/kg		11/24/97	SW846 8260
1,4-Dichlorobenzene	<	630	630	1500		ug/kg		11/24/97	SW846 8260

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-1 1-13

Report Date : 12/2/97

Lab Sample Number : 874616-004

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,2-Dichloroethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,2-Dichlorobenzene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1-Dichloroethene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
cis-1,2-Dichloroethene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Dichlorodifluoromethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
trans-1,2-Dichloroethene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,2-Dichloropropane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1-Dichloroethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,3-Dichloropropane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
2,2-Dichloropropane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1-Dichloropropene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
cis-1,3-Dichloropropene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
trans-1,3-Dichloropropene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Diisopropyl ether	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Ethylbenzene		58000	690	1700	ug/kg	11/24/97	SW846 8260
Fluorotrichloromethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Hexachlorobutadiene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Isopropylbenzene		5800	690	1700	ug/kg	11/24/97	SW846 8260
p-Isopropyltoluene		4100	690	1700	ug/kg	11/24/97	SW846 8260
Methylene chloride	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Methyl-tert-butyl-ether	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Naphthalene		17000	690	1700	ug/kg	11/24/97	SW846 8260
n-Propylbenzene		23000	690	1700	ug/kg	11/24/97	SW846 8260
Styrene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1,2,2-Tetrachloroethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1,1,2-Tetrachloroethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Tetrachloroethene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
Toluene		230000	690	1700	ug/kg	11/24/97	SW846 8260
1,2,3-Trichlorobenzene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,2,4-Trichlorobenzene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1,1-Trichloroethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,1,2-Trichloroethane	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,2,4-Trimethylbenzene		140000	690	1700	ug/kg	11/24/97	SW846 8260
Trichloroethene	<	630	630	1500	ug/kg	11/24/97	SW846 8260
1,2,3-Trichloropropane	<	630	630	1500	ug/kg	11/24/97	SW846 8260

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EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-1 1-13

Report Date : 12/2/97

Lab Sample Number : 874616-004

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,3,5-Trimethylbenzene	44000	690	1700	ug/kg	11/24/97	SW846 8260
Vinyl chloride	< 630	630	1500	ug/kg	11/24/97	SW846 8260
Xylenes, -m, -p	230000	690	1700	ug/kg	11/24/97	SW846 8260
Xylene, -o	86000	690	1700	ug/kg	11/24/97	SW846 8260
4-Bromofluorobenzene	114			%Recov	11/24/97	SW846 8260
Dibromofluoromethane	85			%Recov	11/24/97	SW846 8260
Toluene-d8	104			%Recov	11/24/97	SW846 8260

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL **Prep Method:** WI MOD.GRO **Prep Date:** 11/24/97 **Analyst:** CAR

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	4000			140	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	107			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/24/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-28						11/24/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-1 17-19

Report Date : 12/2/97

Lab Sample Number : 874616-005

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

Inorganic Results

Test	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Prep Method	Analysis Method	Analyst
Lead	< 3.5	3.5	11		mg/kg		12/2/97	SW846 3051	SW846 7421	SAC
Solids, percent	88.5				%		11/25/97	SM2540G	SM2540G	PHS

Organic Results

EPA 8260 VOLATILE LIST - SOIL/METHANOL Prep Method: SW846 5030 Prep Date: 11/24/97 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Benzene	640	28	67		ug/kg		11/24/97	SW846 8260
Bromobenzene	< 25	25	60		ug/kg		11/24/97	SW846 8260
Bromochloromethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
Bromodichloromethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
Bromoform	< 25	25	60		ug/kg		11/24/97	SW846 8260
Bromomethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
s-Butylbenzene	54	28	67		ug/kg	Q	11/24/97	SW846 8260
t-Butylbenzene	< 25	25	60		ug/kg		11/24/97	SW846 8260
n-Butylbenzene	240	28	67		ug/kg		11/24/97	SW846 8260
Carbon tetrachloride	< 25	25	60		ug/kg		11/24/97	SW846 8260
Chloroform	< 25	25	60		ug/kg		11/24/97	SW846 8260
Chlorobenzene	< 25	25	60		ug/kg		11/24/97	SW846 8260
Chlorodibromomethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
Chloroethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
Chloromethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
2-Chlorotoluene	< 25	25	60		ug/kg		11/24/97	SW846 8260
4-Chlorotoluene	< 25	25	60		ug/kg		11/24/97	SW846 8260
1,2-Dibromo-3-chloropropane	< 25	25	60		ug/kg		11/24/97	SW846 8260
1,2-Dibromoethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
Dibromomethane	< 25	25	60		ug/kg		11/24/97	SW846 8260
1,3-Dichlorobenzene	< 25	25	60		ug/kg		11/24/97	SW846 8260
1,4-Dichlorobenzene	< 25	25	60		ug/kg		11/24/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

EN CHEM INC.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-1 17-19

Report Date : 12/2/97

Lab Sample Number : 874616-005

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,2-Dichloroethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,2-Dichlorobenzene	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1-Dichloroethene	<	25	25	60	ug/kg		11/24/97	SW846 8260
cis-1,2-Dichloroethene	<	25	25	60	ug/kg		11/24/97	SW846 8260
Dichlorodifluoromethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
trans-1,2-Dichloroethene	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,2-Dichloropropane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1-Dichloroethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,3-Dichloropropane	<	25	25	60	ug/kg		11/24/97	SW846 8260
2,2-Dichloropropane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1-Dichloropropene	<	25	25	60	ug/kg		11/24/97	SW846 8260
cis-1,3-Dichloropropene	<	25	25	60	ug/kg		11/24/97	SW846 8260
trans-1,3-Dichloropropene	<	25	25	60	ug/kg		11/24/97	SW846 8260
Diisopropyl ether	<	25	25	60	ug/kg		11/24/97	SW846 8260
Ethylbenzene		800	28	67	ug/kg		11/24/97	SW846 8260
Fluorotrichloromethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
Hexachlorobutadiene	<	25	25	60	ug/kg		11/24/97	SW846 8260
Isopropylbenzene		90	28	67	ug/kg		11/24/97	SW846 8260
p-Isopropyltoluene		33	28	67	ug/kg	Q	11/24/97	SW846 8260
Methylene chloride	<	25	25	60	ug/kg		11/24/97	SW846 8260
Methyl-tert-butyl-ether	<	25	25	60	ug/kg		11/24/97	SW846 8260
Naphthalene		490	28	67	ug/kg		11/24/97	SW846 8260
n-Propylbenzene		380	28	67	ug/kg		11/24/97	SW846 8260
Styrene	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1,2,2-Tetrachloroethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1,1,2-Tetrachloroethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
Tetrachloroethene	<	25	25	60	ug/kg		11/24/97	SW846 8260
Toluene		2800	28	67	ug/kg		11/24/97	SW846 8260
1,2,3-Trichlorobenzene	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,2,4-Trichlorobenzene	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1,1-Trichloroethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,1,2-Trichloroethane	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,2,4-Trimethylbenzene		2500	28	67	ug/kg		11/24/97	SW846 8260
Trichloroethene	<	25	25	60	ug/kg		11/24/97	SW846 8260
1,2,3-Trichloropropane	<	25	25	60	ug/kg		11/24/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97.353

Client : FLUID MANAGEMENT INC

Field ID : MW-1 17-19

Report Date : 12/2/97

Lab Sample Number : 874616-005

Collection Date : 11/18/97

WI DNR LAB ID : 405132750

Matrix Type : SOIL

1,3,5-Trimethylbenzene	860	28	67	ug/kg	11/24/97	SW846 8260
Vinyl chloride	< 25	25	60	ug/kg	11/24/97	SW846 8260
Xylenes, -m, -p	3200	28	67	ug/kg	11/24/97	SW846 8260
Xylene, -o	1200	28	67	ug/kg	11/24/97	SW846 8260
4-Bromofluorobenzene	99			%Recov	11/24/97	SW846 8260
Dibromofluoromethane	96			%Recov	11/24/97	SW846 8260
Toluene-d8	100			%Recov	11/24/97	SW846 8260

Organic Results

GASOLINE RANGE ORGANICS - SOIL/METHANOL **Prep Method:** WI MOD.GRO **Prep Date:** 11/24/97 **Analyst:** CAR

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Gasoline Range Organics	20			2.8	mg/kg		11/28/97	WDNR MOD GRO
Blank Spike	107			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank Spike Duplicate	106			1.00	%Recov		11/28/97	WDNR MOD GRO
Blank	< 2.5			2.5	mg/kg		11/28/97	WDNR MOD GRO

Organic Results

VOC-BLK **Prep Method:** SW846 5030 **Prep Date:** 11/24/97 **Analyst:** HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	511-28						11/24/97	SW846 8260

All soil results are reported on a dry weight basis unless otherwise noted.

LABORATORY REPORT REVIEW SUMMARY
Analytical Laboratory Oversight Group

FMI Project Number: 97.0353 ST97353-0001-005

Unique Lab Project Number: 874616

Reviewed By: PAP 12/19/97 ALOG Rec'd 12/11/97

COMMENTS:

None

** Attach to above-referenced laboratory report - for internal use only **

Company Name: FMI - PEWAUKEE

Branch or Location:

Project Contact: MTA

Telephone: 549-6898

Project Number: 97353

Project Name: ARGET SINGERS

Project Location:

Sampled By (Print): BRIAN BJODSTRUP

Regulatory Program (circle): UST RCRA CLP SDWA NPDES/WPDES CAA NR____ Other

NR720 Confirmation Analysis Required? (circle): Y N

(En Chem will not confirm unless otherwise instructed.)

EN CHEM INC.

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☐ 802 Deming Way, Madison, WI 53717, 608-827-5501 • 1-888-536-2436, Fax: 608-827-5503

☐ 1423 N. 8th Street., Suite 122, Superior, WI 54880, 715-392-5844 • 1-800-837-8238, FAX 715-392-5843

CHAIN OF CUSTODY

16376

Page 1 of 1

P.O. #: Quote #:

Mail Report To: PETER JACOBS

Company: FMI - PEWAUKEE

Address:

Invoice To: FMI - PEWAUKEE

Company: ST 97 353 0001 005

Address:

Mail Invoice To: FMI - PEWAUKEE

FILTERED? (YES/NO)

PRESERVATION (CODE)*: F F F A A

FIELD ID	SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	PVOC+NAPTH+12 PCA	VOC	GRO	TOTAL LEAD	DRYWEIGHT			FIELD SCREEN	MATRIX	GOOD COND.	TOTAL BOTTLES	COMMENTS	LABORATORY NUMBER
MW-4	14.5-16.5	11/18/97	8:00 AM	X		X	X	X			2.1	soil	X	1-502 2-202/M		001
MW-4	16.5-18.5	11/18/97	8:10 AM	X		X	X	X			2.1					002
MW-1	1-3	11/18/97	10:00 AM	X				X			86			1-502 1-202/M		003
MW-1	11-13	11/18/97	10:10 AM		X	X	X	X			495			1-502 2-202/M		004
MW-1	17-19	11/18/97	10:20 AM		X	X	X	X			322					005
BLANK	MeOH	11/18/97	8:00 PM		X	X						MeOH		1-202/M		006

SHADED AREA FOR LABORATORY USE ONLY

*Preservation Code

A=None B=HCL C=H2SO4
D=HN03 E=EnCore F=Methanol**
G=NaOH O=Other (Indicate)

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By:	Date/Time:	Received By:	Date/Time:
Brian Bjodstrup	11/21/97 8:30	Tom Nehring 4°C	11/21/97 1040
Stone	11/21/97	A Weckler	11/21/97 1270 R01
A Weckler	11/21/97 1550		
		Received By (En Chem):	11/21/97 1551

En Chem Project No.: 8746616

Sample Receipt Temp.: R01

Sample Receipt pH (Wet/Metals):

ATTACHMENT C

Pre-Remedial Groundwater Sample Laboratory Analytical Report

77331-03

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
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Watertown, WI 53094

Tel: (920) 261-1660
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WDNR No. 128053530

REC'D DEC 19 1997

ANALYTICAL AND QUALITY CONTROL REPORT

1/2/98

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997

Job No: 97.11571

Enclosed are the Analytical and Quality Control reports for the following samples submitted for analysis:

Sample Number	Sample Description	Date Taken	Date Received
278484	MW-1 97.353	12/04/1997	12/04/1997
278485	MW-2 97.353	12/04/1997	12/04/1997
278486	MW-3 97.353	12/04/1997	12/04/1997
278487	MW-4 97.353	12/04/1997	12/04/1997
278488	MW-5 97.353	12/04/1997	12/04/1997
278489	MW-11 97.353	12/04/1997	12/04/1997
278490	Trip Blk 97.353	12/04/1997	12/04/1997
278491	Decon Blk 97.353	12/04/1997	12/04/1997

All soil samples are reported on a dry weight basis. The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

A = Analyzed/extracted past hold time
C = Standard outside of control limits
F = Sample filtered in lab
H = Late eluting hydrocarbons present
J = Estimated concentration
M = Matrix interference
Q = Result confirmed via re-analysis
T = Does not match typical pattern
W = BOD re-set due to dilution
B = Blank is contaminated
D = Diluted for analysis
G = Received past hold time
I = Improperly handled sample
L = Common lab solvent and contaminant
P = Improperly preserved sample
S = Sediment present
X = Unidentified compound(s) present
Z = Internal standard outside limits

Dan Milenski
Project Manager

QA Coordinator

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278488
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-5 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:30 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Di-isopropyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Ethylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Hexachlorobutadiene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Isopropylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
p-Isopropyltoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methylene Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methyl-t-butyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Naphthalene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
n-Propylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Styrene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Tetrachloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Toluene	0.13	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,2,3-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichlorofluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,3-Trichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trimethylbenzene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,3,5-Trimethylbenzene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Vinyl Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Xylenes, Total	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Surr: Dibromofluoromethane	103.8	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Toluene-d8	92.6	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Bromofluorobenzene	91.8	%	n/a	n/a	S-8260B	12/11/1997	1129

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278484
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-1 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:40 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Lead, Dissolved, GFAA	<0.00089	mg/L	0.00089	0.0031	E-200.9	12/05/1997	1269
GRO - AQUEOUS	4,900	ug/L	50	50	WDNR	12/09/1997	1536
VOC - AQUEOUS - EPA 8260B							
Benzene	780	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Bromobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromochloromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromodichloromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromoform	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromomethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
n-Butylbenzene	6.3	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
sec-Butylbenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
tert-Butylbenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Carbon Tetrachloride	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorodibromomethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroform	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2-Chlorotoluene	<1.0	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
4-Chlorotoluene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromo-3-Chloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromoethane (EDB)	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dibromomethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,4-Dichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dichlorodifluoromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,2-Dichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
trans-1,2-Dichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2,2-Dichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloropropene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,3-Dichloropropene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278484
Account No: 28500
Page 3

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-1 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:40 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Di-isopropyl ether	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Ethylbenzene	70	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Hexachlorobutadiene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Isopropylbenzene	3.8	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
p-Isopropyltoluene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methylene Chloride	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methyl-t-butyl ether	17	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Naphthalene	12	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
n-Propylbenzene	12	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Styrene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1,2-Tetrachloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2,2-Tetrachloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Tetrachloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Toluene	850	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,2,3-Trichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1-Trichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2-Trichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichlorofluoromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,3-Trichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trimethylbenzene	98	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,3,5-Trimethylbenzene	31	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Vinyl Chloride	<2.5	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Xylenes, Total	500	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Surr: Dibromofluoromethane	100.0	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Toluene-d8	94.4	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Bromofluorobenzene	91.6	%	n/a	n/a	S-8260B	12/11/1997	1129

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278485
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-2 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:20 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Lead, Dissolved, GFAA	<0.00089	mg/L	0.00089	0.0031	E-200.9	12/05/1997	1269
GRO - AQUEOUS	<50	ug/L	50	50	WDNR	12/08/1997	1535
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.10	ug/L	0.10	0.33	S-8260B	12/10/1997	1127
Bromobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Bromochloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Bromodichloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Bromoform	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Bromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
n-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
sec-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
tert-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Carbon Tetrachloride	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Chlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Chlorodibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Chloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Chloroform	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Chloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
2-Chlorotoluene	<0.10	ug/L	0.10	0.33	S-8260B	12/10/1997	1127
4-Chlorotoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2-Dibromo-3-Chloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2-Dibromoethane (EDB)	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Dibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,3-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,4-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Dichlorodifluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
trans-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,3-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
2,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
cis-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278485
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-2 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:20 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Di-isopropyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Ethylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Hexachlorobutadiene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Isopropylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
p-Isopropyltoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Methylene Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Methyl-t-butyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Naphthalene	<0.10	ug/L	0.10	0.33	S-8260B	12/10/1997	1127
n-Propylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Styrene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1,1,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1,2,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Tetrachloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Toluene	0.11	ug/L	0.10	0.33	S-8260B	12/10/1997	1127
1,2,3-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2,4-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1,1-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,1,2-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Trichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Trichlorofluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2,3-Trichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
1,2,4-Trimethylbenzene	<0.10	ug/L	0.10	0.33	S-8260B	12/10/1997	1127
1,3,5-Trimethylbenzene	<0.10	ug/L	0.10	0.33	S-8260B	12/10/1997	1127
Vinyl Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Xylenes, Total	<0.25	ug/L	0.25	0.83	S-8260B	12/10/1997	1127
Surr: Dibromofluoromethane	103.6	%	n/a	n/a	S-8260B	12/10/1997	1127
Surr: Toluene-d8	92.6	%	n/a	n/a	S-8260B	12/10/1997	1127
Surr: Bromofluorobenzene	94.2	%	n/a	n/a	S-8260B	12/10/1997	1127

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278486
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-3 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:10 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Lead, Dissolved, GFAA	<0.00089	mg/L	0.00089	0.0031	E-200.9	12/05/1997	1269
GRO - AQUEOUS	<50	ug/L	50	50	WDNR	12/08/1997	1535
VOC - AQUEOUS - EPA 8260B							
Benzene	0.19	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Bromobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromochloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromodichloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromoform	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
n-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
sec-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
tert-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Carbon Tetrachloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorodibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroform	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2-Chlorotoluene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
4-Chlorotoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromo-3-Chloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromoethane (EDB)	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,4-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dichlorodifluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
trans-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278486
Account No: 28500
Page 7

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-3 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:10 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Di-isopropyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Ethylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Hexachlorobutadiene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Isopropylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
p-Isopropyltoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methylene Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methyl-t-butyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Naphthalene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
n-Propylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Styrene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Tetrachloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Toluene	0.37	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,2,3-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichlorofluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,3-Trichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trimethylbenzene	0.22	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,3,5-Trimethylbenzene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Vinyl Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Xylenes, Total	0.33	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Surr: Dibromofluoromethane	100.6	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Toluene-d8	94.8	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Bromofluorobenzene	92.0	%	n/a	n/a	S-8260B	12/11/1997	1129

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278487
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-4 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:00 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Lead, Dissolved, GFAA	<0.00089	mg/L	0.00089	0.0031	E-200.9	12/05/1997	1269
GRO - AQUEOUS	<50	ug/L	50	50	WDNR	12/08/1997	1535
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Bromobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromochloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromodichloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromoform	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
n-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
sec-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
tert-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Carbon Tetrachloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorodibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroform	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2-Chlorotoluene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
4-Chlorotoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromo-3-Chloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromoethane (EDB)	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,4-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dichlorodifluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
trans-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278487
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-4 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:00 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
trans-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Di-isopropyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Ethylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Hexachlorobutadiene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Isopropylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
p-Isopropyltoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methylene Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Methyl-t-butyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Naphthalene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
n-Propylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Styrene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2,2-Tetrachloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Tetrachloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Toluene	0.34	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,2,3-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,1-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1,2-Trichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Trichlorofluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,3-Trichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2,4-Trimethylbenzene	0.17	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
1,3,5-Trimethylbenzene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Vinyl Chloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Xylenes, Total	0.28	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Surr: Dibromofluoromethane	102.0	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Toluene-d8	94.6	%	n/a	n/a	S-8260B	12/11/1997	1129
Surr: Bromofluorobenzene	92.2	%	n/a	n/a	S-8260B	12/11/1997	1129

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ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278488
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-5 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:30 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Lead, Dissolved, GFAA	<0.00089	mg/L	0.00089	0.0031	E-200.9	12/05/1997	1269
GRO - AQUEOUS	<50	ug/L	50	50	WDNR	12/08/1997	1535
VOC - AQUEOUS - EPA 8260B							
Benzene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
Bromobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromochloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromodichloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromoform	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Bromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
n-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
sec-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
tert-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Carbon Tetrachloride	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chlorodibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloroform	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Chloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2-Chlorotoluene	<0.10	ug/L	0.10	0.33	S-8260B	12/11/1997	1129
4-Chlorotoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromo-3-Chloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dibromoethane (EDB)	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,4-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
Dichlorodifluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
trans-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,3-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
2,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
1,1-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129
cis-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/11/1997	1129

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278489
Account No: 28500
Page 12

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-11 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:45 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	920	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
Bromobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromochloromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromodichloromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromoform	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromomethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
n-Butylbenzene	7.2	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
sec-Butylbenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
tert-Butylbenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Carbon Tetrachloride	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chlorodibromomethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloroform	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
2-Chlorotoluene	<1.0	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
4-Chlorotoluene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dibromo-3-Chloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dibromoethane (EDB)	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Dibromomethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,3-Dichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,4-Dichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Dichlorodifluoromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
cis-1,2-Dichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
trans-1,2-Dichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,3-Dichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
2,2-Dichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloropropene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
cis-1,3-Dichloropropene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
trans-1,3-Dichloropropene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Di-isopropyl ether	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278489
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-11 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:45 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Ethylbenzene	76	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Hexachlorobutadiene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Isopropylbenzene	4.0	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
p-Isopropyltoluene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Methylene Chloride	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Methyl-t-butyl ether	19	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Naphthalene	7.2	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
n-Propylbenzene	12	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Styrene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,1,2-Tetrachloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,2,2-Tetrachloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Tetrachloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Toluene	1,100	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
1,2,3-Trichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,4-Trichlorobenzene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,1-Trichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,2-Trichloroethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Trichloroethene	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Trichlorofluoromethane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,3-Trichloropropane	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,4-Trimethylbenzene	110	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
1,3,5-Trimethylbenzene	36	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
Vinyl Chloride	<2.5	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Xylenes, Total	570	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Surr: Dibromofluoromethane	102.4	%	n/a	n/a	S-8260B	12/12/1997	1130
Surr: Toluene-d8	97.6	%	n/a	n/a	S-8260B	12/12/1997	1130
Surr: Bromofluorobenzene	104.4	%	n/a	n/a	S-8260B	12/12/1997	1130

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
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12/15/1997
Job No: 97.11571
Sample No: 278490
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Trip Blk 97.353
Recv'd On Ice

Date Taken: 12/04/1997 08:50 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	0.14	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
Bromobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromochloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromodichloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromoform	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
n-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
sec-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
tert-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Carbon Tetrachloride	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chlorodibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloroform	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
2-Chlorotoluene	<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
4-Chlorotoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dibromo-3-Chloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dibromoethane (EDB)	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Dibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,3-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,4-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Dichlorodifluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
trans-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,3-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
2,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
cis-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
trans-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Di-isopropyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278490
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Trip Blk 97.353
Recv'd On Ice

Date Taken: 12/04/1997 08:50 Date Received: 12/04/1997

Parameter		Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Ethylbenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Hexachlorobutadiene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Isopropylbenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
p-Isopropyltoluene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Methylene Chloride	L	0.92	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Methyl-t-butyl ether		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Naphthalene		<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
n-Propylbenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Styrene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,1,2-Tetrachloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,2,2-Tetrachloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Tetrachloroethene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Toluene		0.21	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
1,2,3-Trichlorobenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,4-Trichlorobenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,1-Trichloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,2-Trichloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Trichloroethene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Trichlorofluoromethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,3-Trichloropropane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,4-Trimethylbenzene		<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
1,3,5-Trimethylbenzene		<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
Vinyl Chloride		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Xylenes, Total		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Surr: Dibromofluoromethane		102.4	%	n/a	n/a	S-8260B	12/12/1997	1130
Surr: Toluene-d8		97.8	%	n/a	n/a	S-8260B	12/12/1997	1130
Surr: Bromofluorobenzene		102.2	%	n/a	n/a	S-8260B	12/12/1997	1130

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278491
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Decon Blk 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:50 Date Received: 12/04/1997

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
VOC - AQUEOUS - EPA 8260B							
Benzene	0.35	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
Bromobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromochloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromodichloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromoform	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Bromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
n-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
sec-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
tert-Butylbenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Carbon Tetrachloride	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chlorodibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloroform	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Chloromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
2-Chlorotoluene	<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
4-Chlorotoluene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dibromo-3-Chloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dibromoethane (EDB)	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Dibromomethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,3-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,4-Dichlorobenzene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Dichlorodifluoromethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichloroethane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
trans-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,3-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
2,2-Dichloropropane	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
cis-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
trans-1,3-Dichloropropene	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Di-isopropyl ether	<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/15/1997
Job No: 97.11571
Sample No: 278491
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Decon Blk 97.353
Recv'd On Ice

Date Taken: 12/04/1997 09:50 Date Received: 12/04/1997

Parameter		Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
Ethylbenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Hexachlorobutadiene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Isopropylbenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
p-Isopropyltoluene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Methylene Chloride	L	0.49	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Methyl-t-butyl ether		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Naphthalene		<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
n-Propylbenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Styrene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,1,2-Tetrachloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,2,2-Tetrachloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Tetrachloroethene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Toluene		0.60	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
1,2,3-Trichlorobenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,4-Trichlorobenzene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,1-Trichloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,1,2-Trichloroethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Trichloroethene		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Trichlorofluoromethane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,3-Trichloropropane		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
1,2,4-Trimethylbenzene		<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
1,3,5-Trimethylbenzene		<0.10	ug/L	0.10	0.33	S-8260B	12/12/1997	1130
Vinyl Chloride		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Xylenes, Total		<0.25	ug/L	0.25	0.83	S-8260B	12/12/1997	1130
Surr: Dibromofluoromethane		103.4	%	n/a	n/a	S-8260B	12/12/1997	1130
Surr: Toluene-d8		99.0	%	n/a	n/a	S-8260B	12/12/1997	1130
Surr: Bromofluorobenzene		102.6	%	n/a	n/a	S-8260B	12/12/1997	1130

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WDNR No. 128053530

QUALITY CONTROL REPORT

BLANKS

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units	Date Prepped
Lead, Dissolved, GFAA		1269	<0.00089	0.00089	0.0031	mg/L	
GRO - AQUEOUS		1535	<50	50	50	ug/L	
GRO - AQUEOUS		1536	<50	50	50	ug/L	
VOC - AQUEOUS - EPA 8260B							
Benzene		1127	<0.10	0.10	0.33	ug/L	
Bromobenzene		1127	<0.25	0.25	0.83	ug/L	
Bromochloromethane		1127	<0.25	0.25	0.83	ug/L	
Bromodichloromethane		1127	<0.25	0.25	0.83	ug/L	
Bromoform		1127	<0.25	0.25	0.83	ug/L	
Bromomethane		1127	<0.25	0.25	0.83	ug/L	
n-Butylbenzene		1127	<0.25	0.25	0.83	ug/L	
sec-Butylbenzene		1127	<0.25	0.25	0.83	ug/L	
tert-Butylbenzene		1127	<0.25	0.25	0.83	ug/L	
Carbon Tetrachloride		1127	<0.25	0.25	0.83	ug/L	
Chlorobenzene		1127	<0.25	0.25	0.83	ug/L	
Chlorodibromomethane		1127	<0.25	0.25	0.83	ug/L	
Chloroethane		1127	<0.25	0.25	0.83	ug/L	
Chloroform		1127	<0.25	0.25	0.83	ug/L	
Chloromethane		1127	<0.25	0.25	0.83	ug/L	
2-Chlorotoluene		1127	<0.10	0.10	0.33	ug/L	
4-Chlorotoluene		1127	<0.25	0.25	0.83	ug/L	
1,2-Dibromo-3-Chloropropane		1127	<0.25	0.25	0.83	ug/L	
1,2-Dibromoethane (EDB)		1127	<0.25	0.25	0.83	ug/L	
Dibromomethane		1127	<0.25	0.25	0.83	ug/L	
1,2-Dichlorobenzene		1127	<0.25	0.25	0.83	ug/L	
1,3-Dichlorobenzene		1127	<0.25	0.25	0.83	ug/L	
1,4-Dichlorobenzene		1127	<0.25	0.25	0.83	ug/L	
Dichlorodifluoromethane		1127	<0.25	0.25	0.83	ug/L	
1,1-Dichloroethane		1127	<0.25	0.25	0.83	ug/L	
1,2-Dichloroethane		1127	<0.25	0.25	0.83	ug/L	
1,1-Dichloroethene		1127	<0.25	0.25	0.83	ug/L	
cis-1,2-Dichloroethene		1127	<0.25	0.25	0.83	ug/L	
trans-1,2-Dichloroethene		1127	<0.25	0.25	0.83	ug/L	
1,2-Dichloropropane		1127	<0.25	0.25	0.83	ug/L	
1,3-Dichloropropane		1127	<0.25	0.25	0.83	ug/L	
2,2-Dichloropropane		1127	<0.25	0.25	0.83	ug/L	
1,1-Dichloropropene		1127	<0.25	0.25	0.83	ug/L	
cis-1,3-Dichloropropene		1127	<0.25	0.25	0.83	ug/L	
trans-1,3-Dichloropropene		1127	<0.25	0.25	0.83	ug/L	

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QUALITY CONTROL REPORT

BLANKS

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units	Date Prepped
Di-isopropyl ether		1127	<0.25	0.25	0.83	ug/L	
Ethylbenzene		1127	<0.25	0.25	0.83	ug/L	
Hexachlorobutadiene		1127	<0.25	0.25	0.83	ug/L	
Isopropylbenzene		1127	<0.25	0.25	0.83	ug/L	
p-Isopropyltoluene		1127	<0.25	0.25	0.83	ug/L	
Methylene Chloride		1127	0.28	0.25	0.83	ug/L	
Methyl-t-butyl ether		1127	<0.25	0.25	0.83	ug/L	
Naphthalene		1127	<0.10	0.10	0.33	ug/L	
n-Propylbenzene		1127	<0.25	0.25	0.83	ug/L	
Styrene		1127	<0.25	0.25	0.83	ug/L	
1,1,1,2-Tetrachloroethane		1127	<0.25	0.25	0.83	ug/L	
1,1,2,2-Tetrachloroethane		1127	<0.25	0.25	0.83	ug/L	
Tetrachloroethene		1127	<0.25	0.25	0.83	ug/L	
Toluene		1127	<0.10	0.10	0.33	ug/L	
1,2,3-Trichlorobenzene		1127	<0.25	0.25	0.83	ug/L	
1,2,4-Trichlorobenzene		1127	<0.25	0.25	0.83	ug/L	
1,1,1-Trichloroethane		1127	<0.25	0.25	0.83	ug/L	
1,1,2-Trichloroethane		1127	<0.25	0.25	0.83	ug/L	
Trichloroethene		1127	<0.25	0.25	0.83	ug/L	
Trichlorofluoromethane		1127	<0.25	0.25	0.83	ug/L	
1,2,3-Trichloropropane		1127	<0.25	0.25	0.83	ug/L	
1,2,4-Trimethylbenzene		1127	<0.10	0.10	0.33	ug/L	
1,3,5-Trimethylbenzene		1127	<0.10	0.10	0.33	ug/L	
Vinyl Chloride		1127	<0.25	0.25	0.83	ug/L	
Xylenes, Total		1127	<0.25	0.25	0.83	ug/L	
Surr: Dibromofluoromethane		1127	101.2	n/a	n/a	%	
Surr: Toluene-d8		1127	92.0	n/a	n/a	%	
Surr: Bromofluorobenzene		1127	94.6	n/a	n/a	%	
VOC - AQUEOUS - EPA 8260B							
Benzene		1129	<0.10	0.10	0.33	ug/L	
Bromobenzene		1129	<0.25	0.25	0.83	ug/L	
Bromochloromethane		1129	<0.25	0.25	0.83	ug/L	
Bromodichloromethane		1129	<0.25	0.25	0.83	ug/L	
Bromoform		1129	<0.25	0.25	0.83	ug/L	
Bromomethane		1129	<0.25	0.25	0.83	ug/L	
n-Butylbenzene		1129	<0.25	0.25	0.83	ug/L	
sec-Butylbenzene		1129	<0.25	0.25	0.83	ug/L	
tert-Butylbenzene		1129	<0.25	0.25	0.83	ug/L	
Carbon Tetrachloride		1129	<0.25	0.25	0.83	ug/L	

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QUALITY CONTROL REPORT

BLANKS

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units	Date Prepped
Chlorobenzene		1129	<0.25	0.25	0.83	ug/L	
Chlorodibromomethane		1129	<0.25	0.25	0.83	ug/L	
Chloroethane		1129	<0.25	0.25	0.83	ug/L	
Chloroform		1129	<0.25	0.25	0.83	ug/L	
Chloromethane		1129	<0.25	0.25	0.83	ug/L	
2-Chlorotoluene		1129	<0.10	0.10	0.33	ug/L	
4-Chlorotoluene		1129	<0.25	0.25	0.83	ug/L	
1,2-Dibromo-3-Chloropropane		1129	<0.25	0.25	0.83	ug/L	
1,2-Dibromoethane (EDB)		1129	<0.25	0.25	0.83	ug/L	
Dibromomethane		1129	<0.25	0.25	0.83	ug/L	
1,2-Dichlorobenzene		1129	<0.25	0.25	0.83	ug/L	
1,3-Dichlorobenzene		1129	<0.25	0.25	0.83	ug/L	
1,4-Dichlorobenzene		1129	<0.25	0.25	0.83	ug/L	
Dichlorodifluoromethane		1129	<0.25	0.25	0.83	ug/L	
1,1-Dichloroethane		1129	<0.25	0.25	0.83	ug/L	
1,2-Dichloroethane		1129	<0.25	0.25	0.83	ug/L	
1,1-Dichloroethene		1129	<0.25	0.25	0.83	ug/L	
cis-1,2-Dichloroethene		1129	<0.25	0.25	0.83	ug/L	
trans-1,2-Dichloroethene		1129	<0.25	0.25	0.83	ug/L	
1,2-Dichloropropane		1129	<0.25	0.25	0.83	ug/L	
1,3-Dichloropropane		1129	<0.25	0.25	0.83	ug/L	
2,2-Dichloropropane		1129	<0.25	0.25	0.83	ug/L	
1,1-Dichloropropene		1129	<0.25	0.25	0.83	ug/L	
cis-1,3-Dichloropropene		1129	<0.25	0.25	0.83	ug/L	
trans-1,3-Dichloropropene		1129	<0.25	0.25	0.83	ug/L	
Di-isopropyl ether		1129	<0.25	0.25	0.83	ug/L	
Ethylbenzene		1129	<0.25	0.25	0.83	ug/L	
Hexachlorobutadiene		1129	<0.25	0.25	0.83	ug/L	
Isopropylbenzene		1129	<0.25	0.25	0.83	ug/L	
p-Isopropyltoluene		1129	<0.25	0.25	0.83	ug/L	
Methylene Chloride		1129	<0.25	0.25	0.83	ug/L	
Methyl-t-butyl ether		1129	<0.25	0.25	0.83	ug/L	
Naphthalene		1129	<0.10	0.10	0.33	ug/L	
n-Propylbenzene		1129	<0.25	0.25	0.83	ug/L	
Styrene		1129	<0.25	0.25	0.83	ug/L	
1,1,1,2-Tetrachloroethane		1129	<0.25	0.25	0.83	ug/L	
1,1,2,2-Tetrachloroethane		1129	<0.25	0.25	0.83	ug/L	
Tetrachloroethene		1129	<0.25	0.25	0.83	ug/L	
Toluene		1129	0.28	0.10	0.33	ug/L	

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WDNR No. 128053530

QUALITY CONTROL REPORT

BLANKS

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units	Date Prepped
1,2,3-Trichlorobenzene		1129	<0.25	0.25	0.83	ug/L	
1,2,4-Trichlorobenzene		1129	<0.25	0.25	0.83	ug/L	
1,1,1-Trichloroethane		1129	<0.25	0.25	0.83	ug/L	
1,1,2-Trichloroethane		1129	<0.25	0.25	0.83	ug/L	
Trichloroethene		1129	<0.25	0.25	0.83	ug/L	
Trichlorofluoromethane		1129	<0.25	0.25	0.83	ug/L	
1,2,3-Trichloropropane		1129	<0.25	0.25	0.83	ug/L	
1,2,4-Trimethylbenzene		1129	0.13	0.10	0.33	ug/L	
1,3,5-Trimethylbenzene		1129	<0.10	0.10	0.33	ug/L	
Vinyl Chloride		1129	<0.25	0.25	0.83	ug/L	
Xylenes, Total		1129	0.26	0.25	0.83	ug/L	
Surr: Dibromofluoromethane		1129	100.0	n/a	n/a	%	
Surr: Toluene-d8		1129	95.6	n/a	n/a	%	
Surr: Bromofluorobenzene		1129	94.0	n/a	n/a	%	
VOC - AQUEOUS - EPA 8260B							
Benzene		1130	<0.10	0.10	0.33	ug/L	
Bromobenzene		1130	<0.25	0.25	0.83	ug/L	
Bromochloromethane		1130	<0.25	0.25	0.83	ug/L	
Bromodichloromethane		1130	<0.25	0.25	0.83	ug/L	
Bromoform		1130	<0.25	0.25	0.83	ug/L	
Bromomethane		1130	<0.25	0.25	0.83	ug/L	
n-Butylbenzene		1130	<0.25	0.25	0.83	ug/L	
sec-Butylbenzene		1130	<0.25	0.25	0.83	ug/L	
tert-Butylbenzene		1130	<0.25	0.25	0.83	ug/L	
Carbon Tetrachloride		1130	<0.25	0.25	0.83	ug/L	
Chlorobenzene		1130	<0.25	0.25	0.83	ug/L	
Chlorodibromomethane		1130	<0.25	0.25	0.83	ug/L	
Chloroethane		1130	<0.25	0.25	0.83	ug/L	
Chloroform		1130	<0.25	0.25	0.83	ug/L	
Chloromethane		1130	<0.25	0.25	0.83	ug/L	
2-Chlorotoluene		1130	<0.10	0.10	0.33	ug/L	
4-Chlorotoluene		1130	<0.25	0.25	0.83	ug/L	
1,2-Dibromo-3-Chloropropane		1130	<0.25	0.25	0.83	ug/L	
1,2-Dibromoethane (EDB)		1130	<0.25	0.25	0.83	ug/L	
Dibromomethane		1130	<0.25	0.25	0.83	ug/L	
1,2-Dichlorobenzene		1130	<0.25	0.25	0.83	ug/L	
1,3-Dichlorobenzene		1130	<0.25	0.25	0.83	ug/L	
1,4-Dichlorobenzene		1130	<0.25	0.25	0.83	ug/L	
Dichlorodifluoromethane		1130	<0.25	0.25	0.83	ug/L	

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QUALITY CONTROL REPORT

BLANKS

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units	Date Prepped
1,1-Dichloroethane		1130	<0.25	0.25	0.83	ug/L	
1,2-Dichloroethane		1130	<0.25	0.25	0.83	ug/L	
1,1-Dichloroethene		1130	<0.25	0.25	0.83	ug/L	
cis-1,2-Dichloroethene		1130	<0.25	0.25	0.83	ug/L	
trans-1,2-Dichloroethene		1130	<0.25	0.25	0.83	ug/L	
1,2-Dichloropropane		1130	<0.25	0.25	0.83	ug/L	
1,3-Dichloropropane		1130	<0.25	0.25	0.83	ug/L	
2,2-Dichloropropane		1130	<0.25	0.25	0.83	ug/L	
1,1-Dichloropropene		1130	<0.25	0.25	0.83	ug/L	
cis-1,3-Dichloropropene		1130	<0.25	0.25	0.83	ug/L	
trans-1,3-Dichloropropene		1130	<0.25	0.25	0.83	ug/L	
Di-isopropyl ether		1130	<0.25	0.25	0.83	ug/L	
Ethylbenzene		1130	<0.25	0.25	0.83	ug/L	
Hexachlorobutadiene		1130	<0.25	0.25	0.83	ug/L	
Isopropylbenzene		1130	<0.25	0.25	0.83	ug/L	
p-Isopropyltoluene		1130	<0.25	0.25	0.83	ug/L	
Methylene Chloride		1130	<0.25	0.25	0.83	ug/L	
Methyl-t-butyl ether		1130	<0.25	0.25	0.83	ug/L	
Naphthalene		1130	<0.10	0.10	0.33	ug/L	
n-Propylbenzene		1130	<0.25	0.25	0.83	ug/L	
Styrene		1130	<0.25	0.25	0.83	ug/L	
1,1,1,2-Tetrachloroethane		1130	<0.25	0.25	0.83	ug/L	
1,1,2,2-Tetrachloroethane		1130	<0.25	0.25	0.83	ug/L	
Tetrachloroethene		1130	<0.25	0.25	0.83	ug/L	
Toluene		1130	<0.10	0.10	0.33	ug/L	
1,2,3-Trichlorobenzene		1130	<0.25	0.25	0.83	ug/L	
1,2,4-Trichlorobenzene		1130	<0.25	0.25	0.83	ug/L	
1,1,1-Trichloroethane		1130	<0.25	0.25	0.83	ug/L	
1,1,2-Trichloroethane		1130	<0.25	0.25	0.83	ug/L	
Trichloroethene		1130	<0.25	0.25	0.83	ug/L	
Trichlorofluoromethane		1130	<0.25	0.25	0.83	ug/L	
1,2,3-Trichloropropane		1130	<0.25	0.25	0.83	ug/L	
1,2,4-Trimethylbenzene		1130	<0.10	0.10	0.33	ug/L	
1,3,5-Trimethylbenzene		1130	<0.10	0.10	0.33	ug/L	
Vinyl Chloride		1130	<0.25	0.25	0.83	ug/L	
Xylenes, Total		1130	<0.25	0.25	0.83	ug/L	
Surr: Dibromofluoromethane		1130	98.4	n/a	n/a	%	
Surr: Toluene-d8		1130	97.8	n/a	n/a	%	
Surr: Bromofluorobenzene		1130	99.8	n/a	n/a	%	

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WDNR No. 128053530

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Analyte	Prep Batch Number	Run Batch Number	LCS Amount	Units	LCS Result	LCSD Result	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	Relative Percent Difference
GRO - AQUEOUS		1535	200.0	ug/L	213.9	224.4	107.0	112.2	80 - 120	4.7
GRO - AQUEOUS		1536	200.0	ug/L	221.2	214.2	110.6	107.1	80 - 120	3.2

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QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

12/15/1997

Mr. Jim Kangas
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 97.11571
Account No: 28500

Job Description: 97.353

Analyte	Prep Batch Number	Run Batch Number	Sample Result	Spike Amount	Units	Matrix Spike Result	MSD Result	MS Percent Recovery	MSD Percent Recovery	Control Limits	Relative Percent Difference
Lead, Dissolved, GFAA		1269	<0.00089	0.0200	mg/L	0.01810	0.0182	90.5	91.3	75 - 129	0.9
VOC - AQUEOUS - EPA 8260B											
Benzene		1127	<0.10	50.0	ug/L	52.5	52.9	105.0	105.8	86 - 115	0.8
Chlorobenzene		1127	<0.25	50.0	ug/L	51.8	52.2	103.6	104.4	82 - 116	0.8
1,1-Dichloroethene		1127	<0.25	50.0	ug/L	56.7	56.6	113.4	113.2	74 - 132	0.2
Ethylbenzene		1127	<0.25	50.0	ug/L	51.8	52.5	103.6	105.0	81 - 114	1.3
Methyl-t-butyl ether		1127	<0.25	50.0	ug/L	53.5	54.5	107.0	109.0	68 - 132	1.9
Toluene		1127	0.11	50.0	ug/L	50.5	50.9	100.8	101.6	83 - 114	0.8
Trichloroethene		1127	<0.25	50.0	ug/L	53.2	53.1	106.4	106.2	77 - 120	0.2
1,2,4-Trimethylbenzene		1127	<0.10	50.0	ug/L	52.4	53.0	104.8	106.0	75 - 116	1.1
1,3,5-Trimethylbenzene		1127	<0.10	50.0	ug/L	54.0	54.7	108.0	109.4	77 - 115	1.3
Xylenes, Total		1127	<0.25	150	ug/L	161	161	107.3	107.3	84 - 112	0.0
Surr: Dibromofluoromethane		1127	51.8	50.0	%	51.7	51.5	103.4	103.0	88 - 118	0.4
Surr: Toluene-d8		1127	46.3	50.0	%	47.8	47.8	95.6	95.6	92 - 107	0.0
Surr: Bromofluorobenzene		1127	47.1	50.0	%	48.0	48.4	96.0	96.8	84 - 115	0.8
VOC - AQUEOUS - EPA 8260B											
Benzene		1129	<0.10	50.0	ug/L	49.6	50.2	99.2	100.4	86 - 115	1.1
Chlorobenzene		1129	<0.25	50.0	ug/L	52.0	52.4	104.0	104.8	82 - 116	0.8
1,1-Dichloroethene		1129	<0.25	50.0	ug/L	56.0	55.2	112.0	110.4	74 - 132	1.4
Ethylbenzene		1129	<0.25	50.0	ug/L	52.3	52.6	104.6	105.2	81 - 114	0.6
Methyl-t-butyl ether		1129	<0.25	50.0	ug/L	50.7	50.7	101.4	101.4	68 - 132	0.0
Toluene		1129	0.20	50.0	ug/L	50.5	51.1	100.6	101.8	83 - 114	1.2
Trichloroethene		1129	<0.25	50.0	ug/L	51.0	51.7	102.0	103.4	77 - 120	1.4
1,2,4-Trimethylbenzene		1129	0.12	50.0	ug/L	52.3	52.0	104.4	103.8	75 - 116	0.6
1,3,5-Trimethylbenzene		1129	<0.10	50.0	ug/L	54.3	54.3	108.6	108.6	77 - 115	0.0
Xylenes, Total		1129	<0.25	150	ug/L	162	163	108.0	108.7	84 - 112	0.6
Surr: Dibromofluoromethane		1129	49.5	50.0	%	49.9	50.0	99.8	100.0	88 - 118	0.1
Surr: Toluene-d8		1129	47.5	50.0	%	49.1	49.4	98.2	98.8	92 - 107	0.6
Surr: Bromofluorobenzene		1129	46.1	50.0	%	47.4	47.4	94.8	94.8	84 - 115	0.0

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WDNR No. 128053530

REC'D JUL 17 1998

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998

Job No: 98.06050

Enclosed are the Analytical and Quality Control reports for the following samples submitted for analysis:

Sample Number	Sample Description	Date Taken	Date Received
305399	MW-1 97.353	07/01/1998	07/07/1998
305400	MW-2 97.353	07/01/1998	07/07/1998
305401	MW-3 97.353	07/01/1998	07/07/1998
305402	MW-4 97.353	07/01/1998	07/07/1998
305403	MW-5 97.353	07/01/1998	07/07/1998
305404	MW-10 97.353	07/01/1998	07/07/1998
305405	Trip Blank 97.353	07/01/1998	07/07/1998

CASE NARRATIVE

Samples 305399 and 305404 each contained free product. Both samples were analyzed multiple times with inconsistant results.

All soil samples are reported on a dry weight basis. The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

A = Analyzed/extracted past hold time
C = Standard outside of control limits
F = Sample filtered in lab
H = Late eluting hydrocarbons present
J = Estimated concentration
M = Matrix interference
Q = Result confirmed via re-analysis
T = Does not match typical pattern
W = BOD re-set due to dilution
B = Blank is contaminated
D = Diluted for analysis
G = Received past hold time
I = Improperly handled sample
L = Common lab solvent and contaminant
P = Improperly preserved sample
S = Sediment present
X = Unidentified compound(s) present
Z = Internal standard outside limits

Dan Mulany
Project Manager

Paul P. Jurno
QA Coordinator

KWB 7/22/98

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305399
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-1 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 10:30 Date Received: 07/07/1998

Parameter		Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS								
Benzene		22,000	ug/L	0.13	0.44	SW 8020	07/13/1998	4838
Ethylbenzene		4,000	ug/L	0.22	0.70	SW 8020	07/13/1998	4838
Methyl-t-butyl ether		<80	ug/L	0.16	0.53	SW 8020	07/13/1998	4838
Toluene		49,000	ug/L	0.20	0.64	SW 8020	07/13/1998	4838
1,2,4-Trimethylbenzene		62,000	ug/L	0.22	0.71	SW 8020	07/13/1998	4838
1,3,5-Trimethylbenzene		14,000	ug/L	0.29	0.92	SW 8020	07/13/1998	4838
Xylenes, Total		30,000	ug/L	0.23	0.82	SW 8020	07/13/1998	4838
GRO	H,J	1,120,000	ug/L	50	50	WDNR	07/13/1998	4838
Surr: Bromofluorobenzene		101.0	%	n/a	n/a	SW 8020	07/13/1998	4838

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305400
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-2 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 10:45 Date Received: 07/07/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	07/13/1998	4838
Ethylbenzene	0.25	ug/L	0.22	0.70	SW 8020	07/13/1998	4838
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	07/13/1998	4838
Toluene	0.55	ug/L	0.20	0.64	SW 8020	07/13/1998	4838
1,2,4-Trimethylbenzene	2.1	ug/L	0.22	0.71	SW 8020	07/13/1998	4838
1,3,5-Trimethylbenzene	0.60	ug/L	0.29	0.92	SW 8020	07/13/1998	4838
Xylenes, Total	2.1	ug/L	0.23	0.82	SW 8020	07/13/1998	4838
GRO	<50	ug/L	50	50	WDNR	07/13/1998	4838
Surr: Bromofluorobenzene	101.0	%	n/a	n/a	SW 8020	07/13/1998	4838

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305401
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-3 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 11:00 Date Received: 07/07/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	07/13/1998	4838
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	07/13/1998	4838
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	07/13/1998	4838
Toluene	<0.20	ug/L	0.20	0.64	SW 8020	07/13/1998	4838
1,2,4-Trimethylbenzene	0.29	ug/L	0.22	0.71	SW 8020	07/13/1998	4838
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	07/13/1998	4838
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	07/13/1998	4838
GRO	<50	ug/L	50	50	WDNR	07/13/1998	4838
Surr: Bromofluorobenzene	100.5	%	n/a	n/a	SW 8020	07/13/1998	4838

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305402
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-4 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 11:15 Date Received: 07/07/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	07/13/1998	4838
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	07/13/1998	4838
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	07/13/1998	4838
Toluene	0.46	ug/L	0.20	0.64	SW 8020	07/13/1998	4838
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	07/13/1998	4838
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	07/13/1998	4838
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	07/13/1998	4838
GRO	<50	ug/L	50	50	WDNR	07/13/1998	4838
Surr: Bromofluorobenzene	100.5	%	n/a	n/a	SW 8020	07/13/1998	4838

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305403
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-5 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 11:30 Date Received: 07/07/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	0.17	ug/L	0.13	0.44	SW 8020	07/13/1998	4838
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	07/13/1998	4838
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	07/13/1998	4838
Toluene	0.31	ug/L	0.20	0.64	SW 8020	07/13/1998	4838
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	07/13/1998	4838
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	07/13/1998	4838
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	07/13/1998	4838
GRO	<50	ug/L	50	50	WDNR	07/13/1998	4838
Surr: Bromofluorobenzene	99.0	%	n/a	n/a	SW 8020	07/13/1998	4838

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305404
Account No: 28500
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JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-10 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 11:45 Date Received: 07/07/1998

Parameter		Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS								
Benzene		9,000	ug/L	0.13	0.44	SW 8020	07/14/1998	4841
Ethylbenzene		788,000	ug/L	0.22	0.70	SW 8020	07/14/1998	4841
Methyl-t-butyl ether		<2,000	ug/L	0.16	0.53	SW 8020	07/14/1998	4841
Toluene		166,000	ug/L	0.20	0.64	SW 8020	07/14/1998	4841
1,2,4-Trimethylbenzene	J	12,700,000	ug/L	0.22	0.71	SW 8020	07/14/1998	4841
1,3,5-Trimethylbenzene	J	3,840,000	ug/L	0.29	0.92	SW 8020	07/14/1998	4841
Xylenes, Total		6,890,000	ug/L	0.23	0.82	SW 8020	07/14/1998	4841
GRO	H,J	116,000,000	ug/L	50	50	WDNR	07/14/1998	4841
Surr: Bromofluorobenzene	M	123.0	%	n/a	n/a	SW 8020	07/14/1998	4841

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ANALYTICAL REPORT

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

07/15/1998
Job No: 98.06050
Sample No: 305405
Account No: 28500
Page 8

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Trip Blank 97.353
Rec'd 2 degrees C

Date Taken: 07/01/1998 11:45 Date Received: 07/07/1998

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	07/13/1998	4838
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	07/13/1998	4838
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	07/13/1998	4838
Toluene	0.33	ug/L	0.20	0.64	SW 8020	07/13/1998	4838
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	07/13/1998	4838
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	07/13/1998	4838
Xylenes, Total	0.43	ug/L	0.23	0.82	SW 8020	07/13/1998	4838
Surr: Bromofluorobenzene	100.5	%	n/a	n/a	SW 8020	07/13/1998	4838

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QUALITY CONTROL REPORT

BLANKS

07/15/1998

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 98.06050
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units	Date Prepped
PVOC - AQUEOUS							
Benzene		4838	<0.13	0.13	0.44	ug/L	
Ethylbenzene		4838	<0.22	0.22	0.70	ug/L	
Methyl-t-butyl ether		4838	<0.16	0.16	0.53	ug/L	
Toluene		4838	<0.20	0.20	0.64	ug/L	
1,2,4-Trimethylbenzene		4838	<0.22	0.22	0.71	ug/L	
1,3,5-Trimethylbenzene		4838	<0.29	0.29	0.92	ug/L	
Xylenes, Total		4838	<0.23	0.23	0.82	ug/L	
GRO		4838	<50	50	50	ug/L	
Surr: Bromofluorobenzene		4838	102.5	n/a	n/a	%	
PVOC - AQUEOUS							
Benzene		4841	<0.13	0.13	0.44	ug/L	
Ethylbenzene		4841	<0.22	0.22	0.70	ug/L	
Methyl-t-butyl ether		4841	<0.16	0.16	0.53	ug/L	
Toluene		4841	<0.20	0.20	0.64	ug/L	
1,2,4-Trimethylbenzene		4841	<0.22	0.22	0.71	ug/L	
1,3,5-Trimethylbenzene		4841	<0.29	0.29	0.92	ug/L	
Xylenes, Total		4841	<0.23	0.23	0.82	ug/L	
GRO		4841	<50	50	50	ug/L	
Surr: Bromofluorobenzene		4841	101.5	n/a	n/a	%	

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QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

07/15/1998

Mr. Peter Jacobs
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 98.06050
Account No: 28500

Job Description: 97.353

Analyte	Prep Batch Number	Run Batch Number	LCS Amount	Units	LCS Result	LCSD Result	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	Relative Percent Difference
PVOC - AQUEOUS										
Benzene		4838	20.0	ug/L	19.6	19.6	98.0	98.0	80 - 120	0.0
Ethylbenzene		4838	20.0	ug/L	19.7	19.6	98.5	98.0	80 - 120	0.5
Methyl-t-butyl ether		4838	20.0	ug/L	18.1	19.0	90.5	95.0	80 - 120	4.9
Toluene		4838	20.0	ug/L	19.6	19.7	98.0	98.5	80 - 120	0.5
1,2,4-Trimethylbenzene		4838	20.0	ug/L	19.7	19.6	98.5	98.0	80 - 120	0.5
1,3,5-Trimethylbenzene		4838	20.0	ug/L	20.0	19.8	100.0	99.0	80 - 120	0.9
Xylenes, Total		4838	60.0	ug/L	59.9	60.4	99.8	100.7	80 - 120	0.8
GRO		4838	200.0	ug/L	190.2	177.2	95.1	88.6	80 - 120	7.1
Surr: Bromofluorobenzene		4838	20.0	%	20.3	20.8	101.5	104.0	80 - 120	2.4
PVOC - AQUEOUS										
Benzene		4841	20.0	ug/L	20.0	20.8	100.0	104.0	80 - 120	3.9
Ethylbenzene		4841	20.0	ug/L	20.2	20.5	101.0	102.5	80 - 120	1.5
Methyl-t-butyl ether		4841	20.0	ug/L	18.7	20.0	93.5	100.0	80 - 120	6.6
Toluene		4841	20.0	ug/L	20.1	20.6	100.5	103.0	80 - 120	2.5
1,2,4-Trimethylbenzene		4841	20.0	ug/L	20.1	20.3	100.5	101.5	80 - 120	1.0
1,3,5-Trimethylbenzene		4841	20.0	ug/L	20.5	20.7	102.5	103.5	80 - 120	1.0
Xylenes, Total		4841	60.0	ug/L	61.3	62.1	102.2	103.5	80 - 120	1.3
GRO		4841	200.0	ug/L	209.1	199.2	104.6	99.6	80 - 120	4.8
Surr: Bromofluorobenzene		4841	20.0	%	20.5	20.3	102.5	101.5	80 - 120	1.0

NET® NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY: FMI / Milwaukee
ADDRESS:
PHONE: 414 549 6898 FAX:
PROJECT NAME/LOCATION:
PROJECT NUMBER: 97.353
PROJECT MANAGER: MTA

REPORT TO:
INVOICE TO: ST97353 5004
P.O. NO.: 058
NET QUOTE NO.:

SAMPLED BY (PRINT NAME): MATT ALLEMA
SIGNATURE:
(PRINT NAME)
SIGNATURE

ANALYSES

To assist us in selecting the proper method
Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___
Is this work being conducted for regulatory enforcement action? Yes ___ No ___
Which regulations apply: RCRA ___ NPDES Wastewater ___ UST X Drinking Water ___ Other ___ None ___

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers: HCl (4-40ml)	NaOH	HNO_3	H_2SO_4	OTHER	PVOC	GRO									COMMENTS
7/1/98	10:30 AM	MW-1	H2O	X		X					X	X									1/4 w/h.s.
	10:45	MW-2																			4/4 w/h.s.
	11:00	MW-3																			4/4 w/h.s.
	11:15	MW-4																			4/4 w/h.s.
	11:30	MW-5																			4/4 w/h.s.
	11:45	MW-10																			2/4 w/h.s.
	11:45	Trip Blank																			1-40ml w/h.s.

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? YES / NO
COC SEALS PRESENT AND INTACT? YES / NO
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 2°C
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS
DATE: 7/8 8:13

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
	7/2/98	8:30	7798 A Hassanlu 1050	7798 A Hassanlu 1630			A Voigt 7/8/98 1010

METHOD OF SHIPMENT: NET
REMARKS:

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

LABORATORY REPORT REVIEW SUMMARY

Analytical Laboratory Oversight Group

FMI Project Number: 97.353

Unique Lab Project Number: 98.06050

Reviewed By: KWB

COMMENTS:

LAB BLANKS & SPIKE CHECKED

TOLUENE & XYLENES HITS IN TRIP BLANK

LOW LEVEL TOLUENE HITS THROUGHOUT SAMPLES

SAMPLE VIALS HAD HEADSPACE

high levels of contaminants in
2 sampler

** Attach to above-referenced laboratory report - **for internal use only** **

OK
BCK

ATTACHMENT D

UST Closure Assessment Soil Sample Laboratory Analytical Report

7874 7003

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

REC'D JAN 4 - 1999

ANALYTICAL AND QUALITY CONTROL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/29/1998

Job No: 98.11889

Enclosed are the Analytical and Quality Control reports for the following samples submitted for analysis:

Sample Number	Sample Description	Date Taken	Date Received
330172	SA-1 97.353	12/09/1998	12/11/1998
330173	SA-2 97.353	12/09/1998	12/11/1998
330174	SA-3 97.353	12/09/1998	12/11/1998
330175	SA-4 97.353	12/09/1998	12/11/1998
330176	MeOH Blank 97.353	12/09/1998	12/11/1998

Argetsinger's

All soil samples are reported on a dry weight basis. DNR Guidance for soil suggests uncertainty for volatiles results between 25 and 60 ug/kg. The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

A = Analyzed/extracted past hold time
C = Standard outside of control limits
G = Received past hold time
I = Improperly handled sample
L = Common lab solvent and contaminant
P = Improperly preserved sample
T = Does not match typical pattern
Z = Internal standard outside limits

B = Blank is contaminated
D = Diluted for analysis
H = Late eluting hydrocarbons present
J = Estimated concentration
M = Matrix interference
Q = Result confirmed via re-analysis
X = Unidentified compound(s) present

Project Manager

QA Coordinator

NATIONAL ENVIRONMENTAL TESTING, INC.

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Watertown, WI 53094

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/29/1998
Job No: 98.11889
Sample No: 330172
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: SA-1 97.353
Rec'd on Ice

Date Taken: 12/09/1998 08:45 Date Received: 12/11/1998

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total		90.7	%	n/a	SW 5030	12/21/1998	2599
RO - NONAQUEOUS	H	1,870	mg/kg	5.0	WDNR	12/23/1998	1408

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/29/1998
Job No: 98.11889
Sample No: 330173
Account No: 28500
Page 3

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: SA-2 97.353
Rec'd on Ice

Date Taken: 12/09/1998 09:00 Date Received: 12/11/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	92.9	%	n/a	SW 5030	12/21/1998	2599
RO - NONAQUEOUS	<5.4	mg/kg	5.0	WDNR	12/23/1998	1408

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/29/1998
Job No: 98.11889
Sample No: 330174
Account No: 28500
Page 4

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: SA-3 97.353
Rec'd on Ice

Date Taken: 12/09/1998 09:10 Date Received: 12/11/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
lids, Total	94.6	%	n/a	SW 5030	12/21/1998	2599
O - NONAQUEOUS	6.6	mg/kg	5.0	WDNR	12/23/1998	1408

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/29/1998
Job No: 98.11889
Sample No: 330175
Account No: 28500
Page 5

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: SA-4 97.353
Rec'd on Ice

Date Taken: 12/09/1998 09:20 Date Received: 12/11/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	93.9	%	n/a	SW 5030	12/21/1998	2599
RO - NONAQUEOUS	<5.3	mg/kg	5.0	WDNR	12/23/1998	1408

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/29/1998
Job No: 98.11889
Sample No: 330176
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MeOH Blank 97.353
Rec'd on Ice

Date Taken: 12/09/1998 Date Received: 12/11/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
RO - NONAQUEOUS	<5.0	mg/kg	5.0	WDNR	12/23/1998	1408

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WDNR No. 128053530

QUALITY CONTROL REPORT

BLANKS

12/29/1998

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 98.11889
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	Reporting Limit	Units
GRO - NONAQUEOUS		1408	<5.0	5.0	mg/kg

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WDNR No. 128053530

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

12/29/1998

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 98.11889
Account No: 28500

Job Description: 97.353

Analyte	Prep Batch Number	Run Batch Number	LCS Amount	Units	LCS Result	LCSD Result	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	Relative Percent Difference
GRO - NONAQUEOUS		1408	50.0	mg/kg	51.4	51.1	102.8	102.2	80 - 120	0.6

ATTACHMENT E

WDNR Form Notification to Dispose of Petroleum Contaminated Soil

State of Wisconsin
Department of Natural Resources

NOTIFICATION TO TREAT OR DISPOSE OF PETROLEUM CONTAMINATED SOIL & WATER

Form 4500-168 2-98

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 chapters 285, 289, and 291, Wis. Stats. and may result in forfeitures of not less than $10 or more than $25,000 for each violation, pursuant to ss. 285.87(1), 291.97(1), and 299.97, 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. 291.97(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 Region 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: AR GETSINGER'S IGA SITE Jct. Hwy. 27 and Cnty Rd CC Couderay, WI 54828	Date of Form Completion: 7/19/99
Site Number: BRRTS ID NO. 03-58-170214 PECFA ID NO 54828-0145-70	Do Other Remediation Systems Exist at This Site: ___ Yes X No
County: SAWYER	Site Type: X LUST ___ ERP ___ CERCLA ___ Other, Explain:
Responsible Party Name & Address: Mr Norm Argetsinger P.O. BOX 145 COUDERAY, WISCONSIN 54828	Responsible Party Signature: [signature] Telephone Number: (715) 945-2721
Consulting Firm Name & Address: ENVIROGEN, INC. 2835 NORTH GRANDVIEW BLVD P.O. BOX 90 PEWAUKEE WI, 53072-0090	Consulting Firm Contact: BRIAN BJODSTRUP Telephone Number: (414) 549-6898

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

Type of Contamination: X Gasoline ___ Diesel ___ Fuel Oil ___ Waste Oil ___ Chlorinated Organics ___ Other: _____

Soil Concentration:

GRO:	1870	mg/kg/10^6	x	2800 lb/yd^3	x	464	yd^3	=	2430 lb
DRO:		mg/kg/10^6	x	2800 lb/yd^3	x		yd^3	=	lb
Benzene:	29.500	mg/kg/10^6	x	2800 lb/yd^3	x	464	yd^3	=	38.3 lb
Chlorinated Organics:		mg/kg/10^6	x	2800 lb/yd^3	x		yd^3	=	lb
Other:		mg/kg/10^6	x	2800 lb/yd^3	x		yd^3	=	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: TIMBERLINE TRAIL N4581 HUTCHINSON ROAD WEYERHAEUSER WI 54895	Facility ID: 03787
	Air Pollution Control Permit Number: —
Facility Contact: TINA HULTMAN	Facility Located in 10-county Area in Southeast Wisconsin? ___ Yes X No
Telephone Number: (715) 868-7000	Distance to Nearest Residence or Business: 1/4 MILE
Headquarter Address: TIMBERLINE TRAIL N4581 HUTCHINSON ROAD WEYERHAEUSER WI 54895	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 :	Proposed Operations: (Attach Calculations)
Telephone Number: ( )	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)	Number of Emission Points:
Date of Test:	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.

ATTACHMENT F

Remedial Excavation Soil Sample Laboratory Analytical Report

787477-03

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

REC'D JAN 4 - 1999

ANALYTICAL AND QUALITY CONTROL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998

Job No: 98.11955

Enclosed are the Analytical and Quality Control reports for the following samples submitted for analysis:

Sample Number	Sample Description	Date Taken	Date Received
330561	A 97.353	12/09/1998	12/14/1998
330562	B 97.353	12/09/1998	12/14/1998
330563	C 97.353	12/09/1998	12/14/1998
330564	D 97.353	12/09/1998	12/14/1998
330565	E 97.353	12/09/1998	12/14/1998
330566	F 97.353	12/09/1998	12/14/1998
330567	G 97.353	12/09/1998	12/14/1998
330568	H 97.353	12/09/1998	12/14/1998
330569	I 97.353	12/09/1998	12/14/1998
330570	J 97.353	12/09/1998	12/14/1998
330571	K 97.353	12/09/1998	12/14/1998
330572	L 97.353	12/09/1998	12/14/1998
330573	MeOH Blank 97.353	12/09/1998	12/14/1998

All soil samples are reported on a dry weight basis. DNR Guidance for soil suggests uncertainty for volatiles results between 25 and 60 ug/kg. The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

A = Analyzed/extracted past hold time
C = Standard outside of control limits
G = Received past hold time
I = Improperly handled sample
L = Common lab solvent and contaminant
P = Improperly preserved sample
T = Does not match typical pattern
Z = Internal standard outside limits
B = Blank is contaminated
D = Diluted for analysis
H = Late eluting hydrocarbons present
J = Estimated concentration
M = Matrix interference
Q = Result confirmed via re-analysis
X = Unidentified compound(s) present

Dan Milenky
Project Manager

Paul F. Jenino
QA Coordinator

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330561
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: A 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 12:00 Date Received: 12/14/1998

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total		91.0	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS	H						
enzene		7,800	ug/kg	25	SW 8020	12/29/1998	2219
thylbenzene		11,000	ug/kg	25	SW 8020	12/29/1998	2219
ethyl-t-butyl ether		<140	ug/kg	25	SW 8020	12/29/1998	2219
oluene		38,500	ug/kg	25	SW 8020	12/29/1998	2219
,2,4-Trimethylbenzene		26,400	ug/kg	25	SW 8020	12/29/1998	2219
3,5-Trimethylbenzene		8,350	ug/kg	25	SW 8020	12/29/1998	2219
ylenes, Total		58,200	ug/kg	75	SW 8020	12/29/1998	2219
urr: Bromofluorobenzene		113.0	%	n/a	SW 8020	12/29/1998	2219

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ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330562
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: B 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 13:30 Date Received: 12/14/1998

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total		91.5	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS	H						
enzene		29,500	ug/kg	25	SW 8020	12/29/1998	2219
thylbenzene		72,100	ug/kg	25	SW 8020	12/29/1998	2219
ethyl-t-butyl ether		<540	ug/kg	25	SW 8020	12/29/1998	2219
oluene		220,000	ug/kg	25	SW 8020	12/29/1998	2219
,2,4-Trimethylbenzene		167,000	ug/kg	25	SW 8020	12/29/1998	2219
,3,5-Trimethylbenzene		52,500	ug/kg	25	SW 8020	12/29/1998	2219
ylenes, Total		384,000	ug/kg	75	SW 8020	12/29/1998	2219
urr: Bromofluorobenzene		111.0	%	n/a	SW 8020	12/29/1998	2219

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ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330563
Account No: 28500
Page 4

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: C 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 13:45 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	93.9	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS H						
enzene	192	ug/kg	25	SW 8020	12/29/1998	2219
thylbenzene	1,920	ug/kg	25	SW 8020	12/29/1998	2219
ethyl-t-butyl ether	<27	ug/kg	25	SW 8020	12/29/1998	2219
oluene	2,130	ug/kg	25	SW 8020	12/29/1998	2219
,2,4-Trimethylbenzene	10,600	ug/kg	25	SW 8020	12/29/1998	2219
,3,5-Trimethylbenzene	3,300	ug/kg	25	SW 8020	12/29/1998	2219
ylenes, Total	11,700	ug/kg	75	SW 8020	12/29/1998	2219
urr: Bromofluorobenzene	98.5	%	n/a	SW 8020	12/29/1998	2219

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ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330564
Account No: 28500
Page 5

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: D 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 13:45 Date Received: 12/14/1998

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
lids, Total		92.4	%	n/a	SW 5030	12/21/1998	2602
OC - NONAQUEOUS	H						
nzene		152	ug/kg	25	SW 8020	12/29/1998	2219
hylbenzene		76	ug/kg	25	SW 8020	12/29/1998	2219
thyl-t-butyl ether		<27	ug/kg	25	SW 8020	12/29/1998	2219
luene		368	ug/kg	25	SW 8020	12/29/1998	2219
2,4-Trimethylbenzene		195	ug/kg	25	SW 8020	12/29/1998	2219
3,5-Trimethylbenzene		64	ug/kg	25	SW 8020	12/29/1998	2219
lenes, Total		476	ug/kg	75	SW 8020	12/29/1998	2219
rr: Bromofluorobenzene		101.0	%	n/a	SW 8020	12/29/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
Fax: (920) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330565
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: E 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 14:15 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
lids, Total	96.7	%	n/a	SW 5030	12/21/1998	2602
OC - NONAQUEOUS						
enzene	65	ug/kg	25	SW 8020	12/29/1998	2219
thylbenzene	68	ug/kg	25	SW 8020	12/29/1998	2219
thyl-t-butyl ether	<26	ug/kg	25	SW 8020	12/29/1998	2219
luene	300	ug/kg	25	SW 8020	12/29/1998	2219
,2,4-Trimethylbenzene	228	ug/kg	25	SW 8020	12/29/1998	2219
3,5-Trimethylbenzene	70	ug/kg	25	SW 8020	12/29/1998	2219
lenes, Total	486	ug/kg	75	SW 8020	12/29/1998	2219
rr: Bromofluorobenzene	105.0	%	n/a	SW 8020	12/29/1998	2219

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330566
Account No: 28500
Page 7

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: F 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 14:30 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	96.5	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS						
enzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
thylbenzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
ethyl-t-butyl ether	<26	ug/kg	25	SW 8020	12/30/1998	2219
oluene	<26	ug/kg	25	SW 8020	12/30/1998	2219
,2,4-Trimethylbenzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
,3,5-Trimethylbenzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
ylenes, Total	<78	ug/kg	75	SW 8020	12/30/1998	2219
urr: Bromofluorobenzene	104.5	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330567
Account No: 28500
Page 8

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: G 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 15:00 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
lids, Total	93.6	%	n/a	SW 5030	12/21/1998	2602
OC - NONAQUEOUS						
enzene	28	ug/kg	25	SW 8020	12/30/1998	2219
thylbenzene	<27	ug/kg	25	SW 8020	12/30/1998	2219
thyl-t-butyl ether	<27	ug/kg	25	SW 8020	12/30/1998	2219
luene	67	ug/kg	25	SW 8020	12/30/1998	2219
,2,4-Trimethylbenzene	34	ug/kg	25	SW 8020	12/30/1998	2219
3,5-Trimethylbenzene	<27	ug/kg	25	SW 8020	12/30/1998	2219
lenes, Total	91	ug/kg	75	SW 8020	12/30/1998	2219
rr: Bromofluorobenzene	104.0	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330568
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: H 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 15:00 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
lids, Total	90.3	%	n/a	SW 5030	12/21/1998	2602
OC - NONAQUEOUS						
nzene	244	ug/kg	25	SW 8020	12/30/1998	2219
hylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
thyl-t-butyl ether	<28	ug/kg	25	SW 8020	12/30/1998	2219
luene	<28	ug/kg	25	SW 8020	12/30/1998	2219
2,4-Trimethylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
3,5-Trimethylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
lenes, Total	<83	ug/kg	75	SW 8020	12/30/1998	2219
rr: Bromofluorobenzene	100.5	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330569
Account No: 28500
Page 10

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: I 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 15:15 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	90.0	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS						
enzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
thylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
ethyl-t-butyl ether	<28	ug/kg	25	SW 8020	12/30/1998	2219
oluene	<28	ug/kg	25	SW 8020	12/30/1998	2219
,2,4-Trimethylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
,3,5-Trimethylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
ylenes, Total	<83	ug/kg	75	SW 8020	12/30/1998	2219
urr: Bromofluorobenzene	102.5	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330570
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: J 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 15:30 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	96.2	%	n/a	SW 5030	12/21/1998	2602
/OC - NONAQUEOUS						
enzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
thylbenzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
ethyl-t-butyl ether	<26	ug/kg	25	SW 8020	12/30/1998	2219
oluene	<26	ug/kg	25	SW 8020	12/30/1998	2219
,2,4-Trimethylbenzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
,3,5-Trimethylbenzene	<26	ug/kg	25	SW 8020	12/30/1998	2219
ylenes, Total	<78	ug/kg	75	SW 8020	12/30/1998	2219
urr: Bromofluorobenzene	102.0	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330571
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: K 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 15:30 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	89.7	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS						
enzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
thylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
ethyl-t-butyl ether	<28	ug/kg	25	SW 8020	12/30/1998	2219
oluene	<28	ug/kg	25	SW 8020	12/30/1998	2219
,2,4-Trimethylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
,3,5-Trimethylbenzene	<28	ug/kg	25	SW 8020	12/30/1998	2219
ylenes, Total	<84	ug/kg	75	SW 8020	12/30/1998	2219
urr: Bromofluorobenzene	108.0	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330572
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: L 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 16:00 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
olids, Total	95.2	%	n/a	SW 5030	12/21/1998	2602
VOC - NONAQUEOUS						
enzene	<29	ug/kg	25	SW 8020	12/30/1998	2219
thylbenzene	<29	ug/kg	25	SW 8020	12/30/1998	2219
ethyl-t-butyl ether	<29	ug/kg	25	SW 8020	12/30/1998	2219
oluene	<29	ug/kg	25	SW 8020	12/30/1998	2219
,2,4-Trimethylbenzene	<29	ug/kg	25	SW 8020	12/30/1998	2219
,3,5-Trimethylbenzene	<29	ug/kg	25	SW 8020	12/30/1998	2219
ylenes, Total	<87	ug/kg	75	SW 8020	12/30/1998	2219
urr: Bromofluorobenzene	103.0	%	n/a	SW 8020	12/30/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
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WDNR No. 128053530

ANALYTICAL REPORT

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

12/30/1998
Job No: 98.11955
Sample No: 330573
Account No: 28500

JOB DESCRIPTION: 97.353
PROJECT DESCRIPTION: Soil analysis
SAMPLE DESCRIPTION: MeOH Blank 97.353
Rec'd at 4 degrees C

Date Taken: 12/09/1998 15:45 Date Received: 12/14/1998

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
VOC - NONAQUEOUS						
enzene	<25	ug/kg	25	SW 8020	12/29/1998	2219
thylbenzene	<25	ug/kg	25	SW 8020	12/29/1998	2219
ethyl-t-butyl ether	<25	ug/kg	25	SW 8020	12/29/1998	2219
oluene	<25	ug/kg	25	SW 8020	12/29/1998	2219
2,4-Trimethylbenzene	<25	ug/kg	25	SW 8020	12/29/1998	2219
,3,5-Trimethylbenzene	<25	ug/kg	25	SW 8020	12/29/1998	2219
ylenes, Total	<75	ug/kg	75	SW 8020	12/29/1998	2219
urr: Bromofluorobenzene	101.5	%	n/a	SW 8020	12/29/1998	2219

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094

Tel: (920) 261-1660
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WDNR No. 128053530

QUALITY CONTROL REPORT

BLANKS

12/30/1998

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 98.11955
Account No: 28500

Job Description: 97.353

Parameter	Prep Batch	Run Batch	Blank Result	Reporting Limit	Units
PVOC - NONAQUEOUS					
Benzene		2219	<25	25	ug/kg
Ethylbenzene		2219	<25	25	ug/kg
Methyl-t-butyl ether		2219	<25	25	ug/kg
Toluene		2219	<25	25	ug/kg
1,2,4-Trimethylbenzene		2219	<25	25	ug/kg
1,3,5-Trimethylbenzene		2219	<25	25	ug/kg
Xylenes, Total		2219	<75	75	ug/kg
Surr: Bromofluorobenzene		2219	98.5	n/a	%

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
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Tel: (920) 261-1660
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WDNR No. 128053530

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

12/30/1998

Ms. Brooke Routhier
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 98.11955
Account No: 28500

Job Description: 97.353

Analyte	Prep Batch Number	Run Batch Number	LCS Amount	Units	LCS Result	LCSD Result	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	Relative Percent Difference
PVOC - NONAQUEOUS										
Benzene		2219	5000	ug/kg	4970	4940	99.4	98.8	80 - 120	0.6
Ethylbenzene		2219	5000	ug/kg	5040	4950	100.8	99.0	80 - 120	1.7
Methyl-t-butyl ether		2219	5000	ug/kg	4670	4640	93.4	92.8	80 - 120	0.6
Toluene		2219	5000	ug/kg	4960	4900	99.2	98.0	80 - 120	1.2
1,2,4-Trimethylbenzene		2219	5000	ug/kg	4910	4770	98.2	95.4	80 - 120	2.9
1,3,5-Trimethylbenzene		2219	5000	ug/kg	4990	4850	99.8	97.0	80 - 120	2.8
Xylenes, Total		2219	15000	ug/kg	15000	14700	100.0	98.0	80 - 120	1.9
Surr: Bromofluorobenzene		2219	20.0	%	20.0	20.1	100.0	100.5	80 -	0.5

ATTACHMENT G

Post-Remedial Groundwater Sample Laboratory Analytical Report

TestAmerica INCORPORATED

40789207-03

REC'D MAR 11 1999

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999

Job No: 99.01461

Enclosed are the Analytical and Quality Control reports for the following samples submitted for analysis:

Sample Number	Sample Description	Date Taken	Date Received
339302	MW-10 97353	02/23/1999	02/25/1999
339303	MW-2 97353	02/23/1999	02/25/1999
339304	MW-3 97353	02/23/1999	02/25/1999
339305	MW-4 97353	02/23/1999	02/25/1999
339306	MW-5 97353	02/23/1999	02/25/1999
339307	MW-11 97353	02/23/1999	02/25/1999
339308	Trip Blank 97353	02/23/1999	02/25/1999

The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

A = Analyzed/extracted past hold time
C = Standard outside of control limits
F = Sample filtered in lab
H = Late eluting hydrocarbons present
J = Estimated concentration
M = Matrix interference
Q = Result confirmed via re-analysis
T = Does not match typical pattern
W = BOD re-set due to dilution
B = Blank is contaminated
D = Diluted for analysis
G = Received past hold time
I = Improperly handled sample
L = Common lab solvent and contaminant
P = Improperly preserved sample
S = Sediment present
X = Unidentified compound(s) present
Z = Internal standard outside limits

Project Manager

QA Coordinator

602 COMMERCE DRIVE / WATERTOWN, WI 53094 / 920-261-1660 / FAX: 920-261-8120
WDNR NO. 128053530

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339302
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-10 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 11:00 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	78	ug/L	0.13	0.44	SW 8020	03/05/1999	5422
Ethylbenzene	9.3	ug/L	0.22	0.70	SW 8020	03/05/1999	5422
Methyl-t-butyl ether	7.2	ug/L	0.16	0.53	SW 8020	03/05/1999	5422
Toluene	22	ug/L	0.20	0.64	SW 8020	03/05/1999	5422
1,2,4-Trimethylbenzene	13	ug/L	0.22	0.71	SW 8020	03/05/1999	5422
1,3,5-Trimethylbenzene	9.7	ug/L	0.29	0.92	SW 8020	03/05/1999	5422
Xylenes, Total	130	ug/L	0.23	0.82	SW 8020	03/05/1999	5422
Surr: Bromofluorobenzene	106.5	%	n/a	n/a	SW 8020	03/05/1999	5422
Naphthalene	9.6	ug/L	0.46	1.6	SW 8020	03/05/1999	1229

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339303
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-2 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 09:00 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	03/05/1999	5422
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	03/05/1999	5422
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	03/05/1999	5422
Toluene	<0.20	ug/L	0.20	0.64	SW 8020	03/05/1999	5422
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	03/05/1999	5422
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	03/05/1999	5422
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	03/05/1999	5422
Surr: Bromofluorobenzene	100.0	%	n/a	n/a	SW 8020	03/05/1999	5422
Naphthalene	<0.46	ug/L	0.46	1.6	SW 8020	03/05/1999	1232

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339304
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-3 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 09:30 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	03/05/1999	5422
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	03/05/1999	5422
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	03/05/1999	5422
Toluene	<0.20	ug/L	0.20	0.64	SW 8020	03/05/1999	5422
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	03/05/1999	5422
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	03/05/1999	5422
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	03/05/1999	5422
Surr: Bromofluorobenzene	93.5	%	n/a	n/a	SW 8020	03/05/1999	5422
Naphthalene	<0.46	ug/L	0.46	1.6	SW 8020	03/05/1999	1229

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339305
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-4 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 10:00 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	03/05/1999	5422
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	03/05/1999	5422
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	03/05/1999	5422
Toluene	<0.20	ug/L	0.20	0.64	SW 8020	03/05/1999	5422
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	03/05/1999	5422
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	03/05/1999	5422
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	03/05/1999	54.2
Surr: Bromofluorobenzene	96.0	%	n/a	n/a	SW 8020	03/05/1999	5422
Naphthalene	<0.46	ug/L	0.46	1.6	SW 8020	03/05/1999	1229

TestAmerica
INCORPORATED

ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339306
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-5 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 10:30 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	03/05/1999	5422
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	03/05/1999	5422
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	03/05/1999	5422
Toluene	<0.20	ug/L	0.20	0.64	SW 8020	03/05/1999	5422
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	03/05/1999	5422
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	03/05/1999	5422
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	03/05/1999	5422
Surr: Bromofluorobenzene	96.0	%	n/a	n/a	SW 8020	03/05/1999	5422
Naphthalene	<0.46	ug/L	0.46	1.6	SW 8020	03/05/1999	1229

TestAmerica
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ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339307
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-11 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 11:30 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	72	ug/L	0.13	0.44	SW 8020	03/05/1999	5422
Ethylbenzene	6.6	ug/L	0.22	0.70	SW 8020	03/05/1999	5422
Methyl-t-butyl ether	9.2	ug/L	0.16	0.53	SW 8020	03/05/1999	5422
Toluene	25	ug/L	0.20	0.64	SW 8020	03/05/1999	5422
1,2,4-Trimethylbenzene	11	ug/L	0.22	0.71	SW 8020	03/05/1999	5422
1,3,5-Trimethylbenzene	11	ug/L	0.29	0.92	SW 8020	03/05/1999	5422
Xylenes, Total	120	ug/L	0.23	0.82	SW 8020	03/05/1999	5422
Surr: Bromofluorobenzene	107.5	%	n/a	n/a	SW 8020	03/05/1999	5422
Naphthalene	10	ug/L	0.46	1.6	SW 8020	03/05/1999	1229

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ANALYTICAL REPORT

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

03/08/1999
Job No: 99.01461
Sample No: 339308
Account No: 28500

JOB DESCRIPTION: 97353
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Trip Blank 97353
Rec'd 3 degrees C

Date/Time Taken: 02/23/1999 11:00 Date Received: 02/25/1999

Parameter	Results	Units	MDL	LOQ	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS							
Benzene	<0.13	ug/L	0.13	0.44	SW 8020	03/04/1999	5423
Ethylbenzene	<0.22	ug/L	0.22	0.70	SW 8020	03/04/1999	5423
Methyl-t-butyl ether	<0.16	ug/L	0.16	0.53	SW 8020	03/04/1999	5423
Toluene	<0.20	ug/L	0.20	0.64	SW 8020	03/04/1999	5423
1,2,4-Trimethylbenzene	<0.22	ug/L	0.22	0.71	SW 8020	03/04/1999	5423
1,3,5-Trimethylbenzene	<0.29	ug/L	0.29	0.92	SW 8020	03/04/1999	5423
Xylenes, Total	<0.23	ug/L	0.23	0.82	SW 8020	03/04/1999	5423
Surr: Bromofluorobenzene	96.5	%	n/a	n/a	SW 8020	03/04/1999	5423
Naphthalene	<1.1	ug/L	0.46	1.6	SW 8020	03/04/1999	1230

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QUALITY CONTROL REPORT
BLANKS

03/08/1999

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 99.01461
Account No: 28500

Job Description: 97353

Parameter	Prep Batch	Run Batch	Blank Result	MDL	LOQ	Units
PVOC - AQUEOUS						
Benzene		5422	<0.13	0.13	0.44	ug/L
Ethylbenzene		5422	<0.22	0.22	0.70	ug/L
Methyl-t-butyl ether		5422	<0.16	0.16	0.53	ug/L
Toluene		5422	<0.20	0.20	0.64	ug/L
1,2,4-Trimethylbenzene		5422	<0.22	0.22	0.71	ug/L
1,3,5-Trimethylbenzene		5422	<0.29	0.29	0.92	ug/L
Xylenes, Total		5422	<0.23	0.23	0.82	ug/L
Surr: Bromofluorobenzene		5422	96.5	n/a	n/a	%
PVOC - AQUEOUS						
Benzene		5423	<0.13	0.13	0.44	ug/L
Ethylbenzene		5423	<0.22	0.22	0.70	ug/L
Methyl-t-butyl ether		5423	<0.16	0.16	0.53	ug/L
Toluene		5423	<0.20	0.20	0.64	ug/L
1,2,4-Trimethylbenzene		5423	<0.22	0.22	0.71	ug/L
1,3,5-Trimethylbenzene		5423	<0.29	0.29	0.92	ug/L
Xylenes, Total		5423	<0.23	0.23	0.82	ug/L
Surr: Bromofluorobenzene		5423	95.5	n/a	n/a	%
Naphthalene		1229	<0.46	0.46	1.6	ug/L
Naphthalene		1230	<1.1	1.1	3.6	ug/L
Naphthalene		1232	<0.46	0.46	1.6	ug/L

Method blank results exceed control limits when results are higher than the highest of any of the following: 1 - The limit of detection; 2 - Five percent of the regulatory limit for that analyte; 3 - Five percent of the measured concentration in the sample. NR149.14 (3)d

TestAmerica
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QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

03/08/1999

Mr. Matt Alleva
FLUID MANAGEMENT, INC.
PO Box 90
Pewaukee, WI 53072

Job No: 99.01461
Account No: 28500

Job Description: 97353

Analyte	Prep Batch Number	Run Batch Number	LCS Amount	Units	LCS Result	LCSD Result	LCS Percent Recovery	LCSD Percent Recovery	Control Limits	Relative Percent Difference
PVOC - AQUEOUS										
Benzene		5422	20.0	ug/L	22.2	22.3	111.0	111.5	80 - 120	0.4
Ethylbenzene		5422	20.0	ug/L	22.4	22.3	112.0	111.5	80 - 120	0.4
Methyl-t-butyl ether		5422	20.0	ug/L	20.8	20.3	104.0	101.5	80 - 120	2.4
Toluene		5422	20.0	ug/L	22.2	22.3	111.0	111.5	80 - 120	0.4
1,2,4-Trimethylbenzene		5422	20.0	ug/L	22.8	22.6	114.0	113.0	80 - 120	0.9
1,3,5-Trimethylbenzene		5422	20.0	ug/L	23.0	22.8	115.0	114.0	80 - 120	0.9
Xylenes, Total		5422	60.0	ug/L	68.1	67.9	113.5	113.2	80 - 120	0.3
Surr: Bromofluorobenzene		5422	20.0	%	20.2	20.3	101.0	101.5	80 - 120	0.5
PVOC - AQUEOUS										
Benzene		5423	20.0	ug/L	20.5	20.0	102.5	100.0	80 - 120	2.5
Ethylbenzene		5423	20.0	ug/L	20.5	19.8	102.5	99.0	80 - 120	3.4
Methyl-t-butyl ether		5423	20.0	ug/L	20.6	21.1	103.0	105.5	80 - 120	2.4
Toluene		5423	20.0	ug/L	19.6	19.1	98.0	95.5	80 - 120	2.6
1,2,4-Trimethylbenzene		5423	20.0	ug/L	20.6	20.4	103.0	102.0	80 - 120	1.0
1,3,5-Trimethylbenzene		5423	20.0	ug/L	20.8	20.5	104.0	102.5	80 - 120	1.5
Xylenes, Total		5423	60.0	ug/L	62.1	61.5	103.5	102.5	80 - 120	1.0
Surr: Bromofluorobenzene		5423	20.0	%	19.3	21.0	96.5	105.0	80 - 120	8.3
Naphthalene		1229	20.0	ug/L	22.9	23.5	114.5	117.5	80 - 120	2.6
Naphthalene		1230	20.0	ug/L	21.5	22.4	107.5	112.0	80 - 120	4.1
Naphthalene		1232	20.0	ug/L	21.5	20.9	107.5	104.5	80 - 120	2.8

EN CHEM INC.

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REC'D JUN 03 1999

#1892691

- Analytical Report -

Project Name :

Project Number : 97353

WI DNR LAB ID : 405132750

Client: ENVIROGEN

Report Date : 6/1/99

Sample No.	Field ID	Collection Date	Sample No.	Field ID	Collection Date
892691-001	MW-10	5/20/99			
892691-002	MW-2	5/20/99			
892691-003	MW-3	5/20/99			
892691-004	MW-4	5/20/99			
892691-005	MW-5	5/20/99			
892691-006	TRIP BLANK	5/20/99			

The "Q" flag is present when a parameter has been detected below the LOQ. This indicates the results are qualified due to the uncertainty of the parameter concentration between the LOD and the LOQ.

Soil VOC detects are corrected for the total solids, unless otherwise noted.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.

J. Duranceau — 6/1/99

Approval Signature — Date

Lanie Woelfel — 6/1/99

Project Manager — Date

Form I
Daily Blank

Anal by: PMS
Anal date: 5/27/99
Blank #: 686-53
MS/MSD : 892204-083

	LOD	LOQ	RESULT	UNITS	Q_1
Methyl tert-butyl ether	0.22	0.73	ND	ug/L	
Benzene	0.26	0.87	ND	ug/L	
Toluene	0.21	0.70	ND	ug/L	
Ethylbenzene	0.24	0.80	ND	ug/L	
m/p-Xylene	0.97	3.2	ND	ug/L	
o-Xylene	0.37	1.2	ND	ug/L	
1,3,5-Trimethylbenzene	0.54	1.8	ND	ug/L	
1,2,4-Trimethylbenzene	0.86	2.9	ND	ug/L	
Naphthalene	0.89	3.0	ND	ug/L	
a,a,a-Trifluorotoluene			103	% recov	

B Analyte present in blank. Value in sample(s) may be suspect.
ND Not Detected

NA = Not Applicable
ND = Not Detected
686-53.XLS
6/1/99

Form III
MS - MSD Water

MS/MSD : 892204-083
Analysis by: PMS
Date: 5/27/99

Parameter	Parent Sample	Matrix Spike	Duplicate	Matrix Spike Recovery	Dupliate Spike Recovery	% RPD	LCL	UCL	RPD	Q_1	Q_2
Methyl tert-butyl Ether	0.475	19.594	19.321	96	94	1	81	109	16		
Benzene	5.506	24.342	24.181	94	93	1	85	118	17		
Toluene	1.847	20.894	20.593	95	94	2	87	116	17		
Ethylbenzene	12.718	32.025	31.880	97	96	1	89	126	18		
m/p-Xylenes	20.738	58.170	57.827	94	93	1	86	116	17		
o-Xylene	9.535	28.425	28.198	94	93	1	88	116	17		
1,3,5-Trimethylbenzene	3.941	22.521	22.123	93	91	2	85	116	18		
1,2,4-Trimethylbenzene	13.096	31.876	31.747	94	93	1	80	116	18		
Naphthalene	4.245	24.403	24.889	101	103	2	38	142	24		

Spike Amount (ppb) 20 40 for m/p Xylenes

Q_1 * Matrix Spike Recovery outside of established limits.

Q_2 * Relative Percent Difference outside of limits.

EN CHEM INC.

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- Analytical Report -

Project Name :

Project Number : 97353

Client : ENVIROGEN

Field ID : MW-10

Report Date : 6/1/99

Lab Sample Number : 892691-001

Collection Date : 5/20/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER **Prep Method:** SW846 5030B **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	100				%Recov		5/28/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		5/28/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		5/28/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		5/28/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		5/28/99	MOD 8021B
Toluene	< 0.21	0.21	0.67		ug/l		5/28/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		5/28/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		5/28/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		5/28/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		5/28/99	MOD 8021B

Organic Results

PVOC BLANK - WATER **Prep Method:** **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	686-53						5/27/99	

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- Analytical Report -

Project Name :

Project Number : 97353

Field ID : MW-2

Lab Sample Number : 892691-002

WI DNR LAB ID : 405132750

Client : ENVIROGEN

Report Date : 5/28/99

Collection Date : 5/20/99

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER **Prep Method:** SW846 5030B **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	102				%Recov		5/27/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		5/27/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		5/27/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		5/27/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		5/27/99	MOD 8021B
Toluene	< 0.21	0.21	0.67		ug/l		5/27/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		5/27/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		5/27/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		5/27/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		5/27/99	MOD 8021B

Organic Results

PVOC BLANK - WATER **Prep Method:** **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	686-53						5/27/99	

EN CHEM INC.

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- Analytical Report -

Project Name :

Project Number : 97353

Field ID : MW-3

Lab Sample Number : 892691-003

WI DNR LAB ID : 405132750

Client : ENVIROGEN

Report Date : 5/28/99

Collection Date : 5/20/99

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER — Prep Method: SW846 5030B — Prep Date: 5/25/99 — Analyst: PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	101				%Recov		5/27/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		5/27/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		5/27/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		5/27/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		5/27/99	MOD 8021B
Toluene	< 0.21	0.21	0.67		ug/l		5/27/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		5/27/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		5/27/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		5/27/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		5/27/99	MOD 8021B

Organic Results

PVOC BLANK - WATER — Prep Method: — Prep Date: 5/25/99 — Analyst: PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	686-53						5/27/99	

EN CHEM INC.

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- Analytical Report -

Project Name :

Project Number : 97353

Field ID : MW-4

Lab Sample Number : 892691-004

WI DNR LAB ID : 405132750

Client : ENVIROGEN

Report Date : 5/28/99

Collection Date : 5/20/99

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER **Prep Method:** SW846 5030B **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	101				%Recov		5/27/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		5/27/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		5/27/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		5/27/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		5/27/99	MOD 8021B
Toluene	< 0.21	0.21	0.67		ug/l		5/27/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		5/27/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		5/27/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		5/27/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		5/27/99	MOD 8021B

Organic Results

PVOC BLANK - WATER **Prep Method:** **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	686-53						5/27/99	

EN CHEM INC.

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- Analytical Report -

Project Name :

Project Number : 97353

Field ID : MW-5

Lab Sample Number : 892691-005

WI DNR LAB ID : 405132750

Client : ENVIROGEN

Report Date : 5/28/99

Collection Date : 5/20/99

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER **Prep Method:** SW846 5030B **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	102				%Recov		5/27/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		5/27/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		5/27/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		5/27/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		5/27/99	MOD 8021B
Toluene	< 0.21	0.21	0.67		ug/l		5/27/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		5/27/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		5/27/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		5/27/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		5/27/99	MOD 8021B

Organic Results

PVOC BLANK - WATER **Prep Method:** **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	686-53						5/27/99	

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Green Bay, WI 54302
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- Analytical Report -

Project Name :

Project Number : 97353

Field ID : TRIP BLANK

Lab Sample Number : 892691-006

WI DNR LAB ID : 405132750

Client : ENVIROGEN

Report Date : 5/28/99

Collection Date : 5/20/99

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER **Prep Method:** SW846 5030B **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	102				%Recov		5/27/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		5/27/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		5/27/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		5/27/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		5/27/99	MOD 8021B
Toluene	0.43	0.21	0.67		ug/l	Q	5/27/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		5/27/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		5/27/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		5/27/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		5/27/99	MOD 8021B

Organic Results

PVOC BLANK - WATER **Prep Method:** **Prep Date:** 5/25/99 **Analyst:** PMS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	686-53						5/27/99	

EN CHEM INC.
1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

REC'D SEP 08 1999

ARGETSINGER'S IGA ST 97353

- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client: ENVIROGEN

WI DNR LAB ID : 405132750

Sample No.	Field ID	Collection Date	Sample No.	Field ID	Collection Date
894984-001	MW-2	8/25/99			
894984-002	MW-3	8/25/99			
894984-003	MW-4	8/25/99			
894984-004	MW-5	8/25/99			
894984-005	MW-10	8/25/99			
894984-006	MW-100	8/25/99			
894984-007	TRIP	8/25/99			

The "Q" flag is present when a parameter has been detected below the LOQ. This indicates the results are qualified due to the uncertainty of the parameter concentration between the LOD and the LOQ.

Soil VOC detects are corrected for the total solids, unless otherwise noted.

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.

G. Duraceau — 9/3/99

Approval Signature — Date

Laurie Welfl — 9/7/99

Project Manager — Date

Form I
Daily Blank

Anal by: EGS
Anal date: 9/1/99
Blank #: 726-38
MS/MSD : 894983-001

	LOD	LOQ	RESULT	UNITS	Q_1
Methyl tert-butyl ether	0.22	0.73	ND	ug/L	
Benzene	0.26	0.87	ND	ug/L	
Toluene	0.21	0.70	ND	ug/L	
Ethylbenzene	0.24	0.80	ND	ug/L	
m/p-Xylene	0.97	3.2	ND	ug/L	
o-Xylene	0.37	1.2	ND	ug/L	
1,3,5-Trimethylbenzene	0.54	1.8	ND	ug/L	
1,2,4-Trimethylbenzene	0.86	2.9	ND	ug/L	
Naphthalene	0.89	3.0	ND	ug/L	
a,a,a-Trifluorotoluene			99	% recov	

B Analyte present in blank. Value in sample(s) may be suspect.
ND Not Detected

NA = Not Applicable
ND = Not Detected
726-38.XLS
9/3/99

Form III
MS - MSD Water

MS/MSD : 894983-001
Analysis by: EGS
Date: 9/1/99

Parameter	Parent Sample	Matrix Spike	Duplicate	Matrix Spike Recovery	Dupliate Spike Recovery	% RPD	LCL	UCL	RPD	Q_1	Q_2
Methyl tert-butyl Ether	0.000	18.695	18.832	93	94	1	81	109	16		
Benzene	0.000	19.608	19.810	98	99	1	85	118	17		
Toluene	0.000	19.789	20.080	99	100	1	87	116	17		
Ethylbenzene	0.000	19.772	20.143	99	101	2	89	126	18		
m/p-Xylenes	0.000	39.508	40.271	99	101	2	86	116	17		
o-Xylene	0.000	19.727	20.166	99	101	2	88	116	17		
1,3,5-Trimethylbenzene	0.000	18.872	19.384	94	97	3	85	116	18		
1,2,4-Trimethylbenzene	0.000	19.096	19.593	95	98	3	80	116	18		
Naphthalene	0.000	17.588	18.314	88	92	4	38	142	24		

Spike Amount (ppb) 20 40 for m/p Xylenes

Q_1 * Matrix Spike Recovery outside of established limits.

Q_2 * Relative Percent Difference outside of limits.

VOC Water Blanks
Anal by HW
Anal date:09/01/99
Blank #:702-82A
MS/MSD:702-82A

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.7	1.75	ND	ug/L	
1,1,1-Trichloroethane	0.3	0.75	ND	ug/L	
1,1,2,2-Tetrachloroethane	0.69	1.73	ND	ug/L	
1,1,2-Trichloroethane	0.61	1.53	ND	ug/L	
1,1-Dichloroethane	0.35	0.88	ND	ug/L	
1,1-Dichloroethene	0.43	1.08	ND	ug/L	
1,1-Dichloropropene	0.8	2	ND	ug/L	
1,2,3-Trichlorobenzene	0.47	1.18	ND	ug/L	
1,2,3-Trichloropropane	0.75	1.88	ND	ug/L	
1,2,4-Trichlorobenzene	0.27	0.68	ND	ug/L	
1,2,4-Trimethylbenzene	0.22	0.55	ND	ug/L	
1,2-Dibromo-3chloropropane	0.41	1.03	ND	ug/L	
1,2-Dibromoethane	0.39	0.98	ND	ug/L	
1,2-Dichlorobenzene	0.25	0.63	ND	ug/L	
1,2-Dichloroethane	0.37	0.93	ND	ug/L	
1,2-Dichloropropane	0.35	0.88	ND	ug/L	
1,3,5-Trimethylbenzene	0.27	0.68	ND	ug/L	
1,3-Dichlorobenzene	0.34	0.85	ND	ug/L	
1,3-Dichloropropane	0.42	1.05	ND	ug/L	
1,4-Dichlorobenzene	0.25	0.63	ND	ug/L	
2,2-Dichloropropane	0.36	0.9	ND	ug/L	
2-Chlorotoluene	0.31	0.78	ND	ug/L	
4-Chlorotoluene	0.32	0.8	ND	ug/L	
Benzene	0.27	0.68	ND	ug/L	
Bromobenzene	0.83	2.08	ND	ug/L	
Bromochloromethane	0.42	1.05	ND	ug/L	
Bromodichloromethane	0.3	0.75	ND	ug/L	
Bromoform	0.44	1.1	ND	ug/L	
Bromomethane	0.7	1.75	ND	ug/L	
Carbon Tetrachloride	0.34	0.85	ND	ug/L	
Chlorobenzene	0.23	0.58	ND	ug/L	
Chlorodibromomethane	0.42	1.05	ND	ug/L	
Chloroethane	0.54	1.35	ND	ug/L	
Chloroform	0.35	0.88	ND	ug/L	
Chloromethane	0.61	1.53	ND	ug/L	
cis-1,2-Dichloroethene	0.28	0.7	ND	ug/L	
cis-1,3-Dichloropropene	0.32	0.8	ND	ug/L	
Di-isopropyl ether	0.55	1.38	ND	ug/L	
Dibromomethane	0.53	1.33	ND	ug/L	
Dichlorodifluoromethane	0.47	1.18	ND	ug/L	
Ethylbenzene	0.32	0.8	ND	ug/L	
Hexachlorobutadiene	0.62	1.55	ND	ug/L	

Isopropylbenzene	0.26	0.65	ND	ug/L	
m/p-Xylene	0.43	1.08	ND	ug/L	
Methyl tert-butyl ether	0.32	0.8	ND	ug/L	
Methylene Chloride	0.36	0.9	1.04	ug/L	
n-Butylbenzene	0.29	0.73	ND	ug/L	
n-Propylbenzene	0.76	1.9	ND	ug/L	
Naphthalene	0.35	0.88	ND	ug/L	
o-Xylene	0.24	0.6	ND	ug/L	
p-Isopropyltoluene	0.24	0.6	ND	ug/L	
sec-Butylbenzene	0.29	0.73	ND	ug/L	
Styrene	0.17	0.43	ND	ug/L	
tert-Butylbenzene	0.32	0.8	ND	ug/L	
Tetrachloroethene	0.43	1.08	ND	ug/L	
Toluene	0.27	0.68	ND	ug/L	
trans-1,2-Dichloroethene	0.79	1.98	ND	ug/L	
trans-1,3-Dichloropropene	0.43	1.08	ND	ug/L	
Trichloroethene	0.37	0.93	ND	ug/L	
Trichlorofluoromethane	0.34	0.85	ND	ug/L	
Vinyl Chloride	0.2	0.5	ND	ug/L	
Acetone	1	2.5	ND	ug/L	
2-Butanone	0.89	2.23	ND	ug/L	
Dibromofluoromethane			101.68	% recov	
Toluene-d8			99.64	% recov	
4-Bromofluorobenzene			97.32	% recov	

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\2MNW0831.M
Title : SW846 Method 8260 Volatiles-Water
Last Update : Tue Aug 31 12:56:31 1999
Response via : Initial Calibration

Non-Spiked Sample: 09019907.D

	Spike Sample	Spike Duplicate Sample
File ID :	09019905.D	09019906.D
Sample :	MS94700-033 (702-82A)	MSD94700-033 (702-82A)
Acq Time:	1 Sep 99 8:38 am	1 Sep 99 9:07 am

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.0	50	44	45	88	91	3	11	30-153
Bromomethane	0.0	50	53	54	105	107	2	22	41-148
Dichlorodifluorometh	0.0	50	35	36	70	73	4	10	14-176
Vinyl Chloride	0.0	50	50	52	100	105	4	22	44-151
Chloroethane	0.0	50	52	54	105	107	3	10	57-138
Methylene Chloride	1.3	50	52	53	101	103	2	33	68-128
Trichlorofluorometha	0.0	50	55	56	109	111	2	11	88-137
Acetone	0.0	50	49	53	99	106	7	20	50-150
1,1-Dichloroethene	0.0	50	54	56	108	112	4	10	76-136
trans-1,2-Dichloroet	0.0	50	57	59	114	118	3	10	80-126
Methyl tert-butyl et	0.0	50	51	53	101	106	4	10	77-117
1,1-Dichloroethane	0.0	50	54	55	109	111	2	10	76-131
2-Butanone	0.0	50	48	49	97	98	1	20	50-150
Di-isopropyl ether	0.0	50	54	55	108	110	2	10	79-120
cis-1,2-Dichloroethe	0.0	50	54	55	108	110	2	10	77-126
2,2-Dichloropropane	0.0	50	58	59	116	118	1	10	81-127
Bromochloromethane	0.0	50	56	57	112	113	1	10	86-115
Chloroform	0.0	50	56	55	111	111	1	10	87-119
1,1,1-Trichloroethan	0.0	50	60	60	119	120	0	10	91-132
Carbon Tetrachloride	0.0	50	56	56	112	112	0	10	85-147
1,1-Dichloropropene	0.0	50	56	56	112	112	0	10	89-129
Bromodichloromethane	0.0	50	56	55	111	110	1	10	89-120
1,2-Dichloropropane	0.0	50	52	54	105	108	3	10	80-120
Dibromomethane	0.0	50	57	55	113	110	3	10	82-125
Trichloroethene	0.0	50	57	57	113	113	0	10	86-127
Benzene	0.0	50	54	54	107	108	1	10	85-121
1,2-Dichloroethane	0.0	50	54	55	108	109	1	10	79-129
1,1,2-Trichloroethan	0.0	50	51	53	103	105	2	10	86-113
1,2-Dibromoethane	0.0	50	53	55	107	110	3	10	86-118
Toluene	0.1	50	56	56	112	111	0	10	87-124
Chlorobenzene	0.0	50	52	52	104	104	0	10	90-116
1,1,1,2-Tetrachloroe	0.0	50	54	52	108	104	3	10	90-119
cis-1,3-Dichloroprop	0.0	50	51	51	103	101	1	20	50-150
trans-1,3-Dichloropr	0.0	50	52	52	105	105	0	20	50-150
Tetrachloroethene	0.0	50	56	55	113	111	2	10	88-135
1,3-Dichloropropane	0.0	50	51	52	102	104	2	10	86-115
Dibromochloromethane	0.0	50	53	53	107	106	0	10	90-119
Ethylbenzene	0.0	50	57	57	114	114	0	10	92-123
Styrene	0.0	50	51	50	101	101	0	10	90-120
Bromoform	0.0	50	52	52	104	103	1	12	78-130
m/p-Xylene	0.1	100	110	110	110	110	0	10	88-125
o-Xylene	0.0	50	56	55	111	110	1	10	90-120
Isopropylbenzene	0.0	50	56	56	112	112	0	10	86-121

Bromobenzene	0.0	50	51	50	102	101	2	10	86-111
1,2,3-Trichloropropa	0.1	50	45	47	89	93	4	17	67-118
1,1,2,2-Tetrachloroe	0.0	50	50	52	100	104	4	13	67-121
2-Chlorotoluene	0.0	50	54	53	108	107	1	10	84-117
n-Propylbenzene	0.0	50	56	57	113	114	1	10	84-123
4-Chlorotoluene	0.0	50	52	53	105	105	0	10	86-114
1,3,5-Trimethylbenze	0.0	50	55	55	110	110	1	10	85-120
tert-Butylbenzene	0.1	50	56	56	112	113	0	10	85-121
1,2,4-Trimethylbenze	0.1	50	55	54	109	107	2	10	86-117
sec-Butylbenzene	0.1	50	56	56	113	112	0	10	83-122
1,3-Dichlorobenzene	0.1	50	52	51	104	103	1	10	87-110
1,4-Dichlorobenzene	0.1	50	49	49	99	98	1	10	85-109
p-Isopropyltoluene	0.1	50	55	54	109	108	1	10	84-122
1,2-Dichlorobenzene	0.0	50	51	51	102	102	0	10	85-111
n-Butylbenzene	0.1	50	56	55	111	109	2	10	80-127
1,2-Dibromo-3-chloro	0.0	50	54	52	108	104	4	19	75-122
1,2,4-Trichlorobenze	0.1	50	51	50	101	101	0	10	80-114
Naphthalene	0.2	50	52	53	104	106	2	12	70-121
Hexachlorobutadiene	1.1	50	53	52	104	103	1	14	74-129
1,2,3-Trichlorobenze	0.0	50	51	50	103	100	3	10	79-113
2-Methylnaphthalene	0.5	50	50	53	100	105	5	20	50-150

2MNW0831.M Fri Sep 03 12:27:26 1999

VOC Water Blanks
Anal by HW
Anal date:08/31/99
Blank #:702-80A
MS/MSD:702-80A

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.7	1.75	ND	ug/L	
1,1,1-Trichloroethane	0.3	0.75	ND	ug/L	
1,1,2,2-Tetrachloroethane	0.69	1.73	ND	ug/L	
1,1,2-Trichloroethane	0.61	1.53	ND	ug/L	
1,1-Dichloroethane	0.35	0.88	ND	ug/L	
1,1-Dichloroethene	0.43	1.08	ND	ug/L	
1,1-Dichloropropene	0.8	2	ND	ug/L	
1,2,3-Trichlorobenzene	0.47	1.18	ND	ug/L	
1,2,3-Trichloropropane	0.75	1.88	ND	ug/L	
1,2,4-Trichlorobenzene	0.27	0.68	ND	ug/L	
1,2,4-Trimethylbenzene	0.22	0.55	ND	ug/L	
1,2-Dibromo-3chloropropane	0.41	1.03	ND	ug/L	
1,2-Dibromoethane	0.39	0.98	ND	ug/L	
1,2-Dichlorobenzene	0.25	0.63	ND	ug/L	
1,2-Dichloroethane	0.37	0.93	ND	ug/L	
1,2-Dichloropropane	0.35	0.88	ND	ug/L	
1,3,5-Trimethylbenzene	0.27	0.68	ND	ug/L	
1,3-Dichlorobenzene	0.34	0.85	ND	ug/L	
1,3-Dichloropropane	0.42	1.05	ND	ug/L	
1,4-Dichlorobenzene	0.25	0.63	ND	ug/L	
2,2-Dichloropropane	0.36	0.9	ND	ug/L	
2-Chlorotoluene	0.31	0.78	ND	ug/L	
4-Chlorotoluene	0.32	0.8	ND	ug/L	
Benzene	0.27	0.68	ND	ug/L	
Bromobenzene	0.83	2.08	ND	ug/L	
Bromochloromethane	0.42	1.05	ND	ug/L	
Bromodichloromethane	0.3	0.75	ND	ug/L	
Bromoform	0.44	1.1	ND	ug/L	
Bromomethane	0.7	1.75	ND	ug/L	
Carbon Tetrachloride	0.34	0.85	ND	ug/L	
Chlorobenzene	0.23	0.58	ND	ug/L	
Chlorodibromomethane	0.42	1.05	ND	ug/L	
Chloroethane	0.54	1.35	ND	ug/L	
Chloroform	0.35	0.88	ND	ug/L	
Chloromethane	0.61	1.53	ND	ug/L	
cis-1,2-Dichloroethene	0.28	0.7	ND	ug/L	
cis-1,3-Dichloropropene	0.32	0.8	ND	ug/L	
Di-isopropyl ether	0.55	1.38	ND	ug/L	
Dibromomethane	0.53	1.33	ND	ug/L	
Dichlorodifluoromethane	0.47	1.18	ND	ug/L	
Ethylbenzene	0.32	0.8	ND	ug/L	
Hexachlorobutadiene	0.62	1.55	ND	ug/L	
Isopropylbenzene	0.26	0.65	ND	ug/L	
m/p-Xylene	0.43	1.08	ND	ug/L	

Methyl tert-butyl ether	0.32	0.8	ND	ug/L	
Methylene Chloride	0.36	0.9	0.73	ug/L	Q
n-Butylbenzene	0.29	0.73	ND	ug/L	
n-Propylbenzene	0.76	1.9	ND	ug/L	
Naphthalene	0.35	0.88	ND	ug/L	
o-Xylene	0.24	0.6	ND	ug/L	
p-Isopropyltoluene	0.24	0.6	ND	ug/L	
sec-Butylbenzene	0.29	0.73	ND	ug/L	
Styrene	0.17	0.43	ND	ug/L	
tert-Butylbenzene	0.32	0.8	ND	ug/L	
Tetrachloroethene	0.43	1.08	ND	ug/L	
Toluene	0.27	0.68	ND	ug/L	
trans-1,2-Dichloroethene	0.79	1.98	ND	ug/L	
trans-1,3-Dichloropropene	0.43	1.08	ND	ug/L	
Trichloroethene	0.37	0.93	ND	ug/L	
Trichlorofluoromethane	0.34	0.85	ND	ug/L	
Vinyl Chloride	0.2	0.5	ND	ug/L	
Acetone	1	2.5	1.96	ug/L	Q
2-Butanone	0.89	2.23	ND	ug/L	
Dibromofluoromethane			98.1	% recov	
Toluene-d8			100.26	% recov	
4-Bromofluorobenzene			99.12	% recov	

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\2MNW0831.M
Title : SW846 Method 8260 Volatiles-Water
Last Update : Tue Aug 31 12:56:31 1999
Response via : Initial Calibration

Non-Spiked Sample: 08319916.D

	Spike Sample	Spike Duplicate Sample
File ID :	08319914.D	08319915.D
Sample :	MS94700-032(702-80A)	MSD94700-032(702-80A)
Acq Time:	31 Aug 99 2:26 pm	31 Aug 99 2:55 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.1	50	47	46	94	93	2	11	30-153
Bromomethane	0.1	50	55	58	110	116	5	22	41-148
Dichlorodifluorometh	0.0	50	37	38	74	76	4	10	14-176
Vinyl Chloride	0.0	50	53	54	107	107	1	22	44-151
Chloroethane	0.0	50	54	54	108	109	1	10	57-138
Methylene Chloride	1.1	50	52	53	103	103	1	33	68-128
Trichlorofluorometha	0.0	50	54	55	108	109	2	11	88-137
Acetone	0.0	50	51	52	102	104	2	20	50-150
1,1-Dichloroethene	0.0	50	56	56	112	112	1	10	76-136
trans-1,2-Dichloroet	0.0	50	58	58	116	116	0	10	80-126
Methyl tert-butyl et	0.0	50	52	52	104	105	1	10	77-117
1,1-Dichloroethane	0.0	50	55	55	111	111	0	10	76-131
2-Butanone	0.0	50	53	61	106	122	14	20	50-150
Di-isopropyl ether	0.0	50	56	57	112	113	1	10	79-120
cis-1,2-Dichloroethe	0.0	50	54	54	108	108	0	10	77-126
2,2-Dichloropropane	0.0	50	59	59	118	119	0	10	81-127
Bromochloromethane	0.0	50	55	56	111	112	1	10	86-115
Chloroform	0.0	50	55	55	110	110	1	10	87-119
1,1,1-Trichloroethan	0.0	50	58	59	117	118	1	10	91-132
Carbon Tetrachloride	0.0	50	55	55	111	109	1	10	85-147
1,1-Dichloropropene	0.0	50	59	57	118	114	3	10	89-129
Bromodichloromethane	0.0	50	55	55	110	111	1	10	89-120
1,2-Dichloropropane	0.0	50	55	55	110	110	0	10	80-120
Dibromomethane	0.0	50	55	55	111	111	0	10	82-125
Trichloroethene	0.0	50	58	58	116	115	1	10	86-127
Benzene	0.0	50	55	55	110	110	1	10	85-121
1,2-Dichloroethane	0.0	50	54	53	108	106	2	10	79-129
1,1,2-Trichloroethan	0.0	50	52	52	105	103	1	10	86-113
1,2-Dibromoethane	0.0	50	55	54	110	107	3	10	86-118
Toluene	0.1	50	57	56	115	112	2	10	87-124
Chlorobenzene	0.1	50	53	54	105	107	2	10	90-116
1,1,1,2-Tetrachloroe	0.0	50	53	54	107	108	1	10	90-119
cis-1,3-Dichloroprop	0.0	50	52	53	104	105	1	20	50-150
trans-1,3-Dichloropr	0.0	50	53	54	105	108	2	20	50-150
Tetrachloroethene	0.0	50	57	58	114	115	1	10	88-135
1,3-Dichloropropane	0.0	50	52	53	103	106	2	10	86-115
Dibromochloromethane	0.0	50	53	54	105	108	3	10	90-119
Ethylbenzene	0.0	50	58	58	116	117	0	10	92-123
Styrene	0.0	50	53	53	105	107	1	10	90-120
Bromoform	0.0	50	52	53	104	105	2	12	78-130
m/p-Xylene	0.1	100	112	114	112	114	1	10	88-125
o-Xylene	0.0	50	55	57	110	115	4	10	90-120
Isopropylbenzene	0.1	50	57	56	113	113	0	10	86-121

Bromobenzene	0.0	50	52	51	105	102	2	10	86-111
1,2,3-Trichloropropa	0.0	50	49	51	97	101	4	17	67-118
1,1,2,2-Tetrachloroe	0.0	50	52	52	104	105	0	13	67-121
2-Chlorotoluene	0.0	50	54	55	108	110	2	10	84-117
n-Propylbenzene	0.0	50	58	58	116	116	0	10	84-123
4-Chlorotoluene	0.1	50	54	54	107	108	0	10	86-114
1,3,5-Trimethylbenze	0.1	50	56	56	111	111	0	10	85-120
tert-Butylbenzene	0.1	50	57	57	114	115	1	10	85-121
1,2,4-Trimethylbenze	0.1	50	55	56	110	112	2	10	86-117
sec-Butylbenzene	0.1	50	58	57	115	114	1	10	83-122
1,3-Dichlorobenzene	0.1	50	53	52	105	105	0	10	87-110
1,4-Dichlorobenzene	0.1	50	50	50	100	100	1	10	85-109
p-Isopropyltoluene	0.1	50	56	56	111	111	1	10	84-122
1,2-Dichlorobenzene	0.1	50	51	52	102	103	1	10	85-111
n-Butylbenzene	0.2	50	58	57	115	114	1	10	80-127
1,2-Dibromo-3-chloro	0.0	50	52	53	104	105	1	19	75-122
1,2,4-Trichlorobenze	0.2	50	51	52	103	104	1	10	80-114
Naphthalene	0.2	50	54	55	108	109	0	12	70-121
Hexachlorobutadiene	1.0	50	55	55	109	108	1	14	74-129
1,2,3-Trichlorobenze	0.3	50	52	51	103	101	1	10	79-113
2-Methylnaphthalene	0.6	50	52	55	104	108	4	20	50-150

2MNW0831.M Fri Sep 03 11:36:34 1999

VOC Water Blanks
Anal by:JJB
Anal date:9/01/99
Blank #:701-84A
MS/MSD:701-84A

	LOD	LOQ	REPORTED RESULT	UNITS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.7	1.75	ND	ug/L	
1,1,1-Trichloroethane	0.3	0.75	ND	ug/L	
1,1,2,2-Tetrachloroethane	0.69	1.73	ND	ug/L	
1,1,2-Trichloroethane	0.61	1.53	ND	ug/L	
1,1-Dichloroethane	0.35	0.88	ND	ug/L	
1,1-Dichloroethene	0.43	1.08	ND	ug/L	
1,1-Dichloropropene	0.8	2	ND	ug/L	
1,2,3-Trichlorobenzene	0.47	1.18	ND	ug/L	
1,2,3-Trichloropropane	0.75	1.88	ND	ug/L	
1,2,4-Trichlorobenzene	0.27	0.68	ND	ug/L	
1,2,4-Trimethylbenzene	0.22	0.55	ND	ug/L	
1,2-Dibromo-3chloropropane	0.41	1.03	ND	ug/L	
1,2-Dibromoethane	0.39	0.98	ND	ug/L	
1,2-Dichlorobenzene	0.25	0.63	ND	ug/L	
1,2-Dichloroethane	0.37	0.93	ND	ug/L	
1,2-Dichloropropane	0.35	0.88	ND	ug/L	
1,3,5-Trimethylbenzene	0.27	0.68	ND	ug/L	
1,3-Dichlorobenzene	0.34	0.85	ND	ug/L	
1,3-Dichloropropane	0.42	1.05	ND	ug/L	
1,4-Dichlorobenzene	0.25	0.63	ND	ug/L	
2,2-Dichloropropane	0.36	0.9	ND	ug/L	
2-Chlorotoluene	0.31	0.78	ND	ug/L	
4-Chlorotoluene	0.32	0.8	ND	ug/L	
Benzene	0.27	0.68	ND	ug/L	
Bromobenzene	0.83	2.08	ND	ug/L	
Bromochloromethane	0.42	1.05	ND	ug/L	
Bromodichloromethane	0.3	0.75	ND	ug/L	
Bromoform	0.44	1.1	ND	ug/L	
Bromomethane	0.7	1.75	ND	ug/L	
Carbon Tetrachloride	0.34	0.85	ND	ug/L	
Chlorobenzene	0.23	0.58	ND	ug/L	
Chlorodibromomethane	0.42	1.05	ND	ug/L	
Chloroethane	0.54	1.35	ND	ug/L	
Chloroform	0.35	0.88	ND	ug/L	
Chloromethane	0.61	1.53	ND	ug/L	
cis-1,2-Dichloroethene	0.28	0.7	ND	ug/L	
cis-1,3-Dichloropropene	0.32	0.8	ND	ug/L	
Di-isopropyl ether	0.55	1.38	ND	ug/L	
Dibromomethane	0.53	1.33	ND	ug/L	
Dichlorodifluoromethane	0.47	1.18	ND	ug/L	
Ethylbenzene	0.32	0.8	ND	ug/L	
Hexachlorobutadiene	0.62	1.55	ND	ug/L	

Isopropylbenzene	0.26	0.65	ND	ug/L	
m/p-Xylene	0.43	1.08	ND	ug/L	
Methyl tert-butyl ether	0.32	0.8	ND	ug/L	
Methylene Chloride	0.36	0.9	ND	ug/L	
n-Butylbenzene	0.29	0.73	ND	ug/L	
n-Propylbenzene	0.76	1.9	ND	ug/L	
Naphthalene	0.35	0.88	ND	ug/L	
o-Xylene	0.24	0.6	ND	ug/L	
p-Isopropyltoluene	0.24	0.6	ND	ug/L	
sec-Butylbenzene	0.29	0.73	ND	ug/L	
Styrene	0.17	0.43	ND	ug/L	
tert-Butylbenzene	0.32	0.8	ND	ug/L	
Tetrachloroethene	0.43	1.08	ND	ug/L	
Toluene	0.27	0.68	ND	ug/L	
trans-1,2-Dichloroethene	0.79	1.98	ND	ug/L	
trans-1,3-Dichloropropene	0.43	1.08	ND	ug/L	
Trichloroethene	0.37	0.93	ND	ug/L	
Trichlorofluoromethane	0.34	0.85	ND	ug/L	
Vinyl Chloride	0.2	0.5	ND	ug/L	
Dibromofluoromethane			103.06	% recov	
Toluene-d8			110.52	% recov	
4-Bromofluorobenzene			95.98	% recov	

Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\2MNW0812.M
Title : SW846 Method 8260B Volatiles-Water
Last Update : Wed Sep 01 15:25:36 1999
Response via : Initial Calibration

Non-Spiked Sample: 09019915.D

	Spike Sample	Spike Duplicate Sample
File ID :	09019916.D	09019917.D
Sample :	MS94700-034 (701-84A)	MSD94700-034 (701-84A)
Acq Time:	1 Sep 99 1:44 pm	1 Sep 99 2:14 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Chloromethane	0.0	50	59	57	118	115	3	11	30-153
Bromomethane	0.2	50	41	47	82	94	14	22	41-148
Dichlorodifluorometh	0.0	50	72	66	144	131	9	10	14-176
Vinyl Chloride	0.0	50	55	55	109	110	0	22	44-151
Chloroethane	0.1	50	57	55	113	110	3	10	57-138
Methylene Chloride	-1.8	50	82	84	168#	172#	3	33	68-128
Trichlorofluorometha	0.0	50	60	59	119	117	1	11	86-137
Acetone	-1.0	50	61	64	123	129	5	20	50-150
1,1-Dichloroethene	0.1	50	57	57	114	114	0	10	76-136
trans-1,2-Dichloroet	0.0	50	50	48	100	96	4	10	80-126
Methyl tert-butyl et	0.0	50	49	49	98	99	1	10	77-117
1,1-Dichloroethane	0.0	50	54	53	108	107	1	10	76-131
2-Butanone	0.0	50	48	49	96	98	2	20	50-150
Di-isopropyl ether	0.1	50	51	49	103	98	4	10	79-120
cis-1,2-Dichloroethe	0.1	50	52	52	104	105	1	10	77-126
2,2-Dichloropropane	0.0	50	45	45	90	91	0	10	81-127
Bromochloromethane	0.1	50	52	54	104	108	3	10	86-115
Chloroform	0.0	50	53	53	106	106	0	10	87-119
1,1,1-Trichloroethan	0.0	50	55	54	109	109	0	10	91-132
Carbon Tetrachloride	0.0	50	53	56	106	112	5	10	85-147
1,1-Dichloropropene	0.0	50	51	55	103	109	6	10	89-129
Bromodichloromethane	0.0	50	51	54	103	107	4	10	89-120
1,2-Dichloropropane	0.0	50	51	54	102	107	5	10	80-120
Dibromomethane	0.0	50	55	54	110	108	2	10	82-125
Trichloroethene	0.0	50	52	54	103	108	5	10	86-127
Benzene	0.0	50	51	53	103	106	3	10	85-121
1,2-Dichloroethane	0.0	50	53	54	107	109	2	10	79-129
1,1,2-Trichloroethan	0.0	50	52	55	104	110	6	10	86-113
1,2-Dibromoethane	0.0	50	53	55	105	111	5	10	86-118
Toluene	0.0	50	51	52	103	104	1	10	87-124
Chlorobenzene	0.0	50	49	49	98	98	0	10	90-116
1,1,1,2-Tetrachloroe	0.0	50	53	53	105	106	1	10	90-119
cis-1,3-Dichloroprop	0.0	50	51	52	103	104	1	20	50-150
trans-1,3-Dichloropr	0.0	50	51	51	103	102	0	20	50-150
Tetrachloroethene	0.0	50	52	50	104	101	3	10	88-135
1,3-Dichloropropane	0.0	50	52	53	105	106	1	10	86-115
Dibromochloromethane	0.0	50	52	51	104	101	2	10	90-119
Ethylbenzene	0.0	50	52	50	104	100	4	10	92-123
Styrene	0.0	50	44	43	87#	87#	1	10	90-120
Bromoform	0.0	50	52	52	105	105	0	12	78-130
m/p-Xylene	0.0	100	102	103	102	103	1	10	88-124
o-Xylene	0.0	50	51	51	102	103	1	10	90-120
Isopropylbenzene	0.0	50	50	49	100	99	1	10	86-121

Bromobenzene	0.0	50	48	48	97	96	1	10	86-111
1,2,3-Trichloropropa	0.0	50	51	50	101	100	1	17	67-118
1,1,2,2-Tetrachloroe	0.0	50	51	51	102	103	1	13	67-121
2-Chlorotoluene	0.0	50	50	49	99	99	1	10	84-117
n-Propylbenzene	0.0	50	51	50	102	100	2	10	84-123
4-Chlorotoluene	0.0	50	47	49	94	98	4	10	86-114
1,3,5-Trimethylbenze	0.0	50	49	50	99	101	2	10	85-120
tert-Butylbenzene	0.0	50	49	50	98	99	1	10	85-121
1,2,4-Trimethylbenze	0.0	50	50	51	100	101	1	10	86-117
sec-Butylbenzene	0.0	50	49	50	98	100	2	10	83-122
1,3-Dichlorobenzene	0.0	50	48	48	95	97	2	10	87-110
1,4-Dichlorobenzene	0.0	50	48	49	97	98	1	10	85-109
p-Isopropyltoluene	0.0	50	49	50	98	100	2	10	84-122
1,2-Dichlorobenzene	0.0	50	47	48	94	97	3	10	85-111
n-Butylbenzene	0.0	50	49	49	99	98	1	10	80-127
1,2-Dibromo-3-chloro	0.1	50	50	53	99	107	8	19	75-122
1,2,4-Trichlorobenze	0.0	50	47	47	93	95	1	10	80-114
Naphthalene	0.0	50	49	50	98	99	1	12	70-121
Hexachlorobutadiene	0.0	50	48	48	95	96	0	14	74-129
1,2,3-Trichlorobenze	0.0	50	45	46	89	93	4	10	79-113
2-Methylnaphthalene	0.0	50	48	49	95	99	4	20	50-150

2MNW0812.M Thu Sep 02 14:31:50 1999

EN CHEM INC.

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FAX: 920-469-8827

- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client : ENVIROGEN

Field ID : MW-2

Report Date : 9/2/99

Lab Sample Number : 894984-001

Collection Date : 8/25/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER

Prep Method: SW846 5030B Prep Date: 8/31/99 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
a,a,a-Trifluorotoluene	100				%Recov		9/1/99	MOD 8021B
Benzene	< 0.26	0.26	0.83		ug/l		9/1/99	MOD 8021B
Ethylbenzene	< 0.24	0.24	0.76		ug/l		9/1/99	MOD 8021B
Methyl-tert-butyl-ether	< 0.22	0.22	0.70		ug/l		9/1/99	MOD 8021B
Naphthalene	< 0.89	0.89	2.8		ug/l		9/1/99	MOD 8021B
Toluene	< 0.21	0.21	0.67		ug/l		9/1/99	MOD 8021B
1,3,5-Trimethylbenzene	< 0.54	0.54	1.7		ug/l		9/1/99	MOD 8021B
1,2,4-Trimethylbenzene	< 0.86	0.86	2.7		ug/l		9/1/99	MOD 8021B
Xylenes, -m, -p	< 0.97	0.97	3.1		ug/l		9/1/99	MOD 8021B
Xylene, -o	< 0.37	0.37	1.2		ug/l		9/1/99	MOD 8021B

Organic Results

PVOC BLANK - WATER

Prep Method: Prep Date: 8/31/99 Analyst: EGS

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
PVOC Blank	726-38						9/1/99	

EN CHEM INC.

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- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client : ENVIROGEN

Field ID : MW-3

Report Date : 9/3/99

Lab Sample Number : 894984-002

Collection Date : 8/25/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER Prep Method: SW846 5030B Prep Date: 9/1/99 Analyst: RJN

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	99				%Recov		9/1/99	SW846 8260B
Dibromofluoromethane	103				%Recov		9/1/99	SW846 8260B
4-Bromofluorobenzene	98				%Recov		9/1/99	SW846 8260B
Benzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
Ethylbenzene	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Methyl-tert-butyl-ether	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Naphthalene	< 0.35	0.35	1.1		ug/L		9/1/99	SW846 8260B
Toluene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,3,5-Trimethylbenzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,2,4-Trimethylbenzene	< 0.22	0.22	0.70		ug/L		9/1/99	SW846 8260B
Xylenes, -m, -p	< 0.43	0.43	1.4		ug/L		9/1/99	SW846 8260B
Xylene, -o	< 0.24	0.24	0.76		ug/L		9/1/99	SW846 8260B

Organic Results

VOC-BLK-W Prep Method: SW846 5030B Prep Date: 9/1/99 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	702-82A						9/1/99	SW846 8260

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- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client : ENVIROGEN

Field ID : MW-4

Report Date : 9/3/99

Lab Sample Number : 894984-003

Collection Date : 8/25/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER

Prep Method: SW846 5030B Prep Date: 8/31/99 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	100				%Recov		9/1/99	SW846 8260B
Dibromofluoromethane	103				%Recov		9/1/99	SW846 8260B
4-Bromofluorobenzene	98				%Recov		9/1/99	SW846 8260B
Benzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
Ethylbenzene	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Methyl-tert-butyl-ether	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Naphthalene	< 0.35	0.35	1.1		ug/L		9/1/99	SW846 8260B
Toluene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,3,5-Trimethylbenzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,2,4-Trimethylbenzene	< 0.22	0.22	0.70		ug/L		9/1/99	SW846 8260B
Xylenes, -m, -p	< 0.43	0.43	1.4		ug/L		9/1/99	SW846 8260B
Xylene, -o	< 0.24	0.24	0.76		ug/L		9/1/99	SW846 8260B

Organic Results

VOC-BLK-W

Prep Method: SW846 5030B Prep Date: 8/31/99 Analyst: HW

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	702-80A						8/31/99	SW846 8260

EN CHEM INC.

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- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client : ENVIROGEN

Field ID : MW-5

Report Date : 9/3/99

Lab Sample Number : 894984-004

Collection Date : 8/25/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER

Prep Method: SW846 5030B Prep Date: 9/1/99 Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	111				%Recov		9/1/99	SW846 8260B
Dibromofluoromethane	109				%Recov		9/1/99	SW846 8260B
4-Bromofluorobenzene	96				%Recov		9/1/99	SW846 8260B
Benzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
Ethylbenzene	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Methyl-tert-butyl-ether	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Naphthalene	< 0.35	0.35	1.1		ug/L		9/1/99	SW846 8260B
Toluene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,3,5-Trimethylbenzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,2,4-Trimethylbenzene	< 0.22	0.22	0.70		ug/L		9/1/99	SW846 8260B
Xylenes, -m, -p	< 0.43	0.43	1.4		ug/L		9/1/99	SW846 8260B
Xylene, -o	< 0.24	0.24	0.76		ug/L		9/1/99	SW846 8260B

Organic Results

VOC-BLK-W

Prep Method: SW846 5030B Prep Date: 9/1/99 Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	701-84A						9/1/99	SW846 8260

EN CHEM INC.

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800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Field ID : MW-10 *

Lab Sample Number : 894984-005

WI DNR LAB ID : 405132750

Client : ENVIROGEN

Report Date : 9/3/99

Collection Date : 8/25/99

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER — Prep Method: SW846 5030B — Prep Date: 9/1/99 — Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	112				%Recov		9/1/99	SW846 8260B
Dibromofluoromethane	109				%Recov		9/1/99	SW846 8260B
4-Bromofluorobenzene	94				%Recov		9/1/99	SW846 8260B
Benzene	20	0.27	0.86		ug/L		9/1/99	SW846 8260B
Ethylbenzene	0.57	0.32	1.0		ug/L	Q	9/1/99	SW846 8260B
Methyl-tert-butyl-ether	0.46	0.32	1.0		ug/L	Q	9/1/99	SW846 8260B
Naphthalene	2.5	0.35	1.1		ug/L		9/1/99	SW846 8260B
Toluene	0.45	0.27	0.86		ug/L	Q	9/1/99	SW846 8260B
1,3,5-Trimethylbenzene	0.48	0.27	0.86		ug/L	Q	9/1/99	SW846 8260B
1,2,4-Trimethylbenzene	6.8	0.22	0.70		ug/L		9/1/99	SW846 8260B
Xylenes, -m, -p	11	0.43	1.4		ug/L		9/1/99	SW846 8260B
Xylene, -o	3.8	0.24	0.76		ug/L		9/1/99	SW846 8260B

Organic Results

VOC-BLK-W — Prep Method: SW846 5030B — Prep Date: 9/1/99 — Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	701-84A						9/1/99	SW846 8260

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client : ENVIROGEN

Field ID : MW-100

Report Date : 9/3/99

Lab Sample Number : 894984-006

Collection Date : 8/25/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER

Prep Method: SW846 5030B Prep Date: 9/1/99 Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	108				%Recov		9/1/99	SW846 8260B
Dibromofluoromethane	110				%Recov		9/1/99	SW846 8260B
4-Bromofluorobenzene	95				%Recov		9/1/99	SW846 8260B
Benzene	18	0.27	0.86		ug/L		9/1/99	SW846 8260B
Ethylbenzene	0.41	0.32	1.0		ug/L	Q	9/1/99	SW846 8260B
Methyl-tert-butyl-ether	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Naphthalene	2.0	0.35	1.1		ug/L		9/1/99	SW846 8260B
Toluene	0.38	0.27	0.86		ug/L	Q	9/1/99	SW846 8260B
1,3,5-Trimethylbenzene	0.40	0.27	0.86		ug/L	Q	9/1/99	SW846 8260B
1,2,4-Trimethylbenzene	5.0	0.22	0.70		ug/L		9/1/99	SW846 8260B
Xylenes, -m, -p	8.4	0.43	1.4		ug/L		9/1/99	SW846 8260B
Xylene, -o	3.1	0.24	0.76		ug/L		9/1/99	SW846 8260B

Organic Results

VOC-BLK-W

Prep Method: SW846 5030B Prep Date: 9/1/99 Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	701-84A						9/1/99	SW846 8260

EN CHEM INC.

1795 Industrial Drive
Green Bay, WI 54302
920-469-2436
800-7-ENCHEM
FAX: 920-469-8827

- Analytical Report -

Project Name : ARGETSINGER'S IGA

Project Number : 97353

Client : ENVIROGEN

Field ID : TRIP

Report Date : 9/3/99

Lab Sample Number : 894984-007

Collection Date : 8/25/99

WI DNR LAB ID : 405132750

Matrix Type : WATER

Organic Results

PVOC + NAPHT - WATER — Prep Method: SW846 5030B — Prep Date: 9/1/99 — Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
Toluene-d8	112				%Recov		9/1/99	SW846 8260B
Dibromofluoromethane	107				%Recov		9/1/99	SW846 8260B
4-Bromofluorobenzene	95				%Recov		9/1/99	SW846 8260B
Benzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
Ethylbenzene	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Methyl-tert-butyl-ether	< 0.32	0.32	1.0		ug/L		9/1/99	SW846 8260B
Naphthalene	< 0.35	0.35	1.1		ug/L		9/1/99	SW846 8260B
Toluene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,3,5-Trimethylbenzene	< 0.27	0.27	0.86		ug/L		9/1/99	SW846 8260B
1,2,4-Trimethylbenzene	< 0.22	0.22	0.70		ug/L		9/1/99	SW846 8260B
Xylenes, -m, -p	< 0.43	0.43	1.4		ug/L		9/1/99	SW846 8260B
Xylene, -o	< 0.24	0.24	0.76		ug/L		9/1/99	SW846 8260B

Organic Results

VOC-BLK-W — Prep Method: SW846 5030B — Prep Date: 9/1/99 — Analyst: JJB

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
VOC-BLK	701-84A						9/1/99	SW846 8260

GREAT LAKES ANALYTICAL

1380 Busch Parkway
Buffalo Grove, Illinois 60089

Email: info@glalabs.com
(847) 808-7766 FAX (847) 808-7772

Envirogen Pewaukee	Project:	Argetsingers	Sampled:	1/26/00
2835 N. Grandview Blvd.	Project Number:	97.353	Received:	1/27/00
Pewaukee, WI 53072	Project Manager:	Travis P.	Reported:	2/4/00 12:06

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-10	B001429-01	Water	1/26/00
MW-100	B001429-02	Water	1/26/00
Decon	B001429-03	Water	1/26/00
Trip	B001429-04	Water	1/26/00

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Great Lakes Analytical

S. Patel

Satal Patel, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; Wisconsin DNR-999917160

GREAT LAKES ANALYTICAL

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2835 N. Grandview Blvd.	Project Number:	97.353	Received:	1/27/00
Pewaukee, WI 53072	Project Manager:	Travis P.	Reported:	2/4/00 12:06

Total Metals by EPA 6000/7000 Series Methods
Great Lakes Analytical

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-10			**B001429-01**				**Water**	
Iron	0010696	1/31/00	1/31/00	EPA 6010B	0.100	ND	mg/l	

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Refer to end of report for text of notes and definitions.

Satal Patel, Project Manager

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2835 N. Grandview Blvd.	Project Number:	97.353	Received:	1/27/00
Pewaukee, WI 53072	Project Manager:	Travis P.	Reported:	2/4/00 12:06

Petroleum Volatile Organic Compounds (PVOC) by Method 8021B
Great Lakes Analytical

Analyte	Batch Number	Date Prepared	Date Analyzed	Reporting Limit	Result	Units	Notes*
MW-10			**B001429-01**			**Water**	
Benzene	0020035	2/1/00	2/2/00	0.50	**2.9**	ug/l	
Ethylbenzene	"	"	"	0.50	ND	"	
Methyl tert-butyl ether	"	"	"	0.20	**0.28**	"	
Naphthalene	"	"	"	2.0	**2.2**	"	
Toluene	"	"	"	0.50	ND	"	
1,2,4-Trimethylbenzene	"	"	"	1.0	ND	"	
1,3,5-Trimethylbenzene	"	"	"	1.0	ND	"	
Total Xylenes	"	"	"	0.50	**0.70**	"	
MW-100			**B001429-02**			**Water**	
Benzene	0020035	2/1/00	2/2/00	0.50	**2.2**	ug/l	
Ethylbenzene	"	"	"	0.50	ND	"	
Methyl tert-butyl ether	"	"	"	0.20	**0.33**	"	
Naphthalene	"	"	"	2.0	ND	"	
Toluene	"	"	"	0.50	ND	"	
1,2,4-Trimethylbenzene	"	"	"	1.0	ND	"	
1,3,5-Trimethylbenzene	"	"	"	1.0	ND	"	
Total Xylenes	"	"	"	0.50	ND	"	
Decon			**B001429-03**			**Water**	
Benzene	0020035	2/1/00	2/2/00	0.50	ND	ug/l	
Ethylbenzene	"	"	"	0.50	ND	"	
Methyl tert-butyl ether	"	"	"	0.20	**0.53**	"	
Naphthalene	"	"	"	2.0	ND	"	
Toluene	"	"	"	0.50	ND	"	
1,2,4-Trimethylbenzene	"	"	"	1.0	ND	"	
1,3,5-Trimethylbenzene	"	"	"	1.0	ND	"	
Total Xylenes	"	"	"	0.50	ND	"	
Trip			**B001429-04**			**Water**	
Benzene	0020035	2/1/00	2/2/00	0.50	ND	ug/l	
Ethylbenzene	"	"	"	0.50	ND	"	
Methyl tert-butyl ether	"	"	"	0.20	**0.26**	"	
Naphthalene	"	"	"	2.0	ND	"	
Toluene	"	"	"	0.50	ND	"	

Great Lakes Analytical

**Refer to end of report for text of notes and definitions.*

Satal Patel, Project Manager

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2835 N. Grandview Blvd.	Project Number:	97.353	Received:	1/27/00
Pewaukee, WI 53072	Project Manager:	Travis P.	Reported:	2/4/00 12:06

Petroleum Volatile Organic Compounds (PVOC) by Method 8021B
Great Lakes Analytical

Analyte	Batch Number	Date Prepared	Date Analyzed	Reporting Limit	Result	Units	Notes*
Trip (continued)			**B001429-04**			**Water**	
1,2,4-Trimethylbenzene	0020035	2/1/00	2/2/00	1.0	ND	ug/l	
1,3,5-Trimethylbenzene	"	"	"	1.0	ND	"	
Total Xylenes	"	"	"	0.50	ND	"	

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Pewaukee, WI 53072	Project Manager:	Travis P.	Reported:	2/4/00 12:06

General Chemistry
Great Lakes Analytical

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-10			**B001429-01**				**Water**	
Nitrate/Nitrite as N	0010693	1/31/00	1/31/00	EPA 353.2	0.250	**7.21**	mg/l	
Sulfate as SO4	0010656	1/28/00	1/28/00	EPA 375.2	10.0	**17.5**	"	

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**Refer to end of report for text of notes and definitions.*

Satal Patel, Project Manager

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; Wisconsin DNR-999917160

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2835 N. Grandview Blvd.	Project Number:	97.353	Received:	1/27/00
Pewaukee, WI 53072	Project Manager:	Travis P.	Reported:	2/4/00 12:06

Notes and Definitions

#	Note
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

Great Lakes Analytical

Satal Patel, Project Manager

GREAT LAKES ANALYTICAL

CHAIN OF CUSTODY REPORT

Buffalo Grove, IL 60089-4505
(847) 808-7766
FAX (847) 808-7772

Brookfield, WI 53501
(414) 798-1030
FAX (414) 798-1066

Client: Envirogen
Address: Pewaukee

Bill To:
Address:

TAT: 5 DAY 4 DAY 3 DAY 2 DAY 1 DAY < 24 HRS.
DATE RESULTS NEEDED:
TEMPERATURE UPON RECEIPT:

Report to: Travis Peterson
Phone #: (262) 549-6898
Fax #: (262) 549-4741

State & Program: WI / PECFA
Phone #: ( )
Fax #: ( )

AIR BILL NO.

Project: Argetsingers
Sampler: Ketter
PO/Quote #: 97.353

	FIELD ID, LOCATION	DATE COLLECTED	TIME COLLECTED	SAMPLE MATRIX	PRESERVATIVES	NO. CONTAINERS	TYPE CONTAINERS	PWC+ Naphth	Fe	Nitrate/Nitrite	Sulfate	ANALYSIS TYPE							SAMPLE CONTROL: CRACKED/BROKEN	IMPROPERLY SEALED	GOOD CONDITION	LABORATORY ID NUMBER
1	MW-10	1/26/00	12:00	W	HCL HNO3 None, H2SO4	3 3	G P	X	X	X	X											B001429.1
2	MW-100	↓	12:00	↓	HCL	3	G	X														2
3	Decon	↓	12:10	↓	HCL	2	G	X														3
4	Trip	1/25/00	6:30 am	↓	HCL	2	G	X														4
5																						
6																						
7																						
8																						
9																						
10																						

RELINQUISHED	RECEIVED	RELINQUISHED	RECEIVED
Brett Ketter 1/26/00 DATE 7:00pm TIME	01/27/00 DATE TIME	01/27/00 DATE TIME	DATE TIME
RELINQUISHED DATE TIME	RECEIVED DATE TIME	RELINQUISHED DATE TIME	RECEIVED DATE TIME

COMMENTS:

PAGE OF

J9958198

ATTACHMENT H

Detailed Risk Assessment (RA)

95% Upper Confidence Limit Explanation

A group of soil samples collected during site investigation activities can be evaluated through statistical methods. An appropriate method involves the calculation of the 95% upper confidence limit of the concentrations of the contaminants of concern. The 95% upper confidence limit calculation yields a representative value that is a conservative characterization of all the samples in the data set.

The use of the 95% UCL assumes that the sample data conforms to a normal distribution, a situation that would be expected to be encountered in the natural world. The 95% UCL represents a value for which it is 95% confident that the true mean of the data set is below the 95% UCL. The 95% confidence level has determined to be sufficient for the evaluation of environmental sampling data by the EPA.

95% Upper Confidence Limit

The 95% upper confidence limit (UCL) is calculated by the following equation:

$$95\%\ \text{UCL} = \text{average concentration} + \frac{\text{t table} * \text{standard deviation}}{n^{1/2}}$$

where: n = number of samples
t table value (Wine, Robert J. 1964. Statistics for Scientists and Engineers. Prentice Hall. Englewood Cliffs, NJ)

An example calculation for a hypothetical data set can be shown as:

Concentrations from several different samples of chemical X = 34, 87, 199, 2, 214, 6, and 76.

$$\text{Average concentration} = \frac{34 + 87 + 199 + 2 + 214 + 6 + 76}{7} = 88$$

t table value = 2.447
standard deviation = 87
n = 7

$$95\%\ \text{UCL of chemical X} = 88 + \frac{2.447 * 87}{7^{1/2}} = 169$$

SOIL ANALYTICAL AVERAGING
Argetsinger's IGA Site

Sample	Depth (feet)	Carcinogens (ppb)	Non-Carcinogens (ppb)		
		Benzene	**Toluene**	**Ethylbenzene**	**Xylenes**
MW-3	1-3	**12.5**	**12.5**	**12.5**	**25**
MW-3	14.5-16.5	**12.5**	**12.5**	**12.5**	**25**
MW-4	14.5-16.5	**12.5**	**12.5**	**12.5**	**25**
B	11-13	29500	220000	72100	384000
C	11-13	192	2130	1920	11700
D	11-13	152	368	76	476
E	11-13	65	300	68	486
F	11-13	**13**	**13**	**13**	**39**
G	11-13	28	67	**13.5**	91
AVERAGE CONC. (ppb)		3332	24768	8248	44096
STANDARD DEVIATION		9813	73215	23953	127521
SAMPLE NUMBER		9	9	9	9
t table value		2.306	2.306	2.306	2.306
95% CONFD. LIMIT		10,875.08	81,046	26,659	142,118

BOLD- Represents half the detection limit

Protection of Human Health from Direct Contact

The purpose of the health risk assessment is to determine if the existing contaminant concentrations identified at the site during the site investigation activities may potentially pose a risk to human health through direct contact. Based on Wisconsin regulations, residual contaminant concentrations considered safe to human health from direct contact must not indicate an individual excess cancer risk of greater than 1×10^{-6} for carcinogenic compounds and an individual hazard quotient greater than 1 for non-carcinogenic compounds. Additionally, residual contaminant concentrations must not produce a cumulative excess cancer risk in excess of 1×10^{-5} for carcinogenic compounds and a cumulative hazard index greater than 1 for non-carcinogenic compounds.

This risk assessment has been performed in accordance with current United States Environmental Protection Agency (USEPA) risk assessment guidance detailed in Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual, Part A. (RAGS Part A). Principals of this risk assessment followed guidelines outlined in USEPA Risk Assessment Guidance for Superfund. Volume I, Human Health Evaluation Manual, Part B, Development of Risk Based Preliminary Remediation Goals (RAGS Part B), American Society for Testing Materials (ASTM) Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites (ASTM Guidance) and those outlined in Wisconsin Administrative Code Chapter NR 720.19(5).

Envirogen selected "indicator" compounds to evaluate the potential affect of petroleum-contaminated soil on human health. These "indicator" compounds may also be referred to as chemicals-of-concern. Industry standards and guidance documents acknowledge that select chemicals-of-concern may be used to evaluate potential human health risks for a complex petroleum product. Compounds that are considered chemicals-of-concern and are qualified for evaluation of their risk to human health based on the following criteria:

- the compound concentration exceeds NR 720 generic soil cleanup standards, or
- a compound, that does not have a NR 720 generic soil cleanup standard, has a concentration exceeding laboratory detection limits and information regarding dose responses is available.

Based on these guidelines, Envirogen evaluated the following individual compounds: benzene, ethylbenzene, toluene, and total xylenes. The ASTM Guidance identifies these compounds as the appropriate representatives for gasoline.

The risk assessment includes an exposure assessment which evaluates the magnitude and frequency of potential exposure to the chemicals-of-concern. The pathways by which individuals are potentially exposed, are identified based on the physical characteristics and uses of the site and surrounding area. In NR 720, direct contact is defined as exposure to contaminants in soil through inhalation of particulate matter or incidental ingestion of soil. The risk from these pathways is evaluated for contaminants in surface soils, 0-16 feet below ground surface or the water table. This risk assessment evaluated potential exposure pathways from the surface soils for inhalation

of particulates and incidental ingestion of contaminated soil, as prescribed in NR 720, but also included inhalation of contaminant vapors from the surface soils. This assumes that exposure to vapors from subsurface soils or groundwater will not occur and therefore will not pose a risk to human health.

The site is currently vacant. Due to the proximity of residential housing in the neighborhood, Envirogen classified the site as non-industrial. An industrial classification, which is less conservative, could lead to a conditional closure from the Wisconsin Department of Natural Resources (WDNR), i.e. deed restrictions or restrictive zoning requirements.

Methods to determine the risks associated with chemicals-of-concern through each exposure pathway were based upon guidelines published in the ASTM and EPA documentation. The spreadsheets used to calculate the potential risks for each chemical-of-concern's exposure pathway and the cumulative risk are attached. Input values for the equations are separated into site-specific properties, chemical-of-concern specific properties, and default exposure assumptions. Input values for site-specific properties were obtained from either measured field data or laboratory analysis. Soil particle density was determined by laboratory analysis of several soil samples collected from the site. Input values for chemical-of-concern properties were obtained from literature sources. The literature sources are referenced in the spreadsheets. Input values for the default exposure assumptions are associated with the non-industrial site classification given in NR 720.19 (5).

As a conservative approach, the greatest soil chemical-of-concern concentrations was assumed to exist throughout the contaminant plume for evaluation purposes. Detected compound concentrations for the unsaturated zone were averaged, and the 95% confidence limit was used for the risk assessment. Based on photoionization detector measurements, it is believed that the concentrations used to evaluate risk, for the surface soils, is a very conservative estimation of risk.

Risk assessment results indicate that of the four residual soil contaminants (benzene, toluene, ethylbenzene, and xylenes) of concern, only benzene poses a human health risk through the exposure pathways evaluated. The health risk posed by the carcinogenic compound benzene, 1.06×10^{-5} (unitless), does exceed the individual excess cancer risk of 1.0×10^{-6} or the cumulative risk of 1.0×10^{-5}. The health risk posed by the individual noncarcinogenic compounds; ethylbenzene, 3.71×10^{-2} (unitless), toluene, 3.27×10^{-1} (unitless), and total xylenes, 2.40×10^{-1} (unitless) does not exceed the individual hazard quotient of 1. A cumulative risk of all the noncarcinogenic compounds, 6.04×10^{-1} (unitless), does not exceed the hazard index of 1.

Cumulative Excess Cancer Risk

Due to Direct Contact with Contaminated Soil

Non-Industrial Classification

Argetsinger's IGA Site

Couderay, Wisconsin

Risk 1,2-Dichloroethane = 0.00E+00 [unitless], Excess Cancer Risk due to 1,2-Dichloroethane Contaminated Soil

Risk Benzene = 1.06E-05 [unitless], Excess Cancer Risk due to Benzene Contaminated Soil

Cumulative Excess Cancer Risk = 1.06E-05 [unitless]

Warning: the excess cancer risk of one of the individual compounds exceeds 1E-06!

WARNING: cumulative excess cancer risk exceeds 1e-05: contaminant concentrations are to

Excess Cancer Risk
Due to Direct Contact with Benzene Contaminated Soil
Non-Industrial Classification

Argetsinger's IGA Site
Couderay, Wisconsin

Site Specific Properties

C Benzene =	10.875	[mg/kg], benzene concentration in soil	
LS =	33.5	[m], width of contaminated area	
A =	499.00	[m^2], area of contaminated soil	
f_{oc} =	0.001	[fraction], organic carbon content of soil	
p_s =	2.65	[g/cm^3], soil particle density	(assumed)
p_b=	1.5	[g/cm^3], dry soil bulk density	(assumed)
E =	0.3	[unitless], soil porosity	(assumed)
E_w=	0.13	[cm^3-H_2O/cm^3-soil], soil water filled porosity, see Porosity to determine	
E_a=	0.17	[unitless], soil air filled porosity	
C_{sat} Benzene=	299.96	[mg/kg], benzene saturation concentration in soil	

Benzene Specific Properties

SFo Benzene=	0.029	[$(mg/kg\text{-}day)^{-1}$], oral cancer slope factor (IRIS as reported in ref. 1)
SFi Benzene =	0.029	[$(mg/kg\text{-}day)^{-1}$], inhalation cancer slope factor (IRIS as reported in ref. 1)
Di Benzene =	0.088	[cm^2/sec], molecular diffusivity or air diffusion coefficient (ref. 3)
H Benzene =	0.228	[L-H_2O/L-air], Henry's law constant (ref. 3)
Koc Benzene =	58.9	[cm^3/g], organic carbon partition coefficient, (ref. 3)
D^{wat} Benzene=	9.80E-06	[cm^2/sec],diffusion coefficient in water(ref. 3)
S Benzene=	1750	[mg/L], Solubility in water (ref. 3)

DNR default exposure assumptions per NR 720.19(5)(c)2.a.

IRsoil/age1-6 =	200	[mg/day], ingestion rate of soil age 1 to 6
IRsoil/age7-31 =	100	[mg/day], ingestion rate of soil age 7 to 31
IRair =	20	[m^3/day], daily inhalation rate
BWage1-6 =	15	[kg], average body weight from age 1 to 6
BWage7-31 =	70	[kg], average body weight from age 7 to 31
EDage1-6 =	6	[yr], exposure duration during ages 1 to 6
EDage7-31 =	24	[yr], exposure duration during ages 7 to 31
EDinhalation =	30	[yr], exposure duration for inhalation of particulates
EF =	350	[days/year], exposure frequency
AT =	70	[yr], averaging time
I=	0.254	[m/year], annual groundwater recharge rate

Excess Cancer Risk due to Ingestion of Soil

Calculated Values (equations from reference 2)

IFsoil/adj = 114.29 [mg-yr/kg-day], age-adjusted soil ingestion factor

$$\frac{IRsoil/age1\text{-}6 * EDage1\text{-}6}{BWage1\text{-}6} + \frac{IRsoil/age7\text{-}31 * EDage7\text{-}31}{BWage7\text{-}31}$$

Risk Ingestion = 4.94E-07 [unitless], cancer risk from ingestion of contaminated soil

$$\frac{SFo\text{-}Benzene * C\ Benzene * 10^{-6}\ kg/mg * EF * IFsoil/adj}{AT * 365\ days/yr}$$

Excess Cancer Risk due to Inhalation of Particulates

Assumptions (reference 2)

V =	2.25	[m/sec], wind speed in mixing zone
DH =	2	[m], diffusion height
RF =	0.036	[g/m^2-hr], respirable fraction
G =	0	[unitless], fraction of vegatative cover
Um =	4.5	[m/sec], mean annual wind speed
Ut =	12.8	[m/sec], equivalent threshold value of wind speed at 10m
F(x) =	0.0497	[unitless], function dependent on Um/Ut

Calculated Values (equations from reference 2)

PEF = 1.40E+10 [m3/kg], Particulate Emission Factor

$$\frac{LS * V * DH * 3600\ sec/hr}{A} * \frac{1000\ g/kg}{RF * (1-G) * (Um/Ut)^3 * F(x)}$$

Risk Inhalation Part. = 2.65E-12 [unitless], cancer risk from inhalation of contaminated soil particles

$$\frac{SFi\text{-}Benzene * C\ Benzene * ED\ inhalation * EF * IR\ air * (1/PEF)}{AT * BWage\ 7\text{-}31 * 365\ days/yr}$$

Excess Cancer Risk due to Inhalation of Vapors from Surface Soil

Assumptions (reference 3)

Q/C =	97.78	[gm/m^2-s per kg/m^3], inverse of the mean concentration of a 0.5 acre square source (reference 3)
T =	9.50E+08	[s], averaging time for vapor flux

soil contamination is homogeneous from surface to groundwater or impermeable barrier

Calculated Values (equations from reference 3)

D_a Benzene= 0.00237 [cm^2/s], effective diffusion coefficient in soil based on vapor-phase concentration

$$\frac{(E_a^{3.33} * DiH + E_w^{3.33} D_w)/E^2}{p_b k_s + E_w + E_a H}$$

k_s = 0.0589 [cm^3-H_2O/g-soil], soil-water sorption coefficient

$$f_{oc} * k_{oc}$$

VFBenzene = 3.65E+03 [m3/kg], surface soil-to-air volatilization factor

$$\frac{Q/C * (3.14 * D_a * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * p_b * D_a}$$

Risk Inhalation Vap. = 1.01E-05 [unitless], cancer risk from inhalation of vapors from soil

$$\frac{SFi\text{-}Benzene * CBenzene * EDinhalation * EF * IRair * (1/VFBenzene)}{AT * BWage\ 7\text{-}31 * 365\ days/yr}$$

Excess Cancer Risk due to Benzene Contaminated Soil

Risk Benzene = 1.06E-05 [unitless], Excess Cancer Risk due to Benzene Contaminated Soil

Risk Ingestion of Soil + Risk Inhalation of Particles + Risk Inhalation of Vapors

Warning: the excess cancer risk from this individual compound exceeds 1E-06!

References

1.) Smith, R.L. 1995. "EPA Region III Risk-Based Concentration Table Background Information."

2.) U.S. EPA 1991. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation *Manual (Part B, Development of Risk-Based Preliminary Remediation Goals). Publication EPA/540/R-92/003.* Office of Emergency and Remedial Response, Washington, DC. NTIS PB92-963333

3) U.S. EPA 1996. Soil Screening Guidance: User's Guide. Publication 9355.4-23 Office of Solid Waste and Emergency Response, Washington, D.C.

Cumulative Hazard Index (non-carcinogens)
Due to Direct Contact with Contaminated Soil
Non-Industrial Classification

Consumer's Cooperative Site
Richland Center, Wisconsin

HQ Ethylbenzene =	3.71E-02	[unitless], Hazard Quotient due to Ethylbenzene Contaminated Soil
HQ Methyl t-butyl ether =	0.00E+00	[unitless], Hazard Quotient due to MTBE Contaminated Soil
HQ Toluene =	3.27E-01	[unitless], Hazard Quotient due to Toluene Contaminated Soil
HQ Xylene =	2.40E-01	[unitless], Hazard Quotient due to Xylene Contaminated Soil
HQ Naphthalene =	0.00E+00	[unitless], Hazard Quotient due to Naphthalene Contaminated Soil
Cumulative Hazard Index =	6.04E-01	[unitless]

The hazard quotient for each individual compound does not exceed one.

The Cumulative Hazard Index does not exceed one

Hazard Quotient (non-carcinogens)
Due to Direct Contact with Ethylbenzene Contaminated Soil
Non-Industrial Classification
Consumer's Cooperative Site
Richland Center, Wisconsin

Site Specific Properties

C Ethylbenzene =	26.659	[mg/kg], ethylbenzene concentration in soil
LS =	33.5	[m], width of contaminated area
A =	499.00	[m^2], area of contaminated soil
f_{oc} =	0.001	[fraction], organic carbon content of soil
ps =	2.65	[g/cm^3], soil particle density
E_t =	0.4	[unitless], soil porosity
E_{ws} =	0.13	[cm^3-water/cm^3-soil], water-filled porosity in vadose zone as calculated by: $E_{ws} = E_t(I/K)^{1/(2b+3)}$ See Porosity page.
E_{as} =	0.27	[cm^3-air/cm^3-soil], air-filled porosity in vadose zone soils
p_b =	1.5	[gm/cm^3], dry soil bulk density
C_{sat} =	85.8	mg/kg

Ethylbenzene Specific Properties

RfDo Ethylbenzene=	0.1	[(mg/kg-day)], oral chronic reference dose (IRIS as reported in ref. 1)
RfDi Ethylbenzene =	0.286	[(mg/kg-day)], inhalation chronic reference dose (IRIS as reported in ref. 1)
Di Ethylbenzene =	7.50E-02	[cm^2/sec], molecular diffusivity or air diffusion coefficient (see ref. 3)
H Ethylbenzene =	3.23E-01	[dimensionless], Henry's law constant (see ref. 3)
Koc Ethylbenzene =	363	[cm^3/g], organic carbon partition coefficient (see ref. 3)
Dw Ethylbenzene =	7.80E-06	[cm^2/s], diffusion coefficient in water (See Ref. 3)

DNR default exposure assumptions per NR 720.19(5)(c)1.a.

IR soil =	200	[mg/day], ingestion rate of soil
IR air =	20	[m^3/day], daily inhalation rate
BW =	15	[kg], average body weight - child
ED =	6	[yr], exposure duration for inhalation of particulates
EF =	350	[days/year], exposure frequency
AT =	6	[yr], averaging time for inhalation of particulates
I =	0.254	[m/yr], average annual recharge rate

Hazard Quotient due to Ingestion of Soil

Calculated Values (equations from reference 2)

IFsoil/adj = 80.00 [mg-yr/kg-day], age-adjusted soil ingestion factor

$$\frac{IRsoil * ED}{BW}$$

Risk Ingestion = 3.41E-03 [unitless], hazard quotient from ingestion of contaminated soil

$$\frac{C\ Ethylbenzene * 10^{-6}\ kg/mg * EF * IFsoil/adj}{RfDo\ Ethylbenzene * AT * 365\ days/yr}$$

Hazard Quotient due to Inhalation of Particulates

Assumptions (reference 2)

V =	2.25	[m/sec], wind speed in mixing zone
DH =	2	[m], diffusion height
RF =	0.036	[g/m^2-hr], respirable fraction
G =	0	[unitless], fraction of vegatative cover
Um =	4.5	[m/sec], mean annual wind speed
Ut =	12.8	[m/sec], equivalent threshold value of wind speed at 10m
F(x) =	0.0497	[unitless], function dependent on Um/Ut

Calculated Values (equations from reference 2)

PEF = 1.40E+10 [m^3/kg], Particulate Emission Factor

$$\frac{LS * V * DH * 3600\ sec/hr}{A} * \frac{1000\ g/kg}{RF * (1-G) * (Um/Ut)^3 * F(x)}$$

Risk Inhalation - Part.	8.52E-09	[unitless], hazard quotient from inhalation of contaminated soil particles

$$\frac{C\ Ethylbenzene * ED * EF * IRair * (1/PEF)}{RfDi\ Ethylbenzene * BW * AT * 365\ days/yr}$$

Hazard Quotient due to Inhalation of Vapors

Assumptions (reference 3)

Q/C =	97.78	[gm/m^2-s per kg/m^3], inverse of the mean concentration of a 0.5 acre square source (reference 3)
T =	9.50E+08	[s], averaging time for vapor flux
EDvapors =	30	[yr], exposure duration for inhalation of vapors (see ref. 3)
ATvapors =	30	[yr], averaging time for inhalation of vapors (see ref. 3)

Calculated Values (equations from reference 3)

D_a Ethylbenzene= 0.00254 [cm^2/s], effective diffusion coefficient in soil based on vapor-phase concentration

$$\frac{(E_{as}^{3.33} * DiH + E_{ws}^{3.33} D_w)/E_t^2}{p_b ks + E_{ws} + E_{as} H}$$

Ks Ethylbenzene = 0.363 [cm^3-H_2O/g-soil], soil-water sorption coefficient

$$f_{oc} * k_{oc}$$

VF Ethylbenzene = 3.53E+03 [m^3/kg], surface soil-to-air volatilization factor

$$\frac{Q/C * (3.14 * D_a * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * p_b * D_a}$$

Risk Inhalation -Vap. =	3.37E-02	[unitless], cancer risk from inhalation of contaminated soil

$$\frac{CEthylbenzene * ED * EF * IRair * (1/VFEthylbenzene)}{RfDi\ Ethylbenzene * AT * BW * 365\ days/yr}$$

Hazard Quotient due to Ethylbenzene Contaminated Soil

Risk Ethylbenzene = 3.71E-02 [unitless], Hazard Quotient due to Ethylbenzene Contaminated Soil

HQ Ingestion of Soil + HQ Inhalation of Particles + HQ Inhalation of Vapors

The hazard quotient from this individual compound does not exceed 1

References

1.) Smith, R.L. 1995. "EPA Region III Risk-Based Concentration Table Background Information."

2.) U.S. EPA 1991. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation *Manual (Part B, Development of Risk-Based Preliminary Remediation Goals). Publication EPA/540/R-92/003.* Office of Emergency and Remedial Response, Washington, DC. NTIS PB92-963333

3) U.S. EPA 1996. Soil Screening Guidance: User's Guide. Publication 9355.4-23 Office of Solid Waste and Emergency Response, Washington, D.C.

Hazard Quotient (non-carcinogens)
Due to Direct Contact with Toluene Contaminated Soil
Non-Industrial Classification
Consumer's Cooperative Site
Richland Center, Wisconsin

Site Specific Properties

C Toluene =	81.046	[mg/kg], toluene concentration in soil
LS =	33.5	[m], width of contaminated area
A =	499	[m^2], area of contaminated soil
foc =	0.001	[fraction], organic carbon content of soil
ps =	2.65	[g/cm^3], soil particle density
E_t =	0.4	[unitless], soil porosity
E_{ws} =	0.13	[cm^3-water/cm^3-soil], water-filled porosity in vadose zone as calculated by: $E_{ws} = E_t(I/K)^{1/(2b+3)}$ See Porosity page.
E_{as} =	0.27	[cm^3-air/cm^3-soil], air-filled porosity in vadose zone soils
p_b =	1.5	[gm/cm^3], dry soil bulk density
C_{sat} =	167.1	mg/kg

Toluene Specific Properties

RfDo Toluene=	0.2	[(mg/kg-day)], oral chronic reference dose (IRIS as reported in ref. 1)
RfDi Toluene =	0.114	[(mg/kg-day)], inhalation chronic reference dose (IRIS as reported in ref. 1)
Di Toluene =	8.70E-02	[cm^2/sec], molecular diffusivity or air diffusion coefficient (See Ref. 3)
H Toluene =	2.72E-01	[dimensionless], Henry's law constant (See Ref. 3)
Koc-Toluene =	182	[cm^3/g], organic carbon partition coefficient (See Ref. 3)
Dw Ethylbenzene =	8.60E-06	[cm^2/s], diffusion coefficient in water (See Ref. 3)

DNR default exposure assumptions per NR 720.19(5)(c)1.a.

IRsoil =	200	[mg/day], ingestion rate of soil
IRair =	20	[m^3/day], daily inhalation rate
BW =	15	[kg], average body weight - child
ED =	6	[yr], exposure duration for inhalation of particulates
EF =	350	[days/year], exposure frequency
AT =	6	[yr], averaging time

Hazard Quotient due to Ingestion of Soil

Calculated Values (equations from reference 2)

IFsoil/adj = 80.00 [mg-yr/kg-day], age-adjusted soil ingestion factor

$$\frac{IRsoil * ED}{BW}$$

Risk Ingestion = 5.18E-03 [unitless], hazard quotient from ingestion of contaminated soil

$$\frac{C\ Toluene * 10^{-6}\ kg/mg * EF * IFsoil/age}{RfDo\ Toluene * AT * 365\ days/yr}$$

Hazard Quotient due to Inhalation of Particulates

Assumptions (reference 2)

V =	2.25	[m/sec], wind speed in mixing zone
DH =	2	[m], diffusion height
RF =	0.036	[g/m^2-hr], respirable fraction
G =	0	[unitless], fraction of vegatative cover
Um =	4.5	[m/sec], mean annual wind speed
Ut =	12.8	[m/sec], equivalent threshold value of wind speed at 10m
F(x) =	0.0497	[unitless], function dependent on Um/Ut

Calculated Values (equations from reference 2)

PEF = 1.40E+10 [m^3/kg], Particulate Emission Factor

$$\frac{LS * V * DH * 3600\ sec/hr}{A} * \frac{1000\ g/kg}{RF * (1-G) * (Um/Ut)^3 * F(x)}$$

Risk Inhalation - Part. =	6.50E-08	[unitless], hazard quotient from inhalation of contaminated soil particles

$$\frac{C\ Toluene * ED * EF * IRair * (1/PEF)}{RfDi\ Toluene * BW * AT * 365\ days/yr}$$

Harzard Quotient due to Inhalation of Vapors

Assumptions (reference 3)

Q/C =	97.78	[gm/m^2-s per kg/m^3], inverse of the mean concentration of a 0.5 acre square source (reference 3)
T =	9.50E+08	[s], averaging time for vapor flux
EDvapors =	30	[yr], exposure duration for inhalation of vapors (see ref. 3)
ATvapors =	30	[yr], averaging time for inhalation of vapors (see ref. 3)

Calculated Values (equations from reference 3)

D_a Toluene= 0.00397 [cm^2/s], effective diffusion coefficient in soil based on vapor-phase concentration

$$\frac{(E_{as}^{3.33} * DiH + E_{ws}^{3.33} D_w)/E_t^2}{p_b ks + E_{ws} + E_{as} H}$$

Ks Toluene = 0.182 [cm^3-H_2O/g-soil], soil-water sorption coefficient

$$f_{oc} * k_{oc}$$

VF Toluene = 2.83E+03 [m^3/kg], surface soil-to-air volatilization factor

$$\frac{Q/C * (3.14 * D_a * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * p_b * D_a}$$

Risk Inhalation - Vap. =	3.22E-01	[unitless], cancer risk from inhalation of contaminated soil particles

$$\frac{CToluene * ED * EF * IRair * (1/VFToluene)}{RfDi\ Toluene * AT * BW * 365\ days/yr}$$

Hazard Quotient due to Toluene Contaminated Soil

Risk Toluene = 3.27E-01 [unitless], Hazard Quotient due to Toluene Contaminated Soil

HQ Ingestion of Soil + HQ Inhalation of Particles + HQ Inhalation of Volatiles

The hazard quotient from this individual compound does not exceed 1

References

1.) Smith, R.L. 1995. "EPA Region III Risk-Based Concentration Table Background Information."

2.) U.S. EPA 1991. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation *Manual (Part B, Development of Risk-Based Preliminary Remediation Goals). Publication EPA/540/R-92/003.* Office of Emergency and Remedial Response, Washington, DC. NTIS PB92-963333

3) U.S. EPA 1996. Soil Screening Guidance: User's Guide. Publication 9355.4-23 Office of Solid Waste and Emergency Response, Washington, D.C.

Hazard Quotient (non-carcinogens)
Due to Direct Contact with Xylene Contaminated Soil
Non-Industrial Classification
Consumer's Cooperative Site
Richland Center, Wisconsin

Site Specific Properties

CXylene =	142.118	[mg/kg], xylene concentration in soil
LS =	33.5	[m], width of contaminated area
A =	499	[m^2], area of contaminated soil
foc =	0.001	[fraction], organic carbon content of soil
ps =	2.65	[g/cm^3], soil particle density
E_t =	0.4	[unitless], soil porosity
E_{ws} =	0.13	[cm^3-water/cm^3-soil], water-filled porosity in vadose zone as calculated by: $E_{ws} = E_t(I/K)^{1/(2b+3)}$ See Porosity page.
E_{as} =	0.27	[cm^3-air/cm^3-soil], air-filled porosity in vadose zone soils
p_b =	1.5	[gm/cm^3], dry soil bulk density
C_{sat} =	91.4	mg/kg

Warning: Soil concentrations exceed the theoretical soil contaminant concentration limit. Estimate of risk with a VF is not valid!

Xylene Specific Properties

RfDo Xylene=	2	[(mg/kg-day)], oral chronic reference dose (HEAST as reported in ref. 1)
RfDi Xylene =	0.2	[(mg/kg-day)], inhalation chronic reference dose (withdrawn from IRIS or HEAST as reported in ref.1)
Di Xylene =	7.80E-02	[cm^2/sec], molecular diffusivity or air diffusion coefficient (Avg of o-, m-, p-. See Ref. 3)
H Xylene =	2.76E-01	[dimensionless], Henry's law constant (Avg of o-, m-, p-. See Ref. 3)
Koc-Xylene =	386	[cm^3/g], organic carbon partition coefficient (Avg of o-, m-, p-. See Ref. 3)
DwXylene =	8.75E-06	[cm^2/sec], diffusion coefficient in water (Avg of o-, m-, p-. See Ref. 3)

DNR default exposure assumptions per NR 720.19(5)(c)1.a.

IR soil =	200	[mg/day], ingestion rate of soil
IR air =	20	[m^3/day], daily inhalation rate
BW =	15	[kg], average body weight - child
ED =	6	[yr], exposure duration for inhalation of particulates
EF =	350	[days/year], exposure frequency
AT =	6	[yr], averaging time

Hazard Quotient due to Ingestion of Soil

Calculated Values (equations from reference 2)

IFsoil/adj = 80.00 [mg-yr/kg-day], age-adjusted soil ingestion factor

$$\frac{\text{IR soil} * \text{ED}}{\text{BW}}$$

Risk Ingestion = 9.09E-04 [unitless], hazard quotient from ingestion of contaminated soil

$$\frac{\text{C Xylene} * 10^{-6}\ \text{kg/mg} * \text{EF} * \text{IFsoil/age}}{\text{RfDo Xylene} * \text{AT} * 365\ \text{days/yr}}$$

Hazard Quotient due to Inhalation of Particulates

Assumptions (reference 2)

V =	2.25	[m/sec], wind speed in mixing zone
DH =	2	[m], diffusion height
RF =	0.036	[g/m^2-hr], respirable fraction
G =	0	[unitless], fraction of vegatative cover
Um =	4.5	[m/sec], mean annual wind speed
Ut =	12.8	[m/sec], equivalent threshold value of wind speed at 10m
F(x) =	0.0497	[unitless], function dependent on Um/Ut

Calculated Values (equations from reference 2)

PEF = 1.40E+10 [m^3/kg], Particulate Emission Factor

$$\frac{LS * V * DH * 3600\ sec/hr}{A} * \frac{1000\ g/kg}{RF * (1-G) * (Um/Ut)^3 * F(x)}$$

Risk Inhalation - Part. =	6.49E-08	[unitless], hazard quotient from inhalation of contaminated soil particles

$$\frac{C\ Xylene * ED * EF * IRair * (1/PEF)}{RfDi\ Xylene * BW * AT * 365\ days/yr}$$

Hazard Quotient due to Inhalation of Vapors

Assumptions (reference 3)

Q/C =	97.78	[gm/m^2-s per kg/m^3], inverse of the mean concentration of a 0.5 acre square source (reference 3)
T =	9.50E+08	[s], averaging time for vapor flux
EDvapors =	30	[yr], exposure duration for inhalation of vapors (see ref. 3)
ATvapors =	30	[yr], averaging time for inhalation of vapors (see ref. 3)

Calculated Values (equations from reference 3)

D_a Xylene= 0.00219 [cm^2/s], effective diffusion coefficient in soil based on vapor-phase concentration

$$\frac{(E_{as}^{3.33} * DiH + E_{ws}^{3.33} D_w)/E_t^2}{p_b ks + E_{ws} + E_{as} H}$$

Ks Xylene = 0.386 [cm^3-H_2O/g-soil], soil-water sorption coefficient

$$f_{oc} * k_{oc}$$

VF Xylene = 3.80E+03 [m^3/kg], surface soil-to-air volatilization factor

$$\frac{Q/C * (3.14 * D_a * T)^{1/2} * 10^{-4}\ m^2/cm^2}{2 * p_b * D_a}$$

Risk Inhalation - Vap. =	2.39E-01	[unitless], cancer risk from inhalation of contaminated soil particles

$$\frac{C\ Xylene * ED * EF * IRair * (1/VF\ Xylene)}{RfDi\ Xylene * AT * BW * 365\ days/yr}$$

Hazard Quotient due to Xylene Contaminated Soil

Risk Xylene = 2.40E-01 [unitless], Hazard Quotient due to Xylene Contaminated Soil

HQ Ingestion of Soil + HQ Inhalation of Particles + HQ Inhalation of Vapors

The hazard quotient from this individual compound does not exceed 1

References

1.) Smith, R.L. 1995. "EPA Region III Risk-Based Concentration Table Background Information."

2.) U.S. EPA 1991. Risk Assessment Guidance for Superfund Volume 1: Human Health Evaluation *Manual (Part B, Development of Risk-Based Preliminary Remediation Goals). Publication EPA/540/R-92/003.* Office of Emergency and Remedial Response, Washington, DC. NTIS PB92-963333

3) U.S. EPA 1996. Soil Screening Guidance: User's Guide. Publication 9355.4-23 Office of Solid Waste and Emergency Response, Washington, D.C.

ATTACHMENT I
Potable Well Sample Laboratory Analytical Report

LABORATORY REPORT REVIEW SUMMARY
Analytical Laboratory Oversight Group

FMI Project Number: 97.0353

Unique Lab Project Number: 974607

Reviewed By: UPFS 12/4/97

COMMENTS:

Fluorotrichloromethane in A2 right at LOD
probably refrigerant

** Attach to above-referenced laboratory report - **for internal use only** **

059741607

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- Analytical Report -

Project Name : ARGET SINGERS

Project Number : 97353

Client : FLUID MANAGEMENT INC

Report Date : 11/26/97

WI DNR LAB ID : 113138520

Lab Sample No.	Field ID	Collection Date	Lab Sample No.	Field ID	Collection Date
974607-001	A1	11/17/97			
974607-002	A2	11/17/97			
974607-003	BLANK	11/17/97			

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this final report is authorized by Laboratory management, as is verified by the following signature.

Gregory J Graf
Approval Signature

12-2-97
Date

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SAMPLE NARRATIVE

PROJECT NAME:	ARGENT SINGERS/FMI
PROJECT NUMBER:	97353
WORKORDER NUMBER:	974607
DATE:	11/26/97

There are no comments related to this report.

En Chem Project Manager

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1-800-7-ENCHEM

- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97353
Field ID : A1
Lab Sample Number : 974607-001
Lab Project Number : 974607

Submitter : FLUID MANAGEMENT INC
Report Date : 11/26/97
Collection Date : 11/17/97
Matrix Type : DRINKING WATER
WI DNR LAB ID : 113138520

Volatile Organic Results

SDWA - LOW LEVEL VOLATILE LIST

Prep Method: EPA 524.2

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,1,1-Trichloroethane	< 0.16	0.16	0.51		ug/L		11/24/97	EPA 524.2
1,1,2,2-Tetrachloroethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
1,1,2-Trichloroethane	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,1-Dichloroethane	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,1-Dichloroethene	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
1,1-Dichloropropene	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,2,3-Trichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,2,3-Trichloropropane	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
1,2,4-Trichlorobenzene	< 0.18	0.18	0.57		ug/L		11/24/97	EPA 524.2
1,2,4-Trimethylbenzene	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,2-Dibromo-3-chloropropane	< 0.23	0.23	0.73		ug/L		11/24/97	EPA 524.2
1,2-Dibromoethane	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
1,2-Dichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,2-Dichloroethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
1,2-Dichloropropane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,3,5-Trimethylbenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,3-Dichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,3-Dichloropropane	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,4-Dichlorobenzene	< 0.24	0.24	0.76		ug/L		11/24/97	EPA 524.2
2,2-Dichloropropane	< 0.38	0.38	1.2		ug/L		11/24/97	EPA 524.2
2-Chlorotoluene	< 0.20	0.20	0.64		ug/L		11/24/97	EPA 524.2
4-Chlorotoluene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
Benzene	< 0.090	0.090	0.29		ug/L		11/24/97	EPA 524.2
Bromobenzene	< 0.19	0.19	0.61		ug/L		11/24/97	EPA 524.2
Bromochloromethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
Bromodichloromethane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
Bromoform	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
Bromomethane	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
Carbon tetrachloride	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
Chlorobenzene	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
Chlorodibromomethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
Chloroethane	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
Chloroform	< 0.18	0.18	0.57		ug/L		11/24/97	EPA 524.2
Chloromethane	< 0.19	0.19	0.61		ug/L		11/24/97	EPA 524.2

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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97353
Field ID : A1
Lab Sample Number : 974607-001
Lab Project Number : 974607

Submitter : FLUID MANAGEMENT INC
Report Date : 11/26/97
Collection Date : 11/17/97
Matrix Type : DRINKING WATER
WI DNR LAB ID : 113138520

cis-1,2-Dichloroethene	< 0.10	0.10	0.32	ug/L	11/24/97	EPA 524.2
cis-1,3-Dichloropropene	< 0.18	0.18	0.57	ug/L	11/24/97	EPA 524.2
Dibromomethane	< 0.11	0.11	0.35	ug/L	11/24/97	EPA 524.2
Dichlorodifluoromethane	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Ethylbenzene	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Fluorotrichloromethane	< 0.17	0.17	0.54	ug/L	11/24/97	EPA 524.2
Hexachlorobutadiene	< 0.27	0.27	0.86	ug/L	11/24/97	EPA 524.2
Isopropylbenzene	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Methyl-tert-butyl-ether	< 0.17	0.17	0.54	ug/L	11/24/97	EPA 524.2
Methylene chloride	< 0.11	0.11	0.35	ug/L	11/24/97	EPA 524.2
n-Butylbenzene	< 0.17	0.17	0.54	ug/L	11/24/97	EPA 524.2
n-Propylbenzene	< 0.18	0.18	0.57	ug/L	11/24/97	EPA 524.2
Naphthalene	< 0.11	0.11	0.35	ug/L	11/24/97	EPA 524.2
p-Isopropyltoluene	< 0.16	0.16	0.51	ug/L	11/24/97	EPA 524.2
s-Butylbenzene	< 0.16	0.16	0.51	ug/L	11/24/97	EPA 524.2
Styrene	< 0.20	0.20	0.64	ug/L	11/24/97	EPA 524.2
t-Butylbenzene	< 0.24	0.24	0.76	ug/L	11/24/97	EPA 524.2
Tetrachloroethene	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
Toluene	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
trans-1,2-Dichloroethene	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
trans-1,3-Dichloropropene	< 0.16	0.16	0.51	ug/L	11/24/97	EPA 524.2
Trichloroethene	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
Vinyl chloride	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
Xylene, -o	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Xylenes, -m, -p	< 0.23	0.23	0.73	ug/L	11/24/97	EPA 524.2

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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97353
Field ID : A2
Lab Sample Number : 974607-002
Lab Project Number : 974607

Submitter : FLUID MANAGEMENT INC
Report Date : 11/26/97
Collection Date : 11/17/97
Matrix Type : DRINKING WATER
WI DNR LAB ID : 113138520

Volatile Organic Results

SDWA - LOW LEVEL VOLATILE LIST

Prep Method: EPA 524.2

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,1,1-Trichloroethane	< 0.16	0.16	0.51		ug/L		11/24/97	EPA 524.2
1,1,2,2-Tetrachloroethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
1,1,2-Trichloroethane	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,1-Dichloroethane	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,1-Dichloroethene	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
1,1-Dichloropropene	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,2,3-Trichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,2,3-Trichloropropane	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
1,2,4-Trichlorobenzene	< 0.18	0.18	0.57		ug/L		11/24/97	EPA 524.2
1,2,4-Trimethylbenzene	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,2-Dibromo-3-chloropropane	< 0.23	0.23	0.73		ug/L		11/24/97	EPA 524.2
1,2-Dibromoethane	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
1,2-Dichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,2-Dichloroethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
1,2-Dichloropropane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,3,5-Trimethylbenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,3-Dichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,3-Dichloropropane	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,4-Dichlorobenzene	< 0.24	0.24	0.76		ug/L		11/24/97	EPA 524.2
2,2-Dichloropropane	< 0.38	0.38	1.2		ug/L		11/24/97	EPA 524.2
2-Chlorotoluene	< 0.20	0.20	0.64		ug/L		11/24/97	EPA 524.2
4-Chlorotoluene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
Benzene	< 0.090	0.090	0.29		ug/L		11/24/97	EPA 524.2
Bromobenzene	< 0.19	0.19	0.61		ug/L		11/24/97	EPA 524.2
Bromochloromethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
Bromodichloromethane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
Bromoform	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
Bromomethane	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
Carbon tetrachloride	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
Chlorobenzene	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
Chlorodibromomethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
Chloroethane	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
Chloroform	< 0.18	0.18	0.57		ug/L		11/24/97	EPA 524.2
Chloromethane	< 0.19	0.19	0.61		ug/L		11/24/97	EPA 524.2

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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97353
Field ID : A2
Lab Sample Number : 974607-002
Lab Project Number : 974607

Submitter : FLUID MANAGEMENT INC
Report Date : 11/26/97
Collection Date : 11/17/97
Matrix Type : DRINKING WATER
WI DNR LAB ID : 113138520

cis-1,2-Dichloroethene	< 0.10	0.10	0.32	ug/L		11/24/97	EPA 524.2
cis-1,3-Dichloropropene	< 0.18	0.18	0.57	ug/L		11/24/97	EPA 524.2
Dibromomethane	< 0.11	0.11	0.35	ug/L		11/24/97	EPA 524.2
Dichlorodifluoromethane	< 0.15	0.15	0.48	ug/L		11/24/97	EPA 524.2
Ethylbenzene	< 0.15	0.15	0.48	ug/L		11/24/97	EPA 524.2
Fluorotrichloromethane	< 0.17	0.17	0.54	ug/L	Q	11/24/97	EPA 524.2
Hexachlorobutadiene	< 0.27	0.27	0.86	ug/L		11/24/97	EPA 524.2
Isopropylbenzene	< 0.15	0.15	0.48	ug/L		11/24/97	EPA 524.2
Methyl-tert-butyl-ether	< 0.17	0.17	0.54	ug/L		11/24/97	EPA 524.2
Methylene chloride	< 0.11	0.11	0.35	ug/L		11/24/97	EPA 524.2
n-Butylbenzene	< 0.17	0.17	0.54	ug/L		11/24/97	EPA 524.2
n-Propylbenzene	< 0.18	0.18	0.57	ug/L		11/24/97	EPA 524.2
Naphthalene	< 0.11	0.11	0.35	ug/L		11/24/97	EPA 524.2
p-Isopropyltoluene	< 0.16	0.16	0.51	ug/L		11/24/97	EPA 524.2
s-Butylbenzene	< 0.16	0.16	0.51	ug/L		11/24/97	EPA 524.2
Styrene	< 0.20	0.20	0.64	ug/L		11/24/97	EPA 524.2
t-Butylbenzene	< 0.24	0.24	0.76	ug/L		11/24/97	EPA 524.2
Tetrachloroethene	< 0.13	0.13	0.41	ug/L		11/24/97	EPA 524.2
Toluene	< 0.13	0.13	0.41	ug/L		11/24/97	EPA 524.2
trans-1,2-Dichloroethene	< 0.15	0.15	0.48	ug/L		11/24/97	EPA 524.2
trans-1,3-Dichloropropene	< 0.16	0.16	0.51	ug/L		11/24/97	EPA 524.2
Trichloroethene	< 0.13	0.13	0.41	ug/L		11/24/97	EPA 524.2
Vinyl chloride	< 0.13	0.13	0.41	ug/L		11/24/97	EPA 524.2
Xylene, -o	< 0.15	0.15	0.48	ug/L		11/24/97	EPA 524.2
Xylenes, -m, -p	< 0.23	0.23	0.73	ug/L		11/24/97	EPA 524.2

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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97353
Field ID : BLANK
Lab Sample Number : 974607-003
Lab Project Number : 974607

Submitter : FLUID MANAGEMENT INC
Report Date : 11/26/97
Collection Date : 11/17/97
Matrix Type : BLANK
WI DNR LAB ID : 113138520

Volatile Organic Results

SDWA - LOW LEVEL VOLATILE LIST

Prep Method: EPA 524.2

Analyte	Result	LOD	LOQ	EQL	Units	Code	Analysis Date	Analysis Method
1,1,1,2-Tetrachloroethane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,1,1-Trichloroethane	< 0.16	0.16	0.51		ug/L		11/24/97	EPA 524.2
1,1,2,2-Tetrachloroethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
1,1,2-Trichloroethane	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,1-Dichloroethane	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,1-Dichloroethene	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
1,1-Dichloropropene	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,2,3-Trichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,2,3-Trichloropropane	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
1,2,4-Trichlorobenzene	< 0.18	0.18	0.57		ug/L		11/24/97	EPA 524.2
1,2,4-Trimethylbenzene	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,2-Dibromo-3-chloropropane	< 0.23	0.23	0.73		ug/L		11/24/97	EPA 524.2
1,2-Dibromoethane	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
1,2-Dichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,2-Dichloroethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
1,2-Dichloropropane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
1,3,5-Trimethylbenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,3-Dichlorobenzene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
1,3-Dichloropropane	< 0.14	0.14	0.45		ug/L		11/24/97	EPA 524.2
1,4-Dichlorobenzene	< 0.24	0.24	0.76		ug/L		11/24/97	EPA 524.2
2,2-Dichloropropane	< 0.38	0.38	1.2		ug/L		11/24/97	EPA 524.2
2-Chlorotoluene	< 0.20	0.20	0.64		ug/L		11/24/97	EPA 524.2
4-Chlorotoluene	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
Benzene	< 0.090	0.090	0.29		ug/L		11/24/97	EPA 524.2
Bromobenzene	< 0.19	0.19	0.61		ug/L		11/24/97	EPA 524.2
Bromochloromethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
Bromodichloromethane	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
Bromoform	< 0.13	0.13	0.41		ug/L		11/24/97	EPA 524.2
Bromomethane	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
Carbon tetrachloride	< 0.12	0.12	0.38		ug/L		11/24/97	EPA 524.2
Chlorobenzene	< 0.11	0.11	0.35		ug/L		11/24/97	EPA 524.2
Chlorodibromomethane	< 0.15	0.15	0.48		ug/L		11/24/97	EPA 524.2
Chloroethane	< 0.17	0.17	0.54		ug/L		11/24/97	EPA 524.2
Chloroform	< 0.18	0.18	0.57		ug/L		11/24/97	EPA 524.2
Chloromethane	< 0.19	0.19	0.61		ug/L		11/24/97	EPA 524.2

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- Analytical Report -

Project Name : ARGET SINGERS
Project Number : 97353
Field ID : BLANK
Lab Sample Number : 974607-003
Lab Project Number : 974607

Submitter : FLUID MANAGEMENT INC
Report Date : 11/26/97
Collection Date : 11/17/97
Matrix Type : BLANK
WI DNR LAB ID : 113138520

cis-1,2-Dichloroethene	< 0.10	0.10	0.32	ug/L	11/24/97	EPA 524.2
cis-1,3-Dichloropropene	< 0.18	0.18	0.57	ug/L	11/24/97	EPA 524.2
Dibromomethane	< 0.11	0.11	0.35	ug/L	11/24/97	EPA 524.2
Dichlorodifluoromethane	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Ethylbenzene	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Fluorotrichloromethane	< 0.17	0.17	0.54	ug/L	11/24/97	EPA 524.2
Hexachlorobutadiene	< 0.27	0.27	0.86	ug/L	11/24/97	EPA 524.2
Isopropylbenzene	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Methyl-tert-butyl-ether	< 0.17	0.17	0.54	ug/L	11/24/97	EPA 524.2
Methylene chloride	1.6	0.11	0.35	ug/L	11/24/97	EPA 524.2
n-Butylbenzene	< 0.17	0.17	0.54	ug/L	11/24/97	EPA 524.2
n-Propylbenzene	< 0.18	0.18	0.57	ug/L	11/24/97	EPA 524.2
Naphthalene	< 0.11	0.11	0.35	ug/L	11/24/97	EPA 524.2
p-Isopropyltoluene	< 0.16	0.16	0.51	ug/L	11/24/97	EPA 524.2
s-Butylbenzene	< 0.16	0.16	0.51	ug/L	11/24/97	EPA 524.2
Styrene	< 0.20	0.20	0.64	ug/L	11/24/97	EPA 524.2
t-Butylbenzene	< 0.24	0.24	0.76	ug/L	11/24/97	EPA 524.2
Tetrachloroethene	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
Toluene	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
trans-1,2-Dichloroethene	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
trans-1,3-Dichloropropene	< 0.16	0.16	0.51	ug/L	11/24/97	EPA 524.2
Trichloroethene	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
Vinyl chloride	< 0.13	0.13	0.41	ug/L	11/24/97	EPA 524.2
Xylene, -o	< 0.15	0.15	0.48	ug/L	11/24/97	EPA 524.2
Xylenes, -m, -p	< 0.23	0.23	0.73	ug/L	11/24/97	EPA 524.2

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Data Qualifier Sheet

Q	The analyte has been detected between the Limit of Detection(LOD) and Limit of Quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

	CLIENT SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	OTHER	TOT OUT
01	VBLK	104	114			0
02	LCS	104	108			0
03	A2	95	100			0
04	A1	96	101			0
05	TRIP BLANK	104	109			0
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		QC LIMITS
SMC1	= 4-BROMOFLUOROBENZENE	(80-120)
SMC2	= 1 2-DICHLOROBENZENE d4	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	% REC #	QC. LIMITS REC.
DICHLORODIFLUOROMETHANE	5.00	5.69	114	70-130
CHLOROMETHANE	5.00	4.92	98	70-130
VINYL CHLORIDE	5.00	5.17	103	70-130
BROMOMETHANE	5.00	5.97	119	70-130
CHLOROETHANE	5.00	5.32	106	70-130
TRICHLOROFLUOROMETHANE	5.00	5.07	101	70-130
1 1-DICHLOROETHENE	5.00	5.27	105	70-130
METHYLENE CHLORIDE	5.00	5.29	106	70-130
TRANS-1 2-DICHLOROETHEN	5.00	5.36	107	70-130
1 1-DICHLOROETHANE	5.00	5.45	109	70-130
2 2-DICHLOROPROPANE	5.00	5.24	105	70-130
CIS-1 2-DICHLOROETHENE	5.00	5.50	110	70-130
CHLOROFORM	5.00	5.36	107	70-130
BROMOCHLOROMETHANE	5.00	5.84	117	70-130
1 1 1-TRICHLOROETHANE	5.00	5.33	107	70-130
CARBON TETRACHLORIDE	5.00	5.21	104	70-130
1 1-DICHLOROPROPENE	5.00	5.20	104	70-130
BENZENE	5.00	5.25	105	70-130
1 2-DICHLOROETHANE	5.00	5.56	111	70-130
TRICHLOROETHENE	5.00	5.28	106	70-130
1 2-DICHLOROPROPANE	5.00	5.02	100	70-130
BROMODICHLOROMETHANE	5.00	5.22	104	70-130
DIBROMOMETHANE	5.00	5.66	113	70-130
TOLUENE	5.00	5.23	105	70-130
1 1 2-TRICHLOROETHANE	5.00	5.28	106	70-130
TETRACHLOROETHENE	5.00	5.37	107	70-130
1 3-DICHLOROPROPANE	5.00	5.37	107	70-130
DIBROMOCHLOROMETHANE	5.00	5.62	112	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	% REC #	QC. LIMITS REC.
1 2-DIBROMOETHANE	5.00	5.56	111	70-130
CHLOROBENZENE	5.00	5.28	106	70-130
1 1 1 2-TETRACHLOROETHA	5.00	5.44	109	70-130
ETHYL BENZENE	5.00	5.21	104	70-130
M- P-XYLENE	10.00	10.47	105	70-130
O-XYLENE	5.00	5.18	104	70-130
STYRENE	5.00	5.25	105	70-130
BROMOFORM	5.00	5.67	113	70-130
ISOPROPYLBENZENE	5.00	5.08	102	70-130
1 1 2 2-TETRACHLOROETHA	5.00	5.34	107	70-130
BROMOBENZENE	5.00	5.60	112	70-130
1 2 3-TRICHLOROPROPANE	5.00	5.59	112	70-130
N-PROPYLBENZENE	5.00	5.23	105	70-130
2-CHLOROTOLUENE	5.00	5.32	106	70-130
1 3 5-TRIMETHYLBENZENE	5.00	5.21	104	70-130
4-CHLOROTOLUENE	5.00	5.38	108	70-130
TERT-BUTYLBENZENE	5.00	4.83	97	70-130
1 2 4-TRIMETHYLBENZENE	5.00	5.20	104	70-130
SEC-BUTYLBENZENE	5.00	4.98	100	70-130
P-ISOPROPYLTOLUENE (CYM	5.00	5.03	101	70-130
1 3-DICHLOROBENZENE	5.00	5.54	111	70-130
1 4-DICHLOROBENZENE	5.00	5.50	110	70-130
N-BUTYLBENZENE	5.00	4.90	98	70-130
1 2-DICHLOROBENZENE	5.00	5.52	110	70-130
1 2-DIBROMO-3-CHLOROPRO	5.00	5.87	117	70-130
1 2 4-TRICHLOROBENZENE	5.00	5.64	113	70-130
HEXACHLOROBUTADIENE	5.00	5.53	111	70-130
NAPHTHALENE	5.00	5.63	113	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	% REC #	QC. LIMITS REC.
1 2 3-TRICHLOROBENZENE	5.00	5.61	112	70-130
CIS-1 3-DICHLOROPROPENE	5.00	5.30	106	70-130
TRANS-1 3-DICHLOROPROPE	5.00	5.33	107	70-130
METHYL T-BUTYL ETHER	5.00	5.36	107	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO

VBLK

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Lab File ID: A2712 Lab Sample ID: VBLK

Date Analyzed: 11/24/97 Time Analyzed: 1126

GC Column: DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: VMS1A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS	LCS	A2715	1358
02	A2	974607-002	A2719	1720
03	A1	974607-001	A2720	1809
04	TRIP BLANK	974607-003	A2721	1900
05				
06				
07				
08				
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COMMENTS:

FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLK

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix: (soil/water) WATER Lab Sample ID: VBLK

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: A2712

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/24/97

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	DICHLORODIFLUOROMETHANE	0.15	U
74-87-3	CHLOROMETHANE	0.19	U
75-01-4	VINYL CHLORIDE	0.13	U
74-83-9	BROMOMETHANE	0.11	U
75-00-3	CHLOROETHANE	0.17	U
75-69-4	TRICHLOROFLUOROMETHANE	0.17	U
75-35-4	1 1-DICHLOROETHENE	0.11	U
75-09-2	METHYLENE CHLORIDE	0.11	U
156-60-5	TRANS-1 2-DICHLOROETHENE	0.15	U
75-34-3	1 1-DICHLOROETHANE	0.17	U
590-20-7	2 2-DICHLOROPROPANE	0.38	U
156-59-2	CIS-1 2-DICHLOROETHENE	0.10	U
67-66-3	CHLOROFORM	0.18	U
74-97-5	BROMOCHLOROMETHANE	0.15	U
71-55-6	1 1 1-TRICHLOROETHANE	0.16	U
56-23-5	CARBON TETRACHLORIDE	0.12	U
563-58-6	1 1-DICHLOROPROPENE	0.13	U
71-43-2	BENZENE	0.09	U
107-06-2	1 2-DICHLOROETHANE	0.15	U
79-01-6	TRICHLOROETHENE	0.13	U
78-87-5	1 2-DICHLOROPROPANE	0.13	U
75-27-4	BROMODICHLOROMETHANE	0.13	U
74-95-3	DIBROMOMETHANE	0.11	U
108-88-3	TOLUENE	0.13	U
79-00-5	1 1 2-TRICHLOROETHANE	0.14	U
127-18-4	TETRACHLOROETHENE	0.17	U
142-28-9	1 3-DICHLOROPROPANE	0.14	U
124-48-1	DIBROMOCHLOROMETHANE	0.15	U
106-93-4	1 2-DIBROMOETHANE	0.12	U
108-90-7	CHLOROBENZENE	0.11	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	0.13	U
100-41-4	ETHYL BENZENE	0.15	U
108-38-3	M- P-XYLENE	0.23	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLK

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix: (soil/water) WATER Lab Sample ID: VBLK

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: A2712

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/24/97

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	O-XYLENE	0.15	U
100-42-5	STYRENE	0.20	U
75-25-2	BROMOFORM	0.13	U
98-82-8	ISOPROPYLBENZENE	0.15	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	0.15	U
108-86-1	BROMOBENZENE	0.19	U
96-18-4	1 2 3-TRICHLOROPROPANE	0.12	U
103-65-1	N-PROPYLBENZENE	0.18	U
95-49-8	2-CHLOROTOLUENE	0.20	U
108-67-8	1 3 5-TRIMETHYLBENZENE	0.17	U
106-43-4	4-CHLOROTOLUENE	0.17	U
98-06-6	TERT-BUTYLBENZENE	0.24	U
95-63-6	1 2 4-TRIMETHYLBENZENE	0.14	U
135-98-8	SEC-BUTYLBENZENE	0.16	U
99-87-6	P-ISOPROPYLTOLUENE (CYMENE)	0.16	U
541-73-1	1 3-DICHLOROBENZENE	0.17	U
106-46-7	1 4-DICHLOROBENZENE	0.24	U
104-51-8	N-BUTYLBENZENE	0.17	U
95-50-1	1 2-DICHLOROBENZENE	0.17	U
96-12-8	1 2-DIBROMO-3-CHLOROPROPANE	0.23	U
120-82-1	1 2 4-TRICHLOROBENZENE	0.18	U
87-68-3	HEXACHLOROBUTADIENE	0.27	U
91-20-3	NAPHTHALENE	0.11	U
87-61-6	1 2 3-TRICHLOROBENZENE	0.17	U
10061-01-5	CIS-1 3-DICHLOROPROPENE	0.18	U
10061-02-6	TRANS-1 3-DICHLOROPROPENE	0.16	U
1634-04-4	METHYL T-BUTYL ETHER	0.17	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

STORAGE BLANK

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix: (soil/water) WATER Lab Sample ID: SB-112097

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: A2717

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/24/97

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	DICHLORODIFLUOROMETHANE	0.15	U
74-87-3	CHLOROMETHANE	0.19	U
75-01-4	VINYL CHLORIDE	0.13	U
74-83-9	BROMOMETHANE	0.11	U
75-00-3	CHLOROETHANE	0.17	U
75-69-4	TRICHLOROFLUOROMETHANE	0.17	U
75-35-4	1 1-DICHLOROETHENE	0.11	U
75-09-2	METHYLENE CHLORIDE	0.11	U
156-60-5	TRANS-1 2-DICHLOROETHENE	0.15	U
75-34-3	1 1-DICHLOROETHANE	0.17	U
590-20-7	2 2-DICHLOROPROPANE	0.38	U
156-59-2	CIS-1 2-DICHLOROETHENE	0.10	U
67-66-3	CHLOROFORM	0.18	U
74-97-5	BROMOCHLOROMETHANE	0.15	U
71-55-6	1 1 1-TRICHLOROETHANE	0.16	U
56-23-5	CARBON TETRACHLORIDE	0.12	U
563-58-6	1 1-DICHLOROPROPENE	0.13	U
71-43-2	BENZENE	0.09	U
107-06-2	1 2-DICHLOROETHANE	0.15	U
79-01-6	TRICHLOROETHENE	0.13	U
78-87-5	1 2-DICHLOROPROPANE	0.13	U
75-27-4	BROMODICHLOROMETHANE	0.13	U
74-95-3	DIBROMOMETHANE	0.11	U
108-88-3	TOLUENE	0.13	U
79-00-5	1 1 2-TRICHLOROETHANE	0.14	U
127-18-4	TETRACHLOROETHENE	0.17	U
142-28-9	1 3-DICHLOROPROPANE	0.14	U
124-48-1	DIBROMOCHLOROMETHANE	0.15	U
106-93-4	1 2-DIBROMOETHANE	0.12	U
108-90-7	CHLOROBENZENE	0.11	U
630-20-6	1 1 1 2-TETRACHLOROETHANE	0.13	U
100-41-4	ETHYL BENZENE	0.15	U
108-38-3	M- P-XYLENE	0.23	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

STORAGE BLANK

Lab Name: EN CHEM Contract: FMI

Lab Code: MADISON Case No.: SAS No.: SDG No.: 112497

Matrix: (soil/water) WATER Lab Sample ID: SB-112097

Sample wt/vol: 25.00 (g/mL) ML Lab File ID: A2717

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 11/24/97

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-47-6	O-XYLENE	0.15	U
100-42-5	STYRENE	0.20	U
75-25-2	BROMOFORM	0.13	U
98-82-8	ISOPROPYLBENZENE	0.15	U
79-34-5	1 1 2 2-TETRACHLOROETHANE	0.15	U
108-86-1	BROMOBENZENE	0.19	U
96-18-4	1 2 3-TRICHLOROPROPANE	0.12	U
103-65-1	N-PROPYLBENZENE	0.18	U
95-49-8	2-CHLOROTOLUENE	0.20	U
108-67-8	1 3 5-TRIMETHYLBENZENE	0.17	U
106-43-4	4-CHLOROTOLUENE	0.17	U
98-06-6	TERT-BUTYLBENZENE	0.24	U
95-63-6	1 2 4-TRIMETHYLBENZENE	0.14	U
135-98-8	SEC-BUTYLBENZENE	0.16	U
99-87-6	P-ISOPROPYLTOLUENE (CYMENE)	0.16	U
541-73-1	1 3-DICHLOROBENZENE	0.17	U
106-46-7	1 4-DICHLOROBENZENE	0.24	U
104-51-8	N-BUTYLBENZENE	0.17	U
95-50-1	1 2-DICHLOROBENZENE	0.17	U
96-12-8	1 2-DIBROMO-3-CHLOROPROPANE	0.23	U
120-82-1	1 2 4-TRICHLOROBENZENE	0.18	U
87-68-3	HEXACHLOROBUTADIENE	0.27	U
91-20-3	NAPHTHALENE	0.11	U
87-61-6	1 2 3-TRICHLOROBENZENE	0.17	U
10061-01-5	CIS-1 3-DICHLOROPROPENE	0.18	U
10061-02-6	TRANS-1 3-DICHLOROPROPENE	0.16	U
1634-04-4	METHYL T-BUTYL ETHER	0.17	U

Company Name: FMI

Branch or Location: PEWAUKEE

Project Contact: MTA

Telephone: 549-6898

Project Number: 97353

Project Name: ARLETSINGERS

Project Location:

Sampled By (Print): BRIAN BJODSTRUP

Regulatory Program (circle): UST RCRA CLP SDWA NPDES/WPDES CAA NR____ Other

NR720 Confirmation Analysis Required? (circle): Y N

(En Chem will not confirm unless otherwise instructed.)

EN CHEM INC.

1241 Bellevue St., Suite 9
Green Bay, WI 54302
920-469-2436 • 1-800-736-2436
FAX 920-469-8827

802 Deming Way
Madison, WI 53717
608-827-5501 • 1-888-536-2436
Fax: 608-827-5503

1423 N. 8th Street., Suite 122
Superior, WI 54880
715-392-5844 • 1-800-837-8238
FAX 715-392-5843

CHAIN OF CUSTODY

14846

Page 1 of 1

P.O. # ____ Quote # ____

Mail Report To: JHK

Company: FMI - PEWAUKEE

Address:

Invoice To: ST 97353 0001 005

Company:

Address:

Mail Invoice To: FMI PEWAUKEE

FILTERED? (YES/NO)

PRESERVATION (CODE)* B

ANALYSES REQUESTED: EPA 5245

FIELD ID	SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME									FIELD SCREEN	MATRIX	GOOD COND.	TOTAL BOTTLES	COMMENTS	LABORATORY NUMBER
A1	2-40 mL	11/17/97	11:00	X								Y	H_2O	X	2		974607-001
A2	2-40 mL	↓	11:10	↓									↓	↓	↓		002
BLANK	2-40 mL	↓	10:50	X									X	↓	↓		003

SHADED AREA FOR LABORATORY USE ONLY

*Preservation Code

A=None B=HCL C=H2SO4
D=HN03 E=EnCore F=Methanol**
G=NaOH O=Other (Indicate)

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By:	Date/Time:	Received By:	Date/Time:
Brian Bjodstrup	11/21/97 8:10	from refrig 4°C Stang	11/21/97 1040
Stang	11/21/97 1455	Becka C Victor	11/21/97 1455

Received By (En Chem):

En Chem Project No.

Sample Receipt Temp. ind

Sample Receipt pH (Wet/Metals) no

Wisconsin
Department of Commerce

P. O. Box 530
Park Falls, Wisconsin 54552
(715) 762-5557
FAX (715) 762-0054

Tommy G. Thompson, Governor
Philip Edw. Albert, Acting Secretary

COMM 47 REMEDIAL ALTERNATIVE RESPONSE

CLAIMANT:
Mr. Norm Argetsinger
PO Box 145
Couderay, WI 54828

CLAIM #:54828-0145-70
BRRTS#: 03-58-170214
SITE: Argetsinger's IGA
Jct. Hwy 27 & CTH CC

RECOMMENDED ALTERNATIVE:
Soil excavation with groundwater monitoring

SUBMITTAL DATE: October 2,1998

XXX **Approved with cost caps**

$ 117,643.00 **Cap on total cost to closed remedial action status**

_____ **Site will be bundled with other remediation(s)**

_____ **Site will be directed to the public bid process**

COMMENTS:

Important Claim Note: This document serves as the Department's written approval to submit your first claim for eligible site investigation and remedial action planning costs, per COMM 47.355(2)(b). Please include a copy of this document in your site investigation claim package.

- COMM 47.33(2)(b) The cost detail for the selected remediation alternative shall establish the total estimated cost for the remediation up to the point of receiving approval as a closed remedial action.
- COMM 47.337(5) CLAIMANT OPTIONS. (a) After receiving an approval of a remedial action plan from the department, a claimant may elect to either implement the alternative or to select another alternative. If the claimant elects to implement a higher cost remedial strategy, the claimant must notify the department in writing of the intent to use a higher cost alternative. The notification must include the statement that the claimant agrees that the department approved alternative establishes the maximum reimbursable amount for consulting and commodity services under the fund and that additional costs for the occurrence, excluding interest, will not be submitted to the fund.
- COMM 47.01(3) INTENT OF PECFA. (a) The PECFA fund does not relieve a responsible party from liability. The individual or organization responsible for a contaminated property shall carry out the remediation of that property. PECFA's role is to provide monetary awards to responsible parties who have completed and paid for PECFA approved remediation activities and services. The availability or unavailability of PECFA funding shall not be the determining factor as to whether a remediation shall be completed.
- The approval does not guarantee the reimbursement of Costs. Final determination regarding the eligibility of costs will be determined at the time of claim review.

SIGNATURE Shanna L. Laube

Shanna L. Laube, P.G.
Hydrogeologist
PECFA Site Review Section

DATE: October 14, 1998

cc: FMI
Regional Supervisor, WDNR Remediation and Redevelopment Program

Wisconsin
Department of Commerce

P. O. Box 530
Park Falls, Wisconsin 54552
(715) 762-5557
FAX (715) 762-0054

Tommy G. Thompson, Governor
William J. McCoshen, Secretary

COMM 47 REMEDIAL ALTERNATIVE RESPONSE

CLAIMANT:
Mr. Norm Argetsinger
PO Box 145
Couderay, WI 54828

CLAIM #: 54828-0145070
BRRTS#: 03-58-170214
SITE: Argetsinger's IGA
Jct. Hwy 27 & CTH CC
Couderay, WI 54828

RECOMMENDED ALTERNATIVE:

SUBMITTAL DATE: July 24, 1998

Please collect another round of groundwater samples prior to the finalization of the remedial alternative for this site. One round of samples is not sufficient information to determine the appropriate remedial alternative for your site.

COMMENTS:

Important Claim Note: This document serves as the Department's written approval to submit your first claim for eligible site investigation and remedial action planning costs, per COMM 47.355(2)(b). Please include a copy of this document in your site investigation claim package.

- COMM 47.33(2)(b) The cost detail for the selected remediation alternative shall establish the total estimated cost for the remediation up to the point of receiving approval as a closed remedial action.
- COMM 47.337(5) CLAIMANT OPTIONS. (a) After receiving an approval of a remedial action plan from the department, a claimant may elect to either implement the alternative or to select another alternative. If the claimant elects to implement a higher cost remedial strategy, the claimant must notify the department in writing of the intent to use a higher cost alternative. The notification must include the statement that the claimant agrees that the department approved alternative establishes the maximum reimbursable amount for consulting and commodity services under the fund and that additional costs for the occurrence, excluding interest, will not be submitted to the fund.
- COMM 47.01(3) INTENT OF PECFA. (a) The PECFA fund does not relieve a responsible party from liability. The individual or organization responsible for a contaminated property shall carry out the remediation of that property. PECFA's role is to provide monetary awards to responsible parties who have completed and paid for PECFA approved remediation activities and services. The availability or unavailability of PECFA funding shall not be the determining factor as to whether a remediation shall be completed.
- The approval does not guarantee the reimbursement of Costs. Final determination regarding the eligibility of costs will be determined at the time of claim review.

Shanna L. Laube

Shanna L. Laube, P.G.
Hydrogeologist
PECFA Site Review Section

DATE: September 1, 1998

cc: FMI, Matthew Aleva
Regional Supervisor, WDNR Remediation and Redevelopment Program

Fluid Management
A Division of ENVIROGEN, Inc.

July 17, 1998

Ms. Janet Kazda
Department of Natural Resources
P.O. Box 818
Rhinelander, Wisconsin 54501-0818

Re: Argetsinger's IGA site
Remedial Options Evaluation Report
WDNR No. 03-58-170214
PECFA No. 54828-0145-70

Dear Ms. Kazda:

A Remedial Options report (ROR) for the Argetsinger's IGA site located in Couderay, Wisconsin, has been submitted to the Department of Commerece (COMM) for review. Upon COMM's approval for the remedial alternative and associated expenses, a copy of the ROR will be submitted to you for further review and approval.

Please call me at (414) 549-6898 if you have any questions.

Sincerely,
FLUID MANAGEMENT
A DIVISION OF ENVIROGEN, INC.

Matthew T. Alleva
Senior Project Hydrogeologist

cc: Mr. Norman Argetsinger

2831 N. Grandview Blvd.
Post Office Box 90
Pewaukee, Wisconsin 53072-0090
Tel: (414) 549-6898
Fax: (414) 549-6938

Fluid Management
A Division of ENVIROGEN, Inc.

03-58-170214

April 1, 1998

Ms. Janet Kazda
Wisconsin Department of Natural Resources
North Central District Headquarters
P.O. Box 818, Sutliff Avenue
Rhinelander, Wisconsin 54501-0818

Dear Ms. Kazda:

Enclosed please find a copy of Fluid Management's (FMI's) "Site Investigation Report" for the Argetsinger's IGA site located in Couderay, Wisconsin. Appendices available upon request.

Should you have any questions or require additional information, please contact me at your convenience.

Sincerely,
FLUID MANAGEMENT
A DIVISION OF ENVIROGEN, INC.

Matthew T. Alleva
Senior Project Hydrogeologist

MTA:dlb

Enclosure

2831 N. Grandview Blvd.
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Pewaukee, Wisconsin 53072-0090
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Fluid Management
A Division of ENVIROGEN, Inc.

SITE INVESTIGATION REPORT

ARGETSINGER'S IGA SITE
Couderay, Wisconsin

April 1998

FMI Project No. P97.353
WDNR LUST ID No. 03-58-170214
PECFA ID No. 54828-0145-70

Fluid Management
A Division of ENVIROGEN, Inc.

SITE INVESTIGATION REPORT

For the

ARGETSINGER'S IGA SITE

Jct. Hwy. 27 and County Road CC
Couderay, Wisconsin 54828

Submitted to:

MR. NORM ARGETSINGER

Argetsinger's IGA
P.O. Box 145
Couderay, Wisconsin 54828

and

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

North Central District Headquarters
P.O. Box 818, Sutliff Avenue
Rhinelander, Wisconsin 54501-0818

Prepared by:

FLUID MANAGEMENT A DIVISION OF ENVIROGEN, INC.

FMI Project No. P97.353
WDNR LUST ID No.03-58-170214
PECFA ID No. 54828-0145-70

April 1998

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EXECUTIVE SUMMARY

Fluid Management (FMI) has completed a site investigation for the Argetsinger's IGA (Argetsinger's) site in Couderay, Wisconsin. A petroleum release was discovered in a soil boring performed during a site assessement. During site investigation activities, 5 monitoring wells were installed at the site. Soil and groundwater samples were analyzed to determine the extent and degree of the petroleum contamination. The conclusions based on this investigation are as follows.

- Site geology consists of clay overlaying a coarse sand with occasional clay lenses to a maximum boring depth of 27.5 feet below land surface (bls). Bedrock was not encountered during drilling activities.

- Site hydrogeology has the following characteristics:
  - Depth to groundwater in the monitoring wells was between 15 and 17 feet bls across the site.
  - Hydraulic conductivity (K) is estimated to be approximately 50 ft/day (Freeze and Cherry 1979).
  - Measurements taken in the monitoring wells indicated groundwater flow to be toward the east under a hydraulic gradient of 7.7×10^{-4} ft/ft.
  - Groundwater flow velocity is estimated to be 40 ft/year.

- Soil contamination was detected above the applicable Wisconsin Administrative Code Chapters NR 720 generic soil standards for benzene, ethylbenzene, toluene, xylenes, (BETX), and gasoline range organics (GRO). Groundwater contamination was detected above the NR 140 enforcement standards (ESs) for benzene and toluene.

- Soil and groundwater contamination is primarily confined to the former underground storage tank (UST) and pump island areas.

EXECUTIVE SUMMARY
(Continued)

- The site is classified as a simple site with respect to the criteria listed in NR 700.09 of the Wisconsin Administrative Code. This classification is based on the lack of contaminants of concern other than those listed in Tables 1 and 2 of NR 720. However, the client has decided to proceed with the complex site process.

FMI will conduct a remedial options assessment to facilitate selection of the most cost-effective remedial option. The assessment will evaluate the technical and economic feasibility of several options deemed applicable to the site. Establishment of site-specific soil standards, contaminant source removal, and natural attenuation may be among the options to be considered.

1.0 INTRODUCTION

This document summarizes the results of a site investigation conducted for the Argetsinger's site in Couderay, Wisconsin, where USTs were used for the storage and commercial distribution of gasoline. A release of petroleum contaminants was documented during initial site assessment (ISA) activities and reported to the Wisconsin Department of Natural Resources (WDNR).

This Site Investigation Report (SIR) describes the activities that were conducted during the field study and discusses the results and conclusions associated with the investigation. The purpose of the site investigation was to delineate the source(s), nature, extent, and degree of soil and potential groundwater contamination at the site. The site investigation also provides information needed to design and implement an appropriate response to the contamination. The field investigation was conducted in accordance with the requirements of the Wisconsin Department of Commerce (COMM) and the WDNR for a site investigation associated with leaking USTs.

Definitions of acronyms used in this report are provided at the end of this report. Appendices are available from FMI upon request.

2.0 GENERAL SITE INFORMATION

2.1 Site Location

The Argetsinger's site is located in Couderay, Wisconsin. The site is located in the NW¼, NE¼, Sec. 12, T38N, R8E in Sawyer County (United States Geological Survey [USGS] 1971). Figure 1 illustrates the site location. The site address is:

Jct. Hwy. 27 and Cty. Road CC
Couderay, Wisconsin 54828

2.2 Site Description

The Argetsinger's IGA site is approximately 5,000 square feet in area, slopes to the southwest, and contains a brick structure used as a retail outlet for groceries and gasoline. Two USTs, a 550-gallon UST and a 2,000-gallon UST containing gasoline and a pump island are located on the southeastern portion of the site. A potable well is located in the basement of the structure. The site surface is primarily asphalt- and concrete-covered. The site configuration is provided in Figure 2.

The site is bordered to the south by State Highway 27/70, to the east by County Road CC, to the west by a post office, and to the north by a residence. Much of the area surrounding the Argetsinger's site is commercial and residential.

2.3 Site History

The Argetsinger's site is owned by Mr. Norm Argetsinger of Couderay, Wisconsin. A list of parties involved in site environmental activities is provided in Appendix A. The USTs were installed and have operated since approximately 1950 (Argetsinger,1997). The two USTs are used to dispense unleaded gasoline. Table 1 lists the details and status of the USTs at the site as they appear on the COMM database. The Underground Petroleum Product Tank Inventory forms are available upon request.

The following is a chronological list of environmental activities that have occurred to date at the Argetsinger's site. The methods employed by FMI during these activities are provided

in FMI's Standard Operating Procedures for the Performance of Field Activities, previously provided in the Site Investigation Work Plan (SIWP) (FMI 1997).

August 7, 1997:

FMI performed an ISA. Soil samples were collected near the pump island. Field observations identified the presence of petroleum contaminated soil. One soil sample was submitted to a state certified laboratory. Results from the laboratory analysis indicated GRO was present at a concentration of 2,610 ppm. See Figure 3 for soil sampling locations and Table 2 in the Argetsinger's SIWP (FMI 1997) for analytical results.

October 1997:

FMI submitted a Site Investigation Work Plan to Mr. Norman Argetsinger and the WDNR.

November 17 and 18, 1997:

Five monitoring wells were installed on- and off-site. Soil samples were collected during boring activities and submitted to a state-certified laboratory for analysis.

FMI developed and groundwater sampled all of the monitoring wells at the site. Groundwater samples were submitted to a state-certified laboratory for analysis.

February 10, 1998:

Groundwater elevation measurements were collected at all of the monitoring at the site.

3.0 REGIONAL AND LOCAL CHARACTERISTICS

3.1 Regional and Local Geology

Topography in the region shows moderate relief from 1,250 to 1,500 feet above mean sea level (MSL) with rolling hills and glacial formed lakes (USGS 1971).

The regional glacial/surficial geology (50 to 100 feet thick) is composed of the following units (from top to bottom [Young and Hindall 1972]):

- Ground moraine deposits (till; unstratified clay, silt, sand, gravel, and boulders)
- End moraine deposits (till; stratified sand, and gravel)
- Pitted and unpitted outwash (sand and gravel)

The regional and local bedrock is composed of the following unit (Young and Hindall 1972; Mudrey, Brown, and Greenberg 1982):

- Precambrian igneous and metamorphic rocks

The local glacial/surficial geology (50 to 100 feet thick) is composed of the following unit (Young and Hindall 1972):

- Ground moraine deposits (till; clay, silt, sand, gravel, and boulders)

Soils observed during the initial site assessment include medium to coarse grained sands.

3.2 Regional and Local Hydrogeology

Regional hydrogeology consists of the following (Young and Hindall 1972):

- Regional groundwater flow is southerly to the Couderay River

Local hydrogeology consists of the following (USGS 1971; Young and Hindall 1972):

- Depth to water is between 15 and 17 feet bls
- Groundwater flow is toward the east

3.3 Local Contaminant Pathways and Receptors

Figure 3, site utility locations, shows the layout of utilities at the site.

The nearest surface water body that could potentially be affected by contamination from the site is the Couderay River, located approximately 1000 feet south of the site.

The Wisconsin Geological and Natural History Survey (WGNHS) was contacted regarding the presence of potable wells within a 1,200-foot radius of the site (WGNHS n.d.). No well records were found within the specified search radius by the WGNHS. There was however a potable well observed on-site in the basement of the on-site building. The potable well was sampled for petroleum contaminants, and laboratory analysis revealed no detections. Another potable well, a hand pump water well, is located across state highway 27-70. The pump is broken and is currently not in use. No samples were obtained from this well.

There are no wetlands located on or immediately adjacent to the site (USGS 1971). To the best of FMI's knowledge, there are no sensitive ecosystems or habitats and no state or federally listed endangered species on or adjacent to the site.

Based on a review of the National Register of Historic Places and State Register of Historic Places in Wisconsin, there are no historical or archeological sites on or adjacent to the site (State Historical Society of Wisconsin 1994). Based on a review of NR 102.10 and NR 102.11, there are no outstanding resource waters or exceptional resource waters on or near the site (WDNR 1993).

4.0 SOIL INVESTIGATION

The purpose of the soil contaminant investigation was to delineate the source, nature, degree, and extent of petroleum hydrocarbon soil contamination at the Argetsinger's site. In addition, subsurface materials at the site were characterized to provide information necessary for the development of an appropriate and cost-effective response to the contamination. The investigation included the advancement of hollow-stem auger borings to obtain soil characterization information and the subsequent installation of monitoring wells.

4.1 Field Observations

The observations and results of the November 17 and 18, 1997, field investigation were as follows:

- Five hollow-stem auger borings (MW-1 through MW-5) were advanced up to 27.5 feet bls (Figure 4).
- Soil samples were collected from all of the borings and classified as to soil type according to the Unified Soil Classification System. Boring logs are provided in Appendix B.
- The site geology consists of a clay overlaying a coarse sand with occasional clay lenses. Bedrock was not encountered during drilling activities. Figure 5 illustrates the plan view of two geologic cross sections. Figures 6 and 7 illustrate the geology along the cross sections.
- Split portions of the 29 soil samples collected were field-screened with a 10.7 eV photoionization detector (PID). PID results ranged from <10 ppmv to 495 ppmv. PID results are provided in Table 2.
- Split portions of select samples from the hollow-stem auger borings were submitted to an independent analytical laboratory for analysis.

4.2 Laboratory Analytical Results

Laboratory analyses administered on the 11 soil samples submitted were gasoline range organics (GRO), volatile organic compounds (VOCs), or petroleum volatile organic compounds (PVOCs), and lead. Laboratory quality assurance/quality control (QA/QC) soil sample criteria were met. Table 3 summarizes the laboratory analytical results. The laboratory analytical reports and chain-of-custody forms are provided in Appendix C.

4.3 Summary and Discussion

Contaminant levels at the site were evaluated based on the Wisconsin Administrative Code, Chapter NR 720 generic soil standards. If analytes are detected at a concentration equal to or exceeding their respective soil standard, further assessment or remediation is required. For a few parameters the soil cleanup standards are dependent on site conditions. Standards for GRO and diesel range organics (DRO) are both 250 ppm if the site's hydraulic conductivity is less than or equal to 1×10^{-6} cm/sec. Otherwise the standards are 100 ppm. The standard for lead is 50 ppm if the site is nonindustrial and 500 ppm if it is industrial. The Argetsinger's site has an estimated hydraulic conductivity of 2×10^{-2} cm/sec (Freeze and Cherry 1979); therefore, the 100 ppm standards for GRO and DRO will be applied. Because the site is classified as nonindustrial, the 50 ppm standard will be used for lead.

Based on site investigation observations and laboratory analytical results, FMI concludes the following.

- Contamination was detected above the applicable Wisconsin Administrative Code Chapter NR720 generic soil standards for BETX and GRO in soil samples collected from MW-1.
- Soil analytical data indicate soil contamination at the Argetsinger's site is primarily confined to the former UST and pump island areas. Figure 8 illustrates the lateral soil benzene distribution. Figure 9 illustrates the vertical soil distribution.
- Soil contamination observed at the site is a result of past UST operations at the site. Based on the location of soil contamination, it is unlikely that contamination from off-site sources has migrated to the Argetsinger's site.
- The lateral extent of soil contamination exceeding the NR 720 generic soil standards has been defined. The amount of soil contaminated to levels above NR 720 generic soil standards is approximately 1,000 cubic yards.

5.0 GROUNDWATER INVESTIGATION

The purpose of the groundwater investigation was to delineate the source, nature, degree, and extent of potential groundwater contamination at the site. In addition, hydrogeologic properties were characterized to provide information necessary for the development of an appropriate and cost-effective response.

5.1 Field Observations

On November 17 and 18, 1997, FMI installed five monitoring wells (MW-1 through MW-5) with 15-foot screened intervals from 10 to 25 feet bls. Investigation activities and resultant observations were as follows:

- On February 7, 1998, the monitoring well top-of-casing elevations were surveyed
- Depth to groundwater measurements were used to calculate groundwater table elevations.
- The observed water levels intersected the screened portion of each of the wells during all measurements. Water level elevations are presented in Table 4.
- Each of the monitoring wells was developed and sampled on December 4, 1997. Groundwater samples collected were submitted to a state-certified laboratory for analysis. The WDNR monitoring well construction and development forms are provided in Appendix D.

5.2 Laboratory Analytical Results

Laboratory analyses administered on the five samples were GRO, VOCs, and dissolved lead. A summary of groundwater analytical results is presented in Table 5. The groundwater sample laboratory analytical reports are provided in Appendix E.

For QA/QC purposes a duplicate sample, a decontamination blank, and a trip blank were submitted for laboratory analysis. The duplicate of the sample from MW-1 contained comparable concentrations of contaminants to those in the original sample. A slight chloroform detection was detected in the trip blank and the decon blank. This contaminant was not detected in the other sample results and is considered a laboratory contaminant. Benzene also had slight detections in the trip blank and decontamination blank. This is also considered to be from laboratory contamination and should not effect the analytical results.

5.3 Groundwater Flow Characterization

To characterize groundwater flow, groundwater elevations were measured, a hydraulic gradient was calculated, and a groundwater flow velocity was estimated. As evidenced by the data presented in Table 4, groundwater elevations are fairly uniform across the site. Figure 10 depicts the approximate groundwater flow direction and gradient on February 10, 1998. As shown in the figure, groundwater flow is to the east. Using the data from the February 10, 1998, measurements, the hydraulic gradient (I) has been calculated as shown below:

$$I = \text{Hydraulic gradient} = \frac{\text{Change in groundwater elevation (82.30 - 82.22 contour)}}{\text{Distance (82.30 - 82.22 contour)}}$$

$$I = \frac{dh}{dl} = \frac{0.08\ ft}{104\ ft} = 7.7 \times 10^{-4}\ ft/ft$$

Based on site soil characteristics, a hydraulic conductivity of 50 ft/day has been estimated (Freeze and Cherry 1979). Using the hydraulic conductivity, an assumed effective porosity of 0.35 (Freeze and Cherry 1979), and the measured hydraulic gradient (7.7×10^{-4} ft/ft), the on-site groundwater velocity may be estimated as follows (Freeze and Cherry 1979):

$$V = K\ (I)\ (1/n)$$

- K = Average hydraulic conductivity = 50 ft/day = 18,250 ft/year
- n = Porosity = 0.35
- I = Hydraulic gradient = 7.7×10^{-4} ft/ft

$$V = (18{,}250)\ (7.7 \times 10^{-4})\ (1/0.35)$$
$$V = 40\ ft/yr$$

The groundwater average linear flow velocity represents the maximum rate at which advection could transport the contaminants. On this site the actual contaminant transport velocity would probably be less because of the moderate permeability of the soils and because of factors such as soil characteristics, contaminant solubility, hydrodynamic flow characteristics, and biotic and abiotic mechanisms.

5.4 Summary and Discussion

The WDNR has established regulatory limits for evaluating select compounds in groundwater. For each compound, the WDNR has established a preventive action limit (PAL) and an ES. If the concentration of a compound exceeds the PAL, the WDNR may require no further action or additional investigation. If the concentration exceeds the ES, the WDNR may require active remediation, unless the guidelines for natural attenuation are met.

Based on site investigation observations and laboratory analytical results, the following conclusions were reached:

- Of the five groundwater samples collected at the site, one sample (MW-1) had contaminant concentrations above NR 140 ESs for benzene and toluene. Several VOCs that have no ESs were also identified in the groundwater samples.
- Groundwater contamination above NR 140 ESs appears to be concentrated in the vicinity of the former UST system.
- The extent of groundwater contamination has been defined at the Argetsinger's site. Figure 11 shows the groundwater benzene distribution at the site. Based on the extent and composition of the groundwater contamination observed at the Argetsinger's site, it appears that the observed VOC constituents likely originated from the former UST system.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions reached based on the site investigation are as follows:

Site geology consists of clay overlaying a coarse sand with occasional clay lenses to a maximum boring depth of 27.5 feet bls. Bedrock was not encountered during drilling activities.

- Site hydrogeology has the following characteristics:
  - Depth to groundwater in the monitoring wells was between 15 and 17 feet bls across the site.
  - Hydraulic conductivity (K) is estimated to be approximately 50 ft/day (Freeze and Cherry 1979).
  - Measurements taken in the monitoring wells indicated groundwater flow to be toward the east under a hydraulic gradient of 7.7×10^{-4} ft/ft.
  - Groundwater flow velocity is estimated to be 40 ft/year.

- Soil contamination at levels above the NR 720 generic soil standards were detected in samples collected from one of the five borings advanced on- and off-site and consists primarily of BETX, and GRO. Contamination appears to be mainly confined to the vicinity of the former UST cavity and pump island.

- Benzene and toluene groundwater contamination above the NR 140 ESs was present in one well (MW-1). Minor detections of other petroleum contaminants were observed slightly above the PALs. The lateral extent of groundwater contamination is defined at the site. Contamination is primarily located in the vicinity of the former UST cavity and pump island area. The extent and composition of the groundwater contamination observed indicate that it likely originated from the former UST system.

- The site is classified as a simple site with respect to the criteria listed in NR 700.09 of the Wisconsin Administrative Code. This classification is based on the lack of contaminants of concern other than those listed in Tables 1 and 2 of NR 720. However, the client has decided to proceed with the complex site process.

FMI will conduct a remedial options assessment to facilitate selection of the most cost-effective remedial option. The assessment will evaluate the technical and economic feasibility of several options deemed applicable to the site. Establishment of site-specific soil standards, contaminant source removal, and natural attenuation may be among the options to be considered.

7.0 CONDITIONS AND CERTIFICATIONS

This Site Investigation Report has been prepared, in part, as an underground exploration evaluation for the Argetsinger's site. The evaluations and recommendations presented in this report were developed from a consideration of the project characteristics and an interpretation of available geologic, hydrogeologic, and boring data. FMI's description of the subsurface conditions is based on interpretation of the test boring and monitoring well data using normally accepted geologic/hydrogeologic practices and reasonable engineering judgment. Although boring and monitoring well data are considered to be representative of the subsurface conditions at the precise locations on the dates shown, they are not necessarily indicative of the subsurface conditions at other locations and/or at other times of the year.

Hydrogeologic representations and chemical distribution isoconcentration contours are approximate. They were generalized from and interpolated between the sampling locations. Information about actual hydrogeologic conditions and chemical concentrations exists only at the specific sampling locations, and it is possible that conditions between sampling locations may vary from those indicated. Variations in soil and groundwater conditions typically exist at most sites between sampling locations and at different times, the extent of which may not become evident without further exploration or excavation. If variations are noted in the future, FMI should be informed. It may be necessary to conduct additional exploration activities to determine the characteristics of these variations and provide an opportunity to make a re-evaluation of the conclusions in this report.

FMI's professional services have been performed, findings obtained, and recommendations prepared in accordance with generally accepted engineering and hydrogeologic principles and practices. This warranty is in lieu of all other warranties either implied or expressed. FMI assumes no responsibility for data or interpretations made by others. FMI assumes responsibility for the accuracy of the report's contents subject to what is stated elsewhere in this section but recommends that the report be used only for the purpose intended by the client and FMI when the report was prepared. The report may be unsuitable for other uses, and reliance on its contents by anyone other than the client is done at the sole risk of the user. FMI accepts no responsibility for application or interpretation of the results by anyone other than the client.

The recommendations and conclusions presented herein have been developed from

consideration of the project characteristics and interpretation of available information. Because only limited information is available, FMI reserves the right to modify actual site activities based on subsequent findings.

The recommendations contained in this Site Investigation Report represent our professional opinions.

This Site Investigation Report was prepared by FLUID MANAGEMENT A DIVISION OF ENVIROGEN, INC.

I, Matthew T. Alleva, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm.

Matthew T. Alleva.
Senior Project Hydrogeologist

MTA:ltc

8.0 REFERENCES

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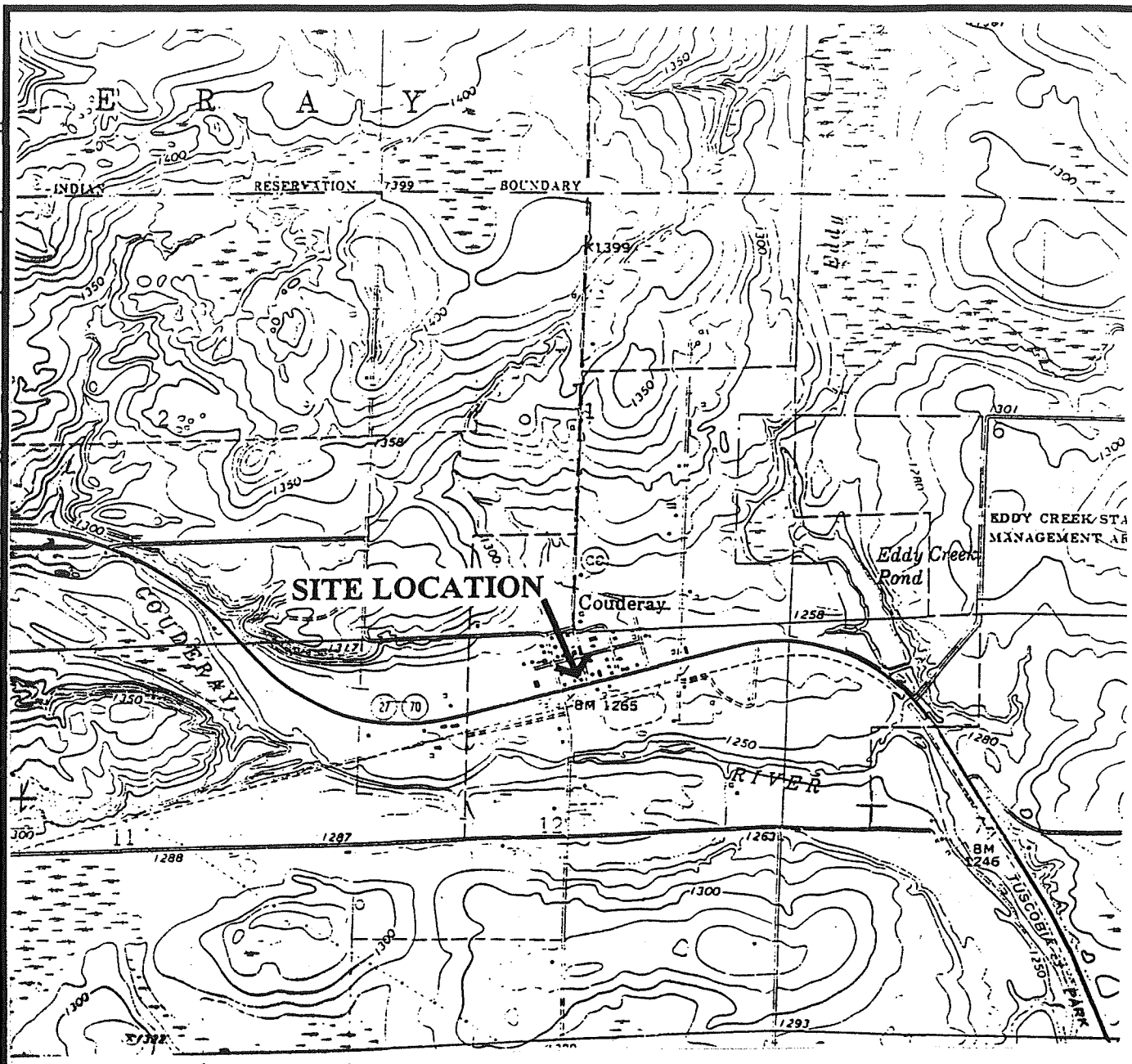


(USGS 1971)

SCALE
1:24000

1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

Fluid Management
A Division of ENVIROGEN, Inc.

N

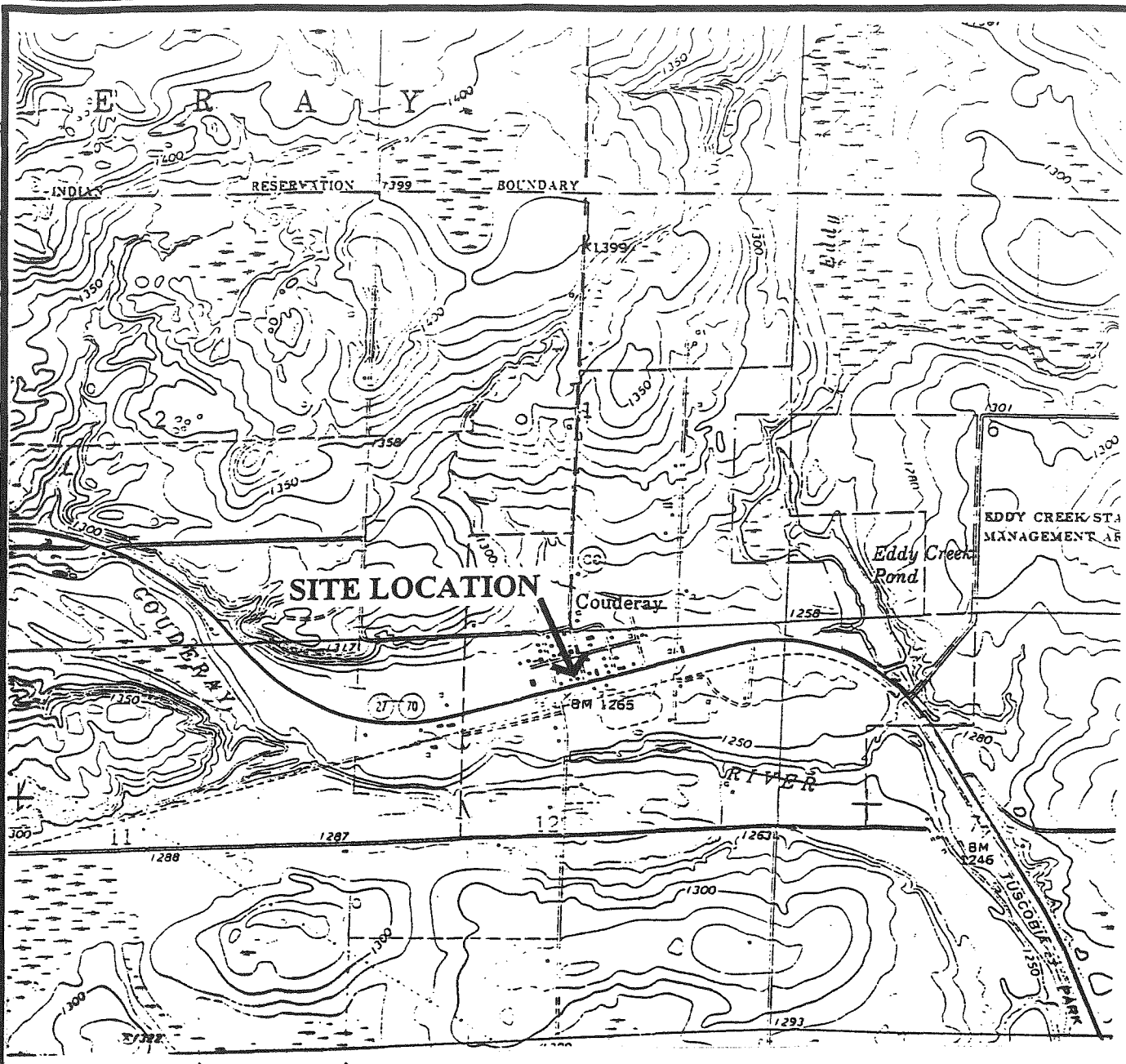
THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

LOCATION

Site Location Map
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.
1

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.0353R1	LME	3/2/98	4/3/98



(USGS 1971)

SCALE
1:24000

1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

Fluid Management
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N

LOCATION

Site Location Map
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.
1

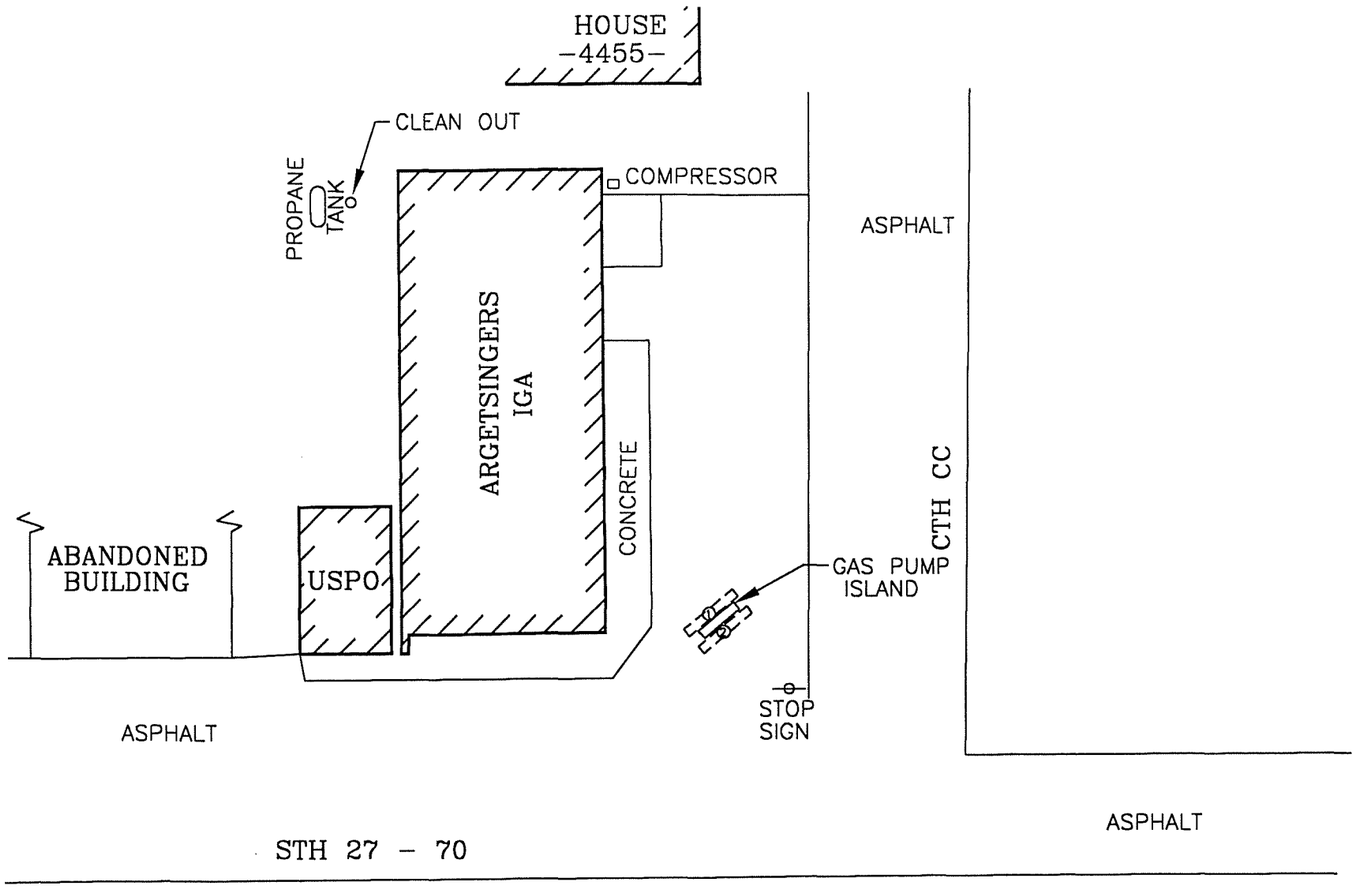
THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.0353R1	LME 3/2/98	BJG 4/3/98	

TANK LEGEND

① 2,000-GALLON UNLEADED UST

② 550-GALLON UNLEADED UST



Ⓦ HAND PUMP, WATER WELL

SCALE

0 30'

Fluid Management
A Division of ENVIROGEN, Inc.

N

Site Plan View
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.

2

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R2	LME 3/4/98	BOB 4/13/98	MPA 4/13/98

SITE SURVEY

FMI 97.353
ARGET SINGERS IGA
COUDERAY, WI.

LOCATED IN THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 12, TOWNSHIP 38 NORTH, RANGE 8 WEST, SAWYER COUNTY, WI.

I, DAVID L. OSTERBRINK, REGISTERED LAND SURVEYOR, CERTIFY THAT I HAVE LOCATED IMPROVEMENTS AS SHOWN. THAT I HAVE DETERMINED ELEVATIONS ON MONITORING WELLS AS SHOWN. THAT I HAVE DONE THIS TO THE BEST OF MY KNOWLEDGE AND BELIEF.

_____

DAVID L. OSTERBRINK RLS NO. S-2014 2-7-98

PREPARED BY:
NORTHWOODS SURVEYING
623 JEFFERSON STREET
WAUSAU, WI. 54403
715-845-1249

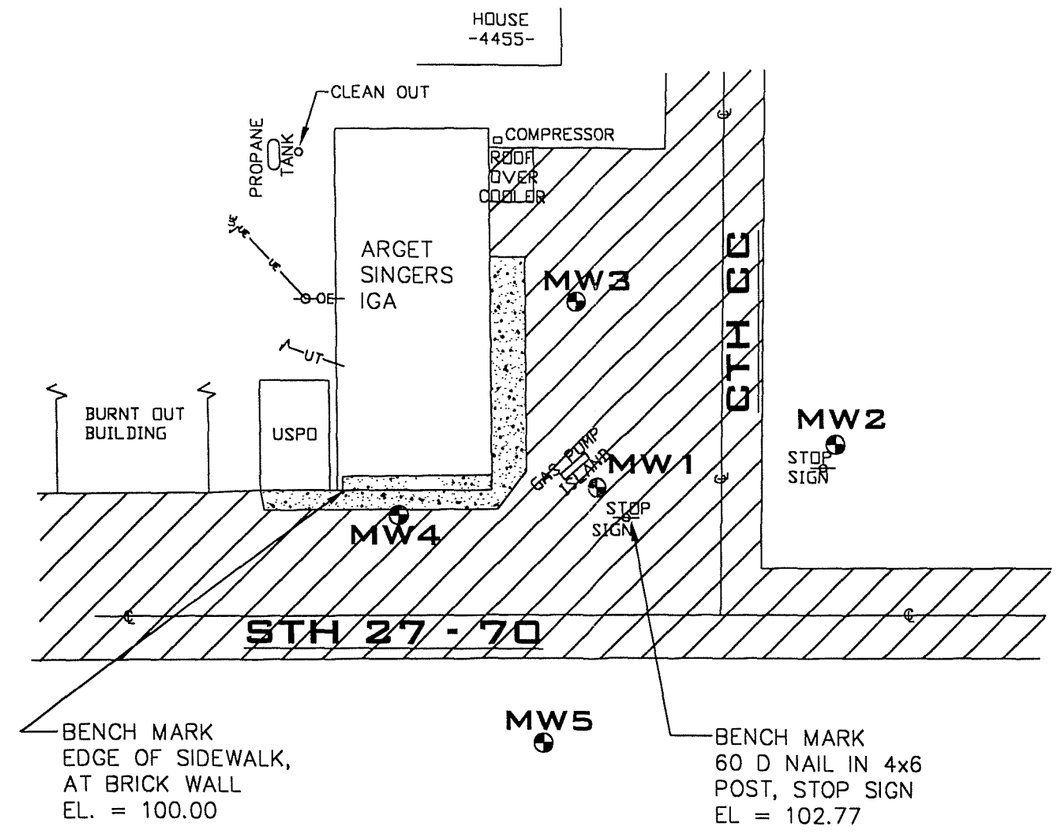
WELL DATA

WELL NUMBER	NORTH COORDINATE	EAST COORDINATE	RIM ELEVATION	PVC ELEVATION
MW 1	10017.43	9992.30	99.48	98.91
MW 2	10029.25	10055.26	98.96	98.62
MW 3	10066.73	9986.28	99.90	99.48
MW 4	10009.78	9938.62	99.12	98.60
MW 5	9949.67	9977.53	97.85	97.47

MONITORING WELL ELEVATIONS ARE REFERENCED TO EDGE OF CONCRETE SIDEWALK AT BRICK WALL. ASSUMED ELEVATION OF 100.00

NOTES:
BECAUSE OF DEEP SNOW AND ICE, EDGES OF BLACK TOP ARE APPROXIMATE.
DIGGERS HOT LINE WAS CALLED FOR A LOCATE AT THIS SITE. NO UTILITIES WERE MARKED.

POWER POLE
MONITORING WELL
BLACK TOP SURFACE
CONCRETE SURFACE
—OE— UTILITY LINE, O= OVER HEAD; U= UNDER GROUND; E= ELECTRIC T= TELEPHONE



● HAND PUMP, WATER WELL

Fluid Management
A Division of ENVIROGEN, Inc.

N

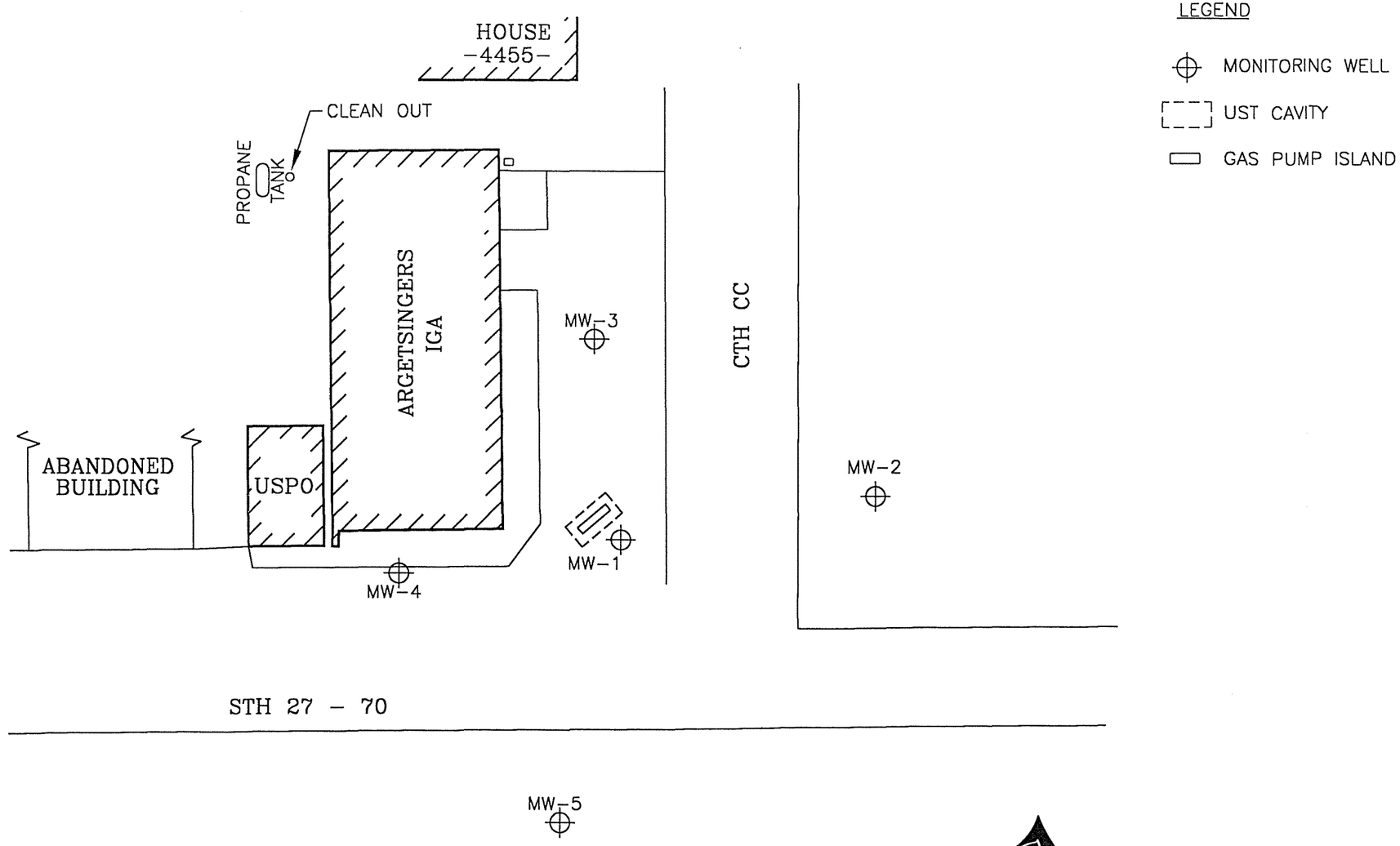
SCALE
0 10' 20' 30' 40'

Site Elevation Map
Argetsinger's IGA Site
Courderay, Wisconsin

FIGURE NO.
3

DRAWING NO.	97.353R3	DRAWN BY:	LME	3/4/98	CHECKED BY:	03/8	4/3/98	APPROVED BY:	MA	5/7/98

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.



LEGEND

- MONITORING WELL
- UST CAVITY
- GAS PUMP ISLAND

HAND PUMP, WATER WELL

Fluid Management
A Division of ENVIROGEN, Inc.

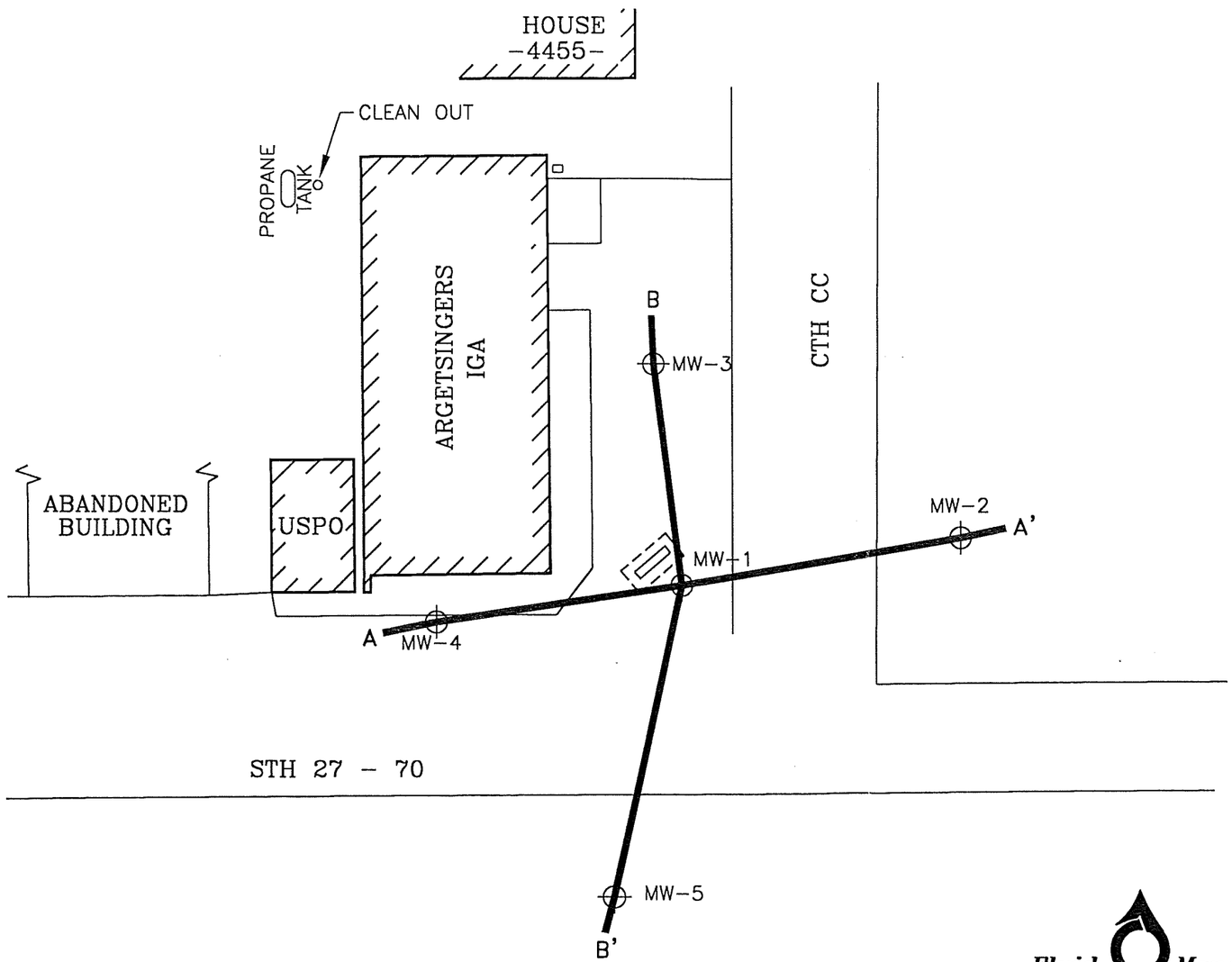
SCALE
0 30'

Monitoring Well Configuration
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.
4

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R4	LME	BJG	
	3/4/98	4/3/98	



LEGEND

- MONITORING WELL
- UST CAVITY
- GAS PUMP ISLAND

Fluid Management
A Division of ENVIROGEN, Inc.

N

HAND PUMP, WATER WELL

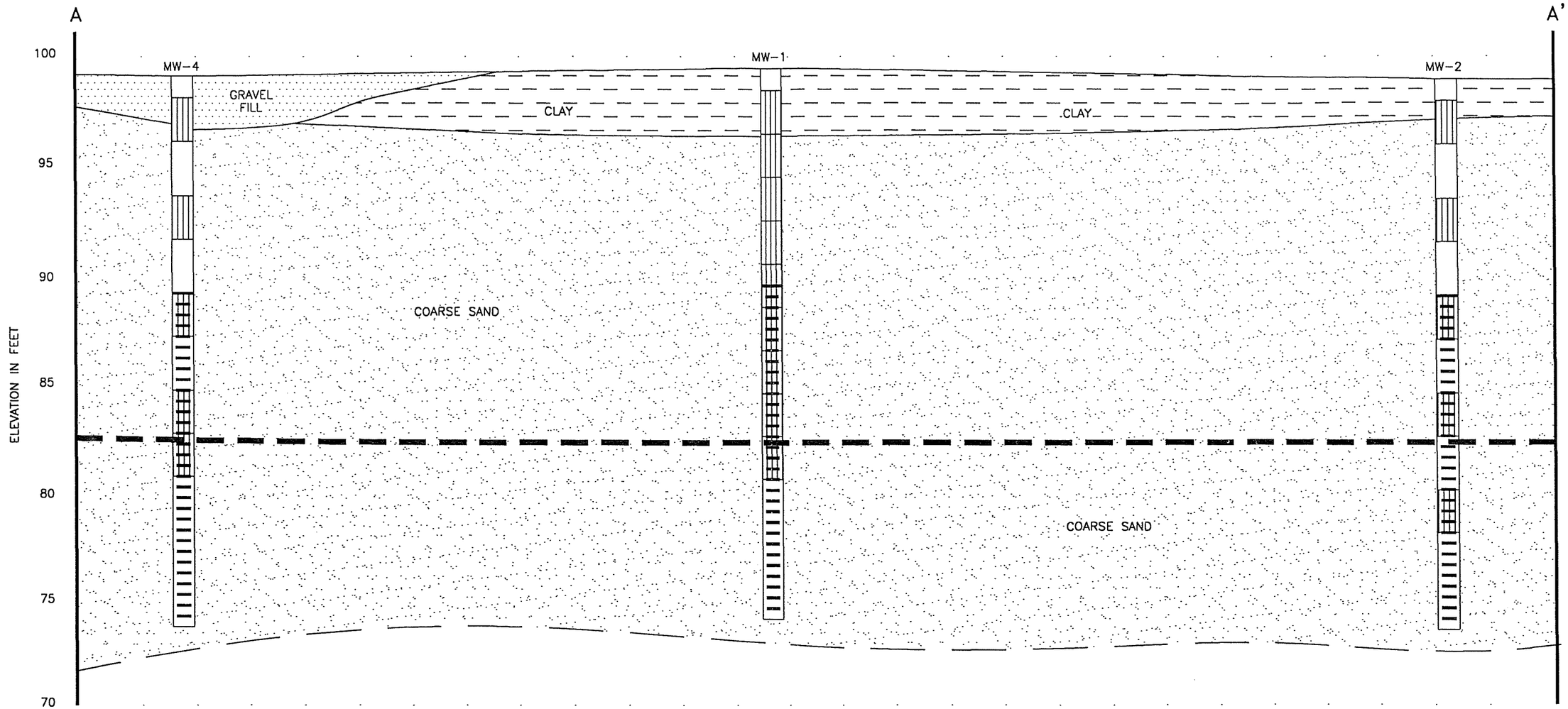
SCALE
0 30'

Cross-Section Plan View
Argetsinger's IGA Site
Couderay, Wisconsin

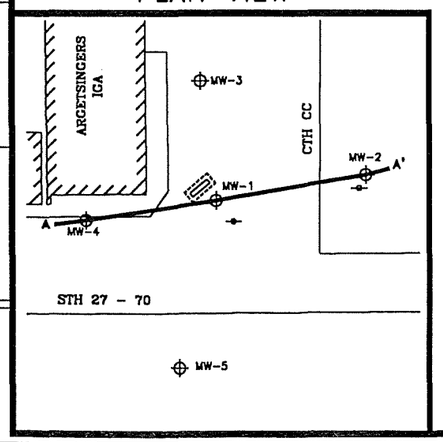
FIGURE NO.
5

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R5	LME 3/4/98	GJB 4/3/98	MJA 4/3/98

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.



PLAN VIEW



LEGEND

SAMPLE INTERVAL

SCREENED INTERVAL

GROUNDWATER TABLE (2/10/98)

Fluid Management
A Division of ENVIROGEN, Inc.

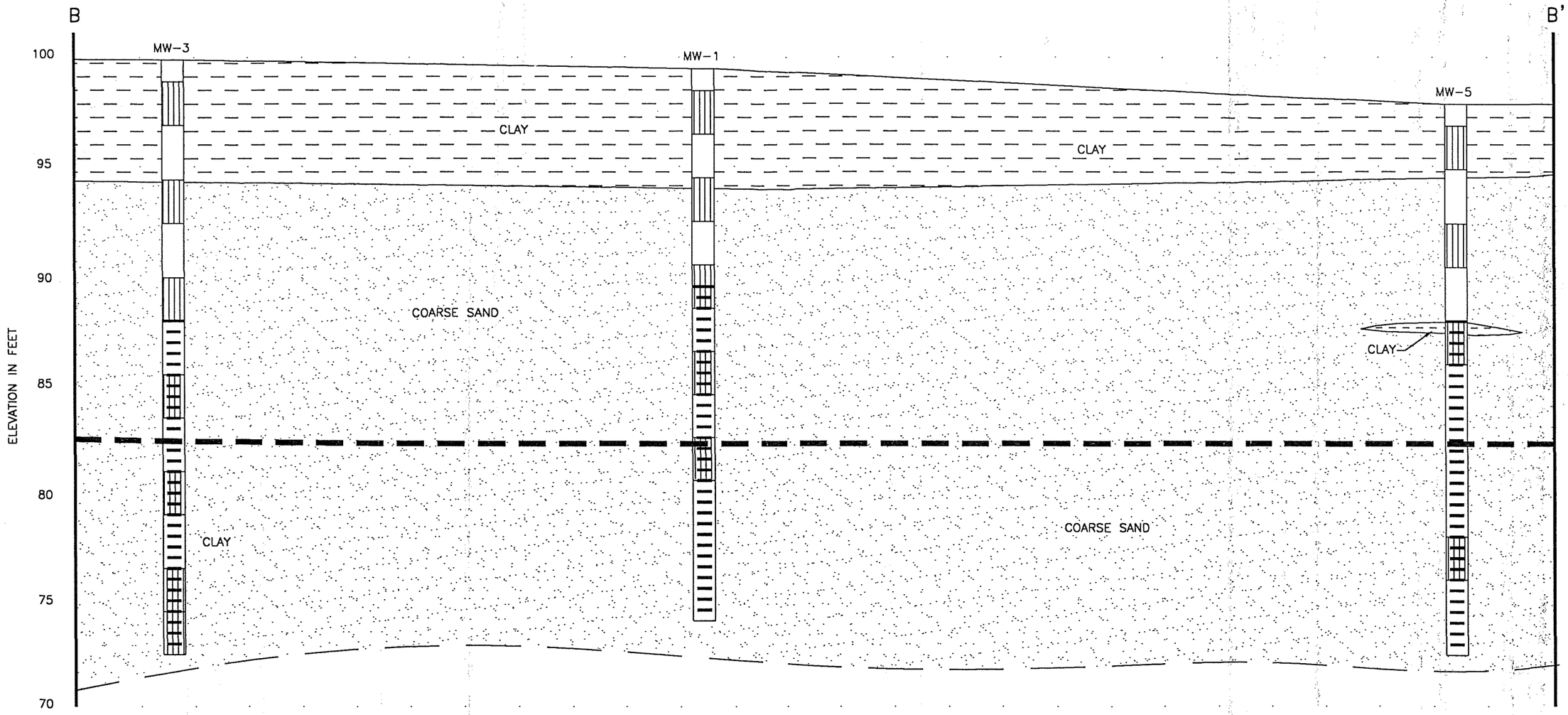
SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 5'

Geologic Cross-Section A-A'
Argetsinger's IGA Site
Couderay, Wisconsin

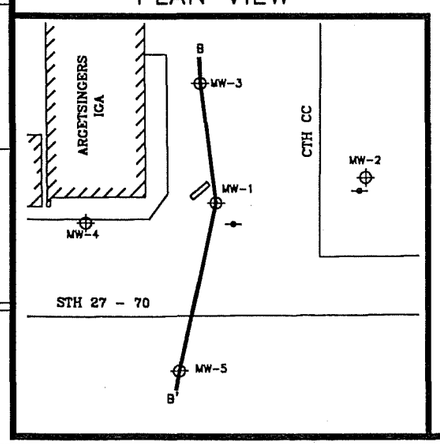
FIGURE NO.
6

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R6	LME 3/4/98	GJB 4/3/98	4/3/98



PLAN VIEW



LEGEND

SAMPLE INTERVAL

SCREENED INTERVAL

GROUNDWATER TABLE (2/10/98)

Fluid Management
A Division of ENVIROGEN, Inc.

SCALE

HORIZONTAL: 1" = 10'

VERTICAL: 1" = 5'

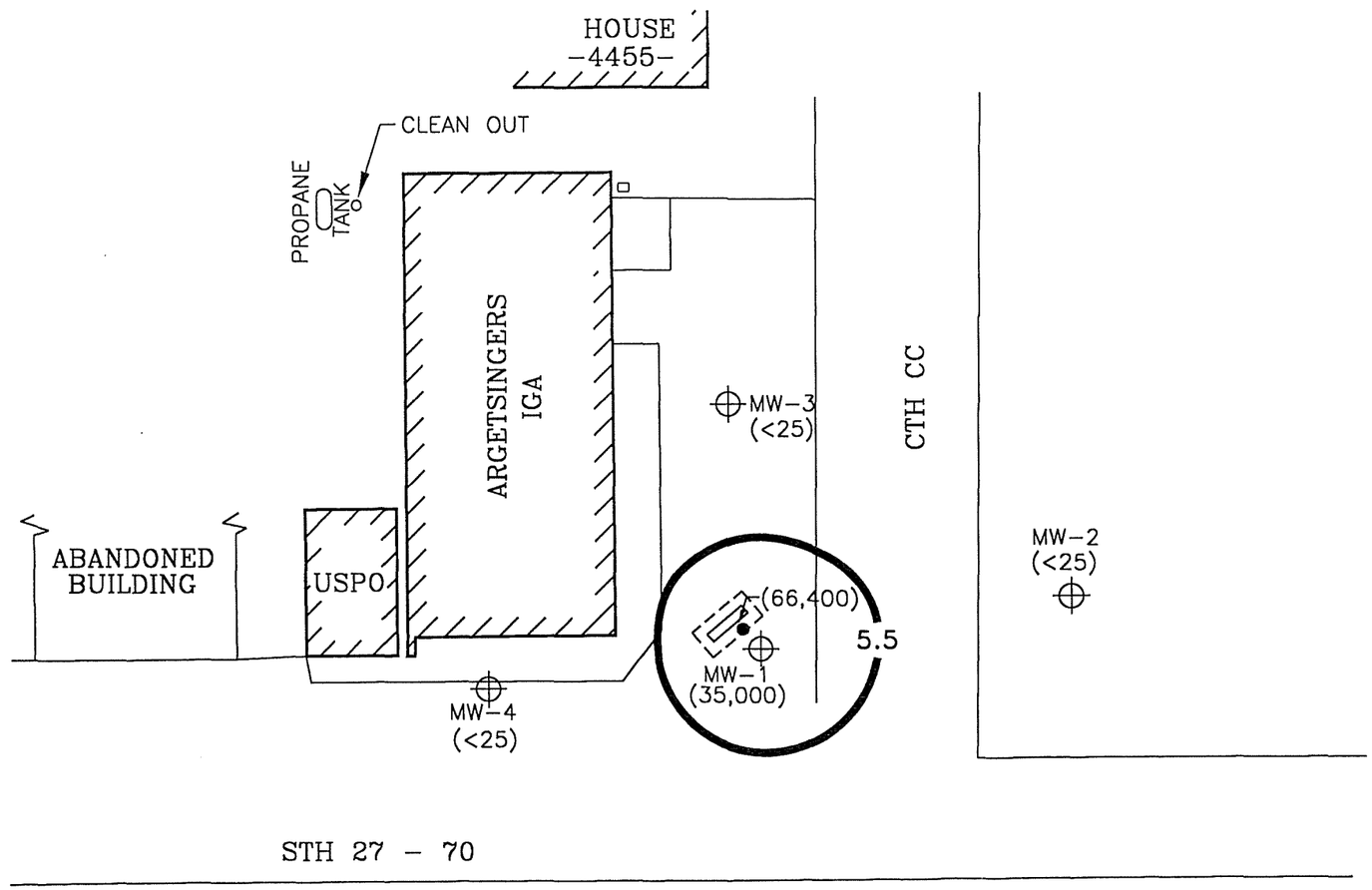
Geologic Cross-Section B-B'
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.

7

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R7	LME 3/6/98	GJB 4/3/98	



LEGEND

- MONITORING WELL
- ISA SAMPLE LOCATION
- ( ) BENZENE CONCENTRATION IN ppb
- 5.5 ISOCONCENTRATION CONTOUR
- GAS PUMP ISLAND
- UST CAVITY

NOTE: THE NR720 GENERIC SOIL STANDARD FOR BENZENE IS 5.5 ppb.

HAND PUMP, WATER WELL

Fluid Management
A Division of ENVIROGEN, Inc.

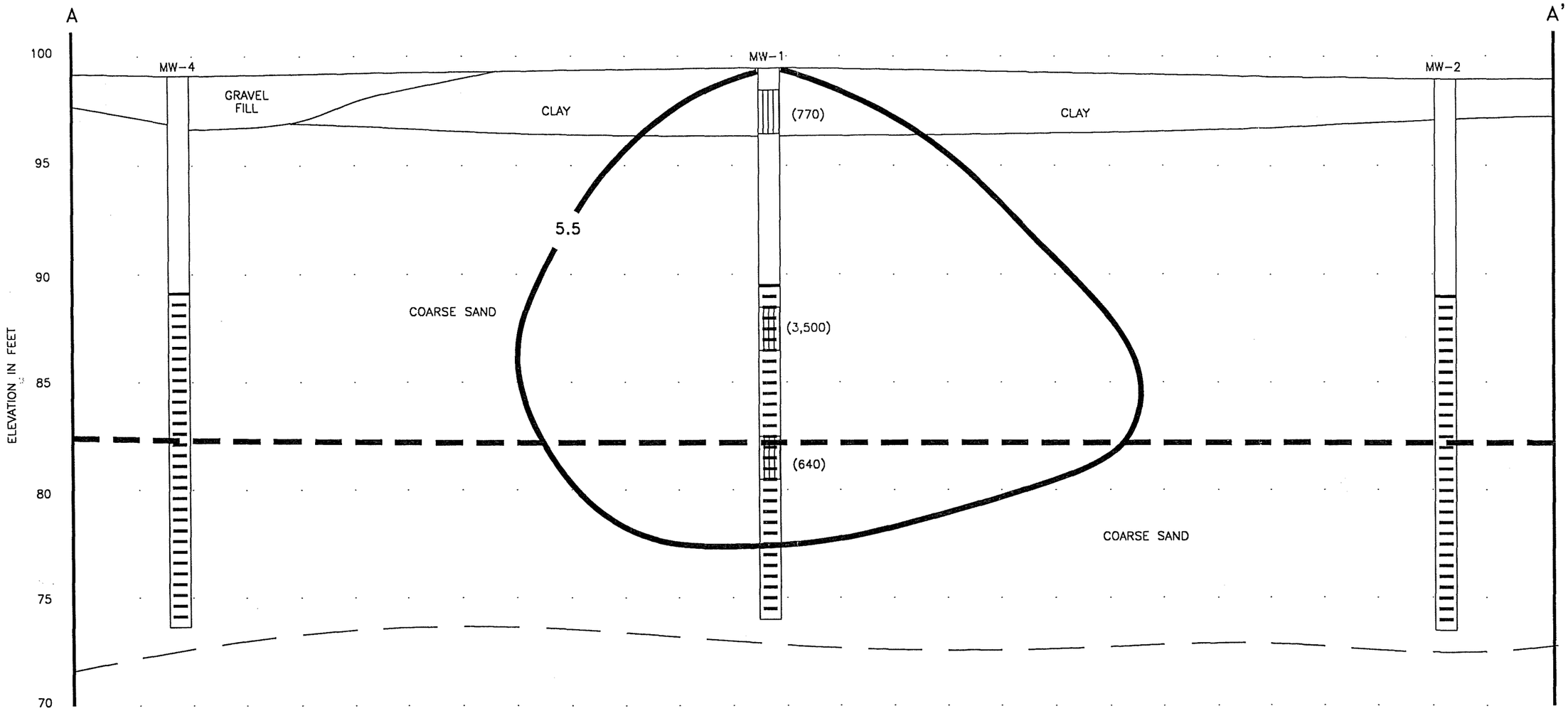
SCALE
0 30'

Soil Benzene Distribution
Argetsinger's IGA Site
Couderay, Wisconsin

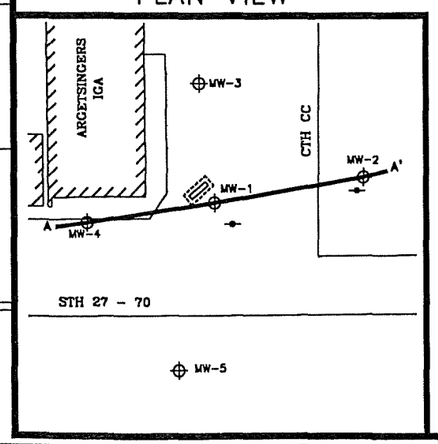
FIGURE NO.
8

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353RB	LME	3/6/98	4/3/98



PLAN VIEW



LEGEND

- SAMPLE INTERVAL
- SCREENED INTERVAL
- GROUNDWATER TABLE (2/10/98)
- ( ) BENZENE CONCENTRATION IN ppb
- 5.5 ISOCONCENTRATION CONTOUR

NOTE: THE NR720 GENERIC SOIL STANDARD FOR BENZENE IS 5.5 ppb.

Fluid Management
A Division of ENVIROGEN, Inc.

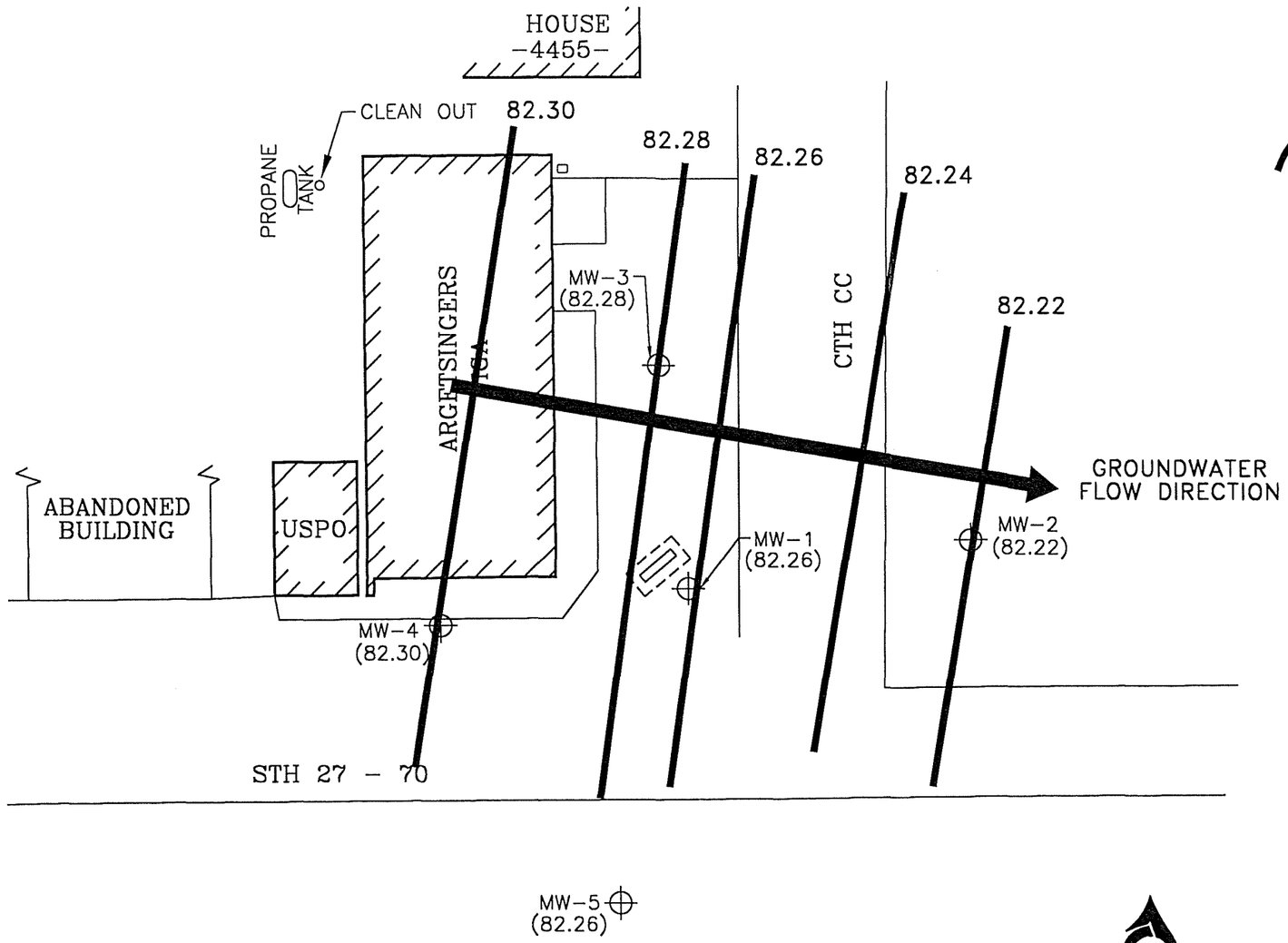
SCALE
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 5'

Soil Benzene Distribution
Cross-Section A-A'
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.
9

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO. 97.353R9 | DRAWN BY: LME 3/23/98 | CHECKED BY: BJB 4/3/98 | APPROVED BY: MJH 7/98



LEGEND

- MONITORING WELL
- ( ) GROUNDWATER ELEVATION IN FEET
- 82.22 ISOELEVATION CONTOUR
- GAS PUMP ISLAND
- UST CAVITY

NOTE: HYDRAULIC GRADIENT = 7.7×10^{-4} ft/ft

ELEVATIONS ARE REFERENCED TO AN ON SITE BENCHMARK WITH AN ARBITRARY 100 FOOT ELEVATION.

HAND PUMP, WATER WELL

Fluid Management
A Division of ENVIROGEN, Inc.

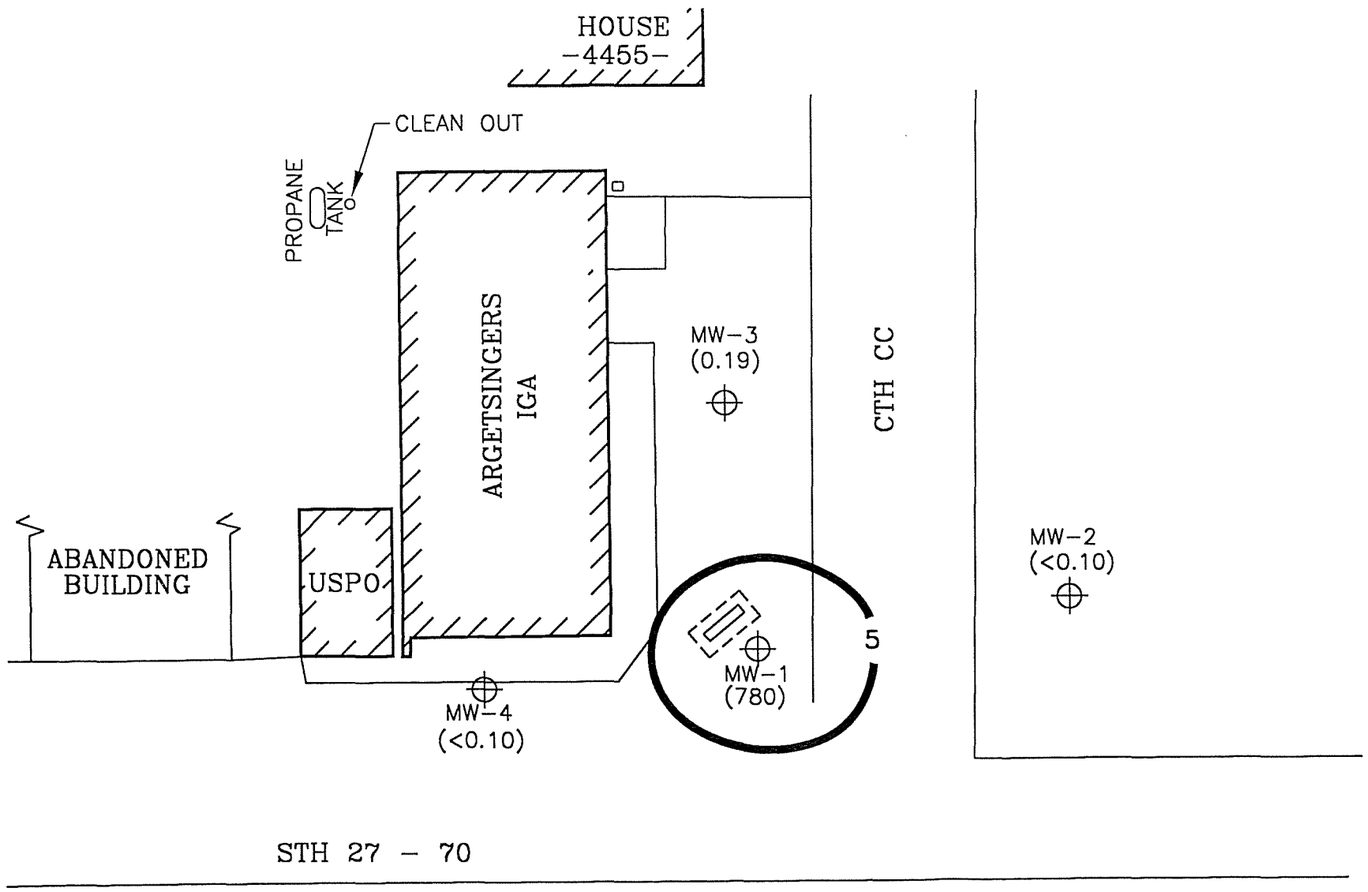
SCALE
0 30'

Potentiometric Surface (2/10/98)
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.
10

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R10	LME 3/6/98	4/3/98	



LEGEND

- MONITORING WELL
- ( ) BENZENE CONCENTRATION IN ppb
- 5 ISOCONCENTRATION CONTOUR
- GAS PUMP ISLAND
- UST CAVITY

NOTE: THE NR140 ENFORCEMENT STANDARD FOR BENZENE IS 5 ppb.

MW-5
(<0.10)

HAND PUMP,
WATER WELL

Fluid Management
A Division of ENVIROGEN, Inc.

SCALE
0 30'

N

Groundwater Benzene Distribution
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.
11

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.353R11	LME	3/6/98	7/1/98

LIST OF TABLES

1	UST Inventory
2	Soil Sample PID Field-Screening Results
3	Soil Sample Laboratory Analytical Results
4	Groundwater Elevation Data
5	Groundwater Sample Laboratory Analytical Results

TABLE 1

UST Inventory
Argetsinger's IGA Site
Couderay, Wisconsin

COMM Registration Number	Product	UST Size (gallons)	Composition	Installation Date	Status
571000045	Unleaded Gasoline	2,000	Steel	Unknown	Currently in use
571000046	Unleaded Gasoline	550	Steel	Unknown	Currently in use

(COMM n.d.)

Notes:

UST: Underground storage tank
COMM: Department of Commerce

Checked by: BJB
Approved by: NEA

TABLE 2

Soil Sample PID Field-Screening Results
Argetsinger's IGA Site
Courderay, Wisconsin

Soil Sample	Sample Depth (feet bls)	PID (ppmv)
MW-1	1-3	86
	3-5	54
	5-7	213
	7-9	387
	9-11	420
	11-13	495
	13-15	313
	15-17	302
	17-19	322
MW-2	1-3	<10
	5.5-7.5	<10
	10-12	<10
	14.5-16.5	<10
	19-21	<10
MW-3	1-3	<10
	5.5-7.5	<10
	10-12	<10
	14.5-16.5	<10
	19-21	<10
	23.5-25.5	<10
	25.5-27.5	<10
MW-4	1-3	NA
	5.5-7.5	<10
	10-12	<10
	14.5-16.5	<10
	16.5-18.5	<10
MW-5	1-3	<10
	5.5-7.5	<10
	10-12	<10
	14.5-16.5	NA
	20-22	<10

Notes:

Samples were collected on November 17&18, 1997
PID: Photoionization detector
NA: Not analyzed

Checked by: BJB Approved by: MGR

TABLE 3

Soil Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin

Sample	Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	1,2,4-TMB	1,35-TMB	MTBE	Naph-thalene	Total Lead (ppm)	GRO (ppm)	1,2-DCA
MW-1 (1-3')	11/18/97	770	1,500	180	1,600	4,000	11,000	<130	4,300	NA	NA	<130
MW-1 (11-13')	11/18/97	35,000	58,000	230,000	316,000	140,000	44,000	<630	17,000	<3.4	4,000	<630
MW-1 (17-19')	11/18/97	640	800	2,800	4,400	2,500	860	<25	490	<3.5	20	<25
MW-2 (5.5-7.5)	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<3.4	<2.7	<25
MW-2 (10-12')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<3.5	<2.7	<25
MW-3 (1-3')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	6.6	<3.0	<25
MW-3 (14.5-16.5')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<3.9	<3.1	<25
MW-4 (14.5-16.5')	11/18/97	<25	<25	<25	<50	<25	<25	<25	<25	<3.4	<2.7	<25
MW-4 (16.5-18.5')	11/18/97	<25	<25	49	<50	<25	<25	<25	<25	<3.6	<3.0	<25
MW-5 (5.5-7.5')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<3.4	<2.7	<25
MW-5 (10-12')	11/17/97	<25	<25	<25	<50	<25	<25	<25	<25	<3.6	<2.9	<25
NR 720 Generic Soil Standard		5.5	2,900	1,500	4,100	NS	NS	NS	NS	50	100	4.9

Notes:

All results in ppb unless otherwise noted.

Shading indicates value equals or exceeds the NR 720 generic soil standard

DCA: Dichloroethane
GRO: Gasoline range organics
MTBE Methyl t-butyl ether
TMB: Trimethylbenzene
NA: Not analyzed
NS: No standard
Checked by: BJB
Approved by: MTA

TABLE 4

Groundwater Elevation Data
Argetsinger's IGA Site
Couderay, Wisconsin
February 10, 1998

Well	Land Surface Elevation	Top-of-Casing Elevation	Top-of-Screen Elevation	Depth to Water (feet)	Groundwater Elevation
MW-1	99.48	98.91	88.91	16.65	82.26
MW-2	98.96	98.62	88.62	16.40	82.22
MW-3	99.90	99.48	86.48	17.20	82.28
MW-4	99.12	98.60	89.60	16.30	82.30
MW-5	97.85	97.47	87.47	15.21	82.26

Notes:

All elevations in feet above mean sea level

Checked by: BJB
Approved by: MTA

TABLE 5

Groundwater Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin
December 4, 1997

Monitoring Well	Benzene	n-Butyl-benzene	Ethyl-benzene	Isopropyl-benzene	MTBE	Napthalene	n-Propyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Xylenes	GRO	Lead (ppm)
MW-1	**780**	**6.3**	**70**	**3.8**	**17**	**12**	**12**	**850**	**98**	**31**	**500**	**4,900**	<0.00089
MW-2	<0.10	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	**0.11**	<0.10	<0.10	<0.25	<50	<0.00089
MW-3	**0.19**	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	**0.37**	0.22	<0.10	0.33	<50	<0.0089
MW-4	<0.10	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	**0.34**	0.17	<0.10	0.28	<50	<0.00089
MW-5	<0.10	<0.25	<0.25	<0.25	<0.25	<0.10	<0.25	**0.13**	<0.10	<0.10	<0.25	<50	<0.00089
MW-11 (a)	**920**	**7.2**	**76**	**4.0**	**19**	**7.2**	**12**	**1,100**	**110**	**36**	**570**	NA	NA
NR 140 Enforcement Standard	5	NS	700	NS	60	40	NS	343	NS	NS	620	NS	18
NR 140 Preventive Action Limit	0.5	NS	140	NS	12	8	NS	68.6	NS	NS	124	NS	1.5

Notes:

All results reported in ppb unless otherwise stated

Shading indicates value equals or exceeds the NR 140 enforcement standard

Cross hatching indicates value equals or exceeds the NR 140 preventive action limit

(a): MW-11 is a duplicate sample of MW-1
GRO: Gasoline range organics
MTBE Methyl t-butyl ether
TMB: Trimethylbenzene
NA: Not analyzed
NS: No standard

Checked by: BJB
Approved by: [illegible]

03-58-170214 X

Fluid Management
A Division of ENVIROGEN, Inc.

October 30, 1997

Ms. Janet Kazda
Wisconsin Department of Natural Resources
North Central District Headquarters
107 Sutliff Avenue
P.O. Box 818
Rhinelander, Wisconsin 54501-0818

Dear Ms. Kazda:

Enclosed please find a copy of Fluid Management's (FMI's) "Site Investigation Work Plan" for the Argetsinger's IGA site located in Couderay, Wisconsin.

Should you have any questions or require additional information, please contact me at (414) 549-6898.

Sincerely,
FLUID MANAGEMENT
A DIVISION OF ENVIROGEN, INC.

Eric F. Dobke / MTA

Eric F. Dobke
Staff I Environmental Specialist

EFD:kab

Enclosure

cc: Mr. Norm Argetsinger

2831 N. Grandview Blvd.
Post Office Box 90
Pewaukee, Wisconsin 53072-0090
Tel: (414) 549-6898
Fax: (414) 549-6938

Fluid Management
A Division of ENVIROGEN, Inc.

SITE INVESTIGATION WORK PLAN

ARGETSINGER'S IGA
Couderay, Wisconsin

October 1997
FMI Project No. P97.0353
WDNR ID No. 03-58-170214

Fluid Management
A Division of ENVIROGEN, Inc.

SITE INVESTIGATION WORK PLAN

For the

ARGETSINGER'S IGA

Jct. Hwy. 27 and County Road CC
Couderay, Wisconsin 54828

Submitted to:

MR. NORM ARGETSINGER

Argetsinger's IGA
P.O. Box 145
Couderay, Wisconsin 54828

and

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

North Central District Headquarters
P.O. Box 818, Sutliff Avenue
Rhinelander, Wisconsin 54501-0818

Prepared by:

FLUID MANAGEMENT A DIVISION OF ENVIROGEN, INC.

FMI Project No. P97.0353
WDNR ID No. 03-58-170214

October 1997

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2.0 GENERAL SITE INFORMATION

- 2.1 Site Location
- 2.2 Site Description
- 2.3 Site History

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- 3.1 Regional and Local Geology
- 3.2 Regional and Local Hydrogeology
- 3.3 Local Contaminant Pathways and Receptors
- 3.4 Local Contaminant Sources Assessment

4.0 SOIL INVESTIGATION

- 4.1 Investigation Strategy
- 4.2 Field Activities
- 4.3 Laboratory Analysis

5.0 GROUNDWATER INVESTIGATION

- 5.1 Investigation Strategy
- 5.2 Field Activities
- 5.3 Laboratory Analysis

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(Continued)

6.0 SITE INVESTIGATION SCHEDULE

7.0 CERTIFICATION

8.0 REFERENCES

LIST OF APPENDICES

APPENDIX A Acronym Definitions

APPENDIX B Involved Parties

1.0 INTRODUCTION

This document presents a proposed work plan, prepared by Fluid Management a Division of Envirogen, Inc. (FMI) for a site investigation at the Argetsinger's IGA site in Couderay, Wisconsin, where underground storage tanks (USTs) are used for the storage and distribution of gasoline. During the initial site assessment (ISA), sample analyses indicated the presence of contaminants at levels above the Wisconsin Department of Natural Resources (WDNR) site investigation trigger levels.

This Site Investigation Work Plan (SIWP) outlines activities conducted and information gathered to date along with the data collection techniques and methods necessary to efficiently complete an investigation and develop a corrective action plan for the site. This work plan has been designed to comply with the Wisconsin Department of Commerce (COMM) and the WDNR requirements for an investigation associated with leaking USTs.

The purpose of the scope of services proposed in this SIWP is the investigation of the source, nature, degree, and extent of soil and potential groundwater contamination at the site.

Definitions of acronyms used in this SIWP are provided in Appendix A. A Health and Safety Plan (HSP) has been assembled for the site in accordance with Occupational Safety and Health Administration (OSHA) regulations. The HSP is available upon request.

2.0 GENERAL SITE INFORMATION

2.1 Site Location

The Argetsinger's IGA site is located in Couderay, Wisconsin. The site is located in the NW¼, NE¼, Sec. 12, T38N, R8W in Sawyer County (United States Geological Survey [USGS] 1971). Figure 1 illustrates the site location. The site address is:

Jct. Hwy. 27 and Cty. Road CC
Couderay, Wisconsin 54828

2.2 Site Description

The Argetsinger's IGA site is approximately 5,000 square feet in area, slopes to the southwest, and contains a brick structure used as a retail outlet for groceries and gasoline. Two USTs, a 550-gallon UST and a 2,000-gallon UST containing gasoline and a pump island are located on the southeastern portion of the site. A potable well is located in the basement of the structure. The site surface is primarily asphalt- and concrete-covered. The site configuration is provided in Figure 2.

The site is bordered to the south by State Highway 27/70, to the east by County Road CC, to the west by a post office, and to the north by a residence. Much of the area surrounding the Argetsinger's IGA site is commercial and residential.

2.3 Site History

The Argetsinger's IGA site is owned by Mr. Norm Argetsinger of Couderay, Wisconsin. A list of parties involved in site environmental activities is provided in Appendix B. The USTs were installed and have operated as a facility for the storage and distribution of petroleum product since 1950 (Argetsinger,1997). The two USTs are used to dispense unleaded gasoline. Table 1 lists the details and status of the USTs at the site as they appear on the COMM database. The Underground Petroleum Product Tank Inventory forms are available upon request.

On August 7, 1997, FMI personnel conducted an ISA. During the assessment samples were collected near the pump island. Field observations identified the presence of petroleum contaminated soil. A soil sample was submitted to a WDNR-certified laboratory to confirm the observations. Results from the laboratory analysis indicated gasoline range organics (GRO) were present at concentrations of 2,610 ppm. The results are in exceedance of the WDNR site investigation trigger level of 10 ppm for GRO. Figure 3 illustrates the soil sampling location. Table 2 summarizes the laboratory analytical results from the soil sample. The laboratory analytical report is available upon request.

3.0 REGIONAL AND LOCAL CHARACTERISTICS

3.1 Regional and Local Geology

Topography in the region shows moderate relief from 1,250 to 1,500 feet above mean sea level (MSL) with rolling hills and glacial formed lakes (USGS 1971).

The regional glacial/surficial geology (50 to 100 feet thick) is composed of the following units (from top to bottom [Young and Hindall 1972]):

- Ground moraine deposits (till; unstratified clay, silt, sand, gravel, and boulders)
- End moraine deposits (till; stratified sand, and gravel)
- Pitted and unpitted outwash (sand and gravel)

The regional and local bedrock is composed of the following unit (Young and Hindall 1972; Mudrey, Brown, and Greenberg 1982):

- Precambrian igneous and metamorphic rocks

The local glacial/surficial geology (50 to 100 feet thick) is composed of the following unit (Young and Hindall 1972):

- Ground moraine deposits (till; clay, silt, sand, gravel, and boulders)

Soils observed during the initial site assessment include medium to coarse grained sands.

3.2 Regional and Local Hydrogeology

Regional hydrogeology consists of the following (Young and Hindall 1972):

- Groundwater flow is to the south toward the Couderay River

Local hydrogeology consists of the following (USGS 1971; Young and Hindall 1972):

- Depth to water is estimated to be between 10 and 15 feet below land surface (bls)

- Groundwater flow is anticipated to be toward the south/southeast

3.3 Local Contaminant Pathways and Receptors

Utility trenches located on and adjacent to the site are potential pathways for contaminant migration that will be investigated during the site investigation. A survey of the locations of site features, including site utilities, has been performed by FMI professional staff. Figure 2, the site plan view, shows the layout of the site.

The nearest surface water body that could potentially be affected by contamination from the site is the Couderay River, located 1000 feet south of the site.

The Wisconsin Geological and Natural History Survey (WGNHS) was contacted regarding the presence of potable wells within a 1,200-foot radius of the site (WGNHS n.d.). No well records were found within the specified search radius by the WGNHS. There was however a potable well observed on-site in the basement of the convenience store.

There are no wetlands located on or immediately adjacent to the site (USGS 1971). Based on available information, there are no sensitive ecosystems or habitats and no state or federally listed endangered species on or adjacent to the site.

Based on a review of the National Register of Historic Places and State Register of Historic Places in Wisconsin, there are no historical or archeological sites on or adjacent to the site (State Historical Society of Wisconsin 1994). Based on a review of NR 102.10 and NR 102.11, there are no outstanding resource waters or exceptional resource waters on or near the site (WDNR 1993a).

3.4 Local Contaminant Sources Assessment

Information regarding nearby sources of contamination was reviewed to evaluate the potential for off-site contaminants to migrate onto the site and to identify nearby sites for which WDNR information would be available. The WDNR information could provide specific information about geology and hydrogeology in the area of the site. To locate potential sources of contamination that exist within a 1,200-foot-radius of the site, FMI has

reviewed the following public records lists:

- Hazard Ranking List (WDNR 1994a)
- Spills Summary Report (WDNR 1995)
- Registry of Waste Disposal Sites in Wisconsin (WDNR 1993b)
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List (Environmental Protection Agency [EPA] 1994a)
- List of Active Leaking Underground Storage Tank (LUST) Sites (WDNR 1997)
- Superfund: Progress at National Priority List Sites: Wisconsin (EPA 1994b)

One property within a 1,200-foot radius of the Argetsinger's IGA site has been identified by FMI from the WDNR LUST list as a potential contaminant source. A second site identified from the WDNR LUST list, the Sawyer County Highway Department is an unknown distance from the Argetsinger's site. Known details regarding these sites are provided in Table 3. FMI will further assess potential off-site contaminant sources during the site investigation.

4.0 SOIL INVESTIGATION

The purpose of the soil investigation is to delineate the source, nature, degree, and extent of petroleum hydrocarbon soil contamination at the Argetsinger's IGA site. In addition, subsurface materials will be characterized to allow development of an appropriate response to contamination at the site. FMI will follow the standard operating procedures (SOP) which is available upon request.

4.1 Investigation Strategy

The initial soil contaminant investigation will be performed using the hollow stem auger (HSA) drilling technique with split-spoon sampling. Soil sampling will begin at known or suspected contaminant source locations. Based on field observations, subsequent sampling locations will be selected radially outward from contaminated sampling points until the extent of contamination or access/budgetary limitations is reached. The proposed soil sampling locations may be modified based on field observations. Off-site access will be obtained from properties located adjacent to the Argetsinger's IGA site prior to drilling activities.

During sample collection, a portion of each sample collected will be field-screened for volatile organic vapors with a photoionization detector (PID). To document the distribution and extent of soil contamination, select soil samples will be submitted for laboratory analyses.

4.2 Field Activities

- Advance approximately five HSA borings (locations are in Figure 4)
- Collect soil samples continuously to an estimated depth of 12 feet.
- Characterize soil samples as to soil type.
- Field-screen sample portions with a PID.
- Select samples for laboratory analysis.

- Submit samples to a state-certified laboratory for analysis.

- Prepare boring logs indicating sample interval depths, observations, locations of various strata, saturation conditions, and other geologic information.

4.3 Laboratory Analysis

Samples collected for state-certified laboratory analysis will be selected and analyzed according to the rationale provided in Table 4. The laboratory analytical methods and limits of detection are provided in FMI's SOP. Additional soil samples may be selected for laboratory analysis to meet Wisconsin Administrative Code, Chapter NR 716 requirements. The results will be reviewed by FMI's chemist.

5.0 GROUNDWATER INVESTIGATION

The purpose of the groundwater investigation at the site is to delineate the source, nature, degree, and extent of possible groundwater contamination on-site. FMI will follow the SOP.

5.1 Investigation Strategy

If site investigation data indicate groundwater contamination exists, monitoring wells will be installed at locations selected based on soil investigation observations. One monitoring well will be installed in the source area. The remaining wells will be installed at the perimeter of the plume to facilitate definition and monitoring of the dissolved-phase contaminants.

5.2 Field Activities

- Install a minimum of five monitoring wells (locations are illustrated in Figure 4).
- Survey the well locations and top of casing elevations.
- Measure the well depths to water.
- Sample the wells.
- Determine the groundwater flow direction and gradient

If free product is detected in a well, the product thickness will be determined by first measuring the depth to the product and then to water with a free-product probe. The well will only be sampled for product identification. The detection of free product will trigger initial abatement measures and product recovery in accordance with 40 CFR 280.62 and 40 CFR 280.64, respectively.

5.3 Laboratory Analysis

To document the results of the groundwater investigation, groundwater samples collected from the monitoring wells will be submitted to a state-certified laboratory for volatile organic compounds (VOC's), GRO and dissolved lead analyses. The laboratory analytical methods and limits of detection are summarized in the SOP. The laboratory analytical results will be reviewed by FMI's chemist.

6.0 SITE INVESTIGATION SCHEDULE

FMI will submit a copy of this SIWP to the WDNR for review. The site investigation activities at the Argetsingers's IGA site are estimated to proceed on the following schedule:

	Months Following SIWP Submittal
• Site investigation activities conducted	1
• SIR completed	4

These time frames are approximate and may deviate due to circumstances such as FMI internal scheduling, subcontractor coordination, field results, and changes to the scope of services.

7.0 CERTIFICATION

This Site Investigation Work Plan has been prepared in accordance with generally accepted engineering and hydrogeologic principles and practices of this time and location.

The recommended scope of services presented herein has been developed from consideration of the project characteristics and interpretation of available information. Because only limited information is available, FMI reserves the right to modify actual site activities based on subsequent findings.

The locations of the soil borings and monitoring wells have been selected to delineate the extent of contamination. If the contamination is found to be more or less than originally anticipated, appropriate modifications to the Site Investigation Work Plan may be necessary.

This Site Investigation Work Plan was prepared by FLUID MANAGEMENT, INC.

I, Matthew T. Alleva, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Matthew T. Alleva
Project Hydrogeologist

Eric F. Dobke / MTA

Eric F. Dobke
Staff I Environmental Specialist/Report Preparer

MTA\EFD:kab

8.0 REFERENCES

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Young, H.L., and S.M. Hindall. 1972. University of Wisconsin-Extension. Geologic and Natural History Survey. Water Resources of Wisconsin-Chippewa River Basin: Hydrologic Investigations. Atlas HA-386. Washington D.C.

FIGURES

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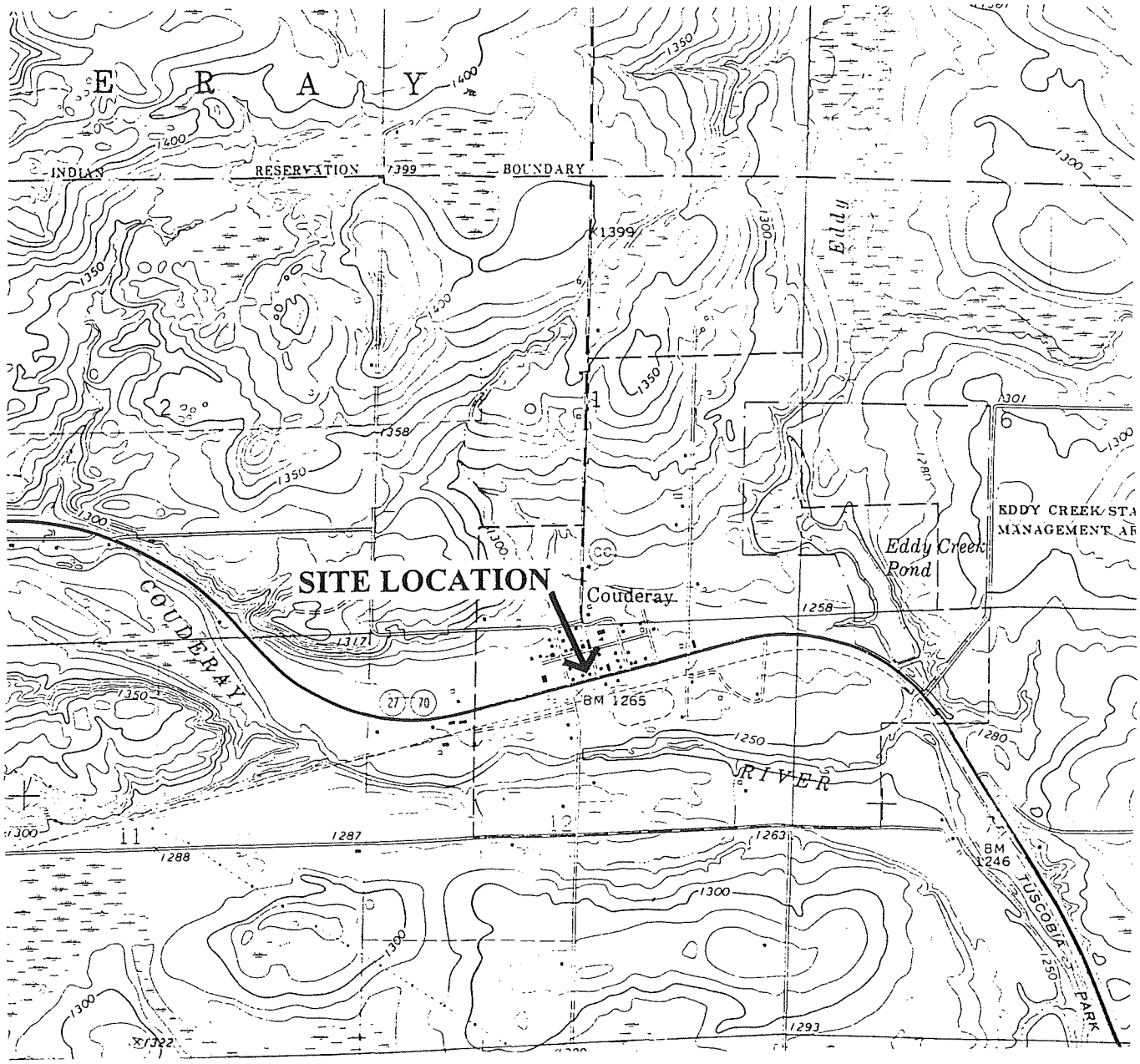


(USGS 1971)

SCALE
1:24000

1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

Fluid Management
A Division of ENVIROGEN, Inc.

N

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

LOCATION

Site Location Map
Argetsinger's IGA Site
Couderay, Wisconsin

FIGURE NO.

1

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.0353W1	LME	10/7/97	11/3/97

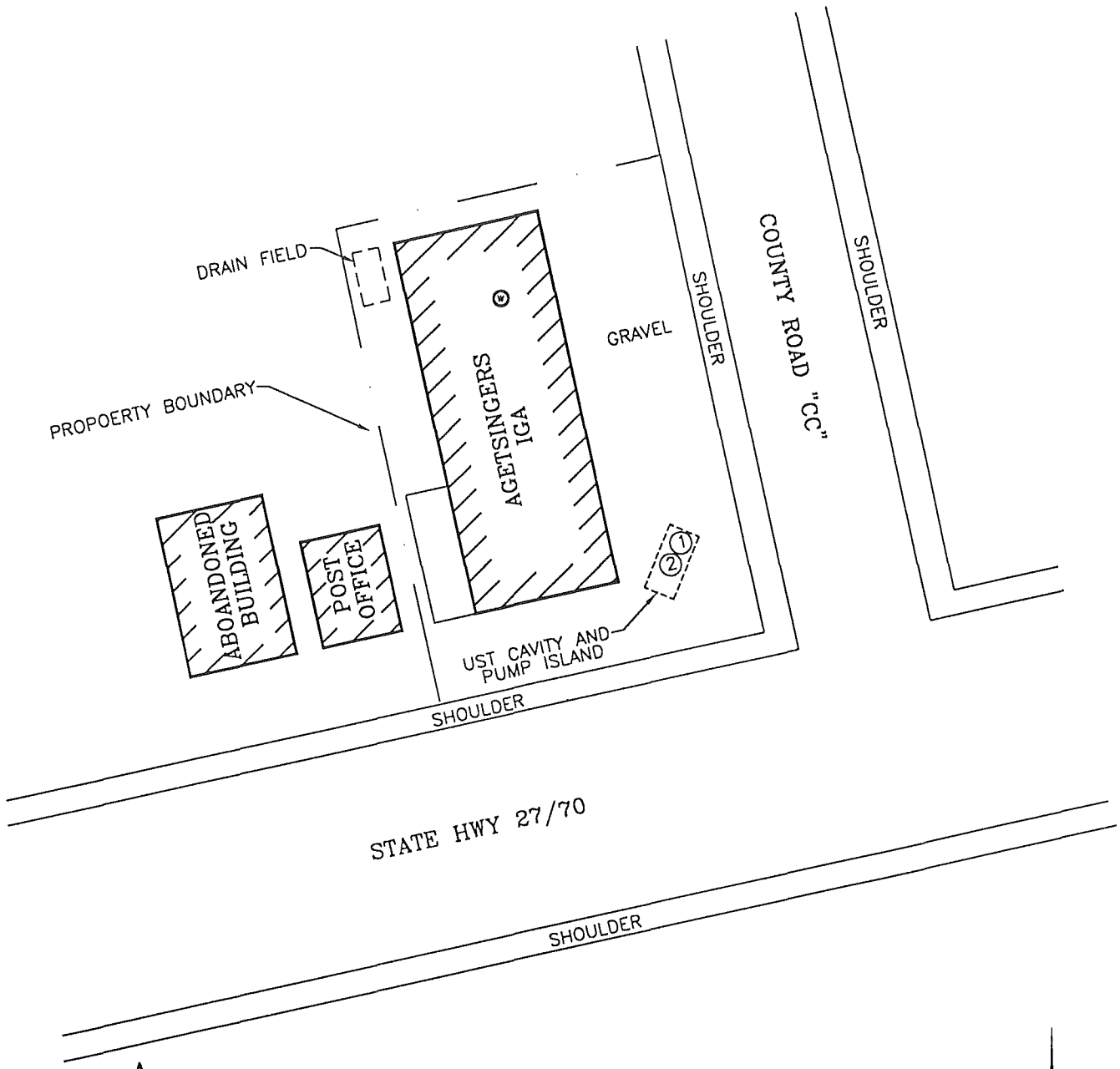
TANK LEGEND

① 2,000-GALLON GASOLINE UST

② 550-GALLON GASOLINE UST

LEGEND

⊙ POTABLE WELL



Fluid Management
A Division of ENVIROGEN, Inc.

N

SCALE

0 30'

Site Plan View
Argetsinger's IGA
Couderay, Wisconsin

FIGURE NO.

2

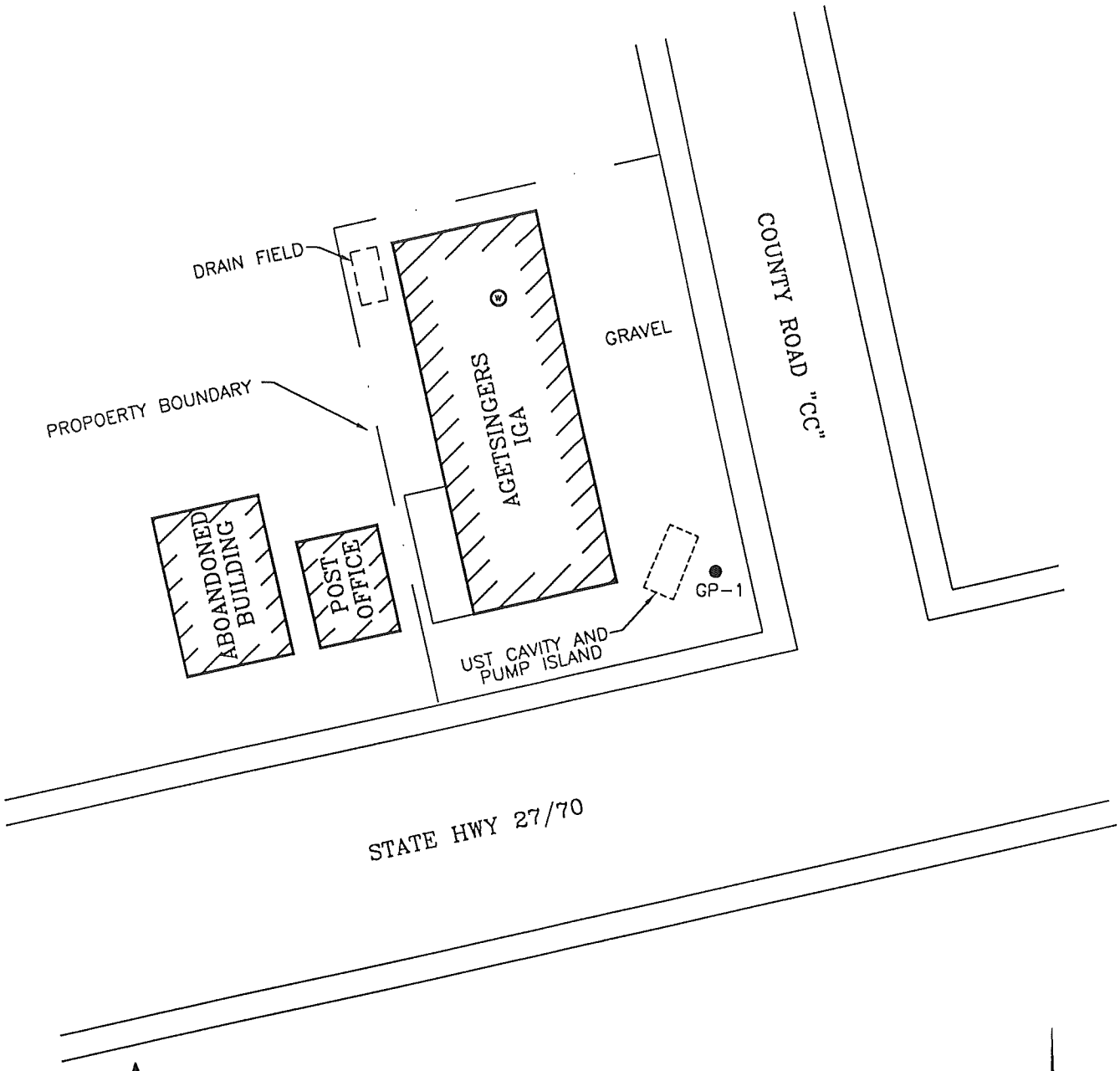
DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.0353W2	LME 10/7/97	SAM 11/3/97	MTT 11/3/97

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

LEGEND

● ISA SOIL SAMPLE LOCATION

⊗ POTABLE WELL



Fluid Management
A Division of ENVIROGEN, Inc.

SCALE
0 30'

Initial Site Assessment
ISA Soil Sample Configuration
Argetsinger's IGA
Couderay, Wisconsin

FIGURE NO. 3

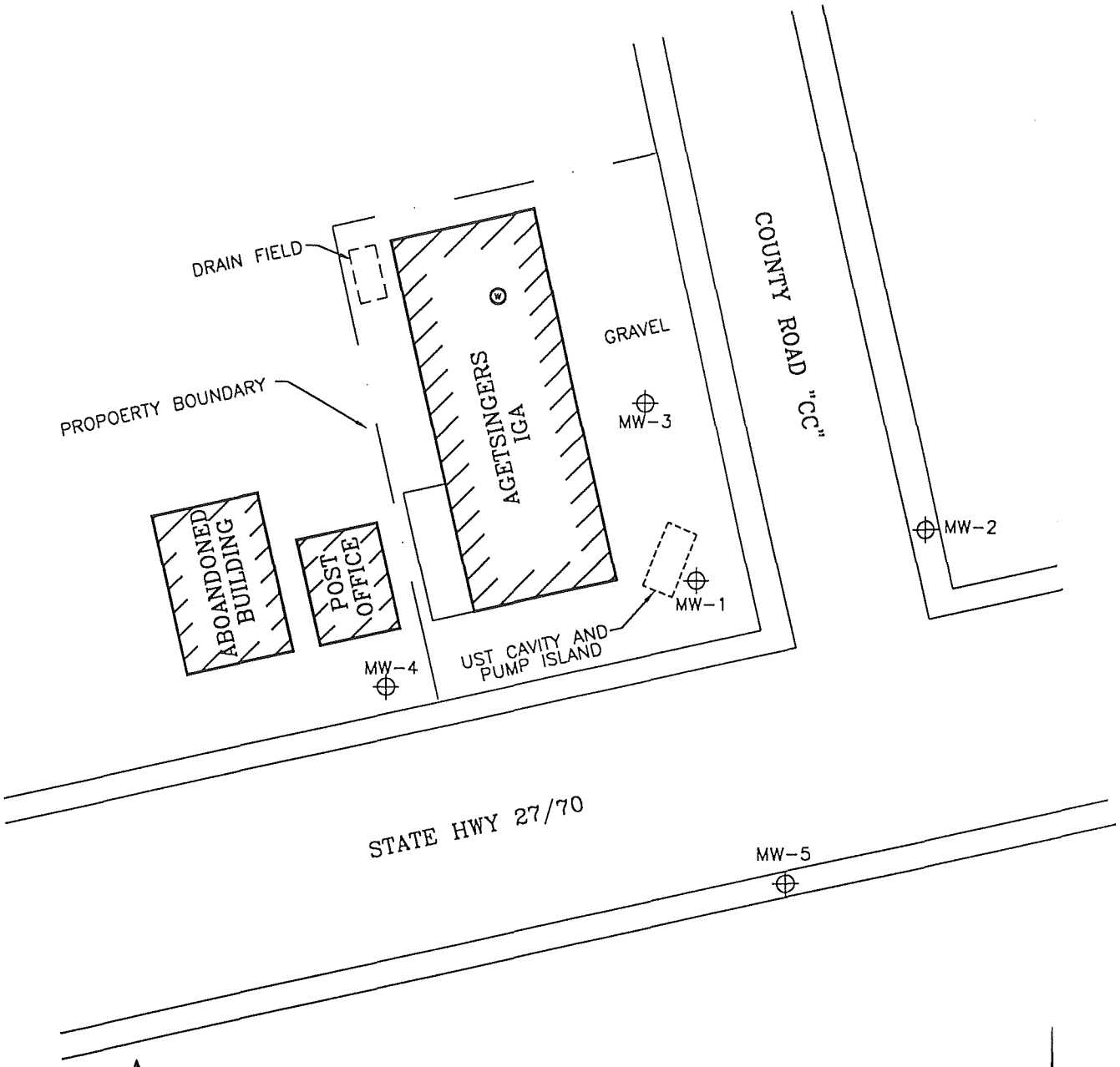
DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.0353W3	LME 10/7/97	SAM 11/5/97	11/3/97

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

LEGEND

⊕ PROPOSED MONITORING WELL LOCATION

Ⓦ POTABLE WELL



Fluid Management
A Division of ENVIROGEN, Inc.

N

SCALE

0 30'

Proposed Monitoring Well Configuration Argetsinger's IGA Couderay, Wisconsin

FIGURE NO.

4

DRAWING NO.	DRAWN BY:	CHECKED BY:	APPROVED BY:
97.0353W4	LME	10/7/97	11/3/97

THE INTERPRETATIONS IN THIS FIGURE ARE BASED ON KNOWN POINTS IN TIME AND SPACE AND ARE INTEGRAL TO A WRITTEN REPORT AND SHOULD BE REVIEWED IN THAT CONTEXT.

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TABLE 1

UST Inventory
Argetsinger's Site
Couderay, Wisconsin

COMM Registration Number	Product	UST Size (gallons)	Composition	Installation Date	Status
571000045	Unleaded Gasoline	2,000	Steel	unknown	Currently in use
571000046	Unleaded Gasoline	550	Steel	unknown	Currently in use

(COMM n.d.)

Notes:

UST: Underground storage tank
COMM: Department of Commerce

Checked by: BJB
Approved by: MTA

TABLE 2

Initial Site Assessment Soil Sample Laboratory Analytical Results
Argetsinger's IGA Site
Couderay, Wisconsin
August 8, 1997

Sampling Location	Sample Depth (feet bls)	GRO (ppm)	Benzene	Ethyl-benzene	Toluene	Xylenes	MTBE	1,2,4-TMB	1,3,5-TMB
GP-1	8-10	**2,610**	66,400	81,700	358,000	434,000	<6,540	173,000	56,600
WDNR Site Investigation Trigger Level		10	NS	NS	NS	NS	NS	NS	NS

Notes:

All results in ppb unless otherwise noted.

Shading indicates value exceeds the WDNR site investigation trigger level

bls: Below land surface
DRO: Diesel range organics
GRO: Gasoline range organics
MTBE: Methyl tert-butyl ether
TMB: Trimethylbenzene
NS: No standard
WDNR: Wisconsin Department of Natural Resources

Checked by: BJB
Approved by: MB

TABLE 3

Potential Off-Site Contaminant Sources
Argetsinger's IGA Site
Couderay, Wisconsin

Site	Information Source	Address/Location	Distance	Direction	Case Status	Substance
Couderay Investigation	WDNR LUST List [1]	405 Gettysburg	Unknown	Unknown	NA	Unknown Hydrocarbon
Sawyer County Hwy. Dept. - Couderay	WDNR LUST List[1]	1 Blk. North of Hwy. 70	Unknown	Unknown	Moved to COMM	Diesel

Notes:

[1]: WDNR 1997a
WDNR: Wisconsin Department of Natural Resources
NA: Not applicable
COMM: Wisconsin Department of Commerce
LUST: Leaking Underground Storage Tank

Checked by: BJB
Approved by: MTA

TABLE 4

Proposed Soil Sample Laboratory Analyses
Argetsingers IGA Site
Couderay, Wisconsin

Location	Boring ID	Sampling Objective	Sampling Strategy	Parameters
Contaminant Source Area	MW-1	To characterize the nature and degree of the contamination and defines vertical extent (if present)	One sample collected from the interval with the highest PID reading	VOCs, GRO, and total lead
			One sample from the water table interface	VOCs, GRO, and total lead
Horizontal Contaminant Extent	MW-2, MW-3, MW-4, MW-5	To define the lateral extent of soil contamination	One sample collected from the interval with the highest PID reading	PVOCs, GRO, and total lead
			One sample from the water table interface	

Notes:

PID: Photoionization detector
GRO: Gasoline range organics
VOC: Volatile organic compound
PVOC: Petroleum volatile organic compound

Checked by: BJB
Approved by: MTA

APPENDIX A

Acronym Definitions

ACRONYM DEFINITIONS

bls -	below land surface
CERCLIS -	Comprehensive Environmental Response, Compensation and Liability Information System
COMM -	Department of Commerce
DRO -	diesel range organics
EPA -	Environmental Protection Agency
FMI -	Fluid Management a Division of Envirogen, Inc.
GRO -	gasoline range organics
HSA-	hollow stem auger
HSP -	Health and Safety Plan
ISA -	Initial Site Assessment
LUST-	leaking underground storage tank
MSL-	mean sea level
NA -	not applicable
NS -	no standard
OSHA -	Occupational Safety and Health Administration
PID -	photoionization detector
PVOC-	petroleum range volatile organic compounds
SIWP -	Site Investigation Work Plan
SOP -	standard operating procedures
USGS -	United States Geological Survey
UST -	underground storage tank
VOC-	volatile organic compounds
WDNR -	Wisconsin Department of Natural Resources
WGNHS -	Wisconsin Geological and Natural History Survey

APPENDIX B

Involved Parties List

INVOLVED PARTIES LIST

Site Owner:	Argetsinger's IGA Contact: Mr. Norm Argetsinger P.O. Box 145 Couderay, Wisconsin 54828
Environmental Consultant:	Fluid Management a Division of Envirogen, Inc. 850 Hwy. 153, Suite F Mosinee, Wisconsin 54455 (715) 693-1750
Governmental Agencies:	Wisconsin Department of Natural Resources North Central District Headquarters P.O. Box 818 107 Sutliff Ave. Rhinelander, Wisconsin 54501-0818 (715) 365-8900 Wisconsin Department of Commerce 201 East Washington Avenue Madison, Wisconsin 53707 (608) 267-3753
Laboratories:	National Environmental Testing, Inc. Watertown Division 602 Commerce Drive P.O. Box 288 Watertown, Wisconsin 53094

INVOLVED PARTIES LIST
(Continued)

Geoprober:

SGS, Inc.
W4490 Pope Road
Merrill, Wisconsin 54452
1-800-261-2803

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William Smith, District Director

North Central District Headquarters
PO Box 818, 107 Sutliff Ave.
Rhinelander, WI 54501-0818
TELEPHONE 715-365-8900
FAX 715-365-8932
TDD 715-365-8957

September 18, 1997

NOR UID # 03-58-170214

Norman Argetsinger
Argetsinger's IGA
PO Box 145
Couderay, WI 54828

SUBJECT: Argetsinger's IGA, NW corner of the Junction of CTH CC & Hwys 27 & 70, Couderay, WI

Dear Mr. Argetsinger:

On August 19, 1997, the Department of Natural Resources - Remediation and Redevelopment Program was notified by Dave Kauzlaric of Fluid Management, Inc. that unleaded gasoline contamination was discovered during site assessment activities at the above referenced site.

Based on the information we have received, the Department believes that you are responsible for restoring the environment at this site under Section 292.11(3), Wisconsin Stats. known as the hazardous substances spills law. Your responsibilities include investigating the extent of the contamination, and then selecting and implementing the most appropriate remedial action. Enclosed is information to help you understand what you need to do to ensure your compliance with the spills law.

The purpose of this letter is threefold: 1) to describe your legal responsibilities, 2) to explain what you need to do to investigate and clean up the contamination, and 3) to provide you with information about cleanups, environmental consultants, and working cooperatively with the Department of Natural Resources.

Legal Responsibilities:

Your legal responsibilities are defined both in statute and in administrative rules. The hazardous substances spill law, Section 292.11(3) Wisconsin Statutes, states:

* RESPONSIBILITY. A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

isconsin Administrative Codes NR 700 through NR 728 establish requirements for emergency and interim actions, public information, site investigations, design and operation of remedial action systems, and case closure. Chapter NR 708 includes provisions for immediate actions in response to limited contamination. Wisconsin Administrative Code NR 140 establishes groundwater standards.

Steps to Take:

The longer contamination is left in the environment the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and to neighboring properties and reduce your costs in investigating and cleaning up the contamination. To ensure that your cleanup complies with Wisconsin's laws and rules, you should hire a professional environmental consultant who understands what needs to be done. The following are the first four steps to take:

1. Within thirty (30) days, please submit written verification (such as a letter from the consultant) that you have hired an environmental consultant. You will need to work quickly to meet this timeline.

2. Within sixty (60) days, your consultant must submit a workplan and a schedule for conducting the investigation. The consultant must follow the Department's administrative rules and our technical guidance documents. Please include with your workplan a copy of any previous information that has been completed for your site (such as an underground tank removal report, or a preliminary soil excavation report).

3. Please keep us informed of what is being done at your site. You or your consultant must provide us with a brief report at least every 90 days, starting after your workplan is submitted. These quarterly reports should summarize the work completed since the last report. Quarterly reports need only include one or two pages of text, plus any relevant maps and tables. However, please note that should conditions at your site warrant, you may receive a letter requiring more frequent contacts with the Department. You will also receive one annual site status report form in February.

4. When the site investigation is complete, your consultant must submit a full report on the extent and degree of soil and groundwater contamination and a proposal for cleaning up the contamination.

Due to the number of contaminated sites and our staffing levels, we will be unable to respond to each report. To maintain your compliance with the spills law and chs. NR 700 through NR 728, do not delay the investigation and cleanup by waiting for DNR responses. We have provided detailed technical guidance to environmental consultants. Your consultant is expected to be familiar with our technical procedures and administrative codes and should be able to answer your questions on meeting Wisconsin's cleanup requirements.

Your correspondence and reports regarding this site should be sent to the Department at the following address: Janet Kazda, Wisconsin Department of Natural Resources, PO Box 818, Rhinelander, WI 54501. Unless otherwise requested, please send only one copy of all plans and reports.

Information for Site Owners:

Enclosed is a list of environmental consultants and some important tips on selecting a consultant. If you are eligible for Wisconsin's PECFA program (see end of letter) you will need to compare at least three consultants' proposals before hiring a consultant. Consultants and laboratories working in the PECFA program are required to carry errors and omissions insurance to help protect you against unsuitable work. Also enclosed are materials on controlling costs, understanding the cleanup process, and choosing a site cleanup method. This information has been prepared to help you understand your responsibilities and what your environmental consultant needs to do. Please read this information carefully.

If you are interested in obtaining the protection of limited liability under s. 292.15, Stats., please contact Mark Giesfeldt at (608) 267-7562 or Darsi Foss at (608) 267-6713, in the Department of Natural Resources' Madison office for more information. The liability exemption under s. 292.15 Stats., is available to persons who meet the definition of "purchaser" in s. 292.15(1)(c) and receive Department approval for the response actions taken at the property undergoing cleanup. The Department will determine eligibility for this program on a case-by-case basis, prior to the "purchaser" developing a scope of work for conducting a ch. NR 716 site investigation at the property.

Financial Information:

Reimbursement from the Petroleum Environmental Cleanup Fund (PECFA) is available for the costs of cleaning up contamination from eligible petroleum storage tanks. The fund is administered by the Department of Industry, Labor, and Human Relations (DILHR). Please contact DILHR at (608) 267-3753 for more information on eligibility and regulations for this program.

If you have any questions about this letter or your responsibilities, please call me at 715-365-8990.

Thank you for your cooperation.

Sincerely,

Janet Kazda

Janet Kazda
Remediation and Redevelopment Program

Enclosures

cc: File
Dave Kauzlaric, Fluid Management, Inc., Mosinee

#03-58-170214

Wisconsin Department of Natural Resources

Notification of Contamination

Please complete this form and FAX it to the appropriate WDNR contact person (see attached list) immediately upon discovery of a release.

TO: WDNR, Attn: JANET KAZDA

FAX #: 715-365-8932

PLEASE PRINT

1. Name, company, mailing address and phone number of person reporting the discharge:

DALE KAUZLARIC
FLUID MANAGEMENT
850 HWY 153, SUITE F
MOSINEE, WI 54455

2. Site Information

Name of site at which discharge occurred (local name of site/business — not responsible party name, unless a residence): ARGETSINGER'S IGA

Location (actual street address, not PO box; if no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60): NORTHWEST CORNER OF THE JUNCTION OF C.T.H. CC & HWYS 27 & 70.

Municipality (city, village, township in which the site is located — not mailing address): COUDERAY, WI

County: SAWYER

Legal Description: NW 1/4, NE 1/4, Section 12, Tn 38N, Range 7 E/(W)

3. Responsible Party (RP) and/or RP Representative Information

Company Name: ARGETSINGER'S IGA

Contact Person: NORMAN ARGETSINGER

Mailing Address (with zip code): PO BOX 145
COUDERAY WI 54828

Telephone Number: 715-945-2261

4. Identity, physical state and quantity of the hazardous substance discharged (check all that apply):

X Unleaded gasoline
___ Leaded gasoline
___ Diesel
___ Fuel oil
___ Waste oil
___ Other _____

5. Impacts to the environment (enter "K" for known or "P" for potential for all that apply):

_____ Fire/explosion threat
_____ Contaminated private wells (# of wells)_____
_____ Contaminated public wells
_____ Groundwater contamination
__K__ Soil contamination
_____ Surface water impacts
_____ Floating product
_____ Other_____

6. Contamination was discovered as a result of:

_____ Tank closure assessment _____ Site assessment __X__ (other) INITIAL SITE ASSESSMENT

On what date: 8-7-97

Additional Comments:

Consultants may report any new site discoveries by FAX, unless there are explosive conditions or contaminated water supplies. Those and any other emergency situations should still be called in.

Reporting by FAX will save time for both consultants and DNR staff and will ensure the responsible party knows that the notification was made immediately, as required by ss. 292.11, Wisconsin Statutes. Reports can be faxed 24 hours per day. The enclosed FAX reporting format may be copied and used in report new LUST sites to the DNR. The form is also available on the BRR program's electronic bulletin board system.

FAX numbers to report LUST sites in DNR's five regions are as follows (this list reflects changes made in the department's reorganization):

Northeast Region (414-492-5859); Attention - Janis DeBrock:
Brown, Calumet, Door, Fond du Lac *(except City of Waupun)*, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, Winnebago Counties

Northern Region (715-365-8932); Attention - Janet Kazda:
Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn Counties

South Central Region (608-275-3338); Attention - Marilyn Jahnke:
Columbia, Crawford, Dane, Dodge, Fond du Lac *(City of Waupun only)*, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk Counties

Southeast Region (414-229-0810); Attention - Mike Farley:
Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha Counties

West Central Region (715-839-6076); Attention - John Grump:
Adams, Buffalo, Chippewa, Clark, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood Counties