Natural
Resource
Technology, Inc.

N R T

PHASE II ENVIRONMENTAL INVESTIGATION REPORT

FORMER MANUFACTURED GAS PLANT SITE
NORTH WATER STREET
SHEBOYGAN, WISCONSIN

Project No: 1060

Prepared For:

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Natural Resource Technology, Inc. (NRT) was retained by Wisconsin Public Service Corporation (WPSC) to conduct a Phase II Environmental Investigation at the former Sheboygan II manufactured gas plant (MGP). This investigation is part of WPSC's overall program for long term management of seven MGP sites. The purpose of the investigation was to evaluate the magnitude and extent of soil and groundwater impacts at the site.

The MGP facility used coal as a feedstock to manufacture gas used for lighting and heating as well as producing by-products which served as feedstocks for other chemical manufacturing operations. The Sheboygan MGP operated from 1872 to 1929. The site was owned by WPSC and its predecessor companies throughout the MGP operational period. WPSC subsequently sold the property in 1966, and it is currently owned by the City of Sheboygan. In 1992, a Phase I investigation of the site was completed. The results of the Phase I investigation indicated the presence of MGP residuals and related soil and groundwater impacts.

The purpose of the Phase II investigation was to expand on the results of the Phase I investigation and to obtain, compile and evaluate environmental information regarding the site and surrounding area to enable decision-making regarding long-term management of the site. The objectives for this investigation included:

- Evaluating the areal extent of soil impacts on the former MGP property, and estimating the volume of impacted soil;
- Establishing the potential for impacts associated with suspected source areas, such as the former gas holders, purifier, and tar tanks;
- Characterizing source materials encountered during the investigation;
- Evaluating the direction of groundwater flow and aquifer parameters;
- Evaluating the presence or absence of impacted groundwater above Chapter NR 140 standards downgradient of sources attributable to former MGP operations;

- Evaluating the presence or absence of MGP related groundwater impacts at depth in the aquifer; and
- Identifying site characteristics and impacts critical to the evaluation of remedial alternatives under Chapter NR 722 Wisconsin Administrative Code (W.A.C.).

The Phase II investigation included the completion of soil borings and the installation and sampling of groundwater monitoring wells. The results indicated the following:

- Soils beneath the site include glacial deposits intermixed with fill material in the upper 6 to 14 feet below land surface (BLS), and predominately fine grained alluvium deposits below. Ash/cinders, bricks, glass, and wood were also found within the fill. Clay and silt dominate the soils to a depth of approximately 30 feet BLS, with discontinuous units of sand, silty sand, and trace gravel.
- Groundwater occurred between 3.6 and 7.9 feet BLS in the shallow monitoring wells and between 13.6 and 16.6 feet BLS in the piezometer. Groundwater generally flows west-southwest, toward the Sheboygan River. The calculated horizontal hydraulic gradient across the site is relatively low, and a downward vertical gradient was exhibited in the well nest. The horizontal groundwater flow velocities at the site are estimated to range from 3 to 63 feet/year.
- Soil impacts above the water table are small, isolated, and not highly impacted. There does not appear to be an unsaturated source area which contributes to groundwater impacts.
- Evidence of tar was noted at eight locations, primarily above the water table. At three locations, tar was present up to approximately 20 feet BLS.
- BETX and PAH impacts in groundwater are widespread across the site. Groundwater impacted with cyanide is present in the southern portion of the site. Wood was present in some of site soils; however, they did not exhibit the blue/black color, odor, or other characteristics typically associated with cyanide-impacted soils.
- Results from the piezometer indicate a significant reduction in groundwater impacts between the water table wells and deeper in the aquifer.
- Additional investigation is recommended to evaluate the lateral and vertical extent of groundwater impacts and extent of tar observed in boreholes on the site.
- A feasibility study is recommended to identify and evaluate remedial alternatives, associated costs and develop a long-term management strategy to bring the site into compliance with environmental or remedial performance standards.

1 INTRODUCTION

1.1 Overview

Natural Resource Technology, Inc. (NRT) was retained by Wisconsin Public Service Corporation (WPSC) to complete this Phase II Environmental Investigation at the former Sheboygan II Manufactured Gas Plant (MGP). This investigation is part of WPSC's overall program for long term management of seven MGP sites. The purpose of the this investigation was to evaluate the magnitude and extent of impacts and to identify preliminary remedial action alternatives.

The former Sheboygan II MGP site (hereafter referred to as the "Site") is located at 732 North Water Street, Sheboygan, Wisconsin and is located within the northwest 1/4 of the southwest 1/4 of Section 23, Township 15 North, Range 23 East, within Sheboygan County, Wisconsin (Figure 1-1).

The Site manufactured gas used for lighting and heating as well as producing by-products which served as feedstocks for other chemical manufacturing operations. The Site operated between 1872 and 1929. The Site is approximately 1.5 acres in size and is bounded by New York Avenue to the north, North Water Street to the east, Center Street to the south, and to the west by the Sheboygan River. Gas was manufactured at the facility using coal and water gas processes. The Site buildings and related structures have since been razed (Figure 1-2).

A Phase I site investigation to evaluate the presence or absence of MGP related chemical constituents on site was performed by Simon Hydro-Search (HSI) in 1992 (HSI(1), 1992). The Phase I investigation included collection of six surface soil samples and thirteen soil samples from fifteen soil test pits. Groundwater samples were collected from three of the test pits. MGP related impacts were detected in both soil and groundwater samples.

The purpose of the Phase II investigation was to expand on the results of the previous investigation by evaluating the magnitude and extent of soil and groundwater impacts. The Phase II investigation also includes a preliminary evaluation of factors to be considered during remedial alternative screening. A Work Plan (HSI(2), 1992) was submitted to the Wisconsin Department of Natural Resources (WDNR) for review and approval before commencing field investigative activities in July 1995. The Phase II investigation was completed in accordance with Chapter NR 716 Wisconsin Administrative Code (W.A.C.) and the recommended procedures from the March, 1992 WDNR publication (SW-157-92) *Guidance for Conducting Environmental Response Actions*.

The Phase II investigation project principals include the following:

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Consultant:	Natural Resource Technology, Inc. 23713 West Paul Road Pewaukee, Wisconsin 53072 (414) 523-9000 Contact: Ms. Susan Greenler

1.2 Background

Historically, MGP facilities used coal as a feedstock to manufacture gas. The gas was used for lighting and heating, and gas by-products served as feedstocks for other chemical manufacturing operations. Nationwide, over 2,000 MGPs operated from 1816 to the 1950s, until natural gas became cheaper to produce than manufactured gas. The history and operation of these facilities is not always well defined. However, sufficient records exist to ascertain the nature of the gas production processes used and the probable volumes of gas and related by-products manufactured. Historically, these records also provide information necessary for evaluating the likelihood for

process residuals to remain on the respective properties as well as the probable characteristics and volumes of the residuals. It should be noted that MGPs operated in an era in which minimal knowledge existed on the fate and environmental effects of these residuals. Therefore, environmental regulation was absent or, at best, cursory.

Two methods of coal gas production were used at the Sheboygan II MGP. From 1872 to approximately 1886, the coal gas production method was used. This method involved heating and volatilizing the coal in an airtight chamber called a retort. At retort temperatures (about 2,200^{0}F), the coal decomposed into gas and tar. The tar was sold for beneficial reuse, including roofing, wood treatment, and paving roads. The gas was passed through a purifier to remove impurities such as sulfur, carbon dioxide, cyanide and ammonia. Dry purifiers used trays and sieves containing lime or hydrated iron oxide mixed with wood chips. The gas was then stored in large holders on-site prior to distribution for lighting and heating.

Beginning as early as 1886 the MGP switched to the carburetted water gas production method, which was utilized until the plant ceased operations in 1929. During production of carburetted water gas, air and steam were passed over incandescent coal in a brick-filled vessel to form a combustible gas. This gas was then enriched with oil gas by squirting a fine mist of oil over the bricks, thereby vaporizing the oil. The gas was then purified and stored in holders prior to distributions.

1.3 Purpose and Objectives

The purpose of the Phase II investigation was to obtain, compile, and evaluate environmental information for the site and surrounding area to enable decision-making regarding long-term management of the site. The objectives for this investigation included:

- Evaluating the areal extent of soil impacts on the former MGP property, and estimating the volume of impacted soil;

- Establishing the potential for impacts associated with suspected source areas, such as the former gas holders, purifier, and tar tanks;
- Characterizing source materials encountered during the investigation;
- Evaluating the direction of groundwater flow and aquifer parameters;
- Evaluating the presence or absence of impacted groundwater above Chapter NR 140 standards downgradient of sources attributable to former MGP operations;
- Evaluating the presence or absence of MGP related groundwater impacts at depth in the aquifer; and
- Identifying site characteristics and impacts critical to the evaluation of remedial alternatives under Chapter NR 722 W.A.C.

An additional objective included in the November 11, 1992 work plan (HSI(2), 1992) was to compile information pertaining to use of the Sheboygan River and a variety of river characteristics. This information will be compiled and evaluated as part of the sediment investigation, currently being conducted with WDNR approval of the August 31, 1995 work plan (NRT, 1995)

2 SITE BACKGROUND

2.1 Location and Land Use

The Site is located adjacent to the Sheboygan River approximately 1 mile west of Lake Michigan. The site is bounded to the north, south, east, and west by a private docking facility, an unused wooded lot, North Water Street, and the Sheboygan River, respectively. The site is approximately 1.5 acres in size. There is approximately 35 feet of relief at the site ranging from approximately 590 feet above mean sea level (msl) at the Sheboygan River to approximately 625 feet msl at the top of the riverbank on the southeast side of the Site near the intersection of North Water Street and Center Street. The majority of the site is flat-lying; this includes the former area of MGP structures which were present at approximately 610 feet msl (HSI(1), 1992). Relief within one mile of the site is approximately 95 feet, ranging from 580 feet msl at Lake Michigan to approximately 675 feet msl northwest of the site near the intersection of Wilgus and Erie Avenues. Surface water drainage across the site is likely to the west-southwest, toward the Sheboygan River.

The former Sheboygan II MGP was owned by a variety of companies and eventually became part of the Sheboygan Gas Light Company. In 1922 the gas company merged with other utilities to form WPSC. In 1966, WPSC sold the property to Heilemann Brewing Company for parking vehicles. Ownership of the property was transferred several times until the City of Sheboygan purchased the property in 1985. The City of Sheboygan maintains the site as a boat docking and recreational vehicle camping area. The property is gravel covered and concrete slips have been constructed for recreational vehicle parking. A pier is placed seasonally in the Sheboygan River.

A toy manufacturer, Garton Toy, located north of the site, reportedly stored naphthalene on the north edge of the property in the past.

2.2 MGP Operations/Former Facilities

The Sheboygan II MGP began operating in 1872 and utilized the coal gas production method. Carburetted water gas machines were installed as early as 1886. The MGP operated until 1929. The facility was subsequently dismantled.

Previously existing and existing structures relevant to this investigation and existing structures are shown on Figure 1-2. Former MGP-related structures at the site included the following:

- Three gas holders ranging in diameter from approximately 35 ft to 70 ft, the larger two with capacities of 70,000 ft^3 and 200,000 ft^3;
- One gas oil tank approximately 15 feet in diameter;
- Three tar tanks, two which are approximately 30 ft by 8 ft and one which is approximately 20 ft by 5 ft;
- One purifier approximately 25 feet in diameter; and
- Gas manufacturing buildings including a garage, a gas meter shop, and a boiler room.

2.3 Previous Investigations

During construction of a foundation for the City of Sheboygan (City) boat docking facility in August 1990, dark oily material was encountered by the City in an excavation along the shoreline. The location of this excavation was reported to be near the former location of the former MGP tar tanks. The City collected a "worst case" sample for analyses of various organic and inorganic parameters. Compounds detected included polynuclear aromatic hydrocarbons (PAHs), benzene, ethylbenzene, toluene, and xylene (BETX), total petroleum hydrocarbons (TPH), and total and amenable cyanide. Based on information obtained from the City, other test pit excavations contained "visible contamination" but were not sampled. The locations of previous test pits and sample locations could not be reliably determined based on available documentation.

Subsequently, Simon Hydro-Search (HSI) conducted a Phase I site investigation in 1992 which included soil sampling from thirteen of fifteen test pits, six surface soil grab samples, and three grab groundwater samples from three of the test pits (Figure 1-2). Soil and groundwater analytical data are summarized in Tables 2-1 and 2-2, respectively. Results of the Phase I investigation are discussed below.

2.3.1 Geology

Based on the test pit logs presented in the Phase I report (HSI(1), 1992), the surface soils (zero to 0.25 feet below land surface) across the site consist of well graded sand and gravel or topsoil. Beneath the surface sediments, the site is generally characterized by approximately 0.25 to one feet of silty sand and gravel or topsoil fill which is underlain by sand and gravel fill to an approximate depth of nine feet. The subsurface sand and gravel fill (one to nine feet) contained coal, slag, and cinders in several of the test pit locations. Construction debris (bricks, concrete, etc.) was encountered at eight test pit locations. Silty to clayey alluvial sand is present beneath the fill. Groundwater is potentially perched within the fill materials at several locations by clayey silt or buried structures, because it was not observed at consistent depths across the small flat site (HSI(1), 1992).

Regionally, unconsolidated deposits in the area are generally less than one hundred feet thick (Skinner, 1973). Based on available well logs for wells within approximately one-half mile of the site, unconsolidated deposits in the site area range in thickness from approximately 50 to 95 feet.

2.3.2 Site Impacts

The Phase I site investigation consisted of the following field activities and laboratory analyses:

- Six surface soil samples were collected from the top zero to three inches of soil and submitted for laboratory analysis of total, amenable, and weak acid dissociable cyanide, BETX, PAHs, and phenol.

- Fifteen soil test pits were excavated and thirteen soil samples collected for analyses of total, amenable, and weak acid dissociable cyanide, BETX, PAHs, and phenol. The seven soil samples believed to be most impacted based on field observations were submitted for arsenic and nickel analysis. Four soil samples were submitted for diesel range organics (DRO) analysis due to field observations of fuel oil-like hydrocarbon odors. Three soil samples were submitted for infra-red fingerprint (IR) analysis in order to evaluate the origin of organic constituents observed containing a fuel oil odor, creosote/fuel oil mixture and creosote-like odor;

- Groundwater samples were collected from three test pit locations and submitted for analysis of total, amenable, and weak acid dissociable cyanide, arsenic, nickel, BETX, PAHs, and phenol. One sample was also analyzed for DRO.

Results of the Phase I investigation are summarized below.

Surface Soil Sampling

Soil samples were field screened with a photoionization detector (PID). PID readings were less than two parts per million (ppm) benzene equivalents and hydrocarbon odors were not noted in the surface soils samples. A summary of analytical results for surface soil samples is included in Table 2-1. Low levels of total PAHs were detected in samples CS-101B (0.1 ppm) and CS-103C (0.06 ppm). Phenol, BETX, and total, amenable, and weak acid dissociable cyanide compounds were not detected in the samples.

Test Pit Sampling

Analytical soil samples were collected from thirteen of the fifteen test pits. Former gas holder foundations were not conclusively located, although a curved foundation was encountered at test pit TP-113. Test pit TP-104 also contained a foundation as well as loose grained sand which may have been used to fill the inside of a foundation.

A strong "moth ball-like hydrocarbon odor" and elevated PID readings occurred at locations TP-107, TP-108, and TP-109, near the tar tanks; and at locations TP-113 and TP-114, within the relief holder at the southern end of the site. Slight diesel fuel odors and slightly elevated field PID readings (3.5 to 14 ppm) were observed in the northern portion of the site at locations TP-102, TP-103, TP-104, and TP-106.

Low concentrations of BETX constituents (approximately 2 ppm or less) were detected at four locations. A fifth location, TP-109, exhibited the highest total BETX concentration (17 ppm). Total PAHs were detected in ten test pit samples at concentrations ranging from 4 ppm to approximately 150 ppm. DRO was detected in all samples collected: TP-103 (7 feet; 3000 ppm), TP-108 (5 feet; 110 ppm), TP-109 (5 feet; 380 ppm) and TP-113 (5 feet; 390 ppm).

IR analysis of soil samples from TP-102, TP-106, and TP-113, indicated the presence of PAHs typical of "heavy" coal tar and potential devolatilized carburetted water gas tar. Petroleum oil, possibly devolatilized fuel oil, was also observed in the samples. Soil sample TP-102 contained heavy aromatic petroleum oil, possibly devolatilized fuel oil and minor amounts of PAHs. Samples from TP-106 and TP-113 contained mostly PAHs and minor amounts of petroleum oil. Samples TP-102 and TP-106 were saturated (collected at the water table approximately 5 feet below land surface) and represent groundwater conditions at their respective locations.

Low levels of phenol and cyanide species were detected at selected locations. Arsenic concentrations ranged from 0.5 ppm to 3.4 ppm and nickel concentrations ranged from 7 to 14 ppm. Both are within the natural range for Wisconsin soils (2 to 5 ppm for arsenic and 10 to 100 ppm for nickel) (HSI(1), 1992).

Groundwater Analytical Results

The grab groundwater sample collected from TP-107, located downgradient of the tar tanks, had 1,700 µg/L benzene, and 780 µg/L, both above the NR 140 groundwater quality Enforcement

Standard (ES). DRO was detected at a concentration of 5 mg/L. Low levels of PAHs were also detected in sample TP-101, but no BETX. Phenol was detected one sample (TP-107) well below the PAL of 1.2 mg/L.

Total dissolved cyanide was detected above the ES of 0.2 mg/L in all three samples, ranging from 0.23 to 0.37 mg/L. Arsenic was detected well below the ES in all three samples, at concentrations ranging from 0.005 to 0.019 mg/L. Nickel was not detected in any of the samples (Table 2-2).

2.3.3 Impact Analysis

The Phase I investigation primarily included collection of surface and subsurface soil samples. Given the limited groundwater data collected, only a cursory analysis of the site impacts was possible. Few surface soil impacts were present. PAHs, detected at very low levels in two locations, may be present due to the long-term use of the site for vehicle parking.

Subsurface soil impacts were present near the gas holders and tar tanks. Results indicated the presence of both coal tar and petroleum or fuel oil related impacts. Grab groundwater samples collected at the water table exhibited impacts primarily in one sample downgradient (toward the Sheboygan River) of the tar tanks. Cyanide was detected in all groundwater samples; however, the fate of any oxide box wastes associated with the facility was not known following the Phase I investigation. It was not possible to draw any conclusions regarding extent and migration of impacts based on the Phase I data.

3 SCOPE OF INVESTIGATION

The Phase II investigation focused on delineating the extent of groundwater and soil impacts on the Site, defining source areas not previously investigated, evaluating potential MGP residuals in the soil, and determining aquifer properties. The Phase II investigation consisted of the following tasks:

- Soil boring installation and sampling;
- Monitoring well and piezometer installation and sampling; and,
- Aquifer characterization.

The field sampling methods are described in detail in the work plan (HSI(2), 1992).

3.1 Soil Borings

Ten soil borings (SB-701 through SB-710) were advanced at the site in July and August 1995 to characterize soil type and quality (Figure 3-1). Soil boring SB-701 was advanced using hollow stem auger drilling techniques. Borings SB-702 through SB-710 were drilled utilizing GeoProbe™ sampling techniques. The rationale for each boring is summarized below:

- SB-701: Evaluate the presence/absence of impacted soils near the former gas meter shop in an area not previously investigated;
- SB-702 through SB-708: Evaluate the presence/absence of impacted soil within and near the former relief holder in the south portion of the site and assess the extent of fill/impacts;
- SB-709: Assess soil quality within the former purifier; and,
- SB-710: Evaluate the soil quality in the vicinity of the former purifier and downgradient of other MGP operations.

All soil borings extended to 10 feet below land surface (BLS), with the exception of SB-701 which extended to 20 feet BLS. Most borings were terminated within a reddish brown, soft to medium plastic clay to sandy/silty clay. The soil borings were continuously sampled. All drilling cuttings were collected in a roll-off box, pending WDNR approval for treatment at a thermal unit. Following completion, each borehole was abandoned using bentonite chips. Boring logs and abandonment forms are included in Appendix A.

Soil samples were screened using a photoionization detector (PID) and the headspace method. One soil sample from above the water table at SB-701 was submitted for laboratory analysis of BETX, PAHs, and phenols. Soil samples were collected and held from all borings for potential metals analyses, pending the results from groundwater metal analyses. After reviewing the groundwater analytical results, it was determined that laboratory analysis for metals was not necessary because metal concentrations in groundwater were low relative to NR 140 Preventive Action Limits (PALs). Soil analytical reports are included in Appendix B.

3.2 Monitoring Wells and Piezometer

Seven water table monitoring wells (MW-701 through MW-707) and one piezometer (PZ-701) were installed in July 1995. Soil information obtained during well installation supplemented data collected from the soil test pits performed during the previous investigation.

The monitoring wells and piezometer were installed to provide hydraulic information on direction of groundwater flow and to evaluate the lateral and vertical extent of groundwater impacts. The water table monitoring wells were planned to be drilled and sampled to a maximum depth of approximately fifteen feet. However, boreholes were extended a minimum of two feet below the lowest extent of any tar or staining observed in the split spoon samples.

Monitoring well borings were drilled using the hollow-stem auger method. Soils in the well borings were continuously sampled using split spoon techniques. Water table observation wells were completed with a screen depth from 3.5 to 13.5 feet BLS to intercept the water table surface.

The piezometer was constructed with a five foot screen placed from approximately 29 to 34 feet BLS. Due to the close proximity of wells in well nest MW-701 and PZ-701, the water table observation well (MW-701) was drilled, logged, sampled, and constructed before installing piezometer PZ-701. Following the installation of MW-701, the piezometer was drilled blind to the terminus depth of MW-701 and sampling was continued to the terminus of the piezometer. The piezometer was installed using mud rotary drilling techniques and temporary casing was advanced to 15 feet BLS during drilling to prevent impacted soil from being carried to depth during drilling.

One soil sample was collected from above the water table at each monitoring well or well nest location for the analyses of BETX, PAHs, and phenols. A grain size sample was collected from the screened interval of each monitoring well and piezometer to aid in lithologic and hydrogeologic characterization. These samples were preferentially collected from the units within the screened interval which would typically exhibit higher hydraulic conductivities.

Monitoring wells and the piezometer were constructed in accordance with Chapter NR 141, Wisconsin Administrative Code (W.A.C.). Following construction, the wells were developed by NRT personnel. Development and sampling purge water was containerized and stored in drums pending determination of disposal alternatives. Soil boring logs, monitoring well information, well construction, and well development forms are included in Appendix C.

The elevation of the well casing and ground surface, and site specific grid location of the wells, piezometer, soil borings, test pits, and surface soil sample locations were surveyed by a registered professional land surveyor. Monitoring wells were sampled in August and September, 1995. Water level elevations were calculated during sampling events. Groundwater sampling

procedures were in accordance with the WDNR *Groundwater Sampling Procedure Guidelines* (Publ-WR-153 87). Groundwater samples were analyzed for BETX, PAHs, total cyanide, amenable cyanide, and weak acid dissociable cyanide. Seven soluble RCRA metals were analyzed from each well during the first sampling event only. Chloride, pH, chemical oxygen demand (COD), oil and grease, and total organic carbon (TOC) were analyzed in samples from wells MW-706 and MW-702 during the second sampling event to aid in evaluating potential groundwater treatment options. Groundwater analytical reports are included in Appendix D.

3.3 Aquifer Characteristics

On August 15, 1995, five of the monitoring wells (MW-701, MW-702, MW-703, MW-705, and MW-707) were tested to characterize the hydraulic properties of the unconsolidated deposits. Monitoring well MW-706 was not tested due to the presence of tar which would adversely affect the operation and integrity of the monitoring equipment. Piezometer PZ-701 was not tested due to slow recovery (greater than 24 hours). Monitoring well MW-704 was tested; however, the data logger file was corrupted during data transfer and the results may not be accurate. The tests were performed using baildown recovery methods. Before starting the tests, the water level elevation in each well was measured. A pressure transducer, connected to a data logger, and a disposable bailer were then inserted into the well. Following recovery of the water level to within 0.02 feet of the original water level the bailer was quickly removed and the rate of the water level recovery was measured and recorded by the pressure transducer and data logger. The baildown recovery data was analyzed using the Bouwer-Rice (Bouwer and Rice, 1976) method.

3.4 Laboratory Quality Assurance / Quality Control

Analysis of environmental media samples was performed by a WDNR laboratory certified under Chapter NR 149 (W.A.C.). Laboratory analytical reports were reviewed to check laboratory quality assurance/quality control (QA/QC) measures. Samples were either extracted or analyzed within the required method hold times.

One trip blank accompanied the BETX sample vials submitted to the laboratory for each sampling event. This blank was prepared and supplied by the laboratory along with the appropriate pre-cleaned sampling containers. The trip blank was transported to the field and laboratory along with the groundwater samples and was analyzed for BETX. Field duplicate samples were analyzed for each ten or fewer groundwater samples collected. The duplicate sample was identified as MW-799 and was collected from MW-704. Since dedicated bailers were used for collection of groundwater samples, field blanks to evaluate equipment decontamination were not necessary and thus were not collected.

4 INVESTIGATION RESULTS

4.1 Regional Geology and Hydrogeology

Near surface geology of Sheboygan County consists of unconsolidated glacial drift comprised of unsorted till as ground and end moraines, outwash as sorted and stratified sand and gravel, and glacial lake deposits as organic materials and stratified clays, silt and sand. Low permeable soils are indicative of the high clayey tills and lake bed deposits which blanket the majority of the county. Moderate and high permeable soils are typically associated with the less clayey till, outwash and end moraine. The glacial drift is Pleistocene to Recent in age and ranges in thickness from 50 to 200 feet (Skinner and Borman, 1973).

Bedrock geology beneath the glacial drift consists of Silurian and Ordovician aged sedimentary dolomite, shale and sandstone, and Cambrian sandstones overlying Precambrian crystalline rock. The Silurian aged dolomite is generally undifferentiated and comprised predominantly of the Niagara Dolomite. This dolomite is fine to medium grained containing sandy chert nodules. These dolomites lie approximately 100 feet BLS in the Sheboygan County area and are approximately 750 feet thick.

Three aquifer systems exist beneath the site area and are (from shallowest to deepest): the sand and gravel, the Niagara, and the sandstone. Skinner and Borman's (1973) description of these units is presented below.

The sand and gravel aquifer in the Site area consists of buried, highly permeable glacial sand and gravel and is most significant where thicknesses are greater than 50 feet. Local glacial sands and gravel may yield significant amounts of water for local use. Thicknesses range from 0 to 300 feet. The top of this aquifer ranges from 0 to 140 feet BLS.

The Niagara aquifer is the principal aquifer overlying the Maquoketa Shale and consists of Silurian aged dolomites. The majority of the aquifer is under artesian conditions due to the overlying confining clayey till. In areas where the clayey till is not present, the aquifer is hydraulically connected with the overlying sand and gravel aquifer. The main source of recharge for the Niagara aquifer is from infiltration through the sand and gravel aquifer or through the overlying glacial outwash and till. Natural discharge occurs into Lake Michigan, nearby rivers and through wells. Water use of the Niagara aquifer is for local domestic wells.

The sandstone aquifer is approximately 600 feet thick beneath Sheboygan County and includes Ordovician and Cambrian units beneath the confining 300 foot thick Maquoketa Shale and above the Precambrian crystalline rock. This aquifer is approximately 600 feet BLS, beneath Sheboygan County (Skinner and Borman, 1973). Local use of the sandstone aquifer is low to moderate.

4.2 Site Geology

Soils encountered during the Phase II investigation generally include glacial deposits intermixed with fill material in the upper six to fourteen feet BLS and predominately fine grained alluvium deposits below. Cross sections showing the soil lithologies are presented on Plate 4-1 (Sections A-A' through C-C').

Near surface soil is dominated by silty organic gravel soil and fill material. The fill material generally consists of ash/cinders, sand, silt, clay, bricks, wood, and glass which varies considerably throughout the site. The ash/cinder fill resembles a black, fine to coarse sand and silt. Field observation of fill types are shown on Figure 4-1. Clay and silt dominate soil in the upper fourteen feet of fill material with disconnected areas of sand and gravel and minor amounts of silty gravel. Clay and silt also dominate the alluvium soils encountered below, with discontinuous units of sand and silty sand.

Tar was encountered in six of the ten soil borings and two of the seven monitoring well borings installed during this investigation. The tar was present at or below the water table predominately in the southern and west-central portions of the site (Figure 4-1). During sampling of monitoring well boreholes and soil borings, sampling was extended a minimum of two feet below the vertical extent of the tar encountered.

4.3 Site Hydrogeology

Water level elevation measurements from August 14, September 25, and October 20, 1995 are presented in Table 4-1. Depth to groundwater ranged from 3.6 to 7.9 feet BLS in the shallow wells and between 13.6 and 16.6 feet BLS in piezometer PZ-701. Groundwater elevations generally decreased across the site from August to September and generally increased from September to October 1995. Water table elevations for August 14, 1995 and October 20, 1995 are shown on Figure 4-2 and Figure 4-3, respectively. Groundwater flow is generally to the west-southwest, toward the Sheboygan River. Horizontal groundwater gradients were calculated based on water table groundwater contour lines and direction of flow. The calculated groundwater gradients range between 0.048 ft/ft in August and 0.063 ft/ft in October. Downward vertical hydraulic gradients were exhibited at the MW-701/PZ-701 well nest. Gradients ranged from 0.33 ft/ft in August to 0.46 ft/ft in September. Gradient calculations are included in Appendix E.

Baildown recovery test results were analyzed using the Bouwer-Rice method. This method yields hydraulic conductivity (K) estimates under unconfined aquifer conditions. The results are summarized in Table 4-2 and the raw data and slug test plots are presented in Appendix F. Calculated K values in the shallow monitoring wells ranged from 2.5×10^{-5} feet/minute to 2.5×10^{-4} feet/minute (1.2×10^{-5} cm/sec to 1.2×10^{-4} cm/sec). The monitoring well results are generally consistent with published estimates for silty sand, silt, and glacial till (Freeze and Cherry, 1979).

A grain size analysis was conducted on soil samples collected from each monitoring well boring location. Samples for grain size analysis were selectively collected from soil units which typically have higher hydraulic conductivities. The grain size analysis results for the monitoring wells and piezometers are included in Appendix G and summarized in Table 4-2. The results indicate soils within the upper ten feet of the aquifer beneath the site are dominated by sandy silt and silty sand, but the mixture of sand, silt and clay varies over the site. The deeper soils present in the screened portion of piezometer consist primarily of silt and clay.

The average linear groundwater flow velocity was estimated using the calculated horizontal hydraulic gradient (i), hydraulic conductivity (K), and assumed effective porosity (n_e) for saturated materials at the site (Freeze and Cherry, 1979). The effective porosity values for silty sands, silts, and glacial till are generally on the order of 15 to 25 percent. Groundwater velocity (v) is calculated as follows:

$$v = Ki/n_e$$

Based on the range of values for K, i, and n_e, the calculated minimum and maximum values for horizontal shallow groundwater flow velocities at the MGP site is approximately 3 to 63 feet per year (Appendix E).

4.4 Field Observations/Screening

Cross sections A-A' through C-C' (Plate 4-1) indicate that fill overlies natural material at the site. Areas where general soil fill, cinders, and tar were observed are shown in Figure 4-1. In general, fill and tar was present in the upper two to four feet BLS. The wood present in several boreholes were not characteristic of those associated with purifier wastes; they were not blue/black in color, and they did not have an odor. Observations from the soil and monitoring well borings are included in Appendices A and C.

In several of the soil borings on the southern portion of the site tar was visible at depths up to six feet BLS. The tar was generally not visible for more than a two foot thickness. In SB-701, MW-704 and MW-706, tar was visible from 12 to 18 feet, 16 to 21 feet, and 4 to 16 feet BLS, respectively. Groundwater removed all wells was grey to black in color, turbid, and exhibited slight to strong odors. A sheen was present in wells MW-701, MW-702, MW-704, and MW-707. "Tarry" material with a sheen was suspended and noted at well MW-706.

No evidence of blue/black wood chips, indicating the presence of potential purifier wastes that are typically cyanide sources, were observed on the Sheboygan II site property. However, a field reconnaissance of the adjacent off-site property to the south of the Site revealed surficial blue wood chips as wells as blue tinted vegetation, including tree trunks and grass, indicating potential cyanide impacts.

4.5 Laboratory Analytical Results

Laboratory analytical reports of the soil and groundwater sampling are included in Appendices B and D, respectively. Analytical results are discussed below.

4.5.4 Soil Sampling Results

One soil sample was collected from the vadose zone at each monitoring well location and SB-701 and submitted for laboratory analyses. Selection of the samples was based on visual and odor observations and PID headspace response. Soil analytical results are summarized on Table 4-3.

Total BETX/benzene and total PAH/naphthalene impacts are sporadically present across the Site as depicted on Figures 4-4 and 4-5, respectively. Total BETX/benzene impacts in soil were limited to two areas of the Site. Soil analyzed from MW-703 contained 13 µg/kg benzene.

Surrounding sampling locations, including HSI sampling locations summarized on Table 2-1, did not contain BETX compounds. Benzene was also detected in TP-106, TP-107, and TP-109.

Total PAH impacts (greater than 100 mg/kg) were detected in soil samples collected from TP-101, TP-107, TP-109, TP-110, and MW-701 (Figure 4-5). Total PAH concentrations were approximately 200 mg/kg at location MW-701 and were between 100 and 150 mg/kg at the other 4 locations. The remaining collected soil samples exhibited total PAH levels of less than 50 mg/kg.

Total BETX/benzene and total PAH/naphthalene distribution in soil indicate the largest impacted area is near the former MGP operations on the west side of the site adjacent to the tar tanks and purifier. A smaller isolated area of impacts is just west of the large gas holder.

Phenol was detected in all soil samples at concentrations ranging from 0.55 mg/kg (MW-704) to 83 mg/kg (MW-707). Phenol concentrations exceeded 1.0 mg/kg at only three locations. Phenol was previously detected at low levels in two of the thirteen test pit samples.

4.5.2 Groundwater Sampling Results

Two rounds of groundwater samples were collected from the site monitoring wells on August 15 and September 25, 1995. Analytical results are presented in Appendix D and are summarized in Table 4-4. In general, the results of both sampling rounds are consistent. Second round samples collected from well MW-706 showed a significant decrease in total PAHs. For the remaining wells, results of both sampling events are within the same order of magnitude suggesting that groundwater concentration changes were not significant.

4.5.2.1 VOCs and PAHs

Tar collected from MW-706 was analyzed for GC/FID fingerprinting and the analytical report is included in Appendix D. The analytical data for the sample presented a very good visual match to a MGP tar reference.

VOC and PAH groundwater impacts exceeding Chapter NR 140 ESs were present in six of the seven monitoring well samples. No BETX or PAHs were detected in the samples collected from side gradient well MW-705, located in the northern portion of the site. Total BETX/benzene results and total PAH/naphthalene results for September 1995 are shown on Figures 4-6 and 4-7, respectively. Areas in which shallow groundwater impact concentrations exceed Chapter NR 140 ESs extend over the entire site with the exception of the northernmost portion of the site. Benzene concentrations in the water table wells range from 340 µg/L to 34,000 µg/L, benzo(a)pyrene concentrations range from 0.66 µg/L to 83,000 µg/L, and naphthalene concentrations range from 220 µg/L to 1,900,000 µg/L.

The most highly impacted groundwater is located in the center of the site at locations MW-701, MW-702, and MW-706. This is the center of the former MGP operation, near the tar tanks, purifier, the smallest of the three gas holders, and one of the plant buildings. Groundwater quality is less highly impacted to the north and south of this area. Groundwater at location MW-703 exhibits benzene and naphthalene impacts about two orders of magnitude above the NR 140 ES. These concentrations decrease significantly to below detection between this location, and MW-705, located a distance of 100 feet north of MW-703.

In addition, groundwater improves significantly in a vertical direction, between wells MW-701 and PZ-701. The groundwater samples from the piezometer PZ-701 contained benzene concentrations exceeding Chapter NR 140 ES in August, 1995.

The levels measured are more than three orders of magnitude less than results from MW-701. Benzo(a)pyrene was detected in the piezometer in August, but was below the detection limit in September. Naphthalene, detected at high levels in the shallow well, was not detected in the piezometer.

4.5.2.2 Cyanide

A total dissolved cyanide concentration slightly above the Chapter NR 140 ES of 0.2 mg/L was detected in at least one of the samples collected from wells MW-702, MW-704, and MW-707. The area of cyanide impacts in groundwater extends from approximately the center of the investigation area to the southern extent of the site (Figure 4-8). The samples from MW-706, which exhibited the highest concentrations of BETX and PAHs, contained no cyanide. No cyanide was detected in northern well MW-705.

4.5.2.3 RCRA Metals

During August 1995, groundwater samples were analyzed for seven RCRA metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver). No metal concentrations exceeded the ES. Results for the remaining samples indicate barium is present in all monitoring wells at concentrations below the Chapter NR 140 PALs. Cadmium, chromium, selenium, and silver were not detected in any samples. Though arsenic, barium, and lead were detected in groundwater, the levels of impacts are not significant compared to the NR 140 standards and the concentrations of BETX and PAHs. Therefore, based on these results, no groundwater samples were submitted for metals analysis during September 1995 and none of the collected soil samples were submitted for laboratory analysis of metals.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

5.1.1 Site Geology

Soils encountered include glacial deposits intermixed with fill material in the upper six to fourteen feet of material and predominately fine grained alluvium deposits below. The surface soil is dominated by silty organic gravel soil and fill material. The fill material generally consists of ash/cinders, sand, silt, clay, bricks, glass, and wood which varies considerably across the site. clay and silt dominate soil in the upper fourteen feet of fill material with discontinuous areas of sand and gravel. Clay and silt also dominate the alluvium soils encountered below, with discontinuous units of sand and silty sand. Tar was encountered in soil samples collected below the water table interface. Tar extended from the west-central to the southern portions of the Site.

5.1.2 Site Hydrogeology

Depth to groundwater in the investigation area ranged from 3.6 to 7.9 feet BLS in the shallow wells and between 13.6 and 16.6 feet BLS in the piezometer. Groundwater flow is generally to the west-southwest, toward the Sheboygan River. Calculated horizontal groundwater gradients range between 0.048 ft/ft in August and 0.063 ft/ft in September. Downward vertical hydraulic gradients were exhibited in the MW-701/PZ-701 well nest. Gradients ranged from 0.33 ft/ft to 0.46 ft/ft downward.

Calculated hydraulic conductivity values in the shallow monitoring wells ranged from $2.5x10^{-5}$ feet/minutes to $2.5x10^{-4}$ feet/minute. Grain size analysis indicate soils within the upper ten feet of the upper aquifer are dominated by sandy silt and silty sand, however sand, silt and, clay percentage varies over the site.

The calculated minimum and maximum values for average linear groundwater flow velocity in shallow groundwater are approximately 3 to 63 feet per year. The higher velocities are representative of monitoring wells constructed in fill with higher hydraulic conductivity than wells set in shallow native silty and clay material.

5.1.3 Source Areas

Total BETX/benzene and total PAH/naphthalene concentrations are sporadically present in unsaturated soils across the site. Total BETX/benzene impacts in soil were limited to two areas on site, from the soil samples collected from MW-703 and the area between TP-106 and TP-109. Total PAH impacts did not exceed 200 mg/kg in any analyzed site soils. Overall, the soil impact areas above the water table are small and isolated, and there does not appear to be an unsaturated source area which contributes to groundwater impacts.

Field reconnaissance south of the investigation area revealed surficial "Prussian blue" wood chips on the ground surface, as well as blue tinted vegetation including trees and grass.

5.1.4 Groundwater Impacts

BTEX, PAHs, and cyanide are the constituents of concern in the groundwater. Groundwater impacts extend from the north central portion of the site to the southern extent of the investigation area and to the Sheboygan River. Migration of impacted groundwater is likely to the west-southwest, in the general direction of groundwater flow. The benzene and naphthalene NR140 ESs have been exceeded in all shallow wells, except northernmost well MW-705. The clay and silt soils are effectively retarding the vertical mitigation of groundwater impacts based on the results from well nests MW-701/PZ-701.

The significant reduction in impacts over a 100 foot distance between wells MW-703 and MW-705, indicate that side gradient migration is likely limited.

Evidence of tar was noted in well MW-706. Tar was noted below the water table during borehole installation at two other locations (MW-704 and SB-701). The source and extent of the tar at depth is unknown at the present time.

Soluble cyanide impacts in the shallow groundwater slightly exceed the NR 140 ES over the southernmost portion of the site. Wood observed in boreholes at the site did not exhibit the typical color or odor characteristics which would suggest that these chips are associated with cyanide sources.

The southern and eastern extent of groundwater impacts has not been fully evaluated.

5.2 Recommendations

Additional investigation is recommended to evaluate the lateral and vertical extent of groundwater impacts and extent of tar observed in boreholes on site. The proposed field investigation and rationale for each boring location is summarized below:

- PZ-702 and PZ-703: Evaluate the vertical extent of groundwater impacts on the site (approximate depth of wells is 40 feet; groundwater analytical parameters include BETX, PAHs, and cyanide species);
- SB-711 through SB-716: Evaluate the extent of tar identified in borings MW-704, MW-706, and MW-707 (maximum depth of borings approximately 25 feet BLS; soil analytical parameters include BETX and PAHs);
- SB(MW)-717 through SB(MW)-720: Evaluate upgradient and side gradient extent of groundwater impacts along the east-northeast, and southern side of the property (maximum depth of borings or monitoring wells approximately 15 feet BLS; soil analytical parameters include BETX and PAHs; groundwater analytical parameters include BETX, PAHs, and cyanide species.

5.3 Remediation Considerations

Following collection of additional soil and groundwater data, a feasibility study (FS) is recommended to identify and evaluate remedial alternatives and associated costs as well as to develop a long-term management strategy for the site. Due to the site's proximity to the Sheboygan River, the Remedial Action Plan should be directed toward alternatives which restore the site to environmental standards for the applicable media, taking into account land use classification both at the MGP and in the surrounding area. The following discusses applicable remedial action objectives and critical parameters to consider in the development of a Remedial Action Plan.

5.3.1 Soil

5.3.1.1 Environmental Standards

The site investigation indicated that BETX impacts are limited to two areas of the site. Total PAHs exceeded values used as remedial action goals at MGP sites outside of Wisconsin. NRT understands that the WDNR has developed an internal draft of NR 720 standards for PAHs in soil which may be promulgated within the likely timeframe of remedy implementation. When compared to the internal draft PAH values, most soils were significantly below values which are protective of groundwater.

The Sheboygan II site does not meet the required site characteristics for application of NR 720 Table 1 soil quality values. Groundwater at the Sheboygan II site occurs at shallow depths such that there is a small unsaturated zone in some areas of the site. In addition, tar was present in at least one location to a depth greater than 20 feet and the impacts present at the site may be subject to cosolvent effects. Therefore, existing site conditions and the practicability of achieving clean closure of the facility should be considered further to establish site-specific remedial objectives or application of a remedial performance standard for soil under the NR 720 process.

5.3.1.2 Remedial Parameters

The soil impact areas above the water table are small and isolated, and there does not appear to be an unsaturated source area which contributes to groundwater impacts. Evidence of tar below the water table warrant removal if the tar is continuous, and if removal will significantly reduce the effort required for groundwater remediation. Additional investigation will evaluate whether or not the tar is continuous. If removal appears warranted, possible treatments strategies will be evaluated during the alternative screening process reflecting current developments in MGP site remediation technologies.

5.3.2 Groundwater

5.3.2.1 Environmental Standards

For groundwater, the remedial action objectives are generally the NR 140 standards. Evaluation of technical and economical feasibility also may dictate development of site-specific alternate concentration limits. The site investigation indicated that BETX, naphthalene, benzo(a)pyrene, fluorene and soluble cyanide in groundwater exceeded NR 140 standards at concentrations which will require remediation.

The extracted groundwater will require treatment if discharged into the sanitary sewer system or a surface water. A discharge permit from the WDNR and/or Sheboygan Sewerage District will be required, along with periodic sampling and laboratory analyses.

If the groundwater treatment includes air stripping, air emission standards will have to be considered.

5.3.2.2 Remedial Parameters

BETX and PAH impacts in groundwater occur across the site, and minor cyanide impacts occur in the central and southern portions of the site. Migration of impacted groundwater is to the west-

southwest extending to the Sheboygan River. The southern, eastern, and northeastern extent of impacted groundwater has not been fully defined.

Vertically, impacts extend to a projected depth of approximately 30 feet BLS. Well nests MW-701/ PZ-701 indicate groundwater impacts are present at the water table and at 30 feet BLS in the aquifer, but concentrations decrease by several orders of magnitude between the shallow and deep wells. Tar and free product was also observed at depth in the central/southern area of the site.

Groundwater extraction may be performed by wells, well points, or trenches. The extraction system should be designed so the lateral extent of the plume of impacted groundwater lies within the capture zone, extending to a depth of at least 30 feet. Trenches may be considered but may not be feasible if groundwater elevations are much shallower at wetter times of the year. Construction of a slurry wall or cut-off trench to act as a barrier for groundwater migration may also be evaluated. These might be used to decrease flow from the river which could impact the effectiveness of a pumping system.

Treatment of extracted groundwater could be accomplished by the following:

- Disposal of groundwater via the City of Sheboygan or the Sheboygan waste-water treatment plant (WWTP). A permit from the City and possibly WDNR would be required. Pre-treatment to remove suspended solids or meet pre-established limits may also be required; or
- On-site treatment of groundwater using air stripping, carbon adsorption, UV oxidation and/or a bioremediation system. Disposal of treated groundwater into the Sheboygan River would require a WPDES permit from WDNR.

Other groundwater treatment approaches should be evaluated during the alternative screening process reflecting current developments in MGP site remediation technologies.

5.3.3 Sediments

The sediments in the Sheboygan River are being evaluated as part of a separate investigation, currently being conducted with WDNR approval of the August 31, 1995 work plan (NRT, 1995).

6 REFERENCES

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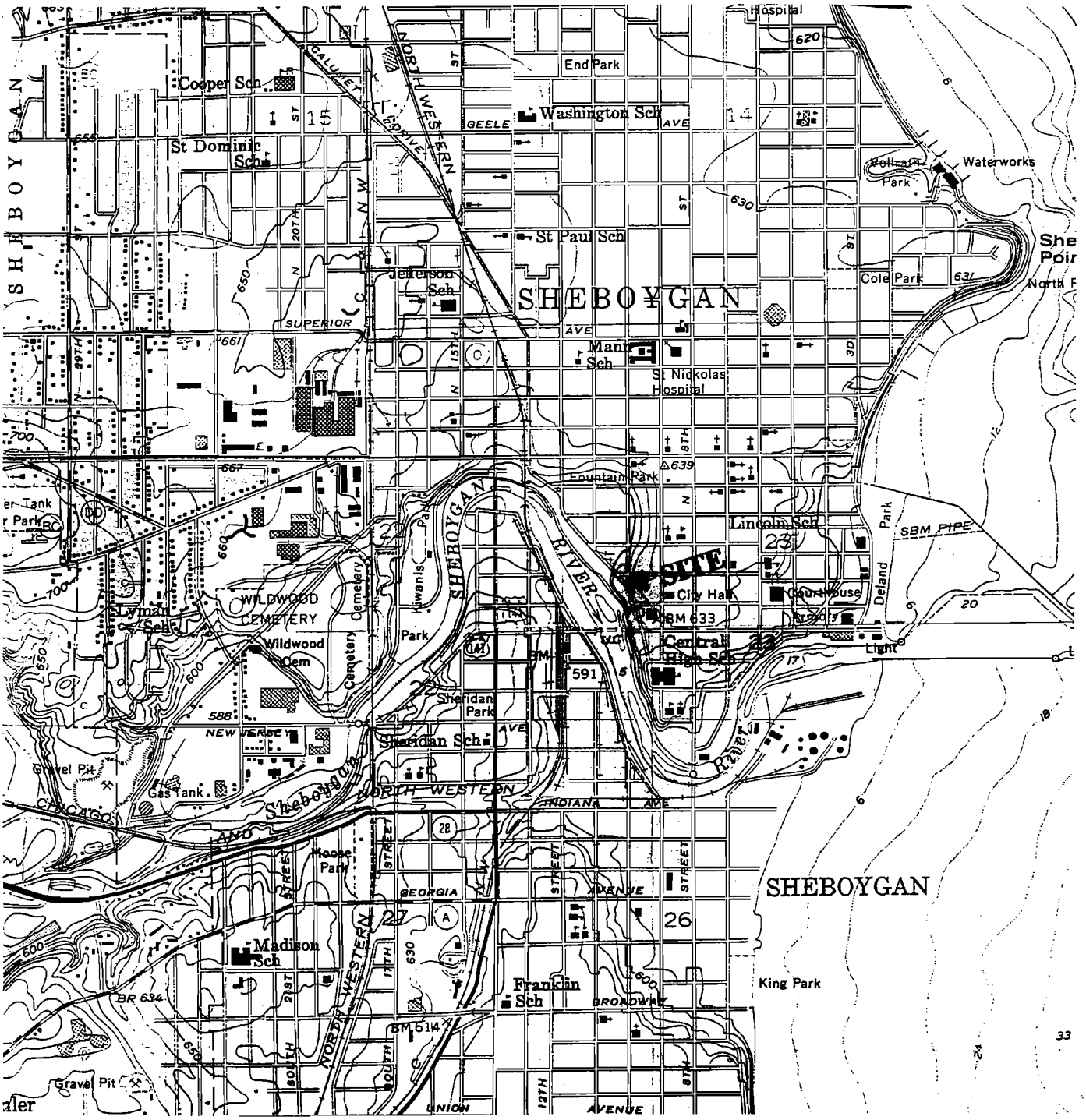
FIGURES



QUADRANGLE LOCATION

N

0 2000 4000

SCALE IN FEET

CONTOUR INTERVAL 10 FEET

SOURCE: USGS 7.5 MINUTE QUADRANGLE, SHEBOYGAN NORTH. DATED 1954. PHOTOREVISED 1973.

Natural Resource Technology

N R T

SITE LOCATION MAP

FORMER SHEBOYGAN II MGP – WPSC
SHEBOYGAN, WISCONSIN

DRAWN BY: TAS APPROVED BY: SAG DATE: 8/15/95

PROJECT NO. 1060/4

DRAWING NO. 1060-A1

FIGURE NO. 1-1

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.

2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

0 15 30 60
SCALE IN FEET

LEGEND

- TP-101 — TEST PIT (HSI)
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- ☼ — LIGHT POLE
- OE — OVERHEAD ELECTRIC
- W/E — BURIED ELECTRIC
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE
- GWS — GRAB GROUNDWATER SAMPLE COLLECTED AT THIS LOCATION

NORTH WATER STREET
CURB
WALK
OE
EXISTING FOUNDATION
HOLDER
FORMER WPSC PROPERTY BOUNDARY
TP-108A
CS-101B
CONCRETE SLAB
CS-101D
HOLDER
W/E
TP-102
GAS OIL TANK
TRAILER STALLS
TP-104
TP-108
TAR TANK
TAR TANK
CS-102B
TP-110 GWS
GAS METER SHOP
CS-102D
GARAGE
BOILERS
TP-112
TP-114
RELIEF HOLDER
TP-113
TP-109
TP-107 GWS
GRAVEL DRIVE
CS-101C
PURIFIER
TP-106
TP-105
CONCRETE WALK
RETAINING WALL
TAR TANK
TP-101 GWS
TP-103
CS-103C
TP-111
APPROXIMATE EDGE OF RIVER
REF. BENCHMARK
SHEBOYGAN RIVER
FORMER WPSC PROPERTY BOUNDARY

DRAWN BY: TAS — DATE: 11/13/95
CHECKED BY: SAG — DATE: 4/12/96
APPROVED BY: SAG — DATE: 6/27/96
AUTOCAD FILE: 1060-B12.DWG

PHASE I SAMPLING LOCATIONS

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B12

FIGURE NO. 1-2

SOURCE NOTE:
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2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

N

0 15 30 60

SCALE IN FEET

LEGEND

- MW-701 MONITORING WELL
- PZ-701 PIEZOMETER
- SB-702 SOIL BORING
- SG-701 STAFF GAUGE
- TP-101 TEST PIT (HSI)
- CS-103B SURFACE SOIL SAMPLE (HSI)
- LIGHT POLE
- OE OVERHEAD ELECTRIC
- W/E BURIED ELECTRIC
- [ ] APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

NORTH WATER STREET

CURB

WALK

EXISTING FOUNDATION

HOLDER

PRIOR WPSC PROPERTY BOUNDARY

MW-705

CS-101B

CONCRETE SLAB

CS-101D

TP-108A

MW-706

TP-110

CS-102B

CS-102D

GAS METER SHOP

GARAGE

BOILERS

TP-102

GAS OIL TANK

HOLDER

SB-701

TP-112

SB-706

SB-707

TP-114

TRAILER STALLS

TP-104

TP-108

TAR TANK

MW-702

SB-708

SB-703

RELIEF HOLDER

TAR TANK

TP-109

MW-703

SB-710

TP-107

GRAVEL DRIVE

SB-704

SB-709

PZ-701

SB-705

SB-702

TP-113

CS-101C

PURIFIER

TP-106

MW-701

TP-105

CONCRETE WALK

CS-103C

MW-704

MW-707

TP-101

TAR TANK

RETAINING WALL

TP-111

TP-103

APPROXIMATE EDGE OF RIVER

SG-701

DRAWN BY: TAS	DATE: 11/13/95
CHECKED BY: SAG	DATE: 4/12/96
APPROVED BY: SAG	DATE: 6/27/96
AUTOCAD FILE: 1060-B13.DWG	

PHASE II SAMPLING LOCATIONS

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B13

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.

2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

N

0 15 30 60

SCALE IN FEET

LEGEND

- MW-701 — MONITORING WELL
- PZ-701 — PIEZOMETER
- SB-702 — SOIL BORING
- TP-101 — TEST PIT (HSI)
- ESTIMATED EXTENT OF GENERAL FILL
- ESTIMATED EXTENT OF GENERAL FILL WITH CINDERS
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- SG-701 — STAFF GAUGE
- LIGHT POLE
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE
- (T) — TAR OBSERVED IN BOREHOLE

MW-705
CS-101B
TP-102
CS-101D
TP-108A
MW-706 (T)
TP-110
CS-102B
CS-102D
SB-701 (T)
TP-112
TP-104
TP-108
MW-702
SB-707 (T)
SB-706 (T)
TP-114
SB-708 (T)
SB-703 (T)
MW-703
TP-109
TP-107
SB-710
SB-709
SB-704 (T)
PZ-701
CS-101C
TP-106
MW-701
SB-705
SB-702
TP-113
TP-101
TP-105
CS-103C
MW-704 (T)
MW-707
TP-103
TP-111
APPROXIMATE EDGE OF RIVER
SG-701

DRAWN BY: TAS	CHECKED BY: SAG	APPROVED BY: SAG
DATE: 11/6/95	DATE: 4/12/96	DATE: 6/27/96

AUTOCAD FILE: 1060-B06.DWG

FIELD OBSERVATIONS

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

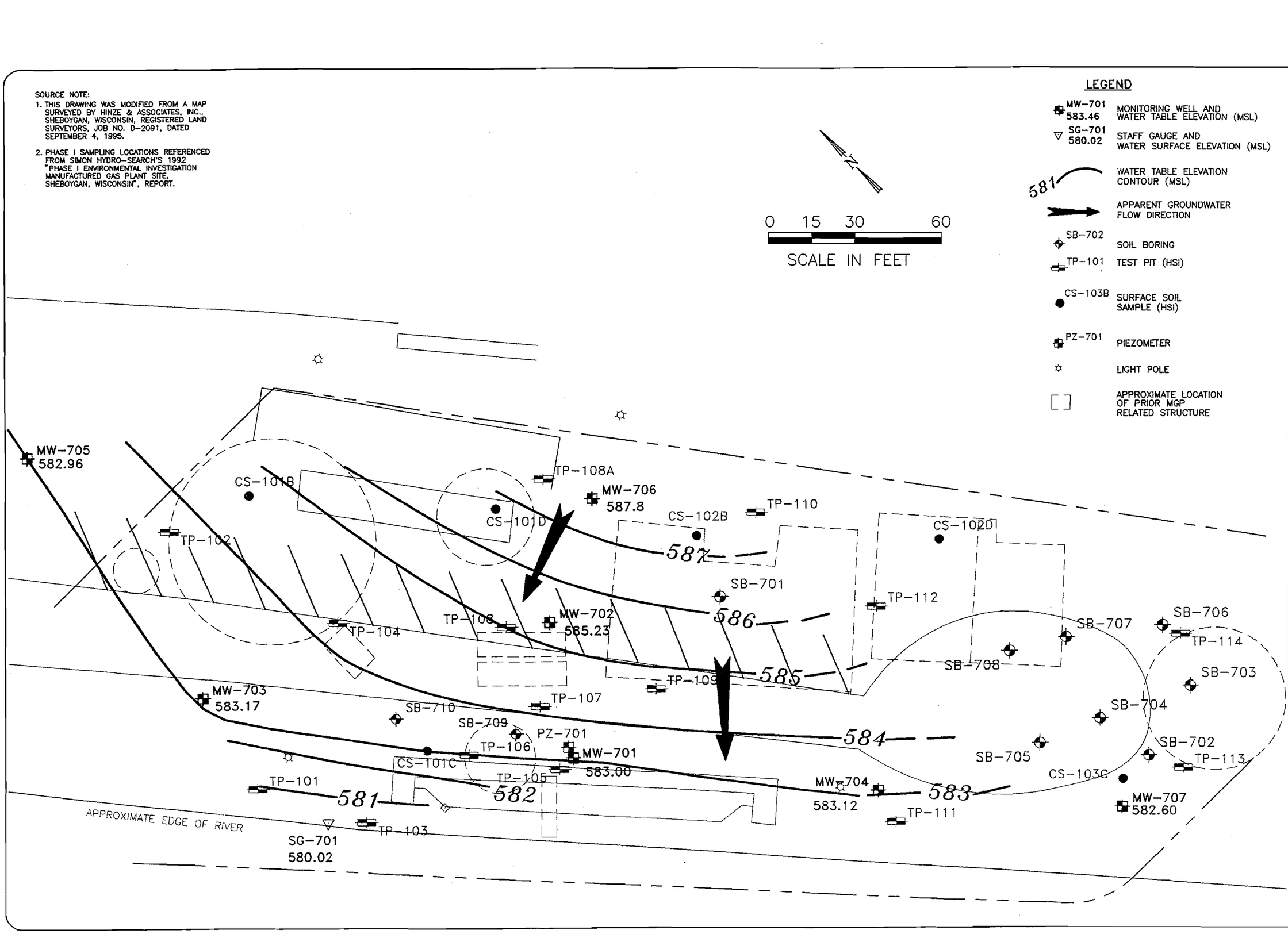
PROJECT NO. 1060/4

DRAWING NO. 1060-B06

FIGURE NO. 4-1

SOURCE NOTE:

1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.



LEGEND

- MW-701 583.46 — MONITORING WELL AND WATER TABLE ELEVATION (MSL)
- SG-701 580.02 — STAFF GAUGE AND WATER SURFACE ELEVATION (MSL)
- 581 — WATER TABLE ELEVATION CONTOUR (MSL)
- APPARENT GROUNDWATER FLOW DIRECTION
- SB-702 — SOIL BORING
- TP-101 — TEST PIT (HSI)
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- PZ-701 — PIEZOMETER
- LIGHT POLE
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

DRAWN BY: TAS	CHECKED BY: SAG	APPROVED BY: SAG
DATE: 10/6/95	DATE: 4/12/96	DATE: 6/27/96

AUTOCAD FILE: 1060-B03.DWG

WATER TABLE ELEVATION CONTOURS AUGUST 14, 1995

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B03

FIGURE NO. 4-2

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

N

0 15 30 60
SCALE IN FEET

LEGEND

- MW-701 583.34 — MONITORING WELL AND WATER TABLE ELEVATION (MSL)
- SG-701 579.69 — STAFF GAUGE AND WATER SURFACE ELEVATION (MSL)
- 581 — WATER TABLE ELEVATION CONTOUR (MSL)
- APPARENT GROUNDWATER FLOW DIRECTION
- SB-702 — SOIL BORING
- TP-101 — TEST PIT (HSI)
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- PZ-701 — PIEZOMETER
- LIGHT POLE
- APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

MW-705 583.84
CS-101B
TP-102
TP-104
MW-703 583.11
TP-101
APPROXIMATE EDGE OF RIVER
SG-701 579.69
TP-103
CS-101C
TP-105
TP-106
SB-709
SB-710
PZ-701
MW-701 582.88
TP-107
TP-108
MW-702 585.40
TP-108A
MW-706 587.9
CS-101D
TP-109
SB-701
CS-102B
TP-110
TP-111
MW-704 583.09
TP-112
CS-102D
SB-705
SB-708
SB-707
SB-706
TP-114
SB-703
SB-704
SB-702
TP-113
CS-103C
MW-707 582.37
586
587
585
584
583
582
581
580

DRAWN BY: TAS	DATE: 10/16/95
CHECKED BY: SAG	DATE: 4/12/96
APPROVED BY: SAG	DATE: 6/27/96
AUTOCAD FILE: 1060-B05.DWG	

WATER TABLE ELEVATION CONTOURS
OCTOBER 20, 1995
WPSC SHEBOYGAN II CAMPMARINA
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B05

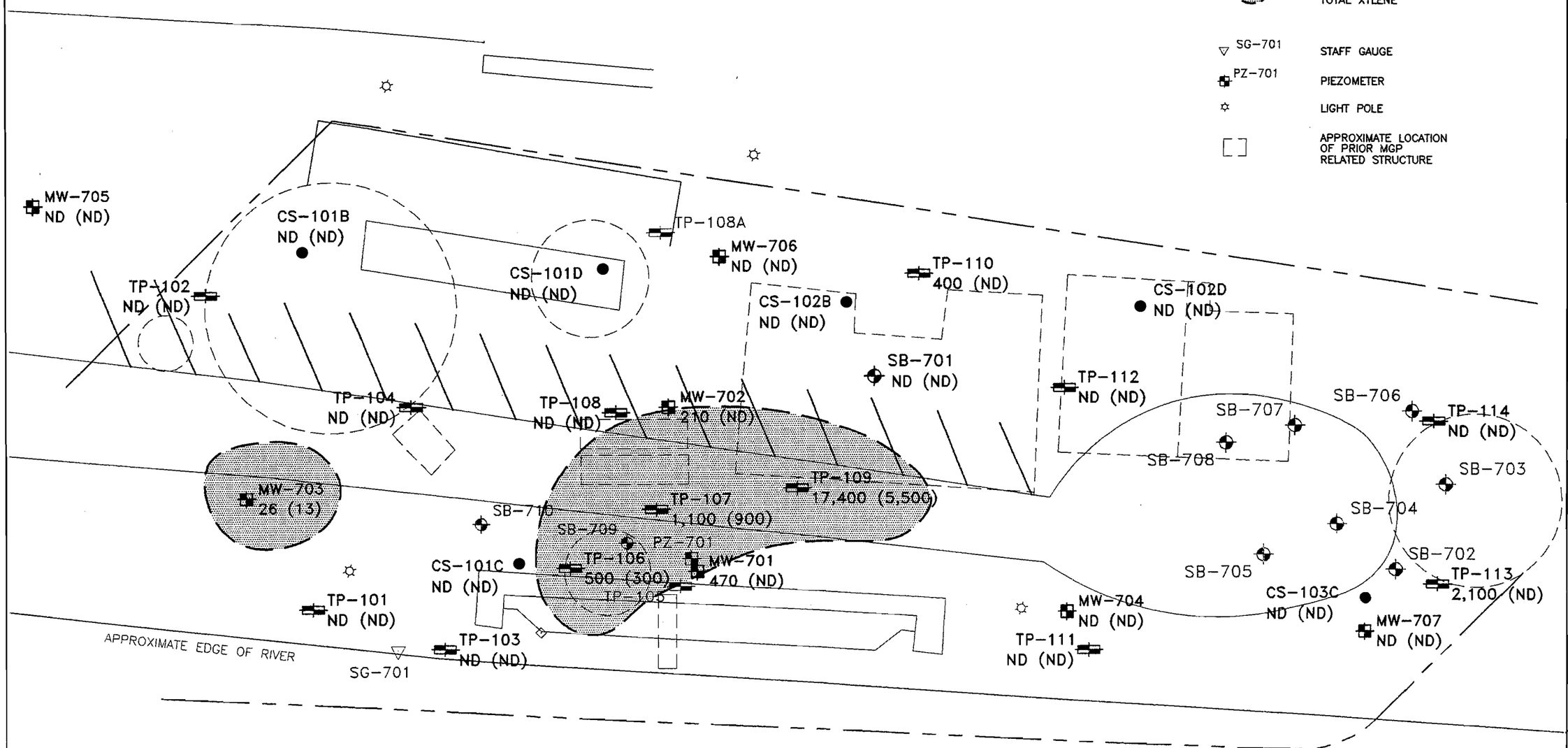
FIGURE NO. 4-3

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

NOTE:
SAMPLING LOCATIONS FOR WHICH AN ANALYTICAL SAMPLE WAS NOT COLLECTED ARE SHOWN IN GRAY.

N

0 15 30 60
SCALE IN FEET



LEGEND

MW-701 470 (ND)	MONITORING WELL AND TOTAL BETX AND BENZENE (UG/KG)
TP-101 ND (ND)	TEST PIT (HSI) TOTAL BETX AND BENZENE (UG/KG)
CS-103C ND (ND)	SURFACE SOIL SAMPLE (HSI) TOTAL BETX AND BENZENE (UG/KG)
SB-701 ND (ND)	SOIL BORING TOTAL BETX AND BENZENE (UG/KG)
	ESTIMATED EXTENT OF BENZENE, ETHYLBENZENE, TOLUENE, AND/OR TOTAL XYLENE
SG-701	STAFF GAUGE
PZ-701	PIEZOMETER
	LIGHT POLE
[ ]	APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

DRAWN BY: TAS | DATE: 11/7/95
CHECKED BY: SAG | DATE: 4/12/96
APPROVED BY: SAG | DATE: 6/27/96
AUTOCAD FILE: 1060-B11.DWG

TOTAL BETX AND BENZENE CONCENTRATIONS IN SOIL

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B11

FIGURE NO. 4-4

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

NOTE:
SAMPLING LOCATIONS FOR WHICH AN ANALYTICAL SAMPLE WAS NOT COLLECTED ARE SHOWN IN GRAY.

0 15 30 60
SCALE IN FEET

LEGEND

- MW-701 / 196.81 (77) — MONITORING WELL AND TOTAL PAH AND NAPHTHALENE (MG/KG)
- TP-101 / 101.2 (ND) — TEST PIT (HSI) TOTAL PAH AND NAPHTHALENE (MG/KG)
- CS-103C / 0.065 (ND) — SURFACE SOIL SAMPLE (HSI) TOTAL PAH AND NAPHTHALENE (MG/KG)
- SB-701 / 9.393 (ND) — SOIL BORING TOTAL PAH AND NAPHTHALENE (MG/KG)
- ESTIMATED EXTENT OF TOTAL PAH CONCENTRATIONS EXCEEDING 100 MG/KG
- SG-701 — STAFF GAUGE
- PZ-701 — PIEZOMETER
- LIGHT POLE
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

MW-705 18.8 (ND)
CS-101B 0.112 (ND)
TP-102 ND (ND)
CS-101D ND (ND)
TP-108A
MW-706 ND (ND)
TP-110 151.3 (8)
CS-102B ND (ND)
CS-102D ND (ND)
SB-701 9.4 (ND)
TP-112 ND (ND)
SB-706
SB-707
TP-114 ND (ND)
SB-708
SB-703
TP-104 4.3 (4.3)
TP-108 4.5 (0.7)
MW-702 10.3 (ND)
TP-109 145.2 (ND)
MW-703 51.767 (3)
SB-710
TP-107 122.9 (ND)
SB-709
PZ-701
SB-704
CS-101C ND (ND)
TP-106 56 (ND)
MW-701 196.8 (77)
TP-105
SB-705
SB-702
TP-113 39.9 (8.5)
CS-103C 0.06 (ND)
TP-101 107.2 (ND)
MW-704 34.2 (ND)
MW-707 3.9 (ND)
TP-103 44.9 (ND)
TP-111 34.2 (ND)
APPROXIMATE EDGE OF RIVER
SG-701

	DATE: 11/6/95
DRAWN BY: TAS	
CHECKED BY: SAG	DATE: 4/12/96
APPROVED BY: SAG	DATE: 6/27/96
AUTOCAD FILE: 1060-B10.DWG	

TOTAL PAH AND NAPHTHALENE CONCENTRATIONS IN SOIL

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B10

FIGURE NO. 4-5

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

NOTE:
SAMPLING LOCATIONS FOR WHICH AN ANALYTICAL SAMPLE WAS NOT COLLECTED ARE SHOWN IN GRAY.

N

0 15 30 60
SCALE IN FEET

LEGEND

- MW-701 13,513 (12,000) — MONITORING WELL AND TOTAL BETX AND BENZENE (UG/L)
- ESTIMATED EXTENT OF BENZENE ES EXCEEDENCE (5 UG/L)
- SG-701 — STAFF GAUGE
- TP-101 — TEST PIT (HSI)
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- PZ-701 — PIEZOMETER
- LIGHT POLE
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

MW-705
ND (ND)
CS-101B
TP-102
TP-108A
MW-706
50,700 (31,000)
CS-101D
TP-110
CS-102D
CS-102B
TP-112
TP-108
MW-702
11,000 (6,100)
TP-104
TP-114
TP-109
MW-703
2,870 (1,300)
TP-107
PZ-701
TP-106
MW-701
13,510 (12,000)
CS-101C
TP-105
TP-101
CS-103C
MW-704
3,120 (1,100)
MW-707
6,030 (1,200)
TP-113
APPROXIMATE EDGE OF RIVER
SG-701
TP-103
TP-111

TOTAL BETX AND BENZENE CONCENTRATIONS IN GROUNDWATER SEPTEMBER 25, 1995

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

DRAWN BY: TAS	CHECKED BY: SAG	APPROVED BY: SAG
DATE: 11/6/95	DATE: 4/12/96	DATE: 6/27/96

AUTOCAD FILE: 1060-B07.DWG

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B07

FIGURE NO. 4-6

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

NOTE:
SAMPLING LOCATIONS FOR WHICH AN ANALYTICAL SAMPLE WAS NOT COLLECTED ARE SHOWN IN GRAY.

0 15 30 60
SCALE IN FEET

LEGEND

- MW-701 5,823.97 (3,800) — MONITORING WELL AND TOTAL PAH AND NAPHTHALENE (UG/L)
- ESTIMATED EXTENT OF NAPHTHALENE EXCEEDENCE OF NR 140 ES (40 UG/L) AND PAL (8 UG/L)
- SG-701 — STAFF GAUGE
- SB-702 — SOIL BORING
- TP-101 — TEST PIT (HSI)
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- PZ-701 — PIEZOMETER
- LIGHT POLE
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

MW-705
ND (ND)
CS-101B
TP-102
TP-104
MW-703
3,500 (2,700)
TP-101
APPROXIMATE EDGE OF RIVER
SG-701
TP-103
TP-108A
MW-706
437,580 (166,000)
CS-101D
CS-102B
TP-110
SB-701
TP-108
MW-702
8,500 (6,400)
TP-109
TP-107
SB-710
SB-709
PZ-701
TP-106
CS-101C
MW-701
5,820 (3,800)
TP-105
CS-102D
TP-112
SB-707
SB-706
TP-114
SB-708
SB-703
SB-704
SB-705
SB-702
TP-113
CS-103C
MW-704
6,360 (4,200)
TP-111
MW-707
5,220 (3,400)

TOTAL PAH AND NAPHTHALENE CONCENTRATIONS IN GROUNDWATER SEPTEMBER 25, 1995

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

DRAWN BY: TAS	DATE: 11/6/95	
CHECKED BY: SAG	DATE: 4/12/96	
APPROVED BY: SAG	DATE: 6/27/96	
AUTOCAD FILE: 1060-B08.DWG		

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B08

FIGURE NO. 4-7

SOURCE NOTE:
1. THIS DRAWING WAS MODIFIED FROM A MAP SURVEYED BY HINZE & ASSOCIATES, INC., SHEBOYGAN, WISCONSIN, REGISTERED LAND SURVEYORS, JOB NO. D-2091, DATED SEPTEMBER 4, 1995.
2. PHASE I SAMPLING LOCATIONS REFERENCED FROM SIMON HYDRO-SEARCH'S 1992 "PHASE I ENVIRONMENTAL INVESTIGATION MANUFACTURED GAS PLANT SITE, SHEBOYGAN, WISCONSIN", REPORT.

NOTE:
SAMPLING LOCATIONS FOR WHICH AN ANALYTICAL SAMPLE WAS NOT COLLECTED ARE SHOWN IN GRAY.

N

0 15 30 60
SCALE IN FEET

LEGEND

- MW-701 0.088 — MONITORING WELL AND TOTAL CYANIDE (MG/L)
- ESTIMATED EXTENT OF TOTAL CYANIDE EXCEEDENCE OF NR 140 ES (0.2 MG\L)
- SG-701 — STAFF GAUGE
- SB-702 — SOIL BORING
- TP-101 — TEST PIT (HSI)
- CS-103B — SURFACE SOIL SAMPLE (HSI)
- PZ-701 — PIEZOMETER
- LIGHT POLE
- [ ] — APPROXIMATE LOCATION OF PRIOR MGP RELATED STRUCTURE

MW-705 ND
CS-101B
TP-102
TP-108A
MW-706 ND
CS-101D
CS-102B
TP-110
CS-102D
SB-701
TP-112
TP-104
TP-108
MW-702 0.072
SB-707
SB-706
TP-114
SB-708
TP-109
SB-703
MW-703 0.14
SB-710
TP-107
SB-704
SB-709
PZ-701
TP-106
MW-701 0.088
SB-705
SB-702
TP-113
CS-101C
TP-105
CS-103C
TP-101
MW-704 0.28
MW-707 0.44
APPROXIMATE EDGE OF RIVER
SG-701
TP-103
TP-111

DRAWN BY: TAS	DATE: 11/6/95
CHECKED BY: SAG	DATE: 4/12/96
APPROVED BY: SAG	DATE: 6/27/96
AUTOCAD FILE: 1060-B09.DWG	

TOTAL CYANIDE CONCENTRATIONS IN GROUNDWATER SEPTEMBER 25, 1995

WPSC SHEBOYGAN II
SHEBOYGAN, WISCONSIN

Natural Resource Technology

PROJECT NO. 1060/4

DRAWING NO. 1060-B09

FIGURE NO. 4-8

TABLES

Table 2-1

Phase I Soil Analytical Summary
WPSC Sheboygan II - North Water Street

Sampling Location	Sampling Depth (feet)	Benzene µg/kg	Ethyl-benzene µg/kg	Toluene µg/kg	Total Xylene µg/kg	Total BETX µg/kg	Arsenic mg/kg	Nickel mg/kg	Cyanide Amen-able mg/kg	Cyanide Disso-ciable mg/kg	Cyanide Total mg/kg
Surface Soil Samples											
CS-101B	0 - 0.25	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
CS-101C	0 - 0.25	<100	<100	<100	<100	0	na	na	<0.25	<0.25	<0.25
CS-101D	0 - 0.25	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
CS-102B	0 - 0.25	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
CS-102D	0 - 0.25	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
CS-103C	0 - 0.25	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
Test Pit Soil Samples											
TP-101	5	<100	<100	<100	<100	0	**3.4**	**14**	<0.80	**0.65**	**0.80**
TP-102	5	<100	<100	<100	<100	0	**0.9**	**7**	<0.19	<0.25	**0.19**
TP-103	7	<100	<100	<100	<100	0	**0.9**	**10**	<8.5	**1.9**	**8.5**
TP-104	6.5	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
TP-106	5	**300**	**200**	<100	<100	**500**	na	na	<0.83	**0.64**	**0.83**
TP-107	2	**900**	<100	<100	**200**	**1100**	na	na	<2.5	<2.5	<2.5
TP-108	5	<100	<100	<100	<100	0	**0.5**	**10**	<2.5	<0.25	<2.5
TP-109	5	**5500**	**2200**	**4600**	**5100**	**17400**	**0.6**	**11**	<3.0	**1.1**	**3.0**
TP-110	1.5	<100	<100	**100**	**300**	**400**	**2.8**	**10**	**0.17**	**0.92**	**9.5**
TP-111	5	<100	<100	<100	<100	0	na	na	**1.03**	<2.5	**1.8**
TP-112	5	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
TP-113	5	<100	1600	<100	**500**	**2100**	**1.1**	**10**	**2.5**	<0.25	<2.5
TP-114	5	<100	<100	<100	<100	0	na	na	<2.5	<2.5	<2.5
NR 720 Residual Contaminant Levels (RCLs)											
Protective of Groundwater		5.5	2900	1500	4100	ns	0.039	ns	ns	ns	ns

ns: A NR 720 RCL has not been established for this parameter.
na: Analysis was not performed.
<100: Less than method detection limit of 100 ug/kg.
Notes: 1. Samples exceeding the NR 720 RCL are shaded
2. See Appendix D of the Phase I report (HSI (1), 1992) for a complete list of analytical parameters.
3. Phase I samples were collected by Simon Hydro-Search

Natural Resource Technology
N R T

Table 2-1 Continued...
Phase I Soil Analytical Summary

Sampling Location	Sampling Depth (feet)	Acenaph-thene (mg/kg)	Acenaph-thylene (mg/kg)	Anthra-cene (mg/kg)	Benzo(a) anthra-cene (mg/kg)	Benzo(a) pyrene (mg/kg)	Benzo(b) fluor-anthene (mg/kg)	Benzo(k) fluor-anthene (mg/kg)	Benzo (g,h,i) perylene (mg/kg)	Chrysene (mg/kg)
Surface Soil Samples										
CS-101B	0 - 0.25	<0.02	<0.02	<0.01	<0.012	**0.031**	**0.024**	**0.057**	<0.012	<0.024
CS-101C	0 - 0.25	<0.02	<0.02	<0.01	<0.012	<0.003	<0.008	<0.004	<0.012	<0.024
CS-101D	0 - 0.25	<0.02	<0.02	<0.01	<0.012	<0.003	<0.008	<0.004	<0.012	<0.024
CS-102B	0 - 0.25	<0.02	<0.02	<0.01	<0.012	<0.003	<0.008	<0.004	<0.012	<0.024
CS-102D	0 - 0.25	<0.02	<0.02	<0.01	<0.012	<0.003	<0.008	<0.004	<0.012	<0.024
CS-103C	0 - 0.25	<0.02	<0.02	<0.01	<0.012	**0.013**	**0.019**	**0.033**	<0.012	<0.024
Test Pit Soil Samples										
TP-101	5	<2.7	<2.7	<2.7	**11**	**11**	**8.8**	**10**	**7**	**9.9**
TP-102	5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
TP-103	7	**11**	<0.66	**1.6**	**3.8**	**3.5**	**3.2**	**3.4**	**2.1**	**3.4**
TP-104	6.5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
TP-106	5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
TP-107	5	<6.6	<6.6	<6.6	**13**	**15**	**13**	**16**	**14**	**13**
TP-108	5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
TP-109	5	<6.6	<6.6	<6.6	**13**	**13**	**11**	**15**	**10**	**13**
TP-110	1.5	<3.3	<3.3	<3.3	**13**	**16**	**7.3**	**23**	**12**	**14**
TP-111	5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	**0.7**
TP-112	5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
TP-113	5	**3.1**	<1.32	**2.7**	**1.9**	**1.5**	<1.32	<1.32	<1.32	<1.32
TP-114	5	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66

ns: A NR 720 RCL has not been established for this parameter.
na: Analysis was not performed.
<100: Less than method detection limit of 100 ug/kg.
Notes: 1. Samples exceeding the NR 720 RCL are shaded.
2. See Appendix D of the Phase I report (HSI (1), 1992) for a complete list of analytical parameters.
3. Phase I samples were collected by Simon Hydro-Search

Table 2-1 Continued...
Phase I Soil Analytical Summary

Sampling Location	Sampling Depth (feet)	Dibenzo (a,h) anthracene (mg/kg)	Fluor-anthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3) pyrene (mg/kg)	Naph-thalene (mg/kg)	Phenan-threne (mg/kg)	Pyrene (mg/kg)	Total PAHs (mg/kg)	Phenol (mg/kg)
Surface Soil Samples										
CS-101B	0 - 0.25	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	**0.1**	<0.66
CS-101C	0 - 0.25	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66
CS-101D	0 - 0.25	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66
CS-102B	0 - 0.25	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66
CS-102D	0 - 0.25	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66
CS-103C	0 - 0.25	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	**0.065**	<0.66
Test Pit Soil Samples										
TP-101	5	**3.1**	**15**	<mdl	**7**	<mdl	**4.4**	**14**	**101.2**	**2.7**
TP-102	5	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66
TP-103	7	**0.98**	**6.9**	**1.2**	**2.1**	<0.01	**5.4**	**6.2**	**44.9**	<0.66
TP-104	6.5	<0.002	<0.012	<0.024	<0.008	**4.3**	<0.016	<0.032	**4.3**	<0.66
TP-106	5	<0.002	**18**	<0.024	<0.008	<0.01	**18**	**20**	**56**	**13.2**
TP-107	5	<0.002	**18**	<0.024	**13**	<0.01	**7.9**	**6.6**	**122.9**	<6.6
TP-108	5	<0.002	**0.86**	<0.024	<0.008	**0.68**	**2**	**1**	**4.5**	<0.66
TP-109	5	<6.6	**23**	<0.024	**9.2**	<0.01	**14**	**24**	**145.2**	<6.6
TP-110	1.5	**4.6**	**17**	<0.024	**11**	**8**	**5.4**	**20**	**151.3**	<3.3
TP-111	5	<0.002	**0.9**	<0.024	<0.008	<0.01	<0.016	**0.94**	**30.4**	<0.66
TP-112	5	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66
TP-113	5	<0.002	**4.3**	**2.6**	<0.008	**8.5**	**10**	**5.3**	**39.9**	<1.32
TP-114	5	<0.002	<0.012	<0.024	<0.008	<0.01	<0.016	<0.032	0	<0.66

ns: A NR 720 RCL has not been established for this parameter.
na: Analysis was not performed.
<100: Less than method detection limit of 100 ug/kg.
Notes: 1. Samples exceeding the NR 720 RCL are shaded.
2. See Appendix D of the Phase I report (HSI (1), 1992) for a complete list of analytical parameters.
3. Phase I samples were collected by Simon Hydro-Search

Table 2-2

Phase I Groundwater Analytical Summary
WPSC Sheboygan II - North Water Street

Sampling Location and Depth (feet)	Benzene (µg/L)	Ethyl-benzene (µg/L)	Toluene (µg/L)	Total Xylene (µg/L)	Total BETX (µg/L)	Acenaph-thene (µg/L)	Acenaph-thylene (µg/L)	Anthra-cene (µg/L)
TP-101 (10)	<1	<1	<1	<1	0	<0.4	<0.5	<0.6
TP-107 (5.5)	**1,700**	**380**	**170**	**280**	2,530	<200	<250	<20
TP-110 (5.5)	**2.6**	1.4	2.6	2.9	9.5	<4	<5	<2
Wisconsin Groundwater Quality Standards (NR 140)								
Preventive Action Limit (PAL)	0.5	140	68.6	124	ns	ns	ns	ns
Enforcement Standard (ES)	5	700	343	620	ns	ns	ns	ns

Sampling Location and Depth (feet)	DRO (mg/L)	Phenols (mg/L)	Cyanide (amenable) (mg/L)	Cyanide (dissociable) (mg/L)	Cyanide (total) (mg/L)	Arsenic (mg/L)	Nickel (mg/L)
TP-101 (10')	na	<0.010	0.18	0.085	**0.37**	**0.006**	<0.1
TP-107 (5.5')	5	0.026	0.048	0.057	**0.30**	**0.005**	<0.1
TP-110 (5.5')	na	<0.010	0.028	0.15	**0.23**	**0.019**	<0.1
Wisconsin Groundwater Quality Standards (NR 140)							
Preventive Action Limit (PAL)	ns	1.20	ns	ns	0.04	0.005	ns
Enforcement Standard (ES)	ns	6.00	ns	ns	0.20	0.050	ns

na: Parameter not analyzed for this sample.
ns: NR 140 ES or PAL standards have not been established for this parameter.
Notes: 1. Samples exceeding the ES are bolded and shaded. Samples exceeding the PAL are bolded and underlined.
2. Phase I samples were collected by Simon Hydro-Search.

Table 2-2 Continued...
Phase I Groundwater Analytical Summary

Sampling Location and Depth (feet)	Benzo (a) anthracene (µg/L)	Benzo (b) fluoranthene (µg/L)	Benzo (k) fluoranthene (µg/L)	Benzo (a) pyrene (µg/L)	Benzo (ghi) perylene (µg/L)	Chrysene (µg/L)	Dibenzo (a,h) anthracene (µg/L)
TP-101 (10')	<0.3	<0.02	<0.1	<0.08	<3	<0.4	<0.05
TP-107 (5.5')	<30	<2	<10	<8	<30	<40	<5
TP-110 (5.5')	<3	<0.2	<1	<0.8	<3	<4	<0.5
Wisconsin Groundwater Quality Standards (NR 140)							
Preventive Action Limit (PAL)	ns	ns	ns	0.02	ns	ns	ns
Enforcement Standards (ES)	ns	ns	ns	0.2	ns	ns	ns

Sampling Location and Depth (feet)	Fluoran-thene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	Naphthalene (µg/L)	Phenan-threne (µg/L)	Pyrene (µg/L)	Total PAH (µg/L)
TP-101 (10')	0.7	<0.6	<0.2	0.3	2	<0.8	3.0
TP-107 (5.5')	<30	<300	<20	**780**	<40	<80	780
TP-110 (5.5')	<3	<6	<2	<2	<4	<8	0
Wisconsin Groundwater Quality Standards (NR 140)							
Preventive Action Limit (PAL)	ns	80	ns	8	ns	ns	ns
Enforcement Standard (ES)	ns	400	ns	40	ns	ns	ns

na: Parameter not analyzed for this sample.
ns: NR 140 ES or PAL standards have not been established for this parameter.
Notes: 1. Samples exceeding the ES are bolded and shaded. Samples exceeding the PAL are bolded and underlined.
2. Phase I samples were collected by Simon Hydro-Search.

Table 4-1

Monitoring Well Construction and Water Level Elevation Data
WPSC Sheboygan II - North Water Street

Well	TOC[A] Elevation (feet)[B]	Ground Surface Elevation (feet)[B]	Well Depth (feet)	Measurement Date	Depth to Water from TOC[A] (feet)	Groundwater Elevation (feet)[B]
Water Table Wells						
MW-701	588.51	588.97	13.40	08/14/95	5.51	583.00
				09/25/95	5.58	582.93
				10/20/95	5.63	582.88
MW-702	590.09	590.39	13.40	08/14/95	4.86	585.23
				09/25/95	4.88	585.21
				10/20/95	4.69	585.40
MW-703	588.80	589.16	13.46	08/14/95	5.63	583.17
				09/25/95	5.74	583.06
				10/20/95	5.69	583.11
MW-704	589.05	589.43	13.20	08/14/95	5.93	583.12
				09/25/95	6.00	583.05
				10/20/95	5.96	583.09
MW-705	589.91	590.22	13.45	08/14/95	6.95	582.96
				09/25/95	6.09	583.82
				10/20/95	6.07	583.84
MW-706	591.34	591.51	13.4[C]	08/14/95	3.5[C]	587.8[C]
				09/25/95	3.6[C]	587.7[C]
				10/20/95	3.4[C]	587.9[C]
MW-707	590.08	590.29	13.35	08/14/95	7.48	582.60
				09/25/95	7.67	582.41
				10/20/95	7.71	582.37
Piezometers						
PZ-701	588.89	589.28	33.80	08/14/95	13.27	575.62
				09/25/95	16.26	572.63
				10/20/95	15.15	573.74
Staff Gauge						
SG-701	582.02	na	na	08/15/95	2.00	580.02
				09/25/95	2.49	579.53
				10/20/95	2.33	579.69

A: TOC - Top of Well Casing.
B: Elevations relative to National Vertical Geodetic Datum (mean sea level).
C: Monitoring well MW-706 contains coal tar. Due to the difficulty with field decontamination for coal tar, depth to water is measured with a tape measure and not a water level indicator. Therefore, the water level is estimated to the 10th of an inch.

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Table 4-2

Hydaulic Conductivity (K) and Grain Size Analysis Results
WPSC Sheboygan II - North Water Street

Well	Sampling Depth (feet)	General Grain Size Range				K (ft/min)	K (cm/sec)
		Gravel	Sand	Fines	Clay		
MW-701	6-10	6.6%	61.0%	25.0%	7.4%	6.2e-05 L	3.2e-05
MW-702	7-11	33.7%	56.0%	10.3%		4.5e-05 L	2.3e-05
MW-703	8-10	2.3%	36.4%	49.1%	12.2%	2.5e-04 H	1.3e-04
MW-704	6-10	36.3%	53.6%	10.1%		No Results	
MW-705	4-6	17.7%	57.1%	25.2%		2.5e-05 L	1.2e-05
MW-706	6-10	1.9%	60.3%	29.9%	7.9%	No Results	
MW-707	2-6	3.7%	23.9%	50.4%	22.0%	1.0e-04 H	5.1e-05
PZ-701	29-33	0.0%	12.3%	32.7%	55.0%	No Results	

K Ranges [A] (cm/sec)	
Clean Sand:	3E-04 to 1
Silty Sand:	8E-06 to 9E-02
Silt, Loess:	10E-7 to 3E-03
Glacial Till:	8E-11 to 2E-04
Unweathered Clay:	5E-11 to 2E-07
Limestone/Dolomite:	7E-08 to 3E-04
Karst Limestone:	9E-05 to 1
Fractured Rock:	6E-07 to 2E-02

[A]Values from "GROUNDWATER" Freeze and Cherry, 1979, p. 29

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Table 4-3

Phase II Soil Analytical Summary
WPSC Sheboygan II - North Water Street

Sample Location (Depth - feet)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl-benzene (µg/kg)	Xylene total (µg/kg)	Total BETX (µg/kg)	Phenol (mg/kg)
Monitoring Well Samples						
MW-701(4'-6')	<16	<16	310	160	470	1.9
MW-702 (2'-4')	<16	<16	50	160	210	1.2
MW-703 (4'-6')	13	6.1	<5.0	6.9	26	0.97
MW-704 (2'-4')	<5.0	<5.0	<5.0	<15	0	0.55
MW-705 (2'-4')	<5.0	<5.0	<5.0	<15	0	0.76
MW-706 (2'-4')	<5.0	<5.0	<5.0	<15	0	0.68
MW-707 (2'-4')	<5.0	<5.0	<5.0	<15	0	83
Soil Boring Samples						
SB-701 (2'-4')	<5.0	<5.0	<5.0	<15	0	0.63
NR 720 Residual Contaminant Levels (RCLs)						
Protective of Groundwater	5.5	2900	1500	4100	ns	ns

Sample Location (Depth - feet)	Anthracene (mg/kg)	Benzo (a) anthracene (mg/kg)	Benzo (b) fluoranthene (mg/kg)	Benzo (k) fluoranthene (mg/kg)	Benzo (a) pyrene (mg/kg)	Benzo (ghi) perylene (mg/kg)	Chrysene (mg/kg)
Monitoring Well Samples							
MW-701 (2'-4)	15	2.3	0.95	0.88	1.7	2.9	1.6
MW-702 (2'-4')	0.21	1.1	0.66	0.53	1.2	1.2	0.74
MW-703 (2'-4')	1.3	3.8	2.3	0.077	3.8	5.1	2.8
MW-704 (4'-6')	0.015	0.015	0.004	0.0036	<0.008	<0.004	0.0078
MW-705 (2'-4')	0.5	1.7	1.0	0.88	1.7	2.1	1.3
MW-706 (2'-4')	<0.008	<0.002	<0.002	<0.002	<0.008	<0.004	<0.004
MW-707 (4'-6')	0.068	0.33	0.18	0.16	0.43	0.48	0.23
Soil Boring Samples							
SB-701 (2'-4')	0.23	0.91	0.49	0.38	0.74	0.89	0.68

ns: A NR 720 RCL has not been established for this parameter.
<5.0: Less than method detection limitof 5.0.
Notes: 1. Samples exceeding the NR 720 RCL are shaded.
2. A parameter is listed if detected in at least one sample. See Appendix B for a complete list of analytical parameters.

Table 4-3 Continued...
Phase II Soil Analytical Summary

Sample Location (Depth - feet)	Dibenzo (a,h) anthracene (mg/kg)	Fluor-anthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) pyrene (mg/kg)	Naph-thalene (mg/kg)	Phenan-threne (mg/kg)	Pyrene (mg/kg)	Total PAHs (mg/kg)
Monitoring Well Samples								
MW-701 (2'-4)	0.18	17	13	1.3	77	53	10	196.8
MW-702 (2'-4')	0.15	2.1	0.11	0.75	<0.04	0.48	1.1	10.3
MW-703 (4'-6')	0.64	12.0	0.95	3.1	3.0	5.6	7.3	51.8
MW-704 (2'-4')	<0.004	0.04	0.028	<0.004	<0.04	0.091	0.021	0.2
MW-705 (2'-4')	0.27	4.4	0.36	1.1	<0.04	1.7	1.8	18.9
MW-706 (2'-4')	<0.004	<0.008	<0.016	<0.004	<0.04	<0.016	<0.008	0
MW-707 (2'-4')	0.063	0.64	0.065	0.33	<0.04	0.21	0.75	3.9
Soil Boring Samples								
SB-701 (2'-4')	0.093	2.5	0.17	0.5	<0.04	1.0	0.81	9.4

ns: A NR 720 RCL has not been established for this parameter.
<5.0: Less than method detection limit of 5.0.
Notes: 1. Samples exceeding the NR 720 RCL are shaded.
2. A parameter is listed if detected in at least one sample. See Appendix B for a complete list of analytical parameters.

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Table 4-4

Phase II Groundwater Analytical Summary
WPSC Sheboygan II - North Water Street

Sampling Location	Sampling Date	Benzene (µg/L)	Ethyl-benzene (µg/L)	Toluene (µg/L)	Total Xylene (µg/L)	Total BETX (µg/L)	Acenaph-thene (µg/L)	Acenaph-thylene (µg/L)	Anthra-cene (µg/L)
Water Table Monitoring Well Samples									
MW-701	08/15/95	**10,000**	**880**	**96**	**820**	11,796	800	<2.0	23
	09/25/95	**12,000**	**780**	53	**680**	13,513	680	1,100	17
MW-702	08/15/95	**5,900**	**1,500**	**2,300**	**1,600**	11,300	390	<2.0	19
	09/25/95	**6,100**	**1,400**	**2,100**	**1,400**	11,000	400	1,400	17
MW-703	08/15/95	**1,300**	**980**	29	**430**	2,739	180	<2.0	17
	09/25/95	**1,300**	**1,100**	23	**450**	2,873	220	430	14
MW-704	08/15/95	**340**	**280**	**200**	**430**	1,250	770	<2.0	44
	09/25/95	**1,100**	**670**	**380**	**970**	3,120	440	1,400	20
MW-705	08/15/95	<1.0	<1.0	<1.0	<3.0	0	<1.0	<2.0	<0.20
	09/25/95	<0.50	<1.0	<1.0	<3.0	0	<1.0	<2.0	<0.20
MW-706	08/15/95	**34,000**	**560**	**13,000**	**7,900**	55,460	197,000	1,480,000	177,000
	09/25/95	**31,000**	<2,500	**12,000**	**7,700**	50,700	9,400	82,000	15,000
MW-707	08/15/95	**1,500**	**3,600**	**190**	**1,400**	6,690	430	<2.0	12
	09/25/95	**1,200**	**3,500**	**130**	**1,200**	6,030	240	1,400	10
Piezometer Samples									
PZ-701	08/17/95	**5.0**	3.6	6.3	11	25.9	<1.0	<2.0	1.5
	09/26/95	**2.2**	1.7	6.6	6.8	17.3	<1.0	<2.0	0.25
Quality Control / Quality Assurance Samples									
MW-799	08/15/95	**310**	**280**	**190**	**440**	1,220	660	<2.0	44
(MW-704 dup.)	09/25/95	**1,100**	**610**	**360**	**900**	2,970	420	1,100	64
Trip Blank	08/15/95	<1.0	<1.0	<1.0	<3.0	0	na	na	na
	09/25/95	<0.50	<1.0	<1.0	<3.0	0	na	na	na
Wisconsin Groundwater Quality Standards (NR 140.10 and 140.12)									
Preventive Action Limit (PAL)		0.5	140	68.6	124	ns	ns	ns	ns
Enforcement Standard (ES)		5	700	343	620	ns	ns	ns	ns

na: Parameter not analyzed for this sample.
ns: NR 140 ES or PAL standards have not been established for this parameter.
<1.0: Less than method detection limit of 1.0.
Note: 1. Samples exceeding the ES are bolded and shaded. Samples exceeding the PAL are bolded and underlined.
2. A parameter is listed if detected in at least one sample. See Appendix D for a complete list of analytical parameters.

Table 4-4 continued...
Phase II Groundwater Analytical Summary

Sampling Location	Sampling Date	Benzo (a) anthracene (µg/L)	Benzo (b) fluoranthene (µg/L)	Benzo (k) fluoranthene (µg/L)	Benzo (a) pyrene (µg/L)	Benzo (ghi) perylene (µg/L)	Chrysene (µg/L)	Dibenzo (a,h) anthracene (µg/L)
Water Table Monitoring Well Samples								
MW-701	08/15/95	3.4	0.60	0.54	**1.8**	1.2	1.7	0.25
	09/25/95	2.0	0.24	0.30	**1.0**	0.67	1.0	0.40
MW-702	08/15/95	2.9	0.32	0.48	**1.4**	0.93	1.5	0.23
	09/25/95	3.7	0.66	0.73	**1.8**	1.6	1.9	0.28
MW-703	08/15/95	1.4	0.10	0.16	**0.46**	0.24	0.55	0.17
	09/25/95	1.2	0.05	0.12	**0.37**	0.34	0.51	0.23
MW-704	08/15/95	26	8.9	7.9	**22**	17	19	<0.10
	09/25/95	5.0	2.7	2.3	**3.1**	<0.10	3.5	<0.10
MW-705	08/15/95	<0.050	<0.050	<0.050	<0.20	<0.10	<0.10	<0.10
	09/25/95	<0.050	<0.050	<0.050	<0.20	<0.10	<0.10	<0.10
MW-706	08/15/95	129,000	31,000	29,000	**83,000**	62,000	82,000	13,000
	09/25/95	11,000	2,400	980	**6,700**	4,900	5,400	<10 m
MW-707	08/15/95	2.2	0.38	0.52	**1.6**	1.3	1.3	0.25
	09/25/95	0.40	0.23	0.19	**0.66**	0.83	0.64	0.40
Piezometer Samples								
PZ-701	08/17/95	0.89	0.21	0.18	**0.43**	0.24	0.61	<0.10
	09/26/95	0.13	<0.050	<0.050	<0.20	<0.10	0.13	<0.10
Quality Assurance / Quality Control Samples								
MW-799	08/15/95	25	8.7	7.3	**21**	16	19	<0.10
(MW-704 dup.)	09/25/95	46	14	15	**38**	31	31	3.2
Trip Blank	08/15/95	na	na	na	na	na	na	na
	09/25/95	na	na	na	na	na	na	na
Wisconsin Groundwater Quality Standards (NR 140.10 and 140.12)								
Preventive Action Limit (PAL)		ns	ns	ns	0.02	ns	ns	ns
Enforcement Standards (ES)		ns	ns	ns	0.2	ns	ns	ns

na: Parameter not analyzed for this sample.
ns: NR 140 ES or PAL standards have not been established for this parameter.
<1.0: Less than method detection limit of 1.0.
Note: 1. Samples exceeding the ES are bolded and shaded. Samples exceeding the PAL are bolded and underlined.
2. A parameter is listed if detected in at least one sample. See Appendix D for a complete list of analyticalparameters.

Table 4-4 continued...
Phase II Groundwater Analytical Summary

Sampling Location	Date	Fluoranthene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)	Total PAHs (µg/L)
MW-701	08/15/95	49	**130**	0.76	**220**	100	20	1,352.25
	09/25/95	29	**100**	0.36	**3,800**	81	11	5,823.97
MW-702	08/15/95	41	**150**	0.55	**7,300**	96	35	8,039.31
	09/25/95	32	**140**	0.76	**6,400**	90	13	8,503.43
MW-703	08/15/95	28	70	0.16	**2,400**	74	9.2	2,781.44
	09/25/95	19	54	0.19	**2,700**	58	5.9	3,503.91
MW-704	08/15/95	150	**180**	10	**5,200**	220	56	6,730.8
	09/25/95	36	**120**	<0.10	**4,200**	120	13	6,365.6
MW-705	08/15/95	<0.20	<0.40	<0.10	<1.0	<0.40	<0.20	0
	09/25/95	<0.20	<0.40	<0.10	<1.0	<0.40	<0.20	0
MW-706	08/15/95	266,000	**640,000**	32,000	**1,900,000**	730,000	142,000	5,993,000
	09/25/95	8,400	**57,000**	2,700	**166,000**	56,000	9,700	437,580
MW-707	08/15/95	27	**93**	0.74	**3,100**	60	12	3,742.29
	09/25/95	21	**81**	0.35	**3,400**	60	4.8	5,220.5
Piezometer Samples								
PZ-701	08/17/95	3.3	1.0	<0.10	<1.0	6.6	2.1	17.06
	09/26/95	0.70	<0.40	<0.10	<1.0	0.80	0.77	2.78
Quality Assurance / Quality Control Samples								
MW-799	08/15/95	140	**190**	9.2	**3,600**	220	55	5,015.2
(MW-704 dup.)	09/25/95	210	**170**	20	**3,100**	310	83	5,655.2
Trip Blank	08/15/95	na	na	na	na	na	na	na
	09/25/95	na	na	na	na	na	na	na
Wisconsin Groundwater Quality Standards (NR 140.10 and 140.12)								
Preventive Action Limit (PAL)		ns	80	ns	8	ns	ns	ns
Enforcement Standard (ES)		ns	400	ns	40	ns	ns	ns

na: Parameter not analyzed for this sample.
ns: NR 140 ES or PAL standards have not been established for this parameter.
<1.0: Less than method detection limit of 1.0.
Note: 1. Samples exceeding the ES are bolded and shaded. Samples exceeding the PAL are bolded and underlined.
2. A parameter is listed if detected in at least one sample. See Appendix D for a complete list of analytical parameters.

Table 4-4 continued...
Phase II Groundwater Analytical Summary

Sampling Location	Date	Cyanide (amenable) (mg/L)	Cyanide (dissociable) (mg/L)	Cyanide (total) (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Lead (mg/L)
Water Table Moniotring Well Samples							
MW-701	08/15/95	<0.0050	0.025	**0.11**	<0.0030	**0.44**	<0.0015
	09/25/95	<0.0050	0.020	**0.088**	na	na	na
MW-702	08/15/95	<0.0050	0.043	**0.20**	**0.0062**	0.25	<0.0015
	09/25/95	<0.0050	0.032	**0.072**	na	na	na
MW-703	08/15/95	<0.0050	0.039	**0.12**	<0.0030	0.19	<0.0015
	09/25/95	<0.0050	0.028	**0.14**	na	na	na
MW-704	08/15/95	<0.0050	0.056	**0.31**	<0.0030	0.31	<0.0015
	09/25/95	<0.0050	0.062	**0.28**	na	na	na
MW-705	08/15/95	<0.0050	<0.0050	<0.0050	0.0039	0.11	<0.0015
	09/25/95	<0.0050	<0.0050	<0.0050	na	na	na
MW-706	08/15/95	<0.0050	<0.0050	<0.0050	<0.0030	0.16	<0.0015
	09/25/95	<0.0050	<0.0050	<0.0050	na	na	na
MW-707	08/15/95	0.21	0.042	**0.38**	<0.003	0.21	<0.0015
	09/25/95	<0.0050	0.058	**0.44**	na	na	na
Piezometer Samples							
PZ-701	08/17/95	0.020	<0.0050	0.020	<0.0030	0.063	**0.0003**
	09/26/95	0.014	<0.0050	0.014	na	na	na
Quality Assurance / Quality Control Samples							
MW-799	08/15/95	0.19	0.022	**0.29**	<0.0030	0.29	<0.0015
(MW-704 dup.)	09/25/95	0.020	0.41	**0.36**	na	na	na
Trip Blank	08/15/95	na	na	na	na	na	na
	09/25/95	na	na	na	na	na	na
Wisconsin Groundwater Quality Standards (NR 140.10 and 140.12)							
Preventive Action Limit		ns	ns	0.04	0.005	0.4	0.0015
Enforcement Standard (ES)		ns	ns	0.2	0.05	2	0.015

na: Parameter not analyzed for this sample.
ns: NR 140 ES or PAL standards have not been established for this parameter.
<1.0:: Less than method detection limit of 1.0.
Note: 1. Samples exceeding the ES are bolded and shaded. Samples exceeding the PAL are bolded and underlined.
2. A parameter is listed if detected in at least one sample. See Appendix D for a complete list of analytical parameters.

APPENDIX A

SOIL BORING LOGS AND SOIL BORING ABANDONMENT FORMS

Appendix A.1

Soil Boring Logs

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		*SB-701*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/19/95*	*07/19/95*	*HSA*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	*590 Feet MSL*	*8.25 inches*

Boring Location		Lat / Long	Local Grid Location (If applicable)
State Plane *NW1/4, SW1/4, 23, T15N, R23E*	Feet N Feet E	Lat Long	*4772 feet* ☒ N ☐ S *5359 feet* ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB701 (1)				GRAVEL FILL FOR DRIVE 1'-2' GRAVEL FILL w/ **BRICKS**, clay, silt, **GLASS BOTTLES** (FILL)	BRICKS GM									
SB701 (3)	5	12	2	2'-4' **BRICKS** w/ silt & clay, **TRC GLASS** (FILL)	BRICKS (FILL)			4601						
SB701)	5	10	4	4'-6' SILTY GRAVEL, lt olv gry (5Y 6/2), f-crs sbnglr grvl, cmpct, v. mst, sl. odor (FILL)	GM (FILL)			590						
SB701 (7)	8	4	6	6'-8' CLAY, brwn (10YR 5/3), 10% gry (2.5Y 6/1) mttlng, med. plast, 5-10% f. sbnglr grvl, v. mst, odor	CL			114						
SB701 (9)	6	8	8	8'-12' CLAY, gray (2.5Y 5/1) w/ lamin. clay w/ grvl & clay w/ crs sand, trc sand, med plast., sft, v. mst-wet, odor	CL			109						
SB701 (11)	15	3	10					155						
SB701 (13)	19	3	12	12'-14' interbedded CLAY/SAND/SANDY CLAY grysh brwn (10YR 5/2), **LAMIN. DRK YLLW BRWN (10YR 4/6) TAR**	CL SC			951						
SB701 (15)	22	2	14	14'-18' SILTY CLAY, drk gray-brn (10YR 4/2), trc f. sand, med plast, firm, **TAR AS ABOVE IN LAMINATIONS OF SILT**, v. moist	CL			800						
SB701 (17)	17	4	16	no tar	CL			3282						
SB701 (19)	17	3	18	18'-20' CLAYEY SILT W/ SAND, gry brwn (10YR 5/2) vf. sand, low plast, rpd dltncy, sft, wet	ML									
			20	EOB @ 20'										
			22											

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

Signature	Firm
[signature]	**Natural Resource Technology**

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

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		*SB-702*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*08/03/95*	*08/03/95*	*Geoprobe*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	*590.80 Feet MSL*	*2 inches*

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E			*4619.6 feet* ☒ *N* *5461.8 feet* ☒ *E* ☐ *S* ☐ *W*

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB702 (1)	7		0	0'-2' SILTY GRAVEL, light olv brwn (2.5Y 5/4), prly grdd, f-crs, subang, trc sand & silt, 10% clay, lse, sl. mst, no odor (FILL)	GM (FILL)			8						
SB702 (3)	8		2	2'-8' CLAY W/ GRAVEL, drk grysh brwn (10YR 4/2), ltl f. sand, f-med, subang grvl, **TRC CINDERS**, soft, v. moist, odor (FILL)	CL (FILL)			810						
SB702 (5)	10		4	grvl 10%, **SHEEN**, wet, sl. odor				674						
SB702 (7)	8		6	**5% CINDERS**, trc grvl				432						
SB702 (9)	12		8	8'-10' CLAY, brwn (7.5YR 5/3), 5% silt, trc f. sand, med plast, soft, wet, no odor	CL			543						
			10	EOB @ 10'										
			12											
			14											
			16											
			18											
			20											
			22											

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

Signature: *Debra J. Hyde* Firm: **Natural Resource Technology**

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		*SB-703*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*08/03/95*	*08/03/95*	*Geoprobe*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	*591.48 Feet MSL*	*2 inches*

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E			*4626.5 feet* ☒ *N* ☐ *S* *5488.9 feet* ☒ *E* ☐ *W*

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB703 (1)	7		0	0'-2' SILTY GRAVEL, lght yllwsh brwn (2.5Y 6/4), 5% sand, f-crs subang, cmpct, mst, no odor (FILL)	GM (FILL)			4						
SB703 (3)	7		2	2'-10' CLAY, rddsh brwn (5Y 5/3), **FEW VF. LAMIN F. SAND W/ TAR** lamin. incrs w/ dpth, med plast, sft, v. mst, odor				318						
SB703 (5)	24		4	lamin. dcrsng w/ dpth, wet				430						
SB703 (7)	24		6	no tar, no laminations	CL (FILL)			85						
SB703 (9)	24		8											
			10	EOB @ 10'										
			12											
			14											
			16											
			18											
			20											
			22											

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

Signature: *Debra J Cyde* Firm: **Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		*SB-704*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*08/03/95*	*08/03/95*	*Geoprobe*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	*591.46 Feet MSL*	*2 inches*

Boring Location			Local Grid Location (If applicable)
State Plane *NW1/4, SW1/4, 23, T15N, R23E*	Feet N Feet E	Lat Long	*4668.6 feet* ☒ N ☐ S *5470.5 feet* ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB704 (1)	9		0–2	0'-1' SILTY GRAVEL pale brwn (10YR 6/3), crs, anglr, cmpct, sl. mst (FILL) 1'-2' CINDERS W/ SILT & SAND, v. drk gray (10YR 3/1), TRC BRICK & grvl, lse, sl. mst, odor (FILL)	GM (FILL)			2340						
SB704 (3)	11		2–4					610						
SB704)	18		4–6	2'-6' SILTY CLAY TRC TAR	CL			840						
SB704 (7)	16		6–8	6'-10' AND W/ GRAVEL, black (N 2.5), prly grd, pred f., subrnd, grvl subang, cmpct, wet, SHEEN, strng odor	SP			2340						
SB704 (9)	18		8–10	8'-10' SAND, drk gry (5Y 4/1) odor, TAR STAINED BOTTOM 1/4, lwr 3" clayey sand w/ gravel, lt olv brwn (2.5Y 5/3)	SC									
			10	EOB @ 10'										

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22

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

Signature: [signature] Firm: **Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

ility/Project Name	**License/Permit/Monitoring Number**	**Boring Number**
WPSC-Sheboygan II /1060 Site Investigation		*SB-705*

Boring Drilled By (Firm name and name of crew chief)	**Date Drilling Started**	**Date Drilling Completed**	**Drilling Method**
Boart Longyear *Scott/Kurt*	*08/03/95*	*08/03/95*	*Geoprobe*

DNR Facility Well No.	**WI Unique Well No.**	**Common Well Name**	**Final Static Water Level**	**Surface Elevation**	**Borehole Diameter**
			Feet MSL	*590.25 Feet MSL*	*2 inches*

Boring Location		**Local Grid Location (if applicable)**
State Plane	**Feet N** / **Feet E**	**Lat** / **Long**
NW1/4, SW1/4, 23, T15N, R23E		*4649.0 feet* ☒ *N* ☐ *S* *5438.4 feet* ☒ *E* ☐ *W*

County	**DNR County Code**	**Civil Town/City/ or Village**
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB705 (1)	18		0	0'-2' SILTY GRAVEL, lght yllwsh brwn (10YR 6/4), crs ang, cmpct, sL mst (FILL)	GM (FILL)			82						
SB705 (3)	8		2	2'-4' SILTY GRAVEL & CINDERS, blck (N 2.5), f-crs, subang- subrnd, cmpct, mst, no odor	GM cinders			102						
SB705	0		4	4'-10' No recovery										
SB705 (7)	0		6											
SB705 (9)	0		8											
			10	EOB @ 10'										
			12											
			14											
			16											
			18											
			20											
			22											

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

Signature	Firm
Barbara J. Clyde	**Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number	
WPSC-Sheboygan II /1060 Site Investigation		SB-706	
Boring Drilled By (Firm name and name of crew chief)	**Date Drilling Started**	**Date Drilling Completed**	**Drilling Method**
Boart Longyear Scott/Kurt	08/03/95	08/03/95	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	591.61 Feet MSL	2 inches

Boring Location		Local Grid Location (if applicable)
State Plane Feet N Feet E NW1/4, SW1/4, 23, T15N, R23E	Lat Long	4648.0 feet ☒ N ☐ S 5497.0 feet ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	60	Sheboygan

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB706 (1)	6		0–2	0-1' SILTY GRAVEL, lght olv brwn (2.5Y 5/4), f-med, subang, cmpct, mst, no odor (FILL)	GP (FILL)			2						
SB706 (3)	24		2–4	1'-10' CLAY, brwn (7.5YR 5/2), 5% silt, trc vf. sand, med plast, frm-sft, v. mst, sl. odor, trc mttlng	CL			840						
SB706 (5)	21		4–6	few lamin. silt & vf. sand, **TAR IN LAMIN.**, wet, odor				1310						
SB706 (7)	24		6–8	no tar, incrsng silt w/ depth to silty clay, sl. odor				610						
SB706 (9)	24		8–10											
			10	EOB @ 10'										

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Signature [signature] Firm **Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
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☐ Superfund ☐ Other:

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		SB-707

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear Scott/Kurt	08/03/95	08/03/95	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	590.78 Feet MSL	2 inches

Boring Location		Local Grid Location (If applicable)
State Plane Feet N Feet E NW1/4, SW1/4, 23, T15N, R23E	Lat Long	4640.4 feet ☒ N ☐ S 5459.2 feet ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	60	Sheboygan

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB707 (1)	14		0–2	0'-2' SILTY GRAVEL, grysh brwn (2.5Y 5/2), **10% CINDERS**, f-med subang, cmpct, mst, sl. odor (FILL)	GM (FILL)			18						
SB707 (3)	17		2–4	CONCRETE 2.7'-10' CLAY, grysh brwn (10YR 5/2), lttl silt, med-hgh plast, sft, wet, sl. odor	concrete CL			94						
SB707 (5)	19		4–6	few f. lamin. silt w/ trc orgncs, **TRC TAR CNCNTRTD IN SILT LAMIN. & W/ ORGANICS**				510						
SB707 (7)	24		6–8	no tar				110						
SB707 (9)	24		8–10											
			10	EOB @ 10'										

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

Signature [signature] Firm **Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		SB-708

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear Scott/Kurt	08/03/95	08/03/95	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	590.37 Feet MSL	2 inches

Boring Location		Local Grid Location (If applicable)
State Plane Feet N Feet E NW1/4, SW1/4, 23, T15N, R23E	Lat Long	4678.8 feet ☒ N ☐ S 5453.6 feet ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	60	Sheboygan

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB708 (1)	7		0–2	0'-2' SILTY GRAVEL, pl yllw (5Y 7/3), prly grd, f-crs, subang, cmpct, sl. moist, no odor	GM (FILL)			2						
SB708 (3)	18		2–4	2'-3' CLAY, brwn (7.5YR 5/3) lttl silt, trc grvl, sand, **CINDERS**, sft, v. mst (FILL)	CL (FILL)			211						
SB708 ([illegible])	7		4–6	3'-4' SANDY GRAVEL W/ CLAY, drk gry (10YR 4/1), prly grd, **TRC CINDERS & TAR**, sft, wet, odor (FILL)	GP (FILL)			431						
SB708 (7)	21		6–8	6'-8' CLAY, grysh brwn (10YR 5/2), trc orgncs, **TAR ON ORGNCS**, 5-10% silt, med plast, sft, wet, odor	CL			561						
SB708 (9)	18		8–10	8'-10' CLAYEY SAND/SANDY CLAY, grysh brwn (10YR 5/2), no orgncs, no tar, low plast, soft, wet, sl. odor	CL SC			320						
				EOB @ 10'										

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

Signature	Firm
[signature]	Natural Resource Technology

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

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		SB-709

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear Scott/Kurt	08/03/95	08/03/95	Geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	589.25 Feet MSL	2 inches

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E			4779.3 feet ☒ N ☐ S 5313.1 feet ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	60	Sheboygan

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
SB709 (1)	10		2	SILTY GRAVEL, light olv brwn (2.5Y 5/4), prly grd, f-crs, subang, cmpct, sl. mst, no odor (FILL)	GP (FILL)			4						
SB709 (3)	0		4	3'-8.5' interbedded CLAY, WOOD, CINDERS, BRICK UPPER 2", blck, cmpct, v. mst, sl. odor (FILL)	FILL			NR						
			6											
SB709 (7)	13		8					111						
SB709 (9)	16		10	8.5'-10' interbedded CLAYEY SAND/SANDY CLAY, drk gry (5Y 4/1), w/ orgncs, abund. gstrpd shls, pred f-med, subrnd, sft, wet, sl. odor	SC/CL			78						
			12	EOB @ 10'										
			14											
			16											
			18											
			20											
			22											

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

Signature	Firm
Debra J Clyde	Natural Resource Technology

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

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060 Site Investigation		*SB-710*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*08/03/95*	*08/03/95*	*Geoprobe*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	*589.19 Feet MSL*	*2 inches*

Boring Location			Local Grid Location (If applicable)
State Plane *NW1/4, SW1/4, 23, T15N, R23E*	Feet N Feet E	Lat Long	*4812.4 feet* ☒ *N* ☐ *S* *5287.5 feet* ☒ *E* ☐ *W*

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth In Feet	PID/FID
SB710 (1)	14		0–2	21
SB710 (3)	3		2–4	
SB710 [illegible]	7		4–6	1098
SB710 (7)	13		6–8	2910
SB710 (9)	9		8–10	208

Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
0'–1' SILTY GRAVEL, lght yllwsh brwn (2.5Y 6/3), f-med, subang, cmpct, sl. mst, no odor (FILL)	GM (FILL)								
1'–2.5' CINDERS/GRAVEL/SAND (FILL)									
2.5–4.5' CONCRETE	concrete								
4.5'–8' SAND, blck (N 2.5), lttl silt & clay, f-med, subrnd, sft, SHEEN, wet, odor incrsd clay, 5% f-med subang grvl	SP (FILL)								
8–10' SANDY CLAY, dark greenish gray (10Y 4/1), f-med, subang-subrnd, sft, few f. blck lamin silt, low plast, sft, wet, sl. odor	CL								
EOB @ 10'									

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

Signature: [signature]

Firm: **Natural Resource Technology**

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

Appendix A.2

Soil Boring Abandonment Forms

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-701

County: Sheboygan

NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E

(If Applicable) Gov't Lot ____ Grid Number ____

Grid Location: 4772 ft. ☒ N. ☐ S., 5359 ft. ☒ E. ☐ W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 732 NORTH WATER STREET

City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE

Original Well Owner (If Known): Wisconsin Public Service Corp.

Present Well Owner: Same as above

Street or Route: P.O. Box 19800

City, State, Zip Code: Sheboygan, WI

Facility Well No. and/or Name (If Applicable): SB-701

WI Unique Well No.:

Reason For Abandonment: Test Boring

Date of Abandonment: 07/19/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 07/19/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) (From groundsurface): N/A Casing Diameter (ins.): N/A

Casing Depth (Ft.): N/A

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

(4) Depth to Water (Feet): 7.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No. Explain: DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	20.0	5 Bags	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work: Boart Longyear

Signature of Person Doing Work: [signature] Date Signed: 8/11/95

Street or Route: 101 Alderson Street Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected:	District/County:
Reviewer/Inspector:	
Follow-up Necessary:	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-702
County: Sheboygan
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N: R. 23 ☒ E
(If Applicable) Gov't Lot ____ Grid Number ____
Grid Location: 4619.6 ft. ☒ N. ☐ S., 5461.8 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp.
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-702
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) (From groundsurface) N/A Casing Diameter (ins.) N/A

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain: DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work: [signature] Date Signed 8/9/95
Street or Route: 101 Alderson Street
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected:
District/County:
Reviewer/Inspector:
Follow-up Necessary:

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-703
County: Sheboygan
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E
(If Applicable) Gov't Lot ____ Grid Number ____
Grid Location: 4626.5 ft. ☒ N. ☐ S., 5488.9 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp.
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-703
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) (From groundsurface) N/A Casing Diameter (ins.) N/A

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7)

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work: [signature] Date Signed 8/9/95
Street or Route: 101 Alderson Street
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected
District/County
Reviewer/Inspector
Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-704
County: Sheboygan
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E
(If Applicable) 4668.6 Gov't Lot 5470.5 Grid Number
Grid Location: _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp.
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-704
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) N/A Casing Diameter (ins.) N/A
(From groundsurface)

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments _____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work
Date Signed 8/9/95
Street or Route: 101 Alderson Street
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected
District/County
Reviewer/Inspector
Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-705
County: Sheboygan
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E
(If Applicable) Gov't Lot ____ Grid Number ____
Grid Location: 4649.0 ft. ☒ N. ☐ S., 5438.4 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp.
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-705
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) N/A (From groundsurface) Casing Diameter (ins.) N/A

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear

Signature of Person Doing Work: [signature]
Date Signed: 8/9/95
Street or Route: 101 Alderson Street
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-706
County: Sheboygan
☒ E
NW 1/4 of SW 1/4 of Sec. 23 : T. 15 N: R. 23
(If Applicable) Gov't Lot ____ Grid Number ____
Grid Location: 4648.0 ft. ☒ N. ☐ S., 5497.0 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp.
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-706
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) N/A Casing Diameter (ins.) N/A
(From groundsurface)

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work: [signature]
Date Signed: 8-9-95
Street or Route: 101 Alderson Street
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected
District/County
Reviewer/Inspector
Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-707
County: Sheboygan
☒ E
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23
(If Applicable)
Gov't Lot ____ Grid Number ____
Grid Location: 4640.4 ft. ☒ N. ☐ S., 5459.2 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp.
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-707
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) N/A (From groundsurface) Casing Diameter (ins.) N/A

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work: [signature] Date Signed 8/9/95
Street or Route: 101 Alderson Street Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected: ____ District/County: ____
Reviewer/Inspector: ____
Follow-up Necessary: ____

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-708
County: Sheboygan
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E
(If Applicable) Gov't Lot ____ Grid Number ____
Grid Location: 4678.8 ft. ☒ N. ☐ S., 5453.6 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-708
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/5

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) N/A Casing Diameter (ins.) N/A
(From groundsurface)

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work: [signature] Date Signed 8/9/95
Street or Route: 101 Alderson Street Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected
District/County
Reviewer/Inspector
Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-709

County: SHEBOYGAN

NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E ☐ W

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

Grid Location: 4779.3 ft. ☒ N. ☐ S., 5313.1 ft. ☒ E. ☐ W.

Civil Town Name: SHEBOYGAN

Street Address of Well: 732 NORTH WATER STREET

City, Village: SHEBOYGAN

(2) FACILITY NAME

Original Well Owner (If Known): WISCONSIN PUBLIC SERVICE CORP.

Present Well Owner: AS ABOVE

Street or Route: P.O. BOX 19800

City, State, Zip Code: SHEBOYGAN WI

Facility Well No. and/or Name (If Applicable): SB-709

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: COMPLETION OF BORING

Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

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

(Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☐ No NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) NA Casing Diameter (ins.) NA
(From groundsurface)

Casing Depth (ft.) NA

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

(4) Depth to Water (Feet) 6

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
BENTONITE CHIPS	Surface	10	1 BAG	

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
NATURAL RESOURCE TECHNOLOGY

Signature of Person Doing Work: [signature] Date Signed: 09/18/95

Street or Route: 23713 W. PAUL RD Telephone Number: (414) 573-9000

City, State, Zip Code: PEWAUKEE WI

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: SB-710
County: Sheboygan
NW 1/4 of SW 1/4 of Sec. 23 ; T. 15 N; R. 23 ☒ E
(If Applicable) Gov't Lot ____ Grid Number ____
Grid Location: 4812.4 ft. ☒ N. ☐ S., 5287.5 ft. ☒ E. ☐ W.
Civil Town Name: SHEBOYGAN
Street Address of Well: 732 NORTH WATER STREET
City, Village: Sheboygan

(2) FACILITY NAME WPSC SITE II

Original Well Owner (If Known): Wisconsin Public Service Corp
Present Well Owner: Same as above
Street or Route: P.O. Box 19800
City, State, Zip Code: Sheboygan, WI
Facility Well No. and/or Name (If Applicable): SB-710
WI Unique Well No.:
Reason For Abandonment: Test Boring
Date of Abandonment: 08/03/95

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 08/03/95

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? Yes ☐ No
NA

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft) N/A (From groundsurface) Casing Diameter (ins.) N/A

Casing Depth (Ft.) N/A

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

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☒ No	

If No, Explain: DRILL CASING REMOVED

Was Casing Cut Off Below Surface?	☐ Yes	☒ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☒ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

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

(7)

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10.0	1 Bag	

(8) Comments ____

(9) Name of Person or Firm Doing Sealing Work
Boart Longyear
Signature of Person Doing Work: [signature]
Date Signed: 8/9/95
Street or Route: 101 Alderson Street
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, WI 54476

(10) FOR DNR OR COUNTY USE ONLY
Date Received/Inspected
District/County
Reviewer/Inspector
Follow-up Necessary

DNR/COUNTY

APPENDIX B

SOIL ANALYTICAL REPORTS

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Eric Kovatch
NATURAL RESOURCE TECH, INC
21005 Watertown Road
PO Box 623
Brookfield, WI 53008-0623

08/10/1995

Job No: 95.04983

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

Sample Number	Sample Description		Date Taken	Date Received
138467	MW-704(3)	#1060	07/19/1995	07/21/1995
138468	MW-706(3)	#1060	07/18/1995	07/21/1995
138469	B-701(3)	#1060	07/19/1995	07/21/1995
138470	MW-702(3)	#1060	07/19/1995	07/21/1995
138471	MW-701(5)	#1060	07/18/1995	07/21/1995
138472	MW-703(5)	#1060	07/18/1995	07/21/1995
138473	MW-705(3)	#1060	07/19/1995	07/21/1995
138474	MW-707(3)	#1060	07/19/1995	07/21/1995

The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

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

Brian D. DeJong, Organic Operations Manager
Certification No. 128053530

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Eric Kovatch
NATURAL RESOURCE TECH, INC
21005 Watertown Road
PO Box 623
Brookfield, WI 53008-0623

08/10/1995
Job No: 95.04983
Sample No: 138467
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-704(3) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/19/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	0.55	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	95.7	%	n/a	E-160.3	07/31/1995	1133
VOC - NONAQUEOUS - 8260						
Benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
Et benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
To ene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
Xylenes, Total	<15	ug/kg	15	S-8260	08/01/1995	267
Surr: Dibromofluoromethane	112.4	%	n/a	S-8260	08/01/1995	267
Surr: Toluene-d8	98.8	%	n/a	S-8260	08/01/1995	267
Surr: Bromofluorobenzene	92.2	%	n/a	S-8260	08/01/1995	267
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	15	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(a)anthracene	15	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(b)fluoranthene	4.0	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	3.6	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	<8.0	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(ghi)perylene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	7.8	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	40	ug/kg	8.0	S-8310	07/27/1995	111 316
Fluorene	28	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Naphthalene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	91	ug/kg	16	S-8310	07/27/1995	111 316
Pyrene	21	ug/kg	8.0	S-8310	07/27/1995	111 316
Surr: 2-Fluorobiphenyl	83.6	%	n/a	S-8310	07/27/1995	111 316

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Eric Kovatch
NATURAL RESOURCE TECH, INC
21005 Watertown Road
PO Box 623
Brookfield, WI 53008-0623

08/10/1995
Job No: 95.04983
Sample No: 138468
Account No: 52450
Page 3

JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-706(3) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/18/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	0.68	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	32.7	%	n/a	E-160.3	07/31/1995	1133
VOC - NONAQUEOUS - 8260						
Benzene	<5.0	ug/kg	5.0	S-8260	07/31/1995	266
Et `benzene	<5.0	ug/kg	5.0	S-8260	07/31/1995	266
Tc ene	<5.0	ug/kg	5.0	S-8260	07/31/1995	266
Xylenes, Total	<15	ug/kg	15	S-8260	07/31/1995	266
Surr: Dibromofluoromethane	112.2	%	n/a	S-8260	07/31/1995	266
Surr: Toluene-d8	117.6	%	n/a	S-8260	07/31/1995	266
Surr: Bromofluorobenzene	77.0	%	n/a	S-8260	07/31/1995	266
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	<8.0	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(a)anthracene	<2.0	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(b)fluoranthene	<2.0	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	<2.0	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	<8.0	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(ghi)perylene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	<8.0	ug/kg	8.0	S-8310	07/27/1995	111 316
Fluorene	<16	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	<4.0	ug/kg	4.0	S-8310	07/27/1995	111 316
Naphthalene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	<16	ug/kg	16	S-8310	07/27/1995	111 316
Pyrene	<8.0	ug/kg	8.0	S-8310	07/27/1995	111 316
Surr: 2-Fluorobiphenyl	82.6	%	n/a	S-8310	07/27/1995	111 316

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Eric Kovatch
NATURAL RESOURCE TECH, INC
21005 Watertown Road
PO Box 623
Brookfield, WI 53008-0623

08/10/1995
Job No: 95.04983
Sample No: 138469
Account No: 52450
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JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: B-701(3) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/19/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	0.63	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	87.4	%	n/a	E-160.3	08/01/1995	1134
VOC - NONAQUEOUS - 8260						
Benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
E[illegible]benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
To[illegible]ene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
Xylenes, Total	<15	ug/kg	15	S-8260	08/01/1995	267
Surr: Dibromofluoromethane	123.8	%	n/a	S-8260	08/01/1995	267
Surr: Toluene-d8	103.8	%	n/a	S-8260	08/01/1995	267
Surr: Bromofluorobenzene	73.2	%	n/a	S-8260	08/01/1995	267
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	230	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(a)anthracene	910	ug/kg	2.0	S-8310	08/03/1995	111 319
Benzo(b)fluoranthene	490	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	380	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	740	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(ghi)perylene	890	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	680	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	93	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	2,500	ug/kg	8.0	S-8310	08/03/1995	111 319
Fluorene	170	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	500	ug/kg	4.0	S-8310	07/27/1995	111 316
Naphthalene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	1,000	ug/kg	16	S-8310	08/03/1995	111 319
Pyrene	810	ug/kg	8.0	S-8310	08/03/1995	111 319
Surr: 2-Fluorobiphenyl	112.2	%	n/a	S-8310	07/27/1995	111 316

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Eric Kovatch
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08/10/1995
Job No: 95.04983
Sample No: 138470
Account No: 52450
Page 5

JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-702(3) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/19/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	1.2	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	84.2	%	n/a	E-160.3	08/01/1995	1134
VOC - NONAQUEOUS - 8260						
Benzene	<16	ug/kg	5.0	S-8260	08/01/1995	267
Ethylbenzene	50	ug/kg	5.0	S-8260	08/01/1995	267
Toluene	<16	ug/kg	5.0	S-8260	08/01/1995	267
Xylenes, Total	160	ug/kg	15	S-8260	08/01/1995	267
Surr: Dibromofluoromethane	132.0	%	n/a	S-8260	08/01/1995	267
Surr: Toluene-d8	102.0	%	n/a	S-8260	08/01/1995	267
Surr: Bromofluorobenzene	80.0	%	n/a	S-8260	08/01/1995	267
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	210	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(a)anthracene	1,100	ug/kg	2.0	S-8310	08/03/1995	111 319
Benzo(b)fluoranthene	660	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	530	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	1,200	ug/kg	8.0	S-8310	08/03/1995	111 319
Benzo(ghi)perylene	1,200	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	740	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	150	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	2,100	ug/kg	8.0	S-8310	08/03/1995	111 319
Fluorene	110	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	750	ug/kg	4.0	S-8310	08/03/1995	111 319
Naphthalene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	480	ug/kg	16	S-8310	07/27/1995	111 316
Pyrene	1,100	ug/kg	8.0	S-8310	08/03/1995	111 319
Surr: 2-Fluorobiphenyl	89.1	%	n/a	S-8310	07/27/1995	111 316

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ANALYTICAL REPORT

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08/10/1995
Job No: 95.04983
Sample No: 138471
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-701(5) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/18/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	1.9	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	91.2	%	n/a	E-160.3	07/31/1995	1133
VOC - NONAQUEOUS - 8260						
Benzene	<16	ug/kg	5.0	S-8260	07/31/1995	266
Ethylbenzene	310	ug/kg	5.0	S-8260	07/31/1995	266
Toluene	<16	ug/kg	5.0	S-8260	07/31/1995	266
Xylenes, Total	160	ug/kg	15	S-8260	07/31/1995	266
Surr: Dibromofluoromethane	112.4	%	n/a	S-8260	07/31/1995	266
Surr: Toluene-d8	106.4	%	n/a	S-8260	07/31/1995	266
Surr: Bromofluorobenzene	96.6	%	n/a	S-8260	07/31/1995	266
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	15,000	ug/kg	8.0	S-8310	08/06/1995	111 320
Benzo(a)anthracene	2,300	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(b)fluoranthene	950	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	880	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	1,700	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(ghi)perylene	2,900	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	1,600	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	180	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	17,000	ug/kg	8.0	S-8310	08/06/1995	111 320
Fluorene	13,000	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	1,300	ug/kg	4.0	S-8310	07/27/1995	111 316
Naphthalene	77,000	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	53,000	ug/kg	16	S-8310	08/06/1995	111 320
Pyrene	10,000	ug/kg	8.0	S-8310	08/06/1995	111 320
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	07/27/1995	111 316

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ANALYTICAL REPORT

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08/10/1995
Job No: 95.04983
Sample No: 138472
Account No: 52450
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JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-703(5) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/18/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	0.97	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	83.4	%	n/a	E-160.3	07/31/1995	1133
VOC - NONAQUEOUS - 8260						
Benzene	13	ug/kg	5.0	S-8260	07/31/1995	266
E[illegible]benzene	<5.0	ug/kg	5.0	S-8260	07/31/1995	266
To[illegible]ene	6.1	ug/kg	5.0	S-8260	07/31/1995	266
Xylenes, Total	6.9	ug/kg	15	S-8260	07/31/1995	266
Surr: Dibromofluoromethane	105.8	%	n/a	S-8260	07/31/1995	266
Surr: Toluene-d8	103.2	%	n/a	S-8260	07/31/1995	266
Surr: Bromofluorobenzene	88.6	%	n/a	S-8260	07/31/1995	266
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	1,300	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(a)anthracene	3,800	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(b)fluoranthene	2,300	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	77	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	3,800	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(ghi)perylene	5,100	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	2,800	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	640	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	12,000	ug/kg	8.0	S-8310	07/27/1995	111 316
Fluorene	950	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	3,100	ug/kg	4.0	S-8310	07/27/1995	111 316
Naphthalene	3,000	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	5,600	ug/kg	16	S-8310	07/27/1995	111 316
Pyrene	7,300	ug/kg	8.0	S-8310	07/27/1995	111 316
Surr: 2-Fluorobiphenyl	94.1	%	n/a	S-8310	07/27/1995	111 316

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08/10/1995
Job No: 95.04983
Sample No: 138473
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-705(3) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/19/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	0.76	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	91.0	%	n/a	E-160.3	08/01/1995	1134
VOC - NONAQUEOUS - 8260						
Benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
Et benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
To. ene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
Xylenes, Total	<15	ug/kg	15	S-8260	08/01/1995	267
Surr: Dibromofluoromethane	120.0	%	n/a	S-8260	08/01/1995	267
Surr: Toluene-d8	97.6	%	n/a	S-8260	08/01/1995	267
Surr: Bromofluorobenzene	88.4	%	n/a	S-8260	08/01/1995	267
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	500	ug/kg	8.0	S-8310	08/03/1995	111 319
Benzo(a)anthracene	1,700	ug/kg	2.0	S-8310	08/03/1995	111 319
Benzo(b)fluoranthene	1,000	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	880	ug/kg	2.0	S-8310	08/03/1995	111 319
Benzo(a)pyrene	1,700	ug/kg	8.0	S-8310	08/03/1995	111 319
Benzo(ghi)perylene	2,100	ug/kg	4.0	S-8310	08/03/1995	111 319
Chrysene	1,300	ug/kg	4.0	S-8310	08/03/1995	111 319
Dibenzo(a,h)anthracene	270	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	4,400	ug/kg	8.0	S-8310	08/03/1995	111 319
Fluorene	360	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	1,100	ug/kg	4.0	S-8310	08/03/1995	111 319
Naphthalene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	1,700	ug/kg	16	S-8310	08/03/1995	111 319
Pyrene	1,800	ug/kg	8.0	S-8310	08/03/1995	111 319
Surr: 2-Fluorobiphenyl	113.9	%	n/a	S-8310	07/27/1995	111 316

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ANALYTICAL REPORT

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08/10/1995
Job No: 95.04983
Sample No: 138474
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheboygan
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-707(3) #1060
Wildwood Ave; Sheboygan, Wi
Recv'd On Ice

Date Taken: 07/19/1995 Date Received: 07/21/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Phenol	83	mg/kg	<0.50	S-9065M	08/03/1995	41
Solids, Total	84.6	%	n/a	E-160.3	08/01/1995	1134
VOC - NONAQUEOUS - 8260						
Benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
E' benzene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
To ene	<5.0	ug/kg	5.0	S-8260	08/01/1995	267
Xylenes, Total	<15	ug/kg	15	S-8260	08/01/1995	267
Surr: Dibromofluoromethane	118.4	%	n/a	S-8260	08/01/1995	267
Surr: Toluene-d8	104.2	%	n/a	S-8260	08/01/1995	267
Surr: Bromofluorobenzene	87.0	%	n/a	S-8260	08/01/1995	267
PNA Extraction	07/26/95			S-3550	07/26/1995	111
PNA METHOD 8310 - NONAQUEOUS						
Acenaphthene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Acenaphthylene	<80	ug/kg	80	S-8310	07/27/1995	111 316
Anthracene	68	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(a)anthracene	330	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(b)fluoranthene	180	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(k)fluoranthene	160	ug/kg	2.0	S-8310	07/27/1995	111 316
Benzo(a)pyrene	430	ug/kg	8.0	S-8310	07/27/1995	111 316
Benzo(ghi)perylene	480	ug/kg	4.0	S-8310	07/27/1995	111 316
Chrysene	230	ug/kg	4.0	S-8310	07/27/1995	111 316
Dibenzo(a,h)anthracene	63	ug/kg	4.0	S-8310	07/27/1995	111 316
Fluoranthene	640	ug/kg	8.0	S-8310	07/27/1995	111 316
Fluorene	65	ug/kg	16	S-8310	07/27/1995	111 316
Indeno(1,2,3-cd)pyrene	330	ug/kg	4.0	S-8310	07/27/1995	111 316
Naphthalene	<40	ug/kg	40	S-8310	07/27/1995	111 316
Phenanthrene	210	ug/kg	16	S-8310	07/27/1995	111 316
Pyrene	750	ug/kg	8.0	S-8310	07/27/1995	111 316
Surr: 2-Fluorobiphenyl	64.0	%	n/a	S-8310	07/27/1995	111 316

APPENDIX C

SOIL BORING LOGS AND

MONITORING WELL INFORMATION,

CONSTRUCTION AND DEVELOPMENT FORMS

Appendix C.1

Monitoring Well Soil Boring Logs

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan I /1060/ Site Investigation		*MW-701*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/18/95*	*07/18/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-701	*583.46 Feet MSL*	*588.97 Feet MSL*	*8.25 inches*

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (if applicable)
NW1/4, SW1/4, 23, T15N, R23E			*4759.4 feet* ☒ N ☐ S *5321.6 feet* ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
MW701 (1)	5	5	1	0'-.5' ORGANIC SILT (FILL)	OL									
				0.5'-2' SILT, brwn (7.5YR 5/2), ltl orgncs, 5% f. sand, lse, dry, no odor (FILL)				483						
			2	.d-2 2'-4' SILT, drk brwn (7.5YR 3/3), **CINDERS**, 10-15% f. sand, loose, sl. mst, odor	ML (FILL)									
01 (3)	8	8	3					218						
			4											
MW701 (5)	10	10	5	4'-6' CLAY W/ SAND, brwn (7.5YR 4/2), **10% WOOD**, trc orgncs, firm, med plast, v. mst, odor (FILL)				2137						
			6	**10% CINDERS, TRC WOOD**, v. mst-wet	CL (FILL)									
MW701 (7)	11	11	7					672						
			8											
MW701 (9)	14	14	9	8'-13.5' CLAYEY SAND, drk gry (10YR 4/1), prly grd, pred. f., f-med, trc f. grvl, 5% gast. shells, sft, wet, odor	SC			867						
			10	CLAYEY SAND/SANDY CLAY, drk gry (5Y 4/1), f., rnd, soft, wet, odor										
MW701 (11)	19	19	11		SC/CL			1175						

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

Signature *Teresa J. Cyle* Firm **Natural Resource Technology**

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

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
MW701 (13)	13	13	13	SANDY CLAY, w/ ltl wood @ bottom 2"	CL			3815						
			14	13.5'-14' SAND W/ CLAY, drk rddsh brwn (5YR 3/4), crs, ltl f-med, gast. shells, **SHEEN**, wet, str. odor	SC									
MW701 (15)	16	16	15	14'-16' CLAY drk gry brn (10YR 4/2), few f. lamin f. sand, soft, v. mst, sl. odor	CL			7811						
			16	SAND W/ CLAY, slight odor	SC									
MW701 (17)	14	14	17	16'-17' CLAYEY SAND, blk (10Y 2.5/N), prly grd, pred f-med, subrnd, abnd. gastr. shells, trc orgncs, odor										
MW701 (19)	8	8	18	17'-22' CLAY, brn (7.5YR 5/3), 15% sand, f-crs, 5% silt, med, frm-hrd, moist, no odor	CL									
MW701 (21)	10	10	20	drk grysh brn (10YR 4/2) frm-sft, v. mst, no odor										
			22	EOB @ 22'										
			23											
			24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060/ Site Investigation		PZ-701

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear Scott/Kurt	07/18/95	07/18/95	Mud Rotary

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		P-701	575.62 Feet MSL	589.28 Feet MSL	8.1 inches

Boring Location State Plane		Lat / Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E	Feet N Feet E	Lat Long	4763.5 feet ☒ N ☐ S 5322.5 feet ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	60	Sheboygan

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0–1	BLIND DRILL TO 23'	OL									
			1–4	REFERENCE LOG FOR MW-701 PLACE TEMPORARY CASING FROM 0'-23' 1'-4' CONCRETE possible foundation	ML (FILL)									
			4–8		CL									
			8–10		SC									
			10–12		SC/CL									
			12–13.5		CL									
			13.5–14		SC									
			14–16		CL									
			16–17		SC									
			17–23		CL									
PZ701 (24)	0	2	23–24		SP									

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

Signature	Firm
Rebecca J. Clyde	Natural Resource Technology

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

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
PZ701 (24)	0	2		23'-27' drill cutting indicate coarse SAND W/ GRAVEL @ approx. 23' 27'-28' SILT, grayish brn (2.5Y 5/2), 5%	SP									
PZ701 (26)	0	6	26											
PZ701 (28)	17	8	28	28'-29' CLAY, rapid dilatency, low plast., soft, wet, no odor	ML CL									
PZ701 (30)	8	14	30	29'-30' CLAY, brn (7.5YR 4/2), some silt, firm-soft, med-hi plast., v. moist, no odor 30'-31' As above silt, tr. clay & f-crs sand, hard	CL ML									
PZ701 (32)	24	10	32	31'-35' CLAY, reddish brown (5YR 4/3), 5% silt, med.-high plast., firm, moist	CL									
PZ701 (34)	24	2	34											
			36	EOB @ 35'										
			38											
			40											
			42											
			44											
			46											
			48											
			50											
			52											
			54											
			56											
			58											
			60											
			62											

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan I /1060/ Site Investigation		*MW-702*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/19/95*	*07/19/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-702	*585.23 Feet MSL*	*590.39 Feet MSL*	*8.25 inches*

Boring Location			Local Grid Location (if applicable)
State Plane *NW1/4, SW1/4, 23, T15N, R23E*	Feet N Feet E	Lat Long	*4798.1 feet* ☒ N ☐ S *5348.4 feet* ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
MW702 (1)				0'-0.5' GRAVEL, crs, ang., compact (FILL)	GP (FILL)									
MW702 (3)	16	52	2	1.5'-6.5' BRICKS (yellow, orange, red) mixed w/ silt & occ. clay (FILL)	brick (FILL)			168						
MW702 (5)	2	18	4					172						
MW702 (7)	16	16	6	6.5'-10' WOOD mixed w/ drk gray (2.5Y 5/1) silt & clay, some sand, odor (FILL)	wood (FILL)			694						
MW702 (9)	14	8	8					841						
MW702 (11)	4	15	10	10'-15' SILTY SAND, v. drk gray (2.5Y 3/1), WOOD, soft, wet, odor (FILL)	SM/wood FILL									
MW702 (13)	5	3	12											
MW702 (15)	0	4	14	15'-18' CLAY, brn (7.5YR 4/2), 5% sand, trc silt, med-high plast, firm, moist	CL									
MW702 (17)	0		16											
			18	EOB @ 18'										
			20											
			22											

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

Signature [signature]

Firm **Natural Resource Technology**

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan I /1060/ Site Investigation		*MW-703*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/18/95*	*07/18/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-703	*583.17 Feet MSL*	*589.16 Feet MSL*	*8.25 inches*

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E			*4864.4 feet* ☒ *N* ☐ *S* *5245.7 feet* ☒ *E* ☐ *W*

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	GRAVEL, base for drive w/ bricks/ silt/ **CINDERS**, (FILL)	GP									
MW703 (3)	18	12	2	**BRICKS** w/ silt, dry, compact, no odor (FIIL)	FILL			69.4						
MW703 (5)	8	8	4	4'-6' SANDY CLAY W/ GRAVEL, grysh brn (2.5Y 5/2), **5% CINDERS**, sand, firm, mst, sl. odor (FILL)	CL (FILL)			185						
MW703 (7)	12	2	6	6'-8' CLAYEY SAND W/ GRAVEL, grysh brn (2.5Y 5/2) w/ blck mtting, **TRC CINDERS**, pred f-med, subrnd, soft, v. mst, sl. odor (FILL)	SC (FILL)			118						
MW703 (9)	14	2	8	8'-10' interbedded CLAY & SANDY CLAY, drk gry (2.5Y 4/1), few blk lamin, med plast, soft, wet, sl. odor (FILL)	CL (FILL)			125						
MW703 (11)	17	2	10	10'-14' CLAY, grading drk grnsh gry (10Y 4/1) abund brwn orgnc to grysh gry (10Y 5/1), abund gast. shells, v. mst, firm, sl. odor	CL									
MW703 (13)	15	2	12	no shells, some sand, soft, wet, grdng to below										
MW703 (15)	13	6	14	14'-16' SAND, blk (N 2.5), prly grd, med-crs, compact, **SHEEN**, wet, odor	SP									
MW703 (17)	21	13	16	16'-20' SANDY CLAY, drk grysh brn, med plast, soft, wet	CL									
MW703 (19)	14	7	18	firm, moist										
			20	EOB @ 20'										
			22											

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

Signature *Rebecca J. Ogle* Firm **Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

Route To:
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☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other:

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060/ Site Investigation		*MW-704*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/19/95*	*07/19/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-704	*583.12 Feet MSL*	*589.43 Feet MSL*	*8.25 inches*

Boring Location		Lat	Local Grid Location (If applicable)
State Plane	Feet N	Long	*4677.2 feet* ☒ *N* *5387.4 feet* ☒ *E*
NW1/4, SW1/4, 23, T15N, R23E	Feet E		☐ *S* ☐ *W*

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	GRAVEL FILL & bed for drive, **BRICKS**, silt, **CINDERS, GLASS BOTTLES**	GP									
			2	1'-6' **BRICKS & SILT, TRC CINDERS**, yllw (10YR 7/6), compact, dry, no odor										
704 (3)	18	32	3		BRICK CINDER			1040						
			4											4'-6' difficult drilling
MW704 (5)	9	68	5					121						
			6	6'-8' GRAVEL, gry (2.5Y 5/1) with silt & sand stained black, crs. subang grvl, wet, sl. odor (FILL)	GP (FILL)									
MW704 (7)	6	7	7					1108						
			8	8'-10' CLAYEY SAND W/ GRAVEL, drk grnsh gry (10Y4/1), **SOME WOOD**, prly grd, pred med, soft, wet, sl. odor	SC									
MW704 (9)	4	4	9					504						
			10	10'-16' CLAY, drk. grysh brwn (10YR 4/2), 5-10% sand (decrsng w/ depth), 10% grvl top 1", trc grvl & orgncs, med plast., firm-soft, v. mst-wet, sl. odor	CL									
MW704 (11)	7	2	11					871						

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

Signature *Edward J Ogle* Firm **Natural Resource Technology**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
MW704 (13)	0	2	13	drk gry (10YR4/1), **VF. LAMIN SILT STAINED W/ DRK YLLWSH BRWN TAR**, soft, wet, odor	CL			NR						
MW704 (15)	5	2	15					828						
MW704 (17)	19	3	17	16'-21' SAND W/ GRAVEL, blk, **DRK YLLWSH BRWN (10YR 3/6) STAINING (TAR)**, lamin clay & clayey sand, **STAINING CNCNTRTD IN SAND ABOVE CLAY & CLAYEY SAND**, prly grd, bedded f-crs w/ f. subang grvl, ltl silt, compact, wet, str. odor, **SHEEN**	SP			431						
MW704 (19)	23	4	19					313						
MW704 (21)	19	9	21	no staining w/ clay	SC									
			22	21'-22' SANDY CLAY/CLAYEY SAND, lght brwn (7.5YR 6/3), pred med, f-med, subrnd, soft, wet	CL									
MW704 (23)	22	13	23	22'-24' CLAY, brwn (7.5YR 5/3), 5% subrnd crs sand, trc silt & f-med sand, hgh plast, frm, mst	CL									
			24	EOB @ 24'										
			25											
			26											
			27											
			28											
			29											
			30											
			31											

State of Wisconsin
Department of Natural Resources

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

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II /1060/ Site Investigation		*MW-705*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/19/95*	*07/19/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-705	*582.96 Feet MSL*	*590.22 Feet MSL*	*8.25 inches*

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E			*4966.2 feet* ☒ N ☐ S *5361.3 feet* ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Gravel Fill										
			2	1'-2' GRAVEL w/ BRICKS silt, clay, TRCINDERS, compact, dry, no odor (FILL)	GM (FILL)									
MW705 (3)	13	6		2'-7.3' SANDY SILT, brwn (10YR 5/3), 5% CINDERS, pred f-med, subrnd sand, trc f-subang grvl, compact, mst, no odor (FILL)	ML (FILL)			56						
MW705 (5)	21	3	4	SILTY SAND	SM (FILL)			41						
MW705 (7)	0	5	6					nr						
MW705 (9)	19	4	8	7.5'-13.5' SILTY CLAY, brwn (7.5YR 4/3) few vf. lamin f. sand, med plast, frm, mst-v.mst, no odor	CL			23						
MW705 (11)	16	7	10					58						
MW705 (13)	18	7	12											
MW705 (15)	0	12	14	13.5'-16' SAND (7.5YR 4/2), med-crs, wet, no odor	SP									
			16	EOB @ 16'										
			18											
			20											
			22											

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

Signature	Firm
Melissa J Coyle	**Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

Route To:
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☐ Emergency Response ☐ Underground Tanks
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☐ Superfund ☐ Other:

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan I /1058/ Site Investigation		*MW-706*

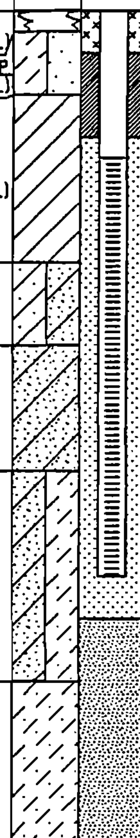
Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/18/95*	*07/18/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-706	*587.8 Feet MSL*	*591.51 Feet MSL*	*8.25 inches*

Boring Location State Plane		Lat / Long	Local Grid Location (If applicable)
Feet N	Feet E	Lat · Long ·	*4817.8 feet* ☒ N ☐ S *5388.9 feet* ☒ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
MW706 (1)	16	6	0–2	0'-0.5' ORGANICS SILT, **W/ GLASS** (FILL) 0.5'-2' SANDY SILT W/ CLAY, drk grysh brwn (10YR 4/2), 10% f. subnglr grvl, lse, **TRC CINDERS**, sl. mst, no odor (FILL)	OL (FILL) GP/SP (FILL)	702						
MW706 (3)	13	5	2–4	.l-2 2'-4' CLAY, blck (N2.5/), **TRC CINDERS, WOOD**, frm-soft, moist, odor (FILL)	CL (FILL)	634						
MW706 (5)	18	4	4–6	4'-6' CLAY, drk gry (N2.5 4/1), blck mttlng, <5% orgncs, **TAR, CNCNTRTD W/ ORGANC**, trc f. sand & silt, med-high plast, frm, mst-wet, odor (possible fill)	CL (FILL)	965						
MW706 (7)	15	2	6–8	6'-11' SANDY CLAY/CLAYEY SAND, gry (5Y 5/1) intrbdd sandy clay & clayey sand, **DRK YLLWSH BRWN (10YR 4/6) TAR, CLAYEY SAND W/ SHEEN**, wet, strong odor	CL SC	>9999						
MW706 (9)	11	11	8–10		SC	5081						
MW706 (11)	0	4	10–12	CLAYEY SAND, interbedded w/ clay, sand, **TAR CNCNTRTD IN PRED SANDY LENSES**. brwn (10YR 5/3)	SC	NR						
MW706 (13)	18	4	12–14	11'-16' CLAYEY SILT SAND, brwn (7.5YR 4/3), prly grd, vf., firm, **TAR AS ABOVE**, wet, odor	SC SM							
MW706 (15)	21	4	14–16									
MW706 (17)	22	3	16–18	16'-20' SILTY SAND, brwn (10YR 5/3), trc clay, prly grd, vf., compact, no tar, wet	SM							
MW706B (19)	24	2	18–20									
MW706B (21)	17		20–22	EOB @ 20'								
MW706B (23)			22–									



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

Signature [signature]

Firm **Natural Resource Technology**

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State of Wisconsin
Department of Natural Resources

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WPSC-Sheboygan II/1060/ Site Investigation		*MW-707*

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Boart Longyear *Scott/Kurt*	*07/19/95*	*07/19/95*	*HSA 4 1/4" (ID)*

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		MW-707	*582.60 Feet MSL*	*590.29 Feet MSL*	*8.25 inches*

Boring Location State Plane	Feet N Feet E	Lat Long	Local Grid Location (If applicable)
NW1/4, SW1/4, 23, T15N, R23E			*4613.4 feet* ☒ *N* *5442.7 feet* ☒ *E* ☐ *S* ☐ *W*

County	DNR County Code	Civil Town/City/ or Village
Sheboygan	*60*	*Sheboygan*

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			1	GRAVEL FILL FOR DRIVE	GP (FILL)									
				GRAVEL (BRICKS) w/ SILT (FILL)	BRICKS (FILL)									
07 (3)	17	2	2-3	2'-4' CLAY, brwn (10YR 5/3), 15% f-med sand, med plast, sft, v. mst, sl. odor	CL (FILL)			8.8						
MW707 (5)	3	2	4-5	4'-14' WOOD w/ blk silt (difficult, slow drilling)				285						
MW707 (7)	0	50 (1")	6-7					NR						
MW707 (9)	0	50 (0)	8-9		WOOD (FILL)			NR						
MW707 (11)	2	2	10-11	w/ med-crs sand & silt - difficult drilling				78						

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

Signature *Rebecca J. Ryle* Firm **Natural Resource Technology**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
MW-707 (13)	0	2	13		WOOD (FILL)			NR						
			14	14'-18' SANDY CLAY, v. drk gry (10YR 3/1) f. sand, med-crs sand & f. grvl, LTTL WOOD, sft, wet, odor										
MW-707 (15)	19	2	15					556						
			16	grysh-brwn (10YR 5/2), occ. spots of drk yllwsh tar	CL									
MW-707 (17)	22	2	17											
			18	18'-19.5' CLAYEY SAND, brwn (7.5YR 5/3), sft, f. sand, wet, odor										
MW-707 (19)	16	2	19		SM									
			20	19.5'-20' SILTY SAND W/ CLAY, drk gry (10YR 4/1), prly grd, f., wet, odor	SM SC									
MW-707 (21)	12	2	21	20'-24' SILTY CLAY W/ SAND, grysh brwn (10YR 5/2), v. mst, no staining										
			22	trc sand, frm, mst	CL									
MW-707 (23)	14	2	23											
			24	EOB @ 24'										
			25											
			26											
			27											
			28											
			29											
			30											
			31											

Appendix C.2

Groundwater Monitoring Well Information Form

State of Wisc
Department of ...ral Resources

GROUNDWATER MONITORING WELL INFORMA... FORM
Chapter 144, Wis. Stats.
Form 4400-89
Rev. 1-90

Facility Name: 732 N. WATER STREET WPSC - CAMPMARINA
Facility ID Number: 11
Date: 11/09/95
Completed By (Name and Firm): REBECCA J. KOEPKE / NATURAL RESOURCE TECH.

Well Name	DNR Well ID Number	Well Location	N	S	E	W	Date Established	Well Casing Diam.	Well Casing Type	Elevations Top of Well Casing	Elevations Ground Surface	Reference MSL (√)	Reference Site Datum (√)	Screen Length	Well Depth	Type of Well (√) PIEZ	OW	PW	LYS	Other	Abandoned	Enf. Stds Apply	Gradient U, S, D or N
MW-701		4759.4	✓				07/18/95	2	P	588.51	588.97	✓		10	13.		✓					Y	D
		5321.6			✓																		
PZ-701		4763.5	✓				07/18/95	2	P	588.89	589.28	✓		5	33.8	✓						Y	D
		5322.5			✓																		
MW-702		4798.1	✓				07/19/95	2	P	590.09	590.39	✓		10	13.4		✓					Y	D
		5348.4			✓																		
MW-703		4864.4	✓				07/19/95	2	P	588.80	589.16	✓		10	13.5		✓					Y	D/S
		5245.7			✓																		
MW-704		4677.2	✓				07/19/95	2	P	589.05	589.43	✓		10	13.2		✓					Y	D/S
		5387.4			✓																		
MW-705		4966.2	✓				07/19/95	2	P	589.91	590.22	✓		10	13.5		✓					Y	U
		5361.3			✓																		
MW-706		4817.8	✓				07/18/95	2	P	591.34	591.51	✓		10	13.4		✓					Y	D
		5388.9			✓																		
MW-707		4613.4	✓				07/19/95	2	P	590.08	590.29	✓		10	13.4		✓					Y	D/S
		5442.7			✓																		

Location Coordinates Are:

☒ Local Grid System (preferred) ☐ State Plane Coordinate ☐ Northern ☐ Central

Remarks:

PSS Use:

File Maint. Completed: _____

Other: _____

Appendix C.3

Monitoring Well Construction Forms

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC - Sheboygan II	Local Grid Location of Well: 4759.4 ft. ☒N. ☐S. 5321.6 ft. ☒E. ☐W.	Well Name: MW-701
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☒11	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 07/18/95
Piezometer ☐12	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23, T. 15 N. R. 23 ☒E.	Well Installed By: (Person's Name and Firm) Scott Buttke
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Boart Longyear
Is Well A Point of Enforcement Std. Application? ☒Yes ☐No		

A. Protective pipe, top elevation 588.97 ft. MSL
B. Well casing, top elevation 588.51 ft. MSL
C. Land surface elevation 588.97 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

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

13. Sieve analysis attached? ☒Yes ☐No

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

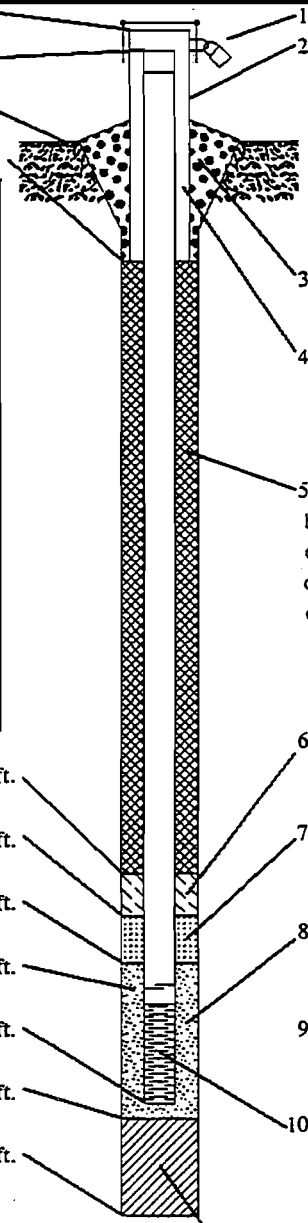
15. Drilling fluid used: Water ☐02 Air ☐01 Drilling Mud ☐03 None ☒99

16. Drilling additives used? ☐Yes ☒No

Describe _____

17. Source of water (attach analysis):
NA

E. Bentonite seal, top _____ ft. MSL or _____ ft.
F. Fine sand, top _____ ft. MSL or _____ ft.
G. Filter pack, top _____ ft. MSL or 3.0 ft.
H. Screen joint, top _____ ft. MSL or 3.5 ft.
I. Well bottom _____ ft. MSL or 13.5 ft.
J. Filter pack, bottom _____ ft. MSL or 14.5 ft.
K. Borehole, bottom _____ ft. MSL or 22.0 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.37 in.
N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04 Other ☐ _____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30 Concrete ☒ 01 Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30 Annular space seal ☐ _____ Other ☒ #30 American Material
5. Annular space seal: a. Granular Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name and mesh size
a. _____
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ _____
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐ _____
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐ 14 Other ☒ Bentonite

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

Signature: [signature] Firm: Boart Longyear, 101 Alderson Street Tel: (715) 359-7090 Fax: (715) 355-5715

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC - Sheboygan II	Local Grid Location of Well: 4763.5 ft. ☒N. ☐S. 5322.5 ft. ☒E. ☐W.	Well Name: PZ-701
City License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☐11	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 07/18/95
Piezometer ☒12	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23, T. 15 N, R. 23 ☒E.	Well Installed By: (Person's Name and Firm) Pat Jensen
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☒ Downgradient n ☐ Not Known	Boart Longyear
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation 589.28 ft. MSL

B. Well casing, top elevation 588.89 ft. MSL

C. Land surface elevation 589.28 ft. MSL

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

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

13. Sieve analysis attached? ☒ Yes ☐ No

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

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

16. Drilling additives used? ☒ Yes ☐ No

Describe Bentonite

17. Source of water (attach analysis):
WPSC, WILLWOOD AVE, SHEBOYGAN

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

F. Fine sand, top _____ ft. MSL or 25.0 ft.

G. Filter pack, top _____ ft. MSL or 27.0 ft.

H. Screen joint, top _____ ft. MSL or 29.0 ft.

I. Well bottom _____ ft. MSL or 34.0 ft.

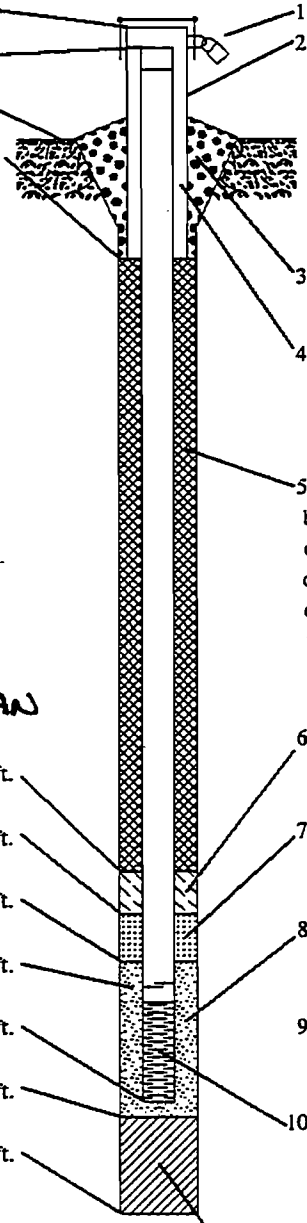
J. Filter pack, bottom _____ ft. MSL or 35.0 ft.

K. Borehole, bottom _____ ft. MSL or 35.0 ft.

L. Borehole, diameter 6.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 8.0 in.
b. Length: 1.0 ft.
c. Material: Steel ☒ 04
_____ Other ☐
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30
Concrete ☒ 01
_____ Other ☐
4. Material between well casing and protective pipe:
Bentonite ☐ 30
Annular space seal ☐
#30 American Material Other ☒
5. Annular space seal: a. Granular Bentonite 33
b. _____Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
c. _____Lbs/gal mud weight . . . Bentonite slurry ☒ 31
d. _____% Bentonite . . . Bentonite-cement grout ☐ 50
e. _____Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity 08
6. Bentonite seal: a. Bentonite granules ☒ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
a. #7 Badger
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐
10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11
Continuous slot ☐ 01
_____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14
#30 American Material Other ☒

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

Signature _____ Firm Boart Longyear, 101 Alderson Street, Tel: (715) 359-7090, Fax: (715) 355-5715

Please complete both sides of this form, and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC - Sheboygan II	Local Grid Location of Well: 4798.1 ft. ☒N. ☐S. 5322.5 ft. ☒E. ☐W.	Well Name: MW-702
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or St. Plane ft. N. ft. E.	Wis. Unique Well Number / DNR Well Number:
Type of Well: Water Table Observation Well ☒11; Piezometer ☐12	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23, T. 15 N, R. 23 ☒E.	Date Well Installed: 07/19/95
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☒ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm): Scott Buttke; Boart Longyear
Is Well A Point of Enforcement Std. Application? ☒Yes ☐No		

A. Protective pipe, top elevation 590.39 ft. MSL

B. Well casing, top elevation 590.09 ft. MSL

C. Land surface elevation 590.39 ft. MSL

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

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

13. Sieve analysis attached? ☒Yes ☐No

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

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

16. Drilling additives used? ☐Yes ☒No

Describe _____

17. Source of water (attach analysis):
NA

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

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

G. Filter pack, top _____ ft. MSL or 3.0 ft.

H. Screen joint, top _____ ft. MSL or 3.5 ft.

I. Well bottom _____ ft. MSL or 13.5 ft.

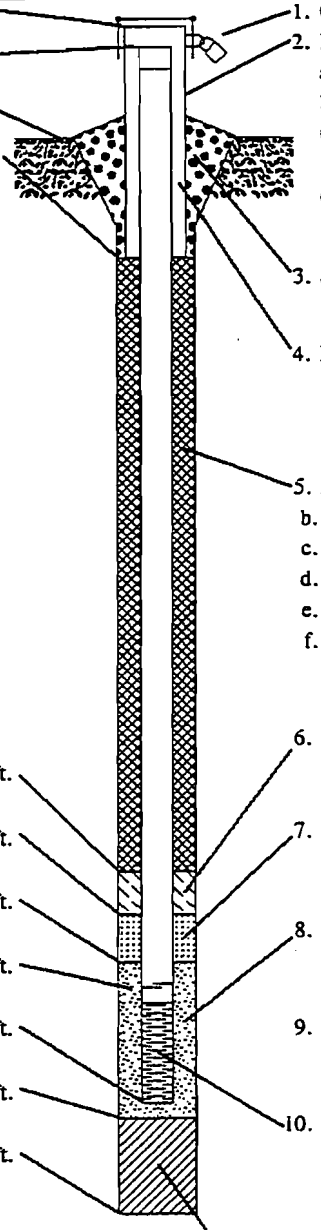
J. Filter pack, bottom _____ ft. MSL or 16.0 ft.

K. Borehole, bottom _____ ft. MSL or 16.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

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

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

4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; #30 American Material Other ☒

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

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

7. Fine sand material: Manufacturer, product name and mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3

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

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

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

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

Signature: [signature] Firm: Boart Longyear, 101 Alderson Street Tel: (715) 359-7090 Fax: (715) 355-5715

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC - Sheboygan II	Local Grid Location of Well: 4864.4 ft. ☒ N. ☐ S. 5245.7 ft. ☒ E. ☐ W.	Well Name: MW-703
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ___ ° ___ ' ___ " Long. ___ ° ___ ' ___ " or St. Plane ___ ft. N, ___ ft. E.	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23 T. 15 N, R. 23 ☒ E. ☐ W.	Date Well Installed: 07/18/95
Distance Well Is From Waste/Source Boundary: ___ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☒ Sidegradient d ☒ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm) Scott Buttke; Boart Longyear
Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No		

A. Protective pipe, top elevation 589.16 ft. MSL

B. Well casing, top elevation 588.80 ft. MSL

C. Land surface elevation 589.16 ft. MSL

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

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

13. Sieve analysis attached? ☒ Yes ☐ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; ___ Other ☐

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

16. Drilling additives used? ☐ Yes ☒ No

Describe ___

17. Source of water (attach analysis):
NA

E. Bentonite seal, top ___ ft. MSL or ___ ft.

F. Fine sand, top ___ ft. MSL or ___ ft.

G. Filter pack, top ___ ft. MSL or 3.0 ft.

H. Screen joint, top ___ ft. MSL or 3.5 ft.

I. Well bottom ___ ft. MSL or 13.5 ft.

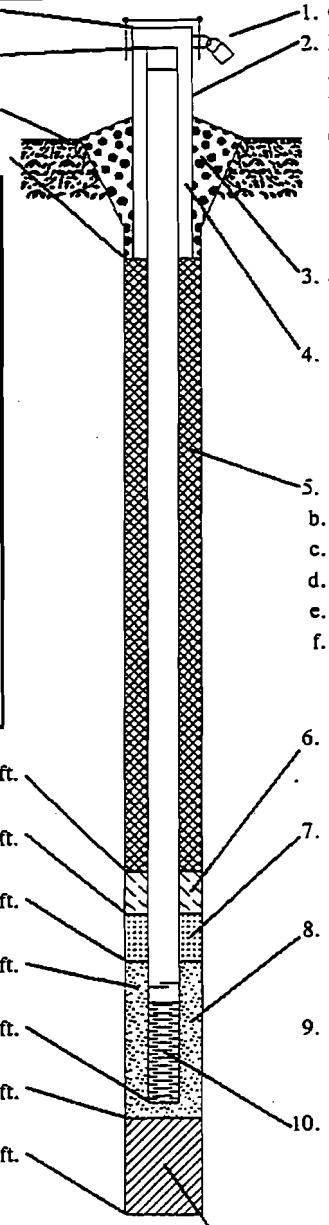
J. Filter pack, bottom ___ ft. MSL or 14.5 ft.

K. Borehole, bottom ___ ft. MSL or 20.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 8.0 in.
   b. Length: 1.0 ft.
   c. Material: Steel ☒ 04; ___ Other ☐
   d. Additional protection? ☐ Yes ☒ No
   If yes, describe: ___
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; ___ Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; #30 American Material Other ☒
5. Annular space seal: a. Granular Bentonite ☒ 33
   b. ___ Lbs/gal mud weight . . Bentonite-sand slurry ☐ 35
   c. ___ Lbs/gal mud weight . . . Bentonite slurry ☐ 31
   d. ___ % Bentonite . . . Bentonite-cement grout ☐ 50
   e. ___ Ft^3 volume added for any of the above
   f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☒ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
   c. ___ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
   a. ___
   b. Volume added ___ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
   a. #30 American Material
   b. Volume added ___ ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; ___ Other ☐
10. Screen material: PVC
    a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; ___ Other ☐
    b. Manufacturer Boart Longyear
    c. Slot size: 0.010 in.
    d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐ 14; #30 American Material Other ☒

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

Signature: [signature] Firm: Boart Longyear, 101 Alderson Street Tel: (715) 359-7090 Fax: (715) 355-5715

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State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC- Sheboygan II	Local Grid Location of Well: ☐N. ☐S. _____ ft. ☐E. ☐W. _____ ft.	Well Name: MW-704
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☒11; Piezometer ☐12	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23, T. 15 N, R. 23 ☒E. ☐W.	Date Well Installed: 07/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm): Scott Buttke; Boart Longyear
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation 589.43 ft. MSL

B. Well casing, top elevation 589.05 ft. MSL

C. Land surface elevation 589.43 ft. MSL

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

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

13. Sieve analysis attached? ☒ Yes ☐ No

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

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

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):

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

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

G. Filter pack, top _____ ft. MSL or 3.0 ft.

H. Screen joint, top _____ ft. MSL or 3.5 ft.

I. Well bottom _____ ft. MSL or 13.5 ft.

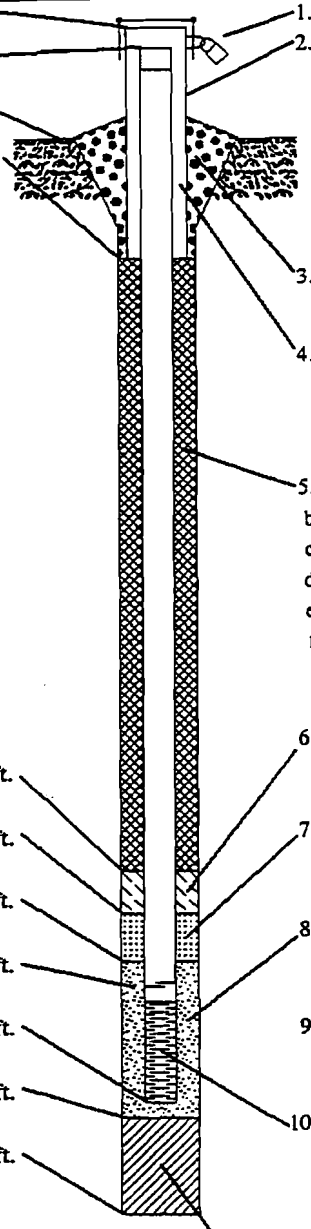
J. Filter pack, bottom _____ ft. MSL or 14.5 ft.

K. Borehole, bottom _____ ft. MSL or 24.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

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

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

4. Material between well casing and protective pipe: Bentonite ☐30; Annular space seal ☐; #30 American Material Other ☒

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

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

7. Fine sand material: Manufacturer, product name and mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3

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

10. Screen material: PVC
a. Screen Type: Factory cut ☒11; Continuous slot ☐01; _____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☐14; #30 American Material Other ☒

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

Signature _____ Firm: Boart Longyear, 101 Alderson Street

Tel: (715) 359-7090
Fax: (715) 355-5715

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State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC - Sheboygan II	Local Grid Location of Well: ☐N. ☐S. _____ ft. ☐E. ☐W. _____ ft.	Well Name: MW-705
ty License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☒11 / Piezometer ☐12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 07/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23, T. 15 N, R. 23 ☒E. ☐W.	Well Installed By: (Person's Name and Firm): Pat Jensen / Boart Longyear
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 590.22 ft. MSL

B. Well casing, top elevation 589.91 ft. MSL

C. Land surface elevation 590.22 ft. MSL

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

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

13. Sieve analysis attached? ☒ Yes ☐ No

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

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

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):

_____

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

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

G. Filter pack, top _____ ft. MSL or 3.0 ft.

H. Screen joint, top _____ ft. MSL or 3.5 ft.

I. Well bottom _____ ft. MSL or 13.5 ft.

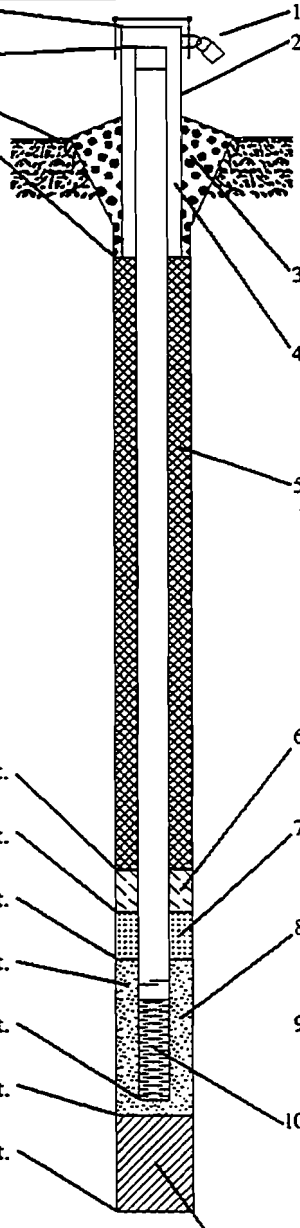
J. Filter pack, bottom _____ ft. MSL or 14.0 ft.

K. Borehole, bottom _____ ft. MSL or 16.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

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

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

4. Material between well casing and protective pipe: Bentonite ☐ 30 / Annular space seal ☐ / #30 American Material Other ☒

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

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

7. Fine sand material: Manufacturer, product name and mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3

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

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11 / Continuous slot ☐ 01 / _____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

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

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

Signature: [signature] Firm: Boart Longyear, 101 Alderson Street Tel: (715) 359-7090 Fax: (715) 355-5715

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State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC-Sheboygan II	Local Grid Location of Well: ☐N. _____ ft. ☐S. ☐E. _____ ft. ☐W.	Well Name: MW-706
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or St. Plane _____ ft. N, _____ ft. E.	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☒11; Piezometer ☐12	Section Location of Waste/Source: NW 1/4 of SW 1/4 of Sec. 23 T. 15 N. R. 23 ☒E.	Date Well Installed: 07/18/95
Distance Well Is From Waste/Source Boundary: ft.	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Well Installed By: (Person's Name and Firm): Scott Buttke; Boart Longyear
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No		

A. Protective pipe, top elevation 591.51 ft. MSL

B. Well casing, top elevation 591.34 ft. MSL

C. Land surface elevation 591.51 ft. MSL

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

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

13. Sieve analysis attached? ☒Yes ☐No

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

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

16. Drilling additives used? ☐ Yes ☒No

Describe _____

17. Source of water (attach analysis):

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

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

G. Filter pack, top _____ ft. MSL or 3.0 ft.

H. Screen joint, top _____ ft. MSL or 3.5 ft.

I. Well bottom _____ ft. MSL or 13.5 ft.

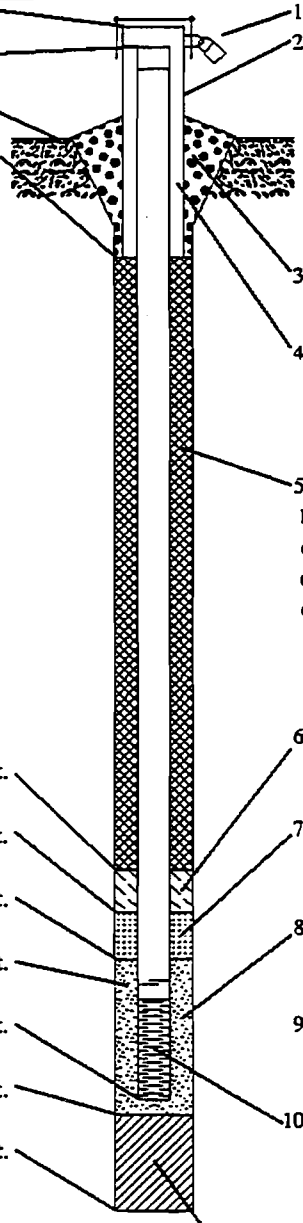
J. Filter pack, bottom _____ ft. MSL or 14.5 ft.

K. Borehole, bottom _____ ft. MSL or 20.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

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

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

4. Material between well casing and protective pipe:
Bentonite ☐30; Annular space seal ☐; #30 American Material Other ☒

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

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

7. Fine sand material: Manufacturer, product name and mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3

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

10. Screen material: PVC
a. Screen Type: Factory cut ☒11; Continuous slot ☐01; _____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None ☐14; Bentonite Other ☒

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

Signature _____ Firm: Boart Longyear, 101 Alderson Street, Tel: (715) 359-7090, Fax: (715) 355-5715

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State of Wisconsin
Department of Natural Resources

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

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 4-90

Facility/Project Name: WPSC-Sheboygan II	Local Grid Location of Well: ☐N. ☐S. _____ ft. ☐E. ☐W. _____ ft.	Well Name: MW-707
Facility License, Permit or Monitoring Number:	Grid Origin Location: Lat. ° ' " Long. ° ' " or	Wis. Unique Well Number: DNR Well Number:
Type of Well: Water Table Observation Well ☒ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 07/19/95
Distance Well Is From Waste/Source Boundary: _____ ft.	Section Location of Waste/Source: ☒E. NW 1/4 of SW 1/4 of Sec. 23 T. 15 N, R. 23 [redacted]	Well Installed By: (Person's Name and Firm): Pat Jensen; Boart Longyear
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 590.29 ft. MSL

B. Well casing, top elevation 590.09 ft. MSL

C. Land surface elevation 590.29 ft. MSL

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

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

13. Sieve analysis attached? ☒ Yes ☐ No

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

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

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis):

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

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

G. Filter pack, top _____ ft. MSL or 3.0 ft.

H. Screen joint, top _____ ft. MSL or 3.5 ft.

I. Well bottom _____ ft. MSL or 13.5 ft.

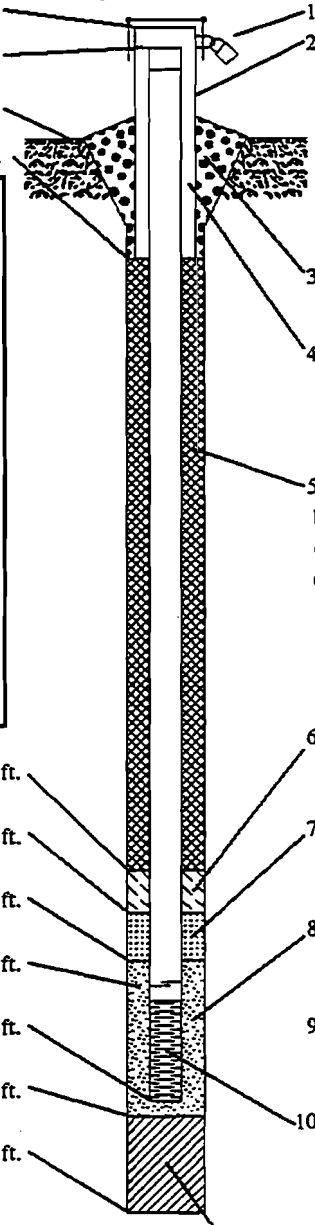
J. Filter pack, bottom _____ ft. MSL or 16.0 ft.

K. Borehole, bottom _____ ft. MSL or 22.0 ft.

L. Borehole, diameter 8.0 in.

M. O.D. well casing 2.37 in.

N. I.D. well casing 2.06 in.



1. Cap and lock? ☒ Yes ☐ No

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

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

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

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

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

7. Fine sand material: Manufacturer, product name and mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name and mesh size
a. #30 American Material
b. Volume added _____ ft^3

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

10. Screen material: PVC
a. Screen Type: Factory cut ☒ 11; Continuous slot ☐ 01; _____ Other ☐
b. Manufacturer Boart Longyear
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.

11. Backfill material (below filter pack): Bentonite; None ☐ 14; Other ☒

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

Signature [signature] Firm Boart Longyear, 101 Alderson Street Tel: (715) 359-7090 Fax: (715) 355-5715

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Appendix C.4

Monitoring Well Development Forms

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
N. WATER STREET WPSC - SHEBOYGAN CAMPMARINA	SHEBOYGAN	MW-701
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	60	_____ / _____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 13.1 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 12.5 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 5.51 ft.	DRY ft.
Date	b. 07/18/95 (m m d d y y)	07/18/95 (m m d d y y)
Time	c. _____ ☐ a.m. ☐ p.m.	_____ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) DARK BROWN SHEEN	Clear ☐ 20 Turbid ☒ 25 (Describe) BROWN SHEEN

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

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: SHELLY M. BRITTON

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Richard J Reske

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER ST. WPSC - CAMPMARINA	SHEBOYGAN	PZ-701
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	60	_____ / _____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 90 min.

4. Depth of well (from top of well casisng) 33.8 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 7.5 gal.

8. Volume of water added (if any) 0.__ gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. ____.27 ft.	.RY.__ ft.
Date	b. 07/18/95 (m m d d y y)	07/18/95 (m m d d y y)
Time	c. __:__ ☐ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	__.__ inches	__.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) LIGHT GRAY	Clear ☐ 20 Turbid ☒ 25 (Describe) LIGHT GRAY
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: MICHELLE M. BRITTON

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Michelle J Britton

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER ST WPSC - CAMPMARINA	SHEBOYGAN	MW-702

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	60	_____	_____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 134 ft.

5. Inside diameter of well 19 in.

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

7. Volume of water removed from well 13.__ gal.

8. Volume of water added (if any) 0.__ gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 4.86 ft.	DRY ft.
Date	b. 07/19/95 (m m d d y y)	07/19/95 (m m d d y y)
Time	c. __:__ ☐ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)	BROWN SHEEN	BROWN SHEEN

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

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

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: STEPHANIE A. VAN DYKE

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: [signature]

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER STREET WPSC - CAMP MARINA	SHEBOYGAN	MW-703

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	60	_____	_____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 13.5 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 8.__ gal.

8. Volume of water added (if any) 0.__ gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 5.63 ft.	DRY ft.
Date	b. 07/18/95 (m m d d y y)	07/18/95 (m m d d y y)
Time	c. __:__ ☐ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	__.__ inches	__.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)	DARK GRAY SHEEN	DARK GRAY SHEEN

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

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

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: MICHELLE M. BRITTON

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Rebecca J Kipfle

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER ST. WPSC - CAMPMARINA	SHEBOYGAN	MW-704
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	60	_____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 13.2 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 6.5 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 5.93 ft.	DRY ft.
Date	b. 07/19/95 (m m d d y y)	07/19/95 (m m d d y y)
Time	c. ☐ a.m. ☐ p.m.	☐ a.m. ☐ p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) DARK GRAY SHEEN	Clear ☐ 20 Turbid ☒ 25 (Describe) DARK GRAY SHEEN

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

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

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: REBECCA J. KOEPKE

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Rebecca J Koepke

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER ST WPSC - CAMPMARINA	SHEBOYGAN	MW-705
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	60	_____ / _____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 13.5 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 11 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 6.95 ft.	DRY ft.
Date	b. 07/19/95 (m m d d y y)	07/19/95 (m m d d y y)
Time	c. _____ ☐ a.m. ☐ p.m.	_____ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) LIGHT BROWN	Clear ☐ 20 Turbid ☒ 25 (Describe) LIGHT BROWN

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

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: REBECCA J. KOEPKE

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Rebecca J Koepke

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER STREET WPSL - CAMPMARINA	SHEBOYGAN	MW-706
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	60	_____ / _____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 80 min.

4. Depth of well (from top of well casisng) 13.4 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 95 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 3.5 ft.	DRY ft.
Date	b. 07/19/95 (m m d d y y)	07/19/95 (m m d d y y)
Time	c. ___:___ ☐ a.m. ☐ p.m.	___:___ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) BLACK SHEEN TAR	Clear ☐ 20 Turbid ☒ 25 (Describe) BLACK SHEEN TAR

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

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

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: REBECCA J. KOEPKE

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Rebecca J Koepke

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

State of Wisconsin
Department of Natural Resources

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

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

Facility/Project Name	County Name	Well Name
NORTH WATER ST WPSC - CAMPMARINA	SHEBOYGAN	MW-707
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	60	_____ / _____

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

2. Well development method

surged with bailer and bailed	☐ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☒ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 13.4 ft.

5. Inside diameter of well 1.9 in.

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

7. Volume of water removed from well 15.__ gal.

8. Volume of water added (if any) 0.__ gal.

9. Source of water added NA

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

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 7.48 ft.	DRY ft.
Date	b. 07/19/95 (m m d d y y)	07/19/95 (m m d d y y)
Time	c. __:__ ☐ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☒ 25
(Describe)	DARK GRAY SHEEN	DARK GRAY SHEEN

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

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

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: MICHELLE M. BRITTON

Firm: NATURAL RESOURCE TECHNOLOGY

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

Signature: Michelle M Britton

Print Initials: RJK

Firm: NATURAL RESOURCE TECHNOLOGY

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

APPENDIX D

GROUNDWATER ANALYTICAL REPORTS

Appendix D.1

August 15, 1995 Groundwater Analytical Report

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
1602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8094
WDNR No. 128053530

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995

Job No: 95.05793

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

Sample Number	Sample Description	Date Taken	Date Received
145575	MW-701 #1060	08/15/1995	08/16/1995
145576	MW-702 #1060	08/15/1995	08/16/1995
145577	MW-703 #1060	08/15/1995	08/16/1995
145578	MW-704 #1060	08/15/1995	08/16/1995
145579	MW-705 #1060	08/15/1995	08/16/1995
145580	MW-706 #1060	08/15/1995	08/16/1995
145581	MW-707 #1060	08/15/1995	08/16/1995
145582	MW-799 #1060	08/15/1995	08/16/1995
145583	Trip Blk #1060	08/15/1995	08/16/1995

The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

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

Brian D. DeJong, Organic Operations Manager
Certification No. 128053530

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995
Job No: 95.05793
Sample No: 145575
Account No: 52450
Page 2

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-701 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	08/25/1995	14 108
Cyanide, dissociable	0.025	mg/L	0.0050	M-4500CNI	08/25/1995	2 29
Cyanide, total	0.11	mg/L	0.0050	M-4500CNE	08/21/1995	19 201
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	08/31/1995	283
Barium, Dissolved, ICP	0.44	mg/L	0.020	E-200.7	08/21/1995	23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995	265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995	176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995	346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/26/1995	706
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995	236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995	242
PVOC - AQUEOUS						
Benzene	10,000	ug/L	1.0	S-8020	08/29/1995	1997
Ethylbenzene	880	ug/L	1.0	S-8020	08/29/1995	1997
Toluene	96	ug/L	1.0	S-8020	08/29/1995	1997
Xylenes, Total	820	ug/L	3.0	S-8020	08/29/1995	1997
Surr: Bromofluorobenzene	108.0	%	n/a	S-8020	08/29/1995	1997
PNA Extraction	08/18/95			S-3510	08/18/1995	335
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	800	ug/L	1.0	S-8310	08/28/1995	335 523
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/24/1995	335 519
Anthracene	23	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(a)anthracene	3.4	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(b)fluoranthene	0.60	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(k)fluoranthene	0.54	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(a)pyrene	1.8	ug/L	0.20	S-8310	08/24/1995	335 519
Benzo(ghi)perylene	1.2	ug/L	0.10	S-8310	08/24/1995	335 519
Chrysene	1.7	ug/L	0.10	S-8310	08/24/1995	335 519
Dibenzo(a,h)anthracene	0.25	ug/L	0.10	S-8310	08/24/1995	335 519
Fluoranthene	49	ug/L	0.20	S-8310	08/24/1995	335 519
Fluorene	130	ug/L	0.40	S-8310	08/28/1995	335 523
Indeno(1,2,3-cd)pyrene	0.76	ug/L	0.10	S-8310	08/24/1995	335 519
Naphthalene	220	ug/L	1.0	S-8310	08/24/1995	335 519
Phenanthrene	100	ug/L	0.40	S-8310	08/28/1995	335 523
Pyrene	20	ug/L	0.20	S-8310	08/24/1995	335 519
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335 523

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995
Job No: 95.05793
Sample No: 145576
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-702 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	08/25/1995	14 108
Cyanide, dissociable	0.043	mg/L	0.0050	M-4500CNI	08/25/1995	2 29
Cyanide, total	0.20	mg/L	0.0050	M-4500CNE	08/21/1995	19 201
Arsenic, Dissolved, GFAA	0.0062	mg/L	0.0030	E-206.2	08/31/1995	283
Barium, Dissolved, ICP	0.25	mg/L	0.020	E-200.7	08/21/1995	23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995	265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995	176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995	346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/26/1995	706
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995	236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995	242
PVOC - AQUEOUS						
Benzene	5,900	ug/L	1.0	S-8020	08/29/1995	1997
Ethylbenzene	1,500	ug/L	1.0	S-8020	08/29/1995	1997
Toluene	2,300	ug/L	1.0	S-8020	08/29/1995	1997
Xylenes, Total	1,600	ug/L	3.0	S-8020	08/29/1995	1997
Surr: Bromofluorobenzene	108.0	%	n/a	S-8020	08/29/1995	1997
PNA Extraction	08/18/95			S-3510	08/18/1995	335
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	390	ug/L	1.0	S-8310	08/28/1995	335 523
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/24/1995	335 519
Anthracene	19	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(a)anthracene	2.9	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(b)fluoranthene	0.32	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(k)fluoranthene	0.48	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(a)pyrene	1.4	ug/L	0.20	S-8310	08/24/1995	335 519
Benzo(ghi)perylene	0.93	ug/L	0.10	S-8310	08/24/1995	335 519
Chrysene	1.5	ug/L	0.10	S-8310	08/24/1995	335 519
Dibenzo(a,h)anthracene	0.23	ug/L	0.10	S-8310	08/24/1995	335 519
Fluoranthene	41	ug/L	0.20	S-8310	08/24/1995	335 519
Fluorene	150	ug/L	0.40	S-8310	08/28/1995	335 523
Indeno(1,2,3-cd)pyrene	0.55	ug/L	0.10	S-8310	08/24/1995	335 519
Naphthalene	7,300	ug/L	1.0	S-8310	08/28/1995	335 523
Phenanthrene	96	ug/L	0.40	S-8310	08/28/1995	335 523
Pyrene	35	ug/L	0.20	S-8310	08/24/1995	335 519
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335 523

NATIONAL ENVIRONMENTAL TESTING, INC.

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995
Job No: 95.05793
Sample No: 145577
Account No: 52450
Page 4

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-703 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	08/25/1995	14 108
Cyanide, dissociable	0.039	mg/L	0.0050	M-4500CNI	08/25/1995	2 29
Cyanide, total	0.12	mg/L	0.0050	M-4500CNE	08/25/1995	20 202
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	08/31/1995	283
Barium, Dissolved, ICP	0.19	mg/L	0.020	E-200.7	08/21/1995	23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995	265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995	176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995	346
Lead, Dissolved, GFAA	0.0019	mg/L	0.0015	E-239.2	08/26/1995	706
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995	236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995	242
PVOC - AQUEOUS						
Benzene	1,300	ug/L	1.0	S-8020	08/29/1995	1997
Ethylbenzene	980	ug/L	1.0	S-8020	08/29/1995	1997
Toluene	29	ug/L	1.0	S-8020	08/29/1995	1997
Xylenes, Total	430	ug/L	3.0	S-8020	08/29/1995	1997
Surr: Bromofluorobenzene	105.0	%	n/a	S-8020	08/29/1995	1997
PNA Extraction	08/18/95			S-3510	08/18/1995	335
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	180	ug/L	1.0	S-8310	08/24/1995	335 519
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/24/1995	335 519
Anthracene	17	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(a)anthracene	1.4	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(b)fluoranthene	0.10	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(k)fluoranthene	0.16	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(a)pyrene	0.46	ug/L	0.20	S-8310	08/24/1995	335 519
Benzo(ghi)perylene	0.24	ug/L	0.10	S-8310	08/24/1995	335 519
Chrysene	0.55	ug/L	0.10	S-8310	08/24/1995	335 519
Dibenzo(a,h)anthracene	0.17	ug/L	0.10	S-8310	08/24/1995	335 519
Fluoranthene	28	ug/L	0.20	S-8310	08/24/1995	335 519
Fluorene	70	ug/L	0.40	S-8310	08/28/1995	335 523
Indeno(1,2,3-cd)pyrene	0.16	ug/L	0.10	S-8310	08/24/1995	335 519
Naphthalene	2,400	ug/L	1.0	S-8310	08/28/1995	335 523
Phenanthrene	74	ug/L	0.40	S-8310	08/28/1995	335 523
Pyrene	9.2	ug/L	0.20	S-8310	08/24/1995	335 519
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335 523

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995
Job No: 95.05793
Sample No: 145578
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-704 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep Batch	Run
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	08/25/1995	14	108
Cyanide, dissociable	0.056	mg/L	0.0050	M-4500CNI	08/25/1995	2	29
Cyanide, total	0.31	mg/L	0.0050	M-4500CNE	08/25/1995	20	202
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	08/31/1995		283
Barium, Dissolved, ICP	0.31	mg/L	0.020	E-200.7	08/21/1995		23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995		265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995		176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995		346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/31/1995		709
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995		236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995		242
PVOC - AQUEOUS							
Benzene	340	ug/L	1.0	S-8020	08/27/1995		1998
Ethylbenzene	280	ug/L	1.0	S-8020	08/27/1995		1998
Toluene	200	ug/L	1.0	S-8020	08/27/1995		1998
Xylenes, Total	430	ug/L	3.0	S-8020	08/27/1995		1998
Surr: Bromofluorobenzene	97.0	%	n/a	S-8020	08/27/1995		1998
PNA Extraction	08/18/95			S-3510	08/18/1995	335	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene	770	ug/L	1.0	S-8310	08/28/1995	335	523
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/28/1995	335	523
Anthracene	44	ug/L	0.20	S-8310	08/28/1995	335	523
Benzo(a)anthracene	26	ug/L	0.050	S-8310	08/28/1995	335	523
Benzo(b)fluoranthene	8.9	ug/L	0.050	S-8310	08/28/1995	335	523
Benzo(k)fluoranthene	7.9	ug/L	0.050	S-8310	08/28/1995	335	523
Benzo(a)pyrene	22	ug/L	0.20	S-8310	08/28/1995	335	523
Benzo(ghi)perylene	17	ug/L	0.10	S-8310	08/28/1995	335	523
Chrysene	19	ug/L	0.10	S-8310	08/28/1995	335	523
Dibenzo(a,h)anthracene	<0.10	ug/L	0.10	S-8310	08/28/1995	335	523
Fluoranthene	150	ug/L	0.20	S-8310	08/28/1995	335	523
Fluorene	180	ug/L	0.40	S-8310	08/28/1995	335	523
Indeno(1,2,3-cd)pyrene	10	ug/L	0.10	S-8310	08/28/1995	335	523
Naphthalene	5,200	ug/L	1.0	S-8310	08/28/1995	335	523
Phenanthrene	220	ug/L	0.40	S-8310	08/28/1995	335	523
Pyrene	56	ug/L	0.20	S-8310	08/28/1995	335	523
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335	523

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
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09/14/1995
Job No: 95.05793
Sample No: 145579
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-705 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch	
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	08/25/1995	14	108
Cyanide, dissociable	<0.0050	mg/L	0.0050	M-4500CNI	08/25/1995	2	29
Cyanide, total	<0.0050	mg/L	0.0050	M-4500CNE	08/21/1995	19	201
Arsenic, Dissolved, GFAA	0.0039	mg/L	0.0030	E-206.2	08/31/1995		283
Barium, Dissolved, ICP	0.11	mg/L	0.020	E-200.7	08/21/1995		23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995		265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995		176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995		346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/31/1995		709
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995		236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995		242
PVOC - AQUEOUS							
Benzene	<1.0	ug/L	1.0	S-8020	08/27/1995		1998
Ethylbenzene	<1.0	ug/L	1.0	S-8020	08/27/1995		1998
Toluene	<1.0	ug/L	1.0	S-8020	08/27/1995		1998
Xylenes, Total	<3.0	ug/L	3.0	S-8020	08/27/1995		1998
Surr: Bromofluorobenzene	89.0	%	n/a	S-8020	08/27/1995		1998
PNA Extraction	08/18/95			S-3510	08/18/1995	335	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene	<1.0	ug/L	1.0	S-8310	08/24/1995	335	519
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/24/1995	335	519
Anthracene	<0.20	ug/L	0.20	S-8310	08/24/1995	335	519
Benzo(a)anthracene	<0.050	ug/L	0.050	S-8310	08/24/1995	335	519
Benzo(b)fluoranthene	<0.050	ug/L	0.050	S-8310	08/24/1995	335	519
Benzo(k)fluoranthene	<0.050	ug/L	0.050	S-8310	08/24/1995	335	519
Benzo(a)pyrene	<0.20	ug/L	0.20	S-8310	08/24/1995	335	519
Benzo(ghi)perylene	<0.10	ug/L	0.10	S-8310	08/24/1995	335	519
Chrysene	<0.10	ug/L	0.10	S-8310	08/24/1995	335	519
Dibenzo(a,h)anthracene	<0.10	ug/L	0.10	S-8310	08/24/1995	335	519
Fluoranthene	<0.20	ug/L	0.20	S-8310	08/24/1995	335	519
Fluorene	<0.40	ug/L	0.40	S-8310	08/24/1995	335	519
Indeno(1,2,3-cd)pyrene	<0.10	ug/L	0.10	S-8310	08/24/1995	335	519
Naphthalene	<1.0	ug/L	1.0	S-8310	08/24/1995	335	519
Phenanthrene	<0.40	ug/L	0.40	S-8310	08/24/1995	335	519
Pyrene	<0.20	ug/L	0.20	S-8310	08/24/1995	335	519
Surr: 2-Fluorobiphenyl	87.5	%	n/a	S-8310	08/24/1995	335	519

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995
Job No: 95.05793
Sample No: 145580
Account No: 52450
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JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-706 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	08/25/1995	14 108
Cyanide, dissociable	<0.0050	mg/L	0.0050	M-4500CNI	08/25/1995	2 29
Cyanide, total	<0.0050	mg/L	0.0050	M-4500CNE	08/25/1995	20 202
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	08/31/1995	283
Barium, Dissolved, ICP	0.16	mg/L	0.020	E-200.7	08/21/1995	23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995	265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995	176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995	346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/31/1995	709
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995	236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995	242
PVOC - AQUEOUS						
Benzene	34,000	ug/L	1.0	S-8020	08/27/1995	1998
Ethylbenzene	560	ug/L	1.0	S-8020	08/27/1995	1998
Toluene	13,000	ug/L	1.0	S-8020	08/27/1995	1998
Xylenes, Total	7,900	ug/L	3.0	S-8020	08/27/1995	1998
Surr: Bromofluorobenzene	94.0	%	n/a	S-8020	08/27/1995	1998
PNA Extraction	08/18/95			S-3510	08/18/1995	335
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	197,000	ug/L	1.0	S-8310	08/28/1995	335 523
Acenaphthylene	1,480,000	ug/L	2.0	S-8310	08/28/1995	335 523
Anthracene	177,000	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(a)anthracene	129,000	ug/L	0.050	S-8310	08/28/1995	335 523
Benzo(b)fluoranthene	31,000	ug/L	0.050	S-8310	08/28/1995	335 523
Benzo(k)fluoranthene	29,000	ug/L	0.050	S-8310	08/28/1995	335 523
Benzo(a)pyrene	83,000	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(ghi)perylene	62,000	ug/L	0.10	S-8310	08/28/1995	335 523
Chrysene	82,000	ug/L	0.10	S-8310	08/28/1995	335 523
Dibenzo(a,h)anthracene	13,000	ug/L	0.10	S-8310	08/28/1995	335 523
Fluoranthene	266,000	ug/L	0.20	S-8310	08/28/1995	335 523
Fluorene	640,000	ug/L	0.40	S-8310	08/28/1995	335 523
Indeno(1,2,3-cd)pyrene	32,000	ug/L	0.10	S-8310	08/28/1995	335 523
Naphthalene	1,900,000	ug/L	1.0	S-8310	08/28/1995	335 523
Phenanthrene	730,000	ug/L	0.40	S-8310	08/28/1995	335 523
Pyrene	142,000	ug/L	0.20	S-8310	08/28/1995	335 523
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335 523

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
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09/14/1995
Job No: 95.05793
Sample No: 145581
Account No: 52450
Page 8

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-707 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	0.21	mg/L	0.0050	M-4500CNG	08/27/1995	15 109
Cyanide, dissociable	0.042	mg/L	0.0050	M-4500CNI	08/25/1995	2 29
Cyanide, total	0.38	mg/L	0.0050	M-4500CNE	08/25/1995	20 202
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	08/31/1995	283
Barium, Dissolved, ICP	0.21	mg/L	0.020	E-200.7	08/21/1995	23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995	265
Chromium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995	176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995	346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/30/1995	709
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995	236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995	242
PVOC - AQUEOUS						
Benzene	1,500	ug/L	1.0	S-8020	08/28/1995	1996
Ethylbenzene	3,600	ug/L	1.0	S-8020	08/28/1995	1996
Toluene	190	ug/L	1.0	S-8020	08/28/1995	1996
Xylenes, Total	1,400	ug/L	3.0	S-8020	08/28/1995	1996
Surr: Bromofluorobenzene	104.0	%	n/a	S-8020	08/28/1995	1996
PNA Extraction	08/18/95			S-3510	08/18/1995	335
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	430	ug/L	1.0	S-8310	08/28/1995	335 523
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/24/1995	335 519
Anthracene	12	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(a)anthracene	2.2	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(b)fluoranthene	0.38	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(k)fluoranthene	0.52	ug/L	0.050	S-8310	08/24/1995	335 519
Benzo(a)pyrene	1.6	ug/L	0.20	S-8310	08/24/1995	335 519
Benzo(ghi)perylene	1.3	ug/L	0.10	S-8310	08/24/1995	335 519
Chrysene	1.3	ug/L	0.10	S-8310	08/24/1995	335 519
Dibenzo(a,h)anthracene	0.25	ug/L	0.10	S-8310	08/24/1995	335 519
Fluoranthene	27	ug/L	0.20	S-8310	08/24/1995	335 519
Fluorene	93	ug/L	0.40	S-8310	08/28/1995	335 523
Indeno(1,2,3-cd)pyrene	0.74	ug/L	0.10	S-8310	08/24/1995	335 519
Naphthalene	3,100	ug/L	1.0	S-8310	08/28/1995	335 523
Phenanthrene	60	ug/L	0.40	S-8310	08/28/1995	335 523
Pyrene	12	ug/L	0.20	S-8310	08/24/1995	335 519
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335 523

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
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09/14/1995
Job No: 95.05793
Sample No: 145582
Account No: 52450
Page 9

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-799 #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	0.19	mg/L	0.0050	M-4500CNG	08/27/1995	15 109
Cyanide, dissociable	0.022	mg/L	0.0050	M-4500CNI	08/25/1995	2 29
Cyanide, total	0.29	mg/L	0.0050	M-4500CNE	08/25/1995	20 202
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	08/31/1995	283
Barium, Dissolved, ICP	0.29	mg/L	0.020	E-200.7	08/21/1995	23
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/01/1995	265
Ch ium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995	176
Copper, Dissolved	<0.020	mg/L	0.020	E-220.1	08/22/1995	346
Lead, Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	08/30/1995	709
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995	236
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/24/1995	242
PVOC - AQUEOUS						
Benzene	310	ug/L	1.0	S-8020	08/28/1995	1996
Ethylbenzene	280	ug/L	1.0	S-8020	08/28/1995	1996
Toluene	190	ug/L	1.0	S-8020	08/28/1995	1996
Xylenes, Total	440	ug/L	3.0	S-8020	08/28/1995	1996
Surr: Bromofluorobenzene	104.0	%	n/a	S-8020	08/28/1995	1996
PNA Extraction	08/18/95			S-3510	08/18/1995	335
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	660	ug/L	1.0	S-8310	08/28/1995	335 523
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/28/1995	335 523
Anthracene	44	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(a)anthracene	25	ug/L	0.050	S-8310	08/28/1995	335 523
Benzo(b)fluoranthene	8.7	ug/L	0.050	S-8310	08/28/1995	335 523
Benzo(k)fluoranthene	7.3	ug/L	0.050	S-8310	08/28/1995	335 523
Benzo(a)pyrene	21	ug/L	0.20	S-8310	08/28/1995	335 523
Benzo(ghi)perylene	16	ug/L	0.10	S-8310	08/28/1995	335 523
Chrysene	19	ug/L	0.10	S-8310	08/28/1995	335 523
Dibenzo(a,h)anthracene	<0.10	ug/L	0.10	S-8310	08/28/1995	335 523
Fluoranthene	140	ug/L	0.20	S-8310	08/28/1995	335 523
Fluorene	190	ug/L	0.40	S-8310	08/28/1995	335 523
Indeno(1,2,3-cd)pyrene	9.2	ug/L	0.10	S-8310	08/28/1995	335 523
Naphthalene	3,600	ug/L	1.0	S-8310	08/28/1995	335 523
Ph nthrene	220	ug/L	0.40	S-8310	08/28/1995	335 523
Pyr e	55	ug/L	0.20	S-8310	08/28/1995	335 523
Surr: 2-Fluorobiphenyl	DO	%	n/a	S-8310	08/28/1995	335 523

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/14/1995
Job No: 95.05793
Sample No: 145583
Account No: 52450
Page 10

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Trip Blk #1060

Date Taken: 08/15/1995 Date Received: 08/16/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS						
Benzene	<1.0	ug/L	1.0	S-8020	08/27/1995	1998
Ethylbenzene	<1.0	ug/L	1.0	S-8020	08/27/1995	1998
Toluene	<1.0	ug/L	1.0	S-8020	08/27/1995	1998
Xylenes, Total	<3.0	ug/L	3.0	S-8020	08/27/1995	1998
Surr: Bromofluorobenzene	90.0	%	n/a	S-8020	08/27/1995	1998

3 COOLERS

95 05793

CHAIN OF CUSTODY RECORD

Natural Resource Technology

Sample Collectors(s)/Signature(s) REBECCA J. KOEPKE / SHELLY BRITTON / STEPHANIE A VAN DYKE

NATURAL RESOURCE TECHNOLOGY, INC.
BROOKFIELD, WISCONSIN

Laboratory Samples are Being Submitted To: NET

Quote Number/Addendum Number _____ Attached: YES __ NO __

Site Name: SHEBOYGAN II

Site Address: NRSE SHEBOYGAN II
CAMP MARINA

Send Report To:
Project Manager: ~~TERI~~ TIM MUELLER / BECKY KOEPKE
Natural Resource Technology, Inc.
21005 Watertown Road, Box 623
Brookfield, WI 53008-0623
Telephone (414) 798-9696 Fax (414) 798-9595

Project Number: 1060

Task Number: _____

Temperature of temperature blank _____

If sample(s) were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

I hereby certify that I received, properly handled, and maintained custody of these samples as noted below:

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Rebecca J Koepke	08/16/95 0830	Jan P. Kowalski	8/16/95 0830
Jan P. Kowalski	8/16/95 1705	Jerry Schmitz	8/16/95 1705
Jerry Schmitz	8-16-95 1845	Karen Kurtz	8/17/95

Field ID Number	Date Collected	Time Collected	Sample Media	Sample Device	Location / Description	PID Reading	Field Comments	Preserv. Type	# of Cont.	BETX	PAHs	TOTAL CYANIDE	AMENABLE CYANIDE	WEAK ACID CYANIDE	DISSOLVED RCRA METALS *		Lab ID Number	Sample Conditions @ Laboratory
MW-701	08/15/95		GW	BAILER	MW-701		ODOR, SHEEN	HCL HNO3 NaOH	9	X	X	X	X	X	X			
MW-702	08/15/95		GW	BAILER	MW-702		ODOR, SHEEN	"	9	X	X	X	X	X	X			
MW-703	08/15/95		GW	BAILER	MW-703		ODOR, SL. SHEEN	"	9	X	X	X	X	X	X			
MW-704	08/15/95		GW	BAILER	MW-704		ODOR, SL. SHEEN	"	9	X	X	X	X	X	X			
MW-705	08/15/95		GW	BAILER	MW-705		NO SHEEN, NO ODOR	"	9	X	X	X	X	X	X			
MW-706	08/15/95		GW	BAILER	MW-706		COAL TAR	"	9	X	X	X	X	X	X			
MW-707	08/15/95		GW	BAILER	MW-707		ODOR, SL. SHEEN	"	9	X	X	X	X	X	X			
MW-799	08/15/95		GW	BAILER	MW-799		ODOR, SL. SHEEN	"	9	X	X	X	X	X	X			
TRIP BLANK								HCL	2	X								

Analytical Method / Numbers

Lab Use Only

SPECIAL INSTRUCTIONS
* - ARSENIC, BARIUM, CADMIUM, CHROMIUM, COPPER, LEAD, SELENIUM, SILVER

Laboratory shall retain samples for 30 days after issuing analytical report unless indicated otherwise below.
__ Return __ Other _____

PT 1 - ORIGINAL-WHITE PT 2 - LABORATORY COPY-YELLOW PT 3 - NRT FIELD COPY-PINK

This form is based on the WDNR LUST Program Chain of Custody Record (Form 4400-151)

W:\FORMS\CUSTODY.CHN

R Monk 8/17 0930

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/18/1995

Job No: 95.05880

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

Sample Number	Sample Description	Date Taken	Date Received
145894	PZ-701	08/17/1995	08/18/1995

The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

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

Brian D. DeJong, Organic Operations Manager
Certification No. 128053530

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
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Watertown, WI 53094
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Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

09/18/1995
Job No: 95.05880
Sample No: 145894
Account No: 52450

JOB DESCRIPTION: WPSC Sheboygan II #1060
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: PZ-701
Recv'd On Ice

Date Taken: 08/17/1995 Date Received: 08/18/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch	
Cyanide, amenable	0.020	mg/L	0.0050	M-4500CNG	08/31/1995	17	111
Cyanide, dissociable	<0.0050	mg/L	0.0050	M-4500CNI	08/27/1995	4	31
Cyanide, total	0.020	mg/L	0.0050	M-4500CNE	08/27/1995	22	204
Arsenic, Dissolved, GFAA	<0.0030	mg/L	0.0030	E-206.2	09/15/1995		288
Barium, Dissolved, ICP	0.063	mg/L	0.010	E-200.7	08/23/1995		24
Cadmium, Dissolved, GFAA	<0.00050	mg/L	0.00050	E-213.2	09/06/1995		267
Ch ium, Dissolved, GFAA	<0.0020	mg/L	0.0020	E-218.2	09/13/1995		177
Le Dissolved, GFAA	<0.0015	mg/L	0.0015	E-239.2	09/07/1995		715
Mercury, Dissolved, CVAA	0.0003	mg/L	0.00020	E-245.1	08/23/1995		239
Selenium, Dissolved, GFAA	<0.0050	mg/L	0.0050	E-270.2	09/11/1995		237
Silver, Dissolved	<0.010	mg/L	0.010	E-272.1	08/30/1995		246
PVOC - AQUEOUS							
Benzene	5.0	ug/L	1.0	S-8020	08/27/1995		1988
Ethylbenzene	3.6	ug/L	1.0	S-8020	08/27/1995		1988
Toluene	6.3	ug/L	1.0	S-8020	08/27/1995		1988
Xylenes, Total	11	ug/L	3.0	S-8020	08/27/1995		1988
Surr: Bromofluorobenzene	86.5	%	n/a	S-8020	08/27/1995		1988
PNA Extraction	08/23/95			S-3510	08/23/1995	337	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene	<1.0	ug/L	1.0	S-8310	08/27/1995	337	524
Acenaphthylene	<2.0	ug/L	2.0	S-8310	08/27/1995	337	524
Anthracene	1.5	ug/L	0.20	S-8310	08/27/1995	337	524
Benzo(a)anthracene	0.89	ug/L	0.050	S-8310	08/27/1995	337	524
Benzo(b)fluoranthene	0.21	ug/L	0.050	S-8310	08/27/1995	337	524
Benzo(k)fluoranthene	0.18	ug/L	0.050	S-8310	08/27/1995	337	524
Benzo(a)pyrene	0.43	ug/L	0.20	S-8310	08/27/1995	337	524
Benzo(ghi)perylene	0.24	ug/L	0.10	S-8310	08/27/1995	337	524
Chrysene	0.61	ug/L	0.10	S-8310	08/27/1995	337	524
Dibenzo(a,h)anthracene	<0.10	ug/L	0.10	S-8310	08/27/1995	337	524
Fluoranthene	3.3	ug/L	0.20	S-8310	08/27/1995	337	524
Fluorene	1.0	ug/L	0.40	S-8310	08/27/1995	337	524
Indeno(1,2,3-cd)pyrene	<0.10	ug/L	0.10	S-8310	08/27/1995	337	524
Naphthalene	<1.0	ug/L	1.0	S-8310	08/27/1995	337	524
Ph nthrene	6.6	ug/L	0.40	S-8310	08/27/1995	337	524
Py e	2.1	ug/L	0.20	S-8310	08/27/1995	337	524
Surr: 2-Fluorobiphenyl	66.2	%	n/a	S-8310	08/27/1995	337	524

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Appendix D.2

September 25, 1995 Groundwater Analytical Report

NET® NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995

Job No: 95.07272

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

Sample Number	Sample Description	Date Taken	Date Received
150983	MW-701 #1060	09/25/1995	09/27/1995
150984	MW-702 #1060	09/25/1995	09/27/1995
150985	MW-703 #1060	09/25/1995	09/27/1995
150986	MW-704 #1060	09/25/1995	09/27/1995
150987	MW-705 #1060	09/25/1995	09/27/1995
150988	MW-706 #1060	09/25/1995	09/27/1995
150989	MW-707 #1060	09/25/1995	09/27/1995
150990	PZ-701 #1060	09/26/1995	09/27/1995
150991	MW-799 #1060	09/25/1995	09/27/1995
150992	Trip Blk #1060	09/25/1995	09/27/1995

The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

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

Brian D. DeJong, Organic Operations Manager
Certification No. 128053530

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
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Fax: (414) 261-8120

WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150983
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-701 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable		<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable		0.020	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total		0.088	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS							
Benzene		12,000	ug/L	0.50	S-8020	10/09/1995	2106
Ethylbenzene		780	ug/L	1.0	S-8020	10/09/1995	2106
To[illegible]ne		53	ug/L	1.0	S-8020	10/09/1995	2106
Xy[illegible]es, Total		680	ug/L	3.0	S-8020	10/09/1995	2106
Surr: Bromofluorobenzene		114.5	%	n/a	S-8020	10/09/1995	2106
PNA Extraction		09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene		680	ug/L	1.0	S-8310	10/16/1995 347	545
Acenaphthylene		1,100	ug/L	2.0	S-8310	10/16/1995 347	545
Anthracene		17	ug/L	0.20	S-8310	10/16/1995 347	545
Benzo(a)anthracene		2.0	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(b)fluoranthene		0.24	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(k)fluoranthene		0.30	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(a)pyrene		1.0	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(ghi)perylene		0.67	ug/L	0.10	S-8310	10/04/1995 347	541
Chrysene		1.0	ug/L	0.10	S-8310	10/04/1995 347	541
Dibenzo(a,h)anthracene		0.40	ug/L	0.10	S-8310	10/04/1995 347	541
Fluoranthene		29	ug/L	0.20	S-8310	10/04/1995 347	541
Fluorene		100	ug/L	0.40	S-8310	10/16/1995 347	545
Indeno(1,2,3-cd)pyrene		0.36	ug/L	0.10	S-8310	10/04/1995 347	541
Naphthalene		3,800	ug/L	1.0	S-8310	10/16/1995 347	545
Phenanthrene		81	ug/L	0.40	S-8310	10/16/1995 347	545
Pyrene		11	ug/L	0.20	S-8310	10/04/1995 347	541
Surr: 2-Fluorobiphenyl	M	133.9	%	n/a	S-8310	10/16/1995 347	545

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150984
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-702 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Chloride		130	mg/L	5.0	E-325.2	10/20/1995	435
COD, Total		340	mg/L	5.0	E-410.4	10/17/1995	572
Cyanide, amenable		<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable		0.032	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total		0.072	mg/L	0.0050	M-4500CNE	10/09/1995	217
Oil & Grease		<5.0	mg/L	5.0	M-5520B	10/10/1995	364
pH		7.00	units	n/a	E-150.1	09/28/1995	1058
To Organic Carbon		40	mg/L	1.0	E-415.2	10/03/1995	99
PVOC - AQUEOUS							
Benzene		6,100	ug/L	0.50	S-8020	10/08/1995	2096
Ethylbenzene		1,400	ug/L	1.0	S-8020	10/08/1995	2096
Toluene		2,100	ug/L	1.0	S-8020	10/08/1995	2096
Xylenes, Total		1,400	ug/L	3.0	S-8020	10/08/1995	2096
Surr: Bromofluorobenzene		103.0	%	n/a	S-8020	10/08/1995	2096
PNA Extraction		09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene		400	ug/L	1.0	S-8310	10/16/1995 347	545
Acenaphthylene		1,400	ug/L	2.0	S-8310	10/16/1995 347	545
Anthracene		17	ug/L	0.20	S-8310	10/16/1995 347	545
Benzo(a)anthracene		3.7	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(b)fluoranthene		0.66	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(k)fluoranthene		0.73	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(a)pyrene		1.8	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(ghi)perylene		1.6	ug/L	0.10	S-8310	10/04/1995 347	541
Chrysene		1.9	ug/L	0.10	S-8310	10/04/1995 347	541
Dibenzo(a,h)anthracene		0.28	ug/L	0.10	S-8310	10/04/1995 347	541
Fluoranthene		32	ug/L	0.20	S-8310	10/04/1995 347	541
Fluorene		140	ug/L	0.40	S-8310	10/16/1995 347	545
Indeno(1,2,3-cd)pyrene		0.76	ug/L	0.10	S-8310	10/04/1995 347	541
Naphthalene		6,400	ug/L	1.0	S-8310	10/16/1995 347	545
Phenanthrene		90	ug/L	0.40	S-8310	10/16/1995 347	545
Pyrene		13	ug/L	0.20	S-8310	10/04/1995 347	541
Surr: 2-Fluorobiphenyl	M		%	n/a	S-8310	10/16/1995 347	545

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150985
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-703 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable		<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable		0.028	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total		0.14	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS							
Benzene		1,300	ug/L	0.50	S-8020	10/09/1995	2106
Ethylbenzene		1,100	ug/L	1.0	S-8020	10/09/1995	2106
To ne		23	ug/L	1.0	S-8020	10/09/1995	2106
Xy es, Total		450	ug/L	3.0	S-8020	10/09/1995	2106
Surr: Bromofluorobenzene		118.0	%	n/a	S-8020	10/09/1995	2106
PNA Extraction		09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene		220	ug/L	1.0	S-8310	10/04/1995 347	541
Acenaphthylene		430	ug/L	2.0	S-8310	10/04/1995 347	541
Anthracene		14	ug/L	0.20	S-8310	10/13/1995 347	544
Benzo(a)anthracene		1.2	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(b)fluoranthene		0.05	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(k)fluoranthene		0.12	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(a)pyrene		0.37	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(ghi)perylene		0.34	ug/L	0.10	S-8310	10/04/1995 347	541
Chrysene		0.51	ug/L	0.10	S-8310	10/04/1995 347	541
Dibenzo(a,h)anthracene		0.23	ug/L	0.10	S-8310	10/04/1995 347	541
Fluoranthene		19	ug/L	0.20	S-8310	10/04/1995 347	541
Fluorene		54	ug/L	0.40	S-8310	10/13/1995 347	544
Indeno(1,2,3-cd)pyrene		0.19	ug/L	0.10	S-8310	10/04/1995 347	541
Naphthalene		2,700	ug/L	1.0	S-8310	10/13/1995 347	544
Phenanthrene		58	ug/L	0.40	S-8310	10/13/1995 347	544
Pyrene		5.9	ug/L	0.20	S-8310	10/04/1995 347	541
Surr: 2-Fluorobiphenyl	M	136.7	%	n/a	S-8310	10/13/1995 347	544

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NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
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Tel: (414) 261-1660
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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150986
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-704 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable		<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable		0.062	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total		0.28	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS							
Benzene		1,100	ug/L	0.50	S-8020	10/07/1995	2096
Ethylbenzene		670	ug/L	1.0	S-8020	10/07/1995	2096
To[illegible]ne		380	ug/L	1.0	S-8020	10/07/1995	2096
Xy[illegible]es, Total		970	ug/L	3.0	S-8020	10/07/1995	2096
Surr: Bromofluorobenzene		116.0	%	n/a	S-8020	10/07/1995	2096
PNA Extraction		09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene		440	ug/L	1.0	S-8310	10/04/1995 347	541
Acenaphthylene		1,400	ug/L	2.0	S-8310	10/16/1995 347	545
Anthracene		20	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(a)anthracene		5.0	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(b)fluoranthene		2.7	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(k)fluoranthene		2.3	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(a)pyrene		3.1	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(ghi)perylene		<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Chrysene		3.5	ug/L	0.10	S-8310	10/04/1995 347	541
Dibenzo(a,h)anthracene		<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Fluoranthene		36	ug/L	0.20	S-8310	10/04/1995 347	541
Fluorene		120	ug/L	0.40	S-8310	10/04/1995 347	541
Indeno(1,2,3-cd)pyrene		<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Naphthalene		4,200	ug/L	1.0	S-8310	10/16/1995 347	545
Phenanthrene		120	ug/L	0.40	S-8310	10/04/1995 347	541
Pyrene		13	ug/L	0.20	S-8310	10/04/1995 347	541
Surr: 2-Fluorobiphenyl	M	DO	%	n/a	S-8310	10/16/1995 347	545

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150987
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-705 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable	<0.0050	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total	<0.0050	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS						
Benzene	<0.50	ug/L	0.50	S-8020	10/07/1995	2096
Ethylbenzene	<1.0	ug/L	1.0	S-8020	10/07/1995	2096
To ne	<1.0	ug/L	1.0	S-8020	10/07/1995	2096
Xy es, Total	<3.0	ug/L	3.0	S-8020	10/07/1995	2096
Surr: Bromofluorobenzene	105.5	%	n/a	S-8020	10/07/1995	2096
PNA Extraction	09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	<1.0	ug/L	1.0	S-8310	10/04/1995 347	541
Acenaphthylene	<2.0	ug/L	2.0	S-8310	10/04/1995 347	541
Anthracene	<0.20	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(a)anthracene	<0.050	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(b)fluoranthene	<0.050	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(k)fluoranthene	<0.050	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(a)pyrene	<0.20	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(ghi)perylene	<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Chrysene	<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Dibenzo(a,h)anthracene	<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Fluoranthene	<0.20	ug/L	0.20	S-8310	10/04/1995 347	541
Fluorene	<0.40	ug/L	0.40	S-8310	10/04/1995 347	541
Indeno(1,2,3-cd)pyrene	<0.10	ug/L	0.10	S-8310	10/04/1995 347	541
Naphthalene	<1.0	ug/L	1.0	S-8310	10/04/1995 347	541
Phenanthrene	<0.40	ug/L	0.40	S-8310	10/04/1995 347	541
Pyrene	<0.20	ug/L	0.20	S-8310	10/04/1995 347	541
Surr: 2-Fluorobiphenyl	87.8	%	n/a	S-8310	10/04/1995 347	541

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150988
Account No: 52450
Page 7

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-706 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Chloride		70	mg/L	5.0	E-325.2	10/20/1995	435
COD, Total		7,300	mg/L	5.0	E-410.4	10/17/1995	572
Cyanide, amenable		<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable		<0.0050	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total		<0.0050	mg/L	0.0050	M-4500CNE	10/09/1995	217
Oil & Grease		190	mg/L	5.0	M-5520B	10/10/1995	364
pH		7.63	units	n/a	E-150.1	09/28/1995	1058
Tot Organic Carbon		76	mg/L	1.0	E-415.2	10/03/1995	99
PVOC - AQUEOUS							
Benzene		31,000	ug/L	0.50	S-8020	10/09/1995	2104
Ethylbenzene		<2,500	ug/L	1.0	S-8020	10/09/1995	2104
Toluene		12,000	ug/L	1.0	S-8020	10/09/1995	2104
Xylenes, Total		7,700	ug/L	3.0	S-8020	10/09/1995	2104
Surr: Bromofluorobenzene		100.0	%	n/a	S-8020	10/09/1995	2104
PNA Extraction		09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene		9,400	ug/L	1.0	S-8310	10/13/1995 347	544
Acenaphthylene		82,000	ug/L	2.0	S-8310	10/13/1995 347	544
Anthracene		15,000	ug/L	0.20	S-8310	10/13/1995 347	544
Benzo(a)anthracene		11,000	ug/L	0.050	S-8310	10/13/1995 347	544
Benzo(b)fluoranthene		2,400	ug/L	0.050	S-8310	10/13/1995 347	544
Benzo(k)fluoranthene		980	ug/L	0.050	S-8310	10/13/1995 347	544
Benzo(a)pyrene		6,700	ug/L	0.20	S-8310	10/13/1995 347	544
Benzo(ghi)perylene		4,900	ug/L	0.10	S-8310	10/13/1995 347	544
Chrysene		5,400	ug/L	0.10	S-8310	10/13/1995 347	544
Dibenzo(a,h)anthracene	M	<10	ug/L	0.10	S-8310	10/13/1995 347	544
Fluoranthene		8,400	ug/L	0.20	S-8310	10/13/1995 347	544
Fluorene		57,000	ug/L	0.40	S-8310	10/13/1995 347	544
Indeno(1,2,3-cd)pyrene		2,700	ug/L	0.10	S-8310	10/13/1995 347	544
Naphthalene		166,000	ug/L	1.0	S-8310	10/13/1995 347	544
Phenanthrene		56,000	ug/L	0.40	S-8310	10/13/1995 347	544
Pyrene		9,700	ug/L	0.20	S-8310	10/13/1995 347	544
Surr: 2-Fluorobiphenyl	M	DO	%	n/a	S-8310	10/13/1995 347	544

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150989
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-707 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter		Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable		<0.0050	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable		0.058	mg/L	0.0050	M-4500CNI	10/05/1995 6	33
Cyanide, total		0.44	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS							
Benzene		1,200	ug/L	0.50	S-8020	10/09/1995	2104
Ethylbenzene		3,500	ug/L	1.0	S-8020	10/09/1995	2104
Toluene		130	ug/L	1.0	S-8020	10/09/1995	2104
Xylenes, Total		1,200	ug/L	3.0	S-8020	10/09/1995	2104
Surr: Bromofluorobenzene		111.0	%	n/a	S-8020	10/09/1995	2104
PNA Extraction		09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS							
Acenaphthene		240	ug/L	1.0	S-8310	10/16/1995 347	545
Acenaphthylene		1,400	ug/L	2.0	S-8310	10/16/1995 347	545
Anthracene		10	ug/L	0.20	S-8310	10/16/1995 347	545
Benzo(a)anthracene		0.40	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(b)fluoranthene		0.23	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(k)fluoranthene		0.19	ug/L	0.050	S-8310	10/04/1995 347	541
Benzo(a)pyrene		0.66	ug/L	0.20	S-8310	10/04/1995 347	541
Benzo(ghi)perylene		0.83	ug/L	0.10	S-8310	10/04/1995 347	541
Chrysene		0.64	ug/L	0.10	S-8310	10/04/1995 347	541
Dibenzo(a,h)anthracene		0.40	ug/L	0.10	S-8310	10/04/1995 347	541
Fluoranthene		21	ug/L	0.20	S-8310	10/04/1995 347	541
Fluorene		81	ug/L	0.40	S-8310	10/16/1995 347	545
Indeno(1,2,3-cd)pyrene		0.35	ug/L	0.10	S-8310	10/04/1995 347	541
Naphthalene		3,400	ug/L	1.0	S-8310	10/16/1995 347	545
Phenanthrene		60	ug/L	0.40	S-8310	10/16/1995 347	545
Pyrene		4.8	ug/L	0.20	S-8310	10/04/1995 347	541
Surr: 2-Fluorobiphenyl	M	DO	%	n/a	S-8310	10/16/1995 347	545

OCEAN GROUP

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150990
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: PZ-701 #1060
Recv'd On Ice

Date Taken: 09/26/1995 Date Received: 09/27/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	0.014	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable	<0.0050	mg/L	0.0050	M-4500CNI	10/05/1995	7 34
Cyanide, total	0.014	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS						
Benzene	2.2	ug/L	0.50	S-8020	10/08/1995	2099
Ethylbenzene	1.7	ug/L	1.0	S-8020	10/08/1995	2099
Toluene	6.6	ug/L	1.0	S-8020	10/08/1995	2099
Xylenes, Total	6.8	ug/L	3.0	S-8020	10/08/1995	2099
Surr: Bromofluorobenzene	95.0	%	n/a	S-8020	10/08/1995	2099
PNA Extraction	10/02/95			S-3510	10/02/1995	348
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	<1.0	ug/L	1.0	S-8310	10/04/1995	348 541
Acenaphthylene	<2.0	ug/L	2.0	S-8310	10/04/1995	348 541
Anthracene	0.25	ug/L	0.20	S-8310	10/04/1995	348 541
Benzo(a)anthracene	0.13	ug/L	0.050	S-8310	10/04/1995	348 541
Benzo(b)fluoranthene	<0.050	ug/L	0.050	S-8310	10/04/1995	348 541
Benzo(k)fluoranthene	<0.050	ug/L	0.050	S-8310	10/04/1995	348 541
Benzo(a)pyrene	<0.20	ug/L	0.20	S-8310	10/04/1995	348 541
Benzo(ghi)perylene	<0.10	ug/L	0.10	S-8310	10/04/1995	348 541
Chrysene	0.13	ug/L	0.10	S-8310	10/04/1995	348 541
Dibenzo(a,h)anthracene	<0.10	ug/L	0.10	S-8310	10/04/1995	348 541
Fluoranthene	0.70	ug/L	0.20	S-8310	10/04/1995	348 541
Fluorene	<0.40	ug/L	0.40	S-8310	10/04/1995	348 541
Indeno(1,2,3-cd)pyrene	<0.10	ug/L	0.10	S-8310	10/04/1995	348 541
Naphthalene	<1.0	ug/L	1.0	S-8310	10/04/1995	348 541
Phenanthrene	0.80	ug/L	0.40	S-8310	10/04/1995	348 541
Pyrene	0.77	ug/L	0.20	S-8310	10/04/1995	348 541
Surr: 2-Fluorobiphenyl	86.2	%	n/a	S-8310	10/04/1995	348 541

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WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150991
Account No: 52450
Page 10

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: MW-799 #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
Cyanide, amenable	0.020	mg/L	0.0050	M-4500CNG	10/09/1995	114
Cyanide, dissociable	0.041	mg/L	0.0050	M-4500CNI	10/05/1995 7	34
Cyanide, total	0.36	mg/L	0.0050	M-4500CNE	10/09/1995	217
PVOC - AQUEOUS						
Benzene	1,100	ug/L	0.50	S-8020	10/09/1995	2104
Ethylbenzene	610	ug/L	1.0	S-8020	10/09/1995	2104
To[illegible]ne	360	ug/L	1.0	S-8020	10/09/1995	2104
Xy[illegible]s, Total	900	ug/L	3.0	S-8020	10/09/1995	2104
Surr: Bromofluorobenzene	110.0	%	n/a	S-8020	10/09/1995	2104
PNA Extraction	09/29/95			S-3510	09/29/1995 347	
PNA METHOD 8310 - AQUEOUS						
Acenaphthene	420	ug/L	1.0	S-8310	10/16/1995 347	545
Acenaphthylene	1,100	ug/L	2.0	S-8310	10/16/1995 347	545
Anthracene	64	ug/L	0.20	S-8310	10/16/1995 347	545
Benzo(a)anthracene	46	ug/L	0.050	S-8310	10/16/1995 347	545
Benzo(b)fluoranthene	14	ug/L	0.050	S-8310	10/16/1995 347	545
Benzo(k)fluoranthene	15	ug/L	0.050	S-8310	10/16/1995 347	545
Benzo(a)pyrene	38	ug/L	0.20	S-8310	10/16/1995 347	545
Benzo(ghi)perylene	31	ug/L	0.10	S-8310	10/16/1995 347	545
Chrysene	31	ug/L	0.10	S-8310	10/16/1995 347	545
Dibenzo(a,h)anthracene	3.2	ug/L	0.10	S-8310	10/16/1995 347	545
Fluoranthene	210	ug/L	0.20	S-8310	10/16/1995 347	545
Fluorene	170	ug/L	0.40	S-8310	10/16/1995 347	545
Indeno(1,2,3-cd)pyrene	20	ug/L	0.10	S-8310	10/16/1995 347	545
Naphthalene	3,100	ug/L	1.0	S-8310	10/16/1995 347	545
Phenanthrene	310	ug/L	0.40	S-8310	10/16/1995 347	545
Pyrene	83	ug/L	0.20	S-8310	10/16/1995 347	545
Surr: 2-Fluorobiphenyl M	DO	%	n/a	S-8310	10/16/1995 347	545

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ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/20/1995
Job No: 95.07272
Sample No: 150992
Account No: 52450

JOB DESCRIPTION: #1060 WPSC-Sheb II
PROJECT DESCRIPTION: Groundwater Analysis
SAMPLE DESCRIPTION: Trip Blk #1060
Recv'd On Ice

Date Taken: 09/25/1995 Date Received: 09/27/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
PVOC - AQUEOUS						
Benzene	<0.50	ug/L	0.50	S-8020	10/08/1995	2099
Ethylbenzene	<1.0	ug/L	1.0	S-8020	10/08/1995	2099
Toluene	<1.0	ug/L	1.0	S-8020	10/08/1995	2099
Xylenes, Total	<3.0	ug/L	3.0	S-8020	10/08/1995	2099
Surr: Bromofluorobenzene	91.0	%	n/a	S-8020	10/08/1995	2099

OCEAN GROUP

CHAIN OF CUSTODY RECORD

9507272

Sample Collectors(s)/Signature(s): Steph Van Dyke / Stephanie A Van Dyke
Rebecca J. Koepke / Rebecca J. Koepke

NATURAL RESOURCE TECHNOLOGY, INC.
PEWAUKEE, WISCONSIN

Laboratory Samples are Being Submitted To: NET

Quote Number/Addendum Number ______ Attached: YES __ NO __

Site Name: WPSC - SHEB II

Site Address: ~~WATER~~ ~~Ave~~ Street CAMPMARINA

Send Report To:
Project Manager: Tim Mueller Project Number: 1060
Natural Resource Technology, Inc.
23713 W. Paul Road B. Koepke Task Number: ______
Pewaukee, WI 53072
Telephone (414) 523-9000 Fax (414) 523-9001

Temperature of temperature blank: rec'd on ice
If sample(s) were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

I hereby certify that I received, properly handled, and maintained custody of these samples as noted below:

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Rebecca J Koepke	09/27/95 1625	Jerry Schmitz	9-27-95 1625
Jerry Schmitz	9-27-95 1800	Ben Mork	9/28 1030
		Lavrne Kurz 9/28/95	

Analytical Method / Number

Lab Use Only

Field ID Number	Date Collected	Time Collected	Sample Media	Sample Device	Location / Description	PID Reading	Field Comments	Preserv. Type	# of Cont.	BETX	PAH	CYANIDE (*1)	CHEMICAL PROFILE (*2)	[redacted]	[redacted]		Lab ID Number	Sample Conditions @ Laboratory
MW-701	09/25/95		GW	BAILER	WELL 701		Sheen	Varied	7	X	X	X						
MW-702	↓		↓	↓	↓ 702		Sheen	↓	12	X	X	X	X					
MW-703	↓		↓	↓	↓ 703			↓	7	X	X	X						
MW-704	↓		↓	↓	↓ 704		Sheen	↓	7	X	X	X						
MW-705	↓		↓	↓	↓ 705			↓	7	X	X	X						
MW-706	↓		↓	↓	↓ 706		CONTAINS COAL TAR!!	↓	12	X	X	X	X					
MW-707	↓		↓	↓	↓ 707		Sheen	↓	7	X	X	X						
PZ-701	09/26/95		↓	↓	PZ-701			↓	7	X	X	X						
MW-799	09/25/95		↓	↓	↓ 799		Sheen	↓	7	X	X	X						
TRIP BLANK								HCL	2	X								

SPECIAL INSTRUCTIONS
(*1) TOTAL CYANIDE / CYANIDE AMENABLE TO CHLORINATION / WEAK ACID DISSOCIABLE CYANIDE
(*2) TOC / COD / OIL + GREASE / CHLORIDES / pH

Laboratory shall retain samples for 30 days after issuing analytical report unless indicated otherwise below:
__ Return __ Other ______

Appendix D.3

Tar Fingerprint Analytical Report

META Environmental, Inc.

49 Clarendon Street
Watertown, MA 02172
TEL: (617) 923-4662
FAX: (617) 923-4610

OCT 26 19

October 21, 1995

Ms. Rebecca J. Koepke
Natural Resources Technology, Inc.
23713 W. Paul Road
Pewaukee, WI 53072

RE: Results of Hydrocarbon Fingerprinting Study

Dear Ms. Koepke:

META Environmental, Inc. (META) has completed the analysis of one liquid sample, MW-706, for hydrocarbon fingerprint (NRT Project No. 1060). When received, the sample consisted of three 40 mL vials, each containing some water, some unknown liquid, and some sediment. The vials were centrifuged, and then as much of the water and sediment was removed as possible. The remaining liquid in the vials was combined and transferred to a clean jar prior to subsampling. The unknown liquid was more dense than water, black, with a strong chemical odor. A small portion of the sample was quantitatively diluted with dichloromethane (DCM) and then analyzed by gas chromatography with flame ionization detection (GC/FID). The chromatograms for sample MW-706 and for a mixture of MGP tars are attached to this letter report.

The sample fingerprint visually matched that of the MGP tar mixture very well. The sample chromatogram was dominated by monocyclic and polycyclic aromatic hydrocarbons in the characteristic pattern of pyrogenic sources, particularly MGP tars.

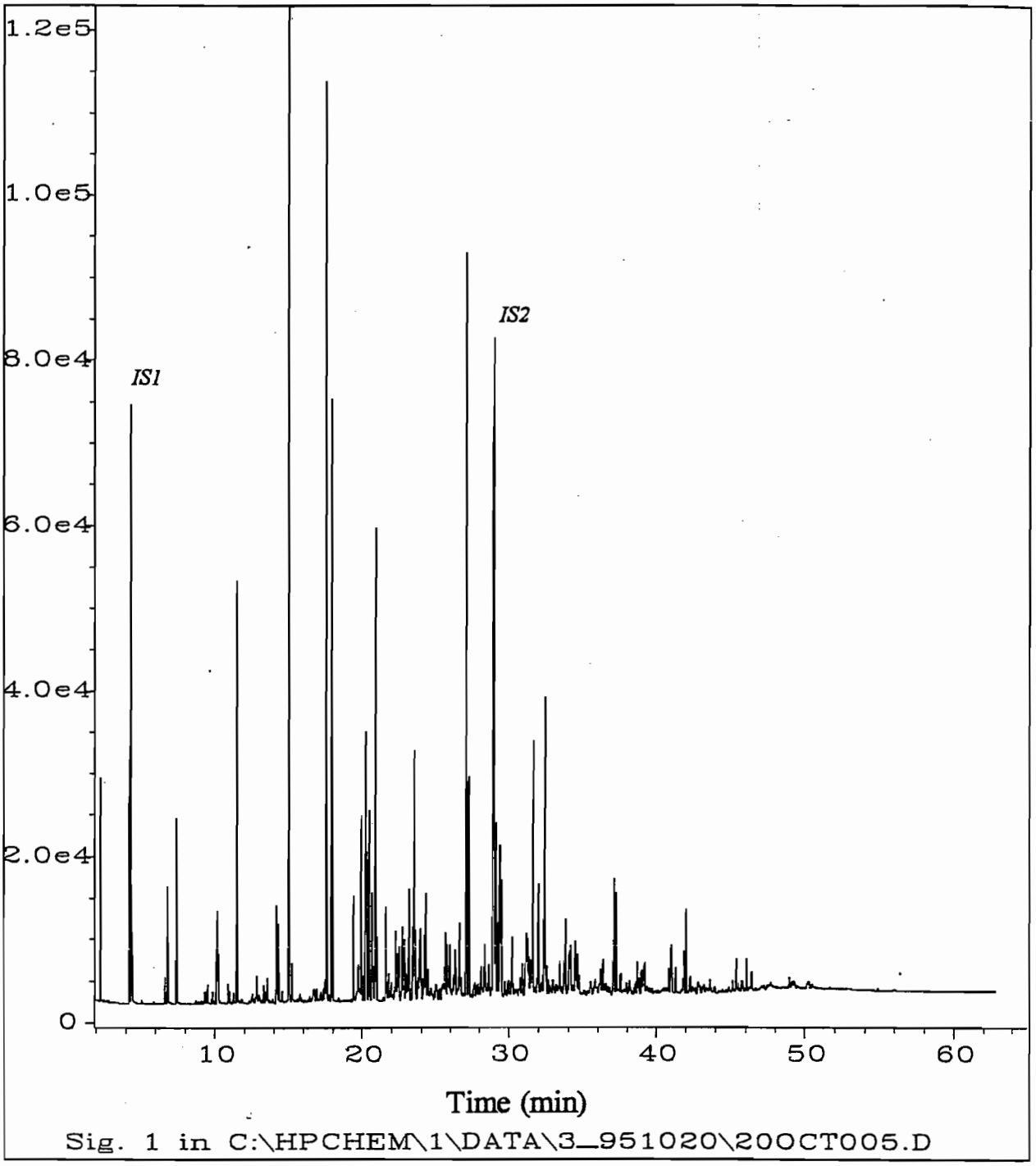
If you have any questions regarding these results, or would like to request additional analyses, please do not hesitate to call me.

Sincerely,

David M. Mauro

David M. Mauro
V. President

GC/FID Fingerprint

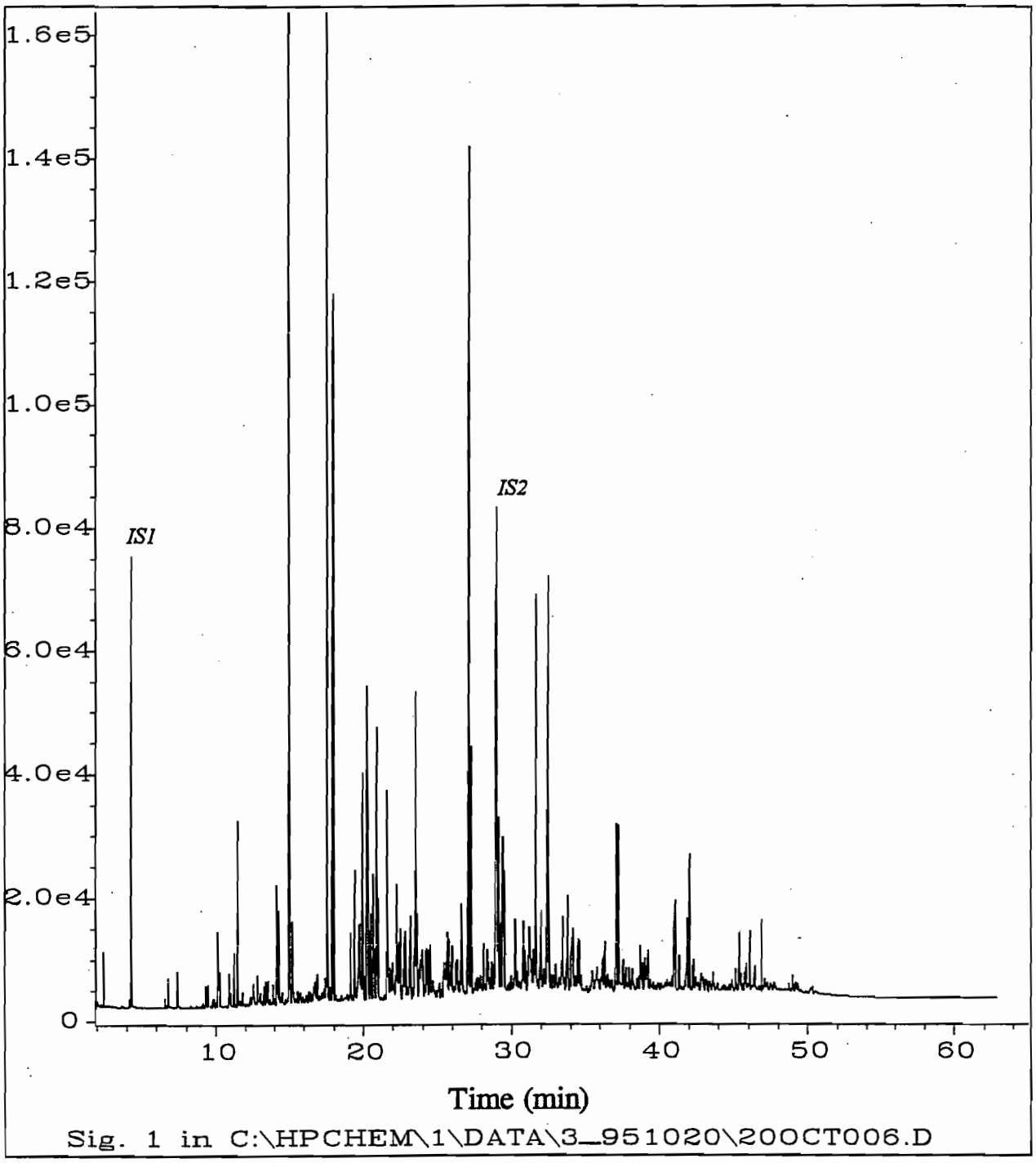


Field ID:	**MW-706**
Laboratory ID:	NR950824-01
Method:	MET4007S

N05002, DMM
10/21/95

META

GC/FID Fingerprint



Field ID:	**EPRI MGP Tar Mix**
Laboratory ID:	CT941216-02JS B
	(Base/Neutral Fraction)
Method:	MET4007S

N05002, DMM
10/21/95

META

META ENVIRONMENTAL SAMPLE RECEIPT

Lab ID	Field ID	Matrix	Analysis	Date Sampled	Date Received	Client/ Project	Container/ Storage	Comments/Logger
NR950824-01abc	MW-706	Tar/Water	Fingerprint	08/15/95	08/24/95	N05001-60	3 x 40ml VOA in ZipLoc	Ref #2

the water was removed from samples by pipet & tars were transferred to a 250 ml Teflon jar & composited

~~all 3 samples transferred to 4 oz jar & composited~~

10/20/95

8/24/95

8/25/95

CHAIN OF CUSTODY RECORD

Sample Collectors(s)/Signature(s): REBECCA J. KOEPKE

NATURAL RESOURCE TECHNOLOGY, INC.
PEWAUKEE, WISCONSIN

Laboratory Samples are Being Submitted To: META ENVIRONMENTAL

Quote Number/Addendum Number _____ Attached: YES __ NO __

Site Name: LUPSC - SHEBOYGAN II (1060)

Site Address: CAMPMARINA
WATER STREET, SHEBOYGAN

Send Report To:
Project Manager: TIM MUELLER / BECCY KOEPKE
Natural Resource Technology, Inc.
23713 W. Paul Road
Pewaukee, WI 53072
Telephone (414) 523-9000 Fax (414) 523-9001

Project Number: 1060

Task Number: _____

Temperature of temperature blank: Room Temp

If sample(s) were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

I hereby certify that I received, properly handled, and maintained custody of these samples as noted below:

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Rebecca J. Koepke	08/16/95 0810	FEDERAL EXPRESS # 6501 9031 03	
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
			8/24/95 1010

Field ID Number	Date Collected	Time Collected	Sample Media	Sample Device	Location / Description	PID Reading	Field Comments	Preserv. Type	# of Cont.	Analytical Method / Numbers: Hydrocarbon Pattern by Gas Chromatography	Lab ID Number	Lab Use Only: Sample Conditions @ Laboratory
MW-706	08/15/95		GW	BAILER	MW-706		#COAL TAR	HCL	3	X	NR950824-01abc	

SPECIAL INSTRUCTIONS

Laboratory shall retain samples for 30 days after issuing analytical report unless indicated otherwise below:
___ Return ___ Other _____

PT 1 - ORIGINAL-WHITE PT 2 - LABORATORY COPY-YELLOW PT 3 - NRT FIELD COPY-PINK

This form is based on the WDNR LUST Program Chain of Custody Record (Form 4400-151)

W:\FORMS\CUSTODY.CHN

APPENDIX E

HYDRAULIC GRADIENT

AND AVERAGE LINEAR VELOCITY CALCULATIONS

SITE:	**WPSC Sheboygan II**
PROJECT:	**Phase II Site Investigation**
PROJECT #:	**1060**
PREPARED BY:	**Eric P. Kovatch**
CHECKED BY:	**Rebecca J. Koepke**
PAGE:	**1 of 1**

hydraulic gradient = dh/dL dh = change in head & dL = change in distance

HORIZONTAL HYDRAULIC GRADIENT CALCULATIONS

August 15, 1995

dh = 4 feet
dL = 82 feet

$\frac{4 \text{ feet}}{82 \text{ feet}} = 4.8 \times 10^{-2}$ west-southwest

October 20, 1995

dh = 6 feet
dL = 96 feet

$\frac{6 \text{ feet}}{96 \text{ feet}} = 6.3 \times 10^{-2}$ west-southwest

- The gradient lines are shown on the attached figures and run from approximately well MW-706 down towards piezometer PZ-701.

VERTICAL HYDRAULIC GRADIENT CALCULATIONS

MW-701 and PZ-701

August 14, 1995

dh = 7.38 feet
dL = 22.52 feet

$\frac{7.38 \text{ feet}}{22.52 \text{ feet}} = 3.3 \times 10^{-1}$ downward

September 25, 1995

dh = 10.30 feet
dL = 22.52 feet

$\frac{10.30 \text{ feet}}{22.52 \text{ feet}} = 4.6 \times 10^{-1}$ downward

October 20, 1995

dh = 9.14 feet
dL = 22.52 feet

$\frac{9.14 \text{ feet}}{22.52 \text{ feet}} = 4.1 \times 10^{-1}$ downward

- The dh values for MW-701 and PZ-701 are simply the difference for the water level elevations in the wells on the given date, presented in Table 4-1. The middle of the screen for well MW-701 is at approximately 580.11 feet MSL (588.51'-13.40'+5'). The middle of the screen for piezometer PZ-701 is at approximately 557.59 feet MSL (588.89'-33.80'+2.5'). Therefore, dL = 22.52' (580.11'-557.59').

Average Linear Velocity Calculations
WPSC Former Sheboygan II MGP Site

Shallow monitoring well value calculations:

Hydraulic Conductivity Range [A] (ft/min)	Hydraulic Gradient Range [B] (ft/ft)	Effective Porosity Range [C]
3e-04	0.06	15%
3e-05	0.05	25%

Range of Average Linear Velocities

Calculated Values	Feet/Minute	Feet/Year
(3e-04 x 0.06) / 15%	1.2e-04	63
(3e-05 x 0.05) / 25%	6.0e-06	3
(3e-04 x 0.06) / 25%	7.2e-05	38
(3e-05 x 0.05) / 15%	1.0e-05	5
(3e-04 x 0.05) / 25%	6.0e-05	32
(3e-05 x 6e-02) / 15%	1.2e-05	6

Notes:

A) Hydraulic Conductivity values obtained from slug test data and results.

B) Hydraulic Gradient values obtained from calculations of horizontal and vertical gradients.

C) Effective porosity values based on grain size analysis results and published estimates from both Fetter, 1988, and from Freeze and Cherry, 1979.

APPENDIX F

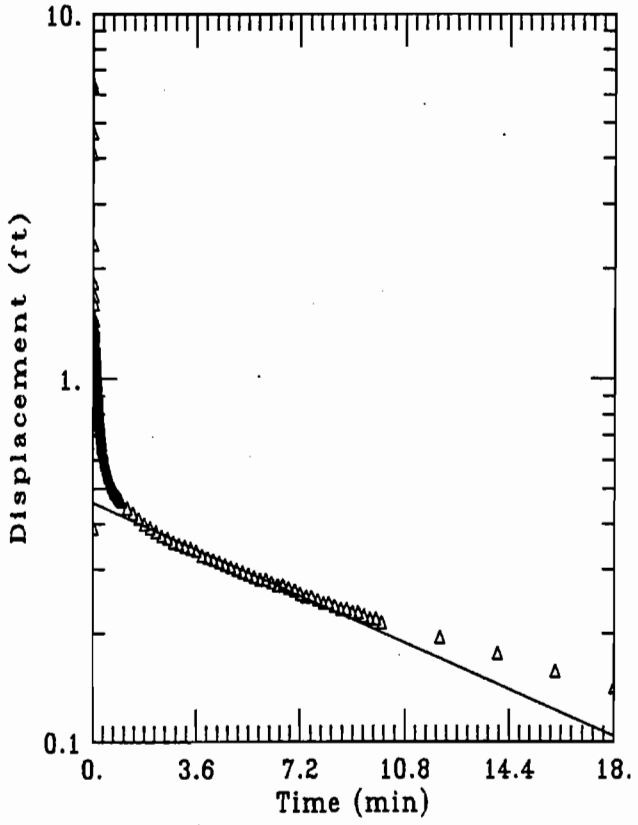
SLUG TEST PLOTS AND TEST FIELD DATA

Appendix F.1

Slug Test Plots

Natural Resource Tech.	Client: WPSC
Project No.: 1060	Location: Sheboygan II

MW-701



DATA SET:
mw701.dat
11/08/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
8/14/95
TEST WELL:
MW-701
OBS. WELL:
MW-701

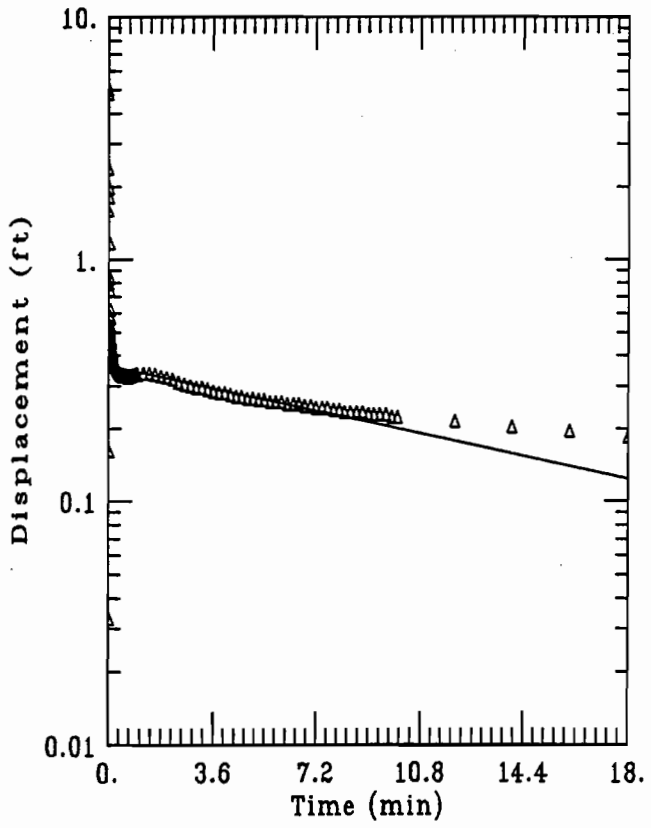
ESTIMATED PARAMETERS:
K = 6.2116E-05 ft/min
y0 = 0.4579 ft

TEST DATA:
H0 = 6.406 ft
rc = 0.0833 ft
rw = 0.3438 ft
L = 10. ft
b = 9.46 ft
H = 7.59 ft

Slug Test Plot for Well MW-701

Natural Resource Tech.	Client: WPSC
Project No.: 1060	Location: Sheboygan II

MW-702



DATA SET:
mw702.dat
11/08/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
8/14/95
TEST WELL:
MW-702
OBS. WELL:
MW-702

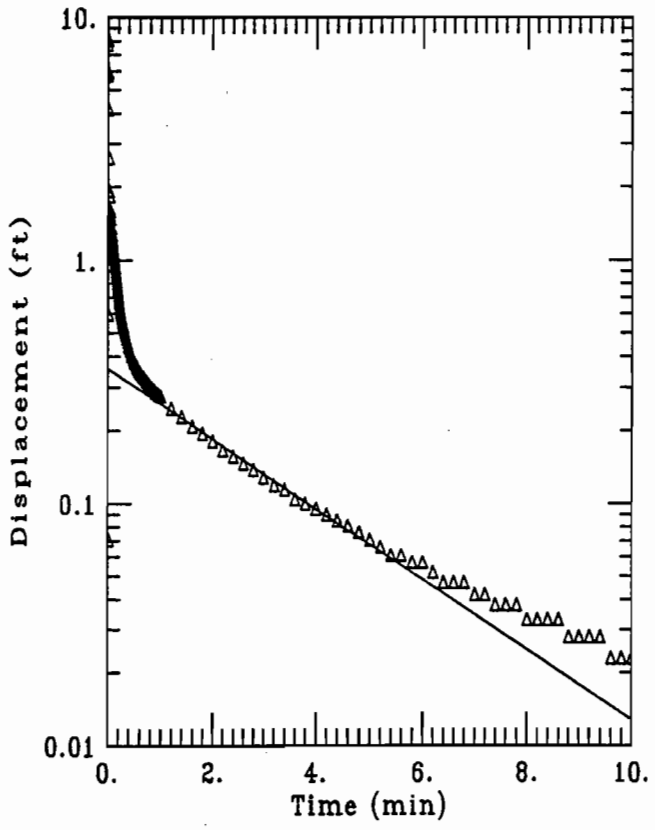
ESTIMATED PARAMETERS:
K = 4.5069E-05 ft/min
y0 = 0.3618 ft

TEST DATA:
H0 = 5.066 ft
rc = 0.0833 ft
rw = 0.3438 ft
L = 10. ft
b = 11.23 ft
H = 8.24 ft

Slug Test Plot for Well MW-702

Natural Resource Tech.	Client: WPSC
Project No.: 1060	Location: Sheboygan II

MW-703



DATA SET:
mw703.dat
11/08/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
8/14/95
TEST WELL:
MW-703
OBS. WELL:
MW-703

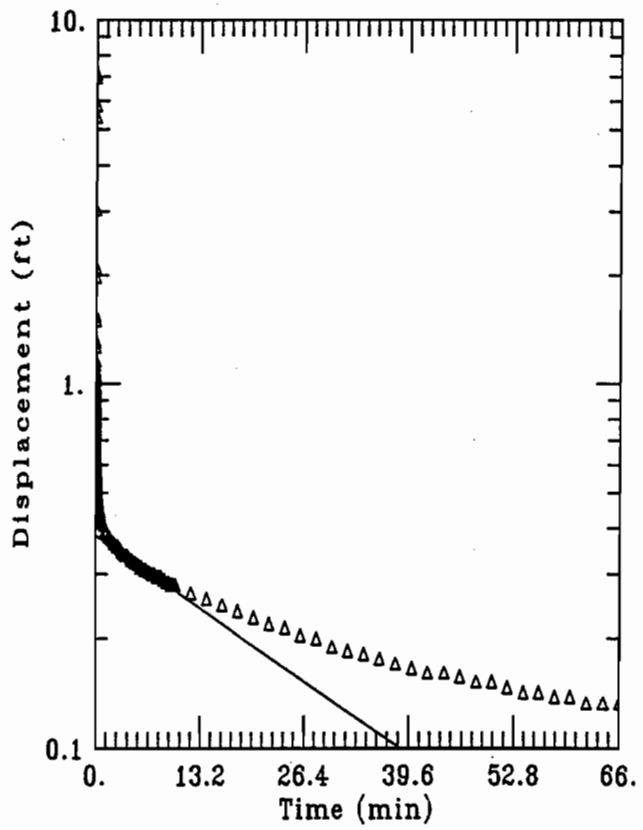
ESTIMATED PARAMETERS:
K = 0.0002507 ft/min
y0 = 0.3574 ft

TEST DATA:
H0 = 8.067 ft
rc = 0.0833 ft
rw = 0.3438 ft
L = 10. ft
b = 9.17 ft
H = 7.47 ft

Slug Test Plot for Well MW-703

Natural Resource Tech.	Client: WPSC
Project No.: 1060	Location: Sheboygan II

MW-705



DATA SET:
mw705.dat
11/08/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
8/14/95
TEST WELL:
MW-705
OBS. WELL:
MW-705

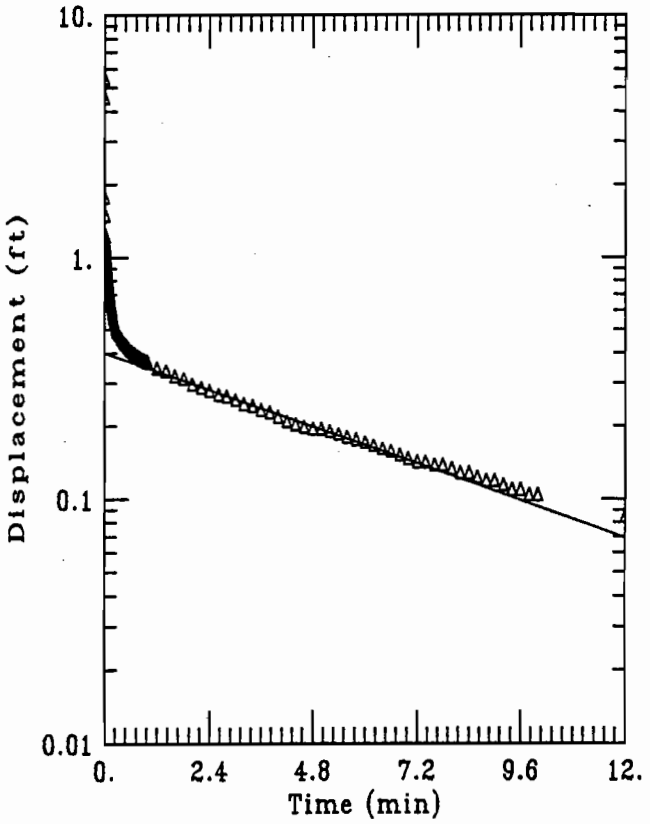
ESTIMATED PARAMETERS:
K = 2.4509E-05 ft/min
y0 = 0.3808 ft

TEST DATA:
H0 = 7.143 ft
rc = 0.0833 ft
rw = 0.3438 ft
L = 10. ft
b = 8.96 ft
H = 6.19 ft

Slug Test Plot for Well MW-705

Natural Resource Tech.	Client: WPSC
Project No.: 1060	Location: Sheboygan II

MW-707



DATA SET:
mw707.dat
11/08/95

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
8/14/95
TEST WELL:
MW-707
OBS. WELL:
MW-707

ESTIMATED PARAMETERS:
K = 0.0001004 ft/min
y0 = 0.3994 ft

TEST DATA:
H0 = 5.471 ft
rc = 0.0833 ft
rw = 0.3438 ft
L = 10. ft
b = 8.6 ft
H = 5.66 ft

Slug Test Plot for Well MW-707

Appendix F.2

Test Field Data

MW-701 - DATA LOGGER OUTPUT

SE1000C
Environmental Logger
08/21 14:48

Unit# 02130 Test 2

Setups: INPUT 1

Type	Level (F)
Mode	TOC
I.D.	10701
Reference	0.000
Linearity	0.080
Scale factor	15.080
Offset	0.050
Delay mSEC	50.000

Step 0 08/14 15:55:58

Elapsed Time INPUT 1

MINUTES	FEET
0.0000	2.900
0.0033	4.708
0.0066	6.306
0.0100	6.406
0.0133	4.147
0.0166	1.038
0.0200	0.390
0.0233	1.405
0.0266	2.328
0.0300	1.824
0.0333	1.209
0.0366	1.367
0.0400	1.681
0.0433	1.600
0.0466	1.390
0.0500	1.381
0.0533	1.462
0.0566	1.443
0.0600	1.371
0.0633	1.348
0.0666	1.352
0.0700	1.338
0.0733	1.305
0.0766	1.286
0.0800	1.271
0.0833	1.262
0.0866	1.238
0.0900	1.224
0.0933	1.205
0.0966	1.190
0.1000	1.176
0.1033	1.162
0.1066	1.143
0.1100	1.128
0.1133	1.114
0.1166	1.100
0.1200	1.086
0.1233	1.071
0.1266	1.057
0.1300	1.047
0.1333	1.033
0.1366	1.019
0.1400	1.009
0.1433	0.995
0.1466	0.986
0.1500	0.971
0.1533	0.962
0.1566	0.947
0.1600	0.938
0.1633	0.928
0.1666	0.919
0.1700	0.909
0.1733	0.895
0.1766	0.890
0.1800	0.876
0.1833	0.866
0.1866	0.862
0.1900	0.852
0.1933	0.843
0.1966	0.833
0.2000	0.828
0.2033	0.819
0.2066	0.809
0.2100	0.805
0.2133	0.795
0.2166	0.790
0.2200	0.781
0.2233	0.776
0.2266	0.766
0.2300	0.762
0.2333	0.757
0.2366	0.752
0.2400	0.743
0.2433	0.738
0.2466	0.733
0.2500	0.728
0.2533	0.724
0.2566	0.719
0.2600	0.714
0.2633	0.709
0.2666	0.705
0.2700	0.700
0.2733	0.700
0.2766	0.695
0.2800	0.690
0.2833	0.686
0.2866	0.686
0.2900	0.681
0.2933	0.676
0.2966	0.676
0.3000	0.671
0.3033	0.666
0.3066	0.662
0.3100	0.657
0.3133	0.657
0.3166	0.657
0.3200	0.657
0.3233	0.652
0.3266	0.647
0.3300	0.643
0.3333	0.643
0.3500	0.633
0.3666	0.624
0.3833	0.614
0.4000	0.605
0.4166	0.595
0.4333	0.585
0.4500	0.581
0.4666	0.571
0.4833	0.566
0.5000	0.562
0.5166	0.552
0.5333	0.547
0.5500	0.543
0.5666	0.538

MW-701 - DATA LOGGER OUTPUT

MINUTES	FEET
0.5833	0.533
0.6000	0.528
0.6166	0.524
0.6333	0.519
0.6500	0.514
0.6666	0.509
0.6833	0.504
0.7000	0.504
0.7166	0.500
0.7333	0.500
0.7500	0.495
0.7666	0.490
0.7833	0.490
0.8000	0.485
0.8166	0.485
0.8333	0.481
0.8500	0.481
0.8666	0.476
0.8833	0.476
0.9000	0.476
0.9166	0.471
0.9333	0.471
0.9500	0.466
0.9666	0.466
0.9833	0.466
1.0000	0.462
1.2000	0.443
1.4000	0.428
1.6000	0.414
1.8000	0.400
2.0000	0.390
2.2000	0.381
2.4000	0.371
2.6000	0.366
2.8000	0.357
3.0000	0.352
3.2000	0.347
3.4000	0.343
3.6000	0.338
3.8000	0.328
4.0000	0.323
4.2000	0.319
4.4000	0.314
4.6000	0.309
4.8000	0.304
5.0000	0.300
5.2000	0.295
5.4000	0.290
5.6000	0.285
5.8000	0.281
6.0000	0.281
6.2000	0.276
6.4000	0.271
6.6000	0.271
6.8000	0.266
7.0000	0.262
7.2000	0.257
7.4000	0.252
7.6000	0.252
7.8000	0.247
8.0000	0.242
8.2000	0.242
8.4000	0.238
8.6000	0.233
8.8000	0.233
9.0000	0.228
9.2000	0.228
9.4000	0.223
9.6000	0.219
9.8000	0.219
10.0000	0.214
12.0000	0.195
14.0000	0.176
16.0000	0.157
18.0000	0.142

MW-702 - DATA LOGGER OUTPUT

SE1000C
Environmental Logger
08/21 15:02

Unit# 02130 Test 5

Setups: INPUT 1

Type	Level (F)
Mode	TOC
I.D.	00702
Reference	0.000
Linearity	0.080
Scale factor	15.080
Offset	0.050
Delay mSEC	50.000

Step 0 08/15 08:46:47

Elapsed Time INPUT 1

MINUTES	FEET
0.0000	0.176
0.0033	2.382
0.0066	4.847
0.0100	5.066
0.0133	1.600
0.0166	-1.096
0.0200	0.033
0.0233	1.977
0.0266	1.815
0.0300	0.509
0.0333	0.162
0.0366	0.795
0.0400	1.167
0.0433	0.843
0.0466	0.476
0.0500	0.533
0.0533	0.748
0.0566	0.752
0.0600	0.586
0.0633	0.519
0.0666	0.576
0.0700	0.619
0.0733	0.571
0.0766	0.519
0.0800	0.514
0.0833	0.528
0.0866	0.524
0.0900	0.500
0.0933	0.486
0.0966	0.486
0.1000	0.486
0.1033	0.476
0.1066	0.467
0.1100	0.457
0.1133	0.457
0.1166	0.452
0.1200	0.447
0.1233	0.443
0.1266	0.438
0.1300	0.433
0.1333	0.428
0.1366	0.424
0.1400	0.419
0.1433	0.419
0.1466	0.414
0.1500	0.414
0.1533	0.409
0.1566	0.405
0.1600	0.405
0.1633	0.400
0.1666	0.400
0.1700	0.395
0.1733	0.395
0.1766	0.390
0.1800	0.390
0.1833	0.385
0.1866	0.385
0.1900	0.385
0.1933	0.381
0.1966	0.381
0.2000	0.376
0.2033	0.376
0.2066	0.376
0.2100	0.371
0.2133	0.371
0.2166	0.371
0.2200	0.371
0.2233	0.366
0.2266	0.366
0.2300	0.366
0.2333	0.366
0.2366	0.362
0.2400	0.362
0.2433	0.362
0.2466	0.362
0.2500	0.357
0.2533	0.357
0.2566	0.357
0.2600	0.357
0.2633	0.357
0.2666	0.352
0.2700	0.352
0.2733	0.352
0.2766	0.352
0.2800	0.352
0.2833	0.352
0.2866	0.347
0.2900	0.347
0.2933	0.347
0.2966	0.347
0.3000	0.347
0.3033	0.347
0.3066	0.347
0.3100	0.343
0.3133	0.343
0.3166	0.343
0.3200	0.343
0.3233	0.343
0.3266	0.343
0.3300	0.343
0.3333	0.343
0.3500	0.343
0.3666	0.338
0.3833	0.333
0.4000	0.333
0.4166	0.333
0.4333	0.333
0.4500	0.328
0.4666	0.328
0.4833	0.328
0.5000	0.328
0.5166	0.328
0.5333	0.328
0.5500	0.328
0.5666	0.328

MW-702 - DATA LOGGER OUTPUT

MINUTES	FEET
0.5833	0.328
0.6000	0.328
0.6166	0.328
0.6333	0.328
0.6500	0.324
0.6666	0.328
0.6833	0.328
0.7000	0.324
0.7166	0.328
0.7333	0.328
0.7500	0.328
0.7666	0.328
0.7833	0.328
0.8000	0.328
0.8166	0.333
0.8333	0.333
0.8500	0.333
0.8666	0.333
0.8833	0.333
0.9000	0.333
0.9166	0.333
0.9333	0.333
0.9500	0.338
0.9666	0.333
0.9833	0.333
1.0000	0.333
1.2000	0.338
1.4000	0.338
1.6000	0.333
1.8000	0.328
2.0000	0.324
2.2000	0.319
2.4000	0.309
2.6000	0.304
2.8000	0.300
3.0000	0.295
3.2000	0.295
3.4000	0.290
3.6000	0.285
3.8000	0.281
4.0000	0.281
4.2000	0.276
4.4000	0.271
4.6000	0.271
4.8000	0.266
5.0000	0.266
5.2000	0.262
5.4000	0.262
5.6000	0.257
5.8000	0.257
6.0000	0.257
6.2000	0.252
6.4000	0.252
6.6000	0.252
6.8000	0.247
7.0000	0.247
7.2000	0.243
7.4000	0.243
7.6000	0.243
7.8000	0.238
8.0000	0.238
8.2000	0.233
8.4000	0.233
8.6000	0.233
8.8000	0.233
9.0000	0.228
9.2000	0.228
9.4000	0.228
9.6000	0.228
9.8000	0.223
10.0000	0.223
12.0000	0.214
14.0000	0.204
16.0000	0.195
18.0000	0.185

MW-703 - DATA LOGGER OUTPUT

SE1000C
Environmental Logger
08/21 14:54

Unit# 02130 Test 3

Setups: INPUT 1

Type	Level (F)
Mode	TOC
I.D.	00703
Reference	0.000
Linearity	0.080
Scale factor	15.080
Offset	0.050
Delay mSEC	50.000

Step 0 08/14 17:40:31

Elapsed Time INPUT 1

MINUTES	FEET
0.0000	3.348
0.0033	5.770
0.0066	7.734
0.0100	8.067
0.0133	5.932
0.0166	4.162
0.0200	0.595
0.0233	0.071
0.0266	1.929
0.0300	2.624
0.0333	1.643
0.0366	1.067
0.0400	1.534
0.0433	1.838
0.0466	1.595
0.0500	1.333
0.0533	1.410
0.0566	1.534
0.0600	1.476
0.0633	1.362
0.0666	1.348
0.0700	1.381
0.0733	1.362
0.0766	1.310
0.0800	1.281
0.0833	1.276
0.0866	1.262
0.0900	1.233
0.0933	1.210
0.0966	1.191
0.1000	1.176
0.1033	1.157
0.1066	1.133
0.1100	1.119
0.1133	1.100
0.1166	1.086
0.1200	1.067
0.1233	1.048
0.1266	1.033
0.1300	1.019
0.1333	1.000
0.1366	0.986
0.1400	0.971
0.1433	0.952
0.1466	0.938
0.1500	0.924
0.1533	0.910
0.1566	0.895
0.1600	0.881
0.1633	0.867
0.1666	0.852
0.1700	0.838
0.1733	0.829
0.1766	0.814
0.1800	0.800
0.1833	0.790
0.1866	0.776
0.1900	0.767
0.1933	0.752
0.1966	0.743
0.2000	0.729
0.2033	0.719
0.2066	0.709
0.2100	0.700
0.2133	0.690
0.2166	0.681
0.2200	0.671
0.2233	0.662
0.2266	0.652
0.2300	0.643
0.2333	0.638
0.2366	0.628
0.2400	0.624
0.2433	0.614
0.2466	0.609
0.2500	0.600
0.2533	0.595
0.2566	0.590
0.2600	0.586
0.2633	0.581
0.2666	0.576
0.2700	0.567
0.2733	0.562
0.2766	0.557
0.2800	0.552
0.2833	0.547
0.2866	0.543
0.2900	0.538
0.2933	0.538
0.2966	0.533
0.3000	0.528
0.3033	0.524
0.3066	0.519
0.3100	0.514
0.3133	0.514
0.3166	0.509
0.3200	0.505
0.3233	0.500
0.3266	0.500
0.3300	0.495
0.3333	0.490
0.3500	0.476
0.3666	0.462
0.3833	0.447
0.4000	0.438
0.4166	0.424
0.4333	0.414
0.4500	0.405
0.4666	0.395
0.4833	0.390
0.5000	0.381
0.5166	0.376
0.5333	0.371
0.5500	0.362
0.5666	0.357

MW-703 - DATA LOGGER OUTPUT

MINUTES	FEET
0.5833	0.352
0.6000	0.347
0.6166	0.343
0.6333	0.338
0.6500	0.333
0.6666	0.333
0.6833	0.328
0.7000	0.324
0.7166	0.319
0.7333	0.319
0.7500	0.314
0.7666	0.309
0.7833	0.309
0.8000	0.304
0.8166	0.300
0.8333	0.300
0.8500	0.295
0.8666	0.295
0.8833	0.290
0.9000	0.285
0.9166	0.285
0.9333	0.285
0.9500	0.281
0.9666	0.281
0.9833	0.276
1.0000	0.276
1.2000	0.247
1.4000	0.228
1.6000	0.209
1.8000	0.195
2.0000	0.181
2.2000	0.166
2.4000	0.157
2.6000	0.147
2.8000	0.138
3.0000	0.128
3.2000	0.119
3.4000	0.114
3.6000	0.104
3.8000	0.100
4.0000	0.095
4.2000	0.090
4.4000	0.085
4.6000	0.081
4.8000	0.076
5.0000	0.071
5.2000	0.066
5.4000	0.061
5.6000	0.061
5.8000	0.057
6.0000	0.057
6.2000	0.052
6.4000	0.047
6.6000	0.047
6.8000	0.047
7.0000	0.042
7.2000	0.042
7.4000	0.038
7.6000	0.038
7.8000	0.038
8.0000	0.033
8.2000	0.033
8.4000	0.033
8.6000	0.033
8.8000	0.028
9.0000	0.028
9.2000	0.028
9.4000	0.028
9.6000	0.023
9.8000	0.023
10.0000	0.023

MW-705 - DATA LOGGER OUTPUT

SE1000C
Environmental Logger
08/21 14:58

Unit# 02130 Test 4

Setups: INPUT 1

Type	Level (F)
Mode	TOC
I.D.	00705
Reference	0.000
Linearity	0.080
Scale factor	15.080
Offset	0.050
Delay mSEC	50.000

Step 0 08/14 18:17:24

Elapsed Time INPUT 1

MINUTES	FEET
0.0000	2.095
0.0033	5.422
0.0066	7.143
0.0100	6.996
0.0133	5.845
0.0166	3.047
0.0200	-0.500
0.0233	2.090
0.0266	1.981
0.0300	0.738
0.0333	1.547
0.0366	1.500
0.0400	1.043
0.0433	1.314
0.0466	1.267
0.0500	1.090
0.0533	1.162
0.0566	1.128
0.0600	1.047
0.0633	1.057
0.0666	1.028
0.0700	0.986
0.0733	0.976
0.0766	0.957
0.0800	0.924
0.0833	0.909
0.0866	0.886
0.0900	0.867
0.0933	0.852
0.0966	0.833
0.1000	0.814
0.1033	0.800
0.1066	0.786
0.1100	0.766
0.1133	0.752
0.1166	0.738
0.1200	0.724
0.1233	0.709
0.1266	0.700
0.1300	0.685
0.1333	0.671
0.1366	0.662
0.1400	0.652
0.1433	0.638
0.1466	0.628
0.1500	0.624
0.1533	0.614
0.1566	0.609
0.1600	0.600
0.1633	0.595
0.1666	0.590
0.1700	0.585
0.1733	0.581
0.1766	0.581
0.1800	0.576
0.1833	0.571
0.1866	0.566
0.1900	0.562
0.1933	0.562
0.1966	0.557
0.2000	0.552
0.2033	0.552
0.2066	0.547
0.2100	0.547
0.2133	0.543
0.2166	0.543
0.2200	0.538
0.2233	0.538
0.2266	0.533
0.2300	0.533
0.2333	0.533
0.2366	0.528
0.2400	0.528
0.2433	0.524
0.2466	0.524
0.2500	0.524
0.2533	0.519
0.2566	0.519
0.2600	0.519
0.2633	0.514
0.2666	0.514
0.2700	0.514
0.2733	0.509
0.2766	0.509
0.2800	0.509
0.2833	0.509
0.2866	0.504
0.2900	0.504
0.2933	0.504
0.2966	0.500
0.3000	0.500
0.3033	0.500
0.3066	0.500
0.3100	0.500
0.3133	0.495
0.3166	0.495
0.3200	0.495
0.3233	0.495
0.3266	0.490
0.3300	0.490
0.3333	0.490
0.3500	0.490
0.3666	0.485
0.3833	0.481
0.4000	0.476
0.4166	0.471
0.4333	0.466
0.4500	0.466
0.4666	0.462
0.4833	0.457
0.5000	0.457
0.5166	0.452
0.5333	0.452
0.5500	0.447
0.5666	0.447

MW-705 - DATA LOGGER OUTPUT

MINUTES	FEET	MINUTES	FEET	MINUTES	FEET
0.5833	0.443	5.2000	0.319	54.0000	0.142
0.6000	0.443	5.4000	0.319	56.0000	0.142
0.6166	0.438	5.6000	0.314	58.0000	0.138
0.6333	0.438	5.8000	0.314	60.0000	0.138
0.6500	0.433	6.0000	0.309	62.0000	0.133
0.6666	0.433	6.2000	0.309	64.0000	0.133
0.6833	0.433	6.4000	0.309	66.0000	0.133
0.7000	0.428	6.6000	0.304		
0.7166	0.428	6.8000	0.304		
0.7333	0.428	7.0000	0.300		
0.7500	0.423	7.2000	0.300		
0.7666	0.423	7.4000	0.300		
0.7833	0.423	7.6000	0.295		
0.8000	0.423	7.8000	0.295		
0.8166	0.419	8.0000	0.295		
0.8333	0.419	8.2000	0.295		
0.8500	0.419	8.4000	0.290		
0.8666	0.419	8.6000	0.290		
0.8833	0.414	8.8000	0.285		
0.9000	0.414	9.0000	0.285		
0.9166	0.414	9.2000	0.285		
0.9333	0.414	9.4000	0.281		
0.9500	0.414	9.6000	0.281		
0.9666	0.409	9.8000	0.281		
0.9833	0.409	10.0000	0.281		
1.0000	0.409	12.0000	0.266		
1.2000	0.395	14.0000	0.257		
1.4000	0.390	16.0000	0.247		
1.6000	0.381	18.0000	0.238		
1.8000	0.376	20.0000	0.228		
2.0000	0.371	22.0000	0.219		
2.2000	0.366	24.0000	0.214		
2.4000	0.362	26.0000	0.204		
2.6000	0.357	28.0000	0.200		
2.8000	0.357	30.0000	0.190		
3.0000	0.352	32.0000	0.185		
3.2000	0.347	34.0000	0.181		
3.4000	0.342	36.0000	0.176		
3.6000	0.338	38.0000	0.171		
3.8000	0.338	40.0000	0.166		
4.0000	0.338	42.0000	0.161		
4.2000	0.333	44.0000	0.161		
4.4000	0.328	46.0000	0.157		
4.6000	0.328	48.0000	0.152		
4.8000	0.323	50.0000	0.152		
5.0000	0.323	52.0000	0.147		

MW-707 - DATA LOGGER OUTPUT

SE1000C
Environmental Logger
08/21 14:42

Unit# 02130 Test 0

Setups: INPUT 1

Type	Level (F)
Mode	TOC
I.D.	00707
Reference	0.000
Linearity	0.080
Scale factor	15.080
Offset	0.050
Delay mSEC	50.000

Step 0 08/14 13:00:49

Elapsed Time INPUT 1

MINUTES	FEET
0.0000	0.142
0.0033	4.581
0.0066	5.471
0.0100	1.780
0.0133	0.994
0.0166	1.504
0.0200	1.204
0.0233	1.256
0.0266	1.237
0.0300	1.185
0.0333	1.175
0.0366	1.147
0.0400	1.118
0.0433	1.099
0.0466	1.075
0.0500	1.056
0.0533	1.033
0.0566	1.014
0.0600	0.994
0.0633	0.975
0.0666	0.956
0.0700	0.937
0.0733	0.923
0.0766	0.904
0.0800	0.890
0.0833	0.871
0.0866	0.856
0.0900	0.842
0.0933	0.828
0.0966	0.814
0.1000	0.799
0.1033	0.785
0.1066	0.776
0.1100	0.761
0.1133	0.752
0.1166	0.742
0.1200	0.728
0.1233	0.718
0.1266	0.709
0.1300	0.699
0.1333	0.690
0.1366	0.685
0.1400	0.676
0.1433	0.666
0.1466	0.661
0.1500	0.652
0.1533	0.642
0.1566	0.637
0.1600	0.633
0.1633	0.623
0.1666	0.618
0.1700	0.614
0.1733	0.609
0.1766	0.599
0.1800	0.595
0.1833	0.590
0.1866	0.585
0.1900	0.580
0.1933	0.580
0.1966	0.576
0.2000	0.571
0.2033	0.566
0.2066	0.561
0.2100	0.557
0.2133	0.557
0.2166	0.552
0.2200	0.547
0.2233	0.547
0.2266	0.542
0.2300	0.537
0.2333	0.537
0.2366	0.533
0.2400	0.533
0.2433	0.528
0.2466	0.528
0.2500	0.523
0.2533	0.523
0.2566	0.518
0.2600	0.518
0.2633	0.514
0.2666	0.514
0.2700	0.509
0.2733	0.509
0.2766	0.504
0.2800	0.504
0.2833	0.504
0.2866	0.499
0.2900	0.499
0.2933	0.495
0.2966	0.495
0.3000	0.495
0.3033	0.495
0.3066	0.490
0.3100	0.490
0.3133	0.490
0.3166	0.485
0.3200	0.485
0.3233	0.485
0.3266	0.480
0.3300	0.480
0.3333	0.480
0.3500	0.476
0.3666	0.466
0.3833	0.461
0.4000	0.457
0.4166	0.452
0.4333	0.447
0.4500	0.442
0.4666	0.438
0.4833	0.438
0.5000	0.433
0.5166	0.428
0.5333	0.423
0.5500	0.423
0.5666	0.418

MW-707 - DATA LOGGER OUTPUT

MINUTES	FEET
0.5833	0.414
0.6000	0.409
0.6166	0.409
0.6333	0.409
0.6500	0.404
0.6666	0.399
0.6833	0.399
0.7000	0.399
0.7166	0.395
0.7333	0.390
0.7500	0.390
0.7666	0.390
0.7833	0.385
0.8000	0.385
0.8166	0.385
0.8333	0.380
0.8500	0.380
0.8666	0.376
0.8833	0.376
0.9000	0.376
0.9166	0.371
0.9333	0.371
0.9500	0.371
0.9666	0.371
0.9833	0.366
1.0000	0.366
1.2000	0.347
1.4000	0.338
1.6000	0.323
1.8000	0.314
2.0000	0.299
2.2000	0.290
2.4000	0.280
2.6000	0.271
2.8000	0.266
3.0000	0.257
3.2000	0.247
3.4000	0.242
3.6000	0.233
3.8000	0.228
4.0000	0.219
4.2000	0.209
4.4000	0.204
4.6000	0.199
4.8000	0.195
5.0000	0.195
5.2000	0.190
5.4000	0.185
5.6000	0.180
5.8000	0.176
6.0000	0.171
6.2000	0.166
6.4000	0.161
6.6000	0.157
6.8000	0.152
7.0000	0.147
7.2000	0.142
7.4000	0.142
7.6000	0.138
7.8000	0.138
8.0000	0.133
8.2000	0.128
8.4000	0.128
8.6000	0.123
8.8000	0.119
9.0000	0.119
9.2000	0.114
9.4000	0.109
9.6000	0.109
9.8000	0.104
10.0000	0.104
12.0000	0.085

APPENDIX G

SOIL GRAIN SIZE ANALYSIS REPORT

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

WDNR No. 128053530

ANALYTICAL AND QUALITY CONTROL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/18/1995

Job No: 95.07202

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

Sample Number	Sample Description	Date Taken	Date Received
150741	MW-701 6-10 #1060		09/25/1995
150742	MW-702 7-11 #1060		09/25/1995
150743	MW-703 8-10 #1060		09/25/1995
150744	MW-704 6-10 #1060		09/25/1995
150745	MW-705 4-6 #1060		09/25/1995
150746	MW-706 6-10 #1060		09/25/1995
150747	MW-707 2-6 #1060		09/25/1995
150748	PZ-701 29-33 #1060		09/25/1995

The above sample(s) may have a result flag shown on the report. The following are the result flag definitions:

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

Karen R. Wenta, Inorganic Operations Manager
Certification No. 128053530

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/18/1995
Job No: 95.07202
Sample No: 150741
Account No: 52450

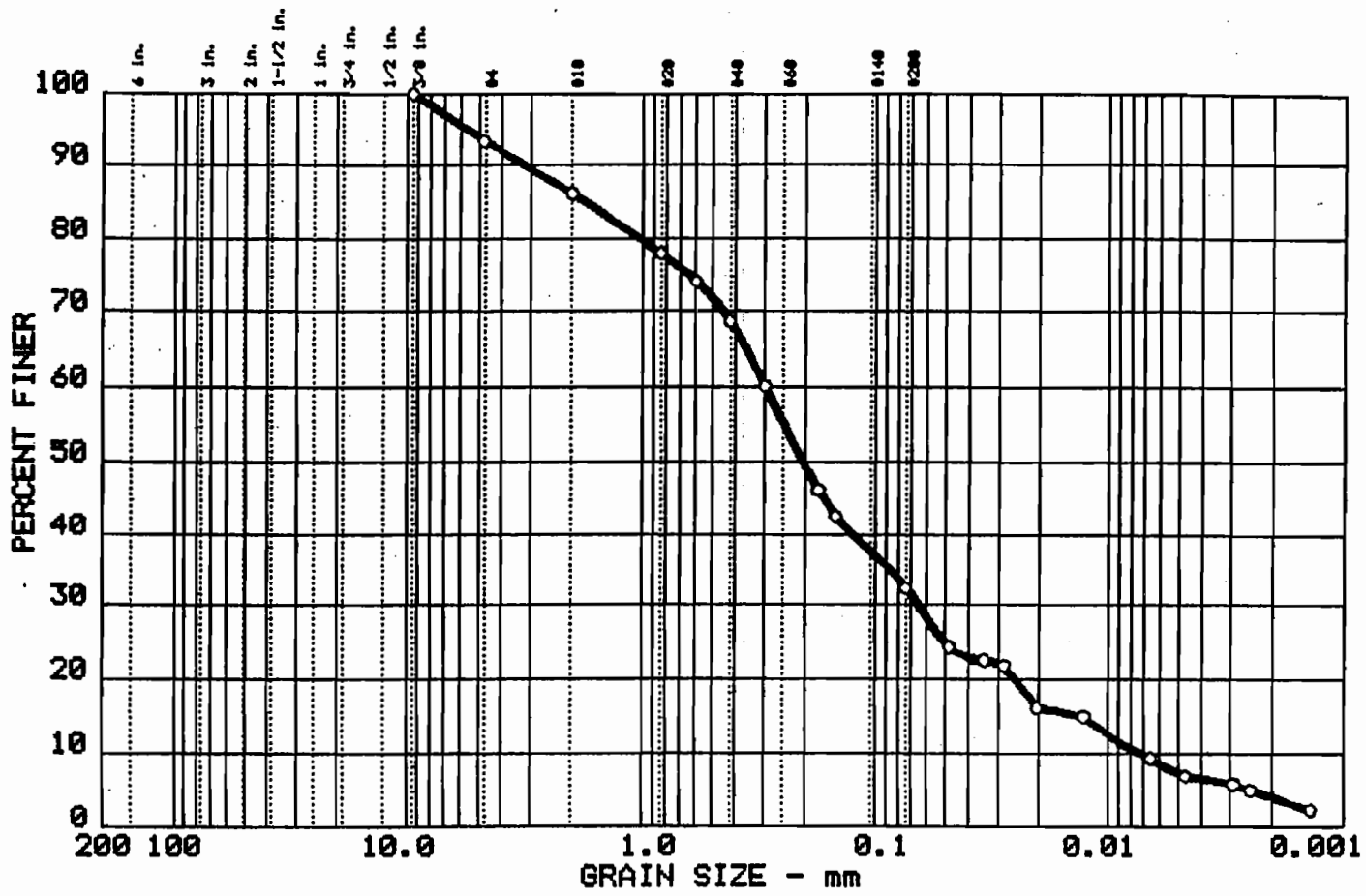
JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-701 6-10 #1060

Date Taken:

Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4
Hydrometer Test	See Attached				10/11/1995	6

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	12	0.0	6.6	61.0	25.0	7.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	1.76	0.30	0.21	0.066	0.0127	0.0071	2.06	41.4

MATERIAL DESCRIPTION	USCS	AASHTO
o Dark Brown Fine SAND, Some Silt	SM	A-2-4

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-701, 150741

Date: October 11, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Remarks:

Figure No.12

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

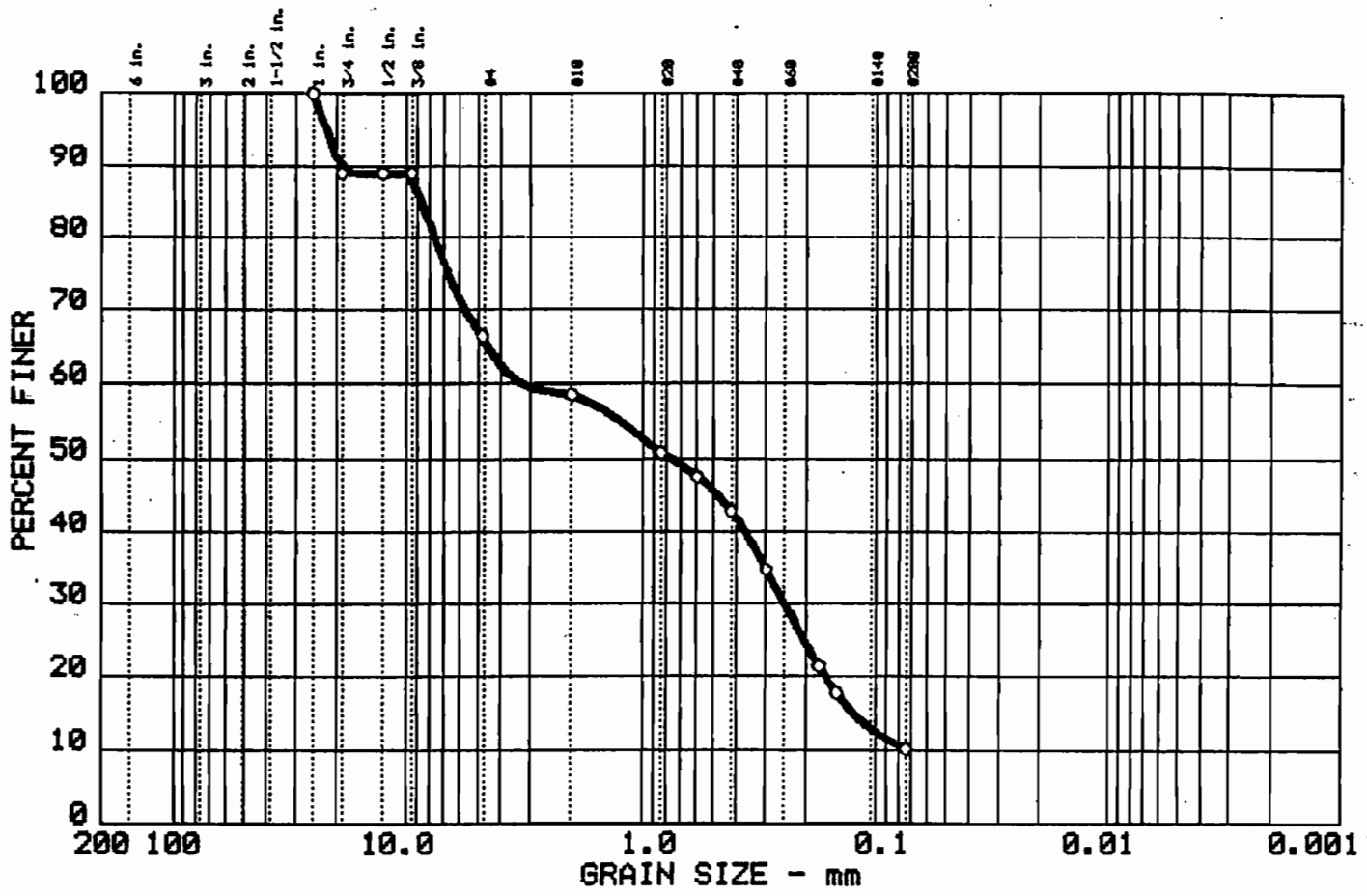
10/18/1995
Job No: 95.07202
Sample No: 150742
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-702 7-11 #1060

Date Taken: Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	13	0.0	33.7	56.0	10.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	8.61	3.24	0.76	0.248	0.1245			

MATERIAL DESCRIPTION	USCS	AASHTO
o Dark Brown SAND, Some Silt, Some Gravel	SP-SM	A-1-b

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-702, 150742

Date: October 11, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Remarks:

Figure No.13

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/18/1995
Job No: 95.07202
Sample No: 150743
Account No: 52450

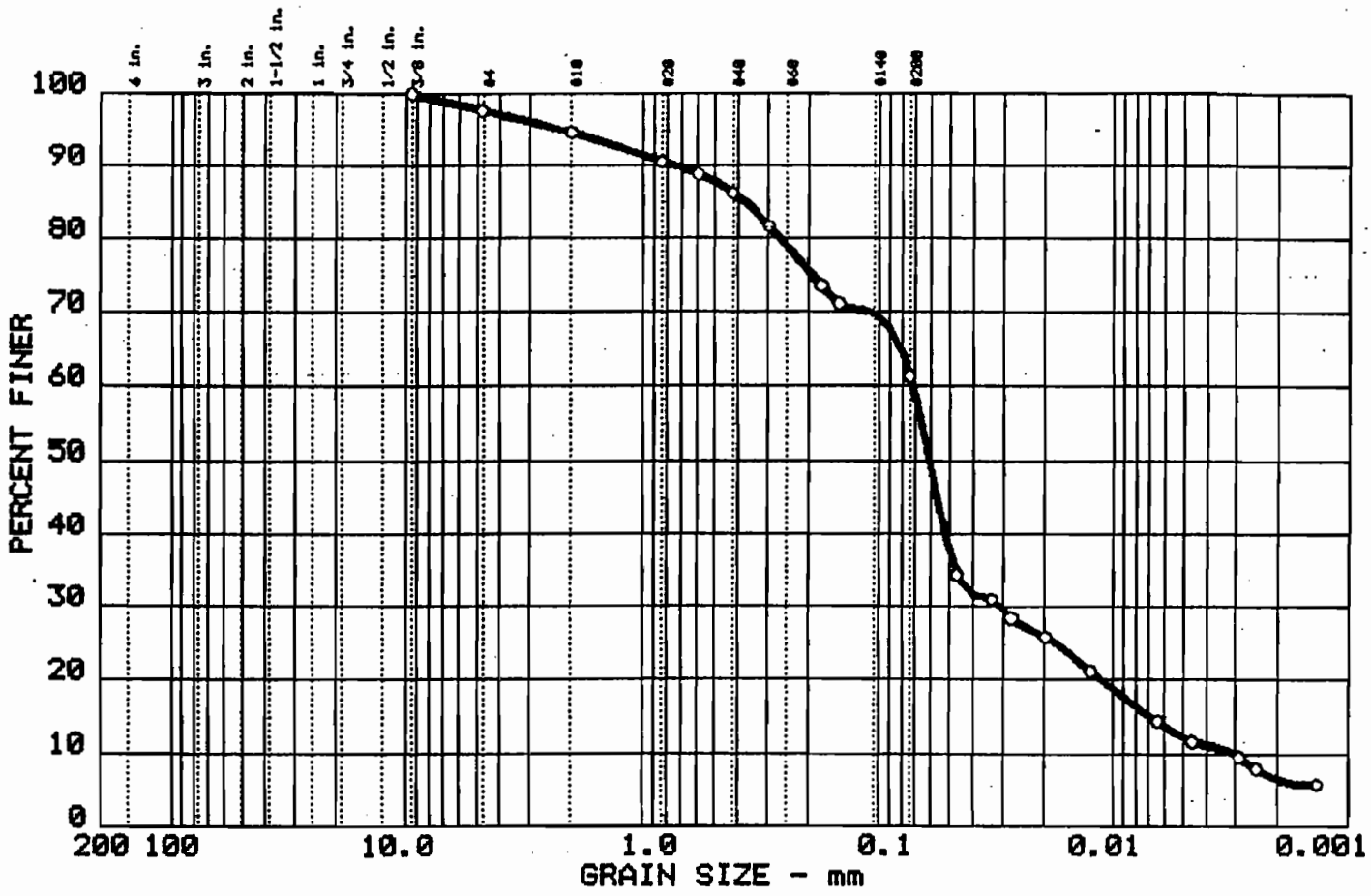
JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-703 8-10 #1060

Date Taken:

Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4
Hydrometer Test	See Attached				10/11/1995	6

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	14	0.0	2.3	36.4	49.1	12.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	0.38		0.06	0.031	0.0069	0.0030	4.37	24.0

MATERIAL DESCRIPTION	USCS	AASHTO
o Brown Clayey SILT	ML	A-4

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-703, 150743

Date: October 11, 1995

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Figure No.14

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

WDNR No. 128052530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

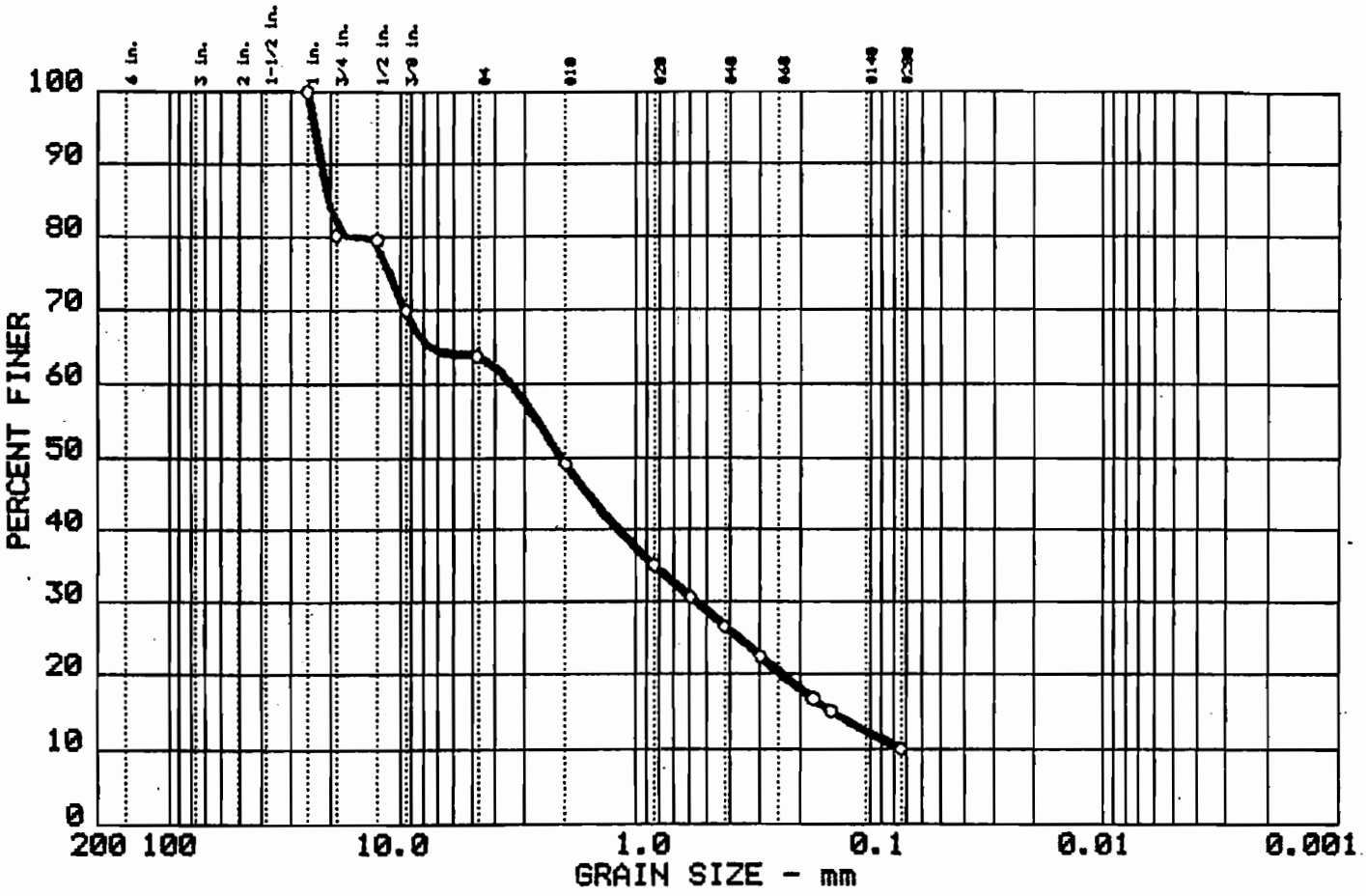
10/18/1995
Job No: 95.07202
Sample No: 150744
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-704 6-10 #1060

Date Taken: Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	15	0.0	36.3	53.6	10.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	20.39	3.38	2.08	0.560	0.1474			

MATERIAL DESCRIPTION	USCS	AASHTO
o Tan SAND and GRAVEL, Some Silt	SP-SM	A-1-a

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-704, 150744

Date: October 11, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Remarks:

Figure No.15

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/18/1995
Job No: 95.07202
Sample No: 150745
Account No: 52450

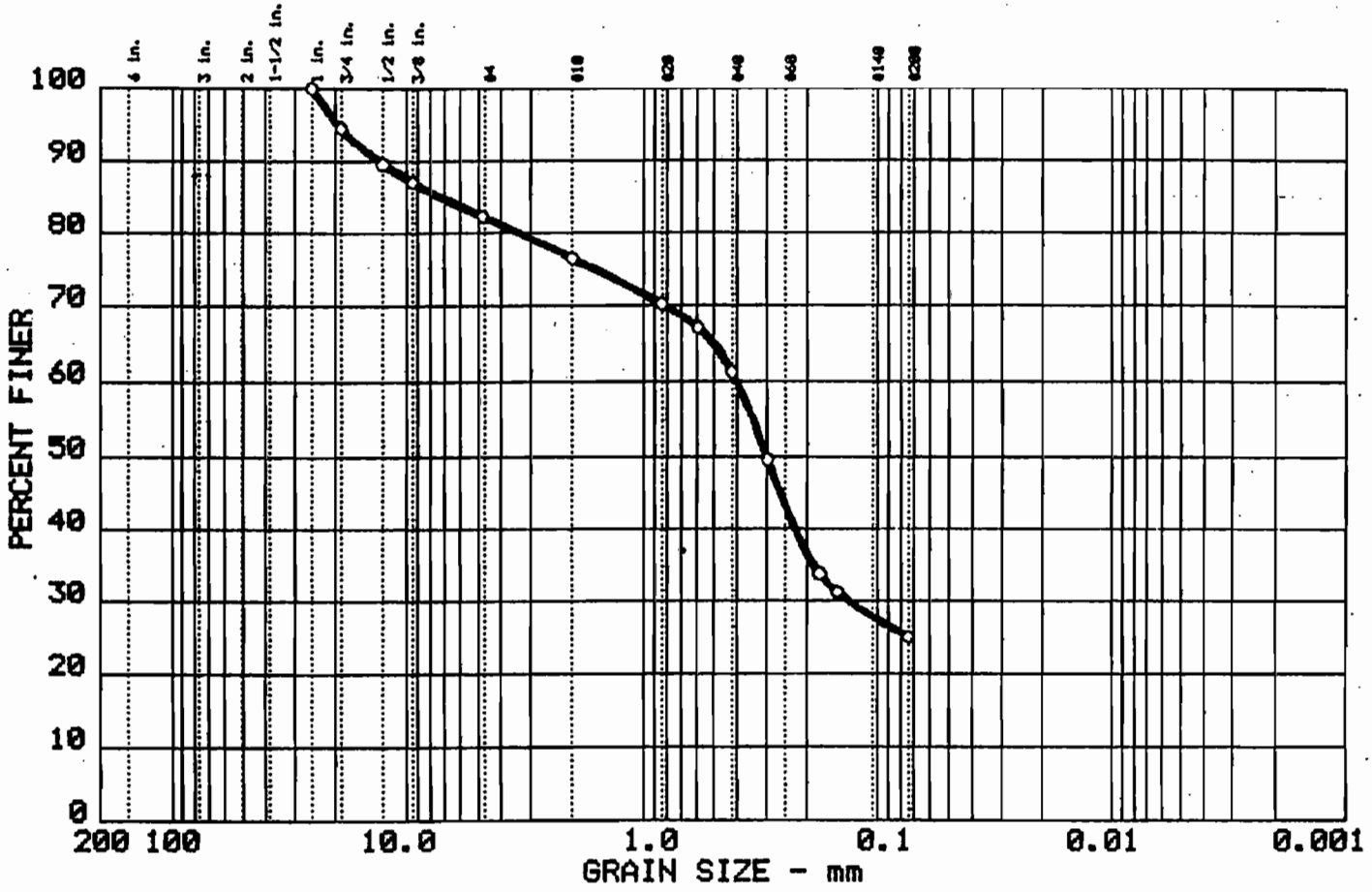
JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-705 4-6 #1060

Date Taken:

Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	16	0.0	17.7	57.1	25.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	7.24	0.40	0.30	0.133				

MATERIAL DESCRIPTION	USCS	AASHTO
o Brown SAND, Some Gravel, Some Silt	SM	A-2-4

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-705, 150745

Date: October 11, 1995

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Figure No.16

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

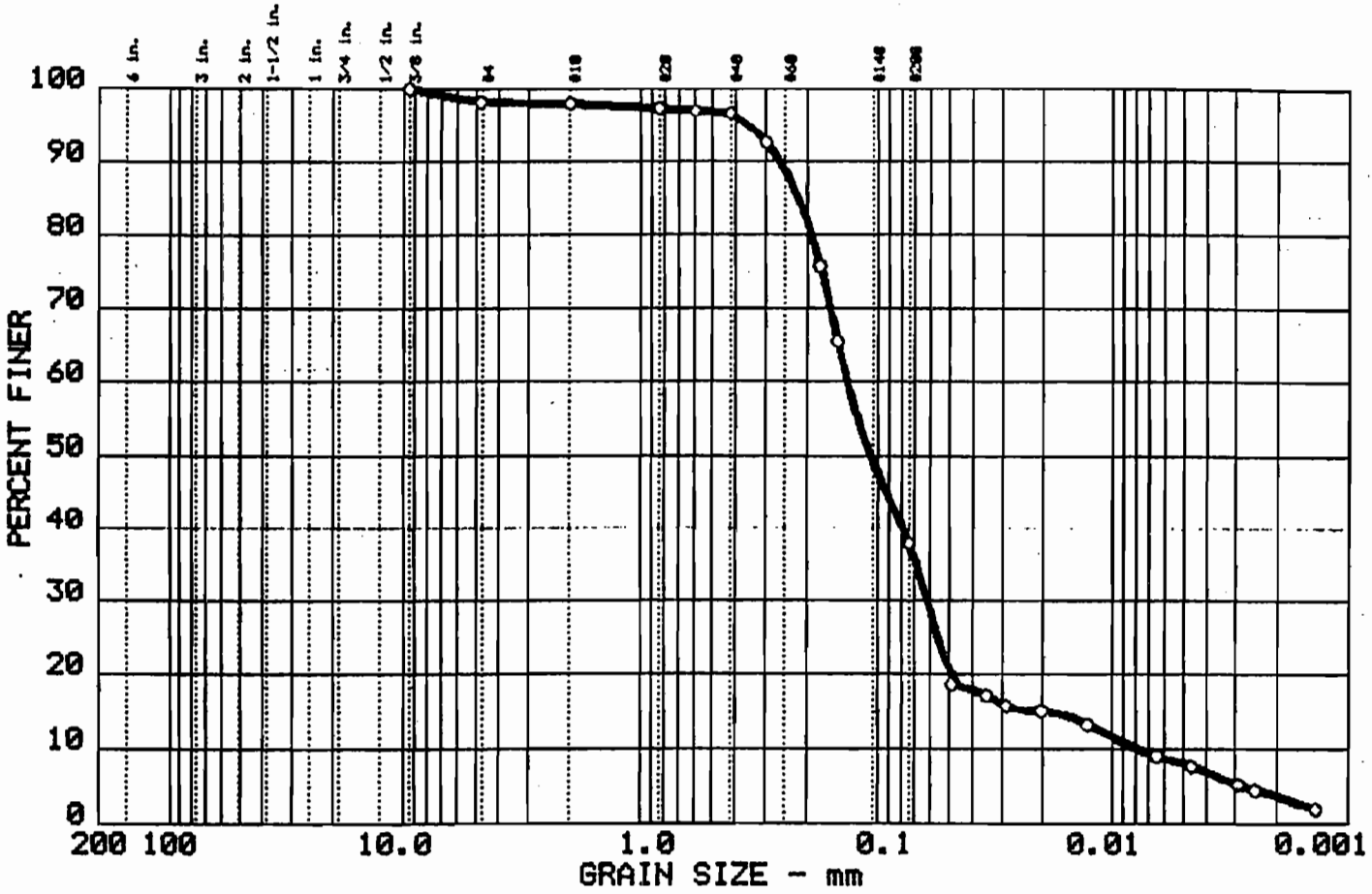
10/18/1995
Job No: 95.07202
Sample No: 150746
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-706 6-10 #1060

Date Taken: Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4
Hydrometer Test	See Attached				10/11/1995	6

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	17	0.0	1.9	60.3	29.9	7.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	0.22	0.14	0.11	0.062	0.0179	0.0077	3.67	17.6

MATERIAL DESCRIPTION	USCS	AASHTO
o Brown Fine SAND, Some Silt	SM	A-4

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-70[illegible], 150746

Date: October 11, 1995

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Figure No.17

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120
WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

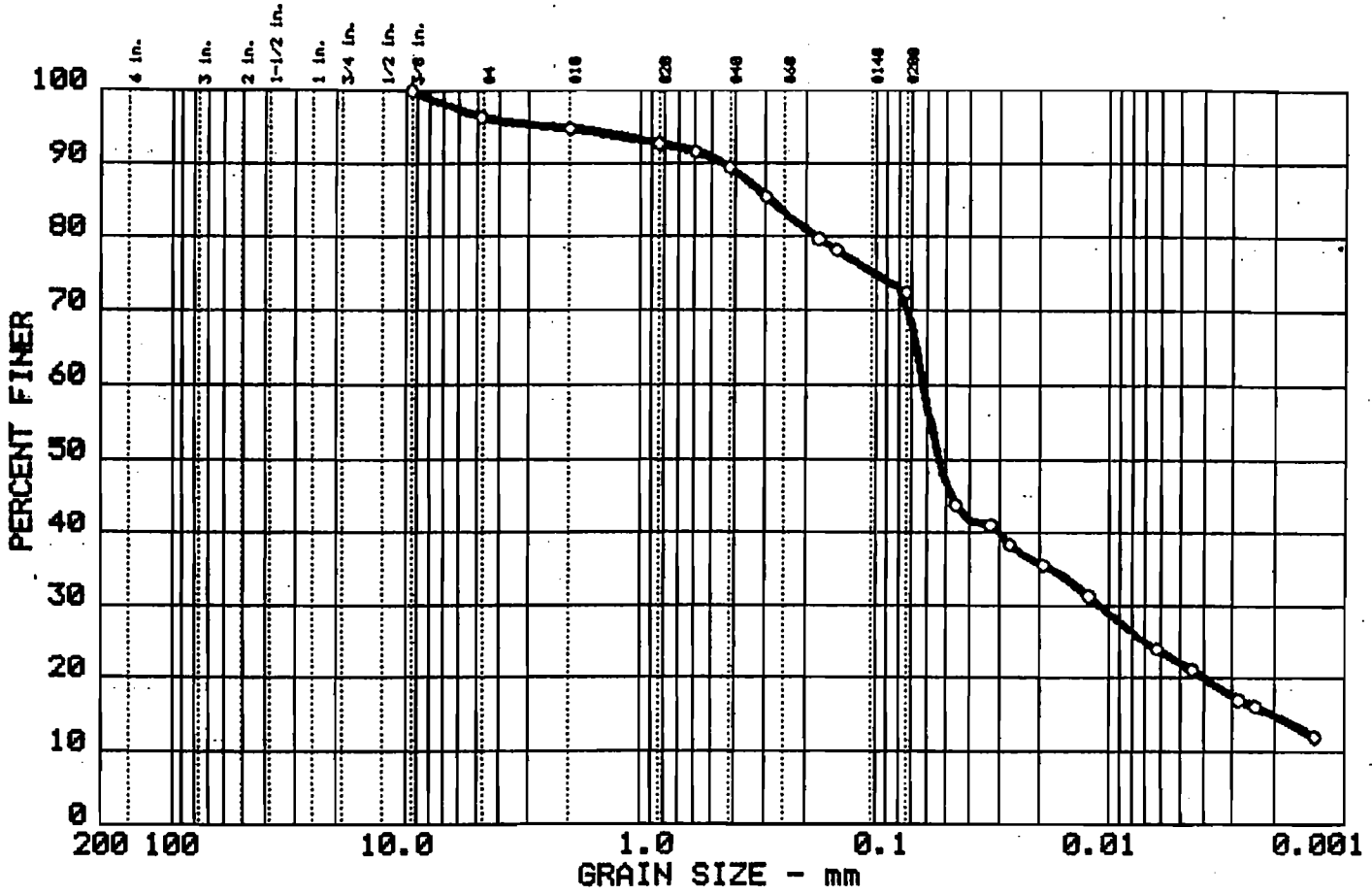
10/18/1995
Job No: 95.07202
Sample No: 150747
Account No: 52450

JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: MW-707 2-6 #1060

Date Taken: Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/11/1995	6
#20 Sieve	See Attached				10/11/1995	4
#50 Sieve	See Attached				10/11/1995	4
#100 Sieve	See Attached				10/11/1995	4
#200 Sieve	See Attached				10/11/1995	4
Hydrometer Test	See Attached				10/11/1995	6

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	18	0.0	3.7	23.9	50.4	22.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----	0.29		0.05	0.011	0.0020			

MATERIAL DESCRIPTION	USCS	AASHTO
o Brown Clayey SILT, Some Fine Sand	ML	A-4

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: MW-707, 150747

Date: October 11, 1995

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Remarks:

Figure No.18

NATIONAL ENVIRONMENTAL TESTING, INC.

Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

WDNR No. 128053530

ANALYTICAL REPORT

Mr. Tim Mueller
NATURAL RESOURCE TECH, INC
23713 W. Paul Road
Pewaukee, WI 53072

10/18/1995
Job No: 95.07202
Sample No: 150748
Account No: 52450

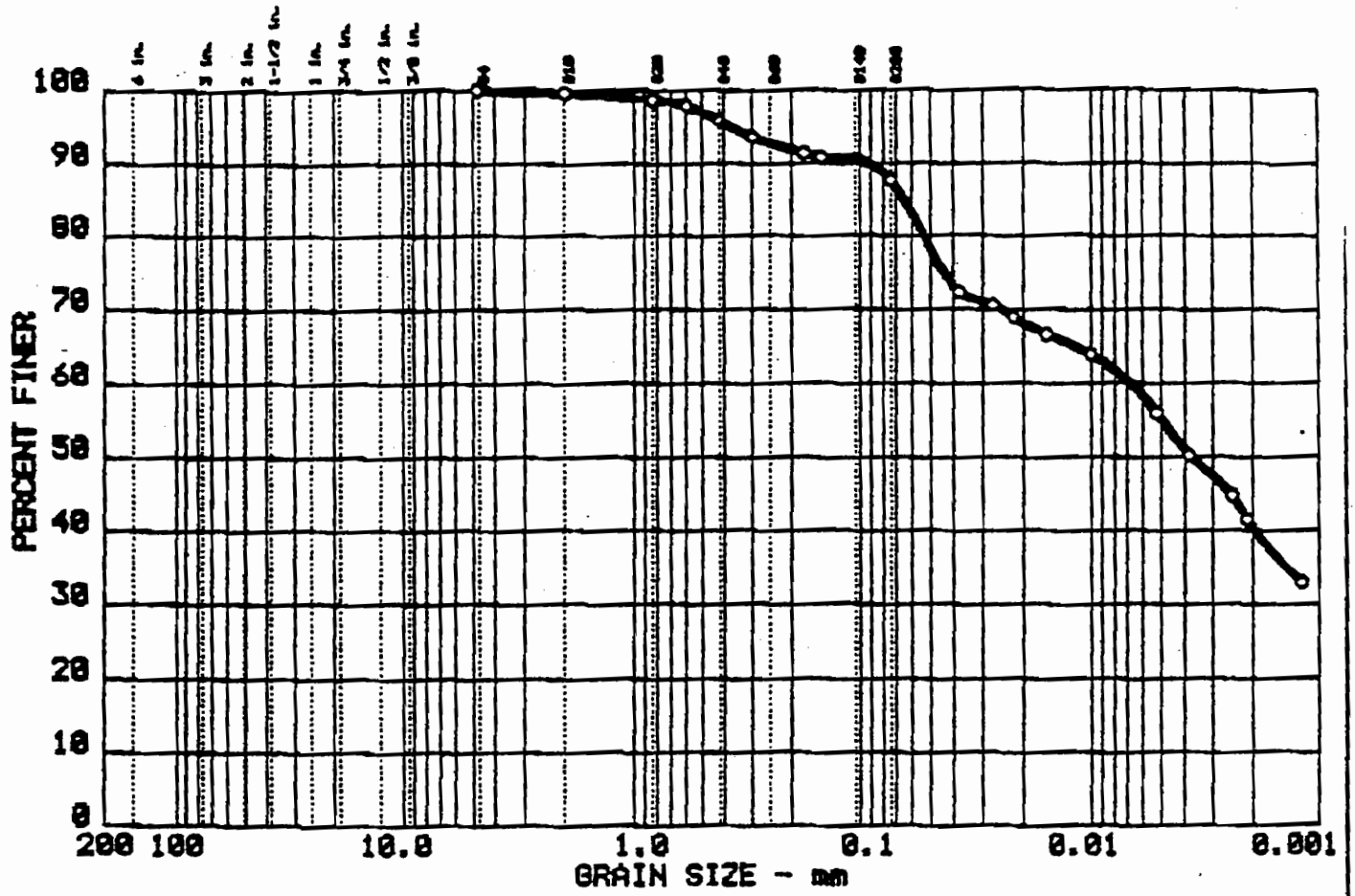
JOB DESCRIPTION: #1060 Sheboygan II
PROJECT DESCRIPTION: Soil Analysis
SAMPLE DESCRIPTION: PZ-701 29-33 #1060

Date Taken:

Date Received: 09/25/1995

Parameter	Results	Units	Reporting Limit	Method	Date Analyzed	Prep/Run Batch
#8 Sieve	See Attached				10/17/1995	6
#20 Sieve	See Attached				10/17/1995	4
#50 Sieve	See Attached				10/17/1995	4
#100 Sieve	See Attached				10/17/1995	4
#200 Sieve	See Attached				10/17/1995	4
Hydrometer Test	See Attached				10/17/1995	6

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
o	7	0.0	0.0	12.3	32.7	55.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	-----	-----			0.00					

MATERIAL DESCRIPTION	USCS	AASHTO
o Brown Lean CLAY, Little Sand	CL	A-6(12)

Project No.: 710.98
Project: NET #95.07202, P.O. WT-4423
o Location: PZ-701, 150748

Date: October 17, 1995

Remarks:
Tested By: TNN

Checked By: SGM

GRAIN SIZE DISTRIBUTION TEST REPORT
NUMMELIN TESTING SERVICES

Figure No.19

CHAIN OF CUSTODY RECORD

9507202

Sample Collectors(s)/Signature(s): REBECCA J. KOEPKE

NATURAL RESOURCE TECHNOLOGY, INC.
PEWAUKEE, WISCONSIN

Laboratory Samples are Being Submitted To: NET

Quote Number/Addendum Number _____ Attached: YES __ NO __

Site Name: WPSC

Site Address: SHEBOYGAN II

Send Report To:
Project Manager: T. MUELLER / B. KOEPKE
Natural Resource Technology, Inc.
23713 W. Paul Road
Pewaukee, WI 53072
Telephone (414) 523-9000 Fax (414) 523-9001

Project Number: 1060

Task Number: _____

Temperature of temperature blank NA

If sample(s) were received on ice and there was ice remaining, you may report the temperature as "received on ice". If all of the ice was melted, the temperature of the melt may be substituted for a temperature blank.

I hereby certify that I received, properly handled, and maintained custody of these samples as noted below:

	Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
1				9-25-95 1515
2		9-25-95 1730	9/26	1440
3			Karen Kurtz 9/26/95	

Field ID Number	Date Collected	Time Collected	Sample Media	Sample Device	Location / Description	PID Reading	Field Comments	Preserv. Type	# of Cont.	SIEVE	HYDROMETER	Lab ID Number	Sample Conditions @ Laboratory
MW-701			SOIL	SS	6'-10'					X	X		
MW-702					7'-11'					X			
MW-703					8'-10'					X	X		
MW-704					6'-10'					X			
MW-705					4'-6'					X			
MW-706					6'-10'					X	X		
MW-707					2'-6'					X	X		
PZ-701			↓	↓	29'-33'					X	X		

SPECIAL INSTRUCTIONS

Laboratory shall retain samples for 30 days after issuing analytical report unless indicated otherwise below:
__ Return __ Other _____

PT 1 - ORIGINAL-WHITE PT 2 - LABORATORY COPY-YELLOW PT 3 - NRT FIELD COPY-PINK

This form is based on the WDNR LUST Program Chain of Custody Record (Form 4400-151)

W:\FORMS\CUSTODY.CHN

PLATES