Site Investigation Field Procedures Workplan

Pizza Place Restaurant
225 US Hwy 8 & 63
Turtle Lake, Wisconsin

October 18, 2016
by METCO
WDNR File Reference #: 03-03-562914
PECFA Claim #: 54889-9999-25

Excellence through experience™

This document was prepared by:

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PECFA Claim #: 54889-9999-25

Douglas Potvin
c/o Janet Diercks
611 E Bracklin Street
Rice Lake, WI 54868

Dear Mr. Potvin,

Enclosed is our "Site Investigation Field Procedures Workplan" concerning the Pizza Place Restaurant site in Turtle Lake, Wisconsin. This document outlines the procedures and the methods used to conduct such an investigation.

A copy of this workplan will be sent to the Wisconsin Department of Natural Resources for review.

We appreciate the opportunity to be of service to you on this project. Should you have any questions or require additional information, do not hesitate to contact our La Crosse office.

Sincerely,

Jason T. Powell
Staff Scientist

C: Carrie Stoltz – WDNR

LIST OF ACRONYMS

AST - Aboveground Storage Tank
ASTM - American Society for Testing and Materials
Cd - Cadmium
DOT - Department of Transportation
DRO - Diesel Range Organics
ES - Enforcement Standards
gpm - gallons per minute
GRO - Gasoline Range Organics
HNU - brand name for Photoionization Detector
ID - inside-diameter
LAST - Leaking Aboveground Storage Tank
LUST - Leaking Underground Storage Tank
MSL - Mean Sea Level
MTBE - Methyl-tert-butyl ether
MW - Monitoring Well
NIOSH - National Institute for Occupational Safety & Health
NR - Natural Resources
OD - outside-diameter
PAH - Polynuclear Aromatic Hydrocarbons
PAL - Preventive Action Limits
Pb - Lead
PECFA - Petroleum Environmental Cleanup Fund
PID - Photoionization Detector
POTW - Publicly Owned Treatment Works
ppb ug/kg - parts per billion
ppm mg/kg - parts per million
psi - pounds per square inch
PVC - Polyvinyl Chloride
PVOC - Petroleum Volatile Organic Compounds
RAP - Remedial Action Plan
scfm - standard cubic feet per minute
SVE - Soil Vapor Extraction
USCS - Unified Soil Classification System
USGS - United States Geological Survey
UST - Underground Storage Tank
VOC - Volatile Organic Compounds
WDNR - Wisconsin Department of Natural Resources
WPDES - Wisconsin Pollutant Discharge Elimination System

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OBJECTIVES

Requirements of the WDNR

A Site Investigation is required by the Wisconsin Department of Natural Resources (WDNR) by authority of Section 292.11 of the Wisconsin Statutes. According to the WDNR, any soil that tests over 10 ppm Gasoline Range Organics (GRO) or Diesel Range Organics (DRO) requires an investigation. Any soil that tests over the Chapter NR720 Groundwater RCLs, Direct Contact RCLs, or Soil Saturation Values an investigation and possible remediation. Any groundwater that tests over the Preventive Action Limits (PAL) or Enforcement Standards (ES) for compounds listed in Chapter NR140 of the Wisconsin Statutes requires an investigation and possible remediation. For a further explanation of WDNR rules and regulations, see Appendix D.

Requirements of the PECFA Program

According to rules adopted in May 2006, the maximum allowable cost for an initial Site Investigation shall be no more than $20,000 unless pre-approved by PECFA. All consultant and commodity service costs must not exceed the PECFA Usual and Customary Charges.

Purpose of Document

This document briefly outlines all methods and procedures used by METCO personnel concerning "Site Investigations". These guidelines are strictly followed unless changed by managing personnel, site conditions, or project situations. All changes will be clearly noted.

All work conducted by METCO is undertaken in accordance with approved methods and regulations of the WDNR Bureau for Remediation and Redevelopment.

This document is site specific and will always be on-site during the project.

INTRODUCTION

Site Name

Pizza Place Restaurant

Site Address

225 US Hwy 8 & 63
Turtle Lake, Wisconsin

Legal Description

NE ¼, SW ¼, Section 30, Township 34 North, Range 14 West, Barron County

Contact or Client

Douglas Potvin
c/o Janet Diercks
611 E Bracklin Street
Rice Lake, WI 54868
(715) 736-1981

WDNR Project Manager

Carrie Stoltz
WDNR Northern Region
107 Sutliff Avenue
Rhinelander, WI 54501
(715) 365-8942

Consultant

METCO
Ronald J. Anderson, P.G.
Jason T. Powell
709 Gillette Street, Suite 3
La Crosse, WI 54603
(608) 781-8879

SITE BACKGROUND

Facility

Based on aerial photos, it appears that the property was first developed in approximately the 1940s after US Highway 8/63 was constructed in this area. The building was originally constructed as a gas station and service garage. Douglas Potvin operated a bait shop at the property and continued retail fuel sales at the property until the late 1980s. On April 12, 1988, a 1,000-gallon diesel UST was removed from the subject property. On April 17, 1989, two 1,000-gallon gasoline (leaded and unleaded) USTs were removed from the subject property. After Douglas Potvin sold the property, it operated as a gift shop for a period of time and has operated as a pizza restaurant for at least the past 10 years.

On April 17, 1989, during the removal of the two 1,000-gallon gasoline USTs, eight soil samples were collected underneath the removed gasoline USTs, piping, and dispensers. Petroleum contamination was detected in the two soil samples collected beneath the removed dispensers at 2,200 and 2,500 ppm Total Petroleum Hydrocarbons (TPH). A small amount, approximately ½ yard, of petroleum contaminated soil was excavated from the area of the removed pump islands and disposed at a local asphalt plant. After the contaminated soil was excavated, two additional soil samples were collected from the base of the excavation which showed no detects for TPH or BTEX (Benzene, Toluene, Ethylbenzene, and Xylene). Based on these results, it was determined that the UST systems had been properly closed based on WDNR regulations at that time and no additional site investigation was required at that time.

A closed LUST case, Davis Auto Body (BRRTS# 03-03-000273), exists approximately 200 feet to the east of the subject property. The Davis Auto Body LUST case was closed in 2003 with residual soil contamination in place. An open LUST case, Wild Card (BRRTS# 03-03-110339), exist approximately 225 feet to the northeast of the subject property.

During investigation of the Wild Card LUST case, a series of monitoring wells were installed to define the extent of petroleum contamination in groundwater. On July 10, 2014, during investigation of the Wild Card LUST site, one monitoring well (PZ-14) was installed in the road right of way adjacent to the Pizza Place Restaurant property. Two rounds of groundwater samples were collected from the Wild Card monitoring well network on July 24, 2014 and October 8, 2014. The results from monitoring well PZ-14 showed elevated levels of petroleum contamination in groundwater in this area and it was suspected that a petroleum release had occurred from the former UST systems that existed on the Pizza Place Restaurant property. On December 3, 2014, the

WDNR issued a letter to the current owner of the Pizza Place Restaurant property (Mike Schradle) requiring that a LUST investigation be conducted for the Pizza Place Restaurant property. However, the former property owner, Douglas Potvin, is assuming responsibility for the LUST investigation at this time.

Potential Risks and Impacts

The subject property and surrounding properties are all served by the Village of Turtle Lake municipal water supply. The nearest municipal well is located approximately 850 feet to the southeast of the subject property. METCO is not aware of any private water supply wells in the area, however neighboring properties will be inspected for private water supply wells during the site investigation.

METCO is not currently aware of any other impacts, receptors, risks, or local problems associated with the subject property.

SITE CONDITIONS

Topography

According to the USGS Hydrologic Atlas, Turtle Lake is located in the central portion of the St Croix River Basin. This area is characterized by a relatively flat glacial outwash plain with numerous swamps and kettle lakes.

The elevation of the site is approximately 1,250 feet above Mean Sea Level (MSL). See Appendix A for site location.

Geology

Native unconsolidated materials in this area generally consist of silty sand from surface to approximately 50 feet below ground surface (bgs). Medium to coarse grained sand exists from approximately 50 feet to at least 80 feet bgs. The unconsolidated materials are underlain by sandstone bedrock at approximately 125-150 feet bgs.

Hydrology

The nearest surface water is an unnamed pond, which exists approximately 450 feet to the southwest of the subject property.

Hydrogeology

Based on nearby LUST sites, perched groundwater may be present at

approximately 10 to 15 feet bgs. Groundwater flow in the perched aquifer appears to be toward the northwest. The true watertable in this area exists at approximately 50 to 60 feet bgs. Local groundwater flow in the deeper aquifer is also generally toward the northwest.

SCOPE OF WORK

Site Investigation

An investigation consists of collecting samples of soil and groundwater for analysis by a laboratory for compounds related to petroleum products. The WDNR requires that the investigation determine the degree and extent of contaminants in these mediums, which is commonly referred to as "defining the contaminant plume". Further background information will also be collected to assist in the investigation.

Geoprobe Project

METCO has proposed a 1-2 day Geoprobe Project. We propose 10-12 borings to 30-60 feet bgs with soil and groundwater sampling. The Geoprobe will be used to collect soil samples at various depths in order to determine the general extent of contaminants in the subsurface environment.

The goal of the Geoprobe Project is to complete the following:

1. Determine general subsurface geotechnical characteristics.
2. Determine general extent of the contaminants in the unconsolidated deposits.
3. Determine the general extent of contaminants in groundwater, if applicable.
4. Determine if contaminants have migrated to competent rock, if applicable.

This data will either completely define the extent of contamination or be used to guide the Drilling Project if required.

Drilling Project (if required)

METCO has proposed 2 to 4 boreholes to be completed on/off site. METCO has also proposed 1 to 3 monitoring wells to be installed on/off site. Based on the results of the Geoprobe project, we will be able to determine how many monitoring wells will need to be installed.

The goal of the Drilling Project is to complete the following:

1. Collect a soil sample for field analysis every 2.5 feet of boring.
2. Collect at least two soil samples for laboratory analysis in every boring.
3. Verify, through sampling, the horizontal and vertical extent of soil contamination, including smear zones.
4. Install monitoring wells in an arrangement that fully defines the horizontal and vertical extent of groundwater contamination.
5. Develop the monitoring wells.
6. Collect at least two rounds of groundwater samples from the monitoring wells.
7. If conditions warrant, perform slug tests on at least one monitoring well.

It should be noted that numerous monitoring wells exist in this area for the Wild Card LUST site. A network of wells (PZ-1 through PZ-15) has been installed in the deeper aquifer and several of these may be used for groundwater monitoring of the Pizza Place Restaurant site if permission is granted from the Wild Card owner or their consultant. It should be noted that these wells (PZ-1 through PZ-15) have been labeled with the piezometer designation (PZ), but they are actually monitoring wells with 15-foot screens intersecting the watertable.

Several other monitoring wells exist in the perched aquifer at the Wild Card site, but none appear to be close enough to be of any use for the Pizza Place Restaurant site.

Report Preparation

The final report, prepared by METCO, will include background information, observations, procedures, methods, field data, laboratory analysis, site maps, data analysis, risk assessment, conclusions, and recommendations concerning all activities conducted for this project. This report will be submitted to the client and the WDNR for review and discussion.

METCO PROCEDURES AND METHODS

Geoprobe

The Geoprobe consists of a truck mounted, hydraulically driven unit that advances 1-inch diameter, 3 or 4-foot long, stainless steel rods into the subsurface. At desired depths, either a soil or water sample can be collected.

A 4-foot or 5-foot long, ½ or 1-inch diameter soil sampler is advanced to the sampling location. At desired depths, a soil sample is collected and brought to the surface for analysis.

All Geoprobe holes are properly abandoned to ground level using bentonite clay and a surface seal.

Drilling

Drilling is conducted with a truck mounted auger drill rig. To penetrate any unconsolidated materials, work is conducted in accordance with ASTM D-1452 "Soil Investigation and Sampling by Auger Boring". If bedrock is encountered and cannot be penetrated with auger boring, an accepted air-rotary drilling procedure will be used.

Sampling unconsolidated materials is done in accordance with ASTM D-1586 "Penetration Tests and Split-Barrel Sampling of Soils" using a 2-inch outside diameter (O.D.), 2.5 foot split spoon sampler. Using this procedure, a split spoon sampler is driven into the soil by a 140-pound weight falling 30-inches, and a soil sample collected.

All borings are properly abandoned to ground level using bentonite clay.

HNU Screening

Each of the samples, for headspace analysis, are placed in a clean, clear, plastic Ziploc bag. These containers are to be filled ¼ full. All containers are the same size and filled to the same volume. The containers are then sealed.

Once collected and sealed, samples are shaken for 30 seconds to break apart soil clods. They are then allowed to establish headspace. The following table is used to determine headspace equilibration time.

Outside temperature Time to establish headspace

- <40 deg. F 40 minutes
- 41-55 deg. F 20 minutes
- 56-69 deg. F 10 minutes
- >70 deg. F 5 minutes

To take readings, the HNU probe is inserted into the plastic bag halfway between the sample and the highest meter response recorded. The samples

are screened with a MODEL DL-102 HNU Meter equipped with a 10.6 eV lamp. Metered calibration is done at the beginning of each workday. Other notes taken are as follows:

1. Temperature and weather conditions.
2. Date of last factory calibration.
3. Field calibration gas used and concentration.
4. Date and time of last calibration.
5. Instrument gain setting.
6. Erratic instrument readings.
7. Cleaning or repairs performed in the field.
8. Sample moisture (saturated, wet, moist, damp, dry).
9. Petroleum odors or staining of samples.
10. Any instrument quenching.
11. Other relevant information.

Monitoring Wells

Groundwater monitoring well installations are completed under the direction of a METCO hydrogeologist and in accordance with Wisconsin Department of Natural Resources Chapter NR141, "Groundwater Monitoring Well Requirements." The monitoring wells are constructed of flush-threaded, two-inch inside diameter schedule 40 or 80 polyvinyl chloride (PVC) piping. Ten-foot well screens with 0.010-inch slots are installed approximately 5 to 6 feet into the watertable. A uniform washed sand is installed around the well screens to serve as a filter pack. Granular bentonite is used above the filter pack to provide a surface seal. Steel, locking protective well casings are cemented in at each well. Any variances from NR141 will be reported to the WDNR.

Each well is developed by alternately surging and purging with a clean polyethylene bailer for 20 to 30 minutes to remove fines from the well screen, after which ten well volumes are removed using a submersible pump.

Groundwater level measurements are obtained using an electronic water level indicator. All measurements are recorded to the nearest 0.01-foot. The probe is thoroughly washed between measurements.

At least two rounds of samples are collected using a bottom loading, disposable, polyethylene bailer and disposable polyethylene cord. Approximately four well volumes are purged from each well before collecting

samples.

Depending on site conditions and groundwater sampling results, slug tests may be conducted on two or three of the monitoring wells to determine hydrogeologic parameters (hydraulic conductivity, transmissivity, and flow velocity). During the slug test, groundwater in a monitoring well is displaced using a solid plastic slug, while water levels are recorded using a transducer and data logger. Water levels are recorded until the water level in the well returns to equilibrium. Slug test data is evaluated using the Bouwer and Rice method.

Well Elevation Survey

All wells are surveyed to the nearest 0.01-foot MSL by a qualified surveying company.

Sample Analysis

Environmental samples are collected to minimize both soil disturbance and exposure of the sample to the air.

Field observations such as soil characteristics, petroleum odors, product sheens, and staining associated with the samples are continuously noted throughout sampling.

The amount of sample taken, the size of the container used, and the type of sample preservation used, will depend on the laboratory contracted and for which parameters the soil samples are analyzed. See Appendix C for LUST Sample Guidelines.

All collected samples are stored in a cooler that maintains a temperature of, at most, 4 degrees Celsius. The coolers are accompanied by a complete chain of custody and are delivered to the laboratory within two days of sampling.

The WDNR document, "LUST Analytical and Quality Assurance Guidance, July 1993" is referenced in determining what parameters in which the soil and water samples will be analyzed, and the amount of duplicates/blanks required.

Quality Assurance/Quality Control/Waste Management

All drilling and sampling equipment advanced into the subsurface is cleaned between sampling locations. This consists of washing with a biodegradable Alconox solution and rinsing with potable water. Wash and rinse water are disposed of atop an isolated area of asphalt for evaporation or discharged into a local storm sewer.

Drill cuttings, field screened as being contaminated, are contained in 55-gallon DOT barrels, characterized, and properly disposed of by METCO and/or client.

Development and purge waters are contained in 55 gallon DOT barrels, characterized, and properly disposed of by METCO and/or the client. Disposal options will depend on the amount of water, type of contaminants, and concentration of contaminants. All wastewater contaminants and disposal activities are recorded with complete documentation submitted to the WDNR.

Variances

We are not aware of any variances needed at this time.

SCHEDULE FOR INVESTIGATION PROJECT

The following is a checklist of activities that have been, or will be completed, concerning the Site Investigation, along with an estimated time frame. A typical Site Investigation takes approximately 2 to 6 months. The investigation may take up to 12 months if bedrock or groundwater is contaminated.

1) METCO submits a Site Investigation Project proposal to client (done).
2) Proposal acceptance by client. METCO notifies the WDNR that a consultant has been contracted (done).
3) Client obtains PECFA Packet and Site Eligibility Letter from PECFA (done).
4) METCO submits a Site Investigation Field Procedures Workplan to client and WDNR for review and approval (10/18/16).
5) METCO conducts Geoprobe Project (2-4 weeks). More than one field mobilization may be needed to complete project depending on complexity of the site and project (1 month to receive lab results).
6) Depending on the results of the investigation, METCO prepares a brief summary report or final report and sends copies to client and WDNR (2 months after lab results are received).

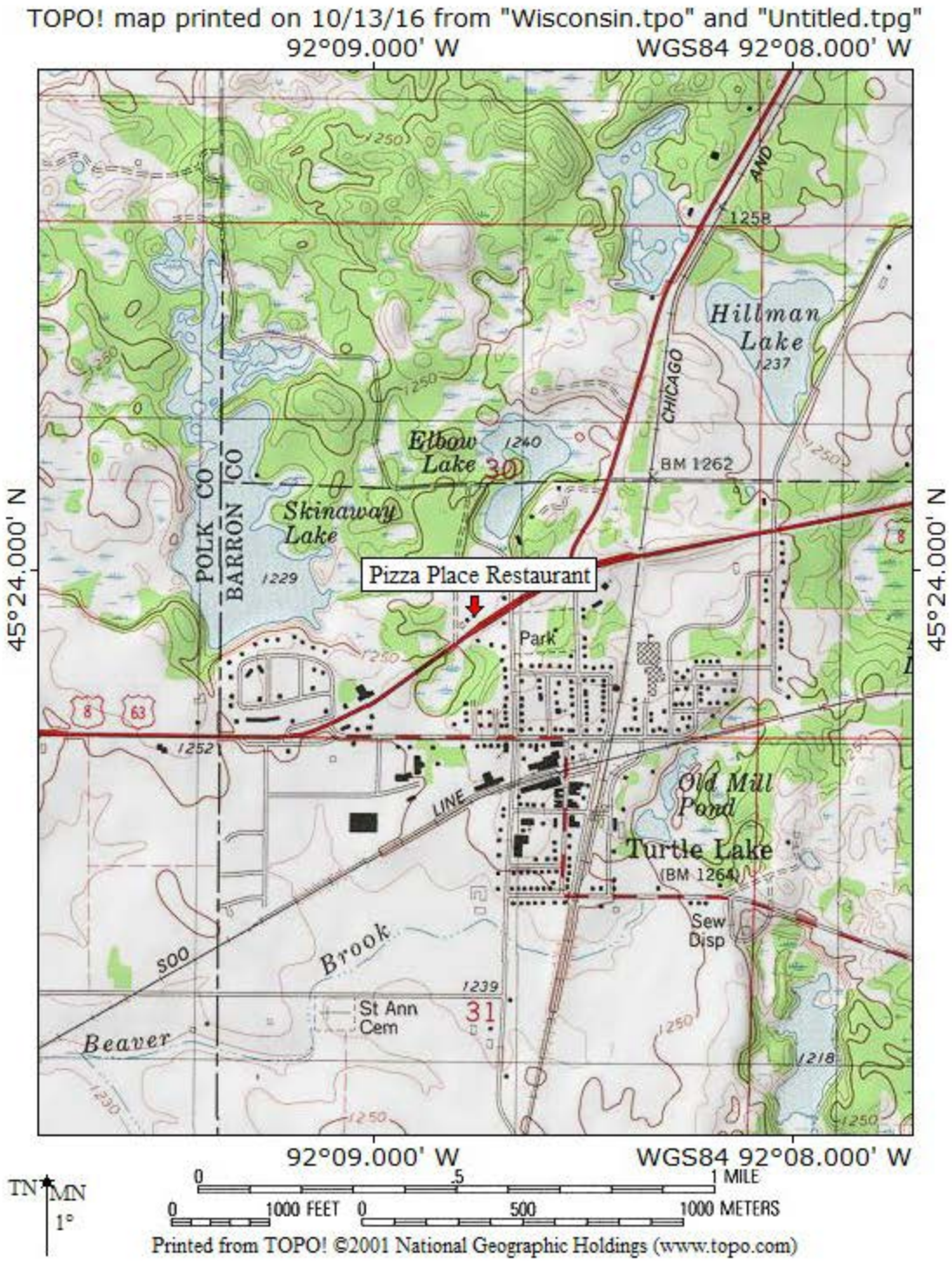
NOTE: If groundwater is found to be impacted or suspected of being impacted by released contaminants, the WDNR will require a Drilling Project with monitoring wells.

7) METCO conducts Drilling Project (2 months). More than one field mobilization may be needed to complete project depending on complexity of the site and project (1 month to receive lab results).
8) METCO develops/surveys the installed monitoring wells and collects.

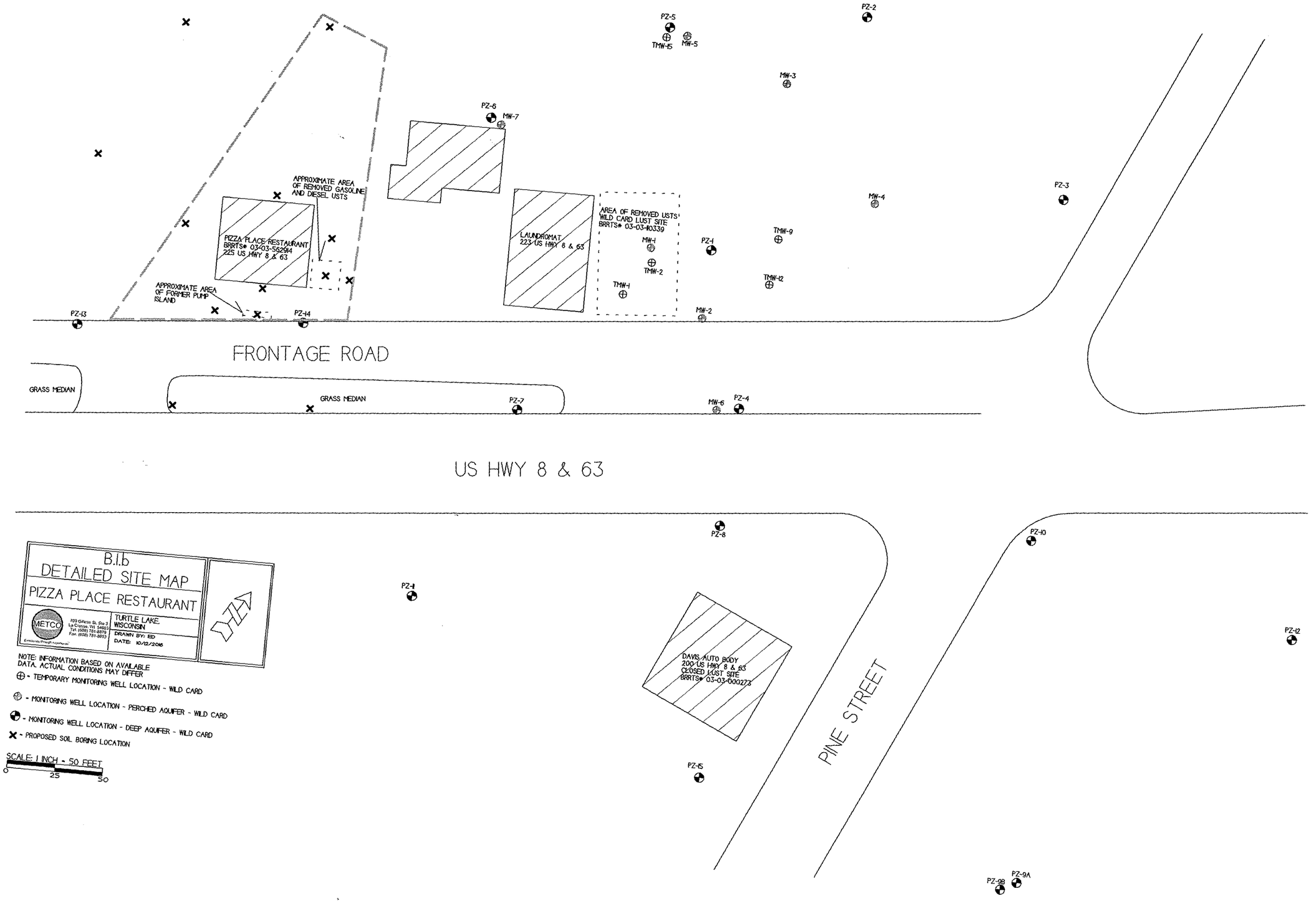
Round 1 groundwater samples for laboratory analysis (1 month to receive lab results).

9) METCO collects Round 2 groundwater samples for laboratory analysis (1 month to receive lab results).
10) METCO completes any additional work that is needed, such as slug tests (1 month).
11) METCO prepares a Site Investigation report that contains all collected data and submits to the client and WDNR (3-6 months).
12) If no further investigation work is required, METCO will apply for "site closure" with the WDNR. Upon closure, METCO will complete the PECFA Application and submit for reimbursement (reimbursement takes 3 to 6 months).
13) If further investigation and/or remediation is required METCO will provide further assistance.

APPENDIX A/SITE MAPS



B.1.a LOCATION MAP CONTOUR INTERVAL 10 FEET
PIZZA PLACE RESTAURANT – TURTLE LAKE, WI
SEAMLESS USGS TOPOGRAPHIC MAPS ON CD-ROM



B.1.b
DETAILED SITE MAP
PIZZA PLACE RESTAURANT

METCO
709 Gillette St. Ste 3
La Crosse, WI 54603
Tel. (608) 781-8878
Fax. (608) 781-3803

TURTLE LAKE,
WISCONSIN
DRAWN BY: ED
DATE: 10/12/2016

NOTE: INFORMATION BASED ON AVAILABLE DATA. ACTUAL CONDITIONS MAY DIFFER

⊕ - TEMPORARY MONITORING WELL LOCATION - WILD CARD

⊕ - MONITORING WELL LOCATION - PERCHED AQUIFER - WILD CARD

⊕ - MONITORING WELL LOCATION - DEEP AQUIFER - WILD CARD

× - PROPOSED SOIL BORING LOCATION

SCALE: 1 INCH = 50 FEET

0 25 50

APPENDIX B/INVESTIGATION CHECKLIST

SITE INVESTIGATION CHECKLIST
Revised February 1992 PUBL-SW-115

This checklist was prepared by the Department of Natural Resources. It lists the necessary information to include in a site investigation report, for investigations conducted in accordance with guidelines prepared by the Emergency and Remedial Response Section, of the Bureau of Solid and Hazardous Waste Management, Wisconsin DNR. Sites include those where actions are conducted under the LUST, Spills and Environmental Repair programs. If some of this information is not submitted the report should clearly state why it is omitted. More complete information regarding site investigations is available in the Department's "Guidance on Conducting Environmental Response Actions".

The purpose of the site investigation is to 1) define the extent and degree of contamination and 2) to provide a basis for choosing a remedial action alternative. The narrative portion of the investigation report should clearly address these goals.

The Department strongly recommends that the site investigation report follow the sequence of information listed here. This will allow for a quick completeness check and more timely review of submittals. Incomplete reports will not be reviewed until all the necessary information has been received. The following information should be included in the site investigation, (as appropriate to each case):

I. INTRODUCTION/COVER LETTER

___ 1. Project title
___ 2. Purpose of report and desired department action
___ 3. Client(s)
___ 4. Author(s), with signatures
___ 5. Scope of Services
___ 6. Dates the work was performed
___ 7. Date of report
___ 8. Subcontractors employed by the consultant

II. GENERAL and BACKGROUND INFORMATION

1. General Information

A. Identify the owner/operator and/or person(s) responsible: (include all applicable)
___ 1. name
___ 2. address
___ 3. day phone number
___ 4. contact person (name)
___ 5. address
___ 6. phone number
___ 7. verification of ownership: photocopy of deed or exact legal description of property

B. Specify the site of contamination:
___ 1. name
___ 2. phone number
___ 3. specific location (street corner, miles from an intersection, etc)
___ a. legal address (street address if applicable, do not supply just a P.O. Box #)
___ b. location of impacted properties by latitude and longitude, to an accuracy of seconds, at a minimum (preferred method) or State Plane coordinate system
___ c. location of impacted properties by quarter, quarter, section, township, range, civil township, county, or other locational criteria if site(s) are not within the Public Land Survey system
___ 4. type of operation: gas station, tank farm, private residence, manufacturer, etc.

C. Site Location Maps
1. General Location Map
___ locate on a USGS topographic base map (include quadrangle name, series and scale)
___ locate on a plat map, if applicable

2. Local Base Map: the map must be drawn to scale and include the following items. Other features may also be needed:
___ a. bar scale
___ b. North arrow
___ c. legend
___ d. location of benchmark used
___ e. origin of horizontal grid system

3. Including Site Specific Features: more than one map may be appropriate, use the local map for the base map (These maps may be used for several purposes.)

___ a. location of discharge on site or facility, for example, the location of (former) tank and pump islands and piping
___ b. location of all buildings on site
___ c. locations of public utilities, appropriately marked
___ d. property boundaries
___ e. location of all soil borings and wells (monitoring wells and potable wells)
___ f. location of soil vapor points
___ g. locations of where field screenings and lab confirmation samples were taken
___ h. nearby/neighboring structures and private wells (within 1200 feet)
___ i. any nearby surface waters (within map scale)
___ j. roads and paved areas, and other access areas
___ k. known and potential sources of contamination
___ l. known and potential receptors
___ m. limits of excavation

2. Site Background

A. General Site Information

1. site description, including features like:
___ - number of tanks/containers
___ - volume/size of tanks/containers
___ - tank/container contents, past and present
___ - tank/container age, installation dates
___ - tank/container construction materials
___ - presence and type of leak detection
___ - presence and type of secondary containment
___ 2. general site construction history
___ 3. any past reports of spills, or other incidents
___ 4. periods of nonoperation
___ 5. proximity of sensitive sites such as schools, homes, private or public wells, etc.

B. Description of Discharge Incident

___ 1. type of hazardous substances discharged, known or suspected (released, spilled, lost, etc.)
___ 2. approximate amounts discharged
___ 3. location of impact
___ 4. dates of discharge
___ 5. local problems associated with discharge, e.g. vapors in homes, well contamination, etc.
___ 6. known receptors

C. Impacts

___ 1. existing impacts to human health, safety, welfare and the environment
___ 2. any impacts to adjacent or nearby buildings, wells or other structures
___ 3. names and addresses of owners of adjacent properties, if those properties have been adversely impacted by the hazardous substance discharge

D. Past Activities, Monitoring and Testing

___ 1. dates of site activities, duration and type and potential amounts of discharges
___ 2. description of emergency actions taken and of interim actions taken, including dates
___ 3. record of activities conducted at the site which had potential to cause contamination
___ 4. inventory record system data
5. summary of monitoring results, including:
___ - product monitoring records according to ILHR 10
___ - groundwater monitoring
___ - surface water monitoring
___ - soil monitoring
___ - sediment monitoring
___ - atmospheric monitoring
___ 6. records of testing, repair, removal or replacement, including dates
7. tank/container/line integrity testing
___ method
___ testing firm
___ dates
___ results

E. Hazardous Waste Generation

___ 1. hazardous waste manifest
___ 2. was hazardous waste ever generated or stored on site?

F. Description of Tank/Container and Soil Removal Activities

___ 1. description of soil conditions in the area of the tank/container excavation or in area of discharge
___ 2. volume of (contaminated) soils removed from the excavation
___ 3. location of stockpiled contaminated soils
___ 4. type of impermeable base for stockpiled soils
___ 5. type of impermeable cover for stockpiled soils
___ 6. if excavation was backfilled, what was used as fill?
___ 7. final deposition of soil excavated, where and how were they used? (daily cover, backfill on/off site, roasted, buried, etc.)
___ 8. condition of tanks, lines, pumps (corrosion, visible leaks, etc?)
___ 9. product (other than petroleum) or waste delivery or storage systems

G. Land Use Information

___ 1. current and past land uses of site and neighboring properties
___ 2. description of zoning of property and adjacent properties

3. Environmental Analysis

A. Site Historical Significance

___ 1. impacts or potential impacts to significant historical or archeological features due to any response activities or the discharge itself
___ 2. presence of buildings greater than 50 years old on or next to discharge site

B. Presence of "Sensitive" Environmental Receptors

___ 1. wildlife habitat
___ 2. state or federal threatened or endangered species
___ 3. sensitive or unique ecosystems or species
___ 4. areas of special natural resource interest
___ 5. other surface waters and wetlands, as appropriate

C. Geology (use maps as appropriate)

___ 1. geologic origin, nature and distribution of bedrock
___ 2. geologic origin, nature and distribution of overlying soils
___ 3. thicknesses of various strata (consolidated and unconsolidated)
___ 4. depth to bedrock
___ 5. geophysical characteristics
___ 6. soil types and texture
___ 7. soil descriptions to include:
___ - structure
___ - mottling
___ - voids
___ - layering
___ - lenses
___ - geologic origin
___ - Unified Soil System Classification
___ - grain size distribution, if applicable
___ - evidence of secondary permeability
___ - odor, if evident
___ - staining, if evident
___ 8. bedrock descriptions, if impacted:
___ - rock type
___ - grain size
___ - bedding thickness
___ - presence of fractures
___ - orientation of fractures
___ - sedimentary structures
___ - secondary porosity/solutional features
___ - other
___ 9. topography
___ 10. site hydrology, including
___ - intermittent and ephemeral streams,
___ - drain tile systems,
___ - surface waters
___ - wetlands
___ - location of floodway and floodplain (this may be best located on a site map)

D. Hydrogeology

___ 1. depth to water table
___ 2. flow directions, seasonal variations

___ 3. horizontal and vertical gradients
___ 4. hydraulic characteristics: (define as field test results or non-field estimates)
___ hydraulic conductivity, variation
___ transmissivity
___ storativity
___ 5. aquifer definition:
___ size
___ use
___ presence of aquitards
___ 6. local and regional recharge or discharge area(s)
___ 7. potentiometric surface
___ 8. location, seasonal variation of groundwater divides
___ 9. location and extent of perched groundwater
___ 10. local and regional groundwater quality
___ 11. hydraulic connection between aquifers
___ 12. saturated thickness of aquifer
___ 13. estimates of flow volume passing below the discharge site/facility (include calculations in the appendices)
___ 14. drillers logs which indicated any abnormal drilling difficulties
___ 15. isoconcentration maps
___ 16. other

III. RESULTS

1. Contaminant Migration Pathway and Receptor Assessment

A. Potential Vapor and Product Migration Pathways (include depth of burial and construction material)
___ 1. sewer lines
___ 2. storm sewers
___ 3. buried power cables
___ 4. buried telephone lines
___ 5. tile lines
___ 6. more permeable soil lenses
___ 7. water lines
___ 8. road beds
___ 9. foundations
___ 10. other

B. Potential Receptors of Contamination (description of impacts or potential impacts, if applicable)
___ 1. buildings on site
___ 2. neighboring basements/buildings
___ 3. nearby wells (locations must be provided on a map)
___ 4. nearby surface waters, including wetlands
___ 5. critical habitats
___ 6. endangered species
___ 7. outstanding resource waters
___ 8. exceptional resource waters
___ 9. sensitive or unique ecosystems
___ 10. other

C. Potential Health Impacts
___ 1. danger of explosion
___ 2. contaminated private wells
___ 3. contaminated public water supply wells
___ 4. exposure to vapors
___ 5. dermal exposure
___ 6. other

2. Sampling and Analysis Results (figures and tables should be used, but general trends and the overall evaluation should be in narrative form) Provide units of measurement for all results. Describe or provide the following information for each media impacted:

A. soil chemistry results, per parameter, per location
___ 1. field screening results with locations identified
___ 2. laboratory (confirmation) sample results with locations identified
___ 3. any indication of contamination of soils encountered (staining, odor, etc.)

B. groundwater sample results, per parameter, per well, over time
___ 1. laboratory results
___ 2. trends analysis

___ 3. compliance evaluation with NR 140 groundwater standards, if applicable

C. soil vapor results (define type of survey used)
___ 1. by parameter
___ 2. per location

D. sampling results from other media impacted by the discharge
___ 1. parameters
___ 2. locations

3. Sampling Methods Used (for each media impacted, lists provided for soil and groundwater only)

A. Soils:
___ 1. description of sample collection method
2. field screening or analytical instrument type used
___ lamp strength
___ calibration
___ operating procedure
___ 3. sample container
___ 4. temperature at which the sample was collected
___ 5. time allowed for PID or FID samples to achieve at least 70° F, and location

B. Groundwater
___ 1. method and instruments used to obtain sample
___ 2. any indication of contamination noticed in field
___ 3. whether the well was purged or not, why and how, and amount removed
___ 4. drilling method used
___ 5. monitoring well construction features
6. abandonment methods
___ a. boreholes
___ b. monitoring wells
___ c. excavations
___ 7. survey methods
___ 8. sample container size
___ 9. sample description
___ - turbid
___ - clear
___ - sheen
___ - free product
___ 10. other

C. Vapors/Ambient Air
___ 1. description of sample collection method
___ 2. field screening, if conducted
___ 3. sample container

4. Quality Control and Quality Assurance

A. General QA/QC (for all media impacted)
___ 1. name and address of laboratory
___ 2. laboratory certification number
3. number of blanks, with results:
___ - field blanks
___ - trip blanks
___ - lab spikes
___ - split samples
___ - replicate spikes
___ 4. name and training of person collecting the samples (including certification, if applicable)

B. Field Instrument Quality Control (for all media impacted)
___ 1. instrument make, model and lamp energy
2. limitations of field screening instruments
___ - temperature changes
___ - humidity changes
___ - other
___ 3. any repairs to the instrument
___ 4. field instrument calibration measures conducted
___ 5. time and frequency or schedule of field instrument calibration
___ 6. composition of the calibration gas used (calibration product ?)
___ 7. calibration curves used
___ 8. correction factor if one was used

___ 9. results of any calibration checks
___ 10. time of day and ambient temperature when calibrations, calibration curves or calibration checks were completed
___ 11. time and temperature that samples were equilibrated if the outside temperature is below 60°F at the time of field analysis

C. Field Sampling and Transportation Quality Control and Assurance (for all media impacted)
___ 1. sample type
___ 2. sample location and associated field and laboratory identification
___ 3. sampling technique used
___ 4. sampling techniques used to minimize exposure of samples to the atmosphere
___ 5. date and time of sampling
___ 6. field preservation performed
___ 7. date and time of preservation or extraction
___ 8. decontamination procedures used during the site investigation
___ 9. deviations from standard operating procedures
___ 10. shipping time and technique

D. Laboratory Receipt and Analysis (for all media impacted)
___ 1. chain of custody forms (4400-151)
___ 2. time and date of receipt of samples by the laboratory
___ 3. sample condition on receipt by the laboratory including
- the temperature of the samples and
- whether the samples were properly sealed
___ 4. time and date of analysis
___ 5. method of analysis
___ 6. laboratory detection limit
___ 7. sample results with units of measurement
___ 8. accuracy and precision of replicate spikes
___ 9. results or percent recovery of matrix spikes with every batch of samples not to exceed eight hours

5. Investigative Wastes (for all media impacted, to include but which is not limited to contaminated water from excavations, borings, purge water, rinse waters from decontamination procedures, extra sample)

___ A. analytical results (hazardous determination, if listed?)
___ B. ultimate disposal
___ C. other

IV. SUMMARY AND EVALUATION OF RESULTS (Analysis of Degree and Extent of Contamination)

___ 1. degree and extent of soil contamination
___ 2. degree and extent of groundwater contamination
___ 3. degree and extent of contamination of other media impacted
___ 4. known or potential impacts to receptors, such as water supply wells
___ 4. vapor migration potential
___ 5. impacts from seepage into basements, utility lines, surface waters
___ 6. difficulties experienced during the investigation
___ 7. unanticipated or questionable results
___ 8. details needing emphasis

V. CONCLUSIONS

___ source and type of release defined
___ soil and groundwater contamination adequately defined?
___ further study needed
___ further remediation needed
___ known or potential impacts from the release defined?
___ clean site, ready for case closure
___ other

VI. RECOMMENDATIONS

1. Investigation Incomplete
___ continued monitoring
___ additional investigation

2. Remedial Action Alternatives (provide description of alternatives) e.g.:
___ remediation method (to be) used for contaminated soil

___ soil removal, treatment and disposal
___ soil venting
___ product recovery
___ groundwater extraction and treatment
___ insitu biological treatment
___ other actions (define)

3. Other
___ work plans for further action
___ construction proposals for further action
___ pilot study, other treatability studies
___ schedules for further actions
___ required permits
___ air quality
___ wastewater discharge

VII. FIGURES

1. Site Maps
___ - location maps (regional and local)
___ - water table and/or potentiometric surface maps
___ - isoconcentration maps
___ - surface water depth maps
___ - bedrock and soil type and distribution maps
___ 2. Flow Cross Sections
___ 3. Extent of Contamination in Soil
___ 4. Extent of Contamination in Groundwater (Isoconcentration)
___ 5. Locations of Potential Receptors
___ 6. Geologic Cross-Sections
___ a. geologic setting
___ b. boring location
___ c. soil classification
___ d. analytical sampling
___ e. monitoring well locations
___ f. water table
___ g. extent of contaminant plume
___ h. concentrations at referenced date and point
___ i. sampling intervals (for soil and groundwater)
___ j. of excavation walls showing location of field screening and/or analytical results, as appropriate
___ 7. Photographs (NO black and white photocopies)

VIII. TABLES

___ 1. Groundwater Chemistry Results
___ 2. Soil Chemistry Results
___ 3. Analytical Methods Used
___ 4. Standards for Comparison and Compliance Determinations (Tables with compliance standards should be combined with analytical results for comparison)
___ 5. Geologic and Hydrogeologic Results
___ 6. Groundwater Elevations
___ 7. Screening Results
___ 8. Other

IX. APPENDICES (up to the author)

___ 1. Table giving data for compounds found, such as:
Chemical formula, Molecular weight, Ionic potential, Solubility,
Vapor pressure, Henry's Law Constant, Kow
___ 2. References used to support methods or provide standards methods, including previous reports
___ 3. All raw data
4. All documentation on forms: (DNR form number)
___ a. soil boring logs (4400-122)
___ b. monitoring well construction logs (4400-113A)
___ c. soil boring/well abandonment forms (3300-5B)
___ d. chain of custody forms
___ e. lab/chemistry results
___ f. groundwater monitoring well information form (4400-89)
___ g. monitoring well development form (4400-113B)
___ 5. Variances (for well construction, hazardous waste storage requirements, etc.)

___ 6. Well logs of all impacted wells and potentially impacted wells within 1200' of the discharge site (locate wells on a map)
___ 7. All calculations and assumptions
___ 8. Landfill receipts for disposed soil
___ 9. Regional hydrogeological information references used

Other information that may be needed includes:
- access
- public information plan
- health and safety plan

APPENDIX C/LUST SAMPLING GUIDELINES

Petroleum Substance Discharged	Analysis of Samples Collected for UST Tank Closure Assessments	Solid Waste Program Requirements for Soils to be landfilled[5]	Site Investigation, Pretreatment and Posttreatment Sample Analysis[11]
Regular Gasoline	GRO[2]	Free Liquids[6] GRO Benzene[7] Pb[7] Haz. Waste Deter.[8]	GRO VOC/PVOC[15] Pb[12]
Unleaded Gasoline; Grades 80 100, and 100 LL (Low Lead) Aviation Fuel	GRO[2]	Free Liquids[6] GRO Benzene[7] Pb[7] Haz. Waste Deter.[8]	GRO PVOC
Diesel; Jet Fuels; and No's 1, 2, and 4 Fuel Oil	DRO[3]	Free Liquids[6] DRO Benzene[7] Haz. Waste Deter.[8]	DRO[3] PVOC PAH[13 14]
Crude Oil; Lubricating Oils; No. 6 Fuel Oil	DRO[3]	Free Liquids[6] DRO Haz. Waste Deter.[8]	DRO[3] PAH[13 14]
Unknown Petroleum	GRO[7] and DRO[3 4]	Free Liquids[6] GRO and DRO Pb, Cd[7] Haz. Waste Deter.[8] CN[19] S[2 10]	GRO and DRO[3 4] VOC/PVOC[15] PAH[13 14] Pb, Cd[12]
Waste Oil	DRO[3]	Free Liquids[6] DRO Pb, Cd[7] Haz. Waste Deter.[8] CN[19] S[2 10]	DRO[3] VOC/PVOC[15] PAH[13 14] PCBs[16] Pb, Cd[12]

Abbreviations:

GRO - Gasoline Range Organics, Determined by the Wisconsin Modified GRO Method

DRO - Diesel Range Organics, Determined by the Wisconsin Modified DRO Method

VOC - Volatile Organic Compounds (See Section 11.1 for a list of VOC compounds)

PVOC - Petroleum Organic Compounds (See Section 11.2 for a list of PVOC compounds)

PAH - Polynuclear Aromatic Hydrocarbons (See Section 11.3 for a list of the PAH compounds)

PCBs - Polychlorinated Biphenyls

Pb - Lead

SYNERGY ENVIRONMENTAL LAB – Sample Bottle Requirements

TABLE 1
SAMPLE & PRESERVATION REQUIREMENTS FOR WATER and DRINKING WATER SAMPLES

Test	Original Sample Container	Preserved	Holding Time to Analysis
WET CHEMISTRY			
Alkalinity SM2320B/EPA 310.2	250 mL HDPE	4°C	14 days
Ammonia EPA 350.1	250 mL HDPE	4°C, pH<2 with H_2SO_4	28 days
BOD, cBOD SM5210B	500 ml HDPE	4°C	48 hrs.
COD EPA 410.4	500 ml HDPE	4°C, pH<2 with H_2SO_4	28 days
Chloride EPA 300.0/EPA 325.2	250 mL HDPE	4°C	28 days
Cyanide SW846 9012A/SM4500-CN-C	1000 mL HDPE	4°C, pH>12 with NaOH	14 days
Flashpoint SW846 1010	250 mL HDPE	4°C	28 days
Fluoride EPA 300.0	250 mL HDPE	4°C	28 days
Hardness SW846 6010B	250 mL HDPE	4°C, pH<2 with HNO_3	180 days
TKN EPA 351.2	1 Liter HDPE	4°C, pH<2 with H_2SO_4	28 days
Nitrate EPA 300.0	250 mL HDPE	4°C	48 hours
Nitrate+Nitrite EPA 300.0	250 mL HDPE	4°C, pH<2 with H_2SO_4	28 days
Nitrite EPA 300.0	250 mL HDPE	4°C	48 hours
Oil & Grease EPA 1664	1 Liter Glass	4°C, pH<2 with H_2SO_4	28 days
Organic Carbon SW846 9060/ EPA 415.1	40 ml Glass	4°C, pH<2 with H_2SO_4 or HCL	28 days
Phenol, Total EPA 420.1	1 Liter Glass	4°C, pH<2 with H_2SO_4	28 days
Phosphorus, Total EPA 365.3	250 mL HDPE	4°C, pH<2 with H_2SO_4	28 days
Sulfate EPA 300.0	250 mL HDPE	4°C	28 days
Total Dissolved Solids EPA 160.1	250 ml HDPE	4°C	7 days
Total Solids EPA 160.3	250 ml HDPE	4°C	7 days
Total Suspended Solids EPA 160.2	250 mL HDPE	4°C	7 days
METALS			
Metals	250 mL HDPE	4°C, pH<2 with HNO_3	6 months
Mercury SW8467470/EPA 245.1	250 mL HDPE	4°C, pH<2 with HNO_3	28 days
ORGANICS			
Semivolatiles SW846 8270C	1 Liter amber glass, collect 2 for one of the samples submitted .	4°C	7 days extr. 40 days following extr
PAH SW846 8270C	1 Liter amber glass, collect 2 for one of the samples submitted	4°C	7 days extr. 40 days following extr
PCB SW846 8082	1 Liter amber glass, collect 2 for one of the samples submitted.	4°C	7 days extr. 40 days following extr
DRO, Modified DNR Sep 95	1 Liter amber glass with Teflon lined cap	4°C, 5 mL 50% HCl	7 days extr. 40 days following extr
VOC'S SW846 8260B/EPA524.2	(3) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl, No Headspace	14 days
GRO/VOC	(4) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days
GRO, Modified DNR Sep 95	(2) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days
GRO/PVOC	(2) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days
PVOC	(2) 40 mL glass vials with Teflon lined septum caps	4°C, 0.5 mL 50% HCl prior to adding sample to jar	14 days

All samples are to be cooled to 4°C until tested.
HDPE = High Density Polyethylene.

SYNERGY ENVIRONMENTAL LAB – Sample Bottle Requirements

TABLE 2
SAMPLE & PRESERVATION REQUIREMENTS FOR SOIL SAMPLES

Test	Original Sample Container	Preserved	Holding Times from Date and Time of Collection			
			Solvent Addition	Shipping	Extraction	Analysis
METALS						
Metals	2 oz glass or soil cup	4°C	NA	NA	NA	180 days
Mercury SW846 7471	2 oz glass or soil cup	4°C	NA	NA	NA	28 days
Chromium Hexavalent SM3500-Cr	2 oz glass or soil cup	4°C	NA	NA	NA	24 hours
ORGANICS						
Any combinations of GRO, VOC, PVOC	1- tared VOC vial with 10 mls methanol, 13 grams of soil collected with syringe	4°C, 1:1 with methanol	Immediately	4 days	21 days	21 days
DRO, Modified	1- tared VOC vial, 13 grams of soil collected with syringe jar	4°C, Hexane	10 days	4 days	47 days	47 days
PAH, SW846 8270C	2 oz glass untared	4°C	NA	NA	14 days	40 days
Semivolatile SW846 8270C	2 oz glass untared	4°C	NA	NA	14 days	40 days
PCB SW846 8082	2 oz glass untared	4°C	NA	NA	14 days	40 days

All samples are to be cooled to 4°C until tested.

APPENDIX D/WDNR DOCUMENTS

DRAFT

Residual Contaminant Levels Protective of Groundwater Quality

(Soil-to-Groundwater Scenario Results from: *http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search*)

NR140 Substance	NR 140 CAS	Fed MCL (ug/l) (If Red, MCL>ES)	NR 140 ES (ug/l)	RCL-gw (mg/kg) DF=1	Use 2, or input the calculated site-specific DF --> 2.00	INPUT NUMERIC Site Data Max (mg/kg)	Flag E = Individual Exceedance
Acetochlor	34256-82-1	-	7	5.58E-03	1.12E-02		
Acetone	67-64-1	-	9000	1.85E+00	3.69E+00		
Alachlor	15972-60-8	2	2	1.65E-03	3.30E-03		
Aldicarb	116-06-3	3	10	2.49E-03	4.99E-03		
Aluminum	7429-90-5	-	200	3.01E+02	6.01E+02		
Antimony	7440-36-0	6	6	2.71E-01	5.42E-01		
Anthracene	120-12-7	-	3000	9.84E+01	1.97E+02		
Arsenic	7440-38-2	10	10	2.92E-01	5.84E-01		
Atrazine, total chlorinated residues	1912-24-9	3	3	1.95E-03	3.90E-03		
Barium	7440-39-3	2000	2000	8.24E+01	1.65E+02		
Bentazon	25057-89-0	-	300	6.59E-02	1.32E-01		
Benzene	71-43-2	5	5	2.56E-03	5.12E-03		
Benzo(a)pyrene (PAH)	50-32-8	0.2	0.2	2.35E-01	4.70E-01		
Benzo(b)fluoranthene (PAH)	205-99-2	-	0.2	2.40E-01	4.80E-01		
Beryllium	7440-41-7	4	4	3.16E+00	6.32E+00		
Boron	7440-42-8	-	1000	3.20E+00	6.40E+00		
Bromodichloromethane (THM)	75-27-4	80	0.6	1.63E-04	3.26E-04		
Bromoform (THM)	75-25-2	80	4.4	1.17E-03	2.33E-03		
Bromomethane	74-83-9	-	10	2.53E-03	5.06E-03		
Butylate	2008-41-5	-	400	3.88E-01	7.76E-01		
Cadmium	7440-43-9	5	5	3.76E-01	7.52E-01		
Carbaryl	63-25-2	-	40	3.64E-02	7.27E-02		
Carbofuran	1563-66-2	40	40	1.56E-02	3.12E-02		
Carbon disulfide	75-15-0	-	1000	2.97E-01	5.93E-01		
Carbon tetrachloride	56-23-5	5	5	1.94E-03	3.88E-03		
Chloramben	133-90-4	-	150	3.63E-02	7.27E-02		
Chlorodifluoromethane	75-45-6	-	7000	2.89E+00	5.79E+00		
Chloroethane	75-00-3	-	400	1.13E-01	2.27E-01		
Chloroform (THM)	67-66-3	80	6	1.67E-03	3.33E-03		
Chlorpyrifos	2921-88-2	-	2	2.95E-02	5.90E-02		
Chloromethane	74-87-3	-	30	7.76E-03	1.55E-02		
Chromium (total)	7440-47-3	100	100	1.80E+05	3.60E+05		Re-assess if Cr-VI present
Chrysene (PAH)	218-01-9	-	0.2	7.25E-02	1.45E-01		
Cobalt	7440-48-4	-	40	1.81E+00	3.62E+00		
Copper	7440-50-8	1300	1300	4.58E+01	9.16E+01		
Cyanazine	21725-46-2	-	1	4.68E-04	9.37E-04		
Cyanide, free	57-12-5	200	200	2.02E+00	4.04E+00		
Dacthal (DCPA)	1861-32-1	-	70	8.56E-02	1.71E-01		
1,2-Dibromoethane	106-93-4	0.05	0.05	1.41E-05	2.82E-05		
Dibromochloromethane (THM)	124-48-1	80	60	1.60E-02	3.20E-02		
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	0.2	8.64E-05	1.73E-04		
Dibutyl phthalate	84-74-2	-	1000	2.52E+00	5.04E+00		
Dicamba	1918-00-9	-	300	7.76E-02	1.55E-01		
1,2-Dichlorobenzene	95-50-1	600	600	5.84E-01	1.17E+00		
1,3-Dichlorobenzene	541-73-1	-	600	5.76E-01	1.15E+00		
1,4-Dichlorobenzene	106-46-7	75	75	7.20E-02	1.44E-01		
Dichlorodifluoromethane	75-71-8	-	1000	1.54E+00	3.08E+00		
1,1-Dichloroethane	75-34-3	-	850	2.42E-01	4.84E-01		
1,2-Dichloroethane	107-06-2	5	5	1.42E-03	2.84E-03		
1,1-Dichloroethylene	75-35-4	7	7	2.51E-03	5.02E-03		
1,2-Dichloroethylene (cis)	156-59-2	70	70	2.06E-02	4.12E-02		
1,2-Dichloroethylene (trans)	156-60-5	100	100	2.94E-02	5.88E-02		
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70	70	1.81E-02	3.62E-02		
1,2-Dichloropropane	78-87-5	5	5	1.66E-03	3.32E-03		
1,3-Dichloropropene (cis/trans) (Telone)	542-75-6	-	0.4	1.43E-04	2.85E-04		
Di (2-ethylhexyl) phthalate	117-81-7	6	6	1.44E+00	2.88E+00		
Dimethoate	60-51-5	-	2	4.51E-04	9.02E-04		
2,4-Dinitrotoluene	121-14-2	-	0.05	6.76E-05	1.35E-04		
2,6-Dinitrotoluene	606-20-2	-	0.05	6.88E-05	1.38E-04		
Dinitrotoluene, Total Residues	25321-14-6	-	0.05	6.89E-05	1.38E-04		
Dinoseb	88-85-7	7	7	6.15E-02	1.23E-01		
1,4-Dioxane (p-dioxane)	123-91-1	-	3	6.18E-04	1.24E-03		
Dioxin (2,3,7,8-TCDD)	1746-01-6	0	0	1.50E-05	3.00E-05		
Endrin	72-20-8	2	2	8.08E-02	1.62E-01		
EPTC	759-94-4	-	250	1.32E-01	2.64E-01		
Ethylbenzene	100-41-4	700	700	7.85E-01	1.57E+00		
Ethyl Ether (Diethyl Ether)	60-29-7	-	1000	2.24E-01	4.47E-01		
Ethylene glycol	107-21-1	-	14000	2.82E+00	5.64E+00		
Fluoranthene	206-44-0	-	400	4.44E+01	8.88E+01		
Fluorene (PAH)	86-73-7	-	400	7.41E+00	1.48E+01		

Type BRRTS No. Here (If Known). Assess groundwater levels separately.

[redacted]

No RSL result for: Asbestos; Bacteria; 1,3-DCB; Hydrogen Sulfide; Nitrate/Nitrite; Tetrahydrofuran; Perchlorate.

Only use DAF=2 (or site-specific DAF) RCL after clearly defining gw plume. RCL < 0.0001 ppm is in "E" notation.

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Residual Contaminant Levels Protective of Groundwater Quality
(Soil-to-Groundwater Scenario Results from: *http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search*)

NR140 Substance	NR 140 CAS	Fed MCL (ug/l) (If Red, MCL>ES)	NR 140 ES (ug/l)	RCL-gw (mg/kg) DF=1	Use 2, or input the calculated site-specific DF -->	2.00	INPUT NUMERIC Site Data Max (mg/kg)	Flag E = Individual Exceedance!
Fluoride	7782-41-4	4000	4000	6.01E+02		1.20E+03		
Fluorotrichloromethane	75-69-4	-	3490	2.23E+00		4.47E+00		
Formaldehyde	50-00-0	-	1000	2.02E-01		4.04E-01		
Heptachlor	76-44-8	0.4	0.4	3.31E-02		6.62E-02		
Heptachlor epoxide	1024-57-3	0.2	0.2	4.08E-03		8.16E-03		
Hexachlorobenzene	118-74-1	1	1	1.26E-02		2.52E-02		
n-Hexane	110-54-3	-	600	4.22E+00		8.44E+00		
Lead	7439-92-1	15	15	1.35E+01		2.70E+01		
Lindane	58-89-9	0.2	0.2	1.16E-03		2.32E-03		
Manganese	7439-96-5	-	300	1.96E+01		3.91E+01		
Mercury	7439-97-6	2	2	1.04E-01		2.08E-01		
Methanol	67-56-1	-	5000	1.01E+00		2.03E+00		
Methoxychlor	72-43-5	40	40	2.16E+00		4.32E+00		
Methylene chloride	75-09-2	5	5	1.28E-03		2.56E-03		
Methyl ethyl ketone (MEK)	78-93-3	-	4000	8.39E-01		1.68E+00		
Methyl isobutyl ketone (MIBK)	108-10-1	-	500	1.13E-01		2.26E-01		
Methyl tert-butyl ether (MTBE)	1634-04-4	-	60	1.35E-02		2.70E-02		
Metolachlor/s-Metolachlor	51218-45-2	-	100	1.17E-01		2.34E-01		
Metribuzin	21087-64-9	-	70	2.14E-02		4.28E-02		
Molybdenum	7439-98-7	-	40	8.08E-01		1.62E+00		
Monochlorobenzene	108-90-7	100	100	6.79E-02		1.36E-01		
Naphthalene	91-20-3	-	100	3.29E-01		6.59E-01		
Nickel	7440-02-0	-	100	6.50E+00		1.30E+01		
N-Nitrosodiphenylamine (NDPA)	86-30-6	-	7	3.82E-02		7.64E-02		
Pentachlorophenol (PCP)	87-86-5	1	1	1.01E-02		2.02E-02		
Phenol	108-95-2	-	2000	1.15E+00		2.30E+00		
Picloram	1918-02-1	500	500	1.39E-01		2.78E-01		
Polychlorinated biphenyls (PCBs)	1336-36-3	0.5	0.03	4.69E-03		9.38E-03		
Prometon	1610-18-0	-	100	4.75E-02		9.49E-02		
Propazine	139-40-2	-	10	8.86E-03		1.77E-02		
Pyrene (PAH)	129-00-0	-	250	2.72E+01		5.45E+01		
Pyridine	110-86-1	-	10	3.44E-03		6.87E-03		
Selenium	7782-49-2	50	50	2.60E-01		5.20E-01		
Silver	7440-22-4	-	50	4.25E-01		8.50E-01		
Simazine	122-34-9	4	4	1.97E-03		3.94E-03		
Styrene	100-42-5	100	100	1.10E-01		2.20E-01		
Tertiary Butyl Alcohol (TBA)	75-65-0	-	12	2.45E-03		4.90E-03		
1,1,1,2-Tetrachloroethane	630-20-6	-	70	2.67E-02		5.33E-02		
1,1,2,2-Tetrachloroethane	79-34-5	-	0.2	7.80E-05		1.56E-04		
Tetrachloroethylene (PCE)	127-18-4	5	5	2.27E-03		4.54E-03		
Tetrahydrofuran	109-99-9	-	50	1.11E-02		2.22E-02		
Thallium	7440-28-0	2	2	1.42E-01		2.84E-01		
Toluene	108-88-3	1000	800	5.54E-01		1.11E+00		
Toxaphene	8001-35-2	3	3	4.64E-01		9.28E-01		
1,2,4-Trichlorobenzene	120-82-1	70	70	2.04E-01		4.08E-01		
1,1,1-Trichloroethane	71-55-6	200	200	7.01E-02		1.40E-01		
1,1,2-Trichloroethane	79-00-5	5	5	1.62E-03		3.24E-03		
Trichloroethylene (TCE)	79-01-6	5	5	1.79E-03		3.58E-03		
2,4,5-Trichlorophenoxyacetic acid (2,4,5-TP(Silvex))	93-72-1	50	50	2.75E-02		5.50E-02		
1,2,3-Trichloropropane	96-18-4	-	60	2.60E-02		5.20E-02		
Trifluralin	1582-09-8	-	7.5	2.48E-01		4.95E-01		
Trimethylbenzenes (1,2,4- and 1,3,5- combined)	95-63-6 / 108-67-8	-	480	6.90E-01		1.38E+00		
Vanadium	7440-62-2							
Vinyl chloride	75-01-4	2	0.2	6.90E-05		1.38E-04		
Xylenes (m-, o-, p- combined)	1330-20-7	10000	2000	1.97E+00		3.94E+00		

Type BRRTS No. Here (If Known). Assess groundwater levels separately.

No RSL result for: Asbestos; Bacteria; 1,3-DCB; Hydrogen Sulfide; Nitrate/Nitrite; Tetrahydrofuran; Perchlorate.

Only use DAF=2 (or site-specific DAF) RCL after clearly defining gw plume. RCL < 0.0001 ppm is in "E" notation.

Residential setting. Not-To-Exceed D-C RCLs from web-calculator at: *http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search* (Chicago as climatic zone). Basis: **ca** = cancer; **nc** = non-cancer; **Csat** = soil saturation concentration; **ceiling** = 10%.

------> If web-calculator result or Csat exceeds 10% by weight (the **ceiling** limit concentration defined in RSL Users Guide), Not-to-Exceed D-C RCL defaults to 100,000 ppm.

1. ***Enter data in yellow cells.*** Numeric only values under "INPUT Site Data." For ND, use detection limit. Do not type '-', 'NA' nor 'space bar.' Leave purple cells "as is."

2. ***After completing data entry, See Summary in Row 872.***

Site Name:

Sample ID:

Contaminant	CAS Number	NC RCL (mg/kg)	C RCL (mg/kg)	Not-To-Exceed D-C RCL (mg/kg)	Basis	INPUT Site Data (mg/kg)	Comparison / Hazard Index / Cumulative Cancer Risk: Flag E = Individual Exceedance!	Hazard Quotient (HQ) from Data	Target CR used: 1.00E-06 Cancer Risk (CR) from Data
Benzene	71-43-2	111	1.49	1.49	ca				
Ethylbenzene	100-41-4	4220	7.47	7.47	ca				
Toluene	108-88-3	5300	-	818	Csat				
Xylenes	1330-20-7	890	-	258	Csat				
Methyl tert-Butyl Ether (MTBE)	1634-04-4	23800	59.4	59.4	ca				
Dichloroethane, 1,2-	107-06-2	46.7	0.61	0.61	ca				
Dibromoethane, 1,2-	106-93-4	107	0.05	0.05	ca				
Trimethylbenzene, 1,2,4-	95-63-6	89.8	-	89.8	nc				
Trimethylbenzene, 1,3,5-	108-67-8	782	-	182	Csat				
Naphthalene	91-20-3	188	5.15	5.15	ca				
Benzo[a]pyrene	50-32-8	-	0.01	0.01	ca				
Acenaphthene	83-32-9	3440	-	3440	nc				
Anthracene	120-12-7	17200	-	17200	nc				
Benz[a]anthracene	56-55-3	-	0.15	0.15	ca				
Benzo(j)fluoranthene	205-82-3	-	0.38	0.38	ca				
Benzo[b]fluoranthene	205-99-2	-	0.15	0.15	ca				
Benzo[k]fluoranthene	207-08-9	-	1.48	1.48	ca				
Chrysene	218-01-9	-	14.8	14.8	ca				
Dibenz[a,h]anthracene	53-70-3	-	0.01	0.01	ca				
Dibenzo(a,e)pyrene	192-65-4	-	0.04	0.04	ca				
Dimethylbenz(a)anthracene, 7,12-	57-97-6	-	0	0	ca				
Fluoranthene	206-44-0	2290	-	2290	nc				
Fluorene	86-73-7	2290	-	2290	nc				
Indeno[1,2,3-cd]pyrene	193-39-5	-	0.15	0.15	ca				
Methylnaphthalene, 1-	90-12-0	4010	15.6	15.6	ca				
Methylnaphthalene, 2-	91-57-6	229	-	229	nc				
Nitropyrene, 4-	57835-92-4	-	0.38	0.38	ca				
Pyrene	129-00-0	1720	-	1720	nc				
Lead and Compounds	7439-92-1	400	-	400	nc				

03-14-563925

Exceedance Count / Hazard Index / Cumulative Cancer Risk: 0 0.00E+00 0.0E+00

To Pass, data must meet all these criteria: Exceedance Count = 0 HI 1.00E+00 ≤ Cumulative CR ≤ 1e-05

Bottom-Line: Soil Data Entry Needed!

Site-specific

Resident Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref
Benzene	71-43-2	No	Yes	5.50E-02	I	7.80E-06	I	4.00E-03	I	3.00E-02	I
Dibromoethane, 1,2-	106-93-4	No	Yes	2.00E+00	I	6.00E-04	I	9.00E-03	I	9.00E-03	I
Dichloroethane, 1,2-	107-06-2	No	Yes	9.10E-02	I	2.60E-05	I	6.00E-03	S	7.00E-03	P
Ethylbenzene	100-41-4	No	Yes	1.10E-02	C	2.50E-06	C	1.00E-01	I	1.00E+00	I
Lead and Compounds	7439-92-1	No	No	-		-		-		-	
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	1.80E-03	C	2.60E-07	C	-		3.00E+00	I
Acenaphthene	83-32-9	No	Yes	-		-		6.00E-02	I	-	
Anthracene	120-12-7	No	Yes	-		-		3.00E-01	I	-	
Benz[a]anthracene	56-55-3	Yes	Yes	7.30E-01	W	1.10E-04	C	-		-	
Benzo(j)fluoranthene	205-82-3	No	No	1.20E+00	C	1.10E-04	C	-		-	
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	I	1.10E-03	C	-		-	
Benzo[b]fluoranthene	205-99-2	Yes	No	7.30E-01	W	1.10E-04	C	-		-	
Benzo[k]fluoranthene	207-08-9	Yes	No	7.30E-02	W	1.10E-04	C	-		-	
Chrysene	218-01-9	Yes	No	7.30E-03	W	1.10E-05	C	-		-	
Dibenz[a,h]anthracene	53-70-3	Yes	No	7.30E+00	W	1.20E-03	C	-		-	
Dibenzo(a,e)pyrene	192-65-4	No	No	1.20E+01	C	1.10E-03	C	-		-	
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	2.50E+02	C	7.10E-02	C	-		-	
Fluoranthene	206-44-0	No	No	-		-		4.00E-02	I	-	
Fluorene	86-73-7	No	Yes	-		-		4.00E-02	I	-	
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	7.30E-01	W	1.10E-04	C	-		-	
Methylnaphthalene, 1-	90-12-0	No	Yes	2.90E-02	P	-		7.00E-02	A	-	
Methylnaphthalene, 2-	91-57-6	No	Yes	-		-		4.00E-03	I	-	
Naphthalene	91-20-3	No	Yes	-		3.40E-05	C	2.00E-02	I	3.00E-03	I
Nitropyrene, 4-	57835-92-4	No	No	1.20E+00	C	1.10E-04	C	-		-	
Pyrene	129-00-0	No	Yes	-		-		3.00E-02	I	-	
Toluene	108-88-3	No	Yes	-		-		8.00E-02	I	5.00E+00	I
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes	-		-		-		7.00E-03	P
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes	-		-		1.00E-02	S	-	
Xylenes	1330-20-7	No	Yes	-		-		2.00E-01	I	1.00E-01	I

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Site-specific

Resident Screening Levels (RSL) for Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide).
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	GIABS	ABS	RBA	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)
Benzene	1	-	1	5.10E+03	1.82E+03	1.56E+09	1.26E+01	-	1.84E+00	1.60E+00
Dibromoethane, 1,2-	1	-	1	1.25E+04	1.34E+03	1.56E+09	3.48E-01	-	5.84E-02	5.00E-02
Dichloroethane, 1,2-	1	-	1	6.60E+03	2.98E+03	1.56E+09	7.64E+00	-	7.13E-01	6.52E-01
Ethylbenzene	1	-	1	8.18E+03	4.80E+02	1.56E+09	6.32E+01	-	9.19E+00	8.02E+00
Lead and Compounds	1	-	1	-	-	1.56E+09	-	-	-	-
Methyl tert-Butyl Ether (MTBE)	1	-	1	7.08E+03	8.87E+03	1.56E+09	3.86E+02	-	7.64E+01	6.38E+01
Acenaphthene	1	0.13	1	2.03E+05	-	1.56E+09	-	-	-	-
Anthracene	1	0.13	1	7.56E+05	-	1.56E+09	-	-	-	-
Benz[a]anthracene	1	0.13	1	6.37E+06	-	1.56E+09	2.10E-01	6.29E-01	5.85E+01	1.57E-01
Benzo(j)fluoranthene	1	0.13	1	-	-	1.56E+09	5.79E-01	1.58E+00	3.98E+04	4.24E-01
Benzo[a]pyrene	1	0.13	1	-	-	1.56E+09	2.10E-02	6.29E-02	1.44E+03	1.57E-02
Benzo[b]fluoranthene	1	0.13	1	-	-	1.56E+09	2.10E-01	6.29E-01	1.44E+04	1.57E-01
Benzo[k]fluoranthene	1	0.13	1	-	-	1.56E+09	2.10E+00	6.29E+00	1.44E+04	1.57E+00
Chrysene	1	0.13	1	-	-	1.56E+09	2.10E+01	6.29E+01	1.44E+05	1.57E+01
Dibenz[a,h]anthracene	1	0.13	1	-	-	1.56E+09	2.10E-02	6.29E-02	1.32E+03	1.57E-02
Dibenzo(a,e)pyrene	1	0.13	1	-	-	1.56E+09	5.79E-02	1.58E-01	3.98E+03	4.24E-02
Dimethylbenz(a)anthracene, 7,12-	1	0.13	1	-	-	1.56E+09	6.13E-04	1.84E-03	2.23E+01	4.59E-04
Fluoranthene	1	0.13	1	-	-	1.56E+09	-	-	-	-
Fluorene	1	0.13	1	4.06E+05	-	1.56E+09	-	-	-	-
Indeno[1,2,3-cd]pyrene	1	0.13	1	-	-	1.56E+09	2.10E-01	6.29E-01	1.44E+04	1.57E-01
Methylnaphthalene, 1-	1	0.13	1	8.46E+04	3.94E+02	1.56E+09	2.40E+01	6.55E+01	-	1.76E+01
Methylnaphthalene, 2-	1	0.13	1	8.37E+04	-	1.56E+09	-	-	-	-
Naphthalene	1	0.13	1	6.69E+04	-	1.56E+09	-	-	5.52E+00	5.52E+00
Nitropyrene, 4-	1	0.13	1	-	-	1.56E+09	5.79E-01	1.58E+00	3.98E+04	4.24E-01
Pyrene	1	0.13	1	3.43E+06	-	1.56E+09	-	-	-	-
Toluene	1	-	1	6.19E+03	8.18E+02	1.56E+09	-	-	-	-
Trimethylbenzene, 1,2,4-	1	-	1	1.14E+04	2.19E+02	1.56E+09	-	-	-	-
Trimethylbenzene, 1,3,5-	1	-	1	9.54E+03	1.82E+02	1.56E+09	-	-	-	-
Xylenes	1	-	1	8.28E+03	2.60E+02	1.56E+09	-	-	-	-

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide).
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	Ingestion SL Child THQ=1 (mg/kg)	Dermal SL Child THQ=1 (mg/kg)	Inhalation SL Child THQ=1 (mg/kg)	Noncarcinogenic SL Child THI=1 (mg/kg)	Ingestion SL Adult THQ=1 (mg/kg)	Dermal SL Adult THQ=1 (mg/kg)	Inhalation SL Adult THQ=1 (mg/kg)	Noncarcinogenic SL Adult THI=1 (mg/kg)	Screening Level (mg/kg)
Benzene	3.13E+02	-	1.60E+02	1.06E+02	3.34E+03	-	1.60E+02	1.52E+02	1.60E+00 ca*
Dibromoethane, 1,2-	7.04E+02	-	1.17E+02	1.00E+02	7.51E+03	-	1.17E+02	1.15E+02	5.00E-02 ca
Dichloroethane, 1,2-	4.69E+02	-	4.82E+01	4.37E+01	5.01E+03	-	4.82E+01	4.77E+01	6.52E-01 ca*
Ethylbenzene	7.82E+03	-	8.53E+03	4.08E+03	8.34E+04	-	8.53E+03	7.74E+03	8.02E+00 ca
Lead and Compounds	-	-	-	-	-	-	-	-	4.00E+02 nc
Methyl tert-Butyl Ether (MTBE)	-	-	2.21E+04	2.21E+04	-	-	2.21E+04	2.21E+04	6.38E+01 ca
Acenaphthene	4.69E+03	1.52E+04	-	3.59E+03	5.01E+04	9.12E+04	-	3.23E+04	3.59E+03 nc
Anthracene	2.35E+04	7.61E+04	-	1.79E+04	2.50E+05	4.56E+05	-	1.62E+05	1.79E+04 nc
Benz[a]anthracene	-	-	-	-	-	-	-	-	1.57E-01 ca
Benzo(j)fluoranthene	-	-	-	-	-	-	-	-	4.24E-01 ca
Benzo[a]pyrene	-	-	-	-	-	-	-	-	1.57E-02 ca
Benzo[b]fluoranthene	-	-	-	-	-	-	-	-	1.57E-01 ca
Benzo[k]fluoranthene	-	-	-	-	-	-	-	-	1.57E+00 ca
Chrysene	-	-	-	-	-	-	-	-	1.57E+01 ca
Dibenz[a,h]anthracene	-	-	-	-	-	-	-	-	1.57E-02 ca
Dibenzo(a,e)pyrene	-	-	-	-	-	-	-	-	4.24E-02 ca
Dimethylbenz(a)anthracene, 7,12-	-	-	-	-	-	-	-	-	4.59E-04 ca
Fluoranthene	3.13E+03	1.01E+04	-	2.39E+03	3.34E+04	6.08E+04	-	2.15E+04	2.39E+03 nc
Fluorene	3.13E+03	1.01E+04	-	2.39E+03	3.34E+04	6.08E+04	-	2.15E+04	2.39E+03 nc
Indeno[1,2,3-cd]pyrene	-	-	-	-	-	-	-	-	1.57E-01 ca
Methylnaphthalene, 1-	5.48E+03	1.77E+04	-	4.18E+03	5.84E+04	1.06E+05	-	3.77E+04	1.76E+01 ca
Methylnaphthalene, 2-	3.13E+02	1.01E+03	-	2.39E+02	3.34E+03	6.08E+03	-	2.15E+03	2.39E+02 nc
Naphthalene	1.56E+03	5.07E+03	2.09E+02	1.78E+02	1.67E+04	3.04E+04	2.09E+02	2.05E+02	5.52E+00 ca*
Nitropyrene, 4-	-	-	-	-	-	-	-	-	4.24E-01 ca
Pyrene	2.35E+03	7.61E+03	-	1.79E+03	2.50E+04	4.56E+04	-	1.62E+04	1.79E+03 nc
Toluene	6.26E+03	-	3.23E+04	5.24E+03	6.67E+04	-	3.23E+04	2.18E+04	5.24E+03 sat
Trimethylbenzene, 1,2,4-	-	-	8.34E+01	8.34E+01	-	-	8.34E+01	8.34E+01	8.34E+01 nc
Trimethylbenzene, 1,3,5-	7.82E+02	-	-	7.82E+02	8.34E+03	-	-	8.34E+03	7.82E+02 sat
Xylenes	1.56E+04	-	8.64E+02	8.18E+02	1.67E+05	-	8.64E+02	8.59E+02	8.18E+02 sat

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(22) "Wastewater and sludge storage or treatment lagoon" means a natural or man−made containment structure, constructed primarily of earthen materials for the treatment or storage of wastewater or sludge, which is not a land disposal system.

History: Cr. Register, September, 1985, No. 357, eff. 10−1−85; cr. (1m), am. (7), (17) and (18), Register, October, 1988, No. 394, eff. 11−1−88; am. (6), cr. (20h) and (20m), Register, March, 1994, No. 459, eff. 4−1−94; cr. (1s), (10e), (10s), (20k), r. and recr. (12), (13), Register, August, 1995, No. 476, eff. 9−1−95; cr. (14m), Register, October, 1996, No. 490, eff. 11−1−96; am. (20), Register, December, 1998, No. 516, eff. 1−1−99; correction in (9) made under s. 13.93 (2m) (b) 7., Stats.,Register, April, 2001, No. 544; CR 02−134: cr. (1u), (1w), (1y) and (20s) Register June 2003 No. 570, eff. 7−1−03; correction in (20) made under s. 13.92 (4) (b) 6., Stats., Register January 2012 No. 673.

Subchapter II — Groundwater Quality Standards

NR 140.10 Public health related groundwater standards. The groundwater quality standards for substances of public health concern are listed in Table 1.

Note: For all substances that have carcinogenic, mutagenic or teratogenic properties or interactive effects, the preventive action limit is 10% of the enforcement standard. The preventive action limit is 20% of the enforcement standard for all other substances that are of public health concern. Enforcement standards and preventive action limits for additional substances will be added to Table 1 as recommendations are developed pursuant to ss. 160.07, 160.13 and 160.15, Stats.

Table 1
Public Health Groundwater Quality Standards

Substance[1]	Enforcement Standard (micrograms per liter − except as noted)	Preventive Action Limit (micrograms per liter − except as noted)
Acetochlor	7	0.7
Acetochlor ethane sulfonic acid + oxanilic acid (Acetochlor − ESA + OXA)	230	46
Acetone	9 mg/l	1.8 mg/l
Alachlor	2	0.2
Alachlor ethane sulfonic acid (Alachlor − ESA)	20	4
Aldicarb	10	2
Aluminum	200	40
Ammonia (as N)	9.7 mg/l	0.97 mg/l
Antimony	6	1.2
Anthracene	3000	600
Arsenic	10	1
Asbestos	7 million fibers per liter (MFL)	0.7 MFL
Atrazine, total chlorinated residues	3[2]	0.3[2]
Bacteria, Total Coliform	0[3]	0[3]
Barium	2 milligrams/liter (mg/l)	0.4 mg/l
Bentazon	300	60
Benzene	5	0.5
Benzo(b)fluoranthene	0.2	0.02
Benzo(a)pyrene	0.2	0.02
Beryllium	4	0.4
Boron	1000	200
Bromodichloromethane	0.6	0.06
Bromoform	4.4	0.44
Bromomethane	10	1
Butylate	400	80
Cadmium	5	0.5
Carbaryl	40	4
Carbofuran	40	8
Carbon disulfide	1000	200
Carbon tetrachloride	5	0.5
Chloramben	150	30
Chlordane	2	0.2
Chlorodifluoromethane	7 mg/l	0.7 mg/l
Chloroethane	400	80
Chloroform	6	0.6
Chlorpyrifos	2	0.4
Chloromethane	30	3
Chromium (total)	100	10
Chrysene	0.2	0.02

Table 1 – Continued
Public Health Groundwater Quality Standards

Substance[1]	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
Cobalt	40	8
Copper	1300	130
Cyanazine	1	0.1
Cyanide, free[4]	200	40
Dacthal	70	14
1,2–Dibromoethane (EDB)	0.05	0.005
Dibromochloromethane	60	6
1,2–Dibromo–3–chloropropane (DBCP)	0.2	0.02
Dibutyl phthalate	1000	100
Dicamba	300	60
1,2–Dichlorobenzene	600	60
1,3–Dichlorobenzene	600	120
1,4–Dichlorobenzene	75	15
Dichlorodifluoromethane	1000	200
1,1–Dichloroethane	850	85
1,2–Dichloroethane	5	0.5
1,1–Dichloroethylene	7	0.7
1,2–Dichloroethylene (cis)	70	7
1,2–Dichloroethylene (trans)	100	20
2,4–Dichlorophenoxyacetic Acid (2,4–D)	70	7
1,2–Dichloropropane	5	0.5
1,3–Dichloropropene (cis/trans)	0.4	0.04
Di (2–ethylhexyl) phthalate	6	0.6
Dimethenamid/Dimethenamid–P	50	5
Dimethoate	2	0.4
2,4–Dinitrotoluene	0.05	0.005
2,6–Dinitrotoluene	0.05	0.005
Dinitrotoluene, Total Residues[5]	0.05	0.005
Dinoseb	7	1.4
1,4–Dioxane	3	0.3
Dioxin (2, 3, 7, 8–TCDD)	0.00003	0.000003
Endrin	2	0.4
EPTC	250	50
Ethylbenzene	700	140
Ethyl ether	1000	100
Ethylene glycol	14 mg/l	2.8 mg/l
Fluoranthene	400	80
Fluorene	400	80
Fluoride	4 mg/l	0.8 mg/l
Fluorotrichloromethane	3490	698
Formaldehyde	1000	100
Heptachlor	0.4	0.04
Heptachlor epoxide	0.2	0.02
Hexachlorobenzene	1	0.1
N–Hexane	600	120
Hydrogen sulfide	30	6
Lead	15	1.5
Lindane	0.2	0.02
Manganese	300	60
Mercury	2	0.2

Table 1 – Continued
Public Health Groundwater Quality Standards

Substance[1]	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
Methanol	5000	1000
Methoxychlor	40	4
Methylene chloride	5	0.5
Methyl ethyl ketone (MEK)	4 mg/l	0.8 mg/l
Methyl isobutyl ketone (MIBK)	500	50
Methyl tert–butyl ether (MTBE)	60	12
Metolachlor/s–Metolachlor	100	10
Metolachlor ethane sulfonic acid + oxanilic acid (Metolachlor – ESA + OXA)	1.3 mg/l	0.26 mg/l
Metribuzin	70	14
Molybdenum	40	8
Monochlorobenzene	100	20
Naphthalene	100	10
Nickel	100	20
Nitrate (as N)	10 mg/l	2 mg/l
Nitrate + Nitrite (as N)	10 mg/l	2 mg/l
Nitrite (as N)	1 mg/l	0.2 mg/l
N–Nitrosodiphenylamine	7	0.7
Pentachlorophenol (PCP)	1	0.1
Perchlorate	1	0.1
Phenol	2 mg/l	0.4 mg/l
Picloram	500	100
Polychlorinated biphenyls (PCBs)	0.03	0.003
Prometon	100	20
Propazine	10	2
Pyrene	250	50
Pyridine	10	2
Selenium	50	10
Silver	50	10
Simazine	4	0.4
Styrene	100	10
Tertiary Butyl Alcohol (TBA)	12	1.2
1,1,1,2–Tetrachloroethane	70	7
1,1,2,2–Tetrachloroethane	0.2	0.02
Tetrachloroethylene	5	0.5
Tetrahydrofuran	50	10
Thallium	2	0.4
Toluene	800	160
Toxaphene	3	0.3
1,2,4–Trichlorobenzene	70	14
1,1,1–Trichloroethane	200	40
1,1,2–Trichloroethane	5	0.5
Trichloroethylene (TCE)	5	0.5
2,4,5–Trichlorophenoxy–propionic acid (2,4,5–TP)	50	5
1,2,3–Trichloropropane	60	12
Trifluralin	7.5	0.75
Trimethylbenzenes (1,2,4– and 1,3,5– combined)	480	96
Vanadium	30	6

Table 1 – Continued
Public Health Groundwater Quality Standards

Substance[1]	Enforcement Standard (micrograms per liter – except as noted)	Preventive Action Limit (micrograms per liter – except as noted)
Vinyl chloride	0.2	0.02
Xylene[6]	2 mg/l	0.4 mg/l

[1] Appendix I contains Chemical Abstract Service (CAS) registry numbers, common synonyms and trade names for most substances listed in T able 1.

[2] Total chlorinated atrazine residues includes parent compound and the following metabolites of health concern: 2-chloro-4-amino-6-isopropylamino-s-triazine (formerly deethylatrazine), 2-chloro-4-amino-6-ethylamino-s-triazine (formerly deisopropylatrazine) and 2-chloro-4,6-diamino-s-triazine (formerly diaminoatrazine).

[3] Total coliform bacteria may not be present in any 100 ml sample using either the membrane filter (MF) technique, the presence-absence (P-A) coliform test, the minimal medium ONPG-MUG (MMO-MUG) test or not present in any 10 ml portion of the 10-tube multiple tube fermentation (MTF) technique.

[4] "Cyanide, free" refers to the simple cyanides (HCN, CN^-) and /or readily dissociable metal-cyanide complexes. Free cyanide is regulatorily equivalent to cyanide quantified by approved analytical methods for "amenable cyanide" or "available cyanide".

[5] Dinitrotoluene. Total Residues includes the dinitrotoluene (DNT) isomers: 2,3-DNT, 2,4-DNT, 2,5-DNT, 2,6-DNT, 3,4-DNT and 3,5-DNT.

[6] Xylene includes meta-, ortho-, and para-xylene combined.

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 1, Register, October, 1988, No. 394, eff. 11-1-88; am. table 1, Register, September, 1990, No. 417, eff. 10-1-90; am. Register, January, 1992, No. 433, eff. 2-1-92; am. Table 1, Register, March, 1994, No. 459, eff. 4-1-94; am. Table 1, Register, August, 1995, No. 476, eff. 9-1-95; am. Table 1, Register, December, 1998, No. 516, eff. 1-1-99; am. Table 1, boron, Register, December, 1998, No. 516, eff. 12-31-99; am. Table 1, Register, March, 2000, No. 531, eff. 4-1-00; CR 03-063: am Table 1, Register February 2004 No. 578, eff. 3-1-04; CR 02-095: am. Table 1, Register November 2006 No. 611, eff. 12-1-06; reprinted to correct errors in Table 1, Register January 2007 No. 613; CR 07-034: am. Table 1 Register January 2008 No. 625, eff. 2-1-08; CR 09-102: am. Table 1 Register December 2010 No. 660, eff. 1-1-11.

NR 140.12 Public welfare related groundwater standards. The groundwater quality standards for substances of public welfare concern are listed in Table 2.

Note: For each substance of public welfare concern, the preventive action limit is 50% of the established enforcement standard.

Table 2
Public Welfare Groundwater Quality Standards

Substance	Enforcement Standard (milligrams per liter – except as noted)	Preventive Action Limit (milligrams per liter – except as noted)
Chloride	250	125
Color	15 color units	7.5 color units
Foaming agents MBAS (Methylene-Blue Active Substances)	0.5	0.25
Iron	0.3	0.15
Manganese	0.05	0.025
Odor	3 (Threshold Odor No.)	1.5 (Threshold Odor No.)
Sulfate	250	125
Zinc	5	2.5

History: Cr. Register, September, 1985, No. 357, eff. 10-1-85; am. table 2, Register, October, 1990, No. 418, eff. 11-1-90; am. Table 2, Register, March, 1994, No. 459, eff. 4-1-94.

NR 140.14 Statistical procedures. (1) If a preventive action limit or an enforcement standard for a substance listed in Table 1 or 2, an alternative concentration limit issued in accordance with s. NR 140.28 or a preventive action limit for an indicator parameter established according to s. NR 140.20 (2) is attained or exceeded at a point of standards application:

(a) The owner or operator of the facility, practice or activity at which a standard is attained or exceeded shall notify the appropriate regulatory agency that a standard has been attained or exceeded; and

(b) The regulatory agency shall require a response in accordance with the rules promulgated under s. 160.21, Stats. No response shall be required if it is demonstrated to the satisfaction of the appropriate regulatory agency that a scientifically valid determination cannot be made that the preventive action limit or enforcement standard for a substance in Table 1 or 2 has been attained or exceeded based on consideration of sampling procedures or laboratory precision and accuracy, at a significance level of 0.05.

(2) The regulatory agency shall use one or more valid statistical procedures to determine if a change in the concentration of a substance has occurred. A significance level of 0.05 shall be used for all tests.

(3) In addition to sub. (2), the following applies when a preventive action limit or enforcement standard is equal to or less than the limit of quantitation:

(a) If a substance is not detected in a sample, the regulatory agency may not consider the preventive action limit or enforcement standard to have been attained or exceeded.

(b) If the preventive action limit or enforcement standard is less than the limit of detection, and the concentration of a substance is reported between the limit of detection and the limit of quantitation, the regulatory agency shall consider the preventive action limit or enforcement standard to be attained or exceeded only if:

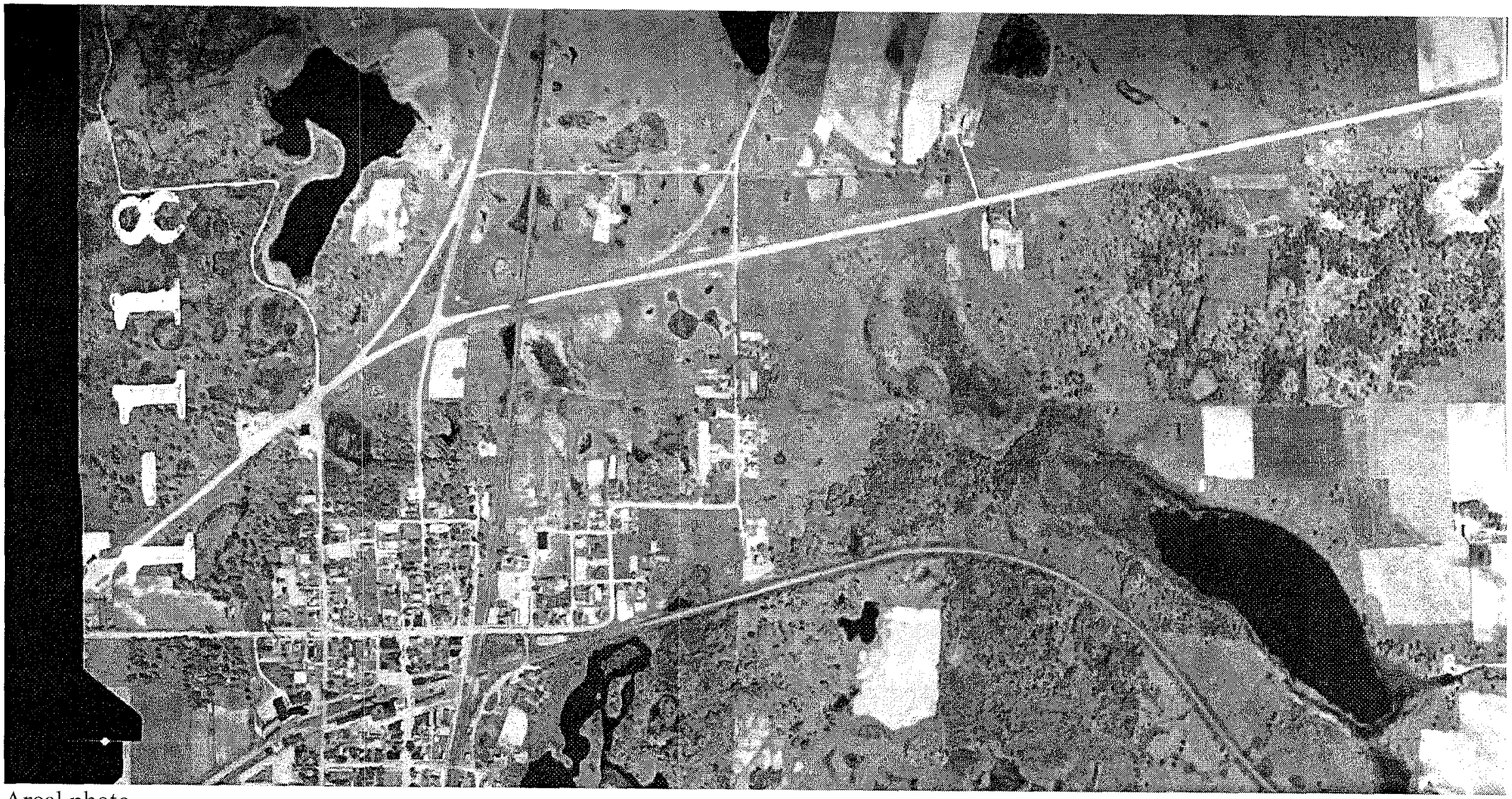
1. The substance has been analytically confirmed to be present in the same sample using an equivalently sensitive analytical method or the same analytical method, and

2. The substance has been statistically confirmed to be present above the preventive action limit or enforcement standard, determined by an appropriate statistical test with sufficient samples at a significance level of 0.05.

(c) If the preventive action limit or enforcement standard is between the limit of detection and the limit of quantitation, the regulatory agency shall consider the preventive action limit or

APPENDIX E/PROJECT DOCUMENTS

Aerial photo
August 17, 1938
Wisconsin Historic Aerial Image Finder



Areal photo
June 2, 1947
USGS Earth Explorer

Areal photo
November 2, 1975
USGS Earth Explorer

Site # 0309 - 65483
RO # 253535

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

19

Send Completed Form To:
Safety & Buildings Division
P.O. Box 7969
Madison, WI 53707
Telephone (608) 267-5280

This form is to be completed pursuant to Section 101.142, Wis. Stats., to register all underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. **A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner.**

This registration applies to a tank that is (check one):
1. ☐ In Use
2. ☐ Abandoned With Product
3. ☐ Abandoned No Product (empty) or With Water
4. ☒ Abandoned - Tank Removed
6. ☐ Abandoned - Filled With Inert Material
7. ☐ Out of Service

Fire Department Providing Fire Coverage Where Tank Located: Turtle Lake Fire Dept.

A. IDENTIFICATION: (Please Print)

1. Installation Name: D & D Sports
Installation Street Address: Rt. 2 Box 319A
☐ City ☒ Village ☐ Town of: Turtle Lake Wi.
State: Wis Zip Code: 54889 County: Barron 03
3. Name of Contact Person: Douglas Potvin
Street Address: Same
☐ City ☐ Town ☐ Village of:
State: Zip Code:
County: Telephone No. (include area code): 715-986-2736

2. Mailing Name if Different Than #1:
Mailing Address if Different Than #1:
☐ City ☐ Village ☐ Town of:
State: Zip Code: County:
4. Owner Name if Different Than #3:
Street Address:
☐ City ☐ Town ☐ Village of:
State: Zip Code:
County: Telephone No. (include area code):

5. Tank Age (date installed, if known: or years old):
6. Tank Capacity (gallons): 1000
7. Tank Manufacturer's Name (if known):

B. TYPE OF USER (check one):

1. ☒ Gas Station
2. ☐ Bulk Storage
3. ☐ Utility
4. ☐ Mercantile
5. ☐ Industrial
6. ☐ Government
7. ☐ School
8. ☐ Residential
9. ☐ Agricultural
10. ☐ Other (specify): _____

C. TANK CONSTRUCTION:

1. ☒ Bare Steel
2. ☐ Cathodically Protected and Coated Steel (☐ Sacrificial Anodes or ☐ Impressed Current)
3. ☐ Coated Steel
4. ☐ Fiberglass
5. ☐ Other (specify): _____
6. ☐ Relined
7. ☐ Steel - Fiberglass Reinforced Plastic Composite

Is tank UL Approved? ☒ Yes ☐ No
Is Tank Double Walled? ☐ Yes ☒ No
Overfill Protection Provided? ☐ Yes ☒ No If yes, identify type:

D. PIPING CONSTRUCTION

1. ☒ Bare Steel
2. ☐ Cathodically Protected Steel (With Coating? ☐ Yes ☐ No)
3. ☐ Coated Steel
4. ☐ Fiberglass
5. ☐ Other (specify): _____
6. ☐ Unknown

Cathodic Protection By: ☐ Sacrificial Anodes or ☐ Impressed Current
UL Approved? ☐ Yes ☐ No
Double Walled ☐ Yes ☐ No

E. TANK CONTENTS

1. ☐ Diesel
2. ☒ Leaded
3. ☐ Unleaded
4. ☐ Fuel Oil
5. ☐ Gasohol
6. ☐ Other
7. ☐ Empty
8. ☐ Sand/Gravel/Slurry
9. ☐ Unknown
10. ☐ Premix
11. ☐ Waste Oil
12. ☐ Propane
13. ☐ Chemical * _____ _____ _____
14. ☐ Kerosene
15. ☐ Aviation

* If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste.

If Tank Abandoned, Give Date (mo/day/yr): 4-17-89 890417
Has Clean Closure Status Been verified? (see reverse side for details) ☒ Yes ☐ No Received 890705

If installation of a new tank is being reported, indicate who performed the installation inspection:
1. ☐ Fire Department
2. ☐ DILHR
3. ☐ Other (identify) _____

Signature of Person Completing Report: Douglas Potvin
Date Signed: 7-3-89

SBD-7437 (R 08/88)

mc

Site # 0309 - 65483
RO # 253536

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Send Completed Form To:
Safety & Buildings Division
P.O. Box 7969
Madison, WI 53707
Telephone (608) 267-5280

This form is to be completed pursuant to section 101.142, Wis. Stats., to register all underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. **A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner.**

This registration applies to a tank that is (check one):
1. ☐ In Use
2. ☐ Abandoned With Product
3. ☐ Abandoned No Product (empty) or With Water
4. ☒ Abandoned - Tank Removed
6. ☐ Abandoned - Filled With Inert Material
7. ☐ Out of Service

Fire Department Providing Fire Coverage Where Tank Located: Turtle Lake Fire Dept

A. IDENTIFICATION: (Please Print)

1. Installation Name: D & D SPORTS
Installation Street Address: RT. 2 Box 319A
☐ City ☒ Village ☐ Town of: Turtle Lake
State: WI Zip Code: 54889 County: Barron 03
3. Name of Contact Person: Douglas Potvin
Street Address:
☐ City ☐ Town ☐ Village of: [illegible] State: Zip Code:
County: Telephone No. (include area code): 715-986-2736

2. Mailing Name if Different Than #1:
Mailing Address if Different Than #1:
☐ City ☐ Village ☒ Town of: [illegible]
State: Zip Code: County:
4. Owner Name if Different Than #3:
Street Address:
☐ City ☐ Town ☐ Village of: State: Zip Code:
County: Telephone No. (include area code):

5. Tank Age (date installed, if known: or years old):
6. Tank Capacity (gallons): 1000
7. Tank Manufacturer's Name (if known):

B. TYPE OF USER (check one):

1. ☒ Gas Station
2. ☐ Bulk Storage
3. ☐ Utility
4. ☐ Mercantile
5. ☐ Industrial
6. ☐ Government
7. ☐ School
8. ☐ Residential
9. ☐ Agricultural
10. ☐ Other (specify): _____

C. TANK CONSTRUCTION:

1. ☒ Bare Steel
2. ☐ Cathodically Protected and Coated Steel (☐ Sacrificial Anodes or ☐ Impressed Current)
3. ☐ Coated Steel
4. ☐ Fiberglass
5. ☐ Other (specify): _____
6. ☐ Relined
7. ☐ Steel - Fiberglass Reinforced Plastic Composite

Is tank UL Approved? ☒ Yes ☐ No
Is Tank Double Walled? ☐ Yes ☒ No
Overfill Protection Provided? ☐ Yes ☒ No If yes, identify type:

D. PIPING CONSTRUCTION

1. ☒ Bare Steel
2. ☐ Cathodically Protected Steel (With Coating? ☐ Yes ☐ No)
3. ☐ Coated Steel
4. ☐ Fiberglass
5. ☐ Other (specify): _____
6. ☐ Unknown

Cathodic Protection By: ☐ Sacrificial Anodes or ☐ Impressed Current
UL Approved? ☐ Yes ☐ No
Double Walled ☐ Yes ☐ No

E. TANK CONTENTS

1. ☐ Diesel
2. ☐ Leaded
3. ☒ Unleaded
4. ☐ Fuel Oil
5. ☐ Gasohol
6. ☐ Other
7. ☐ Empty
8. ☐ Sand/Gravel/Slurry
9. ☐ Unknown
10. ☐ Premix
11. ☐ Waste Oil
12. ☐ Propane
13. ☐ Chemical * _____
14. ☐ Kerosene
15. ☐ Aviation

* If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste.

If Tank Abandoned, Give Date (mo/day/yr): 4-17-89 890417
Has Clean Closure Status Been verified? (see reverse side for details) ☒ Yes ☐ No Received 890705

If installation of a new tank is being reported, indicate who performed the installation inspection:
1. ☐ Fire Department
2. ☐ DILHR
3. ☐ Other (identify) (03093-49)

Signature of Person Completing Report: Douglas Potvin
Date Signed: 7-3-89

SBD-7437 (R 08/88)

Site # 3205 - 166171
RO # 446614

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Send Completed Form To:
Safety & Buildings Division
P.O. Box 7969
Madison, WI 53707
Telephone (608) 267-5280

This form is to be completed pursuant to Section 101.142, Wis. Stats., to register all underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. **A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner.**

This registration applies to a tank that is (check one):
1. ☐ In Use
2. ☐ Abandoned With Product
3. ☐ Abandoned No Product (empty) or With Water
4. ☑ Abandoned - Tank Removed
6. ☐ Abandoned - Filled With Inert Material
7. ☐ Out of Service

Fire Department Providing Fire Coverage Where Tank Located:

A. IDENTIFICATION: (Please Print)

1. Installation Name: D+D Sports
Installation Street Address: Rt. 2 Box 319A
☐ City ☑ Village ☐ Town of: Turtle Lake, Wi.
State: Wi. Zip Code: 54889 County: Barron
3. Name of Contact Person: Douglas Potvin
Street Address: Same
☐ City ☑ Town ☐ Village of: State: Zip Code:
County: Telephone No. (include area code): 715-986-4957

2. Mailing Name if Different Than #1:
Mailing Address if Different Than #1:
☐ City ☐ Village ☐ Town of:
State: Zip Code: County:
4. Owner Name if Different Than #3:
Street Address:
☐ City ☐ Town ☐ Village of: State: Zip Code:
County: Telephone No. (include area code):

5. Tank Age (date installed, if known: or years old): not known
6. Tank Capacity (gallons): 1000
7. Tank Manufacturer's Name (if known): not known

B. TYPE OF USER (check one):

1. ☑ Gas Station
2. ☐ Bulk Storage
3. ☐ Utility
4. ☐ Mercantile
5. ☐ Industrial
6. ☐ Government
7. ☐ School
8. ☐ Residential
9. ☐ Agricultural
10. ☐ Other (specify): _____

C. TANK CONSTRUCTION:

1. ☐ Bare Steel
2. ☐ Cathodically Protected and Coated Steel (☐ Sacrificial Anodes or ☐ Impressed Current)
3. ☑ Coated Steel
4. ☐ Fiberglass
5. ☐ Other (specify): _____
6. ☐ Relined
7. ☐ Steel - Fiberglass Reinforced Plastic Composite

Is tank UL Approved? ☐ Yes ☑ No
Is Tank Double Walled? ☐ Yes ☑ No
Overfill Protection Provided? ☐ Yes ☑ No If yes, identify type:

D. PIPING CONSTRUCTION

1. ☑ Bare Steel
2. ☐ Cathodically Protected Steel (With Coating? ☐ Yes ☐ No)
3. ☐ Coated Steel
4. ☐ Fiberglass
5. ☐ Other (specify): _____
6. ☐ Unknown

Cathodic Protection By: ☐ Sacrificial Anodes or ☐ Impressed Current
UL Approved? ☐ Yes ☐ No
Double Walled ☐ Yes ☐ No

E. TANK CONTENTS

1. ☑ Diesel
2. ☐ Leaded
3. ☐ Unleaded
4. ☐ Fuel Oil
5. ☐ Gasohol
6. ☐ Other
7. ☐ Empty
8. ☐ Sand/Gravel/Slurry
9. ☐ Unknown
10. ☐ Premix
11. ☐ Waste Oil
12. ☐ Propane
13. ☐ Chemical * _____ _____ _____
14. ☐ Kerosene
15. ☐ Aviation

* If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste.

If Tank Abandoned, Give Date (mo/day/yr): 4-12-88
Has Clean Closure Status Been verified? (see reverse side for details) ☐ Yes ☑ No

If installation of a new tank is being reported, indicate who performed the installation inspection:
1. ☐ Fire Department
2. ☐ DILHR
3. ☐ Other (identify) _____

Signature of Person Completing Report: Douglas Potvin
Date Signed: 4-5-89

SBD-7437 (R. 08/88)

pace laboratories, inc.

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California
Leawood, Kansas

REPORT OF LABORATORY ANALYSIS

Leisz Excavating
Route 2, Box 319A
Turtle Lake, WI 54889

May 16, 1989
PACE Project Number: 890417511

Attn: Mr. Tim Leisz

Date Sample(s) Collected: 04/17/89, 04/20/89
Date Sample(s) Received: 04/17/89, 04/20/89

PACE Sample Number:			118350	118360	118370
Parameter	Units	MDL	North End Tank #1	South End Tank #1	North End Tank #2
ORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	1.0	19.7	16.7	22.8
VOLATILE PETROLEUM RELATED CMPDS IN SOIL					
Total Hydrocarbons as gasoline	mg/kg	1.0	ND	ND	ND

MDL Method Detection Limit
ND Not detected at or above the MDL.

pace laboratories, inc

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California
Leawood, Kansas

REPORT OF LABORATORY ANALYSIS

May 16, 1989
PACE Project Number: 890417511

PACE Sample Number:			118380	118390	118400
Parameter	Units	MDL	South End Tank #2	Mid. Reg. Supply	Mid. Unleaded Supply
ORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	1.0	17.2	7.7	8.3
VOLATILE PETROLEUM RELATED CMPDS IN SOIL					
Total Hydrocarbons as gasoline	mg/kg	1.0	ND	ND	ND

MDL Method Detection Limit
ND Not detected at or above the MDL.

pace laboratories, inc.

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California
Leawood, Kansas

REPORT OF LABORATORY ANALYSIS

Mr. Tim Leisz
Page 3

May 16, 1989
PACE Project Number: 890417511

PACE Sample Number:			118410	118420	124100
Parameter	Units	MDL	Reg. Gas Pump (1)	Unleaded Gas Pump (1)	Reg. Gas Pump (2)
ORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	1.0	8.6	8.0	8.8
VOLATILE PETROLEUM RELATED CMPDS IN SOIL					
Benzene	mg/kg	0.12	-	-	ND
Toluene	mg/kg	0.12	-	-	ND
Ethyl benzene	mg/kg	0.12	-	-	ND
Xylene	mg/kg	0.12	-	-	ND
Total Hydrocarbons as gasoline	mg/kg	1.0	2200	2500	ND

MDL Method Detection Limit
ND Not detected at or above the MDL.

pace laboratories, inc.

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California
Leawood, Kansas

REPORT OF LABORATORY ANALYSIS

May 16, 1989
PACE Project Number: 890417511

PACE Sample Number:			124110 Unleaded Gas
Parameter	Units	MDL	Pump (2)
ORGANIC ANALYSIS			
INDIVIDUAL PARAMETERS			
Moisture content	%	1.0	8.5
VOLATILE PETROLEUM RELATED CMPDS IN SOIL			
Benzene	mg/kg	0.12	ND
Toluene	mg/kg	0.12	ND
Ethyl benzene	mg/kg	0.12	ND
Xylene	mg/kg	0.12	ND
Total Hydrocarbons as gasoline	mg/kg	1.0	ND

MDL Method Detection Limit
ND Not detected at or above the MDL.

The analyses of soil samples were performed 'as received' and do not reflect analyses on a dry weight basis unless indicated.

The data contained in this report were obtained using EPA or other approved methodologies. All analyses were performed by me or under my direct supervision.

Dennis R. Seeger
Organic Chemistry Manager

July 14, 2010

Mr. John Robinson

Re: Tank removal
Lake Country Pizza
Turtle Lake WI 54889

Dear Mr. Robinson,

I have located the excavator that did the work at 225 US Hwy 8 in Turtle Lake WI in 1989. The tanks were removed, soil samples were taken with no contamination found. A small amount of soil by the island was tested and found contaminated. This small amount, less than one half yard was removed and taken to a local asphalt plant where it was disposed of. This was witnessed by the property owner, the prospective buyer and an inspector who was on site. This procedure was consistent with the regulations at that time, which are the same as now. There was no further contamination so no report was made to the DNR, per DNR regulations.

This person has a very vivid memory of this project. He is willing to have a phone conversation or make a written statement.

With this and all other information provided, we believe that anything that is detected now did not originate from this site, and we are not held responsible.

Sincerely,

Mike Schradle
Lake Country Pizza
Turtle Lake WI 54889

Please reply that you receive this

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Northern Region Headquarters
107 Sutliff Ave
Rhinelander, WI 54501

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 715-365-8900
FAX 715-365-8932
TTY Access via relay - 711

August 12, 2015

Douglas Potvin
2475 Polk Barron Street
Cumberland, WI 54829

Subject: Reported Contamination at the Pizza Place Restaurant, 225 US Highway 8 & 63, Village of Turtle Lake, WI
DNR BRRTS Activity # 03-03-562914

Dear Mr. Potvin:

On December 2, 2014, Ken Shimko-Meridian Environmental, on behalf of the Former Wild Card Bar (BRRTS # 03-03-110339), notified the Department of Natural Resources (DNR) that petroleum had been detected at the site described above. Soil sample results from the tank removal on April 17, 1989 revealed total hydrocarbons of 2200 and 2500 mg/kg from the area of the former regular gas pump and unleaded gas pump locations respectively. A copy of the tank removal report was sent to the Department of Safety and Buildings in 1989. The Department of Natural Resources never received a copy of this report until a responsible party letter was sent to Mr. Michael Schradle, the current property owner. Mr. Schradle contacted the Department of Agriculture, Trade and Consumer Protection (DATCP) and a copy of said report was sent to the WDNR. A copy this report is enclosed for your review.

Based on the information that has been submitted to the DNR regarding this site, we believe you are responsible for investigating and restoring the environment at the above-described site under Section 292.11, Wisconsin Statutes, known as the hazardous substances spill law.

This letter describes the legal responsibilities of a person who is responsible under section 292.11, Wis. Stats., explains what you need to do to investigate and clean up the contamination, and provides you with information about cleanups, environmental consultants, possible financial assistance, and working cooperatively with the DNR or the Department of Agriculture, Trade and Consumer Protection (DATCP).

Legal Responsibilities:

Your legal responsibilities are defined both in statute and in administrative codes. The hazardous substances spill law, Section 292.11 (3) Wisconsin Statutes, states:

- RESPONSIBILITY. A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

Wisconsin Administrative Code chapters NR 700 through NR 754 establish requirements for emergency and interim actions, public information, site investigations, design and operation of

remedial action systems, and case closure. Wisconsin Administrative Code chapter NR 140 establishes groundwater standards for contaminants that reach groundwater.

Steps to Take:

The longer contamination is left in the environment, the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and neighboring properties and reduce your costs in investigating and cleaning up the contamination. To ensure that your cleanup complies with Wisconsin's laws and administrative codes, you should hire a professional environmental consultant who understands what needs to be done. The following information provides the timeframes and required steps to take. Unless otherwise approved by DNR in writing you must complete the work by the timeframes specified.

1. Within the next **30 days,** by September 12, 2015, you should submit written verification (such as a letter from the consultant) that you have hired an environmental consultant. If you do not take action within this time frame, the DNR may initiate enforcement action against you.

2. Within **60 days,** by October 12, 2015, you must submit a work plan for completing the investigation. The work plan must comply with the requirements in the NR 700 Wis. Adm. Code rule series and should adhere to current DNR technical guidance documents.

3. You must initiate the site investigation within 90 days of submitting the site investigation work plan. You may proceed with the field investigation upon DNR notification to proceed. If the DNR has not responded within 30 days from submittal of the work plan, you are required to proceed with the field investigation. If a fee for DNR review has been submitted, the field investigation must begin within 60 days after receiving DNR approval.

4. Within 60 days after completion of the field investigation and receipt of the laboratory data, you must submit a Site Investigation Report to the DNR or other agency with administrative authority. For sites with agrichemicals contamination, your case will be transferred to the Department of Agriculture, Trade and Consumer Protection for oversight.

5. Within 60 days after submitting the Site Investigation Report, you must submit a remedial actions options report.

Sites where discharges to the environment have been reported are entered into the Bureau for Remediation and Redevelopment Tracking System ("BRRTS"), a version of which appears on the DNR's internet site. You may view the information related to your site at any time (http://dnr.wi.gov/botw/SetUpBasicSearchForm.do) and use the feedback system to alert us to any errors in the data.

If you want a formal written response from the department on a specific submittal, please be aware that a review fee is required in accordance with ch. NR 749, Wis. Adm. Code. If a fee is not submitted with your reports, you must complete the site investigation and cleanup to maintain your compliance with the spills law and chapters NR 700 through NR754. **The timeframes specified above are required by rule, so do not delay the investigation of your site.** We have provided detailed technical guidance to environmental consultants. Your consultant is expected to know our technical procedures and administrative rules and should be able to answer your questions on meeting cleanup requirements.

All correspondence regarding this site should be sent to:

Carrie Stoltz
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
107 Sutliff Avenue, Rhinelander, WI 54501
Carrie.Stoltz@Wisconsin.gov

Unless otherwise directed, submit one paper copy and one electronic copy of plans and reports. To speed processing, correspondence should reference the BRRTS and FID numbers (if assigned) shown at the top of this letter.

Site Investigation and Vapor Pathway Analysis

As you develop the site investigation work plan, we want to remind you to include an assessment of the vapor intrusion pathway. Chapter NR 716, Wisconsin Administrative Code outlines the requirements for investigation of contamination in the environment. Specifically, s. NR 716.11(3) (a) requires that the field investigation determine the "nature, degree and extent, both areal and vertical, of the hazardous substances or environmental pollution in all affected media". In addition, section NR 716.11(5) (g) and (h) contains the specific requirements for evaluating the presence of vapors in the sub-surface as well as in indoor air.

You will need to include documentation with the Site Investigation Report that explains how the assessment was done. If the vapor pathway is being ruled out, then the report needs to provide the appropriate justification for reaching this conclusion. If the pathway cannot be ruled out, then investigation and, if appropriate, remedial action must be taken to address the risk presented prior to submitting the site for closure. The DNR has developed guidance to help responsible parties and their consultants comply with the requirements described above. The guidance includes a detailed explanation of how to assess the vapor intrusion pathway and provides criteria which identify when an investigation is necessary. The guidance is available at: http://dnr.wi.gov/files/PDF/pubs/rr/RR800.pdf.

Additional Information for Site Owners:
We encourage you to visit our website at http://dnr.wi.gov/topic/Brownfields/, where you can find information on selecting a consultant, financial assistance and understanding the cleanup process. You will also find information there about liability clarification letters, post-cleanup liability and more.

Information on selecting a consultant and registered PECFA consulting firms is enclosed.

If you have questions, call me at (715) 365-8942 for more information or visit the RR web site at the address above.

Thank you for your cooperation.

Sincerely,

Carrie Stoltz

Carrie Stoltz
Hydrogeologist
Remediation & Redevelopment Program
/cs

Enclosures:

Selecting a Consultant – RR-502
http://dnr.wi.gov/files/PDF/pubs/rr/RR502.pdf

Registered PECFA Consulting Firms
http://dnr.wi.gov/files/pdf/pubs/rr/rr993.pdf

1989 Underground Petroleum Product Tank Inventory Report

Cc: Michael Schradle
Ron Anderson-Metco (via email)
Ken Shimko-Meridian Environmental (via email)

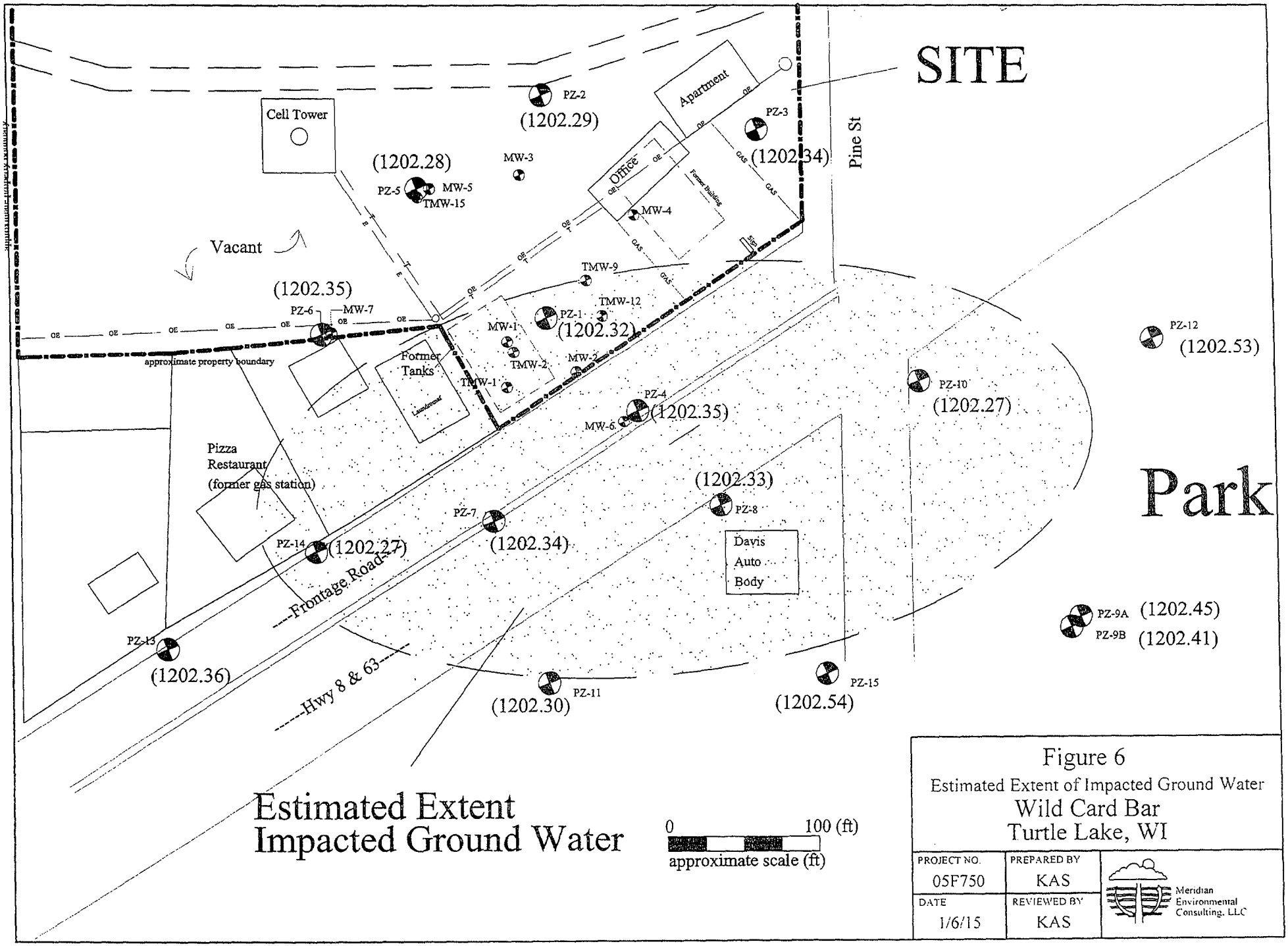


Figure 6

Estimated Extent of Impacted Ground Water

Wild Card Bar

Turtle Lake, WI

PROJECT NO.	PREPARED BY	
05F750	KAS	Meridian Environmental Consulting, LLC
DATE	REVIEWED BY	
1/6/15	KAS	

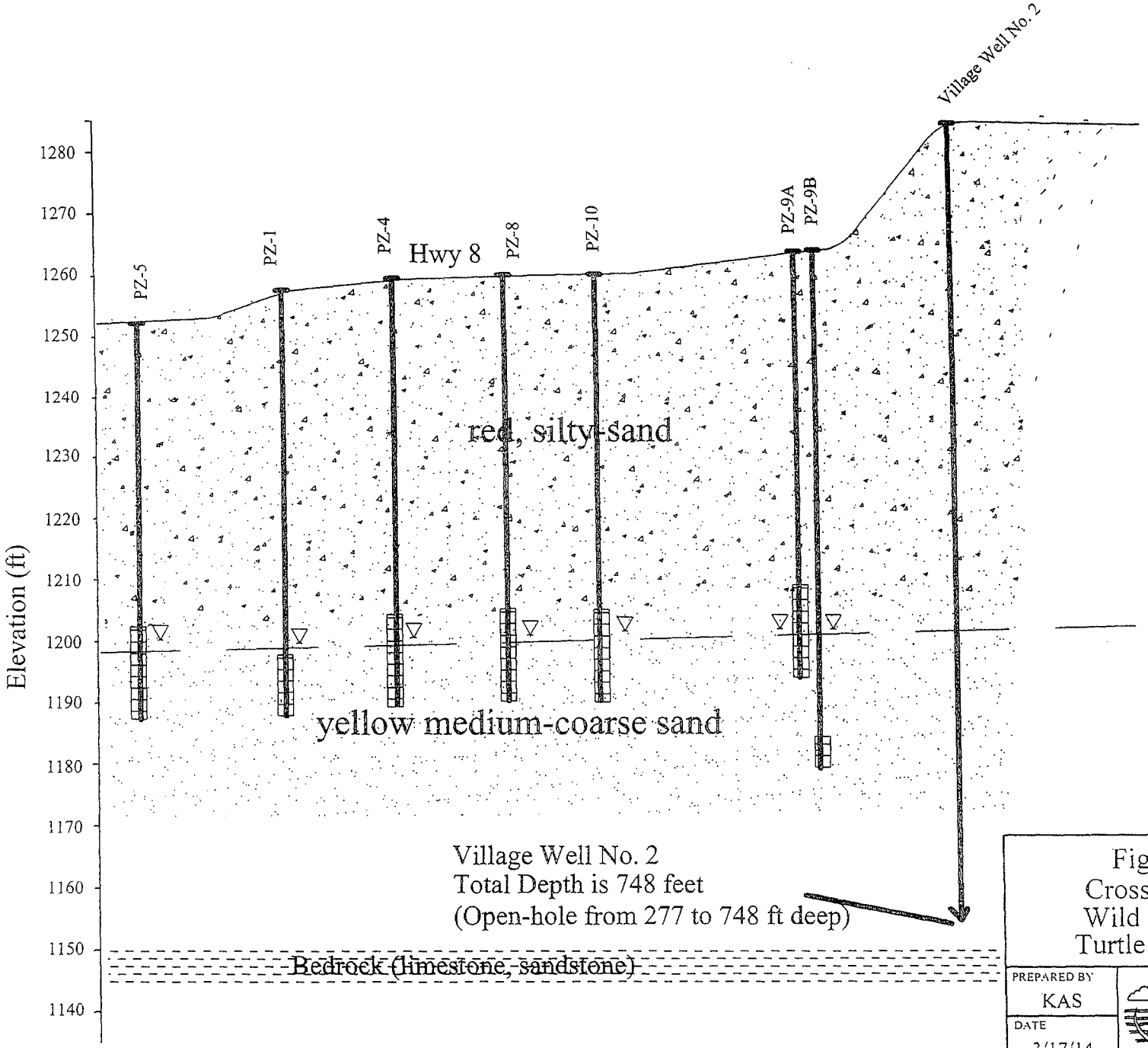


Figure 3
Cross Section
Wild Card Bar
Turtle Lake, WI

PREPARED BY
KAS

DATE
3/17/14

Meridian Environmental Consulting, LLC

Table 1: Soil Data

Wild Card Bar
Turtle Lake, Wisconsin
Meridian No. 05F750

Sample	1,2,4-TMB	1,3,5-TMB	Benzene	Ethylbenzene	m&p-xylene	o-xylene	Total Xylenes	MTBE	Naphthalene	Toluene	DRO
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
September 24, 2008											
GP-1: 0-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-1: 4-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-2: 3-4	0.473	0.671	0.044	0.05	0.086	ND	*0.086*	*ND*	*ND*	*ND*	*155*
GP-2 7-8	1.13	1.84	ND	0.147	0.103	ND	*0.103*	*0.067*	*1.76*	*0.075*	*1060*
GP-3 3-4	ND	0.038	ND	ND	ND	ND	*ND*	*ND*	*ND*	*0.039*	*274*
GP-3 7-8	0.591	0.625	ND	ND	0.075	ND	*0.075*	*0.075*	*0.728*	*0.055*	*678*
GP-4 3-4	ND	ND	ND	ND	ND	ND	*ND*	*ND*	*ND*	*0.045*	*16.1*
GP-5 3-4	ND	ND	ND	ND	ND	ND	*ND*	*0.04*	*ND*	*0.042*	*15*
GP-5 7-8	ND	ND	ND	ND	ND	ND	*ND*	*ND*	*ND*	*ND*	*26.8*
GP-6 3-4	ND	ND	ND	ND	ND	ND	*ND*	*ND*	*ND*	*0.047*	*ND*
GP-6 7-8	ND	ND	ND	ND	ND	ND	*ND*	*ND*	*ND*	*0.042*	*ND*
GP-7 3-4	ND	0.043	ND	ND	0.06	ND	*0.06*	*ND*	*ND*	*ND*	*6.88*
GP-7 7-8	0.046	0.087	ND	ND	0.098	0.09	*0.188*	*ND*	*ND*	*0.048*	*ND*
GP-7 15-16	46.8	22.9	ND	3.78	17.9	8.21	*26.11*	*2.16*	**19.5**	*ND*	2440
GP-10 3-4	ND	ND	ND	ND	ND	ND	*ND*	*ND*	*0.043*	*0.043*	*ND*
GP-12 7-8	ND	ND	ND	ND	0.055	ND	0.055	ND	ND	0.054	13.2
March 8, 2010											
SB-1: 3'	<.013	<.018	<.016	<.018	<.021	<.016	<.021	<.011	<.018	<.017	<5.13
SB-1: 8'	<.013	<.018	<.016	<.018	<.021	<.016	<.021	<.011	<.018	<.017	<5.00
SB-1: 13'	<.013	<.018	<.016	<.018	<.021	<.016	<.021	<.011	<.018	<.017	<4.79
SB-2: 3'	<.013	<.018	<.016	<.018	<.021	<.016	<.021	<.011	<.018	<.017	<5.29
SB-2: 7'	<.014	<.02	<.018	<.02	<.023	<.012	<.023	<.02	<.018	<.019	<4.91
SB-2: 15'	<.014	<.02	<.018	<.02	<.023	<.012	<.023	<.02	<.018	<.019	<4.89
SB-3: 3'	<.013	<.018	<.016	<.018	<.021	<.016	<.021	<.011	<.018	<.017	<4.67
SB-3: 7'	<.014	<.02	<.018	<.02	<.023	<.012	<.023	<.02	<.018	<.019	<5.00
SB-3: 15'	<.015	<.021	<.018	<.021	<.024	<.018	<.024	<.013	<.021	<.019	<4.62
May 11, 2011											
PZ-4: 5-7	<.013	<.018	<.016	<.018	<.022	<.016	<.022	<.024	<.018	<.021	NA
PZ-4: 20 - 22	<.013	<.018	<.016	<.018	<.022	<.016	<.022	<.024	<.018	<.021	NA
PZ-4: 30 - 32	<.013	<.019	<.017	<.019	<.023	<.017	<.023	<.025	<.019	<.022	NA
July 2014											
12: 2-4	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
12:6-8	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
12:10-12	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
12: 15-17	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
12: 40-42	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
13:2-4	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
13:6-8	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
13:15-17	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
13:30-32	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
14: 4-6	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
14:6-8	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
14:10-12	0.254	0.073	<.025	0.176	0.116	0.0984	0.214	<.025	0.0767	<.025	NA
14:15-17	0.108	0.0529	<.025	0.0511	0.172	0.0491	0.221	<.025	0.0306	<.025	NA
14:30-32	0.0579	<.025	<.025	<.025	<.05	<.025	<.075	<.025	0.034	<.025	NA
15:2-4	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
15:6-8	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
15:12-14	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
15:15-17	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA
15:30-32	<.025	<.025	<.025	<.025	<.05	<.025	<.075	<.025	<.025	<.025	NA

PZ-12
PZ-13
PZ-14
PZ-15

Regulatory Standards - Soil

NTEDC*	89.8	182	1.49	7.47			258	59.4	5.15	818	

*Not To Exceed Direct Contact Limit from DNR Webpage

Bold concentration is greater than method detection limit
10 Concentration exceeds regulatory standard
Note: GP-1, GP-2, GP-12 converted to Temporary Monitoring Wells (TMW-1, TMW-2, TMW-12)

Table 2: Ground Water Analytical Data (Page Two)

Sample	Screen Interval (depth - ft)	Depth to Water (ft)	Date	1,2,4-TMB	1,3,5-TMB	Total TMB	Benzene	Ethylbenzene	m&p-xylene	o-xylene	Total Xylenes	MTBE	Naphthalene	Toluene	DRO
Units				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
NR140 Enforcement Standard						480	5	700			2000	60	100	800	-
PZ-1	60-70		(installed 6/10/2009)												
		60.6	7/20/2009	1.51	0.85	2.36	74.7	0.522	7.75	7.82	15.57	1.65	NA	0.792	NA
		61.05	10/22/2009	<.4	<.44	<.44	5.29	<.5	<.62	<.77	< 77	2.09	<.138	<.37	NA
		61.29	4/12/2010	<.4	<.44	<.44	33.1	0.969	0.747	<.77	0.747	<.3	<.8	<.37	NA
		61.2	7/29/2010	<.4	<.44	<.44	8.68	<.5	0.665	<.77	<.77	0.84	2.09	0.477	NA
		58.41	6/10/2011	<.4	<.44	<.44	4.37	<.5	<.62	<.77	<.77	<.3	<2	<.37	NA
		56.45	9/23/2011	<.4	<.44	<.44	11.4	0.525	0.843	<.77	<.77	<.3	<2	0.378	NA
		54.19	6/22/2012	<.43	<.40	<.43	14.6	0.68			<1.3	<.38	<.4	<.42	NA
		54.11	9/24/2012	<.43	<.40	<.43	13.6	0.69			<1.3	<.38	<.4	<.42	NA
		56.45	7/1/2013	0.33	<.36	0.33	12.3	0.73			<1	<.37	<.37	<.34	NA
		56.45	10/10/2013	0.5	<.36	0.5	12.1	0.72			1.5	<.37	0.46	<.34	NA
		56.41	7/24/2014	<.42	<.42	<.42	8.9	0.62			<1.2	<.48	<.42	<.39	NA
		55.31	10/8/2014	<.42	<.42	<.42	8.2	0.59			<1.2	<.48	<.42	<.39	NA
PZ-2	58-68		(installed 3/4/10)												
		56.66	4/12/2010	1.05	0.481	1.531	1.35	0.715	1.32	<.77	1.32	<.3	3.03	6.65	NA
		56.55	7/29/2010	0.701	<.44	0.701	<.31	<.5	0.939	<.77	0.939	<.3	<.8	0.481	NA
		53.78	6/10/2011	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<2	<.37	NA
		51.8	9/23/2011	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<2	<.37	NA
		49.64	6/22/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		49.58	9/24/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		51.88	7/1/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		51.91	10/10/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		51.87	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		50.72	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-3	65-80		(installed 3/5/10)												
		64.12	4/12/2010	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<.8	<.37	NA
		64	7/29/2010	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<.8	<.37	NA
		61.33	6/10/2011	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<.8	<.37	NA
		59.41	9/23/2011	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<.8	<.37	NA
		57.04	6/22/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		57	9/24/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		59.23	7/1/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		59.26	10/10/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		59.3	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		58.23	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-4	55-70		(installed 5/11/11)												
		60.74	6/10/2011	433	138	571	4660	502	2200	805	3005	73.5	161	1290	NA
		58.8	9/23/2011	397	152	549	4970	451	2120	730	2850	<30	262	960	NA
		56.41	6/22/2012	<10.8	<9.9	<10.8	2320	143			37.2	35.6	25.1	44	NA
		56.32	9/24/2012	<2.2	3.1	3.1	1110	57.3			14.8	23.1	7.5	20.7	NA
		58.65	7/1/2013	<3.3	<3.6	<3.6	913	119			16.2	28.5	12.9	35	
		58.64	10/10/2013	<1.7	2	2	574	72.6			7.5	18.9	3.7	23.2	
		56.65	7/24/2014	<2.1	<2.1	<2.1	895	209			<6.2	51.7	5.7	14.3	NA
		57.59	10/8/2014	<4.2	<4.2	<4.2	773	198			<12.5	55	6.2	13.2	NA
PZ-5	50-65		(installed 5/12/11)												
		53.39	6/10/2011	0.713	<.44	0.713	<.31	<.5	<.62	<.77	<.77	<.3	3.18	<.37	NA
		51.4	9/23/2011	<.4	<.44	<.44	<.31	<.5	<.62	<.77	<.77	<.3	<.8	<.37	NA
		49.25	6/22/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		49.21	9/24/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		51.53	7/1/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		51.54	10/10/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		51.48	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		50.28	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-6	50-65		(installed 6/6/11)												
		57.89	6/10/2011	7.25	<.44	7.25	16.3	1.02	12.3	29	41.3	<.3	3.07	0.657	NA
		55.9	9/23/2011	<.4	<.44	<.44	2.31	<.5	0.844	0.8	1.644	<.3	<2	<.37	NA
		53.65	6/22/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		53.62	9/24/2012	<.43	<.4	<.43	<.39	<.41			<1.3	<.38	<.4	<.42	NA
		55.82	7/1/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		55.91	10/10/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		55.91	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		54.71	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-7	50-65		(installed 6/13/12)												
		52.51	6/22/2012	394	123	517	345	144			1920	4	41.6	494	NA
		52.5	9/24/2012	261	90.4	351.4	351	340			1240	14.5	8	1120	NA
		54.85	7/1/2013	308	87.8	395.8	762	611			2040	9.8	46.8	612	
		54.86	10/10/2013	390	119	509	790	629			2240	5.5	53.8	642	
		54.85	7/24/2014	81.9	44.7	126.6	647	598			744	6.8	34.9	469	NA
		53.77	10/8/2014	38.8	45	83.8	399	342			436	5.3	10.7	284	NA

Table 2: Ground Water Analytical Data (Page Three)

Sample	Screen Interval (depth - ft)	Depth to Water (ft)	Date	1,2,4-TMB	1,3,5-TMB	Total TMB	Benzene	Ethylbenzene	m&p-xylene	o-xylene	Total Xylenes	MTBE	Naphthalene	Toluene	DRO
Units				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
NR140 Enforcement Standard						480	5	700			2000	60	100	800	-
PZ-8	55-70		(installed 6/13/12)												
		57.08	6/22/2012	16.7	6.1	22.8	325	48.8			162	5.7	11.6	262	NA
		56.99	9/24/2012	85.8	35.7	121.5	1200	85.6			703	20.9	26.5	206	NA
		59.3	7/1/2013	<.83	<.89	<.89	234	4.2			3.9	10.2	4.6	10.3	
		59.33	10/10/2013	2	1.1	3.1	218	17.5			47.1	9	1.9	158	
		59.36	7/24/2014	9.3	3.3	12.6	267	34.3			59.6	6.9	2.4	177	NA
		58.32	10/6/2014	11.2	6	17.2	528	53.9			65.5	11.7	6.2	275	NA
PZ-9A	54-69	installed June 2013													
		61.2	7/1/2013	<.57	<2.5	<2.5	3.1	<.5	<.82	<.5	<.82	<.49	<2.5	<.44	
		61.3	10/10/2013	<.33	<.36	<.36	0.95	<.34			<1	<.37	<.37	<.34	
		61.47	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		60.41	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-9B	80-85	installed June 2013													
		61.26	7/1/2013	<.57	<2.5	<2.5	<.5	<.5	<.82	<.5	<.82	<.49	<2.5	<.44	
		61.35	10/10/2013	<.33	<.36	<.36	<.34	<.34			<1	<.37	<.37	<.34	
		61.49	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		60.40	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-10	54.5-69.5	installed June 2013													
		61.72	7/1/2013	<1.4	<6.2	<6.2	321	<1.2	<2	<1.2	<2	<1.2	<6.2	<1.1	
		61.84	10/10/2013	<.33	<.36	<.36	114	<.34			<1	<.37	<.37	<.34	
		61.93	7/24/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
		60.82	10/6/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA
PZ-11	52-67	installed June 2013													
		56.04	7/1/2013	<.57	<2.5	<2.5	5.6	2.4	23.4	<.5	23.4	<.49	3.8	0.62	
		56.05	10/10/2013	<.33	12.7	12.7	6.3	33.6			104	<.37	27.1	2.4	
		55.98	7/24/2014	<.42	2.1	2.1	<.4	0.72			3.1	<.48	1.2	<.39	NA
		54.91	10/8/2014	<.42	0.71	0.71	<.4	<.39			2.7	<.48	0.94	<.39	NA
PZ-12	54-69	installed 7/9/14													
		62.02	7/24/2014	<.5	<.5	<.5	<.5	<.5	<1	<.5	<1.2	<.17	<2.5	<.5	NA
		61.01	10/8/2014	<.5	<.5	<.5	<.5	<.5	<1	<.5	<1.2	<.17	<2.5	<.5	NA
PZ-13	47-62	installed 7/10/14													
		52.53	7/24/2014	<.5	<.5	<.5	<.5	<.5	<1	<.5	<1.2	<.17	<2.5	<.5	NA
		51.41	10/8/2014	<.5	<.5	<.5	<.5	<.5	<1	<.5	<1.2	<.17	<2.5	<.5	NA
PZ-14	47-62	installed 7/11/14													
		53.47	7/24/2014	2960	733	3693	6230	3070	12700	5920		20.8	719	8360	NA
		52.33	10/8/2014	2800	758	3558	6740	3260				31.1	749	8220	NA
PZ-15	55-70	installed 7/14/14													
		63.21	6/25/2014	<.5	<.5	<.5	<.5	<.5	<1	<.5	<1.2	<.17	<2.5	<.5	NA
		62.59	10/8/2014	<.42	<.42	<.42	<.4	<.39			<1.2	<.48	<.42	<.39	NA

Table 3: Ground Water Elevation Data (page two of three)

PZ-1			PZ-2			PZ-3		
Surface Elevation (ft)		1257.75	Surface Elevation (ft)		1253.2	Surface Elevation (ft)		1260.7
Top of Casing elevation (ft)		1257.63	Top of Casing elevation (ft)		1253.01	Top of Casing elevation (ft)		1260.57
Top of Screen Elevation (ft)		1198	Top of Screen Elevation (ft)		1195	Top of Screen Elevation (ft)		1196
Bottom of Screen Elevation (ft)		1188	Bottom of Screen Elevation (ft)		1185	Bottom of Screen Elevation (ft)		1181
Meas. Date	DTW (ft)	GW Elev (ft)	Meas. Date	DTW (ft)	GW Elev (ft)	Meas. Date	DTW (ft)	GW Elev (ft)
installed 6/10/2009								
7/20/2009	60.6	1197.03						
10/22/2009	61.05	1196.58	Installed 3/4/2010			installed 3/5/2010		
4/12/2010	61.29	1196.34	4/12/2010	56.66	1196.35	4/12/2010	64.12	1196.45
7/29/2010	61.2	1196.43	7/29/2010	56.55	1196.46	7/29/2010	64	1196.57
6/10/2011	58.41	1199.22	6/10/2011	53.78	1199.23	6/10/2011	61.33	1199.24
9/23/2011	56.45	1201.18	9/23/2011	51.8	1201.21	9/23/2011	59.41	1201.16
6/22/2012	54.19	1203.44	6/22/2012	49.64	1203.37	6/22/2012	57.04	1203.53
9/24/2012	54.11	1203.52	9/24/2012	49.58	1203.43	9/24/2012	57	1203.57
7/1/2013	56.45	1201.18	7/1/2013	51.88	1201.13	7/1/2013	59.23	1201.34
10/10/2013	56.45	1201.18	10/10/2013	51.91	1201.1	10/10/2013	59.28	1201.29
7/24/2014	56.41	1201.22	7/24/2014	51.87	1201.14	7/24/2014	59.3	1201.27
10/8/2014	55.31	1202.32	10/8/2014	50.72	1202.29	10/8/2014	58.23	1202.34

PZ-4			PZ-5			PZ-6		
Surface Elevation (ft)		1260	Surface Elevation (ft)		1252.7	Surface Elevation (ft)		1255
Top of Casing elevation (ft)		1259.94	Top of Casing elevation (ft)		1252.56	Top of Casing elevation (ft)		1257.06
Top of Screen Elevation (ft)		1205	Top of Screen Elevation (ft)		1202	Top of Screen Elevation (ft)		1205
Bottom of Screen Elevation (ft)		1190	Bottom of Screen Elevation (ft)		1188	Bottom of Screen Elevation (ft)		1190
Meas. Date	DTW (ft)	GW Elev (ft)	Meas. Date	DTW (ft)	GW Elev (ft)	Meas. Date	DTW (ft)	GW Elev (ft)
installed 5/11/11			installed 5/12/11			installed 6/6/11		
6/10/2011	60.74	1199.2	6/10/2011	53.39	1199.17	6/10/2011	57.89	1199.17
9/23/2011	58.8	1201.14	9/23/2011	51.4	1201.16	9/23/2011	55.9	1201.16
6/22/2012	56.41	1203.53	6/22/2012	49.25	1203.31	6/22/2012	53.65	1203.41
9/24/2012	56.32	1203.62	9/24/2012	49.21	1203.35	9/24/2012	53.62	1203.44
7/1/2013	58.65	1201.29	7/1/2013	51.53	1201.03	7/1/2013	55.82	1201.24
10/10/2013	58.64	1201.3	10/10/2013	51.54	1201.02	10/10/2013	55.91	1201.15
7/24/2014	58.65	1201.29	7/24/2014	51.48	1201.08	7/24/2014	55.91	1201.15
10/8/2014	57.59	1202.35	10/8/2014	50.28	1202.28	10/8/2014	54.71	1202.35

PZ-7			PZ-8		
Surface Elevation (ft)		1256.7	Surface Elevation (ft)		1260.7
Top of Casing elevation (ft)		1256.11	Top of Casing elevation (ft)		1260.65
Top of Screen Elevation (ft)		1206	Top of Screen Elevation (ft)		1206
Bottom of Screen Elevation (ft)		1191	Bottom of Screen Elevation (ft)		1191
Meas. Date	DTW (ft)	GW Elev (ft)	Meas. Date	DTW (ft)	GW Elev (ft)
installed 6/13/12			installed 6/13/12		
6/22/2012	52.51	1203.6	6/22/2012	57.08	1203.57
9/24/2012	52.5	1203.61	9/24/2012	56.99	1203.66
7/1/2013	54.85	1201.26	7/1/2013	59.3	1201.35
10/10/2013	54.86	1201.25	10/10/2013	59.33	1201.32
7/24/2014	54.85	1201.26	7/24/2014	59.36	1201.29
10/8/2014	53.77	1202.34	10/8/2014	58.32	1202.33

Table 3: Ground Water Elevation Data (page three of three)

PZ-9A		
Surface Elevation (ft)		1262.9
Top of Casing elevation (ft)		1262.86
Top of Screen Elevation (ft)		1209
Bottom of Screen Elevation (ft)		1194
Meas. Date	DTW (ft)	GW Elev (ft)
installed 6/3/13		
7/1/2013	61.2	1201.66
10/10/2013	61.3	1201.56
7/24/2014	61.47	1201.39
10/8/2014	60.41	1202.45

PZ-9B		
Surface Elevation (ft)		1263
Top of Casing elevation (ft)		1262.87
Top of Screen Elevation (ft)		1183
Bottom of Screen Elevation (ft)		1178
Meas. Date	DTW (ft)	GW Elev (ft)
installed 6/3/13		
7/1/2013	61.26	1201.61
10/10/2013	61.35	1201.52
7/24/2014	61.49	1201.38
10/8/2014	60.46	1202.41

Vertical Gradient (positive downward)
0.002
0.002
0.000
0.002

PZ-10		
Surface Elevation (ft)		1263.2
Top of Casing elevation (ft)		1263.09
Top of Screen Elevation (ft)		1209
Bottom of Screen Elevation (ft)		1194
Meas. Date	DTW (ft)	GW Elev (ft)
installed 6/3/13		
7/1/2013	61.72	1201.37
10/10/2013	61.84	1201.25
7/24/2014	61.93	1201.16
10/8/2014	60.82	1202.27

PZ-11		
Surface Elevation (ft)		1257.5
Top of Casing elevation (ft)		1257.21
Top of Screen Elevation (ft)		1205.5
Bottom of Screen Elevation (ft)		1190.5
Meas. Date	DTW (ft)	GW Elev (ft)
installed 6/3/13		
7/1/2013	56.04	1201.17
10/10/2013	56.05	1201.16
7/24/2014	55.98	1201.23
10/8/2014	54.91	1202.3

PZ-12		
Surface Elevation (ft)		1263.75
Top of Casing elevation (ft)		1263.54
Top of Screen Elevation (ft)		1209.75
Bottom of Screen Elevation (ft)		1194.75
Meas. Date	DTW (ft)	GW Elev (ft)
installed July 2014		
7/24/2014	62.02	1201.52
10/8/2014	61.01	1202.53

PZ-13		
Surface Elevation (ft)		1254
Top of Casing elevation (ft)		1253.77
Top of Screen Elevation (ft)		1207.5
Bottom of Screen Elevation (ft)		1192.5
Meas. Date	DTW (ft)	GW Elev (ft)
installed July 2014		
7/24/2014	52.58	1201.19
10/8/2014	51.41	1202.36

PZ-14		
Surface Elevation (ft)		1254.8
Top of Casing elevation (ft)		1254.6
Top of Screen Elevation (ft)		1208
Bottom of Screen Elevation (ft)		1193
Meas. Date	DTW (ft)	GW Elev (ft)
installed July 2014		
7/24/2014	53.47	1201.13
10/8/2014	52.33	1202.27

PZ-15		
Surface Elevation (ft)		1265.25
Top of Casing elevation (ft)		1265.12
Top of Screen Elevation (ft)		1210
Bottom of Screen Elevation (ft)		1195
Meas. Date	DTW (ft)	GW Elev (ft)
installed July 2014		
8/26/2014	63.21	1201.91
10/8/2014	62.58	1202.54

Table 4: Hydraulic Conductivity Tests

Wild Card Bar
Turtle Lake, Wisconsin
Meridian No. 05F750

Well	Date	K (cm/sec)	Soils at Screened Intervall
PZ-1	9/26/2013	1.6×10^{-3}	medium sand
PZ-9A	9/26/2013	7.5×10^{-4}	fine - medium sand
PZ-9B	9/26/2013	3.4×10^{-3}	(no soil samples)
PZ-12	9/17/2014	3.3×10^{-2}	fine sand
PZ-13	9/17/2014	4.5×10^{-3}	fine sand
PZ-14	9/17/2014	2.0×10^{-2}	fine sand silt (layers)
PZ-15	9/17/2014	9.9×10^{-2}	fine sand

APPENDIX F/HEALTH AND SAFETY PLAN

Site Investigation Field Procedures Workplan - METCO
Pizza Place Restaurant

Safety Plan Information

Company Name:	METCO
Contact Information:	Jason Powell 709 Gillette Street, Suite 3 La Crosse, WI 54603 (608) 781-8879

Site Information

METCO Project #:	C2480
Site Name:	Pizza Place Restaurant
Site address:	225 US Hwy 8 & 63 Turtle Lake, WI 54889
County:	Barron
WDNR Contact:	Carrie Stoltz 107 Sutliff Avenue Rhinelander, WI 54501 (715) 365-8942
WDNR BRRTS Case #:	03-03-562914

Purpose of Activity (Check all that apply)

Petroleum Release Investigation	X
Ag Chemical Release Investigation	
Install Soil Borings/Monitoring Wells	X
Tank/Piping Removal	
Tank/Piping Closure Assessment	
Phase 1/Phase 2 Environmental Site Assessment	
Install Remedial System	
Other	

Site Investigation Field Procedures Workplan - METCO
Pizza Place Restaurant

Tank Information

Tank Size (Gallons)	Contents	Age
1000	Diesel	Removed 1988
1000	Unleaded Gasoline	Removed 1989
1000	Leaded Gasoline	Removed 1989

Potential Health and Safety Hazards (Check all that apply)

Handling/Transfer of Product (Fire, Explosions)	
General Construction (Electrical Hazards, Physical Injury)	X
Confined Space Entry (Explosions)	
Heavy Equipment	X
Noise	X
Underground and Overhead Utilities	X
Site Traffic	X
Oxygen Depletion	
Excavation (Cave Ins, Falls, Slips)	
Poisonous Plants	
Snakes, Insects, Rodents	
Heat, Cold	X
Other	

Evaluation of Chemical Hazards

Name	Physical State	Route of Entry	TWA/STEL	Symptoms of Exposure
Gasoline	Vapor/Liquid	Inhalation/Skin	300/500 ppm	Irritation, Nausea, Vomiting, Dizziness, Unconsciousness
Diesel	Vapor/Liquid	Inhalation/Skin	100/None ppm	Irritation, Nausea, Vomiting, Dizziness, Unconsciousness

On-Site Personnel Responsibilities

	Team Member	Reponsibilites
1.	Ron Anderson	Senior Project Manager
2.	Jason Powell	Site Project Manager
3.	Eric Dahl	Hydrogeologist
4.	Jon Jensen	Staff Scientist
5.	Matt Michalski	Hydrogeologist
6.	Bryce Kujawa	Hydrogeologist

Site Investigation Field Procedures Workplan - METCO
Pizza Place Restaurant

Method to Control Potential Heath and Safety Hazards

Monitoring Instruments

Photoionization Detector (PID)	X
Flame Ionization Detector (FID)	
Combustible Gas Indicator	
Four Gas Meter	
Detector Tubes	

Action Levels	Action
0-10% LEL (No Explosion Hazard)	None
Oxygen Deficient (Less Than 21%)	Notify Health & Safety Officer
Oxygen Deficient (Less Than 19%)	Evacuate

Personal Protective Equipment

Minimum Requirements:

1. Hardhat
2. Safety Glasses/Goggles
3. Steel Toe Shoes or Boots
4. Nitrile Gloves
5. Hearing Protection (Muffs or Ear Plugs)

Is additional PPE required? No

Additional Requirements

Uncoated Tyvek Coveralls	
Saranex Tyvek Coveralls	
Rubber Boots	
Overboots	
Surgical Inner Gloves	
Butyl Neoprine/Nitrile Outer Gloves	
Full Face Respirators	
Type of Cartridge:	
SCBA/SAR	
Other	

Level of Protection Designated: D

Site Investigation Field Procedures Workplan - METCO
Pizza Place Restaurant

Site Control

Work Zones

Support Zone: Beyond a 25 foot radius of drilling or excavation and upwind of operation.
Contamination Reduction Zone: Between 15 and 25 foot radius of drilling or excavation.
Exclusion Zone: Within 15 foot radius of of drilling or excavation.

Site Entry Procedure: Obtain all approval and instructions from project manager.

Decontamination Procedures:

Personnel: Remove protective equipment and wash hands prior to eating.
Equipment: Wash with brush and Alconox soap, rinse with fresh tap water.

Investigation Derived Material Disposal:

Stockpiling: The soils will be placed on and covered with plastic. The client will determine the stockpile location, but will have to be approved by the project manager. Soils will be disposed of by the most efficient and cost effective approved method.

DOT drums: Label drums as to content and date filled. Routinely inspect drums for leakage or spills. Place together in area where movement is at minimum.

Work Limitations: Daylight hours. No eating, drinking, or smoking in the exclusion zone or contamination reduction zone.

Employee Limitations:

Site Resources:

Shower	
Water Supply	X

Contingency Planning

Emergency Contacts	Phone Number
Ambulance: Turtle Lake	911
Hospital Emergency Room: Cumberland Memorial Hospital	(715) 822-2741
Poison Control Center: Milwaukee	(800) 222-1222
Police: Turtle Lake	911
Fire Department: Turtle Lake	911
Hazardous Waste Response Center: Wisconsin	(800) 943-0003
EPA	(800) 424-8802

Location Address: 225 US Hwy 8 & 63, Turtle Lake, WI 54889

Site Investigation Field Procedures Workplan - METCO
Pizza Place Restaurant

Hospital: Cumberland Memorial Hospital
1110 7th Avenue
Cumberland, WI 54829

Emergency Route:

Travel northeast on US Hwy 8/63 0.3 miles. Turn left onto US Hwy 63 and travel north/northeast 11.6 miles to 7th Avenue in Cumberland. Turn right onto 7th Avenue and travel south 300 feet. Hospital will be on left.

Emergency Procedures:

If an emergency develops at the site, the discoverer will take the following course of action:
- Notify the proper emergency service (fire, police, etc.) for assistance.
- Notify other personnel on the site. Notify project manager.
- Contact METCO and the client representative to inform them of the incident as soon as possible.
- Prepare a summary report of the incident for METCO and the client representative.

On-Site Organization	Phone Numbers	
METCO Project Manager: Jason Powell	work	(608) 781-8879
	cell	(608) 385-1467
METCO Safety Officer: Brian Hora	work	(800) 236-0448
	cell	(608) 604-2933
METCO Corporate Contact: Paul Knower	work	(800) 236-0448
	cell	(608) 604-2931
Client Contact: Janet Diercks	(715) 736-1981	

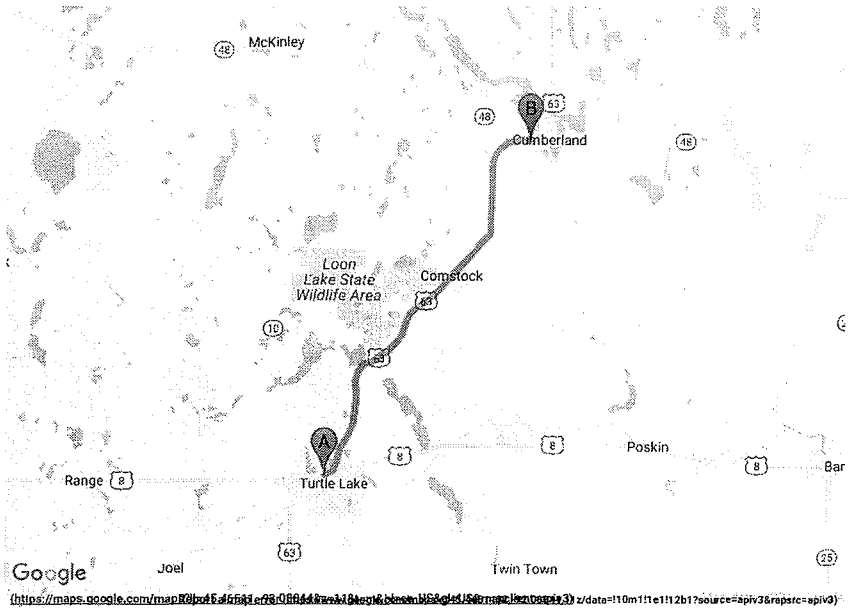
Daily Safety Plan Check

1. Hard Hat
2. Visible Fire Extinguisher
3. Safety Glasses
4. Hearing Protection
5. No Smoking On Site
6. Safety Data Sheet
7. Route to Hospital
8. Barricades (Cones, Flags, Fences, Vehicle)
9. Emergency Phone Numbers
10. Know Where the Site Safety Plan Is

US Hospital Finder (/)™: Directions

From: 225 US Hwy 63, Turtle Lake, WI

To: Cumberland Memorial Hospital 1110 Seventh Avenue Cumberland, WI 54829-9133



A 225 US Hwy 63 N, Turtle Lake, WI 54889, USA

11.9 mi. About 14 mins

1.	Head northeast on US-8 E/US Hwy 63 N N toward Tamarack St	0.3 mi
2.	Turn left onto US Hwy 63 N N	11.6 mi
3.	Turn right onto 7th Ave Destination will be on the left	308 ft

B 1110 7th Ave, Cumberland, WI 54829, USA

Map data ©2016 Google

Name: Cumberland Memorial Hospital

Address: 1110 Seventh Avenue Cumberland, WI 54829-9133

Phone: 715-822-2741

New Hospital Search (/)

Find a Doctor Near You
Opioid dependence treatment in the privacy of a doctor's office Go to Prescription treatment website

US Hospital Finder (/)™: Directions

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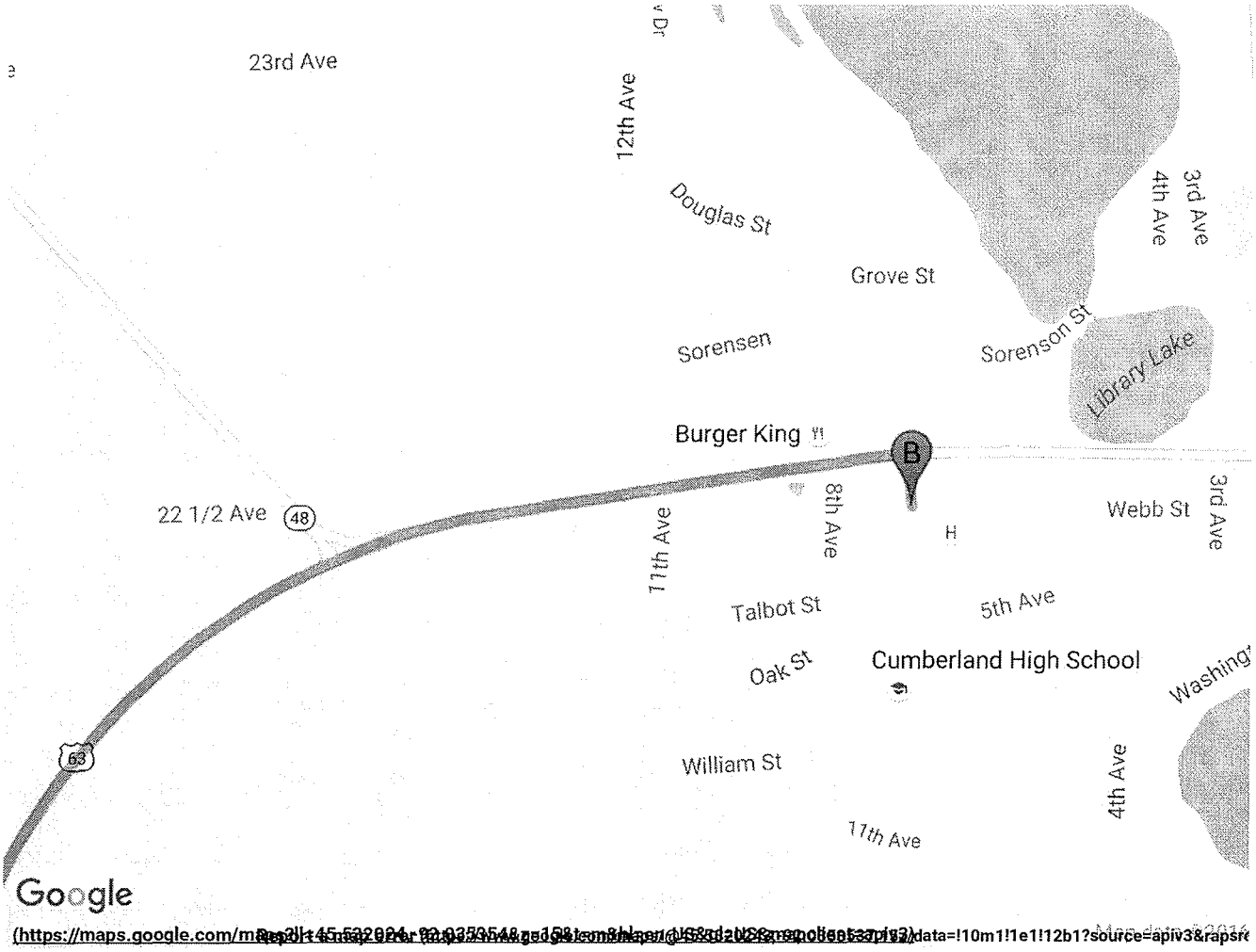

225 US Hwy 63 N, Turtle Lake, WI 54889, USA

APPENDIX G/QUALIFICATIONS

Ronald J. Anderson, P.G.

Professional Titles

- Senior Hydrogeologist
- Project Manager

Credentials

- Licensed Professional Geologist in Wisconsin
- Licensed Professional Geologist in Minnesota
- Recognized by the State of Wisconsin Department of Natural Resources (Chapter NR712) as a qualified Hydrogeologist
- Certified by State of Wisconsin to conduct PECFA-funded LUST projects
- Certified tank closure site assessor (#41861) in Wisconsin
- Member of the Wisconsin Groundwater Association
- Member of the Minnesota Groundwater Association
- Member of the Federation of Environmental Technologist, Inc.

Education

Includes a BA in Earth Science from the University of Minnesota-Duluth. Applicable courses successfully completed include Hydrogeology, Applied Hydrogeology, Environmental Geology, Geological Field Methods, Geology Field Camp, Geomorphology, Structural Geology, Stratigraphy/Tectonics, Mineralogy/Petrology, Glacial/Quaternary Geology, Geology of North America, Oceanography, General Chemistry, Organic Chemistry, and Environmental Conservation

Post-Graduate Education

Includes Personnel Protection and Safety, Conducting Comprehensive Environmental Property Assessments, Groundwater Flow and Well Hydraulics, Effective Techniques for Contaminated Groundwater Treatment, and numerous other continuing education classes and conferences.

Work Experience

Includes nine months with the Wisconsin Department of Natural Resources Leaking Underground Storage Tank Program regulating LUST sites and since June 1990, with METCO as a Hydrogeologist and Project Manager. Duties have included: managing, conducting, and reporting tank closure assessments; property assessment, LUST investigations; spill investigations; agricultural chemical investigations, dry cleaning chemical investigations, general geotechnical/environmental investigations; Geoprobe projects (soil, groundwater, soil gas sampling); drilling projects (soil boring and monitoring wells); and remedial projects. Since 1989, METCO has sampled/consulted over 1,465 environmental sites.

Jason T. Powell

Professional Title

- Staff Scientist

Credentials

- Recognized by the State of Wisconsin Department of Natural Resources (Chapter NR712) as a qualified Scientist.

Education

Includes a BS in Groundwater Management from the University of Wisconsin- Stevens Point. Applicable courses successfully completed include Hydrogeology, Applied Hydrogeology, Environmental Geology, Hydrogeology-Groundwater Flow Modeling, Groundwater Management, Structural Geology, Mineralogy, Glacial Geology, Soils, Soil Physics, Hydrology, Geochemistry, Water Chemistry, Organic Chemistry, General Chemistry, Environmental Issues.

Post-Graduate Education

40-hour OSHA Hazardous Materials Safety Training course with 8-hour refresher course.

Work Experience

With METCO since May 1992 as a Geoprobe Assistant and Geoprobe Operator. In June 1995 to July 1996 as a Environmental Technician. In July 1996 as a Staff Scientist. Duties have included: LUST investigations; general geotechnical/environmental investigations; Geoprobe projects (soil, groundwater sampling); drilling projects (soil boring and monitoring wells); remedial projects (sampling, pilot tests, system operation/maintenance) and project management.

Eric J. Dahl

Professional Title

- Hydrogeologist

Credentials

- Recognized by the State of Wisconsin Department of Natural Resources (Chapter NR712) as a qualified Hydrogeologist.
- Registered through the Wisconsin Department of Safety and Professional Services as a PECFA consultant (#823519).

Education

Includes B.S. in Geology from the University of Wisconsin-Eau Claire. Applicable courses successfully completed include Environmental Geology, Physical Hydrogeology, Chemical Hydrogeology, Computer Modeling in Hydrogeology, Aqueous Geochemistry, Field Geology I and II, Mineralogy and Petrology I and II, Sedimentology and Stratigraphy, Petroleum and Economic Geology, Earth Resources, Earth History, and Structural Geology.

Post-Graduate Education

40-hour OSHA Hazardous Materials Safety Training course with 8-hour refresher course.

Work Experience

With METCO since November 1999 as a Hydrogeologist. Duties have included: Site Investigations, Phase I and Phase II Environmental Site Assessments, Case Closure Requests/GIS Registry, Geoprobe projects (oversight, direction, and sampling), drilling projects/monitoring well installation (oversight, direction, and sampling), soil excavation projects (oversight, direction, and sampling), Geoprobe operation, and operation and maintenance of remedial systems.

Thomas P. Pignet, P.E.

Professional Titles

- Chemical Engineer
- Industrial Engineer

Credentials

- Licensed Professional Engineer in Wisconsin

Education

Undergraduate: B.S. in Chemical Engineering from the University of Wisconsin. Applicable courses include the standard chemistry curriculum - basic, physical, organic, etc. - plus engineering transport phenomena, chemical unit operations (e.g. separations), fluid mechanics, etc.

Post-Graduate Education

Ph.D. in Chemical Engineering from the University of Minnesota - with applicable special training in absorption & catalysis; M.S. in Industrial Engineering from the University of Wisconsin - Milwaukee - with special emphasis on statistical techniques and data analysis. Applicable further training: continuing education, semester-length courses in [1] Understanding Environmental & Safety Regulation; [2] Hazardous & Toxic Waste Management; plus a number of 1-2 day workshops - Fire & Explosion Safety; Small Quantity Generations of Hazardous Waste.

Work Experience

Includes ten years as a research chemical engineer with a large chemical manufacturer; one year as process development engineer and demonstration-scale test analyst on a unique coal gasification project; ten years in association with UW-M, teaching and consulting to industry on energy efficiency, waste minimization and productivity improvement. One year working with a small engineering consulting firm on energy, environmental, and process improvement projects, including LUST Investigations and Remediations. With METCO since February 2000. Duties include Remedial Action Plan preparation, pilot test design and performance, remedial systems design and implementation, and general management of METCO's remedial projects.

Jon Jensen

Professional Title

- Staff Scientist

Credentials

- Registered through the Wisconsin Department of Safety and Professional Services as a PECFA consultant (#1294924).

Education

Includes B.S. in Geography with and Environmental Science minor from University of Wisconsin – La Crosse: Applicable courses successfully completed include Interpretation of Aerial Photographs, Intro to GIS, Advanced Remote Sensing, Fundamentals of Cartography, Biogeography, and Conservation of Global Environments.

Work Experience

With METCO since July, 2014 as Staff Scientist. Duties include: soil and groundwater sampling, operation and maintenance of remedial systems, Geoprobe projects (oversight, direction, and sampling), site mapping, data reduction and analysis, and reporting.

Matthew C. Michalski

Professional Title

- Hydrogeologist

Credentials

- Registered through the Wisconsin Department of Safety and Professional Services as a PECFA consultant (#1261443).
- Member of the Wisconsin Groundwater Association
- Member of the Minnesota Groundwater Association
- Member of the National Groundwater Association
- Member of the American Institute of Professional Geologist
- Member of the Geological Society of America

Education

Includes B.S. in Geology with an emphasis in Hydrogeology and Water Chemistry from the University of Wisconsin-Eau Claire, completion of Western Michigan University's Hydrogeology Field Camp, a B.S. In Geography from the University of Wisconsin-La Crosse. Applicable courses successfully completed include Hydrogeology, Contaminant Hydrogeology, Aqueous Geochemistry, Geomorphology and Aerial Photograhy interpretation, Sedimentology and Stratigraphy, Structural Geology, Mineralogy and Petrology, Hazardous Waste Operation and Emergency Response, Surface Geophysics, Principles and Practices of Groundwater Sampling and Monitoring, Principles and Practices of Aquifer Testing, Principles of Well Drilling and Installation, Remediation Design and Implementation, Water Resources, Environmental Hazards and Land Use, and Advanced Map Design.

Post-Graduate Education

40-hour OSHA Hazardous Materials Safety Training course.

Work Experience

With METCO since May 2016 as a Hydrogeologist and from August 2012 to August 2014 as a Staff Scientist. Duties have included: soil and groundwater sampling, Site Investigations, Phase I and Phase II Environmental Site Assessments, Case Closure Requests/GIS Registry, Geoprobe projects (oversight, direction, and sampling), drilling projects/monitoring well installation (oversight, direction, and sampling), and operation and maintenance of remedial systems, site mapping, data reduction and analysis, and reporting.

Bryce Kujawa

Professional Title

- Staff Scientist

Credentials

- Registered through the Wisconsin Department of Safety and Professional Services as a PECFA consultant (#17138).
- Member of the Geological Society of America

Education

Includes B.S. in Geology from the University of Wisconsin-Eau Claire. Applicable courses successfully completed include Hydrogeology, Contaminant Hydrogeology, Field Geology I and II, Mineralogy and Petrology I and II, Sedimentology and Stratigraphy, Petroleum and Economic Geology, Earth History, Physical Geology, Structural Geology, Computers in Geology, Geographic Informational Systems, Global Environmental Change, and General Chemistry.

Work Experience

With METCO since June, 2016 as Staff Scientist. Duties include: soil and groundwater sampling, operation and maintenance of remedial systems, Geoprobe projects (oversight, direction, and sampling), site mapping, data reduction and analysis, and reporting.