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August 23, 2000

Mr. Jim Delwiche Hydrogeologist Remediation and Redevelopment Program Wisconsin Department of Natural Resources P.O. Box 12436 Milwaukee, WI 53212

Re: Dryclean USA 15427 West National Avenue, New Berlin, Wisconsin Site Investigation Report

Dear Mr. Delwiche:

Enclosed are two copies of the Site Investigation Report for the Dryclean USA property referenced above, and a check for \$750 for the report review fee. The report was prepared in accordance with applicable sections of Wis. Adm. Code chs. NR 716.15. Based on the results of the investigation, McLaren/Hart recommends closure of the site. Feel free to contact either Brian Schneider or George Bayer if you have any questions or require additional information.

Sincerely,

McLAREN/HART ENVIRONMENTAL ENGINEERING CORPORATION

Brian Schneider, P.E. Senior Engineer

George J. Bayer

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Associate Geoscientist

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cc: Mark Thimke, Esq. Mr. Robert Miller Mr. Bill Read

# SITE INVESTIGATION REPORT

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# DRYCLEAN USA FACILITY #88 15427 WEST NATIONAL AVENUE NEW BERLIN, WISCONSIN

Prepared for:

Mr. Robert Miller Spic and Span, Inc. 4301 North Richards Street Milwaukee, WI 53212

Prepared by:

McLaren/Hart Environmental Engineering Corporation W239 N2890 Pewaukee Road Pewaukee, Wisconsin 53072

August 23, 2000

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# **ATTACHMENTS**

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Attachment A	Figure 1 Figure 2	Site Location Site Plan
Attachment B	Table 1	Soil Samples Laboratory Analytical Results
Attachment C	Table 2 Field Method	WDNR Direct Contact Risk Model
Attachment D		analytical Reports and Chain-of-Custody Documents
Attachment E	Soil Boring I	Logs

#### SITE INVESTIGATION REPORT

# DRYCLEAN USA FACILITY #88 15427 WEST NATIONAL AVENUE NEW BERLIN, WISCONSIN

#### May 3, 2000

# **CERTIFICATION - PROFESSIONAL ENGINEER**

I, Brian W. Schneider, 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.

#### REPORT:

ATTACHMI	ENTS:	
А	Figures	2 pages
В	Tables	5 pages
С	Field Methodologies	3 pages
D	Laboratory Analytical Reports/Chain-of-Custody Documents	21 pages
E	Soil Boring Logs	7 pages

Signature and Title

Date

10 pages

P.E. Stamp

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# DRAFT

# **1.0 INTRODUCTION**

# 1.1 SITE LOCATION

The Property is located in the SE 1/4 of the SE 1/4 of Section 3, Township 7 North, Range 20 East. The address is 15427 West National Avenue in New Berlin, Wisconsin. The site location is shown in Figure 1, Attachment A.

# 1.2 BACKGROUND

The following report summarizes investigation activities performed in or adjacent to the Dryclean USA facility located in the Mooreland Plaza Shopping Center. These activities were performed as a follow-up to the investigation activities previously performed by McLaren/Hart on October 21, 1998, and documented in the Site Investigation Work Plan by McLaren/Hart dated July 1, 1999. A site location diagram is presented in Figure 1.

Dryclean USA is a subsidiary of Spic and Span, Inc. and the Dryclean USA facility space is leased from Bradley Real Estate, the property owner. Dryclean USA has occupied the space and conducted dry cleaning operations since July, 1990. The dry cleaning machine was placed in a containment structure in 1995 and removed from the site in 1999???. Dry cleaning chemicals are no longer utilized at the facility.

On October 21, 1998, McLaren/Hart performed three soil boring tests (B-1 to B-3) in the immediate vicinity of the dry cleaning machine. Soil samples were collected from each boring from approximately 0.5 to 1.5 and 3.5 to 4.6 feet below ground surface (bgs). The samples were analyzed for tetrachloroethylene (PCE) and its potential breakdown products. Generally, one sample was obtained from shallow fill soils beneath the concrete slab and one sample was obtained from fill soils found at a greater depth. Laboratory analyses were performed by Great Lakes Analytical using U.S. EPA SW-846 Method 8021. PCE concentrations ranged from "no detect" to 1800  $\mu$ g/kg. Trichloroethene was observed in boring B-3 at concentrations of 1,400  $\mu$ g/kg and 3,200  $\mu$ g/kg. No other PCE breakdown products were detected above the laboratory detection limit of 25  $\mu$ g/kg. Additional details are included in the attached Site Investigation Results report.

# 1.3 PROPERTY OWNERSHIP

The Property is owned by:

Bradley Real Estate Inc. 10901 North Port Washington Road Mequon, WI 53092 Attention: Mr Paul Dunn (414) 562-4141

The responsible party for the site investigation:

Spic and Span, Inc. 4301 North Richards Street Milwaukee, WI 53212 Attention: Mr. Robert Miller (414) 964-5050

#### 1.4 CONSULTANTS AND CONTRACTORS

The site investigation activities reported herein were performed by:

McLaren/Hart Environmental Engineering Corporation W239 N2890 Pewaukee Road, Unit D Pewaukee, WI 53072 (414) 523-2040 - phone (414) 523-2059 - fax

As part of the investigation, the following service/commodity providers also conducted activities associated with the Property investigation:

Soil Probe Services

On-Site Environmental Services, Inc. P.O. Box 280 Sun Prairie, WI 53590 (608) 837-8992

Laboratory Analytical Services

Great Lakes Analytical 1380 Busch Parkway Buffalo Grove, IL 60089 (847) 808-7766

## 2.0 SITE PHYSIOGRAPHY, GEOLOGY AND HYDROGEOLOGY

## 2.1 TOPOGRAPHY AND SURFACE WATER DRAINAGE

• <u>Site Topography</u>. Based on the United States Geological Survey (USGS), Hales Corners, Wisconsin, 7.5 minute topographic map (1994), the topography in the immediate vicinity of the site slopes downward to the east from the site.

Dryclean USA. Site Investigation Report 0:\COMMON\Spic&Span\Spic&Span\8pic&span\8pic&S

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<u>Surface Water Drainage</u>. Storm water along the site is anticipated to generally drain eastward along the curb side drainage associated with the parking lot of the retail mall in which Dryclean USA is located. The curb side drainage discharges to the storm sewer system. Storm water impacting the roof of the building is conveyed by roof drains to the storm sewer as well.

# 2.2 SOILS AND GEOLOGY/HYDROGEOLOGY

<u>Site Geology/Hydrogeology</u>. The surface soils (less than five feet deep) have been classified by the U.S. Department of Agriculture, Soil Conservation Service (1971). The general soil association is the Ozaukee -Morley-Mequon Association with site-specific soils consisting of Ozaukee Silt Loam Series. The general soil association is described as well-drained to poorly drained soils with a subsoil of silty clay that formed in areas of thin loess and silty clay loam glacial till on moraines. The site specific soil characteristics:

Ozaukee Silt Loam: consists of moderately well-drained, silty soils that have a silty clay loam and silty clay subsoil underlain by calcareous silty clay loam glacial till. The Ozaukee soils have moderately slow permeability and high available water capacity.

As noted, the site soils formed in areas of glacial till. The glacial till deposits in the area of the subject property vary between 100 to 200 feet thick and consist of unsorted, unstratified, unconsolidated mixtures of clay, silt, sand, pebbles, cobbles and boulders. The glacial till overlies the Niagara Dolomite bedrock which is up to 450 feet thick. The glacial deposits, as well as the bedrock, are considered to be groundwater aquifers.

# 3.0 SITE INVESTIGATION ACTIVITIES

The site investigation scope of work was developed in response to data gaps from the previous investigation. Additional tasks were added to the scope of work as the need for additional data was identified. The additional tasks are specified in the following sections.

# 3.1 PROJECT SCOPING DATA

To the extent practical, the scope of the project was defined in consideration of the criteria listed in NR 716.07, as detailed below. The data were updated during the investigation, as appropriate:

- <u>Site Use</u>. The Dryclean USA facility is located in the Moorland Square Shopping Center and has operated as a dry cleaning facility at this location since 1990.
- <u>Type and Amount of Impact</u>. Based on investigations performed to date, soils in the immediate vicinity of the dry cleaning machine are impacted with PCE. Five samples collected from 0.5 to 4.6 feet bgs adjacent to the machine contained concentrations of 93  $\mu$ g/kg to 1,800  $\mu$ g/kg of PCE. Trichloroethene was observed in boring B-3 at concentrations of 1,400  $\mu$ g/kg and 3,200  $\mu$ g/kg.
- <u>Environmental Media Potentially Affected</u>. PCE impacts are thought to be predominately within the coarse fill soils underlying the Dryclean USA facility.
- <u>Need for Access Permission</u>. Bradley Real Estate Inc., owns the property on which the impact was found. Based on prior investigation findings, impact is believed to be limited to coarse fill soils in the vicinity of the dry cleaning machine and may extend to adjacent tenant spaces.

Based on existing data, no off-site contamination is suspected and off-site access permission will not be required. Access permission may be required from both the adjacent tenants and the property owner.

- <u>Potential Receptors</u>. No groundwater impacts have been identified at the site. Groundwater was not observed during the previous investigation.
- <u>Significant Resources</u>. Based on existing data, the site has not affected and does not present a threat to any threatened or endangered species, sensitive habitats, wetlands, resource waters, or historical or archeological sites.
- <u>Potential Remedial Actions</u>. Potential remedial actions, if required, may include natural attenuation, bioremediation, soil vapor extraction and/or capping and monitoring.

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# 3.2 SITE PHYSIOGRAPHY/SAMPLING STRATEGY

The sampling strategy was developed to identify the boundaries of soil impact, based on the known site conditions and characteristics. The sampling locations were selected based on data obtained from prior investigations and site characteristics.

# 3.3 FIELD INVESTIGATION METHODS

# 3.3.1 Soil Sample Collection and Handling

Soil sampling was performed using either portable power, hand augering, or soil probe equipment. Upon collection, the soil was classified with respect to USGS classification, color, moisture content, evidence of impact (discoloration and odor) and other observations. When practical, ASTM methods D-2487 and D-2488 were utilized. The information was recorded in a bound field notebook used to record daily activities.

As soon as possible following sample collection, the soil samples for the laboratory analysis were transferred to appropriate laboratory-provided containers. A fresh pair of latex (or similar) gloves will be used during the handling of each sample to minimize the potential for cross contamination. The samples were containerized in laboratory-provided 60-ml glass jars with Teflon<sup>®</sup> septa. Twenty-five to 35 grams of soil was placed in the jars and each sample was preserved in the field with laboratory-provided purge-and-trap grade methanol.

The sample jars were labeled with the sample location identification, depth of sample, date of sample collection and intended analysis. The sample jars were placed in resealable plastic bags and packed in an iced, insulated container. A chain-of-custody form was completed each day, and accompanied each container of samples from the site to the laboratory. Samples were transported from the facility to the laboratory via overnight courier.

# 3.3.2 Decontamination Procedures

Soil sampling equipment was decontaminated before each boring location using an Alconox or TSP solution and rinsed in clean water (distilled, deionized or municipal potable). Any sampling tools (i.e., spoons, knives, spatulas, etc.) were also cleaned in a solution of Alconox or TSP solution and rinsed in clean water prior to collection of each sample. A clean pair of latex, or equivalent, gloves was used during each sample to minimize the potential for cross-contamination.

3.3.3 Laboratory Analysis

Laboratory analyses were performed by Great Lakes Analytical using Wisconsin-modified U.S. EPA SW-846 Method 8021, target list compounds: PCE 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), trans-1,2-dichloroethene, cis-1,2-dichloroethene, 1,1,2-trichloroethane, 1,1-dichlorethane, 1,2-dichloroethane, and vinyl

chloride. The target list is defined to identify the PCE used at the facility, its potential breakdown products and related compounds.

# 3.4 QUALITY ASSURANCE/QUALITY CONTROL METHODS

The following quality assurance/quality control measures were implemented during the site investigation activities:

- Decontamination procedures and measures to minimize the potential for crosscontamination of samples were followed as specified in section 2.3.2.
- All site activities were recorded in a bound field notebook (see Field Documentation section below).
- Chain-of-custody procedures were followed as specified in Attachment D.

A methanol blank was included in each cooler shipped to the laboratory. The samples were shipped on ice; therefore, no temperature blanks were required.

# 3.5 FIELD DOCUMENTATION

All site activities were documented in a bound field notebook. Included in the daily documentation are:

- Procedures for sampling and other routine activities associated with the site investigation.
- Field observations.
- Chronological log of site activities.

# 3.6 SITE HEALTH AND SAFETY

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All reasonable measures were taken to protect the health and safety of the personnel and general public. A site Health and Safety Plan that meets or exceeds the standards found in 29 CFR 1910.120 was prepared and followed during site activities. All project personnel and subcontracted personnel were trained in hazardous materials handling and have on-site training and experience.

Detailed methodologies for each of these tasks is provided in Attachment D. Additional information is presented in the following sections.

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# 3.7 INVESTIGATION SCOPE OF WORK

The site investigation activities, as presented in the July 1, 1999 Work Plan, were implemented on March 14, 1999. The scope of work included:

- Sample 8 soil borings to various depths (eight to twelve feet) below ground surface.
- Collect up to two soil samples from each boring for laboratory analysis of selected VOCs. The samples were collected from various depths.

The specific objectives of each sampling location are presented in the July 1, 1999 Work Plan.

# 3.8 VARIATIONS FROM WORK PLAN

The following tasks were altered or added to the original work plan in response to field conditions and data needs:

- Boring B-4 was relocated 22 feet east due to the repositioning of B-5 and the inability to access the Eye Site facility interior.
- Boring B-5 was relocated approximately 12 feet northwest due to access conflicts.
- Boring B-7 was not installed. Access to the Eye Site facility was denied and an acceptable alternate location could not be found in the adjacent facility.
- Boring B-8 was relocated approximately 12 feet east due to access conflicts.

# 3.9 RESULTS

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The boring locations are shown in Figure 2. The analytical results, including soil sample results from B-1, B-2 and B-3, are summarized in Table 1. Laboratory reports, quality control data and chain of custody documents are provided in Attachment D. Soil boring logs are provided in Attachment E.

# 3.9.1 Soil Sampling

Two soil samples were collected from each of the seven soil borings installed at the site. The samples were submitted for laboratory analysis of select VOCs. The soil sampling analytical results are detailed in Table 1. Tetrachloroethene (PCE) and trichloroethene (TCE) were the only VOCs detected. PCE was detected in one of the seven additional borings (B-6) while TCE was not detected in any of the additional borings.

PCE impacted soil was generally confined to within a 25 foot radius of the dry cleaning machine. The highest PCE concentrations were detected in the sandy fill and shallow silty

clay fill soils immediately beneath the interior concrete slab adjacent to the dry cleaning machine (B-1 and B-3).

PCE concentrations generally decreased with depth in the fill soils. PCE was detected in boring B-6 from 0.5 to 2.5 feet bgs at a concentration of  $164 \mu g/kg$ . PCE was not detected in the remaining samples collected from soil borings B-4 through B-11. PCE was not detected above the laboratory detection limits at depths greater than 6 feet bgs. TCE, which was previously detected in soil boring B-3, was not detected in soil borings B-4 through B-11.

3.9.2 Groundwater

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Groundwater was not observed in any of the soil borings (as deep as 12 feet bgs) installed.

# 4.0 RISK ASSESSMENT

Based on the results of the investigation the PCE is confined to a small volume of fill soils and shallow (1-6 feet bgs) silty clay fill soils beneath the interior concrete slab. Furthermore, PCE concentrations in the soils decrease with distance from the dry cleaning machine, and are confined to within the building footprint. Soil boring logs from this investigation indicate the underlying clay soils extend to a depth to at least 12 feet bgs.

The WDNR Direct Contact Risk Model was used to evaluate the excess cancer risk attributable to contact with PCE through ingestion of soil particles, inhalation of soil particles and inhalation of vapors. The results of the WDNR Direct Contact Risk Model indicate that soils with PCE concentrations below 5.75 mg/kg and TCE concentrations below 9.25 mg/kg would not pose a threat to human health. The highest concentration of PCE was detected at boring location B-3 at a concentration of 1.8 mg/kg. The highest concentration of TCE was detected in soil boring B-3 at a concentration of 3.2 mg/kg. In addition, all soil boring locations where PCE and TCE were detected are located beneath the interior concrete slab within 20 feet of the former dry cleaning machine location.

Dry cleaning equipment has been removed from the facility and PCE is no longer used at the site.

The potential risk to human health through direct contact would be minimal for the following reasons:

- PCE and TCE soil concentrations do not exceed the direct contact limits.
- The soils are currently beneath a floor slab and would become accessible only in the event of building demolition. Building demolition would potentially expose workers for a period of a few days. The Direct Contact Risk Model is based on a minimum exposure period of 24 years for an adult and six years for a child.

The WDNR Direct Contact Risk Model is shown in Table 2.

The potential risk to human health through ingestion of groundwater would be minimal for the following reasons:

- The PCE is contained within low conductivity clay soils and these soils extend to a depth of at least 12 feet. PCE was not detected below 6 feet bgs.
- The affected soils are located under a floor slab, so there is minimal infiltration.
- The dry cleaning equipment and PCE are no longer used at the site. The PCE is amenable to biodegradation and the concentrations will naturally decrease with time.

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#### 5.0 SUMMARY AND RECOMMENDATIONS

Soil samples were obtained from areas surrounding the dry cleaning machine located within the Dryclean USA facility. Soil borings were also installed within the adjacent facility, (H&R Block) and on the exterior of the building to evaluate the horizontal and vertical extent of PCE and TCE impacts. Based on the results of the investigation, the PCE and TCE is confined to a small volume of fill soils and shallow silty clay fill soils beneath the interior concrete slab (1-6 feet bgs). Furthermore, PCE and TCE concentrations in the soils decrease with distance from the dry cleaning machine. The PCE and TCE concentrations are limited in magnitude and further migration is limited by underlying native clay soils. The results of the WDNR Direct Contact Risk Modeling indicate that even in the event of future demolition of the building and disturbance of the soils, the PCE and TCE would not pose a threat to human health through direct contact. In addition, the potential risk to human health through ingestion of groundwater is minimal. The dry cleaning machine has been removed from the facility, and the PCE and TCE in the soil will naturally decrease in concentration. Therefore, McLaren/Hart requests closure of this site.

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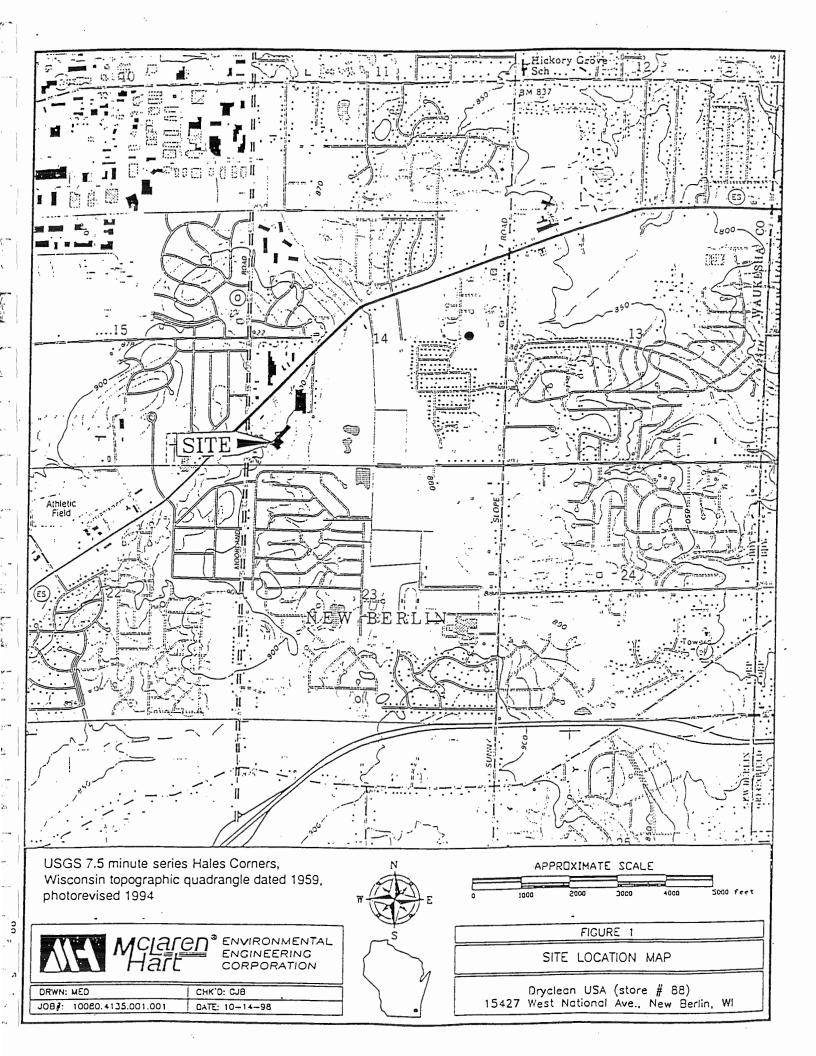
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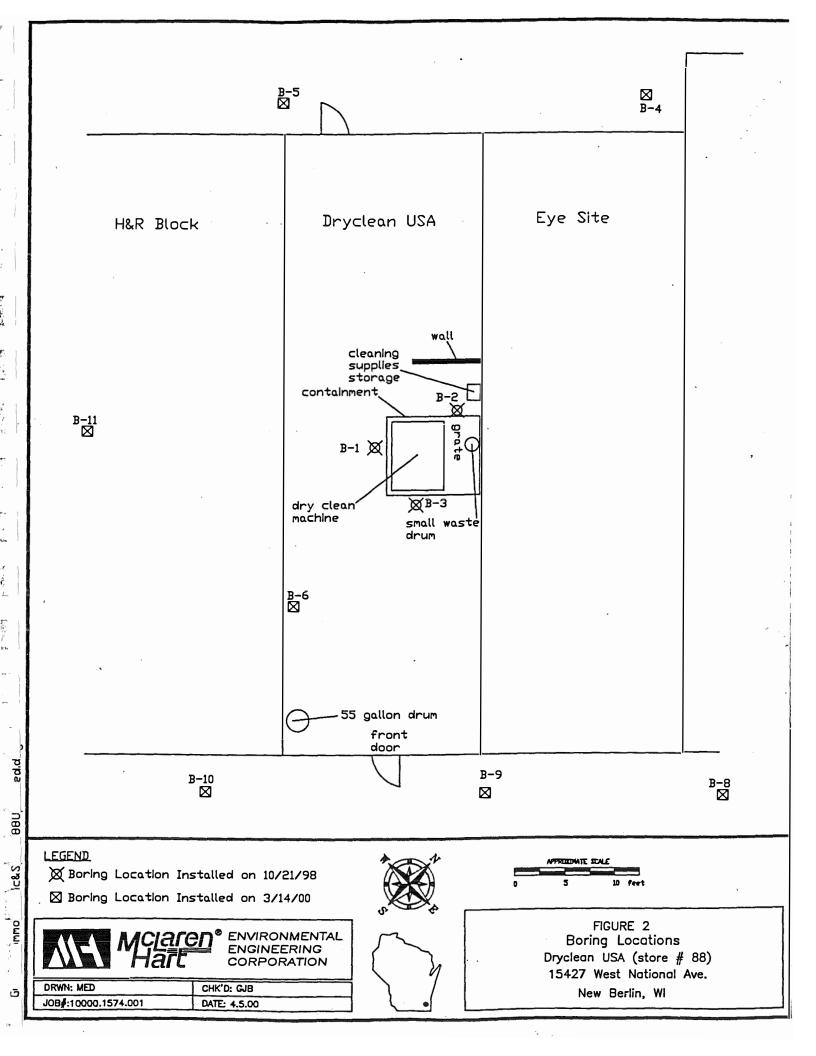
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#### Table 1 SOIL ANALYTICAL RESULTS Dryclean USA Facility #88 15427 West National Avenue New Berlin, Wisconsin

All samples analyzed for Volatile Organic Compounds-special list (VOCs Method 8021).

Concentrations in Micrograms per Kilogram unless otherwise indicated

	D	ryclean USA	Facility #83				
Sample Identification	B-1	B-1	B-2	B-2	B-3	B-3	B-4
Depth (ft)		4.0-4.6	0.5-1.5	3.5-4.0	0.5-1.5	3.5-4.0	2-4
Date Collected			10/21/1998	10/21/1998		10/21/1998	3/14/2000
ANALYTES: 1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	1,400	3,200	ND
Tetrachloroethene (PCE)	570	1,300	93	ND	1,800	1,000	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Sample Identification		B-5	B-5	B-6	B-6	B-8	B-8
Depth (ft)	6-8	2-4	6-8	0.5-2.5	4.5-5.6	2-4	6-8
Date Collected	3/14/2000	3/14/2000	3/14/2000	3/14/2000	3/14/2000	3/14/2000	3/14/2000
ANALYTES 1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND	164	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND
Sample Identification	B-9	B-9	B-10	B-10	B-11	B-11	MEOH
Depth (ft)	6-8	10-12	2-4	6-8	0.5-2.5	4.5-6.0	BLANK
Date Collected		3/14/2000	3/14/2000	3/14/2000	3/14/2000	3/14/2000	3/14/2000
ANALYTES 1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND

Notes:

Only positive detection (i.e., > practical quantitation limit) shown.

ND: Not detected above practical quantitation limit.

NA: Not analyzed

# WDNR DIRECT CONTACT RISK MODEL SOIL CLEAN-UP GOALS Carcinogenic Contaminants in Non-Industrial Soil

COMPOUND: PCE	PROJECT NAME: Spic and Span Store #88			
SITE S	PECIFIC PROPERTIES:			
CONTAMINANT CONCENTRATION COMBINED TARGET CANCER RISK LEVEL	С <sub>снем</sub> = 5.75 mg/kg TR= 9.98E-07			
CHEMICA	L SPECIFIC PROPERTIES			
ORAL CANCER SLOPE FACTOR(FROM RISK-BASED CONC. TABLE BA	SFo= 0.052 [(mg/kg-day)] <sup>-1</sup>			
MOLECULAR DIFFUSIVITY OR AIR DIFFUSION COEFFICIENT	D <sub>air</sub> = 0.072 cm <sup>2</sup> /sec			
WATER DIFFUSION COEFFICIENT	Dwater= 8.20E-06 cm <sup>2</sup> /sec			
HENRY'S LAW CONSTANT	H= 0765 unitless			
ORGANIC CARBON PARTITION COEFFICIENT	K <sub>oc</sub> =155 cm³/gm			
DNR DEFAULT EXPOSURE ASSUMPTIONS PER NR 720.19(5)(c)2.a.				

AVERAGE BODY WEIGHT FOR ADULT AVERAGE BODY WEIGHT FOR CHILD AVERAGING TIME EXPOSURE FREQUENCY EXPOSURE DURATION FOR ADULT - INGESTION EXPOSURE DURATION FOR CHILD - INGESTION INGESTION RATE OF SOIL FOR ADULT INGESTION RATE OF SOIL FOR CHILD INHALATION RATE FOR ADULT LABORER AGE-ADJUSTED SOIL INGESTION FACTOR INHALATION RATE FOR ADULT LABORER	Bwa= BWc= AT= EDa= EDc= IRa= IRc= IRw= IFs= ED= IR=	70 15 70 350 24 6 100 200 24 114 30 20	kg kg yr days/year yr yr mg/day mg/day m <sup>3</sup> /day yr m <sup>3</sup> /day
CONCENTRATION OF PARTICULATED LESS THAN 10um IN AIR	Cp=	1.4	ug/m <sup>3</sup>
INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF SQUARE SOURCE EXPOSURE INTERVAL SOIL DRY BULK DENSITY AIR FILLED POROSITY VOLUMETRIC SOIL MOSITURE CONTENT TOTAL SOIL POROSITY SOIL ORGANIC CARBON CONTENT	$Q/C = T = p_b = O_a = O_w = f_{oc} = f_{oc} = 0$	9.50E+0 1 0.2 0.1	31 kg/m <sup>3</sup> 08 s .5 g/cm <sup>3</sup> 28 cm <sup>3</sup> /cm <sup>3</sup> 15 cm <sup>3</sup> /cm <sup>3</sup> 43 cm <sup>3</sup> /cm <sup>3</sup>

#### CONTINUED ON FOLLOWING PAGE

#### DIRECT CONTACT RISK MODEL (CONTINUED)

#### CALCULATED INPUT VALUES

SOIL:WATER DISTRIBUTION COEFFICIENT	K <sub>d</sub> =	0.93	L/kg
APPARENT DIFFUSIVITY	D <sub>A</sub> =	2.43E-03	cm²/s
VOLATILIZATION FACTOR	VF=	2.54E+03	m³/kg

## TARGET CANCER RISK LEVEL FOR INGESTION OF SOIL (INDUSTRIAL SOIL)

TARGET CANCER RISK LEVEL	TR=	4.67E-07	unitless	
TARGET CANCER RISK L (INDUSTR		ALATION		
TARGET CANCER RISK LEVEL	TR=	5.32E-07	unitless	,

References

1.) Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance, WDNR, April 1997

2.) Table for Texas Risk Reduction Program Rule (1/19/2000) Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals).

3.) EPA Region 9: Preliminary Remediation Goals (PRGs) Tables 0:/STAFF/bschneid/apic and span/norht/direct contact risk car PCE april 13 00.XLS

# WDNR DIRECT CONTACT RISK MODEL SOIL CLEAN-UP GOALS Carcinogenic Contaminants in Non-Industrial Soil

COMPOUND: TCE	PROJECT NAME: Spic and Span Store #88			
SITE SPE	ECIFIC PROPERTIES:			
CONTAMINANT CONCENTRATION COMBINED TARGET CANCER RISK LEVEL	С <sub>снем</sub> = 9.25 mg/kg TR= 9.95E-07			
CHEMICAL	SPECIFIC PROPERTIES			
ORAL CANCER SLOPE FACTOR(FROM RISK-BASED CONC. TABLE BACK INHALATION CANCER SLOPE FACTOR(FROM RISK-BASED CONC. TABLE	SFo= 0.0111 [(mg/kg-day)] <sup>-1</sup>			
MOLECULAR DIFFUSIVITY OR AIR DIFFUSION COEFFICIENT	D <sub>air</sub> = 0.078 cm <sup>2</sup> /sec			
WATER DIFFUSION COEFFICIENT	Dwater= 9.10E-06 cm <sup>2</sup> /sec			
HENRY'S LAW CONSTANT	H <sup>'</sup> = 0.428 unitless			
ORGANIC CARBON PARTITION COEFFICIENT	K <sub>oc</sub> =94 cm³/gm			
DNR DEFAULT EXPOSURE ASSUMPTIONS PER NR 720.19(5)(c)2.a.				

AVERAGE BODY WEIGHT FOR ADULT	Bwa=	70	kg
AVERAGE BODY WEIGHT FOR CHILD	BWc=	15	kg
AVERAGING TIME	AT=	70	yr
EXPOSURE FREQUENCY	EF=	350	days/year
EXPOSURE DURATION FOR ADULT - INGESTION	EDa=	24	yr
EXPOSURE DURATION FOR CHILD - INGESTION	EDc=	6	yr
INGESTION RATE OF SOIL FOR ADULT	IRa=	100	mg/day
INGESTION RATE OF SOIL FOR CHILD	IRc=	200	mg/day
INHALATION RATE FOR ADULT LABORER	IRw=	24	m³/day
AGE-ADJUSTED SOIL INGESTION FACTOR	IFs=	114	mg-yr/kg-d
INHALATION EXPOSURE DURATION	ED=	30	yr
INHALATION RATE FOR ADULT LABORER	IR=	20	m³/day
CONCENTRATION OF PARTICULATED LESS THAN 10um IN AIR	Cp=	1.4	ug/m³
INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF SQUARE SOURCE	Q/C=	68.	81 kg/m <sup>3</sup>
EXPOSURE INTERVAL	T=	9.50E+	08 s
SOIL DRY BULK DENSITY	p <sub>b</sub> =		.5 g/cm <sup>3</sup>
AIR FILLED POROSITY	O <sub>a</sub> =	0.2	28 cm³/cm³
VOLUMETRIC SOIL MOSITURE CONTENT	O <sub>w</sub> =	0.	15 cm³/cm³
TOTAL SOIL POROSITY	n=	0.4	43 cm <sup>3</sup> /cm <sup>3</sup>
SOIL ORGANIC CARBON CONTENT	f <sub>oc</sub> =	0.00	06 g/g

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#### CONTINUED ON FOLLOWING PAGE

#### DIRECT CONTACT RISK MODEL (CONTINUED)

# CALCULATED INPUT VALUES

SOIL:WATER DISTRIBUTION COEFFICIENT	K <sub>d</sub> =	0.564	L/kg
APPARENT DIFFUSIVITY	D <sub>A</sub> =	2.32E-03	cm²/s
VOLATILIZATION FACTOR	VF=	2.60E+03	m <sup>3</sup> /kg

# TARGET CANCER RISK LEVEL FOR INGESTION OF SOIL (INDUSTRIAL SOIL)

TARGET CANCER RISK LEVEL	TR=	1.59E-07	unitless
TARGET CANCER RISK LEV (INDUSTRIAL		ALATION	
TARGET CANCER RISK LEVEL	TR=	8.36E-07	unitless

References

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**探**汉 法 1.) Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs) Interim Guidance, WDNR, April 1997

2.) Table for Texas Risk Reduction Program Rule (1/19/2000) Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals).

3.) EPA Region 9: Preliminary Remediation Goals (PRGs) Tables O:/STAFF/bschneid/apic and span/norht/direct contact risk car PCE april 13 00.XLS

#### SOIL PROBE SAMPLE COLLECTION METHODS

A soil probe (Geoprobe<sup>®</sup> or other) unit consists of a hydraulic ram with a hydraulic hammer, the sampling probe and driving rods. The sampling probe is a one- or two-inch diameter stainless steel tube into which a disposable polyethylene liner is inserted prior to each sampling event. The sampler is then driven into the ground using the hydraulic ram or, when the hydraulic ram cannot exert enough pressure to continue to push the sampler into the ground, the hammer.

Prior to driving the sampler into the ground and between each sampling event, the stainless steel tube was washed in a solution of water and Alconox<sup>®</sup>. The sampler was rinsed in clean water. A new, clean plastic sleeve was inserted for each sampling event. The plastic sleeves are disposable and not intended for reuse.

After the sampler penetrated the ground to the appropriate depth, the nose plug was removed (oneinch sampler only; the two-inch sampler does not use a nose plug) and the sampler was pushed/hammered an additional two feet into the ground (undisturbed soil collection procedures). Upon advancing the sampler two feet (one-inch sampler) or four feet (two-inch sampler), the entire sampler, with the plastic sleeve intact, was withdrawn. The plastic sleeve was then provided to the on-site geologist or scientist for soil classification and sample containerization.

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#### SOIL SAMPLE LOGGING, COLLECTION AND HANDLING

Following retrieval of the soil sample from the sampling device, a section of sample intended for laboratory analysis was contained. A portion of the sample was immediately transferred to laboratory-provided containers, field preserved (if appropriate), labeled, placed in a plastic bag, sealed and stored in an insulated container pending shipment to the laboratory.

The remaining sample was classified in accordance with ASTM method D-2487, with reference to method D-2488 (as appropriate). The descriptions may include information pertaining to soil type (Unified Soil Classification System code), grain size distribution, gradation, color (Munsell notation or other), odor, moisture content, consistency, grain shape, lithology and other content, structure, mottling and layering, as appropriate. Upon completion of classification, this portion of the sample was contained in a sealed plastic bag pending field screening, or was deposited in an appropriate container pending disposal.

The samples to be analyzed in the laboratory for volatile organic compounds (VOCs; SW-846 Method 8021) were transferred to laboratory-provided 60-ml glass jars with Teflon<sup>®</sup> septa. Twenty-five to 35 grams of soil was placed in the jars and preserved in the field with laboratory-provided purge-and-trap grade methanol. The jars were then securely sealed, labeled with the sample identification, date of collection and intended analysis. The selected sample containers were then placed in resealable plastic bags and stored on ice in an insulated container.

The samples were transported to a Wisconsin-certified laboratory via overnight courier or the laboratory courier or McLaren/Hart staff. All sampling locations and procedures were documented in a bound field notebook used to record daily activities at the site.

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#### SAMPLE CUSTODY PROCEDURES

Sample custody procedures are designed to comply with U.S. EPA and National Enforcement Investigation Council (NEIC) requirements for sample control. Samples collected during a site investigation are the responsibility of identified persons from the time they were collected until they or their derived data are incorporated into the final report. Stringent chain-of-custody procedures were followed to maintain and document sample possession.

Chain-of-custody forms were competed to the fullest extent possible prior to sample shipment. They included the following information:

- Sample identification;
- Date collected;
- Source of sample (including type of sample and site identification);
- Sampler name.

The forms were filled out in a legible manner using waterproof ink and were signed by the sampler. Similar information was provided on the sample label, which was securely attached to the sample bottle. Samples were always accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them signed, dated and noted the time on the record. A separate custody record accompanied each sample container. A copy of the custody record was retained by the field sampler and filed upon return to the office.

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March 29, 2000

Brian Schneider McLaren/Hart W239 N2890 Pewaukee Rd. Pewauakee, WI 53072

RE: DryClean USA #88

Dear Brian Schneider

Enclosed are the results of analyses for sample(s) received by the laboratory on March 15, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely, 1

Andy Johnson Project Manager



McLaren/Hart W239 N2890 Pewaukee Rd. Pewauakee, WI 53072	Project: DryClean USA #88 Project Number: 100001574001001 Project Manager: Brian Schneider	R R	ampled: 3/14/00 eceived: 3/15/00 eported: 3/29/00 17:57
	ANALYTICAL REPORT FOR	SAMPLES:	
Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B-11 .5-2.5'	B003316-01	Soil (WI)	3/14/00
B-11 4.5-6'	B003316-02	Soil (WI)	3/14/00
B-6 .5-2.5'	B003316-03	Soil (WI)	3/14/00
B-6 4.5-5.6'	B003316-04	Soil (WI)	3/14/00
B-4 2-4'	B003316-05	Soil (WI)	3/14/00
B-4 6-8'	B003316-06	Soil (WI)	3/14/00 ,
B-5 2-4'	B003316-07	Soil (WI)	3/14/00
B-5 6-8'	B003316-08	Soil (WI)	3/14/00
B-10 2-4'	B003316-09	Soil (WI)	3/14/00
B-10 6-8'	B003316-10	Soil (WI)	3/14/00
B-10 10-12'	B003316-11	Soil (WI)	3/14/00
B-9 2-4'	B003316-12	Soil (WI)	3/14/00
" B-9 6-8'	B003316-13	Soil (WI)	3/14/00
B-9 10-12'	B003316-14	Soil (WI)	3/14/00
B-8 2-4'	B003316-15	Soil (WI)	3/14/00
B-8 6-8'	B003316-16	Soil (WI)	3/14/00
MeOH Blank	B003316-17	MeOH Blank	3/14/00

Great Lakes Analytical

Andy Johnson, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



McLaren/Hart		Project:	DryClean	USA #88		Sampled:	3/14/00	
W239 N2890 Pewaukee Rd.	Pro	oject Number:	: 100001574	4001001		Received:	3/15/00	
Pewauakee, WI 53072	Pro	ject Manager:	Brian Schr	eider		Reported:	3/29/00 17:57	
•								
مع <sup>1</sup>	WDNF	R Volatile O	rganic Con	npounds by M	ethod 8021			
1		Gr	eat Lakes A	Analytical				
				-				
	Batch	Date	Date	Surrogate	Reporting		· · · · · · · · · · · · · · · · · · ·	
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-11 .5-2.5'</u>			<u>B0033</u>	<u>16-01</u>			<u>Soil (WI)</u>	
1,1-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	"	н			25.0	ND	и .	
1,1-Dichloroethene	11	н	**		25.0	ND	14	
cis-1,2-Dichloroethene	11	11			25.0	ND	u -	
trans-1,2-Dichloroethene	11	н	11		25.0	ND	ti v	
Tetrachloroethene	88	"	n		25.0	ND	H ·	
1,1,1-Trichloroethane	11	11	**		25.0	ND	11	
1,1,2-Trichloroethane	11	18	n		25.0	ND	II .	
Trichloroethene	н	11	u		25.0	ND	"	,
Vinyl chloride	11	н	89		25.0	ND	11	
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		146	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		126	"	05

Great Lakes Analytical

Andy Johnson, Project Manager



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McLaren/Hart		Project	DryClean	USA #88		Sampled:	3/14/00	
W239 N2890 Pewaukee Rd.	Pro	ject Number:	: 100001574	4001001		Received:	3/15/00	
Pewauakee, WI 53072	Pro	ject Manager:	: Brian Schr	neider		Reported:	3/29/00 17:57	
	WDNF		-	npounds by M	ethod 8021			
		Gr	eat Lakes A	Anarytical				
	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-11 4.5-6'</u>			<u>B0033</u>	<u>16-02</u>			Soil (WI)	
- 1,1-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	11	t <del>i</del>	f1		25.0	ND		
1,1-Dichloroethene		"	"		25.0	ND	17	
cis-1,2-Dichloroethene	17	17	11		25.0	ND		
trans-1,2-Dichloroethene	"	"	u .		25.0	ND	"	
Tetrachloroethene	11	н	**		25.0	ND	n	
1,1,1-Trichloroethane		17			25.0	ND		
1,1,2-Trichloroethane	"	п			25.0	ND	"	
Trichloroethene		"	н		25.0	ND	"	
Vinyl chloride	"		11		25.0	ND	11	,
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		149	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		147	"	05

Great Lakes Analytical

Andy Johnson, Project Manager

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; USACE; Wisconsin DNR-999917160

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McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

#### WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-6 .5-2.5'</u>			<u>B0033</u>	<u>16-03</u>			<u>Soil (WI)</u>	
1,1-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	н	н	н		25.0	ND	н ,	
1,1-Dichloroethene	11	**	. 11		25.0	ND	11	
cis-1,2-Dichloroethene	"	"	ti		. 25.0	ND	н	
trans-1,2-Dichloroethene	11	н	**		25.0	ND	"	
Tetrachloroethene	11	н			25.0	164	"	1
1,1,1-Trichloroethane	н	**	14		25.0	ND	11	
1,1,2-Trichloroethane					25.0	ND	18	
Trichloroethene			"		25.0	ND	н	
Vinyl chloride	58	"	"		25.0	ND	н	
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		153	%	05
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		119	"	•

Great Lakes Analytical

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Andy Johnson, Project Manager



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McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

#### WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-6 4.5-5.6'</u>			<u>B0033</u>	<u>16-04</u>			<u>Soil (WI)</u>	
l, 1-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	"	11	11		25.0	ND		
l, l-Dichloroethene	n	"	"		25.0	ND		
cis-1,2-Dichloroethene	"	"	<b>50</b>		25.0	ND		
trans-1,2-Dichloroethene	"	п	H		25.0	ND	н	
Tetrachloroethene	н	17	"		25.0	ND	н	
1,1,1-Trichloroethane	n	11	΄ Ν		25.0	ND		
1,1,2-Trichloroethane		н	*1		25.0	ND	"	
Trichloroethene	11	11	11		25.0	ND	11	
Vinyl chloride	11	11	н		25.0	ND	"	,
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		146	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		124	"	05

Great Lakes Analytical

Andy Johnson, Project Manager



McLaren/Hart		Project:	DryClean	USA #88		Sampled:	3/14/00	
W239 N2890 Pewaukee Rd.	Pro	ject Number:	100001574	4001001		Received:	3/15/00	·
Pewauakee, WI 53072	Proj	ect Manager:	Brian Schr	neider		Reported:	3/29/00 17:57	
	WDNF	R Volatile O	rganic Con	npounds by M	ethod 8021			
		Gr	eat Lakes A	Analytical				
	Batch	Date	Date	Surrogate	Reporting			-
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-4 2-4'</u>			<u>B0033</u>	<u>16-05</u>			Soil (WI)	
l, l-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane		**	**		25.0	ND	"	
1,1-Dichloroethene	11	н	н		25.0	ND	11	
cis-1,2-Dichloroethene			"		25.0	ND	0	
trans-1,2-Dichloroethene	н		n		25.0	ND	н	
Tetrachloroethene	"	11			25.0	ND	н	
1,1,1-Trichloroethane			11		25.0	ND	11	
1,1,2-Trichloroethane		19			25.0	ND	**	
Trichloroethene		**	n		25.0	ND	11	
Vinyl chloride	"	n	"		25.0	ND	11	,
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		140	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		113	"	

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Andy Johnson, Hroject Manager



McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

# WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-4 6-8'</u>			B0033	<u>16-06</u>			Soil (WI)	
1,1-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	11	н	**		25.0	ND	97	
1,1-Dichloroethene	н		"		25.0	ND	11	
cis-1,2-Dichloroethene	"	n	"		. 25.0	ND	**	
trans-1,2-Dichloroethene	11	H	11		25.0	ND	".	
Tetrachloroethene	n	0	11		25.0	ND	**	
1,1,1-Trichloroethane	"		· •		25.0	ND	11	
1,1,2-Trichloroethane	11	**	"		25.0	ND	"	
Trichloroethene	н	**	н		25.0	ND		
Vinyl chloride	11	"	"		25.0	ND	11	,
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		136	%	05
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		106	"	

Great Lakes Analytical



McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

# WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-5 2-4'</u>			B0033	<u>16-07</u>			Soil (WI)	
1,1-Dichloroethane	0030429	3/17/00	3/26/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	"		11		25.0	ND	H .	
1,1-Dichloroethene	11	**			25.0	ND		
cis-1,2-Dichloroethene	"	н			25.0	ND	H	
trans-1,2-Dichloroethene	11	11	"		25.0	ND	"	
Tetrachloroethene	17		**		25.0	ND	H	
1,1,1-Trichloroethane	19	11	. 11		25.0	ND	"	
1,1,2-Trichloroethane	**	**			25.0	ND	11	
Trichloroethene	н	tt.			25.0	ND	"	
Vinyl chloride	"	"			25.0	ND	**	`
Surrogate: 4-BFB (ELCD)	"	11	"	80.0-120		142	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		<i>.</i> 119	"	

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Andy Johnson, Project Manager

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; USACE; Wisconsin DNR-999917160



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1380 Busch Parkway Buffalo Grove, Illinois 60089

McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

#### WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

1	Detah	Dut	Dut	Curragete	Denertine			
-	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit ·	Result	Units	Notes*
1								
<u>B-5 6-8'</u>			<u>B0033</u>	<u>16-08</u>			Soil (WI)	
1,1-Dichloroethane	0030429	3/17/00	3/27/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	**	11	**		25.0	ND		
1,1-Dichloroethene	н	**	**		25.0	ND	11	
cis-1,2-Dichloroethene	n		11		25.0	ND	н	
trans-1,2-Dichloroethene	0	F1	н		25.0	ND	H	
Tetrachloroethene	"	11	17		25.0	ND	11	
1,1,1-Trichloroethane		11	. 11		25.0	ND	**	
- 1,1,2-Trichloroethane		и	"		25.0	ND	"	
Trichloroethene	11	n			25.0	ND	"	
Vinyl chloride	"	n	н		25.0	ND	"	,
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		137	%	05
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		116	"	

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1380 Busch Parkway Buffalo Grove, Illinois 60089 Email: info@glalabs.com (847) 808-7766 FAX (847) 808-7772

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McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57
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## WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit ·	Result	Units	Notes*
<u>B-10 2-4'</u>			<u>B0033</u>	<u>16-09</u>			Soil (WI)	
- 1,1-Dichloroethane	0030429	3/17/00	3/27/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	11	IF.	н		25.0	ND	н.	
1,1-Dichloroethene	н	**	н		25.0	ND	11	
cis-1,2-Dichloroethene	"	58	11		25.0	ND '		
trans-1,2-Dichloroethene	0	н	n		25.0	ND	"	
Tetrachloroethene	u.	11			25.0	ND	n	
1,1,1-Trichloroethane	11	H			25.0	ND	11	
1,1,2-Trichloroethane	, <b>n</b>	"	"		25.0	ND		
Trichloroethene	11		**		25.0	ND		
Vinyl chloride	"	11	11		25.0	ND	n	,
Surrogate: 4-BFB (ELCD)	"	"	3/27/00	80.0-120		98.5	%	
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		128	"	<i>O5</i>

Great Lakes Analytical

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; USACE; Wisconsin DNR-999917160



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McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

#### WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-10 6-8'</u>			<u>B0033</u>	<u>16-10</u>			<u>Soil (WI)</u>	
- 1,1-Dichloroethane	0030429	3/17/00	3/27/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	Ħ	**	11		25.0	ND		
1,1-Dichloroethene	tt	**	17		25.0	ND	19	
cis-1,2-Dichloroethene	"	11	17		25.0	ND	H	
trans-1,2-Dichloroethene	0	17			25.0	ND	н ,	
Tetrachloroethene	11	11			25.0	ND	**	
1,1,1-Trichloroethane	н	H			25.0	ND	**	
<sup>1</sup> 1,1,2-Trichloroethane	н		11		25.0	ND	tt.	
Trichloroethene	11	11	13		25.0	ND		
Vinyl chloride	**	Ħ	11		25.0	ND	R	\$
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		162	%	05
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		143	"	<i>O5</i>

Great Lakes Analytical



1380 Busch Parkway Buffalo Grove, Illinois 60089

	McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00	
•	W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00	
1	Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57	_

#### WDNR Volatile Organic Compounds by Method 8021 **Great Lakes Analytical**

	Batch	Date	Date	Surrogate	Reporting		,	
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-8 2-4'</u>			<u>B0033</u>	<u>16-15</u>			<u>Soil (WI)</u>	
- 1,1-Dichloroethane	0030429	3/17/00	3/28/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	11	**	0		25.0	ND	19	
1,1-Dichloroethene	н	н	0		25.0	ND		
cis-1,2-Dichloroethene	11	u –	"		25.0	ND	11	
trans-1,2-Dichloroethene	н	"	19		25.0	ND	"	
Tetrachloroethene	24	н	**		25.0	ND	п	
1,1,1-Trichloroethane	n	"	н		25.0	ND	"	
1,1,2-Trichloroethane	11	н	11		25.0	ND	H	
Trichloroethene	"	11	**		25.0	ND	н	
Vinyl chloride	**	11	11		25.0	ND	n	,
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		353	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0-120		283	"	<i>O5</i>

Great Lakes Analytical

Andy Johnson, Project Manager

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; USACE; Wisconsin DNR-999917160

\*Refer to end of report for text of notes and definitions.

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1380 Busch Parkway Buffalo Grove, Illinois 60089

	Project:	DryClean V	USA #88		Sampled:	3/14/00	
Pro	ject Number:	100001574	001001		Received:	3/15/00	•
Proj	ject Manager:	Brian Schn	neider		Reported:	3/29/00 17:57	
WDNF		0	• •	ethod 8021			
Batch				Reporting			
Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes
		B00331	16-12			Soil (WI)	
0030429	3/17/00	3/28/00		25.0	ND	ug/kg dry	
**		n		25.0	ND		
11	11	11		25.0	ND		
"		H		25.0	ND	n	
	11			25.0	ND		
11	n	**		25.0	ND	n.	
		n		25.0	ND	n	
н	н	11		25.0	ND	u .	
**	н	н		25.0	ND	11	
11	11			25.0	ND	11	,
, "	"	"	80.0-120		191	%	05
"	n	"	80.0-120		147	"	<i>O5</i>
	Pro WDNF Batch Number 0030429 " " " " " " " " "	Project Number: Project Manager: WDNR Volatile O Gr Batch Date Number Prepared 0030429 3/17/00 """""" """""""""""""""""""""""""""	Project Number: 100001574 Project Manager: Brian Schr WDNR Volatile Organic Con Great Lakes A Batch Date Date Number Prepared Analyzed 0030429 3/17/00 3/28/00 """"""" B0033 0030429 3/17/00 3/28/00 """""""""	Project Manager:       Brian Schneider         WDNR Volatile Organic Compounds by M Great Lakes Analytical         Batch       Date       Date       Surrogate         Number       Prepared       Analyzed       Limits         0030429       3/17/00       3/28/00       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         0030429       3/17/00       3/28/00       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "         "       "       "       "       "         "       "       "       "       "         "       "       "       "	Project Number:100001574001001 Brian SchneiderWDNR Volatile Organic Compounds by Method 8021 Great Lakes AnalyticalBatch NumberDate PreparedSurrogate AnalyzedReporting LimitsB003316-12E003316-12CompoundsSurrogate LimitsReporting Limit00304293/17/003/28/0025.0"""""""25.0"""""""25.0""""""""""""""""""""""<	Project Number: Project Manager:100001574001001 Brian SchneiderReceived: Reported:WDNR Volatile Organic Compounds by Method 8021 Great Lakes AnalyticalBatch NumberDate PreparedDate AnalyzedSurrogate LimitsReporting LimitBatch NumberDate PreparedDate AnalyzedSurrogate LimitsReporting LimitResultBoto 0304293/17/003/28/0025.0ND""25.0	Project Number:       100001574001001       Received:       3/15/00         Project Manager:       Brian Schneider       Reported:       3/29/0017:57         WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical       Sourcest Lakes Analytical       Sourcest Lakes Analytical         Batch       Date       Date       Surrogate       Reporting       Units         Batch       Date       Date       Surrogate       Reporting       Units         0030429       3/17/00       3/28/00       25.0       ND       ug/kg dry         "       "       "       25.0       ND       ug/kg dry         "       "       "       25.0       ND       "         "       "       25.0       ND       "         "       "       25.0       ND       "         "       "       25.0       ND       "         "       "

Great Lakes Analytical

Andy Johnson, Project Manager



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	McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00	٦
2	W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00	
L	Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57	

#### WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

Units 1 Soil (WI)	Note
Soil (WI)	
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Great Lakes Analytigal

And Johnson, Project Manager



1380 Busch Parkway Buffalo Grove, Illinois 60089

McLaren/Hart	Project:	DryClean USA #88	Sampled:	3/14/00
W239 N2890 Pewaukee Rd.	Project Number:	100001574001001	Received:	3/15/00
Pewauakee, WI 53072	Project Manager:	Brian Schneider	Reported:	3/29/00 17:57

#### WDNR Volatile Organic Compounds by Method 8021 Great Lakes Analytical

	Batch	Date	Date	Surrogate	Reporting			
Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
<u>B-8 6-8'</u>			<u>B0033</u>	<u>16-16</u>			<u>Soil (WI)</u>	
1,1-Dichloroethane	0030429	3/17/00	3/28/00		25.0	ND	ug/kg dry	
1,2-Dichloroethane	"	н	**		25.0	ND	н	
1,1-Dichloroethene	H		11		25.0	ND		
cis-1,2-Dichloroethene	"	н	н		25.0	ND		
trans-1,2-Dichloroethene	n	11	11		25.0	ND		
Tetrachloroethene	**		**		25.0	ND	11	
1,1,1-Trichloroethane	н	**			25.0	ND	н	
1,1,2-Trichloroethane	"	**	"		25.0	ND	н	
Trichloroethene	"	"	H		25.0	ND	0	
Vinyl chloride	"	"	11		25.0	ND	н	r
Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120		353	%	<i>O5</i>
Surrogate: 4-BFB (PID)	"	"	"	80.0 <b>-</b> 120		290	"	<i>O5</i>

Great Lakes Analytical



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	McLaren/Hart		Project:	DryClean	USA #88	·····	Sampled	3/14/00	
	W239 N2890 Pewaukee Rd.	Pro	ject Number:	100001574	4001001		Received:	3/15/00	
	Pewauakee, WI 53072	Pro	ject Manager:	Brian Schr	neider		Reported:	3/29/00 17:57	
		WDNF	R Volatile O	rganic Con	npounds by M	lethod 8021			
it t				eat Lakes A	• •				
( ()		Batch	Date	Date	Surrogate	Reporting			· · · · · · · · · · · · · · · · · · ·
	Analyte	Number	Prepared	Analyzed	Limits	Limit	Result	Units	Notes*
	MOUDIN			<b>D0033</b>	14 17			MOUDI	and a second
	MeOH Blank			<u>B0033</u>	<u>10-1 /</u>	25.0		<u>MeOH Blank</u>	•
	1,1-Dichloroethane	0030431	3/17/00	3/28/00		25.0	ND	ug/l	
Ŧ	1,2-Dichloroethane	"	11	11		25.0	ND	11 .	
	1,1-Dichloroethene	11	**	11		25.0	ND	<b>11</b>	
ہ ہد	cis-1,2-Dichloroethene	11	48	"		25.0	ND	"	
	trans-1,2-Dichloroethene	11	"	97		25.0	ND	H 5	
6	Tetrachloroethene	11		н		25.0	ND	"	
	1,1,1-Trichloroethane	"	н	88		25.0	ND	11	
	1,1,2-Trichloroethane	n	18	11		25.0	ND	н	
•	Trichloroethene	11	н	u.		25.0	ND	п	2
ł	Vinyl chloride	11	11	"		25.0	ND	н	
<b></b>	Surrogate: 4-BFB (ELCD)	"	"	"	80.0-120	······································	132	%	05
_	Surrogate: 4-BFB (PID)	"	"	"	80.0-120		107	"	

Great Lakes Analytical

Andy Johnson, Project Manager

Accreditations/Certifications: Illinois EPA-100261; New Jersey DEP-54001; USACE; Wisconsin DNR-999917160 2.31

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1380 Busch Parkway Buffalo Grove, Illinois 60089 ۰.

McLaren/Hart W239 N2890 Pewaukee Rd. Pewauakee, WI 53072		DryClean USA #88 100001574001001 Brian Schneider	Sampled: Received: Reported:	3/15/00	7:57
		Weight Determination eat Lakes Analytical			
Sample Name	Lab ID	Matrix		Result	Units
3-11 .5-2.5'	B003316-01	Soil (WI)		86.4	%
3-11 4.5-6'	B003316-02	Soil (WI)		97.5	%
3-6 .5-2.5'	B003316-03	Soil (WI)		94.7	%
3-6 4.5-5.6'	B003316-04	Soil (WI)		92.7	%
3-4 2-4'	B003316-05	Soil (WI)		82.7	%
8-4 6-8'	B003316-06	Soil (WI)		87.2	<b>%</b>
3-5 2-4'	B003316-07	Soil (WI)		85.3	%
8-5 6-8'	B003316-08	Soil (WI)		77.3	%
-10 2-4'	B003316-09	Soil (WI)		82.5	%
-10 6-8'	B003316-10	Soil (WI)		94.5	%
-9 2-4'	B003316-12	Soil (WI)		71.8	%
-9 6-8'	B003316-13	Soil (WI)		89.7	%
-8 2-4'	B003316-15	Soil (WI)		90.7	%
-8 6-8'	B003316-16	Soil (WI)		89.0	%

Great Lakes Analytical

Andy Johnson, Project Manager



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1380 Busch Parkway Buffalo Grove, Illinois 60089

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	Hart 890 Pewaukee Rd. e, WI 53072		DryClean USA #88 100001574001001 Brian Schneider	Sampled: Received: Reported:	
		No	tes and Definitions		
#	Note	94		ورو بروی میگر به محمد این و میگر میگرد.	
05	One or more surrogate rec	overies were above the laboration	tory's established acceptance	criteria.	•
DET	Analyte DETECTED				
ND	Analyte NOT DETECTEI	O at or above the reporting lin	nit		
NR	Not Reported				<b>v</b> <sup>1</sup>
iry	Sample results reported or	a dry weight basis			
Recov.	Recovery				,
RPD	Relative Percent Difference	e			
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# CHAIN OF CUSTODY REPORT

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1380 Busch Parkway Buffalo Grove, IL 60089-4505 (847) 808-7766 FAX (847) 808-7772

2010 - 11. N

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20725 Watertown Road Brookfield, WI 53501 (414) 798-1030 FAX (414) 798-1066

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- YC

	Client: McLaren Hart	Bill To:	Same			TAT: 5 DAY 4 DAY 3 D	DAY 2 DAY 1 DAY < 24 HRS.
	Address: W239 N 2890 Rewanker Rd D.	Address:				DATE RESULTS NEEDED:	3/21/00
	Pewankee (1) 53072 Brian Phone #: (262) 523 2040 Report to: Schneider Fax #: ()			6		TEMPERATURE UPON RECE	EIPT:
	Report to: Schneider Fax #: ()	State & Program:	WI	Phone #X Fax #: V	52621523 - 2040	KARIBILL .	
	Project: Dryclean USA #88_/			Sec. 1			SAMPLE
The	Sampler: George J Bayer POPOLITE #: 10001 1574 001001 45		Santa San	in Si		XVX / 27 /	CONTROL /
	୍କ FIELD ID; LOCATION / ୪୪ / ୬୪ /	Samole Viality	Pessentines 1,775 Containes	UC CELA			Image: State     Image: State       Image: State
	1 B-11 .5-2,5' 3/14	soil	2	X			B003316-1
	<sup>2</sup> B-11 4.5-6'						2
	3 B-6 0.5'-2,5'						3
	1 B-6 4.5.5.6'						Ý
	5 B-4 2-4'						5
	6 B-4 6-8'						6
	1 B-5 2-4						7
	<sup>e</sup> B-5 G-8						8
	<u>9 B-10 2-4'</u>						9
	10 B - 10 G - 8'						10
	RELINGUISHED 3/15/00 RECEIVED		DZ JET DOBELI	VOUISHED	yan 03/	5 BECEIVED	l hátř
BUI BOUD	RELINQUISHED 3/15/00 RECEIVED	ner		VQUISHED	und 1	MAR RECEIVED	186 Defi
CHOL	COMMENTS:		ШME		I.	IME	116.14
				• •		PAGE	1 OF 2



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## CHAIN OF CUSTODY REPORT

1380 Busch Parkway Buffalo Grove, IL 60089-4505 (847) 808-7766 FAX (847) 808-7772

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20725 Watertown Road Brookfield, WI 53501 (414) 798-1030 FAX (414) 798-1066

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Client: Mc Laren Hart	Bill To: S	Éme			TAT: 5 DAY 4 DAY	3 DAY 2 DAY 1 DAY < 24 HRS.
Address:	Address:				DATE RESULTS NEEDED	: 3/21
					TEMPERATURE UPON R	
Brian Phone #: () Report to: Schneider Fax #: ()	State & Program:	UI	Phone #: (262) Fax #: (/ )	523-2040	AIR BILL NO.	
Project: Nry clean USA #88		5	\$ 25	$\times / /$	× / / /	SAMPLE
	8 . /	NIZINES	IN S S S	AMAINSI	3////	CONTROL
Sampler: Cocorse Bayer PO/Quote #: FIELD ID, LOCATION	Stunge Sample Naltige	172E-00120110205	Construction of the Constr			SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1 B-10 10'-12' 3/14	soil	2	HOLD			B003316-11
<sup>2</sup> B-9 2-4' 1			X	X		
<sup>3</sup> B-9 6-8'			X	X		(3
4 B-9 10-12			HOLD			14
5 B-8 2-4'			X	X		
6 B-8 6-8'			X	X		
MEOH BLANK FB-1		1	X	$\mathbf{x}$		
8						
9	_					
10						
RELINOVASHED 3/15-100 RECEIVED A		Delis ABEY	NOUISHED	031	RECEIVED	(14)1
RELINQUISHED 3/15/00 RECEIVED 3/15/00 RECEIVED 101/15/00 RECEIVED 101/15/100	Mar	DATE RELI	NOUISHED	Tandin (1)	NE RECEIVED	154 17511
		1	r			
COMMENTS: DO NOT analyze Hol	d SAmpi	ler until	& instructed	to do.	SO by M	claren Hort
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SOIL BORING LOG INFORMATION Form 4400-122 Rev. 5-97

Route To: Watershed/Wastewater

Remediation/Redevelopment

Ŵaste Management □ Other □

Facili	ty/Proje	ot No.				Licone	/Dorm	t/Monit	oring N	lumber		Borin	Pa g Numt		of	1
	yclean					License	/Ferm	UNIONI		umber		Dom		B·	-4	
				ne and name of crew chie	ef)	Date D	Date Drilling Started Date Drilling Completed							lling Method		
0				al Terre Versei												
	-Site E			tal, Tony Kapugi DNR Well ID No.	Common Well Name	Final St	tatic W	ater Lev	el	Surfac	e Eleva	tion		IE	<u>Sorehole</u>	oilprobe Diameter
			•					MSL				et MS	L			Inches
-	-	ion or I	Local G	rid Origin (Check i	f estimated: 🔲 )			0	1	FT	Local (	Grid Lo	cation	(If app	licable)	
State	Plane	c		4 50	S/C/N	Lat.				"		-	1 🗌			E
Facilit	1/4 y ID	01	1/	/4 of Section , County	<u>T N, R</u>	Lon County C	No. of Concession, name	Civil 7	lown/C	ity/ or	Village	Fee	t 🗆 S	· ·		Feet 🗌 W
	-					-			Berli	•						
Sar	nple											Soil	Prop	erties		
	ઝ 🗓	5	gt		ock Description						e					
ی <u>م</u>	Length Att. & Recovered (in)	Blow Counts	Depth In Feet		blogic Origin For		s	.9	E	e	Compressive Strength	et te		, Ż		RQD/ Comments
Number and Type	engthecov	low (	epth	Each	n Major Unit		SC	Graphic Log	Well Diagram	PID/FID	ompl	Moisture Content	Liquid Limit	Plasticity Index	P 200	QD/ omm
	24	m		Concrete				0 7	× D	 <1	S C	20			<u> </u>	<u> </u>
	12		F	FILL: Gravel, little	e fine to coarse gra	ined	1	XXX								
			-1	sand and silt, light												,
			Εl													
2 -	24		-2							<1						
	12		Ē				1									
			-3				FILL									
			E													
3	24		-4							<1						
.	24		Ē													
			E-5			•										
			F,													
4	24 24,			CLAY, silty, trace	roots, organics, an	nd				<1						-
	24,			fine to coarse grain moist.	ed sand, dark brov											
				moist.			CL-M									
			-8													
5	24 24			CLAY, silty, trace	fine to coarse grai	ned				<1						
	-		-9	sand and gravel, br	own, moist.		1									
			<b>E</b> ´													
Ц			-10				CL									
6	24 24									<1						
			-11													
		ł	-								[					
Ц			-12 -		·											
hereby	y certify	that th	ne inform	nation on this form is true	e and correct to the best	t of my kr	nowled	ge.								
Signatu	-		· ·			aren/H										Tel:
																Fax:

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

4400-122	
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Route To:

Watershed/Wastewater Remediation/Redevelopment

Waste Management 🛛 Other 🗆

- <u></u>													ID		nge 1	of	1
	ty/Proje vclean						Licens	se/Permi	t/Monit	oring N	umber		Bonn	gNumt	B-	5	
				me and	name of crew chi	ef)	Date I	Drilling S	Started	and the second division of the second divisio	Da	ate Drill	ling Co	mplete		_	lling Method
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SOIL BORING	LOG	INFORMATION
Form 4400-122		Rev. 5-97

Form 4400-122

Route To: Watershed/Wastewater

Remediation/Redevelopment

Waste Management 🗌 Other 🗆

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

Route	To
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Watershed/Wastewater

Waste Management 

Other

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

Route To:

Watershed/Wastewater

Waste Management 
Other

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SOIL BORING	LOG INFORMATION Rev. 5-97

Watershed/Wastewater Remediation/Redevelopment Waste Management 🗌 Other 🗆

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

Route To:

Watershed/Wastewater Remediation/Redevelopment Waste Management 🗌 Other 🗌

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Dryclean USA #88 Boring Drilled By (Firm name and name of crew chief)																		lling Method	
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