DEPARTMENT OF TRANSPORTATION - Office of Environmental Services - Oakdale

STATE OF MINNESOTA
Office Memorandum

DATE: February 15, 1994

TO: Mark Koplitz
MPCA-Tanks and Spills Section

FROM: Brian Kamnikar
Project Manager

PHONE: 779-5091

SUBJECT: MNDOT Jordan Truck Station: REQUEST FOR SITE CLOSURE
Leak #1338

Enclosed for your review are an updated Groundwater Progress Report and Monitoring Well Installation Report. Laboratory analyses of eleven rounds of quarterly sampling have detected low levels of petroleum compounds in samples from one monitoring well on site. Detected compounds in this well have not exceeded recommended allowable limits during any sampling event. Analysis of four rounds of groundwater samples collected from the additional downgradient monitoring well installed in December 1992, did not detect any petroleum or volatile organic compounds above method detection limits. No groundwater receptors have been identified downgradient of the site. Therefore, MNDOT requests closure of this site. Please call me if you have any questions concerning this request.

cc(with enc.):
C. Lucas

cc(without enc.):
C. Hoffstedt
B. Johnson/File

DEPARTMENT OF TRANSPORTATION - Environmental Services Section, Rm 124

STATE OF MINNESOTA
Office Memorandum

DATE: February 18, 1992

TO: Mark Koplitz
Tanks and Spills Section, MPCA

FROM: Brian Kamnikar, Project Manager
Environmental Compliance and Investigation

PHONE: 297-2703

1338

SUBJECT: PROGRESS REPORT, MNDOT JORDAN TRUCK STATION - LEAK # 1388

Enclosed for your review is a copy of the groundwater monitoring progress report for the above mentioned site. The most recent round of groundwater analyses has shown a decrease in the level of petroleum compounds in MW-2. MNDOT proposes to sample the wells a minimum of two more times to confirm these results. Should additional analyses reveal this confirmation, MNDOT will request closure of the site. This decision is based upon both MNDOT and Braun Intertec interpretation of the analytical data and specific site characteristics.

Please call if you have any questions regarding this matter.

cc(w/o enc.):
C. Hoffstedt
C. Lucas
B. Johnson/File

Progress Report

Groundwater Monitoring Well Sampling

Introduction:

Site: MNDOT Jordan Truck Station
MPCA Leak #: 1388
Sampling Dates: 8-20-90, 5-30-91, 9-5-91, 12-10-91.

This progress report summarizes follow-up groundwater sampling results for the site mentioned above. This information will be used to determine future site actions. The work was authorized and completed by MNDOT personnel.

Background:

A 1,200 gallon regular/unleaded gasoline and a 3,000 gallon diesel fuel underground storage tank were removed from the MNDOT Jordan Truck Station on October 20, 1989.

A remedial investigation was performed by Braun Intertec, including installation of monitoring wells on August 15 and 16, 1990. Braun described native soils as being lean clay and organic silt to a depth of 7 to 10 feet below grade. Beneath these soils is a coarse alluvium of poorly graded sand to poorly graded sand with silt to a depth of at least 15 feet. The water table is approximately 7 to 8 feet below the ground surface.

WATER QUALITY DATA

Monitoring Well #2*

Parameter	8-20-90	5-30-91	9-5-91	12-10-91
Benzene	2.5	4.8	1.4	<5
Ethylbenzene	2.2	15	10	5
Toluene	1.8	2.8	0.4	<5
Xylene	1.9	6.7	3.3	<5
THC as gas	NA	700	800	850^
THC as fuel oil	1,600	11,000	12,000	600
MTBE	<5	<5	<5	<5

All values in parts per billion.

* MW-1: Only detect of petroleum compounds during sampling history was 0.6 ppm benzene on 5-30-91.
MW-3: No detects of petroleum compounds at any time.

NA Total Hydrocarbons calculated as fuel oil.
^ Chromatographic pattern not typical of gasoline.

Water Level Measurements

	Water Level Elevation (feet)			
Monitoring Well	8-20-90	5-30-91	9-5-91	12-10-91
MW-1	747.22	749.53	746.62	747.18
MW-2	747.04	749.23	746.36	747.08
MW-3	747.11	749.38	746.45	747.03

Discussion:

According to both the tank removal and remedial investigation reports, low level petroleum contamination is present near the south and west side of the former UST basin. Based on the results of the RI, Braun determined the soil contamination to be limited and relatively low in concentration.

Petroleum constituents have been detected in only one of three wells on site (MW-2). This well is located directly downgradient of soil boring ST-5 which revealed the highest level of petroleum contaminated soil encountered on site. Therefore, MW-2 water samples should represent the greatest magnitude of petroleum impacted groundwater on site. Of the petroleum constituents detected, BETX concentrations have not exceeded RAL's at any sampling event. MTBE has not been detected at any time above method detection limits. THC as fuel oil levels have risen in the first three sampling events but have shown a sharp decrease in the fourth sampling event.

Groundwater elevations recorded on 12-10-91 show a shift in groundwater flow direction. This may result from an error in measuring the water depth. This discrepancy will be resolved since MNDOT proposes to sample the wells a minimum of two more times.

Conclusions:

Levels of petroleum contamination remaining in soils appear to be limited and low level. No free product has been detected in any of the wells. All petroleum constituents detected in monitoring well #2 have been below RAL's. There are no potential groundwater or vapor receptors identified in the area. The latest round of groundwater analyses shows a decrease in THC contamination.

Recommendations:

Braun determined it unlikely that any impact to drinking water sources at potential groundwater receptors is likely from this petroleum release since no users of the unconsolidated aquifer were identified directly downgradient of the site. Also, the release should not pose a threat to nearby surface waters since petroleum compounds did not exceed RAL,s. MNDOT proposes to sample the wells for two additional rounds to observe if THC levels continue to decline and to verify groundwater flow direction. Should THC levels decrease further, MNDOT will request closure of this site.

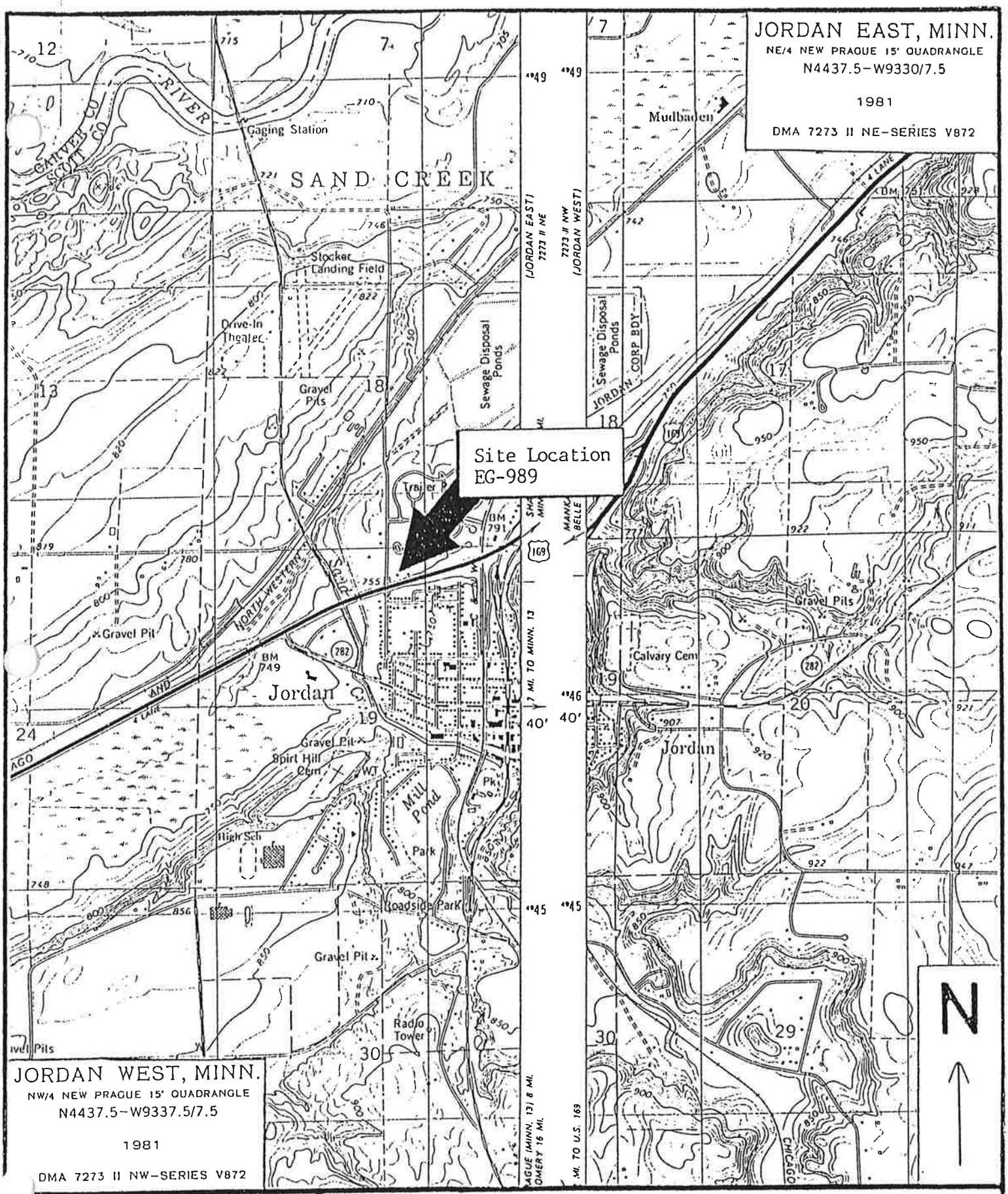

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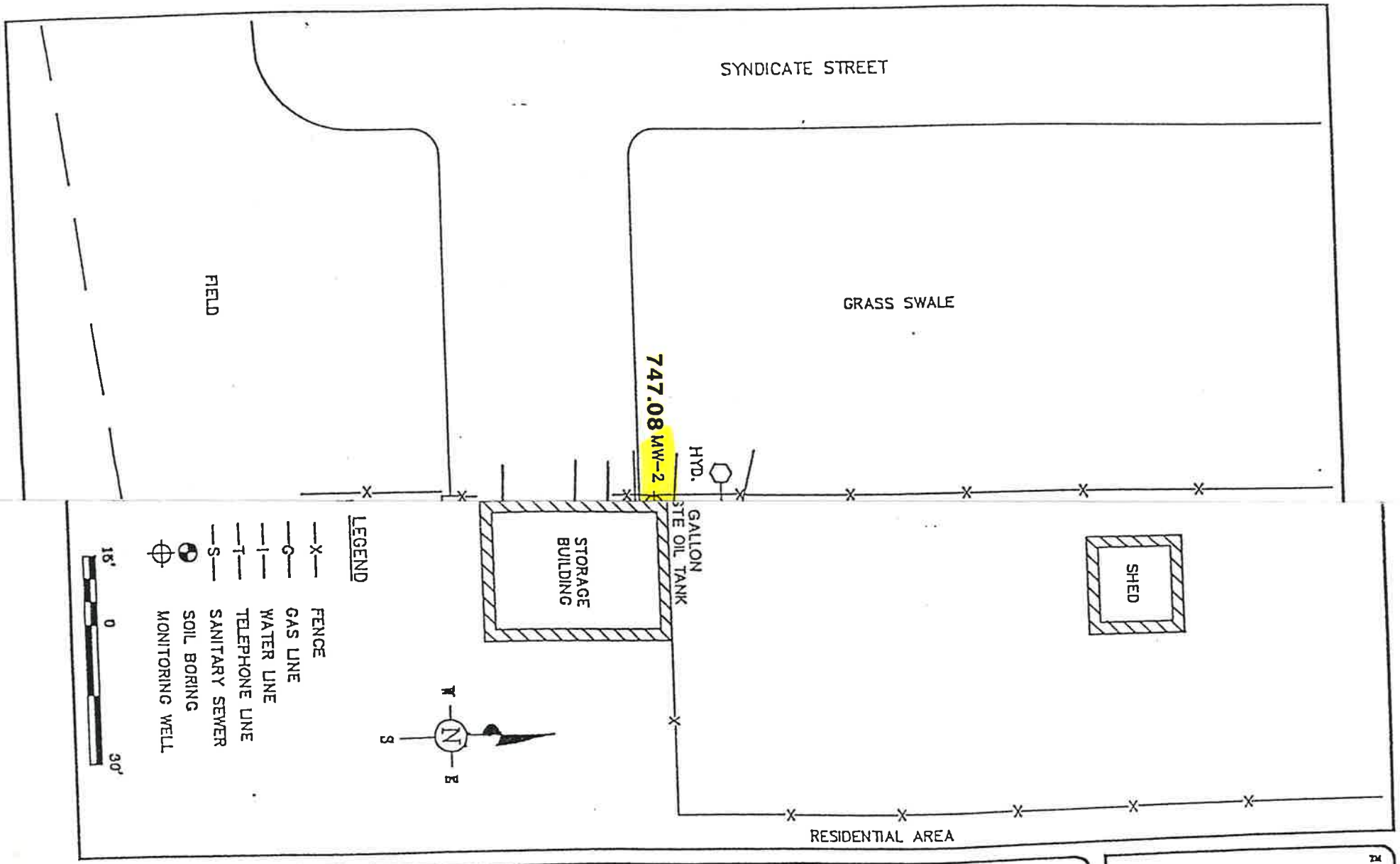
Figure 1
SITE Location Map
UST Remedial Investigation
EG-989

MN Dept. of Transportation
Jordan, MN

Date: 9-11-90	Revised:	Drawn: RCW	Scale: 1"=2000'



SITE MAP
U.S.T. Remedial Investigation
MN/DOT Jordan Truck Station
Jordan, Minnesota

DRAWN BY: KMR	DWG.No. EG-989	APP'D BY: TCS
PLOT TIME:	JOB I.D.# EG-989	PLOT SCALE 1:30

REVISED	DATE	INT
	10-4-90	KMR

SHEET 1 OF 1
SCALE 1"=30'
FIGURE# 2

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ENVIRONMENTAL LABORATORIES
INCORPORATED

Appendix I

Field Stabilization Forms

WATER SAMPLING DATA

Project Number EG-989 Crew Tim Singer Date 8/20/90

Location Mn/DOT Maintenance Facility, Jordan, MN Well Number MW-1

Weather Conditions overcast, 60 - 65 degrees F

Depth to Water (ft.) 10.56 Well Depth (ft.) 17.50 Well Volume (gallons) 1.15

Purging Method: Pump Johnson-Keck Type submersible Diameter (inches) 1.7
Decontamination Procedure Methanol and ultra-pure water

Bailer: Length (ft.)_____ Material_____ Diameter (inches)_____

Sampling Method: Bailer: Length (ft.) 4 Material teflon Diameter (inches) 1.7
Dedicated: Yes_____ No X Lab Cleaned: Yes X No_____

Previously Stabilized: Yes_____ No X Well Volumes Purged_____

Previously Developed: Yes X No_____

Time	Cum. Vol. (gallons)	Temp. (C)	pH	Conduc. (umhos/cm)	Comments (color, odor, etc)
	1.0	16.0	6.83	1020	muddy
	2.0	14.3	6.87	990	muddy
	3.0	14.1	6.22	1010	muddy
	4.0	14.8	6.97	1040	muddy-clear
	5.0	14.5	6.91	1050	clear
	6.0	14.0	9.84	1050	clear; no gasoline odor or film

Additional Notes: Bailed 15 gallons on 8/17/90.

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WATER SAMPLING DATA

Project Number EG-989 Crew Tim Singer Date 8/20/90

Location Mn/DOT Maintenance Facility, Jordan, MN Well Number MW-2

Weather Conditions overcast, 60 - 65 degrees F

Depth to Water (ft.) 10.04 Well Depth (ft.) 17.50 Well Volume (gallons) 1.24

Purging Method: Pump Johnson-Keck Type submersible Diameter (inches) 1.7
Decontamination Procedure Methanol and ultra-pure water

Bailer: Length (ft.)_____ Material_____ Diameter (inches)_____

Sampling Method: Bailer: Length (ft.) 4 Material teflon Diameter (inches) 1.7
Dedicated: Yes____ No X Lab Cleaned: Yes X No____

Previously Stabilized: Yes____ No X Well Volumes Purged_____

Previously Developed: Yes X No_____

Time	Cum. Vol. (gallons)	Temp. (C)	pH	Conduc. (umhos/cm)	Comments (color, odor, etc)
	1.0	18.2	7.22	1630	muddy
	2.0	17.7	7.24	1640	muddy
	3.0	16.7	7.24	1510	muddy
	4.0	16.6	7.34	1500	muddy
	5.0	16.6	7.49	1580	muddy
	6.0	16.5	7.67	1540	muddy-clear; slight gasoline odor; no film

Additional Notes: Cannot bail well dry. Bailed 15 gallons on 8/17/90.

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WATER SAMPLING DATA

Project Number EG-989 Crew Tim Singer Date 8/20/90

Location Mn/DOT Maintenance Facility, Jordan, MN Well Number MW-3

Weather Conditions overcast, 60 - 65 degrees F

Depth to Water (ft.) 10.14 Well Depth (ft.) 17.50 Well Volume (gallons) 1.22

Purging Method: Pump Johnson-Keck Type submersible Diameter (inches) 1.7
Decontamination Procedure Methanol and ultra-pure water

Bailer: Length (ft.)_____ Material_____ Diameter (inches)_____

Sampling Method: Bailer: Length (ft.) 4 Material teflon Diameter (inches) 1.7
Dedicated: Yes_____ No X Lab Cleaned: Yes X No_____

Previously Stabilized: Yes_____ No X Well Volumes Purged_____

Previously Developed: Yes X No_____

Time	Cum. Vol. (gallons)	Temp. (C)	pH	Conduc. (umhos/cm)	Comments (color, odor, etc)
	1.0	18.6	6.76	1300	muddy
	2.0	17.3	7.12	1370	muddy
	3.0	17.5	7.24	1310	muddy-clear
	4.0	18.0	7.39	1320	clear; no gasoline odor or film

Additional Notes: Bailed 9 gallons on 8/17/90. Bailed dry after 2 gallons purged from well; slow recharge.

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notes: bailer [illegible]
- bailer [illegible] color
- water color grey [illegible] odor moderate

Site Jordan Truck [illegible]
Date 5-30-91
Well number MW-2

STABILIZATION TEST

note: preserve [illegible] samples w/ [illegible] HCl
well volume: 1.5

Pumping rate (gallons/minute)
Type of pump Bailer (Teflon)
Water level before pumping (nearest 0.01 ft. below top of casing) gross level - 7.85
Approximate well location [illegible] bldg. by entrance gate
Calculated volume of water in casing
Weather conditions cloudy, 65-70° sprinkles

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
12:50	6.66	141×10 [1639]	16		5 gal
12:57	6.71	142×10 [1651]	16.1		7 gal
1:03	6.73	141×10 [1602]	17		

Total Depth to bottom of well - 16.92'

Sample for: VOC's

STABILIZATION TEST

Site Jordon Truck Station
Date 5/30/91
Well number MW-3

[illegible] all samples w/ 1:1 HCl
Well volume 1.1
Pumping rate (gallons/minute)
Type of pump Bailer Teflon Rinsed Bailer [illegible] MW 1
Water level before pumping (nearest 0.01 ft. below top of casing) Gross Level ~ 7.87'
Approximate well location NW Corner of Bldg in parking Lot
Calculated volume of water in casing
Weather conditions Cloudy ~ 65-70°

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm) [Corrected]	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
11:55	6.72	110x10 [1309]	15		[illegible]
12:03	6.82	110x10 [1309]	15.1		6 gal
12:15	6.85	100x10 [1190]	15.1		8 gal
12:23	6.82	105x10 [1280]	15		10 gal

Total Depth To Bottom 17.05'

Sample for : VOCs

Site	Jordan Truck Station
Date	5/30/91
Well number	MW1

STABILIZATION TEST

Note: All samples preserved w/ HCl

Well volume = 1.3 gal

Pumping rate (gallons/minute) _____

Type of pump Tri Flex Solar

Water level before pumping (nearest 0.01 ft. below top of casing) Grass - 8.25' (Finished)

Approximate well location South Side of Bldg Next to Fence

Calculated volume of water in casing _____

Weather conditions Cloudy, Humid ~ 65-70°

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm) raw [corrected]	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
1030		67.5x10	8.1 (Grab sample water)		practice
10:35	6.48	78x10 [950]	14 (Grab sample groundwater)		initial
10:47	6.58	88x10 [1037]	13		5 gal
10:55	6.83	85x10 [1062]	13		10 gal
11:00	6.62	85x10 [1062]	13		15 gal
11:06	6.60	85x10 [1062]	13		20 gal

Total depth To Bottom 17.05'

STABILIZATION TEST

Site Jordan
Date 9-5-91
Well number MW1

Pumping rate (gallons/minute) _____
Type of pump Field washed Bailer
Water level before pumping (nearest 0.01 ft. below top of casing) 11.16'
Approximate well location _____
Calculated volume of water in casing 1.03 gal Bottom 17.46'
Weather conditions cloudy, windy 20°C

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
1020				11.16	
1025	7.6	830	15		1.0
1027	7.5	830	15		2.0
1029	7.4	830	15		2.5
1031	7.4	850	14		3.0
1033	7.3	850	14		4.0
1035	sample			11.70	

- NO petrol odor
- water lt. Brown

STABILIZATION TEST

Site JORDAN
Date 9-5-91
Well number MW2

Pumping rate (gallons/minute) _____
Type of pump Dedicated Bailer
Water level before pumping (nearest 0.01 ft. below top of casing) 10.72'
Approximate well location _____
Calculated volume of water in casing 1.09 gal Bottom 17.40'
Weather conditions Cloudy, windy 20°C

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
0925				10.72	
0927	6.8	1400	17		1.0
0929	6.7	1250	17		2.0
0931	6.7	1250	17		3.0
0934	6.7	1200	17		4.5
0940	Sample			10.72	

- NOTICABLE petrol odor
- water Blackish

STABILIZATION TEST

Site Jordan
Date 9-5-91
Well number MW3

Pumping rate (gallons/minute) _____
Type of pump Dedicated Bailer
Water level before pumping (nearest 0.01 ft. below top of casing) 10.80
Approximate well location _____
Calculated volume of water in casing 1.08 gal Bottom 17.43
Weather conditions cloudy, windy 20°C

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
0905				10.80	
0908	6.4	410	16		1.0
0911	6.6	450	16		1.5
0915	6.6	630	16		2.0
0918	Dry slow recharge			16.78	
	too slow to Bail				
0945	sample			11.20	
1000	Bailer BLANK				

- NO petrol odor
- water lt. Brown

STABILIZATION TEST

Site Jordan
Date 12-10-91
Well number JMW1

Pumping rate (gallons/minute) _____
Type of pump Field Waste! Bailer
Water level before pumping (nearest 0.01 ft. below top of casing) 10.60
Approximate well location 17.46
Calculated volume of water in casing 1.12 Gal
Weather conditions _____

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
1200	7.3	780	11		1
1205	7.2	780	11		2
1208	7.1	780	11		3
1210	7.1	780	11		4
1215	Sample			11.24	

Brownish Gray in color
Skunky Smell

STABILIZATION TEST

Site Jordan
Date 12-10-91
Well number JMW2

Pumping rate (gallons/minute) _____
Type of pump _____
Water level before pumping (nearest 0.01 ft. below top of casing) 10.00
Approximate well location 1,20gal 1940
Calculated volume of water in casing _____
Weather conditions _____

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
1103				10.00	
1107	7.2	1500	12		1.0
1110	7.1	1400	12		2.0
1113	7.0	1300	12		3.0
1119	6.9	1300	12		4.0
1121	6.9	1300	12		5.0
1125	sample			10.04	
1145	BB.				

~~NOTICEABLE~~ strong PETROL ODOR

STABILIZATION TEST

Site Jordan
Date 12-10-91
Well number JMW3

Pumping rate (gallons/minute) _____
Type of pump _____
Water level before pumping (nearest 0.01 ft. below top of casing) 10.22
Approximate well location 1.18
Calculated volume of water in casing 1.18 17.43
Weather conditions _____

Time	pH (units)	Temperature-Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 ft.)	Cumulative Volume of Water Removed From Well (measured in gallons)
1014				10.22	
1022	6.6	430	13		1.0
1024	6.7	500	13		1.5
-5100	recharge			16.40	
1100	sample			11.20	

water at Burns

Appendix II

Laboratory Analyses
Chain of Custody Forms

6800 South TH-169, P.O. Box 39108
Minneapolis, Minnesota 55439
Phone 612/941-5600 Fax: 612/942-4844

BRAUN ENVIRONMENTAL LABORATORIES

Quality Services Since 1957

September 18, 1990

Minnesota Deptartment of Transportation
Attn: Mr. Glenn Heapy
Transportation Building, Room G-20
St. Paul, MN 55155

Project #: E90-295/EG-989/
11039

Dear Mr. Heapy,

Braun Environmental Laboratories, Inc. is pleased to provide our report for the analysis you requested. Data for the following sample(s) are enclosed:

Your I.D. Number/Description	Work Requested
Aqueous Samples	Organic Analyses

All samples were analyzed according to EPA or other standard methods. Any anomalies which were encountered in this analysis are referenced on the laboratory report. Method references and quality control information are available upon request.

If you have any questions or need additional information regarding this report or other Braun Environmental Laboratories services please contact us.

Very truly yours,

BRAUN ENVIRONMENTAL LABORATORIES, INC.

Linda C. Crawford
Organic Supervisor

Anne L. Ochs
Laboratory Manager

LCC/ALO:crb

cc: Mr. Calvin Lucas/MNDOT

Attachment

Minnesota Department of
Transportation
Transportation Building
St. Paul MN 55155

PROJECT: EG-989
COLLECTED: Braun 08/20/90
RECEIVED: 08/20/90
SAMPLE MATRIX: Aqueous

	BRAUN I.D.:	11039-01	11039-02	11039-03	11039-05
	CLIENT I.D.:	MW-1	MW-2	MW-3	Field Blank
PARAMETER	--UNITS--				
Chloromethane	ug/L	<5.0	<5.0	<5.0	<5.0
Bromomethane	ug/L	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	ug/L	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane	ug/L	<5.0	<5.0	<5.0	<5.0
Chloroethane	ug/L	<1.0	<1.0	<1.0	<1.0
Dichlorofluoromethane	ug/L	<5.0	<5.0	<5.0	<5.0
Methylene Chloride	ug/L	<5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane	ug/L	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0
Allyl Chloride (3-Chloropropene)	ug/L	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethylene (cis & trans)	ug/L	<0.2	<0.2	<0.2	<0.2
Chloroform	ug/L	<1.5	<1.5	<1.5	<1.5
1,1,2-Trichlorotrifluoroethane	ug/L	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane	ug/L	<0.3	<0.3	<0.3	<0.3
Dibromomethane	ug/L	<5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	ug/L	<2.0	<2.0	<2.0	<2.0
Carbon Tetrachloride	ug/L	<1.6	<1.6	<1.6	<1.6
Bromodichloromethane	ug/L	<0.3	<0.3	<0.3	<0.3
2,3-Dichloro-1-propene	ug/L	<0.2	<0.2	<0.2	<0.2
Dichloroacetonitrile	ug/L	<0.3	<0.3	<0.3	<0.3
1,1-Dichloro-1-propene	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ug/L	<1.0	<1.0	<1.0	<1.0
1,3-Dichloro-1-propene (trans)	ug/L	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethylene	ug/L	<0.2	<0.2	<0.2	<0.2
1,3-Dichloropropane	ug/L	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	<1.2	<1.2	<1.2	<1.2
Chlorodibromomethane	ug/L	<2.5	<2.5	<2.5	<2.5
1,3-Dichloro-1-propene (cis)	ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane	ug/L	<0.2	<0.2	<0.2	<0.2

< = less than: compound not detected at or above indicated detection limit
- = Analysis not requested

Quality control data reviewed: _____

BRAUN™

PARAMETER	--UNITS--	BRAUN I.D.: 11039-01 CLIENT I.D.: MW-1	11039-02 MW-2	11039-03 MW-3	11039-05 Field Blank
2-Chloroethyl Vinyl Ether	ug/L	<5.0	<5.0	<5.0	<5.0
Bromoform	ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	ug/L	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	ug/L	<1.0	<1.0	<1.0	<1.0
Tetrachloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	<1.2	<1.2	<1.2	<1.2
1,2,3-Trichloropropane	ug/L	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	ug/L	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	ug/L	<1.5	<1.5	<1.5	<1.5
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2
Acetone	ug/L	<50	<50	<50	<50
Tetrahydrofuran	ug/L	<5.0	<5.0	<5.0	<5.0
Ethyl Ether	ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	ug/L	<5.0	<5.0	<5.0	<5.0
Cumene	ug/L	<3.0	<3.0	<3.0	<3.0
Methyl Tertiary Butyl Ether	ug/L	<1.0	<1.0	<1.0	-
Benzene	ug/L	<1.0	2.5	<1.0	<1.0
Toluene	ug/L	<1.0	1.8	<1.0	<1.0
Ethyl Benzene	ug/L	<1.0	2.2	<1.0	<1.0
Xylenes, Total	ug/L	<1.0	1.9	<1.0	<1.0
Total Hydrocarbons as Gasoline	ug/L	<100	a	<100	-
Total Hydrocarbons as Fuel Oil	ug/L	<500	1600 f	<500	-

*******FOOTNOTES********

a = Total Hydrocarbons calculated as fuel oil.

f = The chromatography of the sample is somewhat atypical of the fuel oil standard.

< = less than: compound not detected at or above indicated detection limit

- = Analysis not requested

Quality control data reviewed: WRC

BRAUN™

09/18/90

ADDENDUM: 11039

Parameter	Date Analyzed
VOCs	08/22-08/25/90
THCs	08/29/90

BRAUN™

Braun Environmental Laboratories, Inc.
6800 South TH-169
Shipping & Recieving - Bldg. #2
Edina, MN. 55435
(612) 941-5600

BRAUN

CHAIN OF CUSTODY RECORD

Client Name, Address, Phone
MINNESOTA DEPARTMENT OF TRANSPORTATION
2055 NORTH LILAC DR.
GOLDEN VALLEY, MN
55422

Report to:
MR. CALVIN LUCAS

Samplers: TCS

Project #/Department #
EG-989

Verbal Results To:

Copy of Report To:

Project Manager:
RON WEAVER

Samples Returned To:

Samples Retained By:

Log-In #	Sample #	Sample Description	Collection Date	Collection Time	Sample Matrix Air	Liq.	Sol.	Type/# of Containers VOA	GENERAL	METALS	NUTRIENTS	PEST/PCB	CHAR TUBE	OTHER	Analysis/Remarks
11039	-1	MW-1	8/20/90	11:45		X		6							VOC'S/MTBE/THC(gas & fuel oil)
	-2	MW-2	8/20/90	1:00		X		6							↓ ↓ ↓
	-3	MW-3	8/20/90	3:15		X		6							
	-4	TRIP BLANK	8/20/90	9:05		X		3							
	-5	FIELD BLANK	8/20/90	1:15		X		3							VOC'S

Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time	Received By:
Tim Duggan	8/20/90	5:25					
Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time	Received By:
Relinquished By:	Date	Time	Received For Laboratory By:	Date	Time	Comments:	
			C. Hess	8-20-90	17:30		

White Copy - Client Yellow Copy - Laboratory Pink Copy - Originating Department F:CHAIN

c:dh 8/2

BRAUN ENVIRONMENTAL LABORATORIES, INC.

Water Level Measurements Record

Date: 8-20-90

Project No. EG-989 Project: MN/DOT - Jordan

Measurements Taken By: Tim Singer Measuring Device: Steel Tape

Weather Conditions: Sky: Overcast Wind: Speed Calm Direction From: - Temp.: 60-65 degrees

Well Number	Time	Well Depth	Measuring Point(MP)	MP Elevation	Depth to GW	GW Elevation	Depth to FP	FP Elevation	Locked?	Comments Below?
MW-1	10:08	17.50'	TOC	757.78	10.56	747.22	None		Yes	
MW-2	10:03	17.50'	TOC	757.08	10.04	747.04	None		Yes	Slight gas odor/No film
MW-3	9:57	17.50'	TOC	757.25	10.14	747.11	None		Yes	Slow Recharge

Comments (Well condition, deviation from SOPs or other conditions, etc.): _____

If site elevation reference datum is assumed:

Location: _____

Assumed elevation: _____

BRAUN™

Mn/DOT TR-03023-01 (8/90)

Minnesota Department of Transportation

Transportation Building
St. Paul, MN 55155

ENVIRONMENTAL COMPLIANCE AND INVESTIGATION UNIT

№ 031

CHAIN OF CUSTODY RECORD

Project Name: Mn/DOT Jordan Truck Station

Name of Sampler: JTC #3 Lonnette Zaiger

Field Number	Date (1991)	Time	Sample Type (s): Monitoring well	Existing well	Surface water	Wastewater	Waste	Other	Sample Location	Analyses Requested	Comments on Samples
JMW1	9-5	1035	X						Jordan T.S.	463	TAN WATER COLOR
JMW2	9-5	0940	X						" "	463	NOTICABLE PETROL ODOR, BLACK
JMW3	9-5	0945	X						" "	463	TAN WATER COLOR
BB	9-5	1000						X	" "	463	
FB	-	-						X		463	

Remarks on Site: cloudy, 20°C, windy

Samples Relinquished by: Lonnette Zaiger 9-5-91 1135	Samples Received by:	Comments	Date/Time: 9/5/91 @ 11:35
Samples Relinquished by	Samples Received by	Comments	Date/Time
Samples Relinquished by	Samples Received by	Comments	Date/Time
Means of Delivery		Seals intact: ☐ YES ☐ NO ☐ N.A.	

Original and yellow copies to Lab. Pink copy to Mn/DOT. La[illegible]wards completed yellow copy to Mn/DOT with analytical results.

09120956 09120957 09120958 09120959

9120855 ORG.FORM.FY91.1

MINNESOTA DEPARTMENT OF HEALTH
Chemical Laboratory Section
Organic Chemistry Unit

WATER ANALYSES ONLY

RECD 15 OCT 91

Date Collected: 9-5-91
Date Received:
Collected by: Mn/DOT

Chain of Custody #: 031

Budget #: DA
Report To: Mn/DOT
Field Blank #: 9120959

Laboratory Number		Field Number	Sample Description	- Container- Number	Type
9120955	a	JMW1	Jordan, Scott. Mn/DOT Truckstation WELL 1035	4	40ml
9120956	b	JMW2	" " " 0940	"	"
9120957	c	JMW3	" " " 0945	"	"
9120958	d	BB	" " " Bailer Blank 1000	"	"
9120959	e		Field BLANK	3	"

Analyses Request Options		ALL	a 9120955	b 9120956	c 9120957	d 9120958	e 9120959
VOLATILE ORGANICS	465						
VOLATILE HALOGENATED ORGANICS (THM)	464						
GASOLINE/FUEL OIL + HALOGENATED	463	X					
VOLATILE ORGANICS by GC/MS	468						
CHLOROPHENOXY ACID HERBICIDES (CPA)	574						
POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)	470						
POLYCHLORINATED BIPHENYLS (PCBs)	420						
PHTHALATE ESTERS	490					OCT 11 1991	
PESTICIDES, CHLORINATED	502						
TOXAPHENE	520						
TECHNICAL CHLORDANE	530						
DDT GROUP	550						
PESTICIDES, NITROGEN/PHOSPHOROUS	571						
SPECIAL SAMPLE HOURS C/C ~~990~~ ~~550~~		X					

Field Notes:

Laboratory Notes:

502.4G MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1
VOLATILE HYDROCARBONS (code 463)

SAMPLED: 09/05/91
ANALYZED: 10/01/91
REPORTED: 10/08/91

LAB SAMPLE #: 9120955

FIELD BLANK #: 9120959

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:
ANALYZED AFTER THE 14 DAYS HOLDING TIME.

GASOLINE & FUEL OIL (463)

GASOLINE : < 30.0 UG/L

FUEL OIL : < 200.0 UG/L

Legend:
< = less than
PP = peak present

MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY

VOLATILE HYDROCARBONS (code 463)

SAMPLED: 09/05/91
ANALYZED: 10/01/91
REPORTED: 10/08/91

LAB SAMPLE #: 9120956

FIELD BLANK #: 9120959

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 2.0		1122-Tetrachloroethane	< 0.4	
Chloromethane	< 4.0		123-Trichloropropane	< 1.0	
Vinyl Chloride	< 2.0		Bromobenzene	< 0.4	
Bromomethane	< 4.0		2-Chlorotoluene	< 1.0	
Chloroethane	< 2.0		4-Chlorotoluene	< 1.0	
Dichlorofluoromethane	< 2.0		1,3-Dichlorobenzene	< 0.4	
Trichlorofluoromethane	< 4.0		1,4-Dichlorobenzene	< 0.4	
Trichloro-trifluoroethane	< 0.4	0.6	1,2-Dichlorobenzene	< 0.4	
1,1-Dichloroethene	< 1.0		1,2-Dibromo-3-Chloropropane	< 4.0	
Allyl Chloride	< 1.0		124-Trichlorobenzene	< 1.0	
Methylene Chloride	< 1.0		Hexachlorobutadiene	< 1.0	
t-1,2-Dichloroethene	< 0.2		123-Trichlorobenzene	< 1.0	
1,1-Dichloroethane	< 0.4		Ethyl Ether	< 4.0	
2,2-dichloropropane	< 1.0		Acetone	< 40	
c-1,2 Dichloroethene	< 0.4		Methyl tertiary-Butyl Ether	< 4.0	
Chloroform	< 0.2		Methyl Ethyl Ketone	< 20	
Bromochloromethane	< 1.0		Tetrahydrofuran	< 20	
1,1,1-Trichloroethane	< 0.4		Benzene	< 0.4	1.4
1,1-Dichloropropene	< 0.4		Methyl Isobutyl Ketone	< 10.0	
Carbon Tetrachloride	< 0.4		Toluene	< 0.4	0.4
1,2-Dichloroethane	< 0.4		Ethyl Benzene	< 0.4	10
Trichloroethene	< 0.2		m+p-Xylene	< 0.4	2.4
1,2-Dichloropropane	< 0.4		o-Xylene	< 0.4	3.3
Bromodichloromethane	< 0.4		Styrene	< 1.0	
Dibromomethane	< 2.0		Isopropyl Benzene	< 1.0	
c-1,3-Dichloropropene	< 0.4		n-Propyl Benzene	< 1.0	11
t-1,3-Dichloropropene	< 0.4		135-Trimethylbenzene	< 1.0	
1,1,2-Trichloroethane	< 0.4		tert-Butyl Benzene	< 1.0	
1,3-Dichloropropane	< 0.4		124-Trimethylbenzene	< 1.0	8.4
Tetrachloroethene	< 0.4		sec-Butylbenzene	< 1.0	13
Chlorodibromomethane	< 1.0		p-Isopropyltoluene	< 1.0	4.0
1,2-Dibromoethane	< 2.0		n-Butylbenzene	< 1.0	7.4
Chlorobenzene	< 0.4		Naphthalene	< 1.0	4.4
1112-Tetrachloroethane	< 0.4				
Bromoform	< 2.0				

COMMENTS:
ANALYZED AFTER THE 14 DAY HOLDING TIME.

GASOLINE & FUEL OIL (463)

GASOLINE : 800 UG/L

FUEL OIL : 12000 UG/L

Legend:
< = less than
PP = peak present

MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY

VOLATILE HYDROCARBONS (code 463)

SAMPLED: 09/05/91
ANALYZED: 10/01/91
REPORTED: 10/08/91

LAB SAMPLE #: 9120957

FIELD BLANK #: 9120959

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 0.2		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:
ANALYZED AFTER THE 14 DAYS HOLDING TIME.

GASOLINE & FUEL OIL (463)

GASOLINE : < 30. UG/L

FUEL OIL : < 200. UG/L

Legend:
< = less than
PP = peak present

DT

502.4G MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1
VOLATILE HYDROCARBONS (code 463)

SAMPLED: 09/05/91 LAB SAMPLE #: 9120958
ANALYZED: 10/01/91
REPORTED: 10/08/91 FIELD BLANK #: 9120959

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1	0.2	Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	0.4
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:
ANALYZED AFTER THE 14 DAYS HOLDING TIME.

GASOLINE & FUEL OIL (463)

GASOLINE : < 30. UG/L

FUEL OIL : < 200. UG/L

Legend:
< = less than
PP = peak present

MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY

VOLATILE HYDROCARBONS (code 463)

SAMPLED: 09/05/91
ANALYZED: 10/01/91
REPORTED: 10/08/91

LAB SAMPLE #: 9120959

FIELD BLANK #: 9120959

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:
ANALYZED AFTER THE 14 DAY HOLDING TIME.

GASOLINE & FUEL OIL (463)

GASOLINE : < 30. UG/L

FUEL OIL : < 200. UG/L

Legend:
< = less than
PP = peak present

Mn/DOT TP-03023-01 (8/90)

Minnesota Department of Transportation

Transportation Building
St. Paul, MN 55155

ENVIRONMENTAL COMPLIANCE AND INVESTIGATION UNIT

NC 912

CHAIN OF CUSTODY RECORD

Project Name	Name of Sampler
Sanitary Transfer Station	Brian Kaminkar, Bruce Johnson, Nancy Radle

Field Number	Date	Time	Sample Type (s): Monitoring well	Existing well	Surface water	Wastewater	Waste	Other	Sample Location	Analyses Requested	Comments on Samples
	5/30/91	12:30	X						MW-3	VOC's	preserved w/ 2 drops 1:1 HCl no sheen observed
	5/30/91	11:00	X						MW-1	VOC's	preserved w/ 2 drops 1:1 HCl no sheen observed
	5/30/91	1300	X						MW-2	VOC's	preserved w/ 2 drops 1:1 HCl moderate odor, very silty
	5/30/91	1145						X	field blk; bailer rinse	VOC's	taken between MW-3 and MW-1 sampling, preserved w/ HCl

Remarks on Site
MW-2 - the inner casing threaded cap was not screwed in - outer casing was locked

Samples Relinquished by	Samples Received by	Comments	Date/Time
Brian Kaminkar			5/30/91 3:00 PM
Samples Relinquished by	Samples Received by	Comments	Date/Time
Samples Relinquished by	Samples Received by	Comments	Date/Time
Means of Delivery		Seals intact: ☐ YES ☐ NO ☐ N.A.	

Original and yellow copies to Lab. Pink copy to Mn/DOT. Lab [illegible]rds completed yellow copy to Mn/DOT with analytical results.

9.7.90
ORG.FORM.FY91.1

MINNESOTA DEPARTMENT OF HEALTH
Chemical Laboratory Section
Organic Chemistry Unit

WATER ANALYSES ONLY

Date Collected: 5/30/91
Date Received: 5-30-91
Collected by: BK

Chain of Custody #: 012

Budget #: DA
Report To: LANETTE ZAHGER BRIAN KAMANIKAR

Field Blank #:

RECD 26 JUN 91

Laboratory Number		Field Number	Sample Description	- Container - Number	Type
9111160	a	MW-1	JORDAN T.S.	4	40 mil
9111161	b	MW-2	PETRO ODORS JUN 24 1991		
9111162	c	MW-3			
9111163	d	BLK	BAILER BLANK - FIELD CLEANING		
	e				

Analyses Request Options		ALL	a 9111160	b 9111161	c 9111162	d 9111163	e
VOLATILE ORGANICS	465						
VOLATILE HALOGENATED ORGANICS (THM)	464						
GASOLINE/FUEL OIL + HALOGENATED	463	X					
VOLATILE ORGANICS by GC/MS	468						
CHLOROPHENOXY ACID HERBICIDES (CPA)	574						
POLYNUCLEAR AROMATIC HYDROCARBONS (PAH)	470						
POLYCHLORINATED BIPHENYLS (PCBs)	420						
PHTHALATE ESTERS	490						
PESTICIDES, CHLORINATED	502						
TOXAPHENE	520						
TECHNICAL CHLORDANE	530						
DDT GROUP	550						
PESTICIDES, NITROGEN/PHOSPHOROUS	571						
SPECIAL SAMPLE HOURS	560						

Field Notes:
TRIP BLANK ACCOMPANIED SAMPLES. WILL GO WITH SAMPLES ALSO ON 5-31-91 (NEW ULM TS)

Laboratory Notes:

MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY
VOLATILE HYDROCARBONS (code 463)

SAMPLED: 05/30/91
ANALYZED: 06/11/91
REPORTED: 06/19/91

LAB SAMPLE #: 9111160

FIELD BLANK #: NONE

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	0.6
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:

GASOLINE & FUEL OIL (463)

GASOLINE : < 30. UG/L

FUEL OIL : < 200. UG/L

Legend:
< = less than
PP = peak present

02.4G MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY
VOLATILE HYDROCARBONS (code 463)

SAMPLED: 05/30/91
ANALYZED: 06/11/91
REPORTED: 06/19/91

LAB SAMPLE #: 9111161

FIELD BLANK #: NONE

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	4.8
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	2.8
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	15
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	5.4
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	6.7
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	12
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	10
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	3.2
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	25
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	10
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	4.7
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	7.1
Chlorobenzene	< 0.2		Naphthalene	< 0.5	1.1
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:

GASOLINE & FUEL OIL (463)

GASOLINE : 700 UG/L

FUEL OIL : 11000 UG/L

Legend:
< = less than
PP = peak present

02.4G MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1
VOLATILE HYDROCARBONS (code 463)

SAMPLED: 05/30/91
ANALYZED: 06/11/91
REPORTED: 06/19/91

LAB SAMPLE #: 9111162

FIELD BLANK #: NONE

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:

GASOLINE & FUEL OIL (463)

GASOLINE : < 30 UG/L

FUEL OIL : < 200 UG/L

Legend:
< = less than
PP = peak present

502.4G MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1
VOLATILE HYDROCARBONS (code 463)

SAMPLED: 05/30/91 LAB SAMPLE #: 9111163
ANALYZED: 06/11/91
REPORTED: 06/19/91 FIELD BLANK #: NONE

COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)	COMPOUND	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Dichlorodifluoromethane	< 1.0		1122-Tetrachloroethane	< 0.2	
Chloromethane	< 2.0		123-Trichloropropane	< 0.5	
Vinyl Chloride	< 1.0		Bromobenzene	< 0.2	
Bromomethane	< 2.0		2-Chlorotoluene	< 0.5	
Chloroethane	< 1.0		4-Chlorotoluene	< 0.5	
Dichlorofluoromethane	< 1.0		1,3-Dichlorobenzene	< 0.2	
Trichlorofluoromethane	< 2.0		1,4-Dichlorobenzene	< 0.2	
Trichloro-trifluoroethane	< 0.2		1,2-Dichlorobenzene	< 0.2	
1,1-Dichloroethene	< 0.5		1,2-Dibromo-3-Chloropropane	< 2.0	
Allyl Chloride	< 0.5		124-Trichlorobenzene	< 0.5	
Methylene Chloride	< 0.5		Hexachlorobutadiene	< 0.5	
t-1,2-Dichloroethene	< 0.1		123-Trichlorobenzene	< 0.5	
1,1-Dichloroethane	< 0.2		Ethyl Ether	< 2.0	
2,2-dichloropropane	< 0.5		Acetone	< 20	
c-1,2 Dichloroethene	< 0.2		Methyl tertiary-Butyl Ether	< 2.0	
Chloroform	< 0.1		Methyl Ethyl Ketone	< 10	
Bromochloromethane	< 0.5		Tetrahydrofuran	< 10	
1,1,1-Trichloroethane	< 0.2		Benzene	< 0.2	
1,1-Dichloropropene	< 0.2		Methyl Isobutyl Ketone	< 5.0	
Carbon Tetrachloride	< 0.2		Toluene	< 0.2	0.2
1,2-Dichloroethane	< 0.2		Ethyl Benzene	< 0.2	
Trichloroethene	< 0.1		m+p-Xylene	< 0.2	
1,2-Dichloropropane	< 0.2		o-Xylene	< 0.2	
Bromodichloromethane	< 0.2		Styrene	< 0.5	
Dibromomethane	< 1.0		Isopropyl Benzene	< 0.5	
c-1,3-Dichloropropene	< 0.2		n-Propyl Benzene	< 0.5	
t-1,3-Dichloropropene	< 0.2		135-Trimethylbenzene	< 0.5	
1,1,2-Trichloroethane	< 0.2		tert-Butyl Benzene	< 0.5	
1,3-Dichloropropane	< 0.2		124-Trimethylbenzene	< 0.5	
Tetrachloroethene	< 0.2		sec-Butylbenzene	< 0.5	
Chlorodibromomethane	< 0.5		p-Isopropyltoluene	< 0.5	
1,2-Dibromoethane	< 1.0		n-Butylbenzene	< 0.5	
Chlorobenzene	< 0.2		Naphthalene	< 0.5	
1112-Tetrachloroethane	< 0.2				
Bromoform	< 1.0				

COMMENTS:

GASOLINE & FUEL OIL (463)

GASOLINE : < 30 UG/L

FUEL OIL : < 200 UG/L

Legend:
< = less than
PP = peak present

twin city testing
corporation

662 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE 612/645-3601

REPORT OF: CHEMICAL ANALYSES

PROJECT: JORDAN, 68639 **DATE:** January 6, 1992

REPORTED TO: Minnesota Department of Transportation
Attn: John Sampson
6000 Minnehaha Avenue South
St. Paul, MN 55111

LABORATORY NO: 4410 92-0654

INTRODUCTION

This report presents the results of the analyses of seven samples received on December 10, 1991, from a representative of Minnesota Department of Transportation. The scope of our services was limited to the parameters listed in the attached tables.

METHODOLOGY

Analyses are performed according to Twin City Testing Standard Operating Procedures. The procedures are based on the references stated in the analytical results tables.

RESULTS

The results are listed in the attached tables.

REMARKS

The samples were collected on December 10, 1991, and were consumed in the analyses.

TWIN CITY TESTING CORPORATION

Stephanie A. Kidder
Project Manager

Susan D. Max, Director
Laboratory Operations

SAK\SDM\clj

VOLATILE ORGANIC COMPOUND RESULTS
EPA METHOD 8020

(All values are in µg/L which is equivalent to parts-per-billion)

Client ID:	JMW1	JMW2	JMW3	
TCT ID:	271722	271723	271724	
Parameter:				PQL
Benzene	ND	ND	ND	5
Toluene	ND	ND	ND	5
Ethyl benzene	ND	5	ND	5
Total xylenes	ND	ND	ND	5
Methyl-tert-butyl ether	ND	ND	ND	5
Surrogate Recovery:				
α,α,α-Trifluorotoluene	97%	111%	86%	
Total hydrocarbons as gasoline	ND	850*	ND	30
Surrogate Recovery:				
α,α,α-Trifluorotoluene	96%	110%	90%	
Date Analyzed:	12/16/91 and 12/17/91	12/16/91 and 12/17/91	12/16/91 and 12/17/91	

*The chromatographic profile is not typical of gasoline.

PQL = Practical Quantitation Limit

ND = Not Detected

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

Leaking Underground Fuel Tank (LUFT) Field Manual, California State Water Resources Control Board, Division of Water Quality, December 17, 1987

LABORATORY NO: 4410 92-0654

VOLATILE ORGANIC COMPOUND RESULTS
EPA METHOD 8020

(All values are in µg/L which is equivalent to parts-per-billion)

Client ID:	**BB**	**FB**	**Method Blank**	
TCT ID:	271725	271726		
Parameter:				PQL
Benzene	ND	ND	ND	5
Toluene	ND	ND	ND	5
Ethyl benzene	ND	ND	ND	5
Total xylenes	ND	ND	ND	5
Methyl-tert-butyl ether	ND	ND	ND	5
Surrogate Recovery:				
α,α,α-Trifluorotoluene	97%	98%	109%	
Total hydrocarbons as gasoline	ND	ND	ND	30
Surrogate Recovery:				
α,α,α-Trifluorotoluene	97%	98%	109%	
Date Analyzed:	12/16/91	12/16/91	12/16/91	

PQL = Practical Quantitation Limit

ND = Not Detected

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

Leaking Underground Fuel Tank (LUFT) Field Manual, California State Water Resources Control Board, Division of Water Quality, December 17, 1987

LABORATORY NO: 4410 92-0654

FUEL OIL RESULTS
USGS METHOD 82-1004

(All values are in mg/L which is equivalent to parts-per-million)

Sample Identification	TCT ID	Total Hydrocarbons as #2 Fuel Oil	Pentacosane Recovery (%)
JMW1	271722	ND	98
JMW2	271723	0.6	102
JMW3	271724	ND	84
BB	271725	ND	105
Blank		ND	117
Spike		76% Recovery	119
Spike Duplicate		70% Recovery	122
Method Detection Limit		0.2	
Date Extracted:		12/16/91	
Date Analyzed:		12/18/91	

ND = Not Detected

Reference: Methods for the Determination of Organic Substances in Water and Fluvial Sediments, U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Laboratory Analysis, Chapter A3.

Leaking Underground Fuel Tank (LUFT) Field Manual, California State Water Resources Control Board, Division of Water Quality, December 17, 1987.

LABORATORY NO: 4410 92-0654

twin city testing corporation
737 PELHAM AVENUE
DOCK 4
ST. PAUL, MN 55114
PHONE 612 659 7555

CHAIN-OF-CUSTODY RECORD

TCT NO. 34491

CLIENT NAME	Mn/DOT
CLIENT ADDRESS (STREET NUMBER, SUITE, ETC.)	6000 Minnehaha Ave S
CLIENT ADDRESS (CITY, STATE, ZIP)	St. Paul MN
CLIENT CONTACT/ADDRESS IF DIFFERENT FROM ABOVE / PHONE	Mark Vogel 725-2384
SAMPLED BY PRINT NAME/SIGNATURE	MV 83

TCT CONTACT	Stephanie Kidder
PROJECT NAME	JordAN
CLIENT P.O. # / PROJECT NO.	Contract #63638?
BILL TO (CO. NAME, ADDRESS)	John Sampson
REPORT TO	SAME

TCT USE ONLY

PROJ. MGR.	Stephanie
PRIORITY	Normal
INVOICE #	AA10 92-0654
JOB NAME	MN-DOT.5
CUSTODY SEAL INTACT/NUMBER Y/N	N
TEMPERATURE OF CONTAINER	Dropped off
SAMPLE CONDITION	OK

PREPAY Y/N	N
CHECK NO.	↓
CHECK AMOUNT	↓

POSSIBLE HAZARD: YES ____ UNKNOWN X (COMMENT BELOW)

SAMPLE DISPOSAL: RETURN TO CLIENT ____ DISPOSAL BY LAB X
(ADDITIONAL CHARGES MAY BE ASSESSED)

ANALYSES REQUEST

CODE A - NONE
B - HNO3
C - H_2SO_4
D - NaOH
E - HCl
F - ____

	Gas, BTEX, MTBE	Fuel oil	Gas BTEX, MTBE	Fuel oil	Lead
FILTERED (YES/NO)	N	N	N	N	N
PRESERVED (CODE)	E	A	A	A	A
REFRIGERATED (Y/N)	Y	Y	Y	Y	Y

ITEM NO.	CLIENT SAMPLE ID.	MATRIX	DATE SAMPLED	TIME SAMPLED	Gas, BTEX, MTBE	Fuel oil	Gas BTEX, MTBE	Fuel oil	Lead			NO. OF CONTAINERS	CONTAINER TYPE	TCT NO.
1	JMW1	WATER	12-10-91	1215	X	X						4	3 40 ml, 1 LT	271722
2	JMW2	"		1125	X	X						"		271723
3	JMW3	"		1100	X	X						"		271724
4	BB	"		1145	X	X						"	↓	271725
5	FB	"		—	X	X						"	40 ml Vial	271726
6	JSP1	SOIL		0945			X	X	X			4	2 250 ml, 2 4oz	271727
7	JSP2	"	↓	1000			X	X	X			4	2, 2 ↓	271728
8														
9														
10														

Additional Comments	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Internal Chain of Custody	[signature]	12-10-91	1350	[signature]	12/10/91	1:50

C813 Rev. 10/91

* SEE REVERSE SIDE FOR INSTRUCTIONS

INTERNAL CHAIN-OF-CUSTODY FORM

MN-DOT 5

Sample Description: Water

Client Identification Number: JMW1, JMW2, JMW3 + BR

TCT Identification Number: 271722-25

Fuel-oil (Dispose of samples 3 months upon Receipt as per stephanie. 12/1/91)

Relinquished By	Received By	Date/Time	Sample Location

PARTIAL SAMPLE DISTRIBUTION

Description	Released To	Date/Time

Final Sample Disposition:

C-825 (5/90)

twin city testing corporation

INTERNAL CHAIN-OF-CUSTODY FORM

MN-DOT 5

Sample Description: Water / Soil

Client Identification Number: Waters - JMW1, JMW2, JMW3 + BB, F
Soils - JSP1 + JSP2

TCT Identification Number: Waters - 27722-26
Soils - 27727-28
BTX + MTBE

Relinquished By:	Received By	Date/Time	Sample Location
Paula Klauke	Craig S. Foxhoven	12-12-91/ 11:30 a.m.	Volatiles Lab
Craig S. Foxhoven	[illegible]	12/13/91 4:00 pm	Lab-IN

PARTIAL SAMPLE DISTRIBUTION

From:	Released To	Date/Time

Final Disposition:

INTERNAL CHAIN-OF-CUSTODY FORM

MN-DOT 5

Sample Description: Soil

Client Identification Number: JSP1 + JSP2

TCT Identification Number: 271727 + 271728

Fuel-oil (Dispose of sample 3 months upon Receipt as per Stephanie. 12/16/91 [initials])

Relinquished By	Received By	Date/Time	Sample Location
Paula Kraus	Charles Miller	12-16-91 10:25	EXT
Charles Miller	Erica A-Eggers	12/16/91 11:05	Prog. In Cooler

PARTIAL SAMPLE DISTRIBUTION

Description	Released To	Date/Time

Final Sample Disposition:

twin city testing corporation

INTERNAL CHAIN-OF-CUSTODY FORM

MN-DOT.5

Sample Description: Soil

Client Identification Number: JSP1 + JSP2

TCT Identification Number: 271727 + 271728

Metals Dispose-3 months upon Receipt as per stephanie, 12/10/91 (LTG)

Relinquished By	Received By	Date/Time	Sample Location
Paula Krause	J. Cebe	12-16-91	In Organic
J. Cebe	Paula Krause	1/3/92 2:00	Log-Cooler.

PARTIAL SAMPLE DISTRIBUTION

Relinquished By	Released To	Date/Time

Final Sample Disposition: