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SITE INVESTIGATION OF A PETROLEUM RELEASE

FORMER V&L STRIPPING, INC. 864 MATHER STREET GREEN BAY, WISCONSIN

(LUST ID #03-05-174885) (PECFA CLAIM #54303-3681-64)

March 19, 1999

Northern Environmental

Hydrologists • Engineers • Geologists

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March 19, 1999

Prepared For:

Mr. Kenneth Juza 1478 Norfield Road Suamico, Wisconsin 54173

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NLL/vej

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2.0 INTRODUCTION AND BACKGROUND

2.1 Site Location

Northern Environmental Technologies, Incorporated (Northern Environmental) has completed a site investigation for a petroleum release identified at the Former V&L Stripping, Inc., 864 Mather Street, Green Bay, Wisconsin (the Site). The Site is in the northwest half of French Long Lot Section 1, Township 24 North, Range 20 East (44 degrees, 31 minutes, 37 seconds north latitude and 88 degrees, 1 minute, 27 seconds west longitude) in the City of Green Bay, Brown County, Wisconsin. The Site location is shown in Figure 1 (United States Geological Survey [USGS], 1992).

2.2 Background

The Site has been vacant since February 1999. A furniture repair business, V&L Stripping, Inc., previously occupied the Site. Prior to being a furniture repair business, One Hour Martinizing Dry Cleaning Service occupied the Site. According to historical records of the City of Green Bay, the Site was a gasoline station from the 1930s through the 1960s. Based on Sanborn Fire Insurance Maps from the 1930s, it appears there were three underground storage tanks (USTs) in operation at the Site. The UST system consisted of three 1,000-gallon leaded gasoline USTs, associated piping, and dispensers. It is believed the UST system was subsequently removed from the Site after the gasoline station ceased operation.

On October 21, 1997, Northern Environmental conducted a limited Phase II Environmental Site Assessment at the Site to ascertain the presence or absence of petroleum contamination associated with the former UST system. Petroleum odors and elevated photoionization detector (PID) readings were detected in soil samples collected from a soil boring advanced near the location of the former USTs. Laboratory analysis of the soil sample detected 30 milligrams per kilogram (mg/kg) gasoline range organics (GRO). Laboratory analysis of a water sample collected from the same boring detected a benzene concentration of 0.7 micrograms per liter (µg/I) in the ground water at the Site. Based on laboratory analytical results, a release was reported to the Wisconsin Department of Natural Resources (WDNR) on October 29, 1997. Subsequently, the WDNR issued a release notification letter directing that appropriate investigative and remedial activities be performed at the Site to restore the environment. A leaking underground storage tank (LUST) identification number (LUST ID#03-05-174885) was assigned to the Site. A site layout with the approximate location of the UST system are shown in Figure 2.

On December 5, 1997, Mr. Kenneth Juza retained Northern Environmental to perform a site investigation to determine the nature and extent of the petroleum release. A site investigation workplan was submitted to the WDNR on January 16, 1998, detailing the proposed investigative activities (Northern Environmental, 1998). Included in the workplan were the results of site scoping, required by section NR 716.07, Wisconsin Administrative Code, to confirm the scope of the investigation was appropriate for the complexity of the site.

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This report presents and interprets the results of the site investigation conducted to evaluate the petroleum release. The investigation was designed to fulfill WDNR and Wisconsin Department of Commerce requirements and to determine the magnitude and extent of released petroleum identified at the Site. This report describes the methods used to conduct the investigation, presents and interprets the data collected, and discusses conclusions and recommendations. A list of project contacts is included as Appendix A.



3.0 METHODS OF INVESTIGATION

3.1 Soil Investigation

Northern Environmental personnel observed the advancement of four soil borings at the Site to evaluate the vertical and lateral extent of the petroleum release. The borings were drilled in conformance with American Society for Testing and Materials (ASTM) Standard Method 1452. The locations of the soil borings are illustrated in Figure 3.

On August 26, 1998, four soil borings (B100 through B400) were advanced by Environmental Drilling Services (EDS) using a drill rig equipped with hollow-stem augers (HSA) to maximum depths of 14.5 feet below grade (fbg). The purpose of the soil borings was to collect soil samples to determine the magnitude and extent of unsaturated soil impacted by the petroleum release and to install ground-water monitoring wells.

All downhole drilling and sampling equipment was cleaned before use on site and was cleaned with a high-pressure washer between borings. No lubricants or solvents were used on the downhole drilling or sampling equipment. Sampling devices were washed with a detergent solution and double-rinsed between sampling intervals and each boring.

Soil samples were collected in the borings at 2.5-foot intervals from a 24-inch-long split-barrel sampling device using the standard split-barrel sampling techniques from ASTM Standard Method 1586. Each soil sample was described in the field by Northern Environmental personnel. Soil boring logs were prepared on WDNR forms in general conformance with ASTM Standard Method 2488. The logs include information on soil type (USCS Classification), geologic origin, color (Munsell notation), relative moisture content, texture, odor, and the presence of volatile constituents, as indicated by PID responses. The soil boring logs are included as Appendix B1. Soil cuttings from all of the soil borings were placed in 55-gallon metal drums and stored on site pending disposal arrangements.

The soil samples collected during drilling were properly containerized for field-screening and laboratory analysis. Soil sample collection, handling, and field-screening procedures followed WDNR guidance (WDNR, 1992). Field-screening was performed using a Thermal Environmental Instruments, Inc. Model 580S PID outfitted with a 10.6 eV lamp and calibrated daily for direct response to isobutylene. The soil samples collected above the apparent water table that exhibited the highest field-screening results were selected for laboratory analysis.

The soil samples selected for laboratory analysis were placed on ice and transported under chain-of-custody protocol to U.S. Analytical Laboratory (WDNR Certification #445027660) in Kimberly, Wisconsin. The soil samples were analyzed for combinations of volatile organic compounds (VOCs) (EPA Method SW846 8021), GRO (WDNR Modified Method), and total lead (EPA Method SW846 6010). One soil sample, collected from B300, was analyzed for petroleum volatile organic compounds (PVOCs) (EPA Method SW846 8020).



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3.2 Ground-Water Investigation

On August 26, 1998, EDS personnel constructed four ground-water monitoring wells (MW100 through MW400) within the respective soil borings (B100 through B400) to evaluate ground-water quality. Due to slow recharge, the wells were developed and sampled between August 26 and August 31, 1998. The monitoring well locations are shown in Figure 4.

Temperature, pH, and specific conductance readings were recorded during the development of each well. Ground-water elevation data was collected from the monitoring wells on four occasions between August 28 and October 29, 1998. Bailer recovery tests were performed at MW200 and MW400 on August 31, 1998. To evaluate petroleum contaminant concentration trends, a second round of ground-water samples was collected on October 29, 1998.

Well construction and development was conducted in accordance with NR 141, Wis. Adm. Code. Ground-water sampling was conducted in accordance with WDNR guidance (WDNR, 1996). WDNR Monitoring Well Construction and Development Forms are included as Appendix B2, and the WDNR Monitoring Well Information Form is included as Appendix B3.

All ground-water samples were placed on ice and transported under chain-of-custody protocol to U.S. Analytical Laboratory for analysis. Ground-water samples collected on August 31, 1998, were analyzed for VOCs (EPA Method SW846 8021), GRO (WDNR Modified Method), and dissolved lead (EPA Method SW846 7421). Ground-water samples collected on October 29, 1998, were analyzed for PVOCs (EPA Method SW846 8260).

To evaluate the geochemistry of ground water and the potential for natural attenuation of petroleum compounds at the Site, ground-water samples collected on October 29, 1998, were also field-analyzed for inorganic parameters. The inorganic parameters analyzed include temperature, pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), high-range nitrate, manganese, ferrous iron, and sulfate. HACH Company colorimetric field test kits were used to test ground-water samples for nitrate, manganese II, ferrous iron, and sulfate. An Oakton Brand ORP Pocket Probe was used to measure ORP in the ground-water samples. A YSI Model 55 Handheld DO Meter was used to measure DO in each monitoring well. The manufacturer's instructions on calibration and use of instruments and test kits were followed for each test.



4.0 APPLICABLE CLEANUP CRITERIA

The Wis. Adm. Code establishes soil cleanup standards for several petroleum-related compounds. These standards, or residual contaminant levels (RCLs), are presented in NR 720, Wis. Adm. Code. Under NR 720, Wis. Adm. Code, soil cleanup standards for GRO and diesel range organics have been established at 100 mg/kg for permeable soils and 250 mg/kg for less Permeable soils are described as soils having a saturated hydraulic conductivity greater than 1 x 10⁻⁶ centimeters per second (cm/sec). Less permeable soils are described as soils having a saturated hydraulic conductivity less than 1 x 10⁻⁶ cm/sec. By these standards, the silty sand and clay found at the Site are permeable soils.

Generic RCLs have also been established for benzene, toluene, ethylbenzene, xylene, and 1,2dichloroethane in soil. The RCLs are 5.5, 1,500, 2,900, 4,100, and 4.9 micrograms per kilogram, respectively. Generic RCLs are established to protect ground-water quality in typical Wisconsin environments and are generally conservative.

Site-specific cleanup standards can be established using contaminant fate and transport models, leach tests, or any WDNR-approved method. These methods can demonstrate that contaminant concentrations several orders of magnitude higher than the generic RCLs can be left in place and be protective of ground-water quality. Because soil in the vadose zone at the Site does not contain significant concentrations of petroleum compounds, Northern Environmental determined that the additional cost of modeling or leach testing to establish sitespecific standards was not necessary.

Water quality standards for ground water are established in NR 140, Wis. Adm. Code. A preventive action limit (PAL) and enforcement standard (ES) are established for some of the polynuclear aromatic hydrocarbons and many VOCs. If the concentration of any compound exceeds its PAL, a wide range of actions may be required, ranging from no action to active remediation to restoration of ground-water quality. If the concentration of any compound exceeds the ES, some action must be taken. This ranges from monitoring to active remediation, depending on characteristics of the contaminants and the site.



5.0 RESULTS OF INVESTIGATION

5.1 Hydrogeology

The Site is in an area once occupied by the western half of the Green Bay Lobe of the Laurentides Ice Sheet. Based on regional and local information from *Pleistocene Geology of Brown County*, reddish-brown loam glacial till of the Middle Inlet Member of the Kewaunee Formation is the surface unit in western Brown County and is discontinuously present beneath the more recent lacustrine sediment in the Fox River lowland and along the western side of Green Bay (Need, 1985). Northern Environmental identified one distinct stratigraphic unit in the upper 14.5 feet of sediment at the Site. The unit may be described as a Lacustrine Offshore Deposit. It consists of a yellowish-brown lacustrine sand, silty sand, and clay. This unit is well stratified with smooth, nearly level topography and was deposited in Lake Michigan when it stood at the Nipissing beach level in Middle Holocene time (Need, 1985). A geologic cross-section showing site stratigraphy is included as Figure 5.

Based on regional information gathered from the *Ground-Water Quality Atlas of Wisconsin*, two aquifers are present at the Site: a shallow glacial drift aquifer and an underlying bedrock aquifer (USGS, 1981). The glacial drift aquifer consists of saturated coarse-grained glacial sediment ranging in thickness from 0 to 200 feet. The underlying bedrock aquifer consists of the St. Peter Sandstone, dolomite of the Sinnipee Group, and Cambrian-aged sandstone. Ground water in the glacial drift aquifer generally moves from areas of higher elevation to areas of lower elevation. A possible discharge area for the glacial drift aquifer is the Fox River, approximately three-quarters of a mile southeast of the Site. However, local variations in ground-water flow may exist within the unconsolidated materials due to site-specific factors, such as fractures in the unconsolidated materials and manmade disturbances (utility lines, fill, etc.). Potable water for the Site is supplied by the City of Green Bay's municipal distribution system, deriving water from Lake Michigan and a series of ground-water production wells.

To measure the shallow ground-water flow direction and estimated horizontal hydraulic gradients, water level measurements were taken at the ground-water monitoring wells. Water levels were found to stabilize between 7.5 and 8.5 fbg at the Site. Using data collected on October 29, 1998, the shallow ground-water flow direction is to the south with a horizontal hydraulic gradient of 0.001 feet per foot. The ground-water elevation data is included in Table 1. The shallow ground-water flow direction is shown in Figure 6.

To determine the hydraulic conductivity, bailer recovery tests were performed on monitoring wells MW200 and MW400. Using the Bouwer and Rice Method, an average hydraulic conductivity of 3.9 X 10⁻⁵ cm/sec was measured for the Site. Based on the hydraulic conductivity, horizontal hydraulic gradient, and an assumed effective porosity of 20 percent, the shallow ground-water velocity is approximately 0.20 feet per year. The results of the bailer recovery tests are included as Appendix C.

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5.2 Extent of Petroleum Compounds in Soil

Field screening of soil samples produced PID responses ranging from 0 to 187 instrument units as isobutylene. The highest PID responses were produced from saturated samples collected from B100 (completed north of the former dispenser island location) and B300 (completed in the vicinity of the former USTs). Field-screening results of the soil samples collected from borings B200 and B400 did not contain significant volatile vapor concentrations. The field-screening results are presented in Table 2.

Laboratory analysis detected low levels of trimethylbenzenes in a soil sample collected from 5 to 7 fbg in B300. No petroleum compounds were detected in any of the other soil borings at the Site. In addition to the discovery of trimethylbenzenes in B300, significant concentrations of tetrachloroethene were also detected in the soil samples collected from B100 and B200.

Based on the soil sampling results, the extent of petroleum compounds in the soil has been adequately characterized and defined. No concentrations of petroleum compounds in excess of NR 720, Wis. Adm. Code RCLs were detected in the soil at the Site. The laboratory analytical results of the soil sampling are summarized in Table 3. Copies of the laboratory reports and chain-of-custody forms are included as Appendix D1.

5.3 Extent of Petroleum Compounds in Ground Water

Ground-water monitoring wells were installed in the vicinity of the former UST system to define the degree and extent of the petroleum release in ground water and to provide suitable sampling points for natural attenuation monitoring. During the initial round of ground-water sampling on August 31, 1998, laboratory analysis detected concentrations of benzene and 1,2-dichloroethane (1,2-DCA) in excess of NR 140, Wis. Adm. Code PAL in MW200, in the vicinity of the former USTs. Concentrations of GRO were also detected in all four of the monitoring wells at the Site. No other petroleum-related compounds were detected in any of the wells at the Site. In addition to the detection of petroleum compounds, laboratory analysis detected concentrations of several halogenated compounds in excess of NR 140, Wis. Adm. Code PAL and/or ES in each of the monitoring wells.

A second round of ground-water samples was collected on October 29, 1998, from the Site to further evaluate petroleum contaminant concentration trends. No concentrations of PVOCs were detected above laboratory detection limits in any of the monitoring wells during the October 1998 sampling event. The laboratory results of the ground-water samples are summarized in Table 4. Copies of the laboratory analytical reports are included as Appendix D2.

To evaluate the geochemistry of the ground water, ground-water samples collected on October 29, 1998, were also field-analyzed for inorganic parameters. The sampling results indicated that electron acceptors are available for intrinsic biodegradation of petroleum compounds in



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ground water at the Site. Aerobic bacteria can effectively degrade dissolved petroleum when DO concentrations are greater than 0.5 milligrams per liter (mg/l) (Wiedemeier, 1995). Typically, when DO concentrations are below 0.5 mg/l, anaerobic bacteria can degrade dissolved petroleum compounds. DO concentrations in the monitoring wells at the Site within the ground-water contaminant plume range from 6.88 to 0.75 mg/l, indicating sufficient oxygen is available for aerobic bacteria to degrade petroleum compounds in groundwater. Results of inorganic ground-water quality data are included in Table 5.

Based on the results of ground-water sampling, the extent of petroleum compounds in ground water has been adequately characterized and defined. Concentrations of petroleum compounds that were initially detected in the area of the former UST system have decreased to below the PAL. The decrease in petroleum contaminant concentrations indicates that intrinsic bioremediation may be effectively remediating gasoline compounds in ground water. The magnitude and extent of the halogenated compounds in ground water at the Site have not been defined. Further investigation of the halogenated compounds will be completed at a later date.

5.4 Contaminant Sources and Exposure Pathways

The source of the released petroleum identified during the site investigation is the former UST system. Since petroleum compounds above RCLs were not detected in unsaturated soil near the former UST system, it appears the USTs may have released the petroleum directly into the capillary fringe or ground water. At the water table, petroleum compounds were further spread by the ground-water flow and ground-water elevation fluctuations. A water line trench was identified as a potential pathway for contaminant migration. To evaluate if petroleum compounds in the soil and ground water extended to the utility trench, Northern Environmental advanced soil boring B200, which was completed as MW200. Based on soil and ground-water sampling results, petroleum compounds do not appear to extend to the utility trench.



6.0 ENVIRONMENTAL FACTORS

In accordance with COMM 47.337, Wis. Adm. Code, the scope of a site investigation shall include determining the presence of the following environmental factors: (1) documented expansion of plume margin; (2) verified contaminant concentrations in a private or public potable well that exceeds the PAL established under Chapter 160, Stats.; (3) contamination within bedrock or within 1 meter of bedrock; (4) petroleum product that is not in the dissolved phase is present with a thickness of 0.01 feet or more and verified by more than one sampling event; and (5) documented contamination discharges to a surface water or wetland.

Northern Environmental has determined that none of the environmental factors listed above are present at the Site based on the following facts:

- 1) Based on the ground-water laboratory analytical results, it appears the contaminant plume is not expanding. Concentrations of petroleum compounds at the Site have decreased to below the PAL.
- 2) There is not a private well on site, and the Site is not in the vicinity of a public potable well. Potable water for the Site is supplied by the City of Green Bay municipal distribution system.
- 3) According to the *Depth to Bedrock of Wisconsin* map, bedrock is greater than 50 fbg (Trotta, 1973).
- 4) Free-phase gasoline was not observed in any well during the site investigation.
- 5) The contaminant plume has been adequately defined, and there are no surface water or wetland areas within the plume margins.



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7.0 CONCLUSIONS

The investigation has adequately characterized and defined the extent of soil and ground water impacted by the petroleum release at the Site. Petroleum compounds in excess of NR 720, Wis. Adm. Code RCLs were not detected in unsaturated soil at the Site. compounds in the ground water have decreased to concentrations below NR 140, Wis. Adm. Code PALs and do not extend off site. During the site investigation, halogenated compounds were also detected in unsaturated soil and ground water at the Site. Halogenated compounds in excess of the PAL and/or ES were identified in each monitoring well. Further investigation of halogenated compounds will be completed at a later date.

Because petroleum compounds in excess of the RCLs were not detected in unsaturated soil at the Site, Northern Environmental recommends no further soil investigation with regard to the petroleum release. In addition, a comparison of the results from two rounds of groundwater sampling at the Site indicate that petroleum compound concentrations in ground water at the Site do not extend off site and have decreased to below the PAL. As a result, Northern Environmental believes no further action is necessary to address petroleum-impacted ground water and recommends case closure under NR 726, Wis. Adm. Code.

The results of this study are based on interpretation of the information available to Northern Environmental. Northern Environmental has assumed the information provided by the cited references is complete and correct. Northern Environmental does not warrant that this report represents an exhaustive study of all possible environmental concerns potentially associated with the Site. However, the items investigated as part of this study do represent the most likely sources of environmental concerns associated with the release and are, consequently, believed to adequately address the responsible party's needs at this time.



8.0 PROFESSIONAL CERTIFICATIONS

I, John H. Sigwart, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, 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.

John H. Sigwart/ **Z**, #E-12295 Director of Engineering

E-12295 PORT WASHINGTON

I, Lynelle P. Caine, 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.

Lynelle P. Caine

Project Manager

<u>3-19-99</u> Date



9.0 REFERENCES

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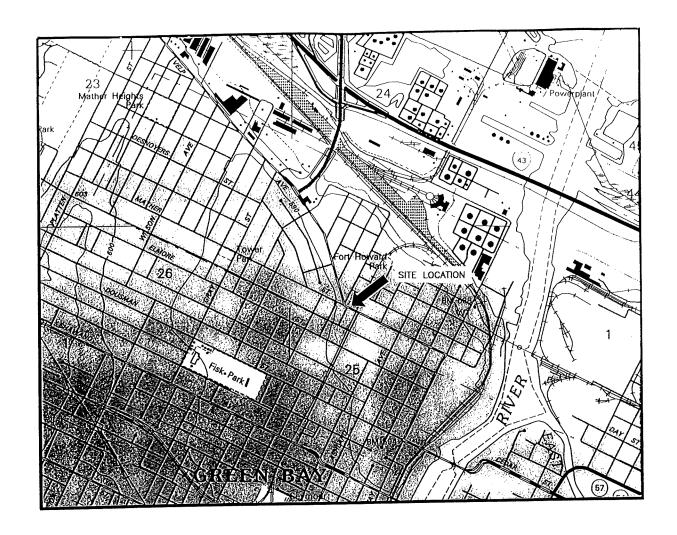
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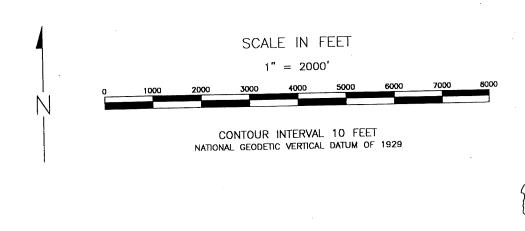
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BASE MAP SOURCE: USGS GREEN BAY WEST, WISCONSIN 7.5 MINUTE QUADRANGLE (REVISED 1992)

QUADRANGLE LOCATION

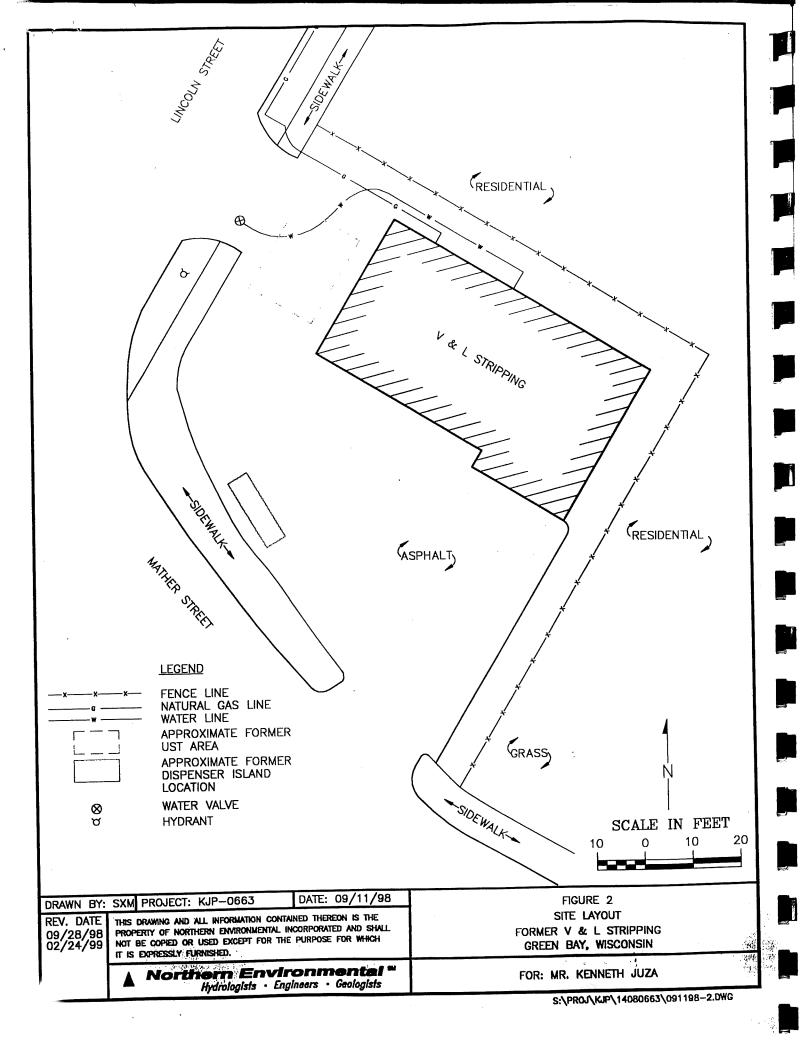
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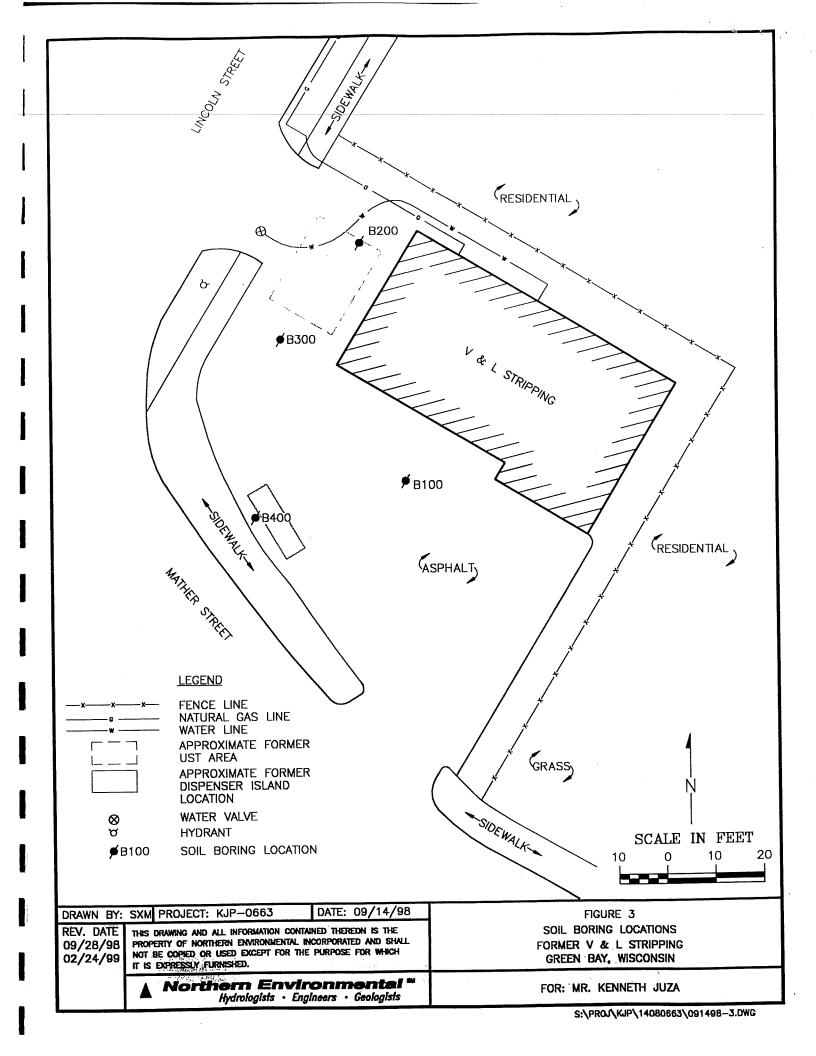
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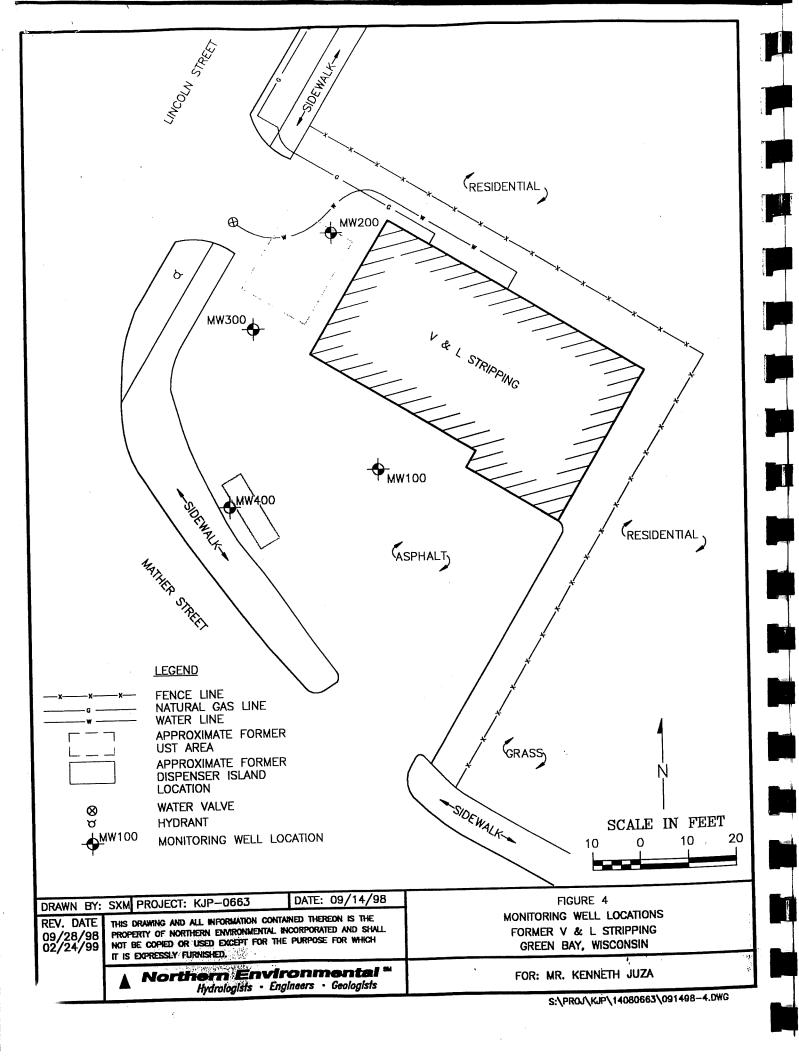
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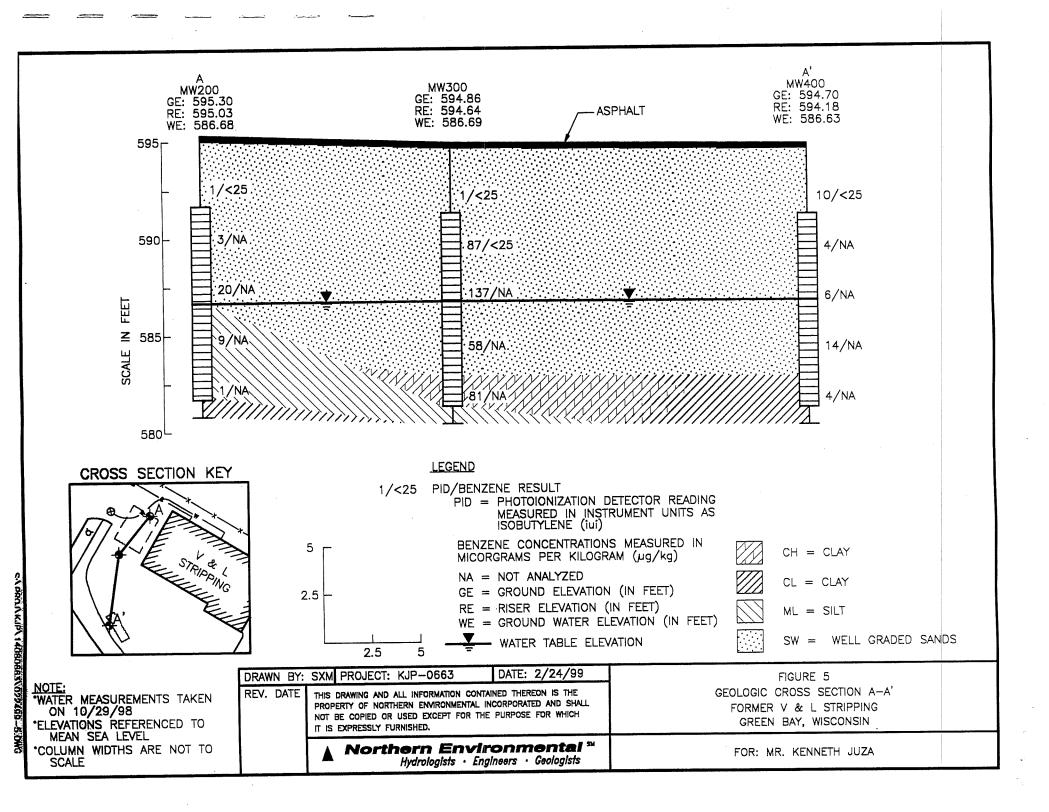
Hydrologists - Engineers - Geologists

FOR: MR. KENNETH JUZA









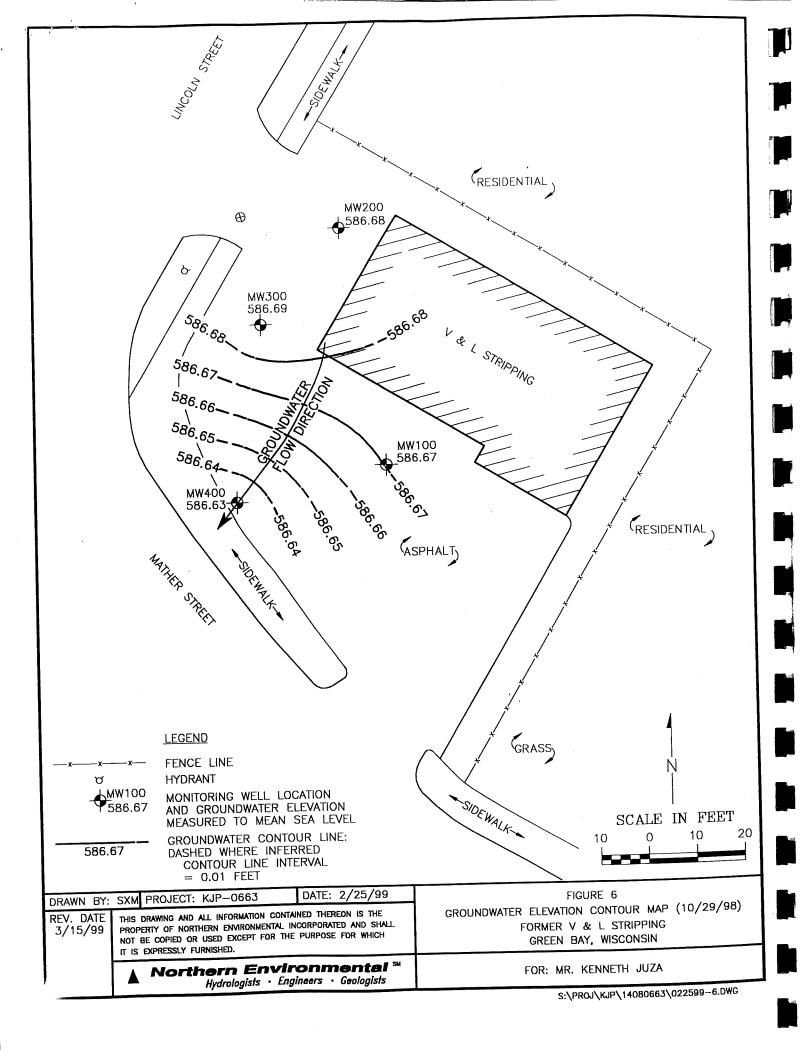




Table 1 Water Level Data, Former V&L Stripping, Inc., Green Bay, Wisconsin

Well	Ground Surface	Reference Point	Date		/ater (feet)	Water Table
I.D.	Elevation	Elevation	•	Below Riser	Below Grade	Elevation (feet)
	<u>(feet)</u>	(feet)				
MW100	595.13	594.74	08/28/98	7.98	8.37	586.76
			08/31/98	8.02	8.41	586.72
	595	594.68	09/15/98	8.12	8.44	586.56
1	•		10/29/98	8.01	8.33	586.67
MW200	595.31	595.1	08/28/98	8.37	8.58	586.73
			08/31/98	8.43	8.64	586.67
	595.3	595.03	09/15/98	8.47	8.74	586.56
			10/29/98	8.35	8.62	586.68
MW300	595.07	594.71	08/28/98	7.92	8.28	586.79
			08/31/98	7.96	8.32	586.75
	594.86	594.64	09/15/98	8.01	8.23	586.63
			10/29/98	7.95	8.17	586.69
MW400	594.78	594.25	08/28/98	7.48	8.01	586.77
			08/31/98	7.52	8.05	586.73
	594.7	594.18	09/15/98	7.6	8.12	586.58
			10/29/98	7.55	8.07	586.63

Table 2 Soil Field-Screening Results, Former V&L Stripping, Inc., Green Bay, Wisconsin

Boring	Sample	Depth	Sample	Moisture	Sample	Date	PID	Headspace A	Analysis
Number	Label	(feet)	Odor	Content	Description	Collected	Time Collected	Time Analyzed	PID Response (iui)
B100	*\$101	2.5 - 4.5	None	Dry	Sand, Some Gravel	08/26/98	0909	1010	0
	S102	5 - 7	None	Moist	Sand, Trace Silt	08/26/98	0912	1011	5
	S103	7.5 - 9.5	Organic	Saturated	Silty Sand	08/26/98	0925	1012	89
	S104	10 - 12	Organic	Saturated	Clayey Silt	08/26/98	0935	1013	82
·	\$105	12.5 - 14.5	None	Saturated	Clayey Silt	08/26/98	0945	1014	3
B200	*\$201	2.5 - 4.5	None	Dry	Sand, Concrete	08/26/98	1020	1117	1
	S202	5 - 7	None	Moist	Sand, Crushed Concrete	08/26/98	1035	1118	3
	S203	7.5 - 9.5	Chemical	Saturated	Sand, Silt, Trace Clay	08/26/98	1044	1119	20
	S204	10 - 12	Chemical	Saturated	Clayey Silt	08/26/98	1051	1120	
	S205	12.5 - 14.5	None	Saturated	Clayey Silt	08/26/98	1055	1121	1
B300	*S301	2.5 - 4.5	Petroleum	Dry	Fine Sand	08/26/98	1134	1212	1
	*S302	5 - 7	Petroleum	Moist	Fine Sand	08/26/98	1138	1216	87
	S303	7.5 - 9.5	Petroleum	Saturated	Fine Sand, Some Silt	08/26/98	1143	1217	137
	S304	10 - 12	Petroleum	Saturated	Fine Sand, Trace Clay	08/26/98	1150	1218	58
	S305	12.5 - 14.5	Petroleum	Saturated	Clay, Some Silt	08/26/98	1156	1219	81
B400	*\$401	2.5 - 4.5	None	Dry	Medium Sand	08/26/98	1308	1425	10
	\$402	5 - 7	None	Moist	Medium Sand	08/26/98	1312	1426	4
	\$403	7.5 - 9.5	None	Saturated	Fine Sand, Some Silt	08/26/98	1317	1427	6
	S404	10 - 12	Organic	Saturated	ine Sand, Some Clay, Trace Sil	08/26/98	1321	1428	14
•	S405	12.5 - 14.5	Organic	Saturated	Clay, With Silt	08/26/98	1329	1429	4

▲ Northern Environmental Hydrologists • Engineers • Geologists

Key:

PID = Photoionization Detector

iui = instrument units as isobutylene

* = Submitted for laboratory analysis

Table 3 Soil Analytical Results, Former V&L Stripping, Inc. Green Bay, Wisconsin

					Relevant an	Relevant an	d Significant	Analytical Res	sults (µg/kg)	7			
Boring Number	Sample Number	Sample Depth (feet)	Date Sampled	GRO (mg/kg)	Lead (mg/kg)	Вепzеле	1,2-Dichloroelhane	Eihylbenzene	Ťetrachkroethene	Toluene	1.2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes
Residual Contan	ninant Level			250	50	5.5	4.9	2900	NE	1500	NE NE	NE.	4100
B100	S101	2.5-4.5	08/26/98	< 10	7 "J"	< 25	< 25	< 25	29	< 25	< 25	< 25	< 75
B200	S201	2.5-4.5	08/26/98	< 10	14 "J"	< 25	< 25	< 25	190	< 25	< 25	< 25	< 75
B300	S301	2.5-4.5	08/26/98	< 10	8 "J"	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 75
	S302	5-7	08/26/98	_		< 25		< 25	-	< 25	170	140	<50
B400	S401	2.5-4.5	08/26/98	< 10	8 "J"	< 25	< 25	< 25	< 25	< 25	< 25	< 25	. < 75

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Key:

mg/kg

milligrams per kilogrammicrograms per kilogram

µg/kg

= Not Analyzed

NE

= Not Established by the Wisconsin

Administrative Code

120

Residual Contaminant Level Exceeded

Table 4 Ground-Water Analytical Results, Former V&L Stripping, Inc., Green Bay, Wisconsin

	i	Relevant	and Signi	ficant An	alytical R	esults (µg	/I)				
Well ID	Date Sampled	GRO	Benzene n-Butylbenzene 1,2-Dichloroethane cis-1,2-Dichloroethene trans-1,2- Dichloroethene		trans-1,2- Dichloroethene	Tetrachloroethene	Trichloroethene	Trimethylbenzenes			
PAL	. (µg/l)	NE	0.5	NE	0.5	0.7	7	20	0.5	0.5	96
ES	(µg/l)	NE	5	NE	5	7	70	100	5	5	480
MW100	08/31/98	2600	< 32	< 23	< 36	< 39	200	< 38	10000	3800	< 99
	10/29/98		< 0.25								< 0.70
MW200	08/31/98	280	1.4	< 0.23	1.4	0.52 "J"	310	93	140	520	0.4 "J"
	10/29/98		0.73 "J"								< 0.70
MW300	08/31/98	120	< 0.32	3.4	< 0.36	< 0.39	50	75	2.4	2.4	0.84 "J"
	10/29/98		0.61 "J"				-				0.66 "J"
MW400	08/31/98	170	< 0.32	< 0.23	< 0.36	6 < 0.39 120		280	34	77	< 0.99
	10/29/98		< 0.25							_	< 0.70

Key:

) = Gasoline Range Organics

ıg/l = micrograms per liter

= Preventive Action Limit

ES = Enforcement Standard

= Analyte detected between Limit of Detection and Limit of Quantitation ▲ Northern Environmental

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= Not established by the Wisconsin

Administrative Code

= Not analyzed

32 = Preventive Action Limit Exceeded

= Enforcement Standard Exceeded

Table 5 Inorganic Ground-Water Quality Data, Former V&L Stripping, Inc., Green Bay, Wisconsin

Well Number	Sample Date	Temperature (° F)	pH (su)	Conductivity (µmho/cm)	O.R.P. (mV)	D.O. (mg/l)	Nitrate (mg/l)	Manganese (mg/l)	lron (mg/l)	Sulfate (mg/l)
MW100	10/29/98	62.2	7.3	1120	135	1.14	0	0.30	2.2	125
MW200	10/29/98	62.0	7.0	1200	180	5.88	0	0.30	1.8	80
MW300	10/29/98	61.4	7.0	2360	170	6.88	0	0.62	3.8	75
MW400	10/29/98	58.9	7.3	1240	20	0.75	0	0.35	1.2	85

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KEY:

D.O. = dissolved oxygen

O.R.P. = oxygen-reduction potential

mg/l = milligrams per liter

mV = millivolts

su = standard units

µMho/cm = microMhos per centimeter

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A XIGN399A

PROJECT CONTACTS



PROJECT CONTACTS

Site Owner:

Mr. Kenneth Juza

1478 Norfield Road

Suamico, Wisconsin 54173

Project Consultant:

Northern Environmental Technologies, Incorporated

954 Circle Drive

Green Bay, Wisconsin 54304

(920) 592-8400

Drilling Contractor:

Environmental Drilling Services

3671 Monroe Road

De Pere, Wisconsin 54115

(920) 497-2977

Laboratory:

U.S. Analytical Laboratory (WDNR #445027660)

1090 Kennedy Avenue

Kimberly, Wisconsin 54136

(800) 490-4902

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APPENDIX B **WDNR FORMS**

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Hydrologists • Engineers • Geologists

APPENDIX B1

SOIL BORING LOGS (FORM 4400-122)

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 R

Rev. 5-97

Facility/Project Name Former V & L Stripping, Inc. Boring Drilled By (Firm name and name of crew chief) License/Permit/Monitoring Number Boring Number Boring Number Boring Number Boring Number Boring Number Boring Number Brown B100 Date Drilling Started Date Drilling Completed Drilling Completed	ng Method		
Former V & L Stripping, Inc.	ng Method		
1 0 mer 1 or 2 or 1 pm 6)	ng Method		
	Di ming Memod		
EDS. Crew Chief was Brian Repinski 8/26/1998 8/26/1998 HS	A		
WI Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Surface Elevation Borehole I			
Boring Location or Local Grid Origin (Check if estimated: \(\) \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Inches		
State Plane $S/C/N$ Lat. $\frac{44^{\circ}}{31} = \frac{37.0^{\circ}}{37.0^{\circ}}$	□ Е		
NW 1/4 of 1/4 of Section 1, T 24 N, R 20 E Long. 85° 1' 27.0" Feet S F Facility ID County Code Civil Town/City/ or Village	eet 🗌 W		
Brown 5 Green Bay			
Sample Soil Properties			
Soil/Rock Description			
And Geologic Origin For Siring the High High High High High High High High	, nents		
Number and Type Length Att. & Recovered (in) Blow Counts Blow Counts O S C S Graphic Log Well Diagram PID/FID Content Liquid Limit Plasticity Index P 200	RQD/ Comments		
- ASPHALT			
SAND and GRAVEL FILL.			
S101 24 3 C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			
SAND, trace silt increasing with depth			
from (5 to 7) feet, well graded, coarse grained grained grained			
F from (5 to 7) feet, yellowish brown (10YR ::: ‡			
S102 24 3 5 5/6), saturated at 6.5 feet. (SW, Lacustrine SW SW 5 5 Offshore Deposit)			
7 SILTY SAND with discontinous sand			
S103 24 2 layers, well graded, fine grained, brown 89 89			
SS \ 24 \ 3 \ -8 \ (10YR 4/3), organic odor, saturated. (SW, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
S104 24 1 E 10 82 82 82 82 82 82 82 82 82 82 82 82 82			
CLAY with silt, trace organics, 2 inch layer of organics at 13.5 feet, high			
I hereby certify that the information on this form is true and correct to the best of my knowledge.			
	20) 592-8400 20) 592- <u>8444</u>		

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions 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 be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

	SSOS	Number and Type	San	Borin
	24	Length Att. & Recovered (in)	Sample	Boring Number
	2	Blow Counts		Ğ
-14	13	Depth In Feet		B100
End of Boring at 14.5 feet	plasticity, brown (10YR 4/3), organic odor, saturated. (CH, Lacustrine Offshore Deposit)	Soil/Rock Description And Geologic Origin For Each Major Unit		Use only as an attachment to Form 4400-122.
	СН	USCS		-122.
		Graphic Log		1
		Well Diagram		
	ω	PID/FID Compressive	T	
		Strength Moisture Content	Soi	
		Liquid Limit	Soil Properties	Page
		Plasticity Index	rties	2
		P 200		of 2
		RQD/ Comments		

State of Wisconsin Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122

Rev. 5-97

												Pa		of	2
Boring Drilled By (Firm name and name of crew chief) Date Drilling Started Date Drilling Completed Drilling Method	• •		: I		License/I	Permit	/Monito	oring N	umber		Boring	3 Numb		۸۸	
Wi Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Surface Elevation Borchole Diameter Sys.3 Feet MSL				ef)	Date Dri	lling S	tarted		Da	te Drill	ing Co	mpleted			ing Methoc
Wi Unique Well No. DNR Well ID No. Common Well Name Final Static Water Level Surface Elevation Borchole Diameter Sys.3 Feet MSL	PD0	:-6	a Duian Daninalsi			0/24	:/1009	•			8/26/	1002		LI	C 4
Boring Location or Local Grid Origin (Check if estimates:				Common Well Name	Final Sta				Surfac			1770	Во		
State Plane			il O is is a Colorada i			Feet	MSL		:				(If onni		Inches
NW	-	ocal Gr	ia Origin (Check i		Lat.	44	° 3	<u>1'</u>	37.0"	Lucai	JHU LU			caolej	
Sample Soil/Rock Description Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description Soil/Rock Description Soil/Rock Description Soil/Rock Description And Geologic Origin For Each Major Unit Soil/Rock Description Soil/Rock Descr		1.		T 24 N, R 20 E						(7:11	Fee				
Sample Soil/Rock Description Soil/Rock Descriptio	Facility ID		1 -		Į ·	de			-	village					
And Geologic Origin For Each Major Unit Sach Major Unit Sach	Sample		1								Soil	Prop	erties		
ASPHALT. SAND, layer of organics from (2.5 to 2.75) feet, well graded, fine grained, yellowish brown (10YR 5/6) from (2.5 to 5) feet, dark yellowish brown (10YR 4/4) from (5 to 8.5) feet, No recovery from (3 to 5) feet (construction debris), lithology assumed to be SAND, dry becoming moist at 6 feet. (SW, Lacustrine Offshore Deposit) SW SW 3 SI02 24 20 5 5 6 7 7 7 7 7 7 7 7 7	Number and Type Cength Att. & Recovered (in) Blow Counts	Depth In Feet	And Geo	ologic Origin For		SC	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
yellowish brown (10YR 5/6) from (2.5 to 5) feet, dark yellowish brown (10YR 4/4) from (5 to 8.5) feet, No recovery from (3 to 5) feet (construction debris), lithology assumed to be SAND, dry becoming moist at 6 feet. (SW, Lacustrine Offshore Deposit) SION 24 20 5 88 12 25 7 9 6 8 2 2 8 8 2 2 8 8 2 2 8 8 8 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-	SAND, layer of or												
	SS 12 >50		5) feet, dark yellor from (5 to 8.5) feet to 5) feet (construt assumed to be SA at 6 feet. (SW, Land Deposit) SILT, trace clay in dark grayish brown odor, saturated. (S	wish brown (10YI) of, No recovery froction debris), lithout ND, dry becoming custrine Offshore on the control of the custrine of the customer	R 4/4) om (3 ology g moist oth, emical				20						
I hereby certify that the information on this form is true and correct to the best of my knowledge.	Signature /	`	4 4		orthern Er			1						T. 1. /	920) 592-8

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completions 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 be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

SOIL BORING LOG INFORMATION SUPPLEMENT Form 4400-122A Rev. 5-97

Boring	g Numb	er	B20	Use only as an attachment to Form 4400-	122.						Pa		of	2
San				Soil/Rock Description						Soil	Prop	erties		
	Length Att. & Recovered (in)	unts	Feet	And Geologic Origin For					sive					23
Number and Type	Length Att. Recovered (Blow Counts	Depth In Feet	Each Major Unit	CS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	uid	Plasticity Index	200	RQD/ Comments
Nun	Len	Blo	Dep		S O	Grap	Wel Dia	PID	Con	Moi	Liquid Limit	Plastic Index	P 20	RQI Com
2104	24	3	Ė					1						
S105 SS	24	3 5 7	-13					•						
ΙÅ		8	-	CLAY, 3 inch yellowish brown (10YR	CI									
			14 	5/6) sand and silt layer at 13.5 feet, low plasticity, brown (10YR 4/3), slight odor. (CL, Lacustrine Offshore Deposit)	CL									
			:	(CL, Lacustrine Offshore Deposit) End of Boring at 14.5 feet.										
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						-						:		
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State of Wisconsin Department of Natural Resources

SOIL BORING LOG INFORMATION Form 4400-122 Rev. 5-97

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							iopinent Zy	Other										
	y/Proje							Licens	e/Permi	t/Monit	oring N	lumbe	r	Borin	Pa g Numl		· of	2
For	mer V	/ & L	Stripp	oing, Inc.											_		00	
Boring	g Dillie	u by (i	rinn nai	me and nam	e or crew	cniei)		Date D	rilling :	Started			ate Dril	ling Co	mpleted	d	Dril	lling Method
				as Brian R		i			8/2	6/1998	8			8/26/	1998		H	SA
WI Ur	nique W	/ell No),	DNR We	II ID No.		on Well Nam	e Final S	tatic W		/el	Surfa	ice Eleva			В	orehole	Diameter
Boring	Locati	ion or I	Local G	rid Origin	(Che		MW300 ated: ()		Feet	MSL	···		595.1			(If appl		Inches
State				Ü			S/C/N	Lat			1'	37.0"	- Locai	OHU LC			icabicj	□ Е
NW		of	1	/4 of Sectio		Т 24	n, r 20 e	Lor	ıg. 8	5°		27.0"	-	Fee	t 🗆 S			Feet W
Facility	y ID			l l	unty OWN			County C	Code	i	Fown/C en Bay		Village					
San	nple		1		OWII			13	1	Gree	li Bay	<u>, </u>	1	Soil	Prop	erties		1
	Ι	ĺ "			So	il/Rock Des	cription								Пор		,	1
L Ø	Att.	ount	n Fee			Geologic C					_		ssive			_		ts
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet]	Each Major	Unit		CS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	uid it	Plasticity Index	0()/ Imer
Nu	Les Re	Bic	D D	_ ASPHA					ΩS	Grap Log	Well Diagr	PID	Cor	S Z	Liquid Limit	Plastic Index	P 200	RQD/ Comments
S101 SS	24 24	3 3 4	1 2 3	to 3.5) for trace classification (10 to fine games (10 YR).	Teet, trace trace to 12) to 12) grained, m (2.5 to 15)	ce silt fro nics and feet, wel brownisl to 6) feet, m (6 to 7	d gravel from (7.5 to 1) marine fossill graded, not yellow (1) yellowish and (8.5 to 6) and (7 to 6)	2) feet, sils nedium 0YR brown o 9.5)				1						
S102 SS	24 24	2 2 4 5	- -4 - - - - - - 5	and (9.5 (6 to 12	to 12)) feet, n d at 8 fe	feet, petro noist at 6 eet. (SW,	oleum odor feet becom Lacustrine	r from ning				87						
S103 SS	24 24	1 2 2 1	-6 -7 -8 -9						SW			137						
S104 SS	24 24	2 1 1	-10 -11 -11	washed								58						
I hereby	certify	that ti	he infor	mation on th	is form i	s true and co	orrect to the b	est of my k	nowled	ge.	<u>.</u>			1	1		I	
Signatu	re	1	Via	de L. s	a Pla	nst	1	orthern E				nsin 54	1304					20) 592-8400 20) 592-8444

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954 Circle Drive Green Bay, Wisconsin 54304

Fax: (920) 592-8444

SOIL BORING LOG INFORMATION SUPPLEMENT Form 4400-122A Rev. 5-97

Boring Number	B30	Use only as an attachment to Form 4400-	122.				Pa	ge 2	of	2
Sample						Soil		erties		
i. & (in)	eet	Soil/Rock Description			မှ					
Number and Type Length Att. & Recovered (in) Blow Counts	Depth In Feet	And Geologic Origin For Each Major Unit	S	o E O	Compressive Strength	5 T		Ŕ		nts
Number and Type Length At Recovered Blow Cou	epth	Bach Major Unit	SC	Graphic Log Well Diagram	mpre	Moisture Content	Liquid Limit	Plasticity Index	8	RQD/ Comments
Z # J W W	L Ă	CIAV some silt discoutions at 1	D	Grapl Log Well Diagr	Str	<u>ട് റ്</u>	Liquic	Plastic Index	P 200	RQD/ Comm
S105 24 1	-	CLAY, some silt, discontinuous layers of black organics, I inch layer of wood		 						
S105 24 1 SS 24 1	-13	fragments at 12.5 feet, medium plasticity	СН	81						
	F	brown (10YR 4/3), petroleum odor. (CL, \Lacustrine Offshore Deposit)								
\mathbb{W}	F-14	SILT, some clay, discontinuous layers of	ML							
		fine grained sand, brown (10yr 4/3), petroleum odor. (ML, Lacustrine Offshore		1 11 1						
		\Deposit)								•
		End of Boring at 14.5 feet.								1
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State of Wisconsin

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SOIL BORING LOG INFORMATION Department of Natural Resources Form 4400-122 Route To: Watershed/Wastewater Waste Management Remediation/Redevelopment- -Other 🗌 Page Facility/Project Name License/Permit/Monitoring Number Boring Number Former V & L Stripping, Inc. B400 Boring Drilled By (Firm name and name of crew chief) Date Drilling Started Date Drilling Completed Drilling Method EDS. Crew Chief was Brian Repinski 8/26/1998 8/26/1998 HSA WI Unique Well No. DNR Well ID No. Final Static Water Level Common Well Name Surface Elevation Borehole Diameter MW400 Feet MSL 594.8 Feet MSL 8.0 Inches Boring Location or Local Grid Origin (Check if estimated: |) Local Grid Location (If applicable) 44° 31' 37.0" State Plane Lat. S/C/N \square N \Box E NW 1/4 of Section 85° 11 N, R 20 E 27.0" Long. Feet S Feet W Facility ID County Civil Town/City/ or Village County Code Brown 5 Green Bay Sample Soil Properties Soil/Rock Description Recovered (in) Depth In Feet Blow Counts Compressive Strength Length Att. And Geologic Origin For PID/FID Moisture Plasticity Each Major Unit Content USC Liquid Limit Well P 200 ASPHALT. SAND, some silt from (8.5 to 12) feet, trace organics and some clay from (9.5 to 12) feet, well graded, medium grained from (2.5 to 8.5) feet, fine grained from 2 (8.5 to 12) feet, dark yellowish brown (10YR 4/6) from (2.5 to 8.5) feet, dark S101 24 3 4 grayish brown (10YR 4/2) from (8.5 to 10 24 SS -3 12) feet, slight organic odor from (10 to 12) feet, saturated at 8.5 feet. (SW, Lacustrine Offshore Deposit) S102 4 3 24 6 SWS103 24 2 2 2

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

Signature Northern Environmental Tel: (920) 592-8400 954 Circle Drive Green Bay, Wisconsin 54304 Fax: (920) 592-8444

14

SOIL BORING LOG INFORMATION SUPPLEMENT Form 4400-122A Rev. 5-97

Boring Number	B40	Use only as an attachment to Form 4400-	122.						Pag		of 2	2
Sample								Soil	Prope	erties		
(in) &	g	Soil/Rock Description					e <					
r Ppe Att.	In Fe	And Geologic Origin For	S	j.	E	Ω	ressi gth	ure nt		ity		ents
Number and Type Length Att. & Recovered (in) Blow Counts	Depth In Feet	Each Major Unit	USC	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
Z B Z W W	Ď	CLAY, with silt, discontinuous layers of	ח	97	≱ Ω I	<u>~</u>	S	20	7 7	면 고	<u>A</u>	₩ O [
105 24 0	F	organics from (12.5 to 13) feet, low				4						
.105 24 0 SS 24 1	-13	plasticity, dark grayish brown (10YR 4/2), slight organic odor. (CL, Lacustrine	CL									
	E	Offshore Deposit)										
\mathbb{N}	- 14											
		End of Boring at 14.5 feet.		2222	Z							
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APPENDIX B2

MONITORING WELL CONSTRUCTION FORMS (FORM 4400-113A) and MONITORING WELL DEVELOPMENT FORMS (FORM 4400-113B)

Wisconsin Route to: Solid Waste Haz. Waste I ent of Natural Resources	
Project Name Local Crid Location of V	Vell Name
1 1	J
License, Permit or Monitoring Number Grid Origin Location	TI. H. W ICO Wis: Unique Well Number DNR Well Number Long. or
	Date Well Installed
Piezometer 12 Section Location of Was	tc/Source mm d d y y
Well Is From Waste/Source Boundary W/1/4 of 1/4 of Sec	Well Installed By: (Person's Name and Firm) BRIAN REPINSE
Location of Well Kelativ	e to Waste/Source
Point of Enforcement Std. Application? u Upgradient Yes Downgradient Upgradient Upgr	s M Sidegradient EDS
:tive pipe, top elevation ft. MSL	1. Cap and lock? Yes \(\sigma\) Yes \(\sigma\) No
	2. Protective cover pipe:
:asing, top elevation 294.68 ft. MSL	a. Inside diameter:
urface elevation _ $\underline{5} \underline{9} \underline{5} . \underline{0}$ ft. MSL	b. Length: _1. Oft.
ze seal, bottom _ 5 9 4 . Q ft. MSL or ft.	c. Material: Steel 04
S classification of soil near screen:	d. Additional protection? Other D
GMG GCG GWG SWG SPG \	If yes, describe:
SC I MLI MII CL I CIL I	3. Surface seal: Bentonite [] 30
ock U	Concrete \(\mathbb{D} \)
analysis attached? Yes No	Other 🗆 🔐
ing method used: Rotary D 5 0 Hollow Stem Auger D 4 1	4. Material between well casing and protective pipe:
(Xher D and	Bentonite 💋 30 Annular space seal 🔲 🐭
	Other 🗆
ing fluid used: Water	5. Annular space seal: a. Granular Bentonite 2 3 3
Drilling Mud 🗆 0 3 None 💆 9 9	bLbs/gal mud weight Bentonite-sand slurry [] 35
ing additives used? Yes No	cLbs/gal mud weight Bentonite slurry 3 1
	d% Bentonite Bentonite-cernent grout \(\Bigcup \) 50
ribe	eFt volume added for any of the above f. How installed: Tremie 01
ce of water (attach analysis):	Tremie punped 0 1
	Gravity 🗹 08
	6. Bentonite seal: a. Bentonite granules 💆 33
nite seal, top _ 5.94.0 ft. MSL or L. D ft.	b. $\Box 1/4$ in. $\Box 3/8$ in. $\Box 1/2$ in. Bentonite pellets $\Box 32$
uid, top	cOther D
und, top _ <u>j 9 ½ o</u> ft. MSL or 3 . o ft.	a. NA
pack, top 592 0 ft. MSL or 30 ft.	b. Volume ackledft ³
	8. Filter pack material: Manufacturer, product name and mesh size
1 joint, top _ 591.5 ft. MSL or _ 3.5 ft.	Bnc 20-40
Co. Ci. MSI w. 12 C fi	b. Volume added
- ∞ttom <u>5</u> <u>8</u> <u>i</u> , <u>5</u> ft. MS1. or _ 1.3 . <u>5</u> ft.	9. Well casing: Flush threaded PVC schedule 40 7 23 Flush threaded PVC schedule 80 1 24
pack, bottom _ 580 & ft. MSL or _ 145 ft.	Other 🛘 🍇
	10. Screen material: BOART
ole, bottom _ 580.5 ft. MSL or 14.5 ft.	a. Screen type: Factory cut 11
	Continuous slot 0 1
the, diameter -8.0 in.	b. Manufacturer Poart ((
well casing _2 3 7 in.	b. Manufacturer DARL 1. (C c. Slot size: 0. 0/Qin.
well casing $2.3.1$ in.	d Slotted length:
rell casing _2 o 4 in.	11. Backfill material (below filter pack): None 2 14
Aller Alera No. 1 de la della caracter de la face e d	Other Other
certify that the information on this form is true and co	itact to the past of the knowledge.

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., Vis. 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 y 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 HOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

of Wisconsin unent of Natural Resources Fuv. Response & Repair Under	MONITORING WELL CONSTRUCTION Form 4400-113A Rev. 4-90
ty/Project Name Local Grid Location o	(Well News
ty License, Permit or Monitoring Number Grid Origin Location	1117 1
TATACCUSE, Letting of Moultollink Minimos. I Chief Duran Location	
	Long or
of Well Water Table Observation Well 11 St. Plane	(IN (L. E. Date Well Installed
Wall Is From Wasta/Source Dougland	
<u>/vw 1/4 or 1/4 or .</u>	Sec. / T. 24 N. R. 20 W. Well Installed By: (Person's Name and Firm)
Location of Well Kela	tive to Waste/Source S Cl Sidegradient Sidegradient Sidegradient
☐ Yes ☐ No d ☐ Downgradient	n Not Known EDS
tective pipe, top elevation ft. MSL	1. Cap and lock? Yes \(\sigma\) Yes \(\sigma\) No
Il casing, top elevation _ 595 03 ft. MSL	2. Protective cover pipe:
d surface elevation _ 29 5 3 ft. MSL	Land diameter:
face seal, bottom _ 5 9 4 .1 ft. MSL or ft.	C. Material: Steel 21 04
SCS classification of soil near screen:	d. Additional protection?
P GM GC GW GSW GSP GM GSC GW GSW GSP G	If yes, describe:
odrock 🗆	3. Surface seal: Bentonite 1 30
eve analysis attached? Yes No	Concrete 🗹 01
illing method used: Rotary [] 50	Other 🗆
Hollow Stem Auger 241	4. Material between well casing and protective pipe:
(Xther 🗀 🎆	Rentonite 2 3 0 Annular space seal
rilling fluid used: Water □ 02 Air □ 01	Other 🗆
Drilling Mud 0 3 None 9 9	5. Annular space seal: a. Granular Bentonite 333
	bLbs/gal mud weight Bentonite-sand slurry [] 35
illing additives used? Yes No	cLbs/gal mud weight Bentonite slurry \[\Bar{\text{3}} \]
and the	d % Bentonite Bentonite-cement grout \[\square 50 \]
escribe	eFt 3 volume added for any of the above f. How installed: Tremie [7] 0.1
and of water (attach marysis).	f. How installed: Tremie Tremie 101 Tremie punped 102
	Gravity 7 08
10 4 1 6 4 1 6 4 6 4 6 4 6 4 6 4 6 4 6 4 6	6. Bentonite seal: a. Bentonite granules 7/33
utonite scal, top _ 2.94.3 ft. MSL or _ 1.0 ft.	b. $\Box 1/4$ in. $\Box 3/8$ in. $\Box 1/2$ in. Bentonite pellets $\Box 32$
: sand, top	COther D
	7. Fine sand material: Manufacturer, product name & mesh size
er pack, top 5933 ft. MSL or 30 ft.	b. Volume ackledft ³
sen joint, top _ <u>5918</u> ft. MSL or _ <u>3</u> 5 ft.	8. Filter pack material: Manufacturer, product name and mesh size
	a. Bmc 20-40 b. Volume added
1 bottom 58 i . 6 ft. MSL or _ 13 . 5 ft.	9. Well casing: Flush threaded PVC schedule 40 \(\overline{2}\) 2 3
or pack, bottom _ 1208 ft. MSL or _ 145 ft.	Flush threaded PVC schedule 80 🔲 24
st back, bottom _ 2 & o it. MSL or _ 14.5 it.	Other 🛘 🎡
chole, bottom _ 500.8 ft. MSL or _ 14.5 ft.	10. Screen material: BOART
	a. Screen type: Factory cut 1 1 Continuous slot 1 0 1
shole, diameter _8.0 in.	Other []
D. Wall agains 7 3 7 .	b. Manufacturer BOARTI. ((
D. well casing 237 in.	c. Slot size: 0. Of Oin. d. Slotted length:
well casing 204 in.	11. Backfill material (below filter pack): None ZI 14
by cartify that the information on this form is true	Other C
by certify that the information on this form is true and co	prrect to the best of my knowledge.
Law Rusingli [EDS	

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., NR 141, 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 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 including where the completed form should be sent.

	id Waste 🗌 Haz. Waste		MONITORING WELL CONSTRUCTION Form 4400 113A Rev 4 90
Project Name	Horal Criet Location of	Oursl Tanks 🛛 (Mer 🗆	htt und
L STRIPPING		K I E	l .
License, Permit or Monitoring Number	Grid Origin Location	N. I. D. E.	Wis, Unique Well Number DNR Well Number
Wellish and South course a management decreases and man is an	l.at	_ Long (or Ballana and an and an
W 1 111 miles 211 1 111 11 21.		_ ſt. N, ſt. E	Date Well Installed
l'iezometer 🔲 12	Section Location of Was		
e Well Is From, Waste/Source Boundary		c. <u>/</u> , T. <u>24</u> N, R. <u>20</u>	
43. [Location of Well Relative	ve to Waste Kource	BRIAN REPINSKI
A Point of Enforcement Std. Application?	u 🛘 Upgradient	s Sidegradient	
☐ Yes 👢 ☐ No	d Downgradient		EDS
ctive pipe, top elevation ft	. MSL	1. Cap and lock	μιω [] 1/0
casing, top elevation	. MSL —	2. Protective co	• •
surface elevation 5949 ft	. MSL	b. Length:	
ce seal, bottom _ 5 93 . 4 ft. MSL or	n. ARREST	c. Material:	Steel Z 04
2S classification of soil near screen:			Other 🔲
	ь Ц <u>, , , , , , , , , , , , , , , , , , </u>	d. Additional	
GMC GCC GWC SWX S		Il yes, des	cribe:
rock 🛘		3. Surface seal;	Bentonite 🔲 30
e analysis attached?	。		Concrete 💋 01
ling method used: Rotary 5	1 1000	4 Material betw	een well casing and protective pipe:
Hollow Stem Auger 24		4. Ivialcitat betw	
Other 🗀 🗒			Bentonite 2 30
			Annular space seal
ling fluid used: Water 0 0 2 Air 0 0		5. Annular space	seal: a. Granular Bentonite 2 3 3
Drilling Mud 🗆 03 None 🗾 9	9 🔉		al mud weight Bentonite-sand slurry [] 35
ing additives used? Yes	. 🐰		al mud weight Bentonite slurry 3 1
2 18	' ₩	₩ d% Be	ntonite Bentonite-cement grout \(\square 50 \)
xibe		е	Ft volume added for any of the above
ce of water (attach analysis):		f. How instal	
			Tremie pumped D 02
	<u> </u>		Gravity 💆 08
nite seal, top _ 293 9 ft. MSL or 1	/ N (6. Bentonite sea	, , , , , , , , , , , , , , , , , , ,
Motoria My _ 222 . Z m motoria 1		b. 11/4 in.	□3/8 in. □ 1/2 in. Bentonite pellets □ 32
and, top	3 o ft.	7. Fine sand mai	erial: Manufacturer, product name & mesh size
.,		a NA	
pack, top <u>5919</u> ft. MSL or	3.0 m	b. Volume ad	
1 joint, top 5 9 1 . 4 ft. MSL or =	35 11.		nterial: Manufacturer, product name and mesh size
, ,	=	a. Bon C b. Volume ad	
ottom _ <u>581</u> . 4 ft. MSL or _ 13	3 5 ft.	9. Well casing:	Flush threaded PVC schedule 40 Z 23
•			Flush threaded PVC schedule 80 \(\square\) 24
pack, bottom _ 180 4 ft. MSL or _ 14	t is u		Other 🛘 🎡
ple, bottom _ 580.4 ft. MSL or 14	15 (10. Screen materi	
me, bottom 2 2 2 t. man or I I	v '''	a. Screen typ	
ile, diameter _8.0 in.			Continuous slot 🔲 01
		h Manufactur	er Boart (
well casing _2 3 7 in.		c. Slot size:	0. O. O. O.
		d Slotted Ien	
oll casing 204 in.		`	al (below filter pack): None 2 14
		-	Other D
certify that the information on this f	form is true and cor	rrect to the best of my k	nowledge.
\B ₁ , () =	Firm		
and Mexically	EDS		

oplete 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., Vis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10,000 for each 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 OTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

te of Wisconsin partment of Natural Resources Route to: Solid Waste [] Haz Waste []	
Env. Response & Repair Underground Underg	Well Name
HL STRIPPING	n. B. Well Name
Anty License, remared Monitoring Number Cond Origin Location	Wis. Unique Well Number DNR Well Number
	ong. or N. William
ou train	N,ft. E. Date Well Installed OB/26/98 Source Date Well Installed OB/26/98
Total in the second of the sec	
N N N N N N N N N N	1. 1. 27 N. R. 00 W. D
The Deliver Fig. 1 and the Control of the Relative to	C Sidegradient
☐ Yes ☐ No d ☑ Downgradient n	
Protective pipe, top elevation ft. MSL	1. Cap and lock? Yes \(\text{No} \)
Well casing, top elevation _ 594.16 ft. MSL	2. Protective cover pipc:
Land surface elevation 597 7 ft. MSL	a. Inside diameter: b. Length: 8. Qn. 7. Q1
	b. Length: c. Material: Steel 204
Surface seal, bottom _ 292.1 ft. MSL or ft.	Other D
USCS classification of soil near screen:	d. Additional protection?
GP GM GC GW GSW SP GSM	If yes, describe:
Bedrock □	3. Surface seal: Bentonite 1 30
. Sieve analysis attached? \(\sum \colon \	Concrete 💆 01
Drilling method used: Rotary 50	4. Material between well casing and protective pipe:
Hollow Stem Auger 🖊 4.1	Bentonite 🗹 3 0
Other 🗆 🎎	Annular space seal
Drilling fluid used: Water □ 02 Air □ 01	Other 🗆 🚃
Drilling Mud 🗆 0 3 None 💆 9 9	5. Annular space seal: a. Granular Bentonite 33
·	bLbs/gal mud weight Bentonite-sand slurry [] 35
. Drilling additives used? Yes No	cLbs/gal mud weight Bentonite slurry d % Bentonite Bentonite-cement grout 50
Describe	cFt 3 volume added for any of the above
Source of water (attach analysis):	f. How installed: Tremic [] 01
	Tremie punped 🔲 02
	Gravity 💆 08
Bentonite seal, top _ 593.1 ft. MSL or _ 1 0 ft.	6. Bentonite scal: a. Bentonite granules 233
	b. 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 3 2
Fine sand, top _ <u>591.7</u> ft. MSL or 3.0 ft.	7. Fine sand material: Manufacturer, product name & mesh size
	A NA
Filter pack, top _ 591 7 ft. MSL or _ 3.0 ft.	b. Volume ackledft ³
Screen joint, top _ 591 2 ft. MSL or _ 3 5 ft.	8. Filter pack material: Manufacturer, product name and mesh size
	a. Bm C 20-40 b. Volume added 13
Well bottom 58 / 2 ft. MSL or _ 13 5 ft.	9. Well casing: Flush threaded PVC schedule 40 2 3
	Flush threaded PVC schedule 80 🔲 24
Filter pack, bottom _ 500 2 ft. MSL or _ 145 ft.	Other 🛘 🚉
Borehole, bottom _ 580.2 ft. MSL or _ 14.5 ft.	10. Screen material: LOART
Borenoie, bouton 2 2 2 n. mos w _ 1 1 0 . n.	a. Screen type: Factory cut 11
Borchole, diameter _8 O in.	Continuous slot Other Other
	b. Manufacturer Poart, ((
O.D. well casing 237 in.	\ c. Slot size: 0. O∫ Oin.
ID well easing 2 o d	d Slotted length:
I.D. well easing 2.94 in.	11. Backfill material (below filter pack): None 14
ereby certify that the information on this form is true and corre	Other Discontinuous Control of the best of my knowledge
gature D · () Firm	and the state of t

see 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 141, 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 00 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 of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 6-97

Route To: Watershed			waste Management					
Remediation	on/Redevel		Other 🗌	118	Vell Name			
Facility/Project Name		County	n.	["	VEII INAIIIC		V100	
Former V & L Stripping, Inc.		County Code	Brown Wis. Unique Well N	umber		DNR Well		
Facility License, Permit or Monitoring Number		1 -	Wis. Offique Well IN	umoci		IDIAIX WEIL	rvamoci	
		5						
1. Can this well be purged dry?	⊠ Ve	s 🗆 No		Be	fore De	velopment	After De	evelopment
1. Can this well be purged dry:	23 10.	3 🗀 110	11. Depth to Water			1		
2. Well development method:			(from top of	a.		7.98 ft.		8.12 n.
surged with bailer and bailed	□ 4	- 1	well casing)					
surged with bailer and pumped	□ 6	1						
surged with block and bailed	□ 4	2	Date	b.	08/2	8/1998	09/	15/1998
surged with block and pumped	□ 6	2						
surged with block, bailed, and pumped	□ 7	0						
compressed air	□ 2	0	Time	c.	08	3:55 am	1	2:00 am
bailed only	⊠ 1	. 0						
pumped only		5 1	12. Sediment in we	11		inches		inches
pumped slowly		50	bottom					
other	_ 0 1		13. Water clarity		lear 🛭	10	Clear 🛛	
					urbid 🗆	1 5	Turbid	2.5
3. Time spent developing well		15 min.		(L	escribe)		(Describe)	
				_				
4. Depth of well (from top of well casing)		14.5 ft.		_				
-				_				
5. Inside diameter of well	:	2.04 in.		_				
				_				
6. Volume of water in filter pack and well		(2)		_				
casing		6.3 gal.				1 11	1: 4	1:4
			Fill in if drilling flu	ids wei	e used an	d well is at soi	iid waste taci	inty:
7. Volume of water removed from well		7.2 gal.						mg/l
			14. Total suspende	d		mg/l		mg/1
8. Volume of water added (if any)		gal.	solids					
			15. COD			mg/l		mg/l
9. Source of water added			13. 332			5		
			16. Well developed	hv. Pe	rson's Nar	ne and Firm		
10. Analysis performed on water added?	П У	es 🗆 No	1					
(If yes, attach results)		25 - 27 110	Jerem	ıy J. F	Claas			
(II yes, attach results)	•		North	ern E	nvironn	nental		
17. Additional comments on development:								
17. Productional comments on activity								
Facility Address or Owner/Responsible Party Ad	dress		I hereby certify tha	it the al	ove infor	mation is true	and correct t	to the best of my
ruomity rudicoso of ownersorpasses,			knowledge.	ii iiic ai	JOVE IIIIOI	mation is true	and volley	
Name:			-					
			0:	000	۸ نیده	16/00	or S	
Firm:			_ Signature:	ب سر	vui!	y Kla	<u> </u>	
			_ Print Name:	J 6	16 W	× Kla	a 5	
Street:			ì			,		
%v/State/Zip:			_ Firm: No	rtherr	<u>Enviro</u>	nmental		
Sawzip.								

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

MONITORING WELL DEVELOPMENT

Facility/Project Name	tion/Rede	velopment 🗵	Other 🗌	1,,,,	1 \ 1							
•		County	<i>D</i>	Well	Well Name							
Former V & L Stripping, Inc Facility License, Permit or Monitoring Number	•	County Code	Brown		M.	W200						
racinty Dicense, Ferritt of Monitoring Number		1	Wis. Unique Well Nu	mber	DNR Wel	l Number						
		5										
. Can this well be purged dry?	⊠ '	Yes □ No		Refo	re Develonment	After Developmen						
am banBan an) .		. 05 🗀 . 10	11. Depth to Water		re Bevelopment	Atter Developmen						
2. Well development method:			(from top of	a.	8.37 ft.	8.47 ft						
surged with bailer and bailed		4 1	well casing)	ει.	0.57 II.	0.47 11						
surged with bailer and pumped		6 1	'									
surged with block and bailed		4 2	Date	b.	08/28/1998	09/15/1998						
surged with block and pumped		6 2	•									
surged with block, bailed, and pumped		70										
compressed air		2 0	Time	c.	10:00 am	12:00 am						
bailed only	\boxtimes	10										
pumped only		5 1	12. Sediment in well		inches	inche:						
pumped slowly		5 0	bottom									
other	_ 🗆	<u>E2</u>	13. Water clarity	Clear	⊠ 10	Clear ⊠ 20						
				Turb	id 🗆 15	Turbid □ 25						
3. Time spent developing well		10 min.		(Desc	ribe)	(Describe)						
Depth of well (from top of well casing)		14.5 ft.										
			·	-								
i. Inside diameter of well		2.04 in.										
b. Volume of water in filter pack and well		<i></i>				***************************************						
casing		5.8 gal.										
			Fill in if drilling fluids	were us	ed and well is at sol	id waste facility:						
V. Volume of water removed from well		2.0 gal.										
			14. Total suspended		mg/l	mg/						
. Volume of water added (if any)		gal.	solids									
			15. COD		M	. и						
Source of water added			13. COD		mg/l	mg/						
			16. Well developed by:	Darcon	's Name and Firm							
Analysis performed on water added?	ПУ	es □ No	10. Well developed by:	reison	S INMINE AND FIRM							
(If yes, attach results)	I	25 140										

Facility Address or Owner/Responsible Party Address Name:	I hereby certify that the above information is true and correct to the best of my knowledge.
Firm:	Signature: Jeremy Klaas
Street:	Print Name: Jeremy 1(1ags
City/State/Zip:	Firm: Northern Environmental

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 6-97

Route To: W	atershed/Wastewate	er 🗆	Waste Management			
R	emediation/Redevel	opment 🖾	Other			
Facility/Project Name		County		Well Name		
Former V & L Strippin	g, Inc.		Brown			V300
Facility License, Permit or Monitoring Nu	imber	County Code	Wis. Unique Well Nur	mber	DNR Well	Number
		5				***************************************
1. Can this well be purged dry?	⊠ Yes	s 🗆 No		Before Dev	velopment	After Development
1. Can this went be purged dry.			11. Depth to Water			
2. Well development method:			(from top of	a .	7.92 n.	8.01 ft.
surged with bailer and bailed	□ 4	1	well casing)			
surged with bailer and pumped	□ 6	1				
surged with block and bailed	□ 4	2	Date	ь. 08/23	8/1998	09/15/1998
surged with block and pumped	□ 6	2				
surged with block, bailed, and pur	nped 🗆 7	0				
compressed air	□ 2	0	Time	c. 11	:00 am	12:00 am
bailed only	⊠ 1	0				
pumped only	□ 5	1	12. Sediment in well		inches	inches
pumped slowly		0	bottom			
other		<u></u>	13. Water clarity	Clear ⊠ Turbid □	1 0 1 5	Clear ⊠ 2 0 Turbid □ 2 5
3. Time spent developing well		20 min.		(Describe)		(Describe)
4. Depth of well (from top of well casing)) 1	14.5 ft.				
5. Inside diameter of well	. 2	2.04 in.				
6. Volume of water in filter pack and wel	1 .					_
casing	11	6.4 gal.				
· · · · · · · · · · · · · · · · · · ·		Ü	Fill in if drilling fluid	s were used and	well is at sol	id waste facility:
7. Volume of water removed from well		10.0 gal.				
7. Volume of water removed from wen		10.0 gai.	14. Total suspended		mg/l	mg/l
8. Volume of water added (if any)		gal.	solids			
9. Source of water added		 	15. COD		mg/l	mg/l
			16. Well developed by	r Person's Nam	ne and Firm	
10. Analysis performed on water added? (If yes, attach results)	☐ Ye	s 🗆 No				
17. Additional comments on developmen	nt:			W. (T.)		
				•	,	
Facility Address or Owner/Responsible I	Party Address		I hereby certify that t knowledge.	the above inform	nation is true	and correct to the best of my
Name:			- A	1.972.40		
				10000	. 1610	\sim
Firm:			_ Signature:	p wine	1 1 1 1 1 1	
Street:			_ Print Name:	Jere	myl	Claas
City/State/Zip:		····	_ Firm: Nort	hern Enviror	nmental	
-						

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

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 6-97

	ershed/wastewater 🔲	Waste Management 1	J	
	nediation/Redevelopment 🛛	Other		
Facility/Project Name	County		Well Name	
Former V & L Stripping,	Inc.	Brown	M	W400
Facility License, Permit or Monitoring Num	ber County C	ode Wis. Unique Well Nu		
	5			
I. Can this well be purged dry?	⊠ Yes □ No		Before Development	After Developmen
		11. Depth to Water (from top of		
2. Well development method:		well casing)	a. 7.48 ft.	7.60 n
surged with bailer and bailed	□ 41	won casing)		
surged with bailer and pumped	□ 61	Date	ь. 08/28/1998	00/15/1000
surged with block and bailed	□ 42	Date	ь. 08/28/1998	09/15/1998
surged with block and pumped	□ 62 ed □ 70			
surged with block, bailed, and pumpe compressed air	ed □ 70 □ 20	Time	a 12:00 nm	12.00
bailed only	□ 20 図 10	Time	c. 12:00 pm	12:00 am
	□ 51	12. Sediment in well	in ale a a	
pumped only pumped slowly	□ 50	bottom	inches	inches
		13. Water clarity	Clear ⊠ 10	Cl 67 2.0
other	U 22	13. Water clarity	Clear ⊠ 10 Turbid □ 15	Clear ⊠ 2.0 Turbid □ 2.5
0.000	22 .		(Describe)	(Describe)
3. Time spent developing well	22 min.		(Describe)	(Describe)
4. Depth of well (from top of well casing)	14.5 ft.			
5. Inside diameter of well	2.04 in.			
6 Values of section of the section 1 and				
6. Volume of water in filter pack and well casing	7.0 gal.			
casing	7.0 gai.	E.n. : (1.11)	1 1 11 11 11 11	
	10.0	Fill in it drilling fluids	s were used and well is at soli	id waste facility;
7. Volume of water removed from well	12.0 gal.	14 70 4 1	d	
0.11.1.00		14. Total suspended solids	mg/l	mg/l
8. Volume of water added (if any)	gal.	Solius		
9. Source of water added		15. COD	mg/l	mg/l
10. Analysis performed on water added?	☐ Yes ☐ No	16. Well developed by	: Person's Name and Firm	
(If yes, attach results)	L 165 L 140			
17. Additional comments on development:			- Brot - A - 100 -	
	•			
Facility Address or Owner/Responsible Party	y Address	I hereby certify that th	ne above information is true a	nd correct to the best of m
Name:		knowledge.	to doore information is true a	and correct to the best of in
Firm:		Signature:	eramy Klas	os
Street:		Print Name:	Jeromy K	QQ5
City/State/Zip:			ern Environmental	
			,	

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



APPENDIX B3

GROUND-WATER MONITORING WELL INFORMATION FORM (FORM 4400-89)

Form 4400-89

Rev. 1-90

Name					Facility ID Number	r Date 3-1-99 Completed By (Name and Firm)																
Form er V & I	L Stripping Inc								Jeremy Klaas N			orthern E	Environmental									
	DNR						Well 0	Casing	Eleva		Refe	rence		141-11	<u></u>			Γ	Type of We	1 (3)		Gradien
	Well ID		.			Date			Top of	Ground	MSL		Screen	Well	L				0.15		Enf. Stds.	
Well Name	Number	Well Location	N	- 5	VV	Established	Diam.	туре	vveii Casing	Surface	(3)	(3)	Length	Depth	Plez	ow	PW	LYS	Other	doned	Apply	or N
MW100			<u> </u>			8-26-98	2.04	SCH40	594.68	595	x		10	14.5		Х				,		s
MW200						8-26-98	2.04	SCH40	595.03	595.3	х		10	14.5		х						U
MW300						8-26-98	2.04	SCH40	594.64	594.86	х		10	14.5		x						N
MW400						8-26-98	2.04	SCH40	954.18	594.7	x		10	14.5		x				· +- · · · · · · · · · · · · · · · · · ·		D
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Looption Car	ordinates Are:					Remarks:								-			p.s	S Us	se:			
LUCATION CO	Local Grid Syste	m State Plane		nates		, comunic.			<u> </u>							-	File Maint. Completed:					
	(perferred)	Centra							-							-	Oth	er				



APPENDIX C BAILER RECOVERY TEST RESULTS

Page 1 Waterloo Hydrogeologic 180 Columbia St. W. slug/bail test analysis HVORSLEV's method Project: KJP0314080663 Waterloo, Ontario, Canada Evaluated by: JJK Date: 19.02.1999 ph.(519)746-1798 Test conducted on: 8-31-98 Slug Test No. 2 MW400 t [s] 800 900 600 700 300 400 500 100 200 0 10⁰ 0 0 10⁻¹ 。MW400 Hydraulic conductivity [cm/s]: 4.78×10^{-5}

Waterloo Hydrogeologic 180 Columbia St. W.

Waterloo,Ontario,Canada ph.(519)746-1798

slug/bail test analysis HVORSLEV's method

Page	2
------	---

Project: KJP0314080663

Evaluated by: JJK | Date: 19.02.1999

Slug Test No. 2

Test conducted on: 8-31-98

MW400

MW400

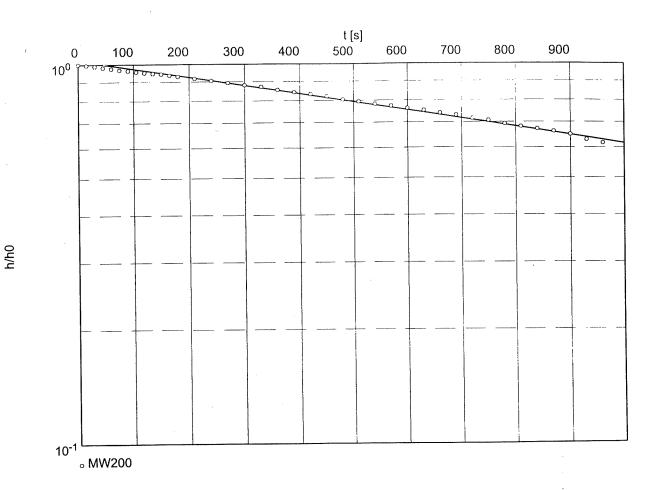
1	į –		Change in Waterlevel	
	[s]	[cm]	[cm]	
	0	363.9	134.7	
2	15	356.9	127.7	
3	30	347.8	118.6	
4	45	341.4	112.2	
5	60	332.8	103.6	
6	75	327.7	98.5	
7	90	320.6	91.4	
8	105	314.6	85.3	
9	120	308.2	78.9	
10	135	300.8	71.6	
11	150	296.0	66.8	
12	165	288.0	58.8	1,00
13	180	282.9	53.6	
14	195	276.8	47.5	
15	210	271.6	42.4	
16	225	268.5	39.3	
17	240	266.7	37.5	
18	255	265.8	36.6	
19	270	265.2	36.0	
20	285	264.6	35.4	
21	300	264.0	34.7	
22	315	263.7	34.4	
23	330	263.7	34.4	
24	345	263.0	33.8	
25	360	262.4	33.2	
26	390	261.5	32.3	
27	420	260.6	31.4	
28	450	259.7	30.5	
29	480	259.1	29.9	
30	510	258.5	29.3	
31	540	257.6	28.3	
32	570	256.9	27.7	
33	600	256.3	27.1	
34	630	255.7	26.5	
35	660 690	254.8	25.6	
36 37	720	254.2	25.0	
37 38		253.6	24.4	
38 39	750	252.4 251.8	23.2 22.6	
9	700	201.0	22.0	
_				
-				
-				

Waterloo Hydrogeologic
180 Columbia St. W.
Waterloo,Ontario,Canada
ph.(519)746-1798

Slug Test No. 1

Test conducted on: 8-31-98

MW200



Hydraulic conductivity [cm/s]: 3.17×10^{-5}

Waterloo Hydrogeologic 180 Columbia St. W. Waterloo,Ontario,Canada ph.(519)746-1798

slug/bail test analysis HVORSLEV's method Page 2
Project: KJP0314080663

Evaluated by: JJK Date: 19.02.1999

Slug Test No. 1	Test conducted on: 8-31-98
MW200	MW200

	Pumping test duration	Water level	Change in	
			Waterlevel	
	[s]	[cm]	[cm]	
1	0	384.7	127.8	-
2	15	384.0	127.1	
3	30	383.1	126.2	
4	45	382.2	125.3	
5	60	381.3	124.4	
6	75	380.4	123.5	
7	90	379.8	122.9	
8	105	378.9	122.0	
9	120	378.3	304.4	-
10	135	377.6	120.7	
11	150	377.3	120.4	
12	165	376.4	119.5	
13	180	375.5	118.6	
14	210	374.0	117.1	
15	240	372.5	115.6	
16	270	370.9	114.0	
17	300	369.4	112.5	
18	330	368.2	111.3	
19	360	366.1	109.2	
20	390	364.5	107.6	
21	420	363.3	106.4	
22	450	361.8	104.9	
23	480	359.7	102.8	
24	510	358.4	101.5	
25	540	356.9	100.0	
26	570	355.7	98.8	
27	600	354.2	97.3	
28	630	353.0	96.1	
29	660	351.4	94.5	
30	690	350.2	93.3	
31	720	348.4	91.5	
32	750	347.2	90.3	
33	780	345.3	88.4	
34	810	343.8	86.9	
35	840	342.6	85.7	
36	870	341.4	84.5	
37	900	339.9	83.0	
38	930	337.1	80.2	
39	960	335.6	78.7	
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APPENDIX D

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

▲ Northern Environmental " Hydrologists • Engineers • Geologists

APPENDIX D1 SOIL SAMPLES

r 1090 Kennedy Ave. Kimberly, WI 54136 ≈ 920-735-8295

LYNELLE CAINE

NORTHERN ENVIRONMENTAL

954 CIRCLE DRIVE

GREEN BAY WI 54304

Report Date:

08-Sep-98

Project #:

K

KJP0314080663

WI DNR Certified Lab #445027660

Project:

Green Bay

Sample ID:

S101

Lab Code:

5022618A

Sample Type:

Soil

Sample Date:

26-Aug-98

Test	Result	LØD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	91.0			%		28-Aug-98	JHL	1
LEAD - SW846 6010	7 "J"	6	20	MG/KG	1	02-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	< 10	0.3	1.1	MG/KG	1	29-Aug-98	BDB	1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature

Association of the second seco



190 Kennedy Ave. Kimberly, WI 54136 20-735-8295

VOC Method 8021 Volatile Organic Compounds (Methanol Preserved)

YNELLE CAINE ORTHERN ENVIRONMENTAL 54 CIRCLE DRIVE REEN BAY WI 54304

eport Date:

08-Sep-98

CJR

nalyzed By:

ANALYTE	RESULT	LOD	LOQ	Dilution
711111111		UG/KG	UG/KG	Factor
enzene	< 25	5.9	20	1
romobenzene	< 25	3.1	10	1
romodichloromethane	< 25	2.7	8.9	1
-Butylbenzene	< 25	2.5	8.4	1
ec-Butylbenzene	< 25	4.8	16	1
art-Butylbenzene	< 25	2.3	7.7	1
arbon Tetrachloride	< 25	2.2	7.2	1 .
hlorobenzene	< 25	2.5	8.2	1
hloroethane	< 25	5	17	1
hloroform	< 25	2.8	9.2	1
hloromethane	< 25	7.3	24	1
:-Chlorotoluene	< 25	2.4	7.9	1
-Chlorotoluene	< 25	2.3	7.8	1
,2-Dibromo-3-Chloropropane		2.1	7.1	1
Abromochloromethane	< 25	2	6.7	1
2-Dichlorobenzene	< 25	2.2	7.2	1
.3-Dichlorobenzene	< 25	2.2	7.4	1
1,4-Dichlorobenzene	< 25	2.2	7.2	1
)ichlorodifluoromethane	< 25	4.3	14	1
I,1-Dichloroethane	< 25	2.3	7.6	1
1,2-Dichloroethane	< 25	2.7	9.1	1
	< 25	2.2	7.5	1
1,1-Dichloroethene	< 25	2.8	9.3	1
ds-1,2-Dichloroethene	< 25	3.5	1	1
rans-1,2-Dichloroethene	< 25	2.4	1	1
1,2-Dichloropropane 1,3-Dichloropropane	< 25	2.2		3 1

Fluorobenzene Surrogate 1,4-Dichlorobutane Surrogate Total % Solids 106 % Rec. 98 % Rec. 91

106 % Rec.

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project : Sample ID: Green Bay S101

Lab Code:

5022618A Soil

Sample Type: Sample Date:

26-Aug-98

Date Analyzed:

31-Aug-98

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/KG	UG/KG	Factor
2,2-DCP,cis-1,2-DCE	< 25	4.1	14	1
Di-isopropyl Ether	< 25	3.9	13	1
Ethylbenzene	< 25	6.2	11	1
EDB (1,2-Dibromoethane)	< 25	4.2	14	1
Hexachlorobutadiene	< 25	4.8	16	1
Isopropylbenzene	< 25	5	17	1
p-Isopropyltoluene	< 25	3.4	11	1
Methylene Chloride	< 25	3.3	11	1
MTBE	< 25	7	23	1
Naphthalene	< 25	7	23	1
n-Propylbenzene	< 25	2.8	Į.	1 1
1,1,2,2-Tetrachloroethane	< 25	7.1	24	1 1
Tetrachloroethene	2	- 1	l	1
Toluene	< 25	5.1	1	1
1,2,3-Trichlorobenzene	< 25	5.4	1	
1,2,4-Trichlorobenzene	< 25	5.1	1	1
1,1,1-Trichloroethane	< 25	2.3		1
1,1,2-Trichloroethane	< 25	2	1	1
Trichloroethene	< 25	4.6	1	
Trichlorofluoromethane	< 25	19	1	
1,2,4-Trimethylbenzene	< 25	2.4		
1,3,5-Trimethylbenzene	< 25	3.8		1
Vinyl Chloride	< 25	4.7	1	
m&p-Xylene	< 50	5.6	1	
o-Xylene	< 25	2.	7 9	1

LOD = Limit of Detection

LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

060453

GC #6

Authorized Signature



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295 WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0314080663

S101

Report Date: Lab Code: 08-Sep-98 5022618A

MATRIX REPLICATE BLANK PID KNOWN INITIAL ANALYTE SURROGATE CALIBRATION STANDARD SPIKE SPIKE SURROGATE Benzene Р Р Р Bromobenzene Bromodichloromethane P Ρ n-Butylbenzene P P sec-Butylbenzene tert-Butylbenzene P P Carbon Tetrachloride Ρ P P Chlorobenzene ρ Chloroethane Chloroform Chloromethane 2-Chlorotoluene Р Р 4-Chlorotoluene Р 1,2-Dibromo-3-Chloropropane Dibromochloromethane Р P P 1,2-Dichlorobenzene P P 1,3-Dichlorobenzene Р Р 1.4-Dichlorobenzene P Dichlorodifluoromethane 1,1-Dichloroethane Р P 1,2-Dichloroethane P 1,1-Dichloroethene cis-1,2-Dichloroethene P P P P Р trans-1,2-Dichloroethene 1,2-Dichloropropane P 1,3-Dichloropropane 2,2-DCP,ds-1,2-DCE P P Di-isopropyl Ether Р Ethylbenzene EDB (1,2-Dibromoethane) Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Methylene Chloride Р P Naphthalene Р n-Propylbenzene 1,1,2,2-Tetrachloroethane P P Tetrachloroethene Toluene 1,2,3-Trichlorobenzene P P 1,2,4-Trichlorobenzene P 1,1,1-Trichloroethane 1,1,2-Trichloroethane P Trichlomethene Р Trichlorofluoromethane Ρ P 1,2,4-Trimethylbenzene Р 1,3,5-Trimethylbenzene Vinyl Chloride P P ρ Р m&p-Xylene o-Xylene

P = Passed QC limits.

F = Failed QC limits.

NA = Not Applicable QC Batch # 060453

"J" Flag: Analyte detected between LOD and LOQ.

Authorized Signature

fina -



1090 Kennedy Ave. Kimberly, WI 54136 120-735-8295

YNELLE CAINE

10RTHERN ENVIRONMENTAL

)54 CIRCLE DRIVE

SREEN BAY WI 54304

Report Date:

08-Sep-98

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project :

Green Bay

Sample ID:

S201

Lab Code:

5022618B

Sample Type:

Soil

Sample Date:

26-Aug-98

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By	QC Code
TOTAL SOLIDS	96.2			%		28-Aug-98	JHL	1
:EAD SW846 6010	14 "J"	6	20	MG/KG	1	02-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	< 10	0.3	1.1	MG/KG	1	29-Aug-98	BDB	1

COD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature

fin



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

VOC

Method 8021 Volatile Organic Compounds (Methanol Preserved)

LYNELLE CAINE NORTHERN ENVIRONMENTAL 954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

08-Sep-98

Analyzed By:

CJR

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/KG	UG/KG	Factor
Benzene	< 25	5.9	20	1
Bromobenzene	< 25	3.1	10	1
Bromodichloromethane	< 25	2.7	8.9	1
n-Butylbenzene	< 25	2.5	8.4	1
sec-Butylbenzene	< 25	4.8	16	1
tert-Butylbenzene	< 25	2.3	1	1
Carbon Tetrachloride	< 25	2.2	7.2	1
Chlorobenzene	< 25	2.5	8.2	1
Chloroethane	< 25	5	17	1
Chloroform	< 25	2.8	9.2	1
Chloromethane	< 25	7.3	24	1
2-Chlorotoluene	< 25	2.4	7.9	1
4-Chlorotoluene	< 25	2.3	7.8	1
1,2-Dibromo-3-Chloropropane	1 1	2.1	7.1	1
Dibromochloromethane	< 25	2	6.7	1
1,2-Dichlorobenzene	< 25	2.2	7.2	1
1,3-Dichlorobenzene	< 25	2.2	7.4	1
1,4-Dichlorobenzene	< 25	2.2	7.2	1
Dichlorodifluoromethane	< 25	4.3	14	1
1,1-Dichloroethane	< 25	2.3	7.6	1
1,2-Dichloroethane	< 25	2.7	9.1	1 -
1,1-Dichloroethene	< 25	2.2	7.5	1
cis-1,2-Dichloroethene	< 25	2.8	9.3	1
trans-1,2-Dichloroethene	< 25	3.5	12	1
1,2-Dichloropropane	< 25	2.4	8	1

Fluorobenzene Surrogate

1.4-Dichlorobutane Surrogat

1,3-Dichloropropane

1,4-Dichlorobutane Surrogate

Total % Solids

103 % Rec. 99 % Rec. 7.3

96.2

< 25

Project #: Project :

KJP0314080663

Sample ID:

Green Bay S201

Lab Code: Sample Type:

5022618B Soil

Sample Date: Date Analyzed: 26-Aug-98

31-Aug-98

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/KG	UG/KG	Factor
2,2-DCP,cis-1,2-DCE	< 25	4.1	14	1
Di-isopropyl Ether	< 25	3.9	13	1
Ethylbenzene	< 25	6.2	11	1
EDB (1,2-Dibromoethane)	< 25	4.2	14	1
Hexachlorobutadiene	< 25	4.8	16	1
Isopropylbenzene	< 25	5	17	1
p-Isopropyltoluene	< 25	3.4	11	1
Methylene Chloride	< 25	3.3	11	1
MTBE	< 25	7	23	1
Naphthalene	< 25	7	23	1
n-Propylbenzene	< 25	2.8	9.2	1
1,1,2,2-Tetrachloroethane	< 25	7.1	24	1
Tetrachloroethene	190	3.6	12	1
Toluene	< 25	5.1	17	1
1,2,3-Trichlorobenzene	< 25	5.4	18	1
1,2,4-Trichlorobenzene	< 25	5.1	17	1
1,1,1-Trichloroethane	< 25	2.3	7.6	1
1,1,2-Trichloroethane	< 25	2	6.7	1
Trichloroethene	< 25	4.6	15	1
Trichlorofluoromethane	< 25	19	65	1
1,2,4-Trimethylbenzene	< 25	2.4	8	1
1,3,5-Trimethylbenzene	< 25	3.8	13	1
Vinyl Chloride	< 25	4.7	16	1
m&p-Xylene	< 50	5.6	19	1
o-Xylene	< 25	2.7	9	1

LOD = Limit of Detection

LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

060453

GC #6

Authorized Signature

090 Kennedy Ave. Kimberly, WI 54136 20-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #:

KJP0314080663 S201

Report Date: Lab Code:

08-Sep-98 5022618B

Sample ID:

ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	900010000000000000000000000000000000000	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
	CALIBRATION	P	P	P	Р	Р	Р
Benzene	P	P	P	P	P	Р	₽
Bromobenzene	P	P	P	P	P	P	Р
Bromodichloromethane	'	P	P	P	P	P	Р
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	Р	l P	P	Р	P	P	Р
tert-Butylbenzene	P P	P	P	P	P	Р	Р
Carbon Tetrachloride	1 .	P	P	P	P	Р	Р
Chlorobenzene	P	F	P	P	P	P	Р
Chloroethane	P	P P	P	P	P	P	Р
Chloroform		F	F	P	P	Р	Р
Chloromethane	Р	P	P	Р	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	Р
4-Chlorotoluene	P	P	P	P	P	Р	Р
1,2-Dibromo-3-Chloropropane	P	P	P	P	Р	P	Р
Dibromochloromethane	P	P	P	P	Р	P	Р
1,2-Dichlorobenzene	P	P	P) _p	P	P	Р
1,3-Dichlorobenzene	P	P	P	P	P	P	Р
1.4-Dichlorobenzene	P	F	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1.1-Dichloroethane	P		P	P	P	P	Р
1,2-Dichloroethane	Р	P	P	P	P	P	P
1.1-Dichloroethene	Р	F	P	P	P	P	P
ds-1,2-Dichloroethene	P		P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	i p	P	Р
1.2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	Р	P	P	P	P	P	Р
2,2-DCP,ds-1,2-DCE	Р	F	P	P	P	P	P
Di-isopropyi Ether	P	P	P	P	P	P	Р
Ethylbenzene	P		P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P) F	P	Р	P
Hexachiorobutadiene	Р	P	P	P	P	P	P
Isopropylbenzene	P	Р	P	P	P	P	Р
p-tsopropyttoluene	Р	Р	P	P	P	P	Р
Methylene Chloride	P	Р	P	P	P	P	P
MTBE	P	P	P	P	P	P	l p
Naphthalene	P	P	P	P	P	P	P
n-Propyibenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	þ	P	P	Р
Tetrachloroethene	,	P	P	P	P	Р	Р
Toluene	· Р	P	P	P	l p	Р	P
1,2,3-Trichlorobenzene	P	P	P	P	P	Р	P
1,2,4-Trichlorobenzene	P		P	P	P	P	l P
1,1,1-Trichloroethane	P	F	P	P	P	Р	P
1,1,2-Trichloroethane	P	P	P	P	P	P	Р
Trichloroethene	P	P	F	P	l P	Р	Р
Trichlorofluoromethane		P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	Р
1,3,5-Trimethylbenzene	Р	P	P	P	P	Р	Р
Vinyl Chloride	P	l P	P	P	P	P	Р
m&p-Xylene	P	P	P	P	P	P	Р
o-Xylene	P	٢	-				

P = Passed QC limits.

F = Failed QC limits.

NA = Not Applicable QC Batch # 060453

"J" Flag: Analyte detected between LOD and LOQ.

Authorized Signature



11090 Kennedy Ave. Kimberly, WI 54136 4920-735-8295

LYNELLE CAINE

Report Date:

NORTHERN ENVIRONMENTAL

954 CIRCLE DRIVE

GREEN BAY WI 54304

04-Sep-98

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project:

Green Bay

Sample ID:

S301

Lab Code:

5022618C

Sample Type:

Soil

Sample Date:

26-Aug-98

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	93.0			%		28-Aug-98	JHL .	1
LEAD SW846 6010	8 "J"	6	20	MG/KG	1	02-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	< 10	0.3	1.1	MG/KG	1	29-Aug-98	BDB	1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature

fin



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

GC #6

VOC

Method 8021 Volatile Organic Compounds (Methanol Preserved)

LYNELLE CAINE NORTHERN ENVIRONMENTAL 954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

04-Sep-98

Analyzed By:

CJR

ANALYTE	RESULT	LOD	LOQ	Dilution	I
		UG/KG	UG/KG	Factor	ı
Benzene	< 25	5.9	20	1	ı
Bromobenzene	< 25	3.1	10	1	ı
Bromodichloromethane	< 25	2.7	8.9	1	ı
n-Butylbenzene	< 25	2.5	8.4	1	l
sec-Butylbenzene	< 25	4.8	16	1	Į
tert-Butylbenzene	< 25	2.3	1	1	ı
Carbon Tetrachloride	< 25	2.2	1 1	1	۱
Chlorobenzene	< 25	2.5	8.2	1	Į
Chloroethane	< 25	5	17	1	ı
Chloroform	< 25	2.8	9.2	1	ı
Chloromethane	< 25	7.3	1		I
2-Chlorotoluene	< 25	2.4	1	l .	
4-Chlorotoluene	< 25	2.3	1	ł	
1,2-Dibromo-3-Chloropropane	< 25	2.1	1	l	I
Dibromochloromethane	< 25	2		1	I
1,2-Dichlorobenzene	< 25	2.2	1	i	
1,3-Dichlorobenzene	< 25	2.2	1	1	
1,4-Dichlorobenzene	< 25	2.2	1	1	
Dichlorodifluoromethane	< 25	4.3	1	1	١
1,1-Dichloroethane	< 25	2.3	1	1	Į
1,2-Dichloroethane	< 25	2.7	1	i .	
1,1-Dichloroethene	< 25	2.2		i i	
cis-1,2-Dichloroethene	< 25	2.8	1	1	
trans-1,2-Dichloroethene	< 25	3.5	1	1	
1,2-Dichloropropane	< 25	2.4			
1 '	. 0.5	1 2) 73	≀\ 1	

< 25

Fluorobenzene Surrogate
1,4-Dichlorobutane Surrogate
Total % Solids

1,3-Dichloropropane

110 % Rec.

95 % Rec.

Project #: Project:

KJP0314080663

Green Bay S301

Sample ID: Lab Code:

5022618C

Sample Type: Sample Date: Soil 26-Aug-98

Date Analyzed:

31-Aug-98

e Allalyzeu.	O i i i i i i
ANALYTE	RESULT

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/KG	UG/KG	Factor
2,2-DCP,cis-1,2-DCE	< 25	4.1	14	1
Di-isopropyl Ether	< 25	3.9	13	1
Ethylbenzene	< 25	6.2	11	1
EDB (1,2-Dibromoethane)	< 25	4.2	14	1
Hexachlorobutadiene	< 25	4.8	16	
Isopropylbenzene	< 25	5	17	
p-Isopropyltoluene	< 25	3.4	11	1
Methylene Chloride	< 25	3.3	I .	1
МТВЕ	< 25	7	23	
Naphthalene	< 25	7	23	
n-Propylbenzene	< 25	2.8	1	
1,1,2,2-Tetrachloroethane	< 25	7.1	24	1 1
Tetrachloroethene	< 25	3.6	1	1 1
Toluene	< 25	5.1		1
1,2,3-Trichlorobenzene	< 25	5.4	1	1
1,2,4-Trichlorobenzene	< 25	5.1	1	1
1,1,1-Trichloroethane	< 25	2.3	1	
1,1,2-Trichloroethane	< 25	2		1
Trichloroethene	< 25	4.6	1	i .
Trichlorofluoromethane	< 25	19	i	1
1,2,4-Trimethylbenzene	< 25	2.4	1	
1,3,5-Trimethylbenzene	< 25	3.8	1	1
Vinyl Chloride	< 25	4.7		
m&p-Xylene	< 50	5.6		1
o-Xylene	< 25	2.7	7 9	9 1

LOD = Limit of Detection

LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

060453

Authorized Signature

2.2

7.3

1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

LYNELLE CAINE

NORTHERN ENVIRONMENTAL

54 CIRCLE DRIVE

GREEN BAY WI 54304

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project:

Green Bay

Sample ID:

S401

Lab Code:

5022618D

Sample Type:

Soil

Sample Date:

26-Aug-98

Report Date:	04-Sep-98				Sample Date:	26-Aug-98		
Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By	QC Code
TOTAL SOLIDS	87.9			%		28-Aug-98	JHL	1
LEAD SW846 6010	8 "J"	6	20	MG/KG	1	02-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	< 10	0.3	1.1	MG/KG	1	29-Aug-98	BDB	1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

VOC

Method 8021 Volatile Organic Compounds (Methanol Preserved)

YNELLE CAINE NORTHERN ENVIRONMENTAL **354 CIRCLE DRIVE** GREEN BAY WI 54304

Report Date: Analyzed By: 04-Sep-98

CJR

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/KG	UG/KG	Factor
Benzene	< 25	5.9	20	1
Bromobenzene	< 25	3.1	10	1
Bromodichloromethane	< 25	2.7	8.9	1
n-Butylbenzene	< 25	2.5	8.4	1
sec-Butylbenzene	< 25	4.8	16	, 1
tert-Butylbenzene	< 25	2.3	7.7	1
Carbon Tetrachloride	< 25	2.2	7.2	1
Chlorobenzene	< 25	2.5	8.2	1
Chloroethane	< 25	5	17	1
Chloroform	< 25	2.8	9.2	1
Chloromethane	< 25	7.3	24	1
2-Chlorotoluene	< 25	2.4	7.9	1
4-Chlorotoluene	< 25	2.3	7.8	1
1,2-Dibromo-3-Chloropropane	< 25	2.1	7.1	
Dibromochloromethane	< 25	2	6.7	1
1,2-Dichlorobenzene	< 25	2.2	1	l .
1,3-Dichlorobenzene	< 25	2.2	7.4	1
1,4-Dichlorobenzene	< 25	2.2	1	l
Dichlorodifluoromethane	< 25	4.3	1	1
1,1-Dichloroethane	< 25	2.3	1	1
1,2-Dichloroethane	< 25	2.7	9.1	1
1,1-Dichloroethene	< 25	2.2		i
cis-1,2-Dichloroethene	< 25	2.8		1
trans-1,2-Dichloroethene	< 25	3.5		1
1,2-Dichloropropane	< 25	2.4		1
1,3-Dichloropropane	< 25	2.2	7.3	1

Fluorobenzene Surrogate 1,4-Dichlorobutane Surrogate **Total % Solids**

87.9

111 % Rec. 96 % Rec.

KJP0314080663 Project #: Green Bay Project: S401 Sample ID: 5022618D Lab Code: Soil Sample Type: 26-Aug-98 Sample Date: 31-Aug-98 Date Analyzed:

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/KG	UG/KG	Factor
2,2-DCP,cis-1,2-DCE	< 25	4.1	14	1
Di-isopropyl Ether	< 25	3.9	13	1
Ethylbenzene	< 25	6.2	11	1
EDB (1,2-Dibromoethane)	< 25	4.2	14	1
Hexachlorobutadiene	< 25	4.8	16	1
Isopropylbenzene	< 25	5	17	1
p-Isopropyltoluene	< 25	3.4	11	1
Methylene Chloride	< 25	3.3	11	1
МТВЕ	< 25	7	23	1
Naphthalene	< 25	7	23	1
n-Propylbenzene	< 25	2.8	9.2	1
1,1,2,2-Tetrachloroethane	< 25	7.1	24	1
Tetrachloroethene	< 25	3.6	12	ł
Toluene	< 25	5.1	17	
1,2,3-Trichlorobenzene	< 25	5.4	18	1
1,2,4-Trichlorobenzene	< 25	5.1	17	
1,1,1-Trichloroethane	< 25	2.3	7.6	1
1,1,2-Trichloroethane	< 25	2	6.7	1
Trichloroethene	< 25	4.6	15	1
Trichlorofluoromethane	< 25	19	65	1
1,2,4-Trimethylbenzene	< 25	2.4	[1
1,3,5-Trimethylbenzene	< 25	3.8	13	1
Vinyl Chloride	< 25	4.7	16	1
m&p-Xylene	< 50	5.6	19	1
o-Xylene	< 25	2.7	9	1

LOD = Limit of Detection

LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

060453

GC #6

Authorized Signature



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0314080663

S401

Report Date: Lab Code: 04-Sep-98

5022618D

ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATI
	P	P	P	P	P	P	P
Benzene	P	P	P	P	P	Р	P
Bromobenzene	P	P	þ	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	1 .	P	P	P	P	p	P
sec-Butylbenzene	P	1	1 '	P	P	P	P
ert-Butylbenzene	P	Р	P	P	P	P	P
Carbon Tetrachloride	Р	P	P		P	P	P
Chlorobenzene	Р	P	Р	P		,	P
Chloroethane	Р	F	P	P	Р	P	
Chloroform	Р	P	Р	Р	P	Р	Р
Chloromethane	P	F	F	Р	P	Р	Р
2-Chlorotoluene	P	Р	P	P	P	Р	Ρ
4-Chlorotoluene	Р	P	P	P	Р	Р	P
1.2-Dibromo-3-Chloropropane	P	P	P	Р	P	P	P
Dibromochloromethane	P	P	P	P	P	Р	P
1.2-Dichlorobenzene	P	P	P	Р	P	Р	Р
1,3-Dichlorobenzene	ĺ P	P	P	P	P	P	P
1.4-Dichlorobenzene	P	P	Р	₽	P	Р	P
Dichlorodifluoromethane	P	F	P	Р	P	P	P
1.1-Dichloroethane	P	P	Р	Р	P	Р	P
1,2-Dichloroethane	P	P	P	Р	P	Р	P
	P	F	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
ds-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	, , , , , , , , , , , , , , , , , , ,	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	F	P	P	P	P	Р
2,2-DCP,cis-1,2-DCE		·P	P	P	P	P	P
Di-Isopropyl Ether	P		P	P	P	P	P
Ethylbenzene	P	P	1 .	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	, ,	, .		
Hexachlorobutadiene	P	Р	P	P	Р	P	Р
Isopropylbenzene	Р	P	P	Р	P	P	Р
p-Isopropyitoluene	Р	P	P	P	P	P	Р
Methylene Chloride	P	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	Р
Naphthalene	P	F	P	Р	P	Р	Р
n-Propylbenzene	P	Р	P	Р	P	P	P
1,1,2,2-Tetrachloroethane	Р	Р	P	Р	Р	P	P
Tetrachloroethene	Р	, Р	į P	Р	P	P	P
Toluene	P	P	P	Р	P	Р	P
1,2,3-Trichlorobenzene	P	Р	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	Р	P	l P	P	P
1.1.1-Trichloroethane	P.	F	Р	. Р	P	Р	P
1.1.2-Trichloroethane	P	P	Р	Р	P	P	P
Trichloroethene	Р	P	P	Р	P	Р	P
Trichlorofluoromethane	Р	P	į į	P	P	P	Р
	P	P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	Р
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene		P	P	P	P	P	P
o-Xylene	Ь.	Ι Ρ	1 1	P	P	P	, r

P = Passed QC limits.

Authorized Signature

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F = Failed QC limits.

NA = Not Applicable
QC Batch # 060453

[&]quot;J" Flag: Analyte detected between LOD and LOQ.



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

YNELLE CAINE

JORTHERN ENVIRONMENTAL

354 CIRCLE DRIVE

GREEN BAY WI 54304

Report Date:

04-Sep-98

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project:

Green Bay

Sample ID:

S302

Lab Code:

5022618E Soil

Sample Type: Sample Date:

26-Aug-98

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
FOTAL SOLIDS	90.8			%		28-Aug-98	JHL	1
SW846 8020 (Meth Pres.) Benzene Ethylbenzene MTBE Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylenes Fluorobenzene Surrogate	< 25 < 25 < 25 < 25 < 25 170 140 < 50	5.9 6.2 7 5.1 2.4 3.8 8.3	11 23 17 8 13	UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG W Rec.	1 1 1 1 1 1	02-Sep-98	BDB	1 1 1 1 1 1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature

file

CHAIN OF CUSTODY RECLAND REQUEST FOR ANALTSIS

No: 10748

1214 W. Venture Ct.
Mequon, WI 53092
414-241-3133
FAX 414-241-8222

372 West County Road D New Brighton, MN 55112 612-635-9100 FAX 612-635-0643 954 Circle Driver Green Bay, WI 54304 920-592-8400 FAX 920-592-8444

330 South 4th Avenue
Park Falls, WI 54552
715-762-1544
FAX 715-762-1844

1203 Storbeck Drive Waupun, WI 53963 920-324-8600 FAX 920-324-3023 217 S. 7th Street Suite 208 Brainerd, MN 56401 218-825-9001 FAX 218-825-9002

Check office originating request

	5022	813	
Project No: Task No: KJP 03 1408 0663 150 Project Location: Green Bay	Wisconsin DNR Certification #: 4 450 2 7660	Sample Integrity - To be completed by receiving lab Seal intact upon receipt yes no Method of shipment	
Project Manager: Lynelle Caine	Laboratory Contact: Mike Ricker	Contents Temperature (C °C Refrigerator No. (ANALYSES REQUESTED	(6)
Sampler: (name) Jeremy (laas	Price Quote:		
Sampler: (Signature) evening 14 and	TURNAROUND TIME REQUIRED	d Meth	
Sampling Date(s): 8 - 26 - 98	Normal Rush	odiffie Method Method	
Reports to be Sent to: Lynelle Caine	Date Needed 9 - 3 - 98	DPO (WI Modified Method) GRO (WI Modified Method) BETX (EPA Method 8020) VOC (EPA Method 8021) PAH (EPA Method) Pb (EPA Method)	
Lab Sample No. Collection No. of Containers, Size & Type	Description Preservative Water Soil Other		
168A 5101 8-26 9:09 1-202 9:055	x hone(ice)) x X X	
B 5201 8-26 10:20 1-203 1 3/css	x none (ce)		
C 5301 8-26 11:34 1-202 1-25ml D 5401 8-26 1:08 1-202 1-25ml	X none	$\sqrt[3]{} \chi $	
D 5401 8-26 1:08 1-202 1-25ml E 5302 8-26 11:38 1-202 1-25ml		× × ×	
C 3 3 C 2 0 7 C 11.10 1 7 7 C 1 7 2 5 M	x none (ice	³ / X X	
Packed for Shipping by: Comments: Shipment Date:			
01-1516			
Relinquished By: Date: Date: 27/98	Relinquished By:	Date: Relinodished By: Date:	
Company: NET) Time: 7820	Company:	Time: Company:	-1
Received Boy Date: 8-27-97	Received By:	Date: Received By: Date Shows	97
Company: US 014 Time: 30	Company:	Time: Company: Time: 2: 0	······································

** Northern Environmental ** Hydrologists • Engineers • Geologists

APPENDIX D2

GROUND-WATER SAMPLES



190 Kennedy Ave. Kimberly, WI 54136 20-735-8295

COLE LAPLANT

ORTHERN ENVIRONMENTAL

34 CIRCLE DRIVE REEN BAY WI 54304

eport Date:

11-Sep-98

Project #:

KJP0663

Project:

Green Bay

Sample ID:

MW100

Lab Code:

5022665A

Sample Type: Water

Sample Date:

31-Aug-98

Test	Result	LOD		Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
:AD \$W846 7421	< 1.0	1	3.3	UG/L	1.0	1	09-Sep-98	SRF	1
DDIFIED GRO VDNR SEP 95	2600	9.3	31	UG/L	1.8	1	04-Sep-98	BDB	1

)D = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

WI DNR Certified Lab #445027660

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

Method 8021 Volatile Organic Compounds

NICOLE LAPLANT NORTHERN ENVIRONMENTAL 954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

11-Sep-98

Analyzed By: DRL

ANALYTE	RESULT	LOD	LOQ	Dilution
70712112		UG/L	UG/L	Factor
Benzene	< 32	32	110	100
Bromobenzene	< 32	32	110	100
Bromodichloromethane	< 38	38	130	100
n-Butylbenzene	< 23	23	78	100
sec-Butylbenzene	< 34	34	110	100
ert-Butylbenzene	< 33	33	110	100
Carbon Tetrachloride	< 47	47	160	100
Chlorobenzene	< 31	31	100	100
Chloroethane	< 13	13	42	100
Chloroform	< 40	40	130	100
Chloromethane	< 18	18	59	100
2-Chlorotoluene	< 31	- 31	100	100
4-Chlorotoluene	< 31	31	100	100
1,2-Dibromo-3-Chloropropane	< 22	22	73	100
Dibromochloromethane	< 37	37	120	100
1,2-Dichlorobenzene	< 29	29	100	100
1,3-Dichlorobenzene	< 28	28	94	100
1,4-Dichlorobenzene	< 28	28	92	100
Dichtorodifluoromethane	< 28	28	92	100
1,1-Dichloroethane	< 34	34	130	100
1,2-Dichloroethane	< 36	36	120	100
1,1-Dichloroethene	< 39	39	130	100
cis 1,2-Dichloroethene	200	32	110	100
trans-1,2-Dichloroethene	< 38	38	130	100
1,2-Dichloropropane	< 38	38	130	100
1,3-DCP, Tetrachloroethene	< 75	75	250	100

Fluorobenzene Surrogate 1.4-Dichlorobutane Surrogate

91 % Rec. 95 % Rec. 1.3

Sample pH

Project #: Project:

KJP0663 Green Bay

Sample ID: Lab Code:

MW100 5022665A

Sample Type:

Water

Sample Date: Date Analyzed: 31-Aug-98

	_
10-S∈	98-q s

ANALYTE	RES	JLT	LOD	LOQ	Dilution
			UG/L	UG/L	Factor
2,2-Dichloropropane	< 56		56	190	100
Di-isopropyl Ether	< 32		32	110	100
Ethylbenzene	< 34		34	110	100
EDB (1,2-Dibromoethane)	< 35		35	120	100
Hexachlorobutadiene	< 27		27	91	100
Isopropylbenzene	< 34		34	110	100
p-Isopropyltoluene	< 31		31	100	100
Methylene Chloride	< 29		29	100	100
MTBE	< 31		31	100	100
Naphthalene	< 88		88	290	100
n-Propylbenzene	< 30		30	100	100
1,1,2,2-Tetrachloroethane	< 35		35	120	100
Tetrachloroethene	1	10000	35	120	100
Toluene	< 35		35	120	100
1,2,3-Trichlorobenzene	< 45		45	150	100
1,2,4-Trichlorobenzene	< 41		41	140	100
1,1,1-Trichloroethane	< 45		45	150	100
1,1,2-Trichloroethane	< 37		37	120	100
Trichloroethene		3800	48	160	100
Trichlorofluoromethane	< 15		15	50	100
1,2,4-Trimethylbenzene	< 35		35	120	100
1,3,5-Trimethylbenzene	< 64		64	210	100
Vinyl Chloride	< 15		15	49	100
m&p-Xylene	< 66	•	66	220	100
o-Xylene	< 32		32	110	100

LOD = Limit of Detection

LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

010672

GC #1

1090 Kennedy Ave. Kimberly, WI 54136 320-735-8295 WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 MW100 Report Date: Lab Code: 11-Sep-98 5022665A

ANALYTE		INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	. De 44	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
Benzene	95. 0.65. 50	P	P	P	P	Р	Р	Р
Bromobenzene		P	P	P	P	P	P .	Р
Bromodichloromethane		P	P	P	P	P	P	P
n-Butylbenzene		P	P	P	. , Р	P	P	P
sec-Butylbenzene		P	Р.	Р	P	P	P	P
		P	P	P	Р	P	p P	P
tert-Butylbenzene Carbon Tetrachloride		P	P	P	P	P	P	Р
Chlorobenzene		P	P	P	P	P	P	P
Chlorocethane		P	P	P	P	P	P	P
•		P	P	P	P	þ	P	P
Chloroform		P	P	P	, F	P	P	P
Chloromethane		P	P	P	þ	P	P	P
2-Chlorotoluene		P	P	P	P	P	P	P
4-Chlorotokuene			P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	•	P	P	P	P	P	P	P
Dibromochloromethane		P P	P	P	P	P	P	P
1,2-Dichlorobenzene			•	, .	P	P	P	P
1,3-Dichlorobenzene		P	P	P			P	P
1,4-Dichlorobenzene		P	P	P	P	P	P	,
Dichlorodifluoromethane		P	P	P	P	, ,		P
1,1-Dichloroethane		Р	P	P	Р	Р	Р	P
1,2-Dichloroethane		P	₽	P	P	P	P	P
1,1-Dichloroethene		Р	P	P	P	P	P	P
cis-1,2-Dichloroethene		P	Р	P	Р	P	P	P
trans-1,2-Dichloroethene		P	P	P	P	P	P	P
1,2-Dichloropropane		Р	P	P	₽	P	Р	P
1,3-Dichloropropane		Р	P	Р	P	Р	Р	P
2,2-Dichloropropane		P	Р	P	P	P	Р	P
Di-Isopropyl Ether		P	Р	P	P	P	Р	P
Ethylbenzene		P	Р	P	P	P	P	P
EDB (1,2-Dibromoethane)		P	P	P	P	P	Р	P
Hexachlorobutadiene		Р	P	P	P	P	Р	P
Isopropytbenzene		P	P	P	P	Р	Р	P
p-Isopropyttoluene		P	P	P	P	P	P	P
Methylene Chloride		₽	P	P	P	P	P	P
MTBÉ		P	Р	Р	P	P	Р	P
Naphthalene		P	P	P	P	P	Р	Р
n-Propytbenzene		Р	P	P	Р	Р	P	P
1,1,2,2-Tetrachloroethane		P	F	P	P	P	P	Р
Tetrachloroethene		P	Р	Р	Р	P	Р	P
Toluene		P	P	P	Р	P	P	P
1,2,3-Trichlorobenzene		P	P	P	Р	P	Р	P
1,2,4-Trichlorobenzene		P	P	P	P	P	P	Р
1,1,1-Trichloroethane		P	P	Р	Р	P	P	Р
1,1,2-Trichloroethane		P	P	P	Р	P	P	Р
Trichloroethene		P	P	P	Р	P	P	P
Trichlorofluoromethane		P	P	P	F	P	Р	P
1,2,4-Trimethylbenzene		P	P	P	P	P	P	P
1,3,5-Trimethylbenzene		P	i P	P	P	P	P	P
Vinyl Chloride		P	P	F	P	P	P P	P
m & p-Xylene		P	P	P	P	P	P	P
o-Xylene		P	P	l p	P	P	P	P

P = Passed QC limits.

Authorized Signature

Jaid Contract of the Contract

F = Failed QC limits.

NA = Not Applicable
QC Batch # 010672

[&]quot;J" Flag: Analyte detected between LOD and LOQ.



WI DNR Certified Lab #445027660

1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

NICOLE LAPLANT

NORTHERN ENVIRONMENTAL

)54 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

11-Sep-98

Project #:

KJP0663

Project:

Green Bay

Sample ID:

MW200

Lab Code:

5022665B

Sample Type: Water

alei

Sample Date:	31-Aug-98

Test	Result	LOD	LOQ	Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
LEAD SW846 7421	< 1.0	1	3.3	UG/L	1.0	1	09-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	280	9.3	31	UG/L	1.8	1	04-Sep-98	BDB	1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.



090 Kennedy Ave. Kimberly, WI 54136 20-735-8295

WI DNR Certified Lab #445027660

LOD

UG/L

0.56

0.32

0.34

0.35

0.27

0.34

0.31

0.29

0.31

0.88

0.3

0.35

0.35

0.35

0.45

0.41

0.45

0.37

0.15

0.35

0.64

0.15

0.66

0.32

48

140

520

LOQ Dilution

Factor

1

1

1

1

1

1

1

100

1

1

1

1

UG/L

1.9 1

1.1 1

1.1 1

1.2 1

0.91

1.1 1

2.9 1

1.2

1.2 1

1.2 1

1.5

1.4 1

1.5 1

1.2 1

160

0.5

1.2 1

2.1

0.49

2.2

1.1

GC #1

Method 8021 Volatile Organic Compounds

ICOLE LAPLANT IORTHERN ENVIRONMENTAL 54 CIRCLE DRIVE iREEN BAY WI 54304

eport Date:

11-Sep-98

nalyzed By:

DRL

ANALYTE	RESU	LT	LOD	LOQ	Dilution
			UG/L	UG/L	Factor
enzene		1.4	0.32	1.1	1
romobenzene	< 0.32		0.32	1.1	1
romodichloromethane	< 0.38		0.38	1.3	1
-Butylbenzene	< 0.23		0.23	0.78	1
ec-Butylbenzene	< 0.34		0.34	1.1	1
irt-Butylbenzene	< 0.33		0.33	1.1	1
arbon Tetrachloride	< 0.47		0.47	1.6	1
hlorobenzene	< 0.31		0.31	1	1
hloroethane	< 0.13		0.13	0.42	1
hloroform	< 0.4		0.4	1.3	1
hloromethane	< 0.18		0.18	0.59	1
-Chlorotoluene	< 0.31		0.31	1	1
-Chlorotoluene	< 0.31		0.31	1	1
,2-Dibromo-3-Chloropropane	< 0.22		0.22	0.73	1
ibromochloromethane	< 0.37		0.37	1.2	1
2-Dichlorobenzene	< 0.29		0.29	1	1
3-Dichlorobenzene	< 0.28		0.28	0.94	1
A-Dichlorobenzene	< 0.28		0.28	0.92	1
ichlorodifluoromethane	< 0.28		0.28	0.92	1
.1-Dichloroethane	< 0.34		0.34	1.3	1
.2-Dichloroethane		1.4	0.36	1.2	1
,1-Dichloroethene	0.52 "J"		0.39	1.3	1
is 1,2-Dichloroethene		310	32	110	100
ans-1,2-Dichloroethene		93	0.38	1.3	1
.2-Dichloropropane	< 0.38		0.38	1.3	1
3-DCP, Tetrachloroethene	< 0.75		0.75	2.5	1

luorobenzene Surrogate .4-Dichlorobutane Surrogate ample pH

96 % Rec. 93 % Rec.

Project #:

KJP0663

Project: Sample ID:

Green Bay MW200

Lab Code: Sample Type: 5022665B

Sample Date:

Water

< 0.56

< 0.32

< 0.34

< 0.35

< 0.27

< 0.34

0.32 "J"

< 0.29

< 0.31

< 0.88

< 0.3

< 0.35

< 0.35

< 0.45

< 0.41

< 0.45

< 0.37

< 0.15

0.4 "J"

< 0.64

< 0.15

< 0.66

< 0.32

31-Aug-98

Date Analyzed:

05-Sep-98

RESULT

erera	
on	ANALYTE
9	
	2,2-Dichloropropane
1	Di-isopropyl Ether
ŀ	Ethylbenzene
	EDB (1,2-Dibromoethane)
	Hexachlorobutadiene
	Isopropylbenzene
	p-Isopropyitoluene
	Methylene Chloride
	мтве
	Naphthalene
	n-Propylbenzene
	1,1,2,2-Tetrachloroethane
	Tetrachloroethene
	Toluene
	1,2,3-Trichlorobenzene
	1,2,4-Trichlorobenzene
	1,1,1-Trichloroethane
	1,1,2-Trichloroethane
	Trichloroethene
	Trichlorofluoromethane
	1,2,4-Trimethylbenzene
	1,3,5-Trimethylbenzene
	Vinyl Chloride
	m&p-Xylene
	o-Xylene
=	LOD = Limit of Detection

LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

010670



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295 WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 MW200 Report Date:

11-Sep-98

Lab Code: 5022665B

ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
Benzene	P	Р	Р	Р	Р	Р	P
Bromobenzene	Р	P	Р	P	ĺР	P	P
Bromodichloromethane	P	Р	P	Р	l P	P	P
n-Butylbenzene	Р	P	P	P	P	P	P
sec-Butylbenzene	Р	P	P	P	P	P	P
tert-Butyfbenzene	Р	P	P	P	P	p	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	Р	P	Р	P	p	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	Р	p	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	· P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	1 '	P	P	P	P	P	P
T,z-Dioromo-S-Chioropropane Dibromochloromethane	P	P	P	P	P	P	1 .
1,2-Dichlorobenzene	P	P	P	P P	P	P	P
	P	P	P	P		•	•
1,3-Dichlorobenzene 1.4-Dichlorobenzene	P	P	P	12	P	P	P
	, ·			, ,	P	P	Р
Dichlorodifluoromethane	P	P	P	P	P	'P	Р
1,1-Dichloroethane	P	P	P	P	P	P	Р
1,2-Dichloroethane	P	P	Р	P	Р	P	₽
1,1-Dichloroethene	Р	P	P	P	P	P	Р
cis-1,2-Dichloroethene	P	P	P	Р	P	Р	P
trans-1,2-Dichloroethene	P	P	Р	Р	Р	, Р	Р
1,2-Dichloropropane	P	P	Р	P	P	P	Р
1,3-Dichloropropane	P	₽	Р	Р	Р	Р	Р
2,2-Dichloropropane	P	P	Р	Р	P	Р	P
Di-Isopropyl Ether	P	P	Р	P	P	. Р	Р
Ethylbenzene	P	P	P	Р	Р	Р	Р
EDB (1,2-Dibromoethane)	P	Р	Р	Р	Р	Р	Р
Hexachlorobutadiene	P	Р	Р	P	Р	P	P
Isopropytbenzene	P	Р	Р	P	P	P	P
p-Isopropyttoluene	P	Р	P	P	P	P	P
Methylene Chloride	P	Р	P	P	P	P	P
MTBÉ	P	P	P	, P	Р	P	P
Naphthalene	P	P	P	Р	P	p i	P
n-Propytbenzene	P	P	P	P	P	P	P
1.1.2.2-Tetrachloroethane	P	F	P	P	Р	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P		
1,2,3-Trichlorobenzene	P	P	P	P	P	P	Р
1,2,4-Trichlorobenzene	P	P	P	P		P	Р
1,1,1-Trichloroethane	P	P	P	P	Р	Р	Р
1,1,2-Trichloroethane	P	P			P	P	Р
r, r,z-rnchloroethane Trichloroethene	P	P	P P	Р	Р	Р	P
	1 '	' '		P	Р	P	P
Trichlorofluoromethane	P	Р	P	F	Р	P	, Р
1,2,4-Trimethylbenzene	P	P	P	P	Р	Р	Р
1,3,5-Trimethylbenzene	P	P	P	P	Р	Р	P
Vinyl Chloride	P	F	F	P	Р	Р	₽
n & p-Xylene	P	Р	P	Р	Р	Р	Р
>-Xylene	P	P	P	P	P	P	P

P = Passed QC limits.

Authorized Signature

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F = Failed QC limits.

NA = Not Applicable
QC Batch # 010670

[&]quot;J" Flag: Analyte detected between LOD and LOQ.



090 Kennedy Ave. Kimberly, WI 54136 120-735-8295

IICOLE LAPLANT

IORTHERN ENVIRONMENTAL

154 CIRCLE DRIVE €REEN BAY WI 54304

Report Date:

11-Sep-98

Project #:

KJP0663

Project:

Green Bay

Sample ID:

MW300

Lab Code:

5022665C

Sample Type: Water Sample Date: 31-A

31-Aug-98

Test	Result		LOQ	Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
ÆAD SW846 7421	< 1.0	1	3.3	UG/L	1.0	1	09-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	120	9.3	31	UG/L	1.8	1	04-Sep-98	BDB	1,2

OD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

WI DNR Certified Lab #445027660

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

2

GRO chromatogram indicates contamination outside of the GRO window.

Authorized Signature

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1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

Method 8021 Volatile Organic Compounds

Project #:

Project:

NICOLE LAPLANT
NORTHERN ENVIRONMENTAL
954 CIRCLE DRIVE
GREEN BAY WI 54304

Report Date:

11-Sep-98

RESULT

LOD

LOQ Dilution

Analyzed By:

ANALYTE

DRL

		UG/L	UG/L	Factor
Benzene	< 0.32	0.32	1.1	1
Bromobenzene	< 0.32	0.32	1.1	1
Bromodichloromethane	< 0.38	0.38	1.3	1
n-Butylbenzene	3.4	0.23	0.78	1
sec-Butylbenzene	< 0.34	0.34	1.1	1
tert-Butylbenzene	< 0.33	0.33	1.1	1
Carbon Tetrachloride	< 0.47	0.47	1.6	1
Chlorobenzene	< 0.31	0.31	1	1
Chloroethane	< 0.13	0.13	0.42	1
Chloroform	< 0.4	0.4	1.3	1
Chloromethane	< 0.18	0.18	0.59	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.31	0.31	1	1 .
1,2-Dibromo-3-Chloropropane	< 0.22	0.22	0.73	1
Dibromochloromethane	< 0.37	0.37	1.2	1
1,2-Dichlorobenzene	< 0.29	0.29	1	1
1,3-Dichlorobenzene	< 0.28	0.28	0.94	1
1,4-Dichlorobenzene	< 0.28	0.28	0.92	1
Dichlorodifluoromethane	< 0.28	0.28	0.92	1

< 0.34

< 0.36

< 0.39

< 0.38

< 0.75

Fluorobenzene Surrogate 1,4-Dichlorobutane Surrogate Sample pH

,3-DCP, Tetrachloroethene

1,1-Dichloroethane

1.2-Dichloroethane

1,1-Dichloroethene

cis 1,2-Dichloroethene

1,2-Dichloropropane

trans-1,2-Dichloroethene

92 % Rec. 97 % Rec. 1.3

50

75

0.34

0.36

0.39

0.32

0.38

0.38

0.75

1.3 1

1.2 1

1.3 1

1.1 1

1.3 1

1.3 1

2.5

Sample ID: MW300
Lab Code: 5022665C
Sample Type: Water
Sample Date: 31-Aug-98
Date Analyzed: 09-Sep-98

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/L	UG/L	Factor
2,2-Dichloropropane	< 0.56	0.56	1.9	1
Di-isopropyl Ether	< 0.32	0.32	1.1	1
Ethylbenzene	< 0.34	0.34	1.1	1
EDB (1,2-Dibromoethane)	< 0.35	0.35	1.2	1
Hexachlorobutadiene	< 0.27	0.27	0.91	1
Isopropylbenzene	< 0.34	0.34	1.1	1
p-Isopropyltoluene	0.61 "J"	0.31	1	1
Methylene Chloride	< 0.29	0.29	1	1
MTBE	< 0.31	0.31	1	1
Naphthalene	< 0.88	0.88	2.9	1
n-Propylbenzene	< 0.3	0.3	1	1
1,1,2,2-Tetrachloroethane	< 0.35	0.35	1.2	1
Tetrachloroethene	2.4	0.35	1.2	1
Toluene	< 0.35	0.35	1.2	1
1,2,3-Trichlorobenzene	< 0.45	0.45	1.5	1
1,2,4-Trichlorobenzene	< 0.41	0.41	1.4	1
1,1,1-Trichloroethane	< 0.45	0.45	1.5	1
1,1,2-Trichloroethane	< 0.37	0.37	1.2	1
Trichloroethene	2.4	0.48	1.6	1
Trichlorofluoromethane	< 0.15	0.15	0.5	1
1,2,4-Trimethylbenzene	< 0.35	0.35	1.2	1
1,3,5-Trimethylbenzene	0.84 "J"	0.64	2.1	1
Vinyl Chloride	< 0.15	0.15	0.49	1
m&p-Xylene	< 0.66	0.66	2.2	1
o-Xylene	< 0.32	0.32	1.1	1

GC #1

KJP0663

Green Bay

LOD = Limit of Detection LOQ = Limit of Quantitation

NA = Not Applicable

147 - 1401 Applicable

QC Batch # 010671

Authorized Signature

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090 Kennedy Ave. Kimberly, WI 54136 20-735-8295 WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 MW300 Report Date: Lab Code: 11-Sep-98 5022665C

ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
ANACTIC	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
	CALIBRATION	P	P	P	Р	Р	Р
Benzene	P	P	P	P	Р	P	P
fromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	Р	. Ρ	. Ь
n-Butylbenzene	P	P	P	P	Р	Р	P
sec-Butylbenzene	,	P	Р	P	P	Р	P
ert-Butylbenzene	P P	P	Р	P	P	Р	P
Carbon Tetrachloride	P	P	p	P	P	P	P
Chlorobenzene	P	P	P	P	P	Р	P
Chloroethane		P	P	P	p	Р	P
Chloroform	P	P	P	P	P	Р	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	,	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	F	P	P	P	P	Р
Dibromochloromethane	P	, ,	P	P	P	P	P
1,2-Dichlorobenzene	Р	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P		P	P	P	P
1.4-Dichlorobenzene	P	P	P	P	P	þ	Р
Dichlorodifluoromethane	Р	F	P	P	P	P	P
1,1-Dichloroethane	P	P	P		P	þ	Р
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	Р	P	P	þ	P
cis-1,2-Dichloroethene	P	P	P	Р	P	P	P
trans-1,2-Dichloroethene	P	Р	P	P	1 '	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	, P	P	P	P	P
2.2-Dichloropropane	P	P	P	P	P		P
Di-Isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	Р	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	1
Hexachlorobutadiene	P	P	l P	P	P	P	Р
[sopropytbenzene	P	P	j P	P	P	P	Р
p-Isopropyttoluene	Р	Р	P	P	P	P	P
Methylene Chloride	P	Р	P	P	P	Р	Р
	Р	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	P	P	P	P	· P	P
n-Propythenzene	P	F	l P	P	₽	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	l P	P	Р
Toluene	P	P	P	P	P.	P	Р
1,2,3-Trichlorobenzene	P	P	P	P	Р	P	₽
1,2,4-Trichlorobenzene	P	P	l P	P	P	Р	P
1,1,1-Trichloroethane	P	P	P	Р	P	P	P
1,1,2-Trichloroethane	P	P	Р	P	l P	P	Р
Trichloroethene	P	F	P	P	P	P	. Р
Trichlorofluoromethane	P	P	P	Р	P	Р	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	F	P	P	P	P	P
Vinyl Chloride	P	P	P	l P	P	P	Р
m & p-Xylene	P	P	P	P	P	Р	Į Р
o-Xylene	Ρ	F			خد		

P = Passed QC limits.

F = Failed QC limits.

NA = Not Applicable
QC Batch # 010671

"J" Flag: Analyte detected between LOD and LOQ.



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295 WI DNR Certified Lab #445027660

NICOLE LAPLANT

NORTHERN ENVIRONMENTAL

154 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

11-Sep-98

Project #:

KJP0663

Project:

Green Bay

Sample ID:

MW400

Lab Code:

5022665D

Sample Type: Water Sample Date: 31-A

31-Aug-98

Test	Result	LOD		Unit		Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
LEAD SW846 7421	< 1.0	1	3.3	UG/L	1.1	1	09-Sep-98	SRF	1
MODIFIED GRO WDNR SEP 95	170	9.3	31	UG/L	1.8	1	04-Sep-98	BDB	1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.



190 Kennedy Ave. Kimberly, WI 54136 20-735-8295

WI DNR Certified Lab #445027660

Method 8021 Volatile Organic Compounds

ICOLE LAPLANT ORTHERN ENVIRONMENTAL 54 CIRCLE DRIVE REEN BAY WI 54304

eport Date:

11-Sep-98

nalyzed By:

	•	•	\sim
D	RI	L	

ANALYTE	RESUL	Γ	LOD	LOQ	Dilution
			UG/L	***************************************	Factor
enzene	< 0.32		0.32	1.1	1
romobenzene	< 0.32	İ	0.32	1.1	1
romodichloromethane	< 0.38	1	0.38	1.3	1
Butylbenzene	< 0.23		0.23	0.78	1
ec-Butylbenzene	< 0.34		0.34	1.1	1
rt-Butylbenzene	< 0.33	1	0.33	1.1	1
arbon Tetrachloride	< 0.47		0.47	1.6	1
hlorobenzene	< 0.31		0.31	1	1
hloroethane	< 0.13		0.13	0.42	1 1
hloroform	< 0.4		0.4	1.3	1
hloromethane	< 0.18		0.18	0.59	1
Chlorotoluene	< 0.31		0.31	1	1
-Chlorotoluene	< 0.31		0.31	1	1
2-Dibromo-3-Chloropropane	< 0.22		0.22	0.73	1
)ibromochloromethane	< 0.37		0.37	1.2	1
.2-Dichlorobenzene	< 0.29		0.29	1	1
.3-Dichlorobenzene	< 0.28		0.28	0.94	1
1.4-Dichlorobenzene	< 0.28		0.28	Į.	L
Dichlorodifluoromethane	< 0.28		0.28	1	1
1,1-Dichloroethane	< 0.34		0.34	1	i
1,2-Dichloroethane	< 0.36		0.36	1	1
1,1-Dichloroethene	< 0.39		0.39	1	1
is 1,2-Dichloroethene		120	0.32	1	1
rans-1,2-Dichloroethene		280	19	l .	
1,2-Dichloropropane	< 0.38		0.38	ł	1
1,3-DCP, Tetrachloroethene	< 0.75		0.75	2.5	1

Fluorobenzene Surrogate 1,4-Dichlorobutane Surrogate 96 % Rec. 96 % Rec.

Sample pH

1.3

KJP0663 Project #: Green Bay Project: MW400 Sample ID: 5022665D Lab Code:

Sample Type: Sample Date:

Water 31-Aug-98

Date Analyzed:

05-Sep-98

ANALYTE	RESU	т	LOD	LOQ	Dilution	1
			UG/L	UG/L	Factor	
2,2-Dichloropropane	< 0.56		0.56	1.9	1	l
Di-isopropyl Ether	< 0.32		0.32	1.1	1	ı
Ethylbenzene	< 0.34		0.34	1.1	1	ı
EDB (1,2-Dibromoethane)	< 0.35		0.35	1.2	1	
Hexachlorobutadiene	< 0.27		0.27	0.91	1	ı
Isopropylbenzene	< 0.34		0.34	1.1	1	l
p-Isopropyltoluene	< 0.31		0.31	1	1	ı
Methylene Chloride	< 0.29		0.29	1	1	ı
МТВЕ	< 0.31		0.31	1	1	l
Naphthalene	< 0.88		0.88	2.9	1	l
n-Propylbenzene	< 0.3		0.3	1	1	l
1,1,2,2-Tetrachloroethane	< 0.35		0.35	1.2	1	l
Tetrachloroethene	}	34	0.35	1.2	1	ı
Toluene	< 0.35		0.35	1.2	1	ı
1,2,3-Trichlorobenzene	< 0.45		0.45	1.5		ı
1,2,4-Trichlorobenzene	< 0.41		0.41	1.4	1	ı
1,1,1-Trichloroethane	< 0.45		0.45	1.5	1	ı
1,1,2-Trichloroethane	< 0.37		0.37	1.2	l .	ı
Trichloroethene		77	24	80	50	ı
Trichlorofluoromethane	< 0.15	'	0.15	0.5	1	ı
1,2,4-Trimethylbenzene	< 0.35		0.35	1.	1	
1,3,5-Trimethylbenzene	< 0.64		0.64	2.1	1	
Vinyl Chloride	< 0.15		0.15	0.49	1	
m&p-Xylene	< 0.66		0.66	}	Į.	ı
o-Xylene	< 0.32		0.32	1.1	1	1

LOD = Limit of Detection LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

010670

GC #1



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295 WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 MW400

Report Date:

11-Sep-98

Lab Code:

5022665D

Sample ID.	11111100			Lab Code.		J022003D	
ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
Benzene	P	P	P	P	P	P	D
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P.	P	P	P	P	P
n-Butylbenzene	Р	P .	P	P	P	P	ρ.
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	Р	P	P	P	P
Carbon Tetrachloride	l 'p	P	P	P	Р	P	F
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	Р.
Chloromethane	P	P	P	P	P	P	P.
2-Chlorotoluene	, P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	1
	P	P	1 .	P	P		P
Dibromochloromethane	P		P	, ,	1 •	P	P
1,2-Dichlorobenzene	P	P	Р	P	P	Р	P
1,3-Dichlorobenzene	,	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	Р	Р	Р
Dichlorodifluoromethane	P	P	P	P	Р	Р	Р
1,1-Dichloroethane	P	P	Р	P	Р	P	P
1,2-Dichloroethane	P	P	Р	P	Р	P	P
1,1-Dichloroethene	P	P	P	P	P	Р	Р
cis-1,2-Dichloroethene	P	₽	P	P	Р	P	Р
rans-1,2-Dichloroethene	P	P	Р	Р	P	Р	Р
1,2-Dichloropropane	P	Р	P	Р	P	P	P
1,3-Dichloropropane	P	Р	P	Р	Р	Р	P
2,2-Dichloropropane	P	P	P	Р	P	Р	P
Di-Isopropyl Ether	P	P	P	Р	Р	P	P
Ethylbenzene	P	Р	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	Р	Р	P	P	Р	Р
Hexachlorobutadiene	P	Р	P	P	P	Р	Р
sopropytbenzene	P	P	Р	Р	Р	Р	Р
o-Isopropyttoluene	P	P	Р	Р	Р	Р	, р
Methylene Chloride	Р	P	Р	Р	Р	Р	P
MTBÉ	Р	P	Р	Р	Р	Р	P
Vaphthalene	P	P	P	Р	Р	Р	P
n-Propytbenzene	P	Р	Р	Р	P	P	P
,1,2,2-Tetrachloroethane	P	F	Р	P	P	P	P P
l'etrachloroethene	P	P	Р	Р	P	P	P
Fokuene	Р	P	P	Р	P	, P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	, P	P
,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	, P	P	P	P	P	P
1,1,2-Trichloroethane	P	p	P	P	P	p	P
richloroethene	P	, P	р	P	Р	P	r P
richlorofluoromethane	P	, P	P	F	Р	P	P
,2,4-Trimethylbenzene	Р.	P	P	P	P	P	. г Р
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
/invl Chloride	P	F	F	P	P	P	P
n & p-Xylene	P	P	P	P	P	P	P
-Xylene	F	p	P	P	P	P	P
7.710.10		г		r	r	r	۲

P = Passed QC limits.



F = Failed QC limits.

NA = Not Applicable QC Batch # 010670

[&]quot;J" Flag: Analyte detected between LOD and LOQ.



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

Method 8021 Volatile Organic Compounds

NICOLE LAPLANT NORTHERN ENVIRONMENTAL 954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

11-Sep-98

Analyzed By:

DRL

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/L	UG/L	Factor
Benzene	< 0.32	0.32	1.1	1
Bromobenzene	< 0.32	0.32	1.1	1
Bromodichloromethane	< 0.38	0.38	1.3	1
n-Butylbenzene	3	0.23		l '
sec-Butylbenzene	< 0.34	0.34	l	1
tert-Butylbenzene	< 0.33	0.33	1	1
Carbon Tetrachloride	< 0.47	0.47	1.6	1
Chlorobenzene	< 0.31	0.31	1	1
Chloroethane	< 0.13	0.13		1
Chloroform	< 0.4	0.4	1	1
Chloromethane	< 0.18	0.18	0.59	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chiorotoluene	< 0.31	0.31	1	1
1,2-Dibromo-3-Chloropropane	< 0.22	0.22	0.73	1
Dibromochloromethane	< 0.37	0.37	1.2	1
1,2-Dichlorobenzene	< 0.29	0.29	1	1
1,3-Dichlorobenzene	< 0.28	0.28	0.94	1
1,4-Dichlorobenzene	< 0.28	0.28	0.92	1
Dichlorodifluoromethane	< 0.28	0.28	0.92	1
1,1-Dichloroethane	< 0.34	0.34	1.3	1
1,2-Dichloroethane	< 0.36	0.36	1.2	1
1,1-Dichloroethene	< 0.39	0.39	1.3	1
cis 1,2-Dichloroethene	44	0.32	1.1	1
trans-1,2-Dichloroethene	74	0.38	1.3	1
1,2-Dichloropropane	< 0.38	0.38	1	1
1,3-DCP, Tetrachloroethene	< 0.75	0.75	2.5	1

Fluorobenzene Surrogate 1,4-Dichlorobutane Surrogate Sample pH 82 % Rec. 96 % Rec.

1.3

Project #: Project : Sample ID:

Green Bay DUP 5022665E

Water

KJP0663

Sample Type: Sample Date: Date Analyzed:

Lab Code:

31-Aug-98 09-Sep-98

ANALYTE	RESUL	T I	LOD	LOQ	Dilution
			UG/L	UG/L	Factor
2,2-Dichloropropane	< 0.56		0.56	1.9	1
Di-isopropyl Ether	< 0.32		0.32	1.1	1
Ethylbenzene	< 0.34	-	0.34	1.1	1
EDB (1,2-Dibromoethane)	< 0.35		0.35	1.2	1
Hexachlorobutadiene	< 0.27		0.27	0.91	1
Isopropylbenzene	< 0.34		0.34	1.1	1
p-Isopropyltoluene	0.6 "J"		0.31	1	1
Methylene Chloride	< 0.29		0.29	1	1
МТВЕ	< 0.31		0.31	1	1
Naphthalene	< 0.88		0.88	2.9	1
n-Propylbenzene	< 0.3		0.3	1	1
1,1,2,2-Tetrachloroethane	< 0.35		0.35	1.2	1
Tetrachloroethene		2.1	0.35	1.2	1
Toluene	< 0.35		0.35	1.2	1
1,2,3-Trichlorobenzene	< 0.45		0.45	1.5	1
1,2,4-Trichlorobenzene	< 0.41		0.41	1.4	1
1,1,1-Trichloroethane	< 0.45		0.45	1.5	1
1,1,2-Trichloroethane	< 0.37		0.37	1.2	1
Trichloroethene		2.4	0.48	1.6	1 1
Trichlorofluoromethane	< 0.15		0.15	0.5	1
1,2,4-Trimethylbenzene	< 0.35		0.35	1.2	1
1,3,5-Trimethylbenzene	0.94 "J"		0.64	2.1	1
Vinyl Chloride	< 0.15		0.15	0.49	1
m&p-Xylene	< 0.66		0.66	2.2	1
o-Xylene	< 0.32		0.32	1.1	1

LOD = Limit of Detection

LOQ = Limit of Quantitation NA = Not Applicable

QC Batch #

010671

GC #1



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 DUP

Report Date:

11-Sep-98

Lab Code:

5022665E

ANALYTE		INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
		CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
Benzene		Р	P	P	P	P	P	SUNNOGATE
Bromobenzene		P	P	P	P	P	P	P
Bromodichloromethane		P	P	P	P	Р	P	P
n-Butylbenzene		p	P	P	P	P	P	P
sec-Butylbenzene		P	P	P	P	Р	P	P
tert-Butylbenzene		P	P	P	P	Р	P	P
Carbon Tetrachloride		Р	P	P	P	P	P	P
Chlorobenzene		P	P	P	P	P	P	P
Chloroethane		P	P	P	P	P	Ρ.	P
Chloroform		P	P	P	P	P	P	P
Chloromethane		P	P	P	P	P	P	P
2-Chlorotoluene		P	P	P	P	P	· P	P
4-Chlorotoluene		P	P	þ	P	Р	P	P
1,2-Dibromo-3-Chloropropane		P	F	P	P	p	P	P
Dibromochloromethane		P	P	P	P	P	P	P
1,2-Dichlorobenzene		P	P	P	P	P	P	
1,3-Dichlorobenzene		P	Р	P	P	P	P	Р
1.4-Dichlorobenzene		P	P	P	P	P	P	P P
Dichlorodifuoromethane		P	F	Р	P	P	P	
1,1-Dichloroethane		P	P	P	P	P	P	P
1,2-Dichloroethane		P	P	Р	P	P		Р
1,1-Dichloroethene		P	P	P	P	P	Р	P
ss-1,2-Dichloroethene		P	P	P	P	P	Р	P
rans-1,2-Dichloroethene		P	P	P	P	P	. Р Р	P
1,2-Dichloropropane	ļ	p	P	P	P	P		P
1,3-Dichloropropane		P	P	P	P	P	P	P
2,2-Dichloropropane]	P	P	P	• •		P	P
Di-Isopropyl Ether	- 1	P	P	P	P	Р	Р	P
Ethytbenzene		P	P	P	P	Р	Р	P
EDB (1,2-Dibromoethane)	- 1	P	P	P	P	P	Р	P
Hexachlorobutadiene	i	P	p	P		Р	P	P
sopropylbenzene	- 1	P	P	P	P '	P	P	P
o-Isopropyttoluene	- 1	P	P		P	P	Р	P
Methylene Chloride	- 1	P	P	Р	P	Р	P	P
MTBE	İ	P		P	P	Р	P	Р
Naphthalene	- [P	P	Р	P	Р	Р	P
r-Propylbenzene	1	P	P P	P	P	Р	P	P
1,1,2,2-Tetrachloroethane	1	P	•	P	P	Р	Р	Р
r, 1,2,2-1 et actilor detriane	İ	P	F	P	P	Р	Р	P
oluene	- 1	P	P	P	Р	P	P	Р
,2,3-Trichlorobenzene		P	P	P	Р	P	P	Р
,2,4-Trichlorobenzene	- 1		Р	Р	Р	Р	P	P
.1,1-Trichloroethane	- 1	P P	P	P	Р	P	P	Р
.1.2-Trichloroethane]	P	Р	Р	Р	Р	Р	P
richloroethene]	P	P	Р	P	Р	Р	Р
richlorofluoromethane	- 1		Р	P	P	P	Р	Р
	- 1	P	F	Р	P	Р	Р	. Р
,2,4-Trimethylbenzene	ĺ	P	P	Р	P	Р	Р	P
,3,5-Trimethytbenzene		P	P	P	P	Р	Р	₽
/inyl Chloride	1	P	F	Р	Р	Р	Р	Р
n & p-Xylene	-	Р	P	Р	Р	Р	P	P
-Xylene		P	Р	Р	P	P	Р	Р

P = Passed QC limits.

F = Failed QC limits.

NA = Not Applicable QC Batch # 010671

[&]quot;J" Flag: Analyte detected between LOD and LOQ.



090 Kennedy Ave. Kimberly, WI 54136 20-735-8295

WI DNR Certified Lab #445027660

Method 8021 Volatile Organic Compounds

VICOLE LAPLANT 10RTHERN ENVIRONMENTAL 154 CIRCLE DRIVE FREEN BAY WI 54304

Report Date:

Analyzed By:

DRL

11-Sep-98

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/L	UG/L	Factor
Senzene	< 0.32	0.32	1.1	1
Bromobenzene	< 0.32	0.32	1.1	1
3romodichloromethane	< 0.38	0.38	1.3	1
-Butylbenzene	< 0.23	0.23	0.78	1
ec-Butylbenzene	< 0.34	0.34	1.1	1
ert-Butylbenzene	< 0.33	0.33	1.1	1
Sarbon Tetrachloride	< 0.47	0.47	1.6	1
Shlorobenzene	< 0.31	0.31	1	1
hloroethane	< 0.13	0.13	0.42	1
≯hloroform	< 0.4	0.4	1.3	1
hloromethane	< 0.18	0.18	0.59	1
:-Chiorotoluene	< 0.31	0.31	1	1
I-Chlorotoluene	< 0.31	0.31	1	1
I,2-Dibromo-3-Chloropropane	< 0.22	0.22	0.73	1
Dibromochloromethane	< 0.37	0.37	1.2	1
1,2-Dichlorobenzene	< 0.29	0.29	1	1
1,3-Dichlorobenzene	< 0.28	0.28	0.94	1
i,4-Dichlorobenzene	< 0.28	0.28	0.92	1
Dichlorodifluoromethane	< 0.28	0.28	0.92	1
I,1-Dichloroethane	< 0.34	0.34	1.3	1
1,2-Dichloroethane	< 0.36	0.36	1.2	1
I,1-Dichloroethene	< 0.39	0.39	1.3	1 '
is 1,2-Dichloroethene	< 0.32	0.32	1.1	1
rans-1,2-Dichloroethene	< 0.38	0.38	1.3	1
1,2-Dichloropropane	< 0.38	0.38	1.3	1
	1	1		1 4

< 0.75

luorobenzene Surrogate
,4-Dichlorobutane Surrogate
Sample nH

1,3-DCP, Tetrachloroethene

91 % Rec. 103 % Rec.

0.75

1.4

Project #:

KJP0663

Project: Sample ID: Green Bay **FIELD**

Lab Code:

5022665F Water

Sample Type: Sample Date:

31-Aug-98

Date Analyzed:

04-Sep-98

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/L	UG/L	
2,2-Dichloropropane	< 0.56	0.56	1.9	1
Di-isopropyl Ether	< 0.32	0.32	1.1	1
Ethylbenzene	< 0.34	0.34	1.1	1
EDB (1,2-Dibromoethane)	< 0.35	0.35	1.2	1
Hexachlorobutadiene	< 0.27	0.27	0.91	1
Isopropylbenzene	< 0.34	0.34	1.1	1
p-Isopropyltoluene	< 0.31	0.31	1	1
Methylene Chloride	< 0.29	0.29	1	1
МТВЕ	< 0.31	0.31	1.	1
Naphthalene	< 0.88	0.88	2.9	1
n-Propylbenzene	< 0.3	0.3	1	1
1,1,2,2-Tetrachloroethane	< 0.35	0.35	1.2	1
Tetrachloroethene	< 0.35	0.35	1.2	1
Toluene	< 0.35	0.35	1.2	1
1,2,3-Trichlorobenzene	< 0.45	0.45	1.5	1
1,2,4-Trichlorobenzene	< 0.41	0.41	1.4	1
1,1,1-Trichloroethane	< 0.45	0.45	1.5	1
1,1,2-Trichloroethane	< 0.37	0.37	1.2	1 1
Trichloroethene	< 0.48	0.48	1.6	1
Trichlorofluoromethane	< 0.15	0.15	0.5	1
1,2,4-Trimethylbenzene	< 0.35	0.35	1.2	1
1,3,5-Trimethylbenzene	< 0.64	0.64	2.1	1
Vinyl Chloride	< 0.15	0.15	0.49	1
m&p-Xylene	< 0.66	0.66	2.2	1
o-Xylene	< 0.32	0.32	1.1	1

LOD = Limit of Detection LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

010670

GC #1



1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295 WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 FIELD

Report Date:

11-Sep-98

Lab Code:

5022665F

ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
Benzene	P	Р	P	Р	P	P	P
Bromobenzene	P	P	Р	Р	P	Р	P
Bromodichloromethane	Р	P	P	P	P	P	P
n-Butylbenzene	P	Р	P	P	Р	, P	P
sec-Butylbenzene	Р	P	P	P	P	Ρ	P
lert-Butylbenzene	P	Р	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	Р	. р	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	Р	P	P	P P
2-Chlorolokuene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	Р	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	Р	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1.3-Dichlorobenzene	P	P	P	P	P	P	. Р . р
I.4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	. Р	P	P	P	•
1.1-Dichloroethane	P	P	P	P	P	P	Р
1,2-Dichloroethane	P	P	P	P			Р
I.1-Dichloroethene	P	P	P	P	P	P	P
ds-1,2-Dichloroethene	P		P	P		P	P
rans-1,2-Dichloroethene	P	P P	P	P	Р	P	P
1,2-Dichloropropane	P	P	P.	P	P	P	P
i,3-Dichloropropane	P	P		P	P	P	Р
2,2-Dichloropropane	P	P	Р		Р	Р	Р
i,z-Dictioroproparie Di-Isopropyl Ether	P	P	P	P	P	Р	Р
		,	P	P	P	Р	Р
Ethylbenzene EDB (1,2-Dibromoethane)	Р	Р	P	Р	P	Р	Р
lexachlorobutadiene	P	P	Р	P	P	Р	P
	P	P	Р	Р	P	Р	P
sopropylbenzene	P	P	Р	Р	P	₽	P
Isopropyttoluene	P	P	Р	Р	Р	.Р	P
Methylene Chloride	Р	Р	P	Р	P	P	P
MTBE	P	P	Р	Р	Р	P	P
Vaphthalene	P	P	Р	Р	Р	Р	P
-Propylbenzene	P	Р	Р	P	Р	Р	P
,1,2,2-Tetrachloroethane	P	F	Р	P	Р	Р	Р
etrachloroethene	P	P	Р	Р	P	P	P
oluene	P	P	P	P	P	Р	Р
,2,3-Trichlorobenzene	P	Р	Р	Р	P	P	Р
,2,4-Trichlorobenzene	P	P	Р	P	P	Р	P
,1,1-Trichloroethane	Р	Р	.Р	P	P	Р	Р
,1,2-Trichloroethane	P	Р	Р	P	Р	Р	P
richloroethene	P	Р	P	P	Р	P	P
richlorofluoromethane	P	Р	Р	F	P	Р	. Р
,2,4-Trimethylbenzene	Ρ.	Р	P	P	Р	Р	P
,3,5-Trimethylbenzene	P	Р	P	Р	Р	Р	P
'inyl Chloride	P	F	F	Р	Р	P	P
1 & p-Xylene	P	Р	P	Р]	Р	Р	Р
-Xylene	P	P	Р	Р	Р	P	P

P = Passed QC limits.

Authorized Signature

Ah

F = Failed QC limits.

NA = Not Applicable
QC Batch # 010670

[&]quot;J" Flag: Analyte detected between LOD and LOQ.



090 Kennedy Ave. Kimberly, WI 54136 120-735-8295

WI DNR Certified Lab #445027660

Method 8021 Volatile Organic Compounds

VICOLE LAPLANT NORTHERN ENVIRONMENTAL 354 CIRCLE DRIVE **3REEN BAY WI 54304**

Report Date:

Analyzed By:

DF		Sel	J-90
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ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/L	UG/L	Factor
3enzene	< 0.32	0.32	1.1	1
Bromobenzene	< 0.32	0.32	1.1	1
Bromodichloromethane	< 0.38	0.38	1.3	1
n-Butylbenzene	< 0.23	0.23	0.78	1
sec-Butylbenzene	< 0.34	0.34	1.1	1
tert-Butylbenzene	< 0.33	0.33	1.1	1
Carbon Tetrachloride	< 0.47	0.47	1.6	1
Chlorobenzene	< 0.31	0.31	1	1 .
Chloroethane	< 0.13	0.13	0.42	1
Chloroform	< 0.4	0.4	1.3	1
Chloromethane	< 0.18	0.18	0.59	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.31	0.31	1	1
1,2-Dibromo-3-Chloropropane	< 0.22	0.22	0.73	1
Dibromochloromethane	< 0.37	0.37	1.2	1
1,2-Dichlorobenzene	< 0.29	0.29	1	1
1.3-Dichlorobenzene	< 0.28	0.28	0.94	1
1.4-Dichlorobenzene	< 0.28	0.28	0.92	1
Dichlorodifluoromethane	< 0.28	0.28	0.92	1
1,1-Dichloroethane	< 0.34	0.34	1.3	1
1,2-Dichloroethane	< 0.36	0.36	4	
1.1-Dichloroethene	< 0.39	0.39	1.3	1
cis 1,2-Dichloroethene	< 0.32	0.32	1.1	1
trans-1,2-Dichloroethene	< 0.38	0.38	1	
1.2-Dichloropropane	< 0.38	0.38		
1,3-DCP, Tetrachloroethene	< 0.75	0.75	2.5	5 1

Fluorobenzene Surrogate 1,4-Dichlorobutane Surrogate Sample pH

101 % Rec. 1.6

92 % Rec.

KJP0663 Project #: Green Bay Project: **TRIP** Sample ID: 5022665G Lab Code: Water Sample Type: 31-Aug-98 Sample Date: 04-Sep-98 Date Analyzed:

ANALYTE	RESULT	LOD	LOQ	Dilution
		UG/L	UG/L	Factor
2,2-Dichloropropane	< 0.56	0.56	1.9	1
Di-isopropyl Ether	< 0.32	0.32	1.1	1
Ethylbenzene	< 0.34	0.34	1.1	1
EDB (1,2-Dibromoethane)	< 0.35	0.35	1.2	1
Hexachlorobutadiene	< 0.27	0.27	0.91	1
Isopropylbenzene	< 0.34	0.34	1.1	1
p-Isopropyltoluene	< 0.31	0.31	1	1
Methylene Chloride	< 0.29	0.29	1	1
мтве	< 0.31	0.31	1	1
Naphthalene	< 0.88	0.88	2.9	1
n-Propylbenzene	< 0.3	0.3	1	1
1,1,2,2-Tetrachloroethane	< 0.35	0.35	1	
Tetrachloroethene	< 0.35	0.35	1.2	1
Toluene	< 0.35	0.35	1	1
1,2,3-Trichlorobenzene	< 0.45	0.45	1.5	1
1,2,4-Trichlorobenzene	< 0.41	0.41	1	1
1,1,1-Trichloroethane	< 0.45	0.45	i .	
1,1,2-Trichloroethane	< 0.37	0.37	1.2	1
Trichloroethene	< 0.48	0.48	1	1
Trichlorofluoromethane	< 0.15	0.15	0.5	ı
1,2,4-Trimethylbenzene	< 0.35	0.35	1.2	
1,3,5-Trimethylbenzene	< 0.64	0.64		1
Vinyl Chloride	< 0.15	0.15	1	ł
m&p-Xylene	< 0.66	0.66	i	1
o-Xylene	< 0.32	0.32	2 1.1	1

LOD = Limit of Detection LOQ = Limit of Quantitation

NA = Not Applicable

QC Batch #

010670

GC #1



1090 Kennedy Ave. Kimberly, WI 54136 **920-735-829**5

WI DNR Certified Lab #445027660

QC Summary

Method 8021 Volatile Organic Compounds

Project #: Sample ID: KJP0663 TRIP

Report Date:

11-Sep-98

Lab Code:

5022665G

ANALYTE	INITIAL	KNOWN	MATRIX	REPLICATE	BLANK	PID	HALL
	CALIBRATION	STANDARD	SPIKE	SPIKE		SURROGATE	SURROGATE
Benzene	P	P	P	P	Р	Р	P
Bromobenzene	P	Р	P	P	P	Р	Р
Bromodichloromelhane	P	P	P	Р	P	P	P
n-Butyfbenzene	P	Р	P	P	P	P	P
sec-Butylbenzene	p	P	P	P	p	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	Р	P	P	P
Chlorobenzene	P	P	P	Р	P	P	P
	P	P	P	Р	þ	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromathane				P			,
2-Chlorotoluene	P	Р	P	,	P	P P	Р
4-Chlorotoluene	P	Р	P	Р	P		Р
1,2-Dibromo-3-Chloropropane	P	Р	P	Р	Р	Р	Р
Dibromochloromethane	P	P	P	Р	P	P	P
1,2-Dichlorobenzene	Р	Р	P	Р	P	P	P
1,3-Dichlorobenzene	P	P	Р	Р	P	P	Р
1,4-Dichlorobenzene	P	P	Р	P	Р	Р	Р
Dichlorodifluoromethane	P	Р	P	Р	P	Р	Р
1,1-Dichloroethane	P	Р	Р	P	P	P	P
1,2-Dichloroethane	P	Р	P	Р	P	P	P
1,1-Dichloroethene	P	P	P	Р	P	P	Р
cis-1,2-Dichloroethene	Р	Р	P	P	Р	Р	Р
trans-1,2-Dichloroethene	P	Р	Р	ρ	P	Р	Р
1,2-Dichloropropane	P	P	Р	Р	Р	Р	Р
1,3-Dichloropropane	Р	Р	Р	Р	Р	Р	Р
2,2-Dichloropropane	P	P	P	Р	P	P	Р
Di-Isopropyl Ether	P	P	P	P	Р	Р	Р
Ethytbenzene	Р	P	P	P	Р	Р	Р
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	p	P	P
Isopropytbenzene	P	Р	P	P	P	P	Р
p-Isopropyttoluene	P	P	P	P	P	P	P
Methylene Chloride	Р	P	P	P	Р	Р	P
MTBE	P	P	p	P	Р	P	þ
Naphthalene	P	P	P	P	P	P	P
n-Propytbenzene	P	P	P	P	P	P	P
1.1.2.2-Tetrachloroethane	P	F	P	, F	P	P	P.
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P		P	P	P	P
·	P	P	P P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	, ,					,
1,1,1-Trichloroethane		Р	P	P	Р	Р	P
1,1,2-Trichloroethane	Р	P	Р	P	P	P	P
Trichloroethene	P	Р	Р	P	Р	Р	P
Trichlorofluoromethane	P	P	P	F	Р	Р	. Р
1,2,4-Trimethylbenzene	Р	P	Р	P	Р	Р	Р
1,3,5-Trimethylbenzene	Р	P	Р	P	Р	Р	Р
Vinyl Chloride	Р	F	F	P	Р	Р	Р
m & p-Xylene	P	Р	Р	P	Р	Р	P
o-Xy lene	P	P	Р	Р	P	Р	P

P = Passed QC limits.

F = Failed QC limits.

NA = Not Applicable QC Batch # 010670

[&]quot;J" Flag: Analyte detected between LOD and LOQ.

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1214 W. Venture Ct. Mequon, WI 53092 414-241-3133 FAX 414-241-8222

372 West County Road D New Brighton, MN 55112 612-635-9100 FAX 612-635-0643

954 Circle Driver Green Bay, WI 54304 920-592-8400 FAX 920-592-8444

330 South 4th Avenue Park Falls, WI 54552 715-762-1544 FAX 715-762-1844

1203 Storbeck Drive Waupun, WI 53963 920-324-8600 FAX 920-324-3023

217 S. 7th Street Suite 208 Brainerd, MN 56401 218-825-9001 FAX 218-825-9002

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1090 Kennedy Ave. Kimberly, WI 54136 920-735-8295

LYNELLE CAINE

Report Date:

NORTHERN ENVIRONMENTAL

954 CIRCLE DRIVE GREEN BAY WI 54304

12-Nov-98

KJP0314080663

Project #: Project :

Green Bay

WI DNR Certified Lab #445027660

Sample ID:

MW100

Lab Code:

5023387A

Sample Type: Water

Sample Date:

29-Oct-98

Test	Result	LOD	LOQ	Unit	Нq	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
PVOC									
MOD SW846 8260					1.9	1	11-Nov-98	CJR	
Benzene	< 0.25	0.25	0.85	UG/L					1
Ethylbenzene	< 0.32	0.32	1.1	UG/L					1
MTBE	< 0.21	0.21	0.69	UG/L					1
Toluene	< 0.38	0.38	1.3	UG/L					1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	UG/L					1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	UG/L					1
Xylenes	< 1.0	1	3.4	UG/L					1
1,2-Dichloroethane-d4 Surrogate	101			% Rec.					
1									

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.

Authorized Signature

Air



090 Kennedy Ave. Kimberly, WI 54136 120-735-8295

LYNELLE CAINE NORTHERN ENVIRONMENTAL 954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

12-Nov-98

WI DNR Certified Lab #445027660

Project #:

KJP0314080663

Project:

Green Bay

Sample ID:

MW200

Lab Code:

5023387B

Sample Type: Water

Sample Date:

29-Oct-98

Test	Result	LOD	LOQ	Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
PVOC MOD SW846 8260 Benzene Ethylbenzene MTBE Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	0.73 "J" < 0.32 < 0.21 < 0.38 < 0.34 < 0.36 < 1.0	0.25 0.32 0.21 0.38 0.34 0.36	1.1 0.69 1.3 1.1 1.2	UG/L UG/L UG/L UG/L UG/L UG/L UG/L W Rec.	1.9	1	11-Nov-98	CJR	1 1 1 1 1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.



7090 Kennedy Ave. Kimberly, WI 54136 **920-735-8295**

LYNELLE CAINE

NORTHERN ENVIRONMENTAL

954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

12-Nov-98

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project:

Green Bay

Sample ID:

MW300

Lab Code:

5023387C

Sample Type: Water

Sample Date:

29-Oct-98

Test	Result	LOD	LOQ	Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
PVOC MOD SW846 8260					1.9	4	44 Nov. 00	0.10	
Benzene	0.61 "J"	0.25	0.85	UG/L	1.9	ı	11-Nov-98	CJR	
	< 0.32	0.23	Ĭ	UG/L					
Ethylbenzene MTBE	< 0.32	0.32		UG/L					1
Toluene	< 0.38	0.38	1.3	UG/L					1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	UG/L					1
1,3,5-Trimethylbenzene	0.66 "J"	0.36	1.2	UG/L					1
Xylenes	< 1.0	1	3.4	UG/L					1
1,2-Dichloroethane-d4 Surrogate	102			% Rec.					

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

All laboratory QC requirements were met for this sample.





90 Kennedy Ave. Kimberly, WI 54136 0-735-8295

YNELLE CAINE IORTHERN ENVIRONMENTAL 54 CIRCLE DRIVE REEN BAY WI 54304

teport Date:

12-Nov-98

WI DNR Certified Lab #445027660

Project #:

KJP0314080663

Project:

Green Bay

Sample ID:

MW400

Lab Code:

5023387D

Sample Type: Water

Sample Date:

29-Oct-98

Test	Result	LOD	LOQ	Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
MOD SW846 8260 Senzene Ethylbenzene MTBE Toluene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Xylenes 1,2-Dichloroethane-d4 Surrogate	< 0.25 < 0.32 < 0.21 < 0.38 < 0.34 < 0.36 < 1.0	0.25 0.32 0.21 0.38 0.34 0.36	1.1 0.69 1.3 1.1 1.2	UG/L UG/L UG/L UG/L UG/L UG/L UG/L W Rec.	1.9	1	11-Nov-98	CJR	1 1 1 1 1 1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.



090 Kennedy Ave. Kimberly, WI 54136

120-735-8295

LYNELLE CAINE

NORTHERN ENVIRONMENTAL

954 CIRCLE DRIVE GREEN BAY WI 54304

Report Date:

12-Nov-98

Project #:

KJP0314080663

WI DNR Certified Lab #445027660

Project:

Green Bay

Sample ID:

TRIP

Lab Code:

5023387E

Sample Type: Water

Sample Date:

29-Oct-98

Test	Result	LOD	LOQ	Unit	рН	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
PVOC MOD SW846 8260					1.9	1	11-Nov-98	CJR	
Benzene	< 0.25	0.25		UG/L					
Ethylbenzene	< 0.32	0.32		UG/L					1
MTBE	< 0.21	0.21	0.69	UG/L					1
Toluene	< 0.38	0.38	1.3	UG/L					1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	UG/L					1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	UG/L					1
, , ,	< 1.0	1	3.4	UG/L					1
1,2-Dichloroethane-d4 Surrogate	98			% Rec.					

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1

All laboratory QC requirements were met for this sample.



CHAIN OF CUSTODY REC. AD REQUEST FOR ANALYSIS

\blacktriangle	Morthorn	Environmental*	
\mathbf{A}	MIIFIIIHFII	riiviriiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	

No: 10698

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	Check office originating request				5023	33	80	7												
	Project Location: 0 G3 J408 0	Laboratory: (1, 5, C); Wisconsin DNR Certification #: 44 50 2 7 660				Sample Integrity - To be completed by receiving lab Seal intact upon receipt yes no Method of shipment														
	Project Location: Green Bay			1.0007/00				Temper			و	°C I	Refrigerat	ator No.			- (6)			
	Project Manager:	Laboratory Contact: Mike Ricker				ANALYSES REQUESTED														
	Sampler: (name) jonemy (Clau	Caine	Price Quote: TURNAROUND TIME REQUIRED																	
	0						etho etho 3020 0021)													
	(Signature)	laos				Pa Pa	ed N	poq	thod	g po	р Т									
	Sampling Date(s): 18-29-9	Normal Rush				ijipo	Mer	We	Meth	Aeth ethoc										
	Reports to be Sent to:	Date Needed			DRO (WI Modified Method)	GRO (Wt Modified Method)	BETX (EPA Method 8020)	PVOC (EPA Method 8020)	VOC (EPA Method 8021)	PAH (EPA Method Pb (EPA Method										
	Lab Sample No. Collection Date Time	No. of Containers, Size & Type	Water	Description Soil Other	Preservative	B8	зRО	BET)	PVO	NOC.	PAH Pb (E									
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