Engineers
Architects
Planners
Scientists



Foth & Van Dyke

2737 S. Ridge Road
P. O. Box 19012
Green Bay, WI 54307-9012
414/497-2500
FAX: 414/497-8516

July 28, 1993

Mr. Mike Schmoller
WDNR - Southern District
3911 Fish Hatchery Road
Fitchburg, WI 53711

Dear Mr. Schmoller:

RE: Borgerding ERP Project Contamination Study

During the period June 1-14, 1993, Foth & Van Dyke conducted investigatory activities at the Ursula Borgerding Estate Property, 433-437 Portland Avenue, Beloit, Wisconsin to augment the completion of the extent of contamination study required by the Wisconsin Department of Natural Resources (WDNR). These activities included:

- The drilling and Hydropunch® II sampling of two approximately 50-foot soil borings.
- The installation of six groundwater monitoring wells.
- The collection of four soil samples for hazardous waste determination.
- The collection of ten soil samples for comparative enumeration assays (CEAs).
- The retrofitting of nine existing monitoring wells (originally installed with upright protective casings) with flush-mounted protective casings.

A summary of drilling/sampling procedures and results for each of the field activities conducted is presented below.

## Hydropunch Borings

During the period June 1-2, 1993, Soil Boring Nos. Sb-12 and SB-13 were drilled and groundwater was sampled to evaluate the depth to set well screens at planned "deep" monitoring well locations. The soil boring locations are shown in Figure 1 (Attachment 1). The soil boring logs are presented in Attachment 2 and the borehole abandonment forms are included in Attachment 3. Hydropunch® II groundwater sampling analytical results are presented in Table 1 (Attachment 4). The laboratory reports are included in Attachment 5.

### *Soil Boring Hydropunch® II Drilling/Sampling*

The soil borings were advanced using a four-inch tricone bit and NWJ drill rod recirculating bentonite drilling mud. Drilling water was obtained from a City of Beloit hydrant located in the adjacent Riverside Park parking lot. Upon advancement of each borehole to a depth of 25 feet, groundwater samples were collected at five-foot intervals to a depth of approximately 50 feet by drilling a precleaned Hydropunch® II sampler three to

four feet beyond the open borehole bottom. Following maximum advancement of the Hydropunch® II sampler in a given sampling interval, it was back pounded approximately two feet to expose a new well screen to the saturated formation. However, fine sands under hydrostatic pressure consistently locked the well screen into the Hydropunch® II chamber preventing it's exposure to the formation. Groundwater did, however, enter the chamber through the bottom of the sampler. A precleaned polyethylene bailer was lowered through the drill rod and into the Hydropunch® II chamber to collect groundwater samples for benzene, ethylbenzene, toluene and xylenes (BETX) laboratory analyses.

Groundwater was transferred directly from the bailer to 40-ml glass vials, which were immediately placed in iced, secure storage and subsequently shipped to the ORTEK laboratory of Green Bay, Wisconsin via overnight courier service. Chain-of-custody protocol was maintained by Foth & Van Dyke and is included in Attachment 5.

Procedures were followed to minimize the potential for cross-contact of a Hydropunch® water sample with borehole mud and previous sampling intervals.

All drill rod threaded joints were teflon taped to minimize inward leakage into the Hydropunch® II chamber. In addition, all sampling equipment (including the Hydropunch® II sampler, bailer and drill rod) was hot water pressure washed between sampling intervals.

Following borehole/sampling completion, the borehole was abandoned by thickening the existing drilling mud with granular bentonite and pumping it into the borehole through the NWJ drill rod. Settlement was subsequently topped up to the surface with bentonite chips (Attachment 3). Unused drilling mud was containerized in 55-gallon drums labelled and staged on-site. The drums were subsequently removed from the site by the City of Beloit and placed in secure storage at a city wastewater treatment facility. Table 2 (Attachment 4) provides a listing of the containerized waste.

### *Hydropunch Analytical Results*

The analytical results from the Hydropunch II® groundwater sampling are presented in Table 1 (Attachment 4).

At soil boring No. SB-12, detections of benzene ranged from 1.8 to 19 ug/l and occurred in four of the five samples. The highest BETX concentrations occurred in the sample most resembling drilling mud in appearance, which suggests the possibility of some cross-contact with the drilling mud used to keep the borehole open during advancement and sampling. A petroleum product contaminated zone in the upper ten feet of the borehole may have contaminated the drilling mud, which was recirculated throughout the boring. The potential cross-contamination impact due to the drilling method is uncertain.

At soil boring No. SB-13, the 27- to 29-foot sampler interval contained benzene at 290 ug/l. BETX compounds were not detected at or above detection limits in any other sample.

Based upon these analytical results which included benzene detections down to 48 feet (in Soil Boring No. SB-12), it was decided by Foth & Van Dyke and the WDNR to screen the 45-50 foot zone at the four planned "deep" monitoring wells (piezometers).

## Monitoring Wells

A total of six monitoring wells (five piezometers and one water table well) were installed and developed during the period June 3-14, 1993. The wells identified as MW-1DD (Adjacent to MW-1), MW-2DD (adjacent to MW-2S and MW-2D), MW-3DD (adjacent to MW-3S and MW-3D) and MW-11S, MW-11D and MW-11DD (on the south edge of the Portland Avenue Right-of-Way [ROW]) are shown in Figure 1 (Attachment 1). Soil boring logs are presented in Attachment 2. Monitoring well construction (WDNR 4400-113a) and monitoring well development forms (WDNR 113b) are presented in Attachment 6. Groundwater sampling and surveying of these wells was not performed by Foth & Van Dyke.

### *Monitoring Well Drilling/Installation*

All wells, with the exception of Well No. MW-11S, were drilled using a six-inch tricone bit and NWJ drill rod recirculating bentonite drilling mud. Drilling water was obtained from the City of Beloit hydrant in the Riverside Park parking lot. Temporary six-inch inside diameter (I.D.) steel casing at lengths varying from 5 to 25 feet were installed at mud rotary borings to enhance recirculation and limit formation collapse. Well No. MW-11S, installed as a water table monitoring well, was drilled using 4.25-inch I.D. hollow-stem auger (HSA). The drilling subcontractor was WTD Environmental Drilling, Inc. of Schofield, Wisconsin.

Limited split-spoon sampling was conducted to obtain subsurface soil conditions information including photoionization detector (PID) headspace values. PID headspace readings were obtained using a Microtip HL-200 PID, manufactured by Photovac, Inc., with an ultraviolet lamp strength of 10.6 electron volts (eV). The PID was cleaned and calibrated prior to use each day according to manufacturer's specifications for the detection of ionizable organic compounds (IOCs), using an isobutylene standard of 100 parts per million (ppm). Following sampler retrieval from the borehole, the contents were inspected for visual evidence of contamination and placed in a four-ounce glass container for subsequent PID headspace screening. Following a headspace development period of approximately 20 minutes, the screw cap was removed and the seal quickly punctured with the PID sampling probe. The highest PID response was recorded as the sample headspace value. The soil samples were visually classified using the Unified Soil Classification System (USCS). Soil boring logs are presented in Attachment 2.

In addition, drilling mud PID headspace screening was conducted at some borings, where the potential for cross-contamination from upper stratigraphic zones to lower zones was suspected. Recirculating drilling mud was collected in four-ounce glass bottles and screened as described above. Mud PID values are included on the boring logs (Attachment 2).

Following the advancement of a mud rotary boring to a depth necessary to install a piezometer, the well pipe string was set through the mud and the drilling mud was flushed and retrieved from the borehole by pumping "clean" water through the well pipe and up through the borehole annular space and back to the mud tub. Immediately following borehole flushing, the installation of well construction sand or sealant was initiated. The water table well was installed through the HSA without the use of drilling water and/or fluids.

All wells were constructed with two-inch ID Schedule 40 PVC riser pipe and well screen. Flush mounting protective covers and locking gasket caps were installed at all wells. Piezometers were constructed with a five-foot segment of well screen set to the predetermined depth of either 25 feet (MW-11D) or 50 feet (MW-1DD, MW-2DD, MW-3DD and MW-11DD). The water table well was constructed with a ten-foot segment of well screen positioned to intersect the water table. Filter sand pack and seal were installed in accordance with NR 141 except where the collapse of natural foundation sands and gravels prevented the full addition of filter pack sand. The bentonite/annular space seal was constructed with 3/8-inch bentonite chips and concrete was used for the surface seal.

Equipment decontamination procedures were followed to minimize the possibility of cross-contamination between samples and boreholes. Downhole drilling equipment (i.e., augers, bits, drill rods, etc.) was cleaned with a high pressure hot water wash system between borings. Split-spoon samplers were decontaminated between samples as follows:

- Tap water/trisodium phosphate detergent (TSP) wash.
- Tap water rinse.
- Distilled water rinse.
- Air dried.

All recovered drilling mud and soil cuttings were containerized in 55-gallon drums, labeled and staged on site. Mud waste included excessively sandy mud retrieved from the mud tub prior to mixing new batches and mud flushed prior to well pipe installation. All drums were subsequently removed from the site (by the City of Beloit) and placed in secure storage at a city wastewater treatment facility. Table 2 (Attachment 4) summarizes the quantities and types of wastes which were drummed.

Observations made during the drilling of the new wells are included on the soil boring logs. However, a brief summary of several noteworthy installation observations is included below:

- A high water table and hydrostatic pressures in the saturated subsurface alluvial sands and gravels presented drilling difficulties which resulted in time consuming drilling mud recirculation problems (e.g., drill rod plugging) and required frequent remixing of mud. In addition, some difficulty was encountered with formation collapse around the well pipe when the mud was flushed from the borehole during well installation activities.

- Shallow subsurface soil and water table groundwater contamination at Well Nos. MW-1DD, MW-2DD and MW-3DD likely impacted recirculating drilling mud during the advancement of the boring. Intermittent mud PID headspace readings and the occasional appearance of oily sheens indicated some degree of petroleum product presence. The occasional removal of contaminated drilling mud and replacement with new drilling mud may have lessened the potential impact of cross-contamination to the eventual screened zone(s).

- Based upon soil sample PID field screening results, a zone of petroleum product contamination appears to be present in the 20- to 25-foot zone at the location of the Well Nos. MW-11S, MW-11D, and MW-11DD well nest.

### *Monitoring Well Development*

All new monitoring wells were developed in accordance with s. NR 141 Wis. Adm. Code during the period June 10-14, 1993. All wells were pumped using a Brainard-Kilman 1.7-inch hand pump discharging to 55-gallon drums. Monitoring well development forms are presented in Attachment 7.

Development water drums were labeled and staged on site until transferred by the City of Beloit to the wastewater treatment facility for storage.

Equipment decontamination procedures were followed to minimize the possibility of cross-contamination between wells. Downwell pump components were cleaned with a high pressure hot water wash system between wells.

## Soil Sampling

Near surface soil sampling was conducted on June 4, 1993 to obtain samples for waste characterization (hazardous waste determination) and microbiology screening. Soil sampling locations are shown in Figure 1 (Attachment 1). A summary of the waste characterization analytical results is presented in Table 3 (Attachment 4). A summary of the microbiology screening (or comparative enumerating assay [CEA] results) is presented in Table 4 (Attachment 4). The laboratory reports for all soil sampling is included in Attachment 5.

## Waste Characterization Soil Sampling

Soil samples were collected from four locations (WC-01, WC-02, WC-03 and WC-04) shown in Figure 1. Locations WC-01 and WC-02 were selected due to their proximity to previously detected elevated total petroleum hydrocarbon (TPH) concentrations in black fill material at locations MW-3S and MW-1, respectively. Locations WC-03 and WC-04 are located within a previously identified area where paint waste may be present.

The soil at the locations sampled were composited over the sampling intervals below:

| Sample I.D. No. | Sample Interval (Feet) | Soil Description |
|---|---|---|
| BE-WC-01 | 3-7′ | Black gravelly sand fill, moist to wet. |
| BE-WC-02 | 1-5′ | Black silty gravely sand fill, moist. |
| BE-WC-03 | 1-5′ | Black & gray-brown gravel and sand fill, moist to wet. |
| BE-WC-04 | 1-5′ | Brown gravelly sand fill and silty sand, moist. |

The soil samples were collected by pounding precleaned split-spoon samplers over the intervals indicated. The split-spoon sampler contents were composited in stainless steel trays and subsequently transferred to sample containers for the laboratory analysis of toxicity characteristics leaching procedure (TCLP) volatiles, TCLP semivolatiles, TCLP metals, TCLP pesticides and TCLP herbicides. All samples were placed in secure, cool storage and a chain-of-custody protocol was maintained by Foth & Van Dyke. The samples were shipped the day of collection via overnight courier service to the ORTEK laboratory in Green Bay, Wisconsin.

Split spoon samplers and stainless steel sampling equipment was decontaminated with a high pressure hot water spray wash system and allowed to air dry between samples.

The analytical results are summarized in Table 3 (Attachment 4). The results did not indicate that any of the samples analyzed exhibited characteristics of a TCLP hazardous waste. TCLP organics testing did not detect concentrations above the laboratory detection limits. In addition, only barium at concentration levels below hazardous waste concentrations was detected among the TCLP metals.

## CEA Soil Sampling

Ten soil samples for CEA analysis were collected from seven locations shown in Figure 1 (Attachment 1). Sampling locations were selected to represent a wide spatial and previously evaluated TPH concentration distribution (by locating in close proximity to previous drilling/sampling locations). For example, Location CEA-07, adjacent to former Well No. MW-6 was selected as a potential clean area. Other locations such as CEA-02

and CEA-03 were selected due to their close proximity to known contaminated areas. In addition, the degrader population (i.e., gasoline or diesel) was varied to evaluate the presence of microorganisms capable of degrading the contaminant most likely to be present in a given area.

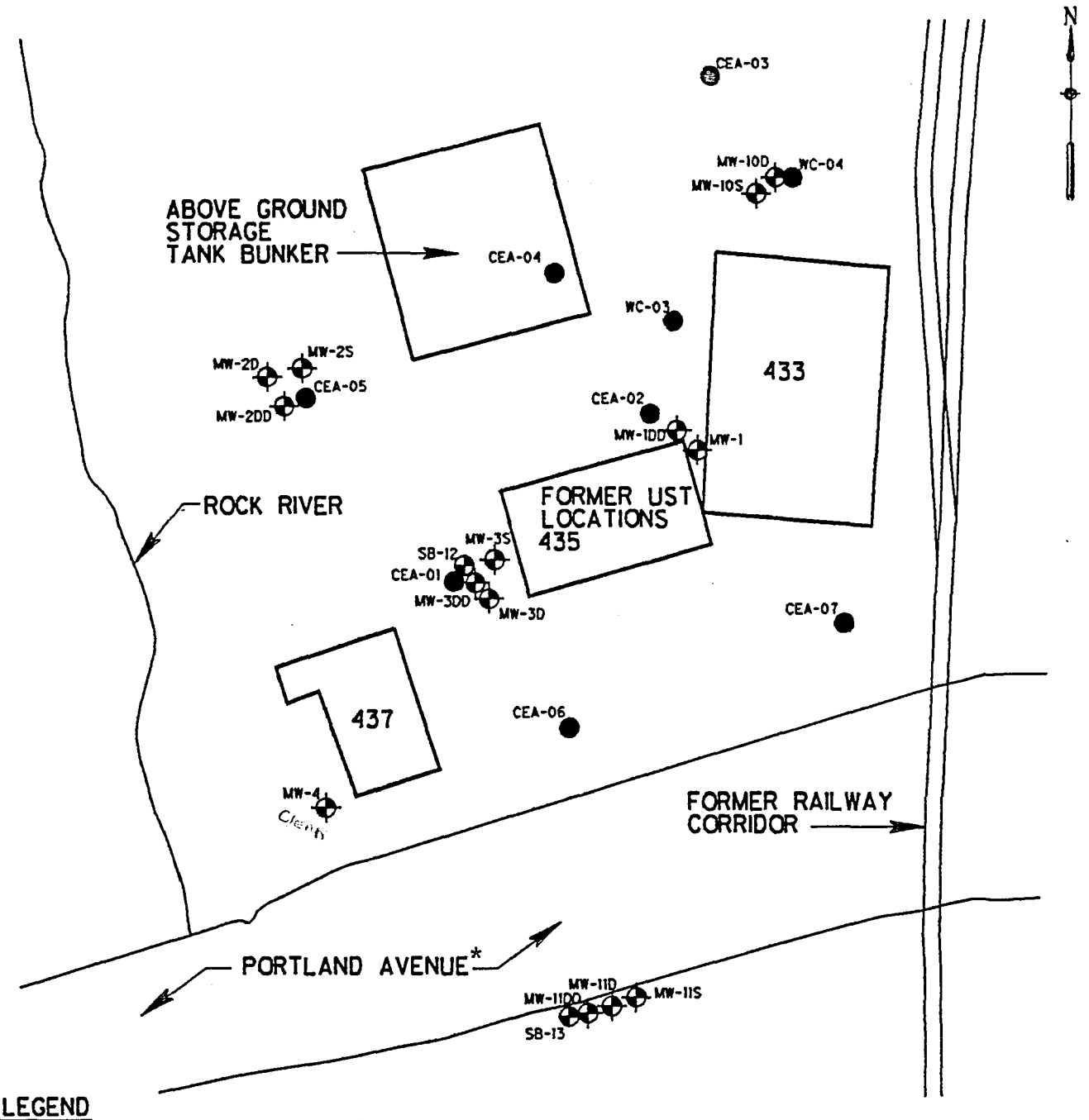
Grab samples were collected from specific sampling intervals by pounding decontaminated split spoon samplers. The sampling intervals and soil descriptions are summarized in Table 4 (Attachment 4). The split spoon sampler contents were transferred to sterilized four-ounce containers (provided by the laboratory) and placed in cool secure storage until delivered by Foth & Van Dyke to BioRenewal Technologies, Inc. in Madison, Wisconsin within 12 hours of collection. Chain-of-Custody documentation is included in Attachment 5.

Equipment decontamination procedures were followed to minimize the potential for cross-contamination between sampling locations and intervals. Split-spoon samplers and stainless steel sampling equipment were decontaminated using a high-pressure hot water wash system between uses. In addition, washed spoons were wipe-dried with new paper toweling and allowed to air dry.

The analytical results are summarized in Table 4 (Attachment 4). The mean total populations (which included petroleum product degrader and non-degrader microorganisms) in the soil samples submitted ranged from a low of 1.5E+05 Colony Forming Units (cfus) per gram of dry weight soil in Sample No. BE-CEA-05BG, to a high of 5.1+06 cfus in presumed "clean" Sample No. BE-CEA-08G.

The estimated mean degrader populations (specific to gasoline and diesel carbon sources) suggest microbial activity in response to the presence of petroleum product contamination. Total mean degrader populations ranged from 1.3E+04 for a diesel carbon source in presumed "clean" Sample No. BE-CEA-07D, to a high of 8.4E+05 for a diesel carbon source in Sample No. BE-CEA-03D. Expressed as a percentage of the mean total population, combined gasoline and diesel carbon source degrader populations ranged from a low of 2.4 percent at presumed "clean" Sample Nos. BE-CEA-07G and BE-CEA-07D, to a high of 74 percent at Sample No. BE-CEA-05AG.

Although TPH laboratory analyses were not performed in concert with the CEA analyses for correlation purposes, based upon visual observations during field sampling, some of the soil samples collected from areas of assumed relatively high contamination such as locations CEA-01, CEA-02, CEA-04 and CEA-06, contained relatively lower degrader populations as a percentage of the total population (i.e., 3.5 to 6.9 percent). Although it is not possible to evaluate the actual causes with the available data, possible causes may include toxicity resulting from excessively high petroleum product contamination, varying nutrient availability and moisture conditions. In addition, the degrader populations specific to both gasoline and diesel sources, were not always estimated at each sampling location, because the choice for analyzing GRO or DRO degrader populations was based on previous analyses performed.




## LEGEND

MW-3DD — MONITORING WELL (FOTH & VAN DYKE - JUNE 1993 WELL NOS. MW-1DD, MW-2DD, MW-3DD, MW-11S, MW-11D AND MW-11DD MONITORING WELL (DAMES + MOORE WELL NOS. MW-1, MW-25, MW-2D, MW-3S, MW-3D, MW-4, MW-10S AND MW-10D)

SB-12 — HYDROPUNCH SOIL BORING

CEA-01 / WC-01 — COMPARATIVE ENUMERATION ASSAY AND/ OR WASTE CHARACTERIZATION SOIL SAMPLING LOCATION

## NOTES:

DRILLING/SAMPLING LOCATIONS APPROXIMATED LOCATIONS NOT SURVEYED BY FOTH & VAN DYKE

* NOTED AS WOODWARD AVENUE ON DAMES & MOORE DRAWINGS, BUT ACCORDING TO WDOT THE NAME CHANGES EAST OF HWY 51.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

# FIGURE 1
DRILLING/SAMPLING LOCATIONS
BORGERDING ESTATE SITE
BELOIT, WISCONSIN

| Scale: | 1" = 50' | Date: | JULY, 1993 |
|---|---|---|---|
| Prepared By: | Foth & Van Dyke | By: | BBV |

3w44z1.DGN

93W044

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste, Emergency Response, Wastewater, Haz. Waste, Underground Tanks, Water Resources, X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Page 1 of 1

| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | MW-1DD |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/09/93<br>MM/DD/YY | 06/09/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | MW-1DD | | | 6.0 inches |

Boring Location
State Plane ___ N, ___ E S/C/N
NE 1/4 of NE 1/4 of Section 35, T1N, R12E
Lat
Long

Local Grid Location (if applicable)
___ Feet ___ N ___ S
___ Feet ___ E ___ W

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/ Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | NOTES: | | | | | | | | | | |
| | | | -- | No soil samples collected. | | | | | | | | | | |
| | | | -- | 6" casing set to 15'. | | | | | | | | | | |
| | | | -- 5 | Much f. to c. sand in recirculating drilling mud. | | | | | | | | | | |
| | | | -- | New mud batches mixed to improve recirculation and purge oily mud. | | | | | | | | | | |
| | | | -- 10 | Mud PID headspace field screening conducted. | | | | | | | | | | Mud PID = 350 ppm |
| | | | -- 15 | | | | | | | | | | | |
| | | | -- 20 | | | | | | | | | | | |
| | | | -- 25 | Advance casing to 15', mix new mud. | | | | | | | | | | |
| | | | -- 30 | Mud PID headspace = 150 ppm, slight oily sheen. | | | | | | | | | | |
| | | | -- 35 | Mix new mud. | | | | | | | | | | |
| | | | -- 40 | Mud PID headspace = 59 ppm, no oily sheen. | | | | | | | | | | |
| | | | -- 45 | Mud PID headspace = 124 ppm. | | | | | | | | | | |
| | | | -- 50 | | | | | | | | | | | |
| | | | -- 55 | E.O.B. @ 53.0'. | | | | | | | | | | |
| | | | -- | Well No. MW-1DD installed. | | | | | | | | | | |
| | | | -- | (9) 55-gallon mud drums. | | | | | | | | | | |

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

Signature: Robert Paron

Firm: Foth & Van Dyke

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to:
Solid Waste
Emergency Response
Wastewater
Haz. Waste
Underground Tanks
Water Resources
X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91
Page 1 of 1

| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | MW-2DD |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/10/93<br>MM/DD/YY | 06/11/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | MW-2DD | | | 6.0 inches |

| Boring Location | Local Grid Location (if applicable) |
|---|---|
| State Plane ___ N, ___ E S/C/N<br>NE 1/4 of NE 1/4 of Section 35, T1N, R12E Lat Long | ___ N ___ E<br>Feet S Feet W |

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Grass Surface | | | | | | | | | | |
| | | | -- | NOTES: No soil samples collected. | | | | | | | | | | |
| | | | -- | 6" casing set to 25'. | | | | | | | | | | |
| | | | -- | Much f. to c. sand in recircu- | | | | | | | | | | |
| | | | -- 5 | lating drilling mud. | | | | | | | | | | |
| | | | -- | New mud batches mixed to improve | | | | | | | | | | |
| | | | -- | recirculation and purge oily mud. | | | | | | | | | | |
| | | | -- | Mud PID headspace field screening | | | | | | | | | | |
| | | | -- 10 | conducted. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 15 | Mud PID headspace = 55 ppm. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 20 | | | | | | | | | | | |
| | | | -- | Mix new mud, drive 15' of 6" casing. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 25 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | Mud PID headspace = 60 ppm, rods | | | | | | | | | | |
| | | | -- | plugged - drive casing to 25', mix new | | | | | | | | | | |
| | | | -- 30 | mud 6/11/93 a.m. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 35 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | Mud PID headspace = 285 ppm. | | | | | | | | | | |
| | | | -- 40 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | Mix new mud. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 45 | | | | | | | | | | | |
| | | | -- | Mud PID headspace = 20 ppm. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 50 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | E.O.B. @ 53.0'. | | | | | | | | | | |
| | | | -- 55 | Well No. MW-2DD installed. | | | | | | | | | | |
| | | | -- | (12) 55-gal. mud drums. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |

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

Signature: Richard Van Dyke

Firm: Foth & Van Dyke

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to:
Solid Waste
Emergency Response
Wastewater
Haz. Waste
Underground Tanks
Water Resources
X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91
Page 1 of 1

| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | MW-3DD |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/08/93<br>MM/DD/YY | 06/09/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | MW-3DD | | | 6.0 inches |

Boring Location
State Plane ___ N, ____ E S/C/N Lat
NE 1/4 of NE 1/4 of Section 35, T1N, R12E Long

Local Grid Location (if applicable)
___ N Feet
___ S
___ E Feet
___ W

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Concrete (approx. 2.5') surface. | | | | | | | | | | |
| | | | -- | NOTES: | | | | | | | | | | |
| | | | -- | 6" casing set to 15'. | | | | | | | | | | |
| | | | -- | Much f. to c. sand in recirculating | | | | | | | | | | |
| | | | -- 5 | drilling mud. | | | | | | | | | | |
| | | | -- | New mud batches mixed to improve | | | | | | | | | | |
| | | | -- | recirculation. | | | | | | | | | | |
| | | | -- | Oily sheen on recirculating mud. | | | | | | | | | | |
| | | | -- 10 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 15 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 20 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 25 | M. dense, brown subangular to rounded | GP | | | 0.0 | | Wet | | | | |
| 1 | 24 | 14 | -- | f. GRAVEL, tr. f. to m. sand (possibly | | | | | | | | | | |
| | | | -- | slough). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 30 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 35 | M. dense, brown f. to m. sandy f.GRAVEL, | | | | | | | | | | |
| 2 | 14 | 11 | -- | tr. silt. | GP | | | 0.0 | | Wet | | | | |
| | | | -- | Mix new mud. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 40 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 45 | M. dense, brown f. gravelly, f. to c. | | | | | | | | | | |
| 3 | 8 | 22 | -- | SAND, tr. silt. Advance casing to 15'. | SW | | | 0.0 | | Wet | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 50 | 6-9-93 a.m.-Mix new mud, approx. 10 gal. | | | | | | | | | | |
| | | | -- | oily water collected at initiation of | | | | | | | | | | |
| | | | -- | recirculation. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 55 | E.O.B. @ 53.0'. | | | | | | | | | | |
| | | | -- | Well No. MW-3DD installed. | | | | | | | | | | |
| | | | -- | (10) 55-gal. mud drums. | | | | | | | | | | |

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

Signature: Robert Pearson

Firm: Foth & Van Dyke

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste, Emergency Response, Wastewater, Haz. Waste, Underground Tanks, Water Resources, X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Page 1 of 1

| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | MW-11S |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/03/93<br>MM/DD/YY | 06/03/93<br>MM/DD/YY | Hollow-Stem Auger |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | MW-11S | | | 8.0 inches |

Boring Location
State Plane ___ N, ____ E S/C/N Lat
NE 1/4 of NE 1/4 of Section 35, T1N, R12E Long

Local Grid Location (if applicable)
____ Feet ___ N S ____ Feet ___ E W

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Concrete (6") sidewalk. | | | | | | | | | | |
| | | | -- | FILL, brown f. to m. sand, tr. f.gravel. | | | | | | | | | | |
| 1 | 7 | 12 | -- | | hf | | | 0.0 | | Mst | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | V. | | | | |
| | | | -- 5 | Fill, brown f. sandy f. gravel. 5.2' | | | | | | mst- | | | | |
| 2 | 24 | 2 | -- | V. soft, black to dk. gray, v.f. to f. | ml/ | | | 0.0 | | Wet | | | | Wet @ |
| | | | -- | sandy SILT, tr. wood fragments, grading | ol | | | | | | | | | ~6'. |
| | | | -- | to v. soft dk. gray SILT. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 10 | | | | | | | | | | | |
| 3 | 12 | 28 | -- | M. dense, gray f. gravelly f. SAND. | sp | | | 0.0 | | Wet | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 15 | | | | | | | | | | | |
| 4 | 8 | 112/ | -- | V. dense, as above, subangular to | | | | 0.0 | | Wet | | | | |
| | | 10" | -- | rounded, f. gravel. | | | | | | | | | | |
| | | | -- | E.O.B. @ 17.0'. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 20 | Well No. MW-11S installed. | | | | | | | | | | |
| | | | -- | (1) 55-gal. cuttings drum. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 25 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 30 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |

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

Signature: Robert Van

Firm: Foth & Van Dyke

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste, Emergency Response, Wastewater, Haz. Waste, Underground Tanks, Water Resources, X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91

Page 1 of 1

| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | MW-11D |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/03/93<br>MM/DD/YY | 06/03/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | MW-11D | | | 6.0 inches |

| Boring Location | Local Grid Location (if applicable) |
|---|---|
| State Plane ___ N, ____ E S/C/N Lat<br>NE 1/4 of NE 1/4 of Section 35, T1N, R12E Long | ___ N ___ E<br>Feet S Feet W |

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Concrete (6") sidewalk. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | Notes: | | | | | | | | | | |
| | | | -- | See Boring Log MW-11S for soil | | | | | | | | | | |
| | | | -- | description to 17.0'. | | | | | | | | | | |
| | | | -- 5 | 6" casing set to 5'. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 10 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 15 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 20 | M. dense, brown v.f. to c. SAND, tr. | SW | | | 104 | | Wet | | | | |
| 1 | 18 | 25 | -- | silt, tr. f. subangular to subrounded | | | | | | | | | | |
| | | | -- | gravel. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 25 | | | | | | | | | | | |
| 2 | 7 | 24 | -- | As above, tr. cobbles. | SW | | | 201 | | Wet | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | E.O.B. @ 27.0'. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 30 | | | | | | | | | | | |
| | | | -- | Well No. MW-11D installed. | | | | | | | | | | |
| | | | -- | (4) 55-gal. mud drums. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |

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

Signature: Robert Paar

Firm: Foth & Van Dyke

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste, Emergency Response, Wastewater, Haz. Waste, Underground Tanks, Water Resources, X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | MW-11DD |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/10/93<br>MM/DD/YY | 06/10/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | MW-11DD | | | 6.0 inches |

Boring Location
State Plane ___ N, ____ E S/C/N Lat
NE 1/4 of NE 1/4 of Section 35, T1N, R12E Long

Local Grid Location (if applicable)
___ Feet N ___ Feet E
___ Feet S ___ Feet W

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Concrete (6") sidewalk. | | | | | | | | | | |
| | | | -- | NOTES: | | | | | | | | | | |
| | | | -- | See Boring Logs MW-11S and MW-11D for soil description to 27.0'. | | | | | | | | | | |
| | | | -- 5 | 6" casing set to 15'. | | | | | | | | | | |
| | | | -- | No soil samples collected. | | | | | | | | | | |
| | | | -- | Much f. to c. sand in recirculating drilling mud. | | | | | | | | | | |
| | | | -- 10 | New mud batches mixed to improve circulation. | | | | | | | | | | |
| | | | -- | Mud PID headspace field screening conducted. | | | | | | | | | | |
| | | | -- 15 | | | | | | | | | | | |
| | | | -- 20 | | | | | | | | | | | |
| | | | -- 25 | | | | | | | | | | | |
| | | | -- 30 | New mud mixed. | | | | | | | | | | |
| | | | -- 35 | | | | | | | | | | | |
| | | | -- 40 | Mud PID headspace = 40 ppm. | | | | | | | | | | |
| | | | -- 45 | New mud mixed. | | | | | | | | | | |
| | | | -- 50 | Mud PID headspace = 3 ppm. | | | | | | | | | | |
| | | | -- | E.O.B. @ 53.0'. | | | | | | | | | | |
| | | | -- | Well No. MW-11DD installed. | | | | | | | | | | |
| | | | -- 55 | (8) 55-gal. mud drums. | | | | | | | | | | |
| | | | -- | (1) 55-gal. cuttings drum. | | | | | | | | | | |

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

Signature: Richard Parmentier

Firm: Foth & Van Dyke

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to:
Solid Waste
Emergency Response
Wastewater
Haz. Waste
Underground Tanks
Water Resources
X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91
Page 1 of 1

| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | SB-12 |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/01/93<br>MM/DD/YY | 06/01/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | | | | 4.0 inches |

| Boring Location | Local Grid Location (if applicable) |
|---|---|
| State Plane ___ N, ___ E S/C/N<br>NE 1/4 of NE 1/4 of Section 35, T1N, R12E | Lat<br>Long |
| | ___ N<br>Feet ___ S<br>Feet ___ E<br>___ W |

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/ Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Concrete (10"). | | | | | | | | | | |
| | | | -- | Notes: | | | | | | | | | | |
| | | | -- | Bentonite mud rotary drilling w/ | | | | | | | | | | Wet @ ~7'. |
| | | | -- 5 | Hydropunch II water sampling. | | | | | | | | | | |
| | | | -- | 6" casing set to 5'. | | | | | | | | | | |
| | | | -- | No soil samples collected. | | | | | | | | | | |
| | | | -- | Much f. to c. sand in recirculating | | | | | | | | | | |
| | | | -- 10 | mud throughout boring. | | | | | | | | | | |
| | | | -- | Occasional oily sheen visible in | | | | | | | | | | |
| | | | -- | drilling mud. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 15 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 20 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | Hydropunch II water samples: | | | | | | | | | | |
| | | | -- 25 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| 01 | | | -- | Sample No. BE-SB12-01, t=1520. | | | | | | | | | | |
| | | | -- 30 | (Sample Interval 28-30'). | | | | | | | | | | |
| 02 | | | -- | Sample No. BE-SB12-02, t=1630. | | | | | | | | | | |
| | | | -- | (Sample Interval 31.5-33.5'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 35 | | | | | | | | | | | |
| 03 | | | -- | Sample No. BE-SB12-03, t=1750. | | | | | | | | | | |
| | | | -- | (Sample Interval 36-38'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 40 | | | | | | | | | | | |
| 04 | | | -- | Sample No. BE-SB12-04, t=1850. | | | | | | | | | | |
| | | | -- | (Sample Interval 41-43'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 45 | | | | | | | | | | | |
| 05 | | | -- | Sample No. BE-SB12-05, t-1955. | | | | | | | | | | |
| | | | -- | (Sample Interval 46-48'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 50 | E.O.B. @ 48.0'. | | | | | | | | | | |
| | | | -- | Borehole abandoned w/bentonite-sand | | | | | | | | | | |
| | | | -- | slurry. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 55 | (2) 55-gal. mud drums. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |

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

| Signature | Firm |
|---|---|
| Robert Paum | Foth & Van Dyke |

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste, Emergency Response, Wastewater, Haz. Waste, Underground Tanks, Water Resources, X Other: Env. Response/Repair

SOIL BORING LOG INFORMATION
Form 4400-122 7-91



| Facility/Project Name | License/Permit/Monitoring Number | Boring Number |
|---|---|---|
| Borgerding Site - Beloit - 93W044 | | SB-13 |

| Boring Drilled by (Firm name and name of crew chief) | Date Started | Date Completed | Drilling Method |
|---|---|---|---|
| WTD Environmental Drilling<br>R. Radtke | 06/02/93<br>MM/DD/YY | 06/02/93<br>MM/DD/YY | Mud Rotary |

| DNR Facility Well No. | WI Unique Well No. | Common Well Name | Final Static Water Level | Surface Elevation | Borehole Diameter |
|---|---|---|---|---|---|
| | | | | | 4.0 inches |

| Boring Location | Local Grid Location (if applicable) |
|---|---|
| State Plane ___ N, ___ E S/C/N<br>NE 1/4 of NE 1/4 of Section 35, T1N, R12E | Lat<br>Long |
| | ___ N ___ E<br>Feet S Feet W |

| County | DNR County Code | Civil Town/City/or Village |
|---|---|---|
| Rock | 54 | City of Beloit |

| SAMPLE No. | SAMPLE Rec (in) | Blow Counts | Depth in Feet | Soil/rock description and geologic origin for each major unit | USCS | Graph Log | Well Diag | PID/FID | Soil Properties: Std Pntr | Mst Cont | Liq Lim | Plas Lim | P 200 | RQD/ Comm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | -- | Concrete (6") sidewalk. | | | | | | | | | | |
| | | | -- | Notes: | | | | | | | | | | |
| | | | -- | Bentonite mud rotary drilling w/ | | | | | | | | | | |
| | | | -- 5 | Hydropunch II water sampling. | | | | | | | | | | |
| | | | -- | 6" casing set to 8'. | | | | | | | | | | |
| | | | -- | No soil samples collected. | | | | | | | | | | |
| | | | -- | Much f. to c. sand in recirculating | | | | | | | | | | |
| | | | -- 10 | mud. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 15 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 20 | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | Hydropunch II water samples: | | | | | | | | | | |
| | | | -- 25 | | | | | | | | | | | |
| 01 | | | -- | Sample No. BE-SB13-01, t=1240. | | | | | | | | | | |
| | | | -- | (Sample Interval 27-29'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 30 | | | | | | | | | | | |
| 02 | | | -- | Sample No. BE-SB13-02, t=1320. | | | | | | | | | | |
| | | | -- | (Sample Interval 32-34'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 35 | | | | | | | | | | | |
| 03 | | | -- | Sample No. BE-SB13-03, t=1435. | | | | | | | | | | |
| | | | -- | (Sample Interval 37-39'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 40 | | | | | | | | | | | |
| 04 | | | -- | Sample No. BE-SB13-04, t=1540. | | | | | | | | | | |
| | | | -- | (Sample Interval 42-44'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 45 | | | | | | | | | | | |
| 05 | | | -- | Sample No. BE-SB13-05, t-1705. | | | | | | | | | | |
| | | | -- | (Sample Interval 47-49'). | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 50 | E.O.B. @ 49.0'. | | | | | | | | | | |
| | | | -- | Borehole abandoned w/bentonite-sand | | | | | | | | | | |
| | | | -- | slurry. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- 55 | (2) 55-gal. mud drums. | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |
| | | | -- | | | | | | | | | | | |

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

| Signature | Firm |
|---|---|
| Robert Parmer | Foth & Van Dyke |

This form is authorized by Chapters 114.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each volation. 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 114.06, Wis. Stats.

State of Wisconsin
Department of Natural Resources

# WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 7-89

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: Borgerding Site
County: Rock
NE 1/4 of NE 1/4 of Sec. 35 ; T. 1 N; R. 12 [X] E [ ] W
(If applicable) _____ Gov't Lot _____ Grid Number
Grid Location _____ ft. [ ] N. [ ] S., _____ ft. [ ] E. [ ] W.
Civil Town Name:
Street Address of Well: 434 Portland Avenue ROW
City, Village: Beloit, Wisconsin

## (2) FACILITY NAME

Original Well Owner (If Known):
Present Well Owner: City of Beloit
Street or Route: 100 State Street
City, State, Zip Code: Beloit, Wisconsin 53511
Facility Well No. and/or Name (If Applicable): SB-13
WI Unique Well No.:
Reason For Abandonment: Investigative Only
Date of Abandonment: 06/02/93

## WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On
(Date) 06/02/93

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [X] Yes [ ] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify)

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) 49 ~~Casing~~ Diameter (ins.) 4
(From groundsurface)

Casing Depth (ft.) _____

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

(4) Depth to Water (Feet) 6

| | | | |
|---|---|---|---|
| Pump & Piping Removed? | [ ] Yes | [ ] No | [X] Not Applicable |
| Liner(s) Removed? | [ ] Yes | [ ] No | [X] Not Applicable |
| Screen Removed? | [ ] Yes | [ ] No | [X] Not Applicable |
| Casing Left in Place? | [ ] Yes | [X] No | |

If No, Explain: No casing - mud rotary drilling

| | | |
|---|---|---|
| Was Casing Cut Off Below Surface? | [ ] Yes | [ ] No |
| Did Sealing Material Rise to Surface? | [X] Yes | [ ] No |
| Did Material Settle After 24 Hours? | [X] Yes | [ ] No |
| If Yes, Was Hole Retopped? | [X] 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

| (7) Sealing Material Used | From (Ft.) | To (Ft.) | No. Yards, Sacks Sealant or Volume | Mix Ratio or Mud Weight |
|---|---|---|---|---|
| Concrete | Surface | 0.5 | 0.1 $ft^3$ | |
| 3/8 in. Bentonite Chips | 0.5 | 2.0 | 0.3 $ft^3$ | |
| Granular & Bentonite Powder/Formation Sand Slurry | 2.0 | 49 | 4.1 $ft^3$ | Approx. 13% bentonite by wt. Approx. 10% sand by vol. |

(8) Comments: Used drilling mud (approx. 9% bentonite by wt.) and thickened w/50 lbs. granular bentonite (approx. 13% by wt.) for abandonment, topped up w/bentonite chips and concrete.

(9) Name of Person or Firm Doing Sealing Work
~~WTD~~ Environmental Drilling, Inc.
Signature of ~~Person~~ Doing Work
Date Signed: 06/30/93
Street or Route: P. O. Box 109
Telephone Number: (715) 359-7090
City, State, Zip Code: Schofield, Wisconsin 54476-0109

(10) FOR DNR OR COUNTY USE ONLY

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

DNR/COUNTY

## REASONS FOR WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Wis. Adm. Code (NR 111, NR 112, & NR 141) requires well owners to permanently abandon unused wells/drillholes/boreholes on their property. The reasons for this requirement are:

- To prevent contamination from entering the well/drillhole/borehole at the surface or through corroded well casings and moving downward to an aquifer used by other wells, and

- To prevent vertical movement of water between different geologic formations of differing water quality.

Most licensed well drillers and pump installers have the equipment, knowledge and experience needed to permanently abandon wells/drillholes/boreholes. We recommend that these licensed contractors be hired to do this work.

### PROCEDURE

1. Remove any pump, pump piping, debris or other obstacles that could interfere with the sealing operation. In most situations the well casing should be left in place. When the casing is removed it should be pulled during the abandonment process so the drillhole does not collapse.

2. The sealing material must be placed with a conductor (tremie) pipe either by pumping or by gravity, (except when approved chipped bentonite is used according to department instructions).

3. The bottom end of the conductor pipe must initially reach the bottom of the well and must be kept submerged in the sealing material as it is placed.

4. Unconsolidated formation wells should be sealed with the materials listed in item (6) on the form. When clay or sodium benonite slurry is used to fill wells, the top 20 feet must be sealed with neat cement grout, concrete grout, concrete, or bentonite chips. Bedrock formation wells should be filled with neat cement grout, concrete grout or concrete. Monitoring wells must be filled with the materials specified by NR 141, Wis. Adm. Code.

5. Fill the entire well column from the bottom to the top with the required sealing material.

6. Any standing water in the hole will be forced out by the concrete or cement grout (it is more dense) resulting in an entire column of cement to seal the well. The sealing material must flow at the surface with the same consistency as it is being pumped in.

7. The casing may be cut off several feet below the ground surface.

8. To abandon flowing wells, the flow must be stopped or greatly reduced. This can be accomplished by extending the well casing to an elevation higher than the artesian head, or inserting a seal or packer in the casing. Once the flow has been stopped or reduced, the well can be abandoned the same as other wells.

9. For a municipal well, information regarding drillhole diameter and depths and geologic formations should be submitted on a separate sheet.

10. For use of alternative methods and materials, especially for deep, multi-formation wells contact DNR.

### TEMPORARY ABANDONMENT

- A well may be temporarily abandoned if it is planned to place the well back in service within a time specified by administrative rule.

- Temporary abandonment is accomplished by threading or welding a watertight cover to the casing or by filling the well with a clean clay slurry and then placing a cover over the well.

- If the well is not placed back into service, it should be permanently abandoned unless a written extension is granted by DNR.

### REPORT TO DNR

The Well/Drillhole/Borehole Abandonment Form 3300-5B, on the front, must be completed by the owner (or agent) and submitted to the appropriate DNR district office or delegated county office within 30 days.

**This form is authorized by chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10.00 nor more than $5,000.00 for each violation. Fined not less than $10.00 or more than $100.00 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

# WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 7-89

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: Borgerding Site
County: Rock

NE 1/4 of NE 1/4 of Sec. 35 ; T. 1 N; R. 12 [X] E [ ] W

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

Grid Location _____ ft. [ ] N. [ ] S., _____ ft. [ ] E. [ ] W.

Civil Town Name

Street Address of Well: 435 Portland Avenue

City, Village: Beloit, Wisconsin

## (2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: Ursula Borgerding Estate

Street or Route: 1000 East Dean Road

City, State, Zip Code: Milwaukee, Wisconsin

Facility Well No. and/or Name (If Applicable): SB-12

WI Unique Well No. _ _ _ _ _ _

Reason For Abandonment: Investigative Only

Date of Abandonment: 06/01/93

## WELL/DRILLHOLE/BOREHOLE INFORMATION

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

(Date) 06/01/93

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [X] Yes [ ] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total ~~Well~~ Depth (ft.) 48 ~~Casing~~ Diameter (ins.) 4
(From groundsurface)

Casing Depth (ft.) _____

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

(4) Depth to Water (Feet) 7

| | | | |
|---|---|---|---|
| Pump & Piping Removed? | [ ] Yes | [ ] No | [X] Not Applicable |
| Liner(s) Removed? | [ ] Yes | [ ] No | [X] Not Applicable |
| Screen Removed? | [ ] Yes | [ ] No | [X] Not Applicable |
| Casing Left in Place? | [ ] Yes | [X] No | |

If No, Explain: No casing - mud rotary drilling

| | | |
|---|---|---|
| Was Casing Cut Off Below Surface? | [ ] Yes | [ ] No |
| Did Sealing Material Rise to Surface? | [X] Yes | [ ] No |
| Did Material Settle After 24 Hours? | [X] Yes | [ ] No |
| If Yes, Was Hole Retopped? | [X] Yes | [ ] No |

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [X] Conductor Pipe-Pumped
[ ] Dump Bailer [ ] Other (Explain)

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[X] Bentonite-Sand Slurry
[X] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[ ] Granular Bentonite

| (7) Sealing Material Used | From (Ft.) | To (Ft.) | No. Yards, Sacks Sealant or Volume | Mix Ratio or Mud Weight |
|---|---|---|---|---|
| Concrete | Surface | 0.5 | 0.1 $ft^3$ | |
| 3/8 in. Bentonite Chips | 0.5 | 3.5 | 0.6 $ft^3$ | |
| Sand Granular & Bentonite Powder/Formation Slurry | 3.5 | 48 | 3.9 $ft^3$ | Approx. 13% bentonite by wt. |
| | | | | Approx. 10% sand by vol. |

(8) Comments: Used drilling mud (approx. 9% bentonite by wt.) and thickened w/50 lbs. granular bentonite (approx. 13% bentonite by wt.) for abandonment, topped up w/bentonite chips and concrete.

(9) Name of Person or Firm Doing Sealing Work
WTD Environmental Drilling, Inc.

Signature of Person Doing Work: [signature]
Date Signed: 06/30/93

Street or Route: P. O. Box 109
Telephone Number: (715) 359-7090

City, State, Zip Code: Schofield, Wisconsin 54476-0109

(10) FOR DNR OR COUNTY USE ONLY

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

DNR/COUNTY

## REASONS FOR WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Wis. Adm. Code (NR 111, NR 112, & NR 141) requires well owners to permanently abandon unused wells/drillholes/boreholes on their property. The reasons for this requirement are:

- To prevent contamination from entering the well/drillhole/borehole at the surface or through corroded well casings and moving downward to an aquifer used by other wells, and
- To prevent vertical movement of water between different geologic formations of differing water quality.

Most licensed well drillers and pump installers have the equipment, knowledge and experience needed to permanently abandon wells/drillholes/boreholes. We recommend that these licensed contractors be hired to do this work.

### PROCEDURE

1. Remove any pump, pump piping, debris or other obstacles that could interfere with the sealing operation. In most situations the well casing should be left in place. When the casing is removed it should be pulled during the abandonment process so the drillhole does not collapse.
2. The sealing material must be placed with a conductor (tremie) pipe either by pumping or by gravity, (except when approved chipped bentonite is used according to department instructions).
3. The bottom end of the conductor pipe must initially reach the bottom of the well and must be kept submerged in the sealing material as it is placed.
4. Unconsolidated formation wells should be sealed with the materials listed in item (6) on the form. When clay or sodium benonite slurry is used to fill wells, the top 20 feet must be sealed with neat cement grout, concrete grout, concrete, or bentonite chips. Bedrock formation wells should be filled with neat cement grout, concrete grout or concrete. Monitoring wells must be filled with the materials specified by NR 141, Wis. Adm. Code.
5. Fill the entire well column from the bottom to the top with the required sealing material.
6. Any standing water in the hole will be forced out by the concrete or cement grout (it is more dense) resulting in an entire column of cement to seal the well. The sealing material must flow at the surface with the same consistency as it is being pumped in.
7. The casing may be cut off several feet below the ground surface.
8. To abandon flowing wells, the flow must be stopped or greatly reduced. This can be accomplished by extending the well casing to an elevation higher than the artesian head, or inserting a seal or packer in the casing. Once the flow has been stopped or reduced, the well can be abandoned the same as other wells.
9. For a municipal well, information regarding drillhole diameter and depths and geologic formations should be submitted on a separate sheet.
10. For use of alternative methods and materials, especially for deep, multi-formation wells contact DNR.

### TEMPORARY ABANDONMENT

- A well may be temporarily abandoned if it is planned to place the well back in service within a time specified by administrative rule.
- Temporary abandonment is accomplished by threading or welding a watertight cover to the casing or by filling the well with a clean clay slurry and then placing a cover over the well.
- If the well is not placed back into service, it should be permanently abandoned unless a written extension is granted by DNR.

### REPORT TO DNR

The Well/Drillhole/Borehole Abandonment Form 3300-5B, on the front, must be completed by the owner (or agent) and submitted to the appropriate DNR district office or delegated county office within 30 days.

**This form is authorized by chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10.00 nor more than $5,000.00 for each violation. Fined not less than $10.00 or more than $100.00 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.**

# Attachment 4

## Tables

# Table 1

## Hydropunch Groundwater Sampling Results
## Borgerding Estate Site
## June, 1993

| Soil Boring No. | Groundwater Sample ID No. | Sampling Interval (ft.) | Concentration (ug/l) | | | |
|---|---|---|---|---|---|---|
| | | | Benzene | Ethylbenzene | Toluene | Xylenes |
| SB-12 | BE-SB12-01 | 28-30 | 4.9 | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-12 | BE-SB12-02 | 31.5-33.5 | ND (1.0) | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-12 | BE-SB12-03 | 36-38 | 19 | 1.7 | 2.8 | 3.8 |
| SB-12 | BE-SB12-04 | 41-43 | 1.8 | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-12 | BE-SB12-05 | 46-48 | 7.5 | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-13 | BE-SB13-01 | 27-29 | 290 | ND (5.0) | ND (5.0) | ND (15) |
| SB-13 | BE-SB13-02 | 32-34 | ND (1.0) | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-13 | BE-SB13-03 | 37-39 | ND (1.0) | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-13 | BE-SB13-04 | 42-44 | ND (1.0) | ND (1.0) | ND (1.0) | ND (3.0) |
| SB-13 | BE-SB13-05 | 47-49 | ND (1.0) | ND (1.0) | ND (1.0) | ND (3.0) |

ND = Analyte not detected at or above the detection limit in parenthesis.
ug/l = Micrograms per liter



Prepared by: RLP1
Checked by: LLA

## Table 2

## Drummed Waste Summary
## Borgerding Estate Site
## June, 1993

| Boring/Well No. | Waste Type | | |
|---|---|---|---|
| | Soil Cuttings (drums) | Drilling Mud (drums) | Development Water (drums) |
| MW-1DD | -- | 9 | 3 |
| MW-2DD | -- | 12 | 3 |
| MW-3DD | -- | 10 | 2 |
| MW-11S | 1 | -- | --* |
| MW-11D | -- | 4 | 2 |
| MW-11DD | 1 | 8 | 3 |
| SB-12 | -- | 2 | -- |
| SB-13 | -- | 2 | -- |
| Totals | 2 | 47 | 13 |

* Small quantity of development water from well MW-11S was combined with Well No. MW-11D drum.

## Table 3

## TCLP Waste Characterization Soil Sample Results
## Borgerding Estate Site
## June 1993

| Analytical Parameters | Units | Sampling Location | | | |
|---|---|---|---|---|---|
| | | BE-WC-01 | BE-WC-02 | BE-WC-03 | BE-WC-04 |
| **Volatile Organic Analysis (EPA Method 8240)** | | | | | |
| Vinyl Chloride | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| 1,1-Dichloroethene | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| Chloroform | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| 1,2-Dichloroethane | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| Methyl Ethyl Ketone | mg/l | <0.20 | <0.20 | <0.20 | <0.20 |
| Carbon Tetrachloride | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| Trichloroethene | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| Benzene | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| Tetrachloroethene | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| Chlorobenzene | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| 1,4-Dichlorobenzene | mg/l | <0.10 | <0.10 | <0.10 | <0.10 |
| **Semivolatile Organic Analysis (EPA Method 8270)** | | | | | |
| Pyridine | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| o-Cresol | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| m,p-Cresol | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |

[32-15/A3S10/10]93W044

Prepared by: BMK1
Checked by: RJK2

Table 3, TCLP Waste Characterization Soil Sample Results (*Continued*)

| Analytical Parameters | Units | Sampling Location | | | |
|---|---|---|---|---|---|
| | | BE-WC-01 | BE-WC-02 | BE-WC-03 | BE-WC-04 |
| Hexachloroethane | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| Nitrobenzene | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| Hexachlorobutadiene | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| 2,4,6-Trichlorophenol | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| 2,4,5-Trichlorophenol | mg/l | <0.25 | <0.25 | <0.25 | <0.25 |
| 2,4-Dinitrotoluene | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| Hexachlorobenzene | mg/l | <0.05 | <0.05 | <0.05 | <0.05 |
| Pentachlorophenol | mg/l | <0.25 | <0.25 | <0.25 | <0.25 |
| **Pesticide and Herbicide Analysis (EPA Methods 8080 and 8150)** | | | | | |
| Chlordane | mg/l | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Endrin | mg/l | <0.0005 | <0.0005 | <0.0005 | <0.0005 |
| Heptachlor | mg/l | <0.00025 | <0.00025 | <0.00025 | <0.00025 |
| gamma-BHC (Lindane) | mg/l | <0.00025 | <0.00025 | <0.00025 | <0.00025 |
| Methoxychlor | mg/l | <0.0025 | <0.0025 | <0.0025 | <0.0025 |
| Toxaphene | mg/l | <0.025 | <0.025 | <0.025 | <0.025 |
| 2,4-D | mg/l | <0.25 | <0.25 | <0.25 | <0.25 |
| 2,4,5-TP (Silvex) | mg/l | <0.002 | <0.002 | <0.002 | <0.002 |

## Table 3, TCLP Waste Characterization Soil Sample Results (*Continued*)

| Analytical Parameters | Units | Sampling Location | | | |
|---|---|---|---|---|---|
| | | BE-WC-01 | BE-WC-02 | BE-WC-03 | BE-WC-04 |
| | | **Metals** | | | |
| Mercury | ug/l | <20 | <20 | <20 | <20 |
| Arsenic | ug/l | <300 | <300 | <300 | <300 |
| Selenium | ug/l | <300 | <300 | <300 | <300 |
| Silver | ug/l | <90 | <90 | <90 | <90 |
| Barium | ug/l | 640 | 760 | 1100 | 550 |
| Cadmium | ug/l | <50 | <50 | <50 | <50 |
| Chromium | ug/l | <130 | <130 | <130 | <130 |
| Lead | ug/l | <580 | <580 | <580 | <580 |

< Compound was not identified above detection limit shown.

# Table 4

## Comparative Enumeration Assay
## Soil Sampling Summary
## Borgerding Estate Site
## June, 1993

| Sample ID No. | Sample Depth (ft) | CEA Results (mean value[1]) Total Population (cfu's) | Gasoline Degrader Population (cfu's) | Diesel Degrader Population (cfu's) | Degrader Population / Total Population (%) | Comments |
|---|---|---|---|---|---|---|
| BE-CEA-01G | 3-5 | 7.9E+05 | 2.8E+04 | NA | 3.5 | Black gravelly sandy fill, petro odor, moist |
| BE-CEA-02D | 3-5 | 3.7E+06 | NA | 1.7E+05 | 4.6 | Black silty gravelly sandy fill, faint petro odor, moist |
| BE-CEA-03D | 5-7 | 3.0E+06 | NA | 8.4E+05 | 28 | Brown sandy fill and sandy silt, moist |
| BE-CEA-04D | 3-5 | 2.1E+05 | NA | 9.4E+03 | 4.5 | Black and brown sand fill, strong petro odor, wet at 4 feet |
| BE-CEA-05AG | 1-3 | 3.4E+05 | 2.5E+05 | NA | 74 | Brown sandy and gravelly fill, moist |
| BE-CEA-05BG | 3-5 | 1.5E+05 | 3.3E+04 | NA | 22 | Brown gravelly sand, faint petro odor, wet |
| BE-CEA-06G | 4-6 | 1.6E+06 | 1.1E+05 | NA | 6.9 | Brown and black gravelly sand fill, strong petro odor, wet and 5.5 feet |
| BE-CEA-06D | 4-6 | 4.5E+06 | NA | 2.6E+05 | 5.8 | |
| BE-CEA-07G | 4-6 | 5.1E+06 | 7.3E+04 | NA | 1.4 | Brown gravelly sand fill and silt, moist, presumed "clean" location based upon previous MW-6 soil sampling results |
| BE-CEA-07D | 4-6 | 1.3E+06 | NA | 1.3E+04 | 1.0 | |

CEA Comparative enumeration assay.
cfu's Colony forming units/gram of dry weight soil.
NA Not analyzed.
1 Value is mean of maximum five replicate plate counts.



Prepared by: RLP1
Checked by: LLA

# Attachment 5

## Laboratory Reports and Chain-of-Custody Documentation

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

rec'd 6.7.93
cc: LLA
RLJ1
file ⇒ 93WC44
(9000)

June 4,1993

Russ Janeshek
Foth & Van Dyke
2737 S. Ridge Road
P.O. Box 19012
Green Bay, Wi. 54307-9012

Dear Russ:

Subject: Samples Received June 3, 1993
Reference: 9306026(134598-134602)
Project Number: 93W044

Enclosed you will find a report of analytical results of five(5) samples received by ORTEK Environmental Laboratory on June 3, 1993. The samples were analyzed in accordance to the Chain of Custody form contained herewith.

Should you have any questions regarding this report please feel free to call me at 498-2222. Please have both reference numbers listed above available when making inquiries regarding this report.

Sincerely,

Becki Detaege MT(ASCP)
Becki Detaege MT(ASCP)
Project Manager

Approval,

John Burnett
Laboratory Manager

Enclosure

c: file

ORTEK
NVIRONMENTAL LABORATORY
09 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB12-01
Sample Desc: Groundwater
Date Collected: 6/1/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | 4.9 |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306026-134598
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Dahl Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB12-02
Sample Desc: Groundwater
Date Collected: 6/1/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | ND |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306026-134599
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Dorh Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB12-03
Sample Desc: Groundwater
Date Collected: 6/1/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | 19 |
| Ethylbenzene | 1.0 | 1.7 |
| Toluene | 1.0 | 2.8 |
| Total Xylenes | 3.0 | 3.8 |

ND = Not Detected

Comments: Lab Sample ID: 9306026-134600
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Grah Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB12-04
Sample Desc: Groundwater
Date Collected: 6/1/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | 1.8 |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306026-134601
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Dahl Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB12-05
Sample Desc: Groundwater
Date Collected: 6/1/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | 7.5 |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306026-134602
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Grob Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067
Green Bay, WI 54307-2435

VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

CUSTOMER NAME: FOTH & VAN DYKE

PROJECT: 93W044

DATE RECIEVED: 6/3/93

BATCH NUMBER: 9306026

DATE RUN: 6/3/93

SAMPLE SPIKED: 134604

| COMPOUND | SPIKE ADDED (ug/L) | MS CONCENTRATION (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS % RECOVERY |
|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 25 | 24.6 | 0.0 | 98 |
| BENZENE | 50 | 48.0 | 0.0 | 96 |
| TRICHLOROETHENE | 25 | 23.5 | 0.0 | 94 |
| TOLUENE | 50 | 46.9 | 0.0 | 94 |
| CHLOROBENZENE | 50 | 48.4 | 0.0 | 97 |
| m-XYLENE | 25 | 23.3 | 0.0 | 93 |
| STYRENE | 25 | 31.7 | 0.0 | 127 |
| ISOPROPYL BENZENE | 25 | 22.2 | 0.0 | 89 |
| n-PROPYL BENZENE | 25 | 22.2 | 0.0 | 89 |
| 1,3,5-TRIMETHYLBENZENE | 25 | 20.2 | 0.0 | 81 |
| tert-BUTYLBENZENE | 25 | 24.9 | 0.0 | 100 |

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % RECOVERY | % RPD |
|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 25 | 25.2 | 101 | 2.7 |
| BENZENE | 50 | 50.4 | 101 | 4.8 |
| TRICHLOROETHENE | 25 | 24.3 | 97 | 3.5 |
| TOLUENE | 50 | 49.4 | 99 | 5.2 |
| CHLOROBENZENE | 50 | 51.2 | 102 | 5.6 |
| m-XYLENE | 25 | 25.0 | 100 | 7.3 |
| STYRENE | 25 | 34.7 | 139 | 9.2 |
| ISOPROPYL BENZENE | 25 | 23.9 | 96 | 7.5 |
| n-PROPYL BENZENE | 25 | 24.2 | 97 | 8.4 |
| 1,3,5-TRIMETHYLBENZENE | 25 | 22.4 | 89 | 10.2 |
| tert-BUTYLBENZENE | 25 | 26.9 | 108 | 7.5 |

Reviewed by: Christopher J. Foth

Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

VOLATILE SURROGATE RECOVERY

CUSTOMER NAME: Foth & Van Dyke PROJECT: 93W044 DATE RECEIVED: 6/3/93

BATCH #: 9306026 DATE RUN 6/3/93

| LAB SAMPLE # | SURROGATE 1 % RECOVERY | SURROGATE 2 % RECOVERY |
|---|---|---|
| 134598 | 75.4 | 106.8 |
| 134599 | 72.6 | 104.9 |
| 134600 | 74.8 | 109.4 |
| 134601 | 73.1 | 90.5 |
| 134602 | 69.4 | 98.0 |
| 134604MS | 82.7 | 93.5 |
| 134604MSD | 79.1 | 87.4 |

SURROGATE 1 = 1-CHLORO-2-FLUOROBENZENE
SURROGATE 2 = ALPHA,ALPHA,ALPHA-TRIFLUOROTOLUENE

Reviewed by: Christopher J. Foth Date: 6/4/93

# ORTEK CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

Company Name: Foth & Van Dyke

Project No./Client: 93W044 / WDNR

Sampling Location: Borgerding Estate Site

Sampler: R. Panosh

No.: 9228

ORTEK Batch No.: 9306026

Bottle Size/Preservative: 40ml glass/HCl; BETX

| Date | Time | Sample I.D./Description | No. of Bottles | Total | *Sample Type | ANALYSIS REQUESTED | Remarks | Lab Use Only I.D. Number |
|---|---|---|---|---|---|---|---|---|
| 6/1/93 | 1520 | BE-SB12-01 | 4 | 4 | GW | X | | 134598 |
| | 1630 | BE-SB12-02 | | | | | | 134599 |
| | 1750 | BE-SB12-03 | | | | | possible drilling mud | 134600 |
| | 1850 | BE-SB12-04 | | | | | | 134601 |
| ↓ | 1955 | BE-SB12-05 | ↓ | ↓ | ↓ | ↓ | | 134602 |

COMMENTS/SPECIAL INSTRUCTIONS:
Need 24 hr. turn,
Centrifuge samples w/high solids content

☐ If Pb > 5 ppm do TCLP

*SAMPLE TYPE: S - Soil; SE - Sediment; SO - Solid; SW - Surface Water; DW - Drinking Water; WW - Wastewater; GW - Groundwater; H - Hazardous Liquid; A - Air; O - Oil; X - Other

Date received: 6-3-93 RLP

Date due: 6-7-93

☒ RUSH (approved by lab)

Quotation #:

Purchase order #:

To be completed by client

Seal intact upon receipt by sampling co.: ☐ Yes ☐ No

Packed by:

Sealed for shipping by: Seal #

Results to: Foth & Van Dyke - Green Bay

Attention: Lanette Allenbach

Billing address:

Phone: Fax:

## CUSTODY TRANSFERS

| Relinquished by: | Date | Time: | Received by: | Date: | Time: |
|---|---|---|---|---|---|
| 1. R. Panosh/Foth & Van Dyke | 6-2-93 RLP | 1800 | Gloria Dorfler | 6/3/93 | 10:15 |
| 2. | | | | | |
| | | | Gloria Dorfler | 6/3/93 | 10:15 |

Received for laboratory:

## Shipping details - to be completed by ORTEK

Seal intact upon receipt by laboratory ☐ Yes ☐ No

Method of shipment: Federal Express

Contents temperature 1.7 °C Refrig. # 44

ORTEK
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
414/492-5200

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

rec'd 6-7-93
cc: LLA
RLP1
File ⇒ 93W044
(9ccc)

June 4,1993

Russ Janeshek
Foth & Van Dyke
2737 S. Ridge Road
P.O. Box 19012
Green Bay, Wi. 54307-9012

Dear Russ:

Subject: Samples Received June 3, 1993
Reference: 9306027(134603-134607)
Project Number: 93W044

Enclosed you will find a report of analytical results of five(5) samples received by ORTEK Environmental Laboratory on June 3, 1993. The samples were analyzed in accordance to the Chain of Custody form contained herewith.

Should you have any questions regarding this report please feel free to call me at 498-2222. Please have both reference numbers listed above available when making inquiries regarding this report.

Sincerely,

Becki Detaege MT(ASCP)
Project Manager

Approval,

John Burnett
Laboratory Manager

Enclosure

c: file

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB13-01
Sample Desc: Groundwater
Date Collected: 6/2/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 5.0 | 290 |
| Ethylbenzene | 5.0 | ND |
| Toluene | 5.0 | ND |
| Total Xylenes | 15 | ND |

E = Exceeds calibration range
ND = Not Detected

Comments: Lab Sample ID: 9306027-134603
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Smith Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB13-02
Sample Desc: Groundwater
Date Collected: 6/2/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | ND |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306027-134604
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Smith Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB13-03
Sample Desc: Groundwater
Date Collected: 6/2/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | ND |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306027-134605
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Duh Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB13-04
Sample Desc: Groundwater
Date Collected: 6/2/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | ND |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306027-134606
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Smith Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

CLIENT: FOTH AND VAN DYKE
ADDRESS: 2737 S RIDGE RD
P O BOX 19012
GREEN BAY, WI 54307

ATTENTION: Russ Janeshek
TELEPHONE: (414) 497-2500

Wisconsin Certification No.
405099530

Sample ID: BE-SB13-05
Sample Desc: Groundwater
Date Collected: 6/2/93
Date Received: 6/3/93
Job #: 93W044

## VOLATILE ORGANIC WATER ANALYSIS

| PARAMETER | DETECTION LIMIT | CONCENTRATION ug/l |
|---|---|---|
| Benzene | 1.0 | ND |
| Ethylbenzene | 1.0 | ND |
| Toluene | 1.0 | ND |
| Total Xylenes | 3.0 | ND |

ND = Not Detected

Comments: Lab Sample ID: 9306027-134607
Date Analyzed: 6/3/93
Analyzed by GC Method 8020.

Signed: Christopher J. Foth Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067
Green Bay, WI 54307-2435

VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

CUSTOMER NAME: FOTH & VAN DYKE
PROJECT: 93W044
DATE RECIEVED: 6/3/93

BATCH NUMBER: 9306027
DATE RUN: 6/3/93

SAMPLE SPIKED: 134604

| COMPOUND | SPIKE ADDED (ug/L) | MS CONCENTRATION (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS % RECOVERY |
|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 25 | 24.6 | 0.0 | 98 |
| BENZENE | 50 | 48.0 | 0.0 | 96 |
| TRICHLOROETHENE | 25 | 23.5 | 0.0 | 94 |
| TOLUENE | 50 | 46.9 | 0.0 | 94 |
| CHLOROBENZENE | 50 | 48.4 | 0.0 | 97 |
| m-XYLENE | 25 | 23.3 | 0.0 | 93 |
| STYRENE | 25 | 31.7 | 0.0 | 127 |
| ISOPROPYL BENZENE | 25 | 22.2 | 0.0 | 89 |
| n-PROPYL BENZENE | 25 | 22.2 | 0.0 | 89 |
| 1,3,5-TRIMETHYLBENZENE | 25 | 20.2 | 0.0 | 81 |
| tert-BUTYLBENZENE | 25 | 24.9 | 0.0 | 100 |

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % RECOVERY | % RPD |
|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 25 | 25.2 | 101 | 2.7 |
| BENZENE | 50 | 50.4 | 101 | 4.8 |
| TRICHLOROETHENE | 25 | 24.3 | 97 | 3.5 |
| TOLUENE | 50 | 49.4 | 99 | 5.2 |
| CHLOROBENZENE | 50 | 51.2 | 102 | 5.6 |
| m-XYLENE | 25 | 25.0 | 100 | 7.3 |
| STYRENE | 25 | 34.7 | 139 | 9.2 |
| ISOPROPYL BENZENE | 25 | 23.9 | 96 | 7.5 |
| n-PROPYL BENZENE | 25 | 24.2 | 97 | 8.4 |
| 1,3,5-TRIMETHYLBENZENE | 25 | 22.4 | 89 | 10.2 |
| tert-BUTYLBENZENE | 25 | 26.9 | 108 | 7.5 |

Reviewed by: Christopher J. Foth
Date: 6/4/93

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

VOLATILE SURROGATE RECOVERY

CUSTOMER NAME: Foth & Van Dyke PROJECT: 93W044 DATE RECEIVED: 6/3/93

BATCH #: 9306027 DATE RUN 6/3/93

| LAB SAMPLE # | SURROGATE 1 % RECOVERY | SURROGATE 2 % RECOVERY |
|---|---|---|
| 134603 | 67.6 | 69.3 |
| 134604 | 73.8 | 96.1 |
| 134605 | 77.3 | 106.6 |
| 134606 | 76.6 | 97.9 |
| 134607 | 72.7 | 91.1 |
| 134604MS | 82.7 | 93.5 |
| 134604MSD | 79.1 | 87.4 |

SURROGATE 1 = 1-CHLORO-2-FLUOROBENZENE
SURROGATE 2 = ALPHA,ALPHA,ALPHA-TRIFLUOROTOLUENE

Reviewed by: Christopher J. Foth Date: 6/4/93

# ORTEK CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

No.: 9229

Company Name: Foth & Van Dyke

Project No./Client: 93W044/WDNR

Sampling Location: Borgerding Estate Site

Sampler: R. Panosh

| Date | Time | Sample I.D./Description | No. of Bottles (40 ml glass/HCl) | Total | *Sample Type | ANALYSIS REQUESTED (BETX) | Remarks | ORTEK Batch No. 93060027 Lab Use Only I.D. Number |
|---|---|---|---|---|---|---|---|---|
| 6/2/93 | 1240 | BE-SB13-01 | 4 | 4 | GW | X | | 134603 |
| | 1320 | BE-SB13-02 | ↓ | ↓ | ↓ | ↓ | possible drilling mud | 134604 |
| | 1435 | BE-SB13-03 | ↓ | ↓ | ↓ | ↓ | | 134605 |
| | 1540 | BE-SB13-04 | ↓ | ↓ | ↓ | ↓ | | 134606 |
| | 1705 | BE-SB13-05 | 3 | 3 | ↓ | ↓ | | 134607 |

COMMENTS/SPECIAL INSTRUCTIONS:
Need 24 hr. turn,
Centrifuge samples w/ high solids content

☐ If Pb > 5 ppm do TCLP

*SAMPLE TYPE
S - Soil
SE - Sediment
SO - Solid
SW - Surface Water
DW - Drinking Water
WW - Wastewater
GW - Groundwater
H - Hazardous Liquid
A - Air
O - Oil
X - Other

Date received: 6-3-93
Date due: 6-3-93 ☒ RUSH (approved by lab)
Quotation #:
Purchase order #:

To be completed by client

Seal intact upon receipt by sampling co.: ☐ Yes ☐ No

Packed by:

Sealed for shipping by: Seal #

Results to: Foth & Van Dyke - Green Bay

Attention: Lanette Altenbach

Billing address:

Phone: Fax:

CUSTODY TRANSFERS

| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
|---|---|---|---|---|---|
| 1. R. Panosh - Foth & Van Dyke | 6-2-93 | 1800 | | | |
| 2. | | | | | |

Received for laboratory: [signature] 6-3-93 1100

Shipping details - to be completed by ORTEK

Seal intact upon receipt by laboratory ☒ Yes ☐ No

Method of shipment: Federal Express

Contents temperature 1.7 °C Refrig. # 114

ORTEK
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
414 / 498-2222

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

rec'd 6.18.93
cc: LLA
RCP1
file ⇒ 93W044
B/L 3 (green)

June 17,1993

Russ Janeshek
Foth & Van Dyke
2737 S. Ridge Road
P.O. Box 19012
Green Bay, Wi. 54307

Dear Russ:

Subject: Samples Received June 5, 1993
Reference: 9306053(134707-134710)
Project Number: 93W044/WDNR/Borgerding Site

Enclosed you will find a report of analytical results of four(4) samples received by ORTEK Environmental Laboratory on June 5, 1993. The samples were analyzed in accordance to the Chain of Custody form contained herewith.

Should you have any questions regarding this report please feel free to call me at 498-2222. Please have both reference numbers listed above available when making inquiries regarding this report.

Sincerely,

Becki Detaege MT(ASCP)
Becki Detaege MT(ASCP)
Project Manager

Approval,

John Burnett
John Burnett
Laboratory Manager

Enclosure

c: file

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

# - SAMPLE ANALYSIS REPORT -

To: FOTH & VAN DYKE
2737 S RIDGE ROAD
P O BOX 19012
GREEN BAY WI 54307

Attn: RUSS JANESHEK

Batch ID : 9306053
Our Lab # : 134707 Report Date: 06/17/93
Your Sample ID: BE-WC-01
Sample Matrix : SOIL

COLLECTION INFORMATION
Date/Time/By: 06/04/93 07:45 R P
Location : 93W044/WDNR BORGERDING

| Lab# | test | | Result | Units | Analysis Date |
|---|---|---|---|---|---|
| 134707 | TCLP Mercury | < | 20 | UG/L | 06/11/93 |
| | Non-Volatile TCLP Extraction | | EXTRACTED | | 06/07/93 |
| | TCLP Arsenic | < | 300 | UG/L | 06/09/93 |
| | TCLP Selenium | < | 300 | UG/L | 06/09/93 |
| | TCLP Silver | < | 90 | UG/L | 06/15/93 |
| | TCLP Barium | | 640 | UG/L | 06/10/93 |
| | TCLP Cadmium | < | 50 | UG/L | 06/10/93 |
| | TCLP Chromium | < | 130 | UG/L | 06/10/93 |
| | TCLP Lead | < | 580 | UG/L | 06/10/93 |

Signed Earl G Schmoll Date 6/17/93

Signed _____ Date _____

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

# - SAMPLE ANALYSIS REPORT -

To: FOTH & VAN DYKE
2737 S RIDGE ROAD
P O BOX 19012
GREEN BAY WI 54307

Attn: RUSS JANESHEK

Batch ID : 9306053
Our Lab # : 134708
Your Sample ID: BE-WC-02
Sample Matrix : SOIL

Report Date: 06/17/93

COLLECTION INFORMATION
Date/Time/By: 06/04/93 09:20 R P
Location : 93W044/WDNR BORGERDING

| Lab# | test | | Result | Units | Analysis Date |
|---|---|---|---|---|---|
| 134708 | TCLP Mercury | < | 20 | UG/L | 06/11/93 |
| | Non-Volatile TCLP Extraction | | EXTRACTED | | 06/07/93 |
| | TCLP Arsenic | < | 300 | UG/L | 06/09/93 |
| | TCLP Selenium | < | 300 | UG/L | 06/09/93 |
| | TCLP Silver | < | 90 | UG/L | 06/15/93 |
| | TCLP Barium | | 760 | UG/L | 06/10/93 |
| | TCLP Cadmium | < | 50 | UG/L | 06/10/93 |
| | TCLP Chromium | < | 130 | UG/L | 06/10/93 |
| | TCLP Lead | < | 580 | UG/L | 06/10/93 |

Signed Earl D Schmidt Date 6/17/93

Signed _____ Date _____

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

# - SAMPLE ANALYSIS REPORT -

To: FOTH & VAN DYKE
2737 S RIDGE ROAD
P O BOX 19012
GREEN BAY WI 54307

Attn: RUSS JANESHEK

Batch ID : 9306053
Our Lab # : 134709
Report Date: 06/17/93
Your Sample ID: BE-WC-03
Sample Matrix : SOIL

COLLECTION INFORMATION
Date/Time/By: 06/04/93 09:45 R P
Location : 93W044/WDNR BORGERDING

| Lab# | test | | Result | Units | Analysis Date |
|---|---|---|---|---|---|
| 134709 | TCLP Mercury | < | 20 | UG/L | 06/11/93 |
| | Non-Volatile TCLP Extraction | | EXTRACTED | | 06/07/93 |
| | TCLP Arsenic | < | 300 | UG/L | 06/09/93 |
| | TCLP Selenium | < | 300 | UG/L | 06/09/93 |
| | TCLP Silver | < | 90 | UG/L | 06/15/93 |
| | TCLP Barium | | 1100 | UG/L | 06/10/93 |
| | TCLP Cadmium | < | 50 | UG/L | 06/10/93 |
| | TCLP Chromium | < | 130 | UG/L | 06/10/93 |
| | TCLP Lead | < | 580 | UG/L | 06/10/93 |

Signed Earl G Schmall Date 6/17/93

Signed _____ Date _____

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue P.O. Box 12435 Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

# - SAMPLE ANALYSIS REPORT -

To: FOTH & VAN DYKE
2737 S RIDGE ROAD
P O BOX 19012
GREEN BAY WI 54307

Attn: RUSS JANESHEK

Batch ID : 9306053
Our Lab # : 134710 Report Date: 06/17/93
Your Sample ID: BE-WC-04
Sample Matrix : SOIL

COLLECTION INFORMATION
Date/Time/By: 06/04/93 10:25 R P
Location : 93W044/WDNR BORGERDING

| Lab# | test | | Result | Units | Analysis Date |
|---|---|---|---|---|---|
| 134710 | TCLP Mercury | < | 20 | UG/L | 06/11/93 |
| | Non-Volatile TCLP Extraction | | EXTRACTED | | 06/07/93 |
| | TCLP Arsenic | < | 300 | UG/L | 06/09/93 |
| | TCLP Selenium | < | 300 | UG/L | 06/09/93 |
| | TCLP Silver | < | 90 | UG/L | 06/15/93 |
| | TCLP Barium | | 550 | UG/L | 06/10/93 |
| | TCLP Cadmium | < | 50 | UG/L | 06/10/93 |
| | TCLP Chromium | < | 130 | UG/L | 06/10/93 |
| | TCLP Lead | < | 580 | UG/L | 06/10/93 |

Signed Earl G Schmoll Date 6/17/93

Signed _____ Date _____

# ORTEK CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

No.: 9235

Company Name: Fotha Van Dyke

Project No./Client: 93W044 / WDNR

Sampling Location: Borgerding Site

Sampler: R. Panosh

ORTEK Batch No. 9306053

| Date | Time | Sample I.D./Description | No. of Bottles (4oz poly) | Total | *Sample Type | ANALYSIS REQUESTED (TCLP RCRA metals) | Remarks | Lab Use Only I.D. Numbe. |
|---|---|---|---|---|---|---|---|---|
| 6/4/93 | 0745 | BE-WC-01 | 2 | 2 | Soil | X | | 134707 |
| | 0920 | BE-WC-02 | ↓ | ↓ | ↓ | ↓ | | 134708 |
| | 0945 | BE-WC-03 | ↓ | ↓ | ↓ | ↓ | | 134709 |
| | 1025 | BE-WC-04 | ↓ | ↓ | ↓ | ↓ | | 134710 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

COMMENTS/SPECIAL INSTRUCTIONS:

☐ If Pb > 5 ppm do TCLP

*SAMPLE TYPE
S - Soil
SE - Sediment
SO - Solid
SW - Surface Water
DW - Drinking Water
WW - Wastewater
GW - Groundwater
H - Hazardous Liquid
A - Air
O - Oil
X - Other _____

Date received: 6/5/93
Date due: 6/18/93 ☐ RUSH (approved by lab)
Quotation #: _____
Purchase order #: _____

To be completed by client

Seal intact upon receipt by sampling co.: ☐ Yes ☐ No

Packed by: _____

Sealed for shipping by: _____ Seal # _____

Results to: Fotha Van Dyke - G.B.

Attention: Lanette Altenbach

Billing address: 2737 S. Ridge Rd.
P.O. Box 19012
Green Bay, WI 54307

Phone: 414-497-2500 Fax: _____

CUSTODY TRANSFERS

| Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
|---|---|---|---|---|---|
| 1. Richard Panosh | 6-4-93 | 1545 | | | |
| 2. | | | | | |

Received for laboratory: Ron Ackerbauer 6/5/93 11:20

Shipping details - to be completed by ORTEK

Seal intact upon receipt by laboratory ☑ Yes ☐ No

Method of shipment: FED-X

Contents temperature 0.8 °C Refrig. # G-4

ORTEK
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
414 / 498-2222

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

rec'd 6.28.93
cc. RLP1
LLA
file ⇒ 93W044|3
(9000)

June 25, 1993

Lanette Altenbach
Foth & Van Dyke
2737 S. Ridge Road
P.O. Box 9012
Green Bay, Wi. 54307-9012

Dear Lanette:

Subject: Project 93W044/WDNR/Borgerding Site
Reference: 9306052(134703-134706)

Enclosed you will find the analytical results of four(4) samples received by ORTEK Environmental Laboratory on 6/5/93.

We realize that these results are late and apologize for any inconvenience that this may have caused.

Should you have any questions regarding this report please feel free to call me at 498-2222. Please have both reference numbers listed above available when making inquiries regarding this report.

Sincerely,

Becki Detaege MT(ASCP)
Becki Detaege MT(ASCP)
Project Manager

Approval,

John Burnett
John Burnett
Laboratory Manager

Enclosure

c: file

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067
Green Bay, WI 54307-2435

# GC/MS TCLP (ZHE) VOLATILE ORGANIC ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Foth & Van Dyke | Project Name/Desc.: | Borgerding Site |
| Address: | 2737 S. Ridge Road | Project Number: | 93W044/WDNR |
| | Green Bay, WI 54307 | Batch Number: | 9306052 |
| Phone: | (414) 497-2500 | COC Number: | 9234 |
| FAX: | (414) 497-8516 | | |
| | | Case No.: | FVD |
| Contact: | Lanette Altenbach | SDG No.: | BEWC01 |

## SAMPLE SUMMARY

| Client Sample No. | EPA Sample No. | Ortek Lab Sample ID |
|---|---|---|
| BE-WC-01 | BEWC01 | 134703 |
| BE-WC-02 | BEWC02 | 134704 |
| BE-WC-03 | BEWC03 | 134705 |
| BE-WC-04 | BEWC04 | 134706 |

**COMMENTS:** VOLATILE ORGANIC ANALYSIS PERFORMED BY MODIFIED EPA METHOD 8240 ON A DB-624 CAPILLARY COLUMN

1.) The instrument ID for Volatile Organic Analysis is HP-B. The blank associated with the samples is VBLK05. The TCLP extraction blank is EPA Sample No. TBLK02, extracted on 06/10/93.

2.) All ZHE samples are diluted 1:20 to reduce matrix problems due to the TCLP buffers.

"Q" COLUMN QUALIFIERS:
- U - Compound analyzed for but not detected
- B - Indicates the analyte is found in the associated method blank
- J - Estimated value, concentration of analyte below quantitation limit
- E - Compound exceeds calibration range, but did not saturate the detector; actual concentrations could be higher than reported
- D - Compound identified in the analysis at a secondary dilution
- N - Indicates presumptive evidence of a compound (identified based on mass spectral library search)

Signed: John C. Rather  Name: John C. Rather

Title: GC/MS/EC Supervisor  Date: 6/24/93

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC01

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134703

Sample wt/vol: 5 (g/ml) ML Lab File ID: >B6F03

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. Date Analyzed: 06/15/93

Column: (pack/cap) CAP Dilution Factor: 20

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | .10 | U |
| 75-35-4 | 1,1-Dichloroethene | .10 | U |
| 67-66-3 | Chloroform | .10 | U |
| 107-06-2 | 1,2-Dichloroethane | .10 | U |
| 78-93-3 | Methyl Ethyl Ketone | .20 | U |
| 56-23-5 | Carbon Tetrachloride | .10 | U |
| 79-01-6 | Trichloroethene | .10 | U |
| 71-43-2 | Benzene | .10 | U |
| 127-18-4 | Tetrachloroethene | .10 | U |
| 108-90-7 | Chlorobenzene | .10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | .10 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC02

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134704

Sample wt/vol: 5 (g/ml) ML Lab File ID: >B6F04

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. Date Analyzed: 06/15/93

Column: (pack/cap) CAP Dilution Factor: 20

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | .10 | U |
| 75-35-4 | 1,1-Dichloroethene | .10 | U |
| 67-66-3 | Chloroform | .10 | U |
| 107-06-2 | 1,2-Dichloroethane | .10 | U |
| 78-93-3 | Methyl Ethyl Ketone | .20 | U |
| 56-23-5 | Carbon Tetrachloride | .10 | U |
| 79-01-6 | Trichloroethene | .10 | U |
| 71-43-2 | Benzene | .10 | U |
| 127-18-4 | Tetrachloroethene | .10 | U |
| 108-90-7 | Chlorobenzene | .10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | .10 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC03

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134705

Sample wt/vol: 5 (g/ml) ML Lab File ID: >B6F05

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. Date Analyzed: 06/15/93

Column: (pack/cap) CAP Dilution Factor: 20

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | .10 | U |
| 75-35-4 | 1,1-Dichloroethene | .10 | U |
| 67-66-3 | Chloroform | .10 | U |
| 107-06-2 | 1,2-Dichloroethane | .10 | U |
| 78-93-3 | Methyl Ethyl Ketone | .20 | U |
| 56-23-5 | Carbon Tetrachloride | .10 | U |
| 79-01-6 | Trichloroethene | .10 | U |
| 71-43-2 | Benzene | .10 | U |
| 127-18-4 | Tetrachloroethene | .10 | U |
| 108-90-7 | Chlorobenzene | .10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | .10 | U |

1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC04

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134706

Sample wt/vol: 5 (g/ml) ML Lab File ID: >B6F06

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. Date Analyzed: 06/15/93

Column: (pack/cap) CAP Dilution Factor: 20

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | .10 | U |
| 75-35-4 | 1,1-Dichloroethene | .10 | U |
| 67-66-3 | Chloroform | .10 | U |
| 107-06-2 | 1,2-Dichloroethane | .10 | U |
| 78-93-3 | Methyl Ethyl Ketone | .20 | U |
| 56-23-5 | Carbon Tetrachloride | .10 | U |
| 79-01-6 | Trichloroethene | .10 | U |
| 71-43-2 | Benzene | .10 | U |
| 127-18-4 | Tetrachloroethene | .10 | U |
| 108-90-7 | Chlorobenzene | .10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | .10 | U |

1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TBLK02

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 0610BLK

Sample wt/vol: 5 (g/ml) ML Lab File ID: >B6F02

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/15/93

Column: (pack/cap) CAP Dilution Factor: 20

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | .10 | U |
| 75-35-4 | 1,1-Dichloroethene | .10 | U |
| 67-66-3 | Chloroform | .10 | U |
| 107-06-2 | 1,2-Dichloroethane | .10 | U |
| 78-93-3 | Methyl Ethyl Ketone | .20 | U |
| 56-23-5 | Carbon Tetrachloride | .10 | U |
| 79-01-6 | Trichloroethene | .10 | U |
| 71-43-2 | Benzene | .10 | U |
| 127-18-4 | Tetrachloroethene | .10 | U |
| 108-90-7 | Chlorobenzene | .10 | U |
| 106-46-7 | 1,4-Dichlorobenzene | .10 | U |

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK05

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 0615BLK

Sample wt/vol: 5 (g/ml) ML Lab File ID: >B6FB1

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/15/93

Column: (pack/cap) CAP Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L | Q |
|---|---|---|---|
| 75-01-4 | Vinyl Chloride | 5.00 | U |
| 75-35-4 | 1,1-Dichloroethene | 5.00 | U |
| 67-66-3 | Chloroform | 5.00 | U |
| 107-06-2 | 1,2-Dichloroethane | 5.00 | U |
| 78-93-3 | Methyl Ethyl Ketone | 10.0 | U |
| 56-23-5 | Carbon Tetrachloride | 5.00 | U |
| 79-01-6 | Trichloroethene | 5.00 | U |
| 71-43-2 | Benzene | 5.00 | U |
| 127-18-4 | Tetrachloroethene | 5.00 | U |
| 108-90-7 | Chlorobenzene | 5.00 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 5.00 | U |

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

# GC/MS TCLP SEMIVOLATILE ORGANIC ANALYSIS

| | | | |
|---|---|---|---|
| Client: | Foth & Van Dyke | Project Name/Desc.: | WDNR |
| Address: | 2737 S. Ridge Road | Project Number: | 93W044 |
| | Green Bay, WI 54307 | Batch Number: | 9306052 |
| Phone: | (414) 497-2500 | COC Number: | 9234 |
| FAX: | (414) 497-8516 | | |
| | | Case No.: | FVD |
| Contact: | Lanette Allenbach | SDG No.: | BEWC01 |

## SAMPLE SUMMARY

| Client Sample No. | EPA Sample No. | Ortek Lab Sample ID |
|---|---|---|
| BE-WC-01 | BEWC01 | 134703 |
| BE-WC-02 | BEWC02 | 134704 |
| BE-WC-03 | BEWC03 | 134705 |
| BE-WC-04 | BEWC04 | 134706 |

COMMENTS: SEMIVOLATILE ORGANIC ANALYSIS PERFORMED BY MODIFIED EPA METHOD 8270 ON A DB-5MS CAPILLARY COLUMN.

1.) The instrument ID for Semivolatile Organic Analysis is HP-C. The blank associated with the samples is SBLK02.

2.) The m,p-Cresol isomers coelute and cannot be separated and are therefore reported as a combined total.

"Q" COLUMN QUALIFIERS:
- U - Compound analyzed for but not detected
- B - Indicates the analyte is found in the associated method blank
- J - Estimated value, concentration of analyte below quantitation limit
- E - Compound exceeds calibration range, but did not saturate the detector; actual concentrations could be higher than reported
- D - Compound identified in the analysis at a secondary dilution
- N - Indicates presumptive evidence of a compound (identified based on mass spectral library search)

Signed: John C Rather Name: John C. Rather

Title: GC/MS/EC Supervisor Date: 6/23/93

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC01

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134703

Sample wt/vol: 200 (g/ml) ML Lab File ID: >C6H05

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. dec. Date Extracted: 06/11/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 06/17/93

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) mg/L | Q |
|---|---|---|---|
| 110-86-1 | Pyridine | .05 | U |
| 95-48-7 | o-Cresol | .05 | U |
| | m,p-Cresol | .05 | U |
| 67-72-1 | Hexachloroethane | .05 | U |
| 98-95-3 | Nitrobenzene | .05 | U |
| 87-68-3 | Hexachlorobutadiene | .05 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | .05 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | .25 | U |
| 121-14-2 | 2,4-Dinitrotoluene | .05 | U |
| 118-74-1 | Hexachlorobenzene | .05 | U |
| 87-86-5 | Pentachlorophenol | .25 | U |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC02

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134704

Sample wt/vol: 200 (g/ml) ML Lab File ID: >C6H06

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. dec. Date Extracted: 06/11/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 06/17/93

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) mg/L | Q |
|---|---|---|---|
| 110-86-1 | Pyridine | .05 | U |
| 95-48-7 | o-Cresol | .05 | U |
| | m,p-Cresol | .05 | U |
| 67-72-1 | Hexachloroethane | .05 | U |
| 98-95-3 | Nitrobenzene | .05 | U |
| 87-68-3 | Hexachlorobutadiene | .05 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | .05 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | .25 | U |
| 121-14-2 | 2,4-Dinitrotoluene | .05 | U |
| 118-74-1 | Hexachlorobenzene | .05 | U |
| 87-86-5 | Pentachlorophenol | .25 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC03

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134705

Sample wt/vol: 200 (g/ml) ML Lab File ID: >C6H07

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. dec. Date Extracted: 06/11/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 06/17/93

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) mg/L | Q |
|---|---|---|---|
| 110-86-1 | Pyridine | .05 | U |
| 95-48-7 | o-Cresol | .05 | U |
| | m,p-Cresol | .05 | U |
| 67-72-1 | Hexachloroethane | .05 | U |
| 98-95-3 | Nitrobenzene | .05 | U |
| 87-68-3 | Hexachlorobutadiene | .05 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | .05 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | .25 | U |
| 121-14-2 | 2,4-Dinitrotoluene | .05 | U |
| 118-74-1 | Hexachlorobenzene | .05 | U |
| 87-86-5 | Pentachlorophenol | .25 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BEWC04

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 134706

Sample wt/vol: 200 (g/ml) ML Lab File ID: >C6H08

Level: (low/med) LOW Date Received: 06/05/93

% Moisture: not dec. dec. Date Extracted: 06/11/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 06/17/93

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) mg/L | Q |
|---|---|---|---|
| 110-86-1 | Pyridine | .05 | U |
| 95-48-7 | o-Cresol | .05 | U |
| | m,p-Cresol | .05 | U |
| 67-72-1 | Hexachloroethane | .05 | U |
| 98-95-3 | Nitrobenzene | .05 | U |
| 87-68-3 | Hexachlorobutadiene | .05 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | .05 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | .25 | U |
| 121-14-2 | 2,4-Dinitrotoluene | .05 | U |
| 118-74-1 | Hexachlorobenzene | .05 | U |
| 87-86-5 | Pentachlorophenol | .25 | U |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK02

Lab Name: ORTEK Contract:

Lab Code: ORTEK Case No.: FVD SAS No.: SDG No.: BEWC01

Matrix: (soil/water) WATER Lab Sample ID: 0611BLK

Sample wt/vol: 200 (g/ml) ML Lab File ID: >C6H03

Level: (low/med) LOW Date Received:

% Moisture: not dec. dec. Date Extracted: 06/11/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 06/17/93

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) mg/L | Q |
|---|---|---|---|
| 110-86-1 | Pyridine | .05 | U |
| 95-48-7 | o-Cresol | .05 | U |
| | m,p-Cresol | .05 | U |
| 67-72-1 | Hexachloroethane | .05 | U |
| 98-95-3 | Nitrobenzene | .05 | U |
| 87-68-3 | Hexachlorobutadiene | .05 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | .05 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | .25 | U |
| 121-14-2 | 2,4-Dinitrotoluene | .05 | U |
| 118-74-1 | Hexachlorobenzene | .05 | U |
| 87-86-5 | Pentachlorophenol | .25 | U |

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-01 |
| ADDRESS: | 2737 S. Ridge Road | PROJECT JOB #: | 93W044/WDNR |
| | Green Bay, WI 54307 | PROJECT DESC: | Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8516 | SAMPLE MATRIX: | SOIL |
| | | DATE COLLECTED: | 06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP PCB/PESTICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| Chlordane | 0.0025 | U |
| Endrin | 0.0005 | U |
| Heptachlor | 0.00025 | U |
| gamma-BHC (Lindane) | 0.00025 | U |
| Methoxychlor | 0.0025 | U |
| Toxaphene | 0.025 | U |

- Batch: 9306052 — Extraction Date: 06/11/93
- Lab Sample ID: 134703 — Analysis Date: 06/23/93
- Analyzed by modified EPA Method 8080 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: [signature] Date: 6/24/93

APPROVED: [signature] TITLE: GC/MS/EC Supervisor DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-01 |
| ADDRESS: | 2737 S. Ridge Road | PROJECT JOB #: | 93W044/WDNR |
| | Green Bay, WI 54307 | PROJECT DESC: | Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8561 | SAMPLE MATRIX: | SOIL |
| | | DATE COLLECTED: | 06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP HERBICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| 2,4-D | 0.25 | U |
| 2,4,5-TP (Silvex) | 0.002 | U |

- Batch: 9306052 — Extraction Date: 06/10/93
- Lab Sample ID: 134703 — Analysis Date: 06/16/93
- Analyzed by modified EPA Method 8150 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: Kevin Campbell — Date: 6/24/93

APPROVED: [signature] — TITLE: GC/MS/EC Supervisor — DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-02 |
| ADDRESS: | 2737 S. Ridge Road<br>Green Bay, WI 54307 | PROJECT JOB #:<br>PROJECT DESC: | 93W044/WDNR<br>Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8516 | SAMPLE MATRIX:<br>DATE COLLECTED: | SOIL<br>06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP PCB/PESTICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| Chlordane | 0.0025 | U |
| Endrin | 0.0005 | U |
| Heptachlor | 0.00025 | U |
| gamma-BHC (Lindane) | 0.00025 | U |
| Methoxychlor | 0.0025 | U |
| Toxaphene | 0.025 | U |

- Batch: 9306052 — Extraction Date: 06/11/93
- Lab Sample ID: 134704 — Analysis Date: 06/23/93
- Analyzed by modified EPA Method 8080 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: Kevin Campbell — Date: 6/24/93

APPROVED: C.C. — TITLE: GC/MS/EC Supervisor — DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-02 |
| ADDRESS: | 2737 S. Ridge Road<br>Green Bay, WI 54307 | PROJECT JOB #:<br>PROJECT DESC: | 93W044/WDNR<br>Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8561 | SAMPLE MATRIX:<br>DATE COLLECTED: | SOIL<br>06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP HERBICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| 2,4-D | 0.25 | U |
| 2,4,5-TP (Silvex) | 0.002 | U |

- Batch: 9306052 — Extraction Date: 06/10/93
- Lab Sample ID: 134704 — Analysis Date: 06/16/93
- Analyzed by modified EPA Method 8150 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: [signature] Date: 6/24/93

APPROVED: [signature] TITLE: GC/MS/EC Supervisor DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067
Green Bay, WI 54307-2435

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-03 |
| ADDRESS: | 2737 S. Ridge Road | PROJECT JOB #: | 93W044/WDNR |
| | Green Bay, WI 54307 | PROJECT DESC: | Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8516 | SAMPLE MATRIX: | SOIL |
| | | DATE COLLECTED: | 06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP PCB/PESTICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| Chlordane | 0.0025 | U |
| Endrin | 0.0005 | U |
| Heptachlor | 0.00025 | U |
| gamma-BHC (Lindane) | 0.00025 | U |
| Methoxychlor | 0.0025 | U |
| Toxaphene | 0.025 | U |

- Batch: 9306052 — **Extraction Date:** 06/11/93
- Lab Sample ID: 134705 — **Analysis Date:** 06/23/93
- Analyzed by modified EPA Method 8080 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: Kim Campbell — Date: 6/24/93

**APPROVED:** John C Zeit — **TITLE:** GC/MS/EC Supervisor — **DATE:** 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-03 |
| ADDRESS: | 2737 S. Ridge Road<br>Green Bay, WI 54307 | PROJECT JOB #:<br>PROJECT DESC: | 93W044/WDNR<br>Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8561 | SAMPLE MATRIX:<br>DATE COLLECTED: | SOIL<br>06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP HERBICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| 2,4-D | 0.25 | U |
| 2,4,5-TP (Silvex) | 0.002 | U |

- Batch: 9306052 — Extraction Date: 06/10/93
- Lab Sample ID: 134705 — Analysis Date: 06/16/93
- Analyzed by modified EPA Method 8150 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: Kevin Campbell | Date: 6/24/93

APPROVED: John C. Foth | TITLE: GC/MS/EC Supervisor | DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-04 |
| ADDRESS: | 2737 S. Ridge Road | PROJECT JOB #: | 93W044/WDNR |
| | Green Bay, WI 54307 | PROJECT DESC: | Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8516 | SAMPLE MATRIX: | SOIL |
| | | DATE COLLECTED: | 06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP PCB/PESTICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| Chlordane | 0.0025 | U |
| Endrin | 0.0005 | U |
| Heptachlor | 0.00025 | U |
| gamma-BHC (Lindane) | 0.00025 | U |
| Methoxychlor | 0.0025 | U |
| Toxaphene | 0.025 | U |

- Batch: 9306052 — Extraction Date: 06/11/93
- Lab Sample ID: 134706 — Analysis Date: 06/23/93
- Analyzed by modified EPA Method 8080 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: Kristine Campbell — Date: 6/24/93

APPROVED: John C. Ruth — TITLE: GC/MS/GC Supervisor — DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

ORTEK
ENVIRONMENTAL LABORATORY
1609 Western Avenue
P.O. Box 12435
(414) 498-2222
(800) 236-4067
FAX (414) 498-4067
Green Bay, WI 54307-2435

| | | | |
|---|---|---|---|
| COMPANY: | Foth & Van Dyke | CLIENT SAMPLE ID: | BE-WC-04 |
| ADDRESS: | 2737 S. Ridge Road | PROJECT JOB #: | 93W044/WDNR |
| | Green Bay, WI 54307 | PROJECT DESC: | Borgerding Site |
| TELEPHONE: | (414) 497-2500 | | |
| FAX: | (414) 497-8561 | SAMPLE MATRIX: | SOIL |
| | | DATE COLLECTED: | 06/04/93 |
| ATTENTION: | Lanette Altenbach | DATE RECEIVED: | 06/05/93 |

## *TCLP HERBICIDE ANALYSIS*

| PARAMETERS | DETECTION LIMITS (mg/L) | CONCENTRATION (mg/L) |
|---|---|---|
| 2,4-D | 0.25 | U |
| 2,4,5-TP (Silvex) | 0.002 | U |

- Batch: 9306052 — Extraction Date: 06/10/93
- Lab Sample ID: 134706 — Analysis Date: 06/16/93
- Analyzed by modified EPA Method 8150 on a PTE-5 capillary column and confirmed with a SPB-608 capillary column.

**Comments:**

U = Compound analyzed for but not detected
B = Detected in associated method blank
J = Estimated value, concentration of analyte below method detection limit

Analyst: Kevin Campbell Date: 6/24/93

APPROVED: John C Root TITLE: GC/MS/EC Supervisor DATE: 6/24/93

**Wisconsin DNR Laboratory Certification No. 405099530**

# ORTEK CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

No.: 9234

Company Name: Foth & Van Dyke

Project No./Client: 93W044/WDNR

Sampling Location: Bowerding Site

Sampler: R. Panosh

ORTEK Batch No. 9306052

| Date | Time | Sample I.D./Description | No. of Bottles (Bottle Size/Preservative: 8oz amber glass, 4oz clear glass, Ziploc) | Total | *Sample Type | ANALYSIS REQUESTED: TCLP Volatiles | TCLP Semi-Volatiles | TCLP pesticides | TCLP herbicides | Remarks | Lab Use Only I.D. Number |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/4/93 | 0745 | BE-WC-01 | 1 1 | 2 | soil | X | X | X | X | | 134703 |
| | 0920 | BE-WC-02 | 1 1 | 2 | ↓ | ↓ | ↓ | ↓ | ↓ | | 134704 |
| | 0945 | BE-WC-03 | 1 1 | 2 | ↓ | ↓ | ↓ | ↓ | ↓ | | 134705 |
| | 1025 | BE-WC-04 | 1 1 | 2 | ↓ | ↓ | ↓ | ↓ | ↓ | | 134706 |

COMMENTS/SPECIAL INSTRUCTIONS:

[ ] If Pb > 5 ppm do TCLP

*SAMPLE TYPE: S - Soil; SE - Sediment; SO - Solid; SW - Surface Water; DW - Drinking Water; WW - Wastewater; GW - Groundwater; H - Hazardous Liquid; A - Air; O - Oil; X - Other _____

Date received: 6/5/93

Date due: 6/18/93 ☐ RUSH (approved by lab)

Quotation #: _____

Purchase order #: _____

To be completed by client

Seal intact upon receipt by sampling co.: ☐ Yes ☐ No

Packed by: _____

Sealed for shipping by: _____ Seal # _____

Results to: Foth & Van Dyke - G.B.

Attention: Lanette Attenbach

Billing address: 2737 S. Ridge Rd
P.O. Box 19012
Green Bay, WI 54307

Phone: 414-498-2500 Fax: _____

## CUSTODY TRANSFERS

| | Relinquished by: | Date: | Time: | Received by: | Date: | Time: |
|---|---|---|---|---|---|---|
| 1 | Rchd Panosh | 6-4-93 | 1545 | | | |
| 2 | | | | | | |

Received for laboratory: [signature] 6/5/93 11:20

## Shipping details - to be completed by ORTEK

Seal intact upon receipt by laboratory ☑ Yes ☐ No

Method of shipment: ~~off~~ Fed-X

Contents temperature 0.9 °C Refrig. # 0-2

ORTEK
1609 Western Avenue
P.O. Box 12435
Green Bay, WI 54307-2435
414 / 498-2222

**BioRenewal Technologies, Inc.**

## *Facsimile Cover Sheet*

rec'd 7.6.93
cc: LLA
RLP1

file => 93W044
[Bergenderg] (9cee)

**To:** Russ Janeshek
**Company:** Foth & Van Dyke
**Phone:** (414)496-6816
**Fax:** (414)497-8516

**From:** M. Lynn Haugh
**Company:** Biorenewal Technologies, Inc.
**Phone:** (608)276-8980
**Fax:** (608)273-6989

**Date:** July 1, 1993
**Pages including this cover page:** 4

If there is a problem with this transmission, please call (608) 276-8980

## *Comments:*

**(CONFIRMATION COPY TO FOLLOW VIA MAIL)**

Dear Russ,

Here are the results from our comparative enumeration assays for the ten soil samples you sent us in connection with Scope ID 93W044. I have also enclosed an invoice for this project.

Please give me a call if you wish to further discuss these results or have other questions. Thank you for retaining BTI for this project. We look forward to working with you again in the future.

Sincerely,

M. Lynn Haugh
Microbial Services Manager

# COMPARATIVE MICROBIOLOGICAL ENUMERATION ASSAY AND NUTRIENT ANALYSIS

## REPORT OF RESULTS

| | | | |
|---|---|---|---|
| Client | Foth & Van Dyke | Cl. contact | Russ Janeshek |
| Date of Order | 5/25/93 | Project # | 93W044 |
| Address | | P.O. No. | |
| Street | 2737 S. Rigde Road | Date rec'd | 6/4/93 |
| City | Green Bay | Date rept'd | 6/30/93 |
| State | WI | BTI Rep | M. Lynn Haugh |
| Zip | 54307-9012 | Growth Conditions: | |
| Site Information: | | Specific Carbon Source: | Weathered gasoline 1% v/v |
| Identification: | Borgerding Site | | or Diesel fuel 1.0% v/v |
| Contaminants: | Gasoline or Diesel | Incubation Temperature: | 22 degree C |

| Sample ID | BE-CEA 01G | BE-CEA 02D | BE-CEA 03D | BE-CEA 04D | BE-CEA 05AG | BE-CEA 05BG |
|---|---|---|---|---|---|---|
| **CEA Results** | Gasoline | Diesel | Diesel | Diesel | Gasoline | Gasoline |
| **Total Population** | | | | | | |
| Rep 1 | 8.3E+05 | 3.6E+06 | 3.9E+06 | 2.3E+05 | 4.9E+05 | 1.6E+05 |
| 2 | 9.1E+05 | 3.2E+06 | 3.7E+06 | 2.0E+05 | 2.2E+05 | 1.8E+05 |
| 3 | 7.3E+05 | 3.5E+06 | 2.1E+06 | 2.1E+05 | 2.3E+05 | 1.4E+05 |
| 4 | 7.1E+05 | 5.6E+06 | 2.8E+06 | 1.9E+05 | 4.1E+05 | 1.7E+05 |
| 5 | #N/A | 2.5E+06 | 2.3E+06 | 2.3E+05 | #N/A | 1.2E+05 |
| Mean | 7.9E+05 | 3.7E+06 | 3.0E+06 | 2.1E+05 | 3.4E+05 | 1.5E+05 |
| Std Dev | 9.3E+04 | 1.2E+06 | 8.1E+05 | 1.8E+04 | 1.3E+05 | 2.4E+04 |
| Coefficient of Variation | 11.8% | 31.5% | 27.3% | 8.5% | 39.6% | 15.7% |
| **Degrader' Population** | | | | | | |
| Rep 1 | 2.5E+04 | 1.9E+05 | 8.4E+05 | 1.2E+04 | 2.3E+05 | 3.1E+04 |
| 2 | 2.6E+04 | 1.9E+05 | 6.8E+05 | 1.0E+04 | 3.1E+05 | 3.0E+04 |
| 3 | 3.0E+04 | 1.9E+05 | 8.9E+05 | 7.1E+03 | 2.0E+05 | 3.5E+04 |
| 4 | 3.4E+04 | 1.2E+05 | 9.2E+05 | 6.3E+03 | 2.4E+05 | 3.6E+04 |
| 5 | 2.6E+04 | #N/A | 8.6E+05 | 1.2E+04 | 2.5E+05 | 3.4E+04 |
| Mean | 2.8E+04 | 1.7E+05 | 8.4E+05 | 9.4E+03 | 2.5E+05 | 3.3E+04 |
| Std Dev | 3.8E+03 | 3.5E+04 | 9.6E+04 | 2.6E+03 | 3.8E+04 | 2.4E+03 |
| Coefficient of Variation | 13.6% | 20.6% | 11.5% | 27.3% | 15.2% | 7.3% |
| **Nutrient Analysis** | | | | | | |
| pH | NR | NR | NR | NR | NR | NR |
| Organic Matter (%) | NR | NR | NR | NR | NR | NR |
| P (ppm) | NR | NR | NR | NR | NR | NR |
| K (ppm) | NR | NR | NR | NR | NR | NR |
| TKN (ppm) | NR | NR | NR | NR | NR | NR |
| Ammonium-N (ppm) | NR | NR | NR | NR | NR | NR |
| Solids (%) | NR | NR | NR | NR | NR | NR |
| Ca (ppm) | NR | NR | NR | NR | NR | NR |
| Mg (ppm) | NR | NR | NR | NR | NR | NR |
| Cation Ex. (meq/100g) | NR | NR | NR | NR | NR | NR |
| %Sand:%Silt:%Clay | NR | NR | NR | NR | NR | NR |
| Soil Texture | NR | NR | NR | NR | NR | NR |

**Remarks:**

Enumeration data is reported in colony forming units (cfu's) / gram of dry weight soil. Five replicates were plated from each sample. #N/A represents data not available.

The standard limit of detection for this assay (using five replicates) is 1% for hydrocarbon degraders relative to the complete media population.

NR represents data not requested.

Reviewed and approved by:
M. Lynn Haugh
Microbiological Services Manager

# COMPARATIVE MICROBIOLOGICAL ENUMERATION ASSAY AND NUTRIENT ANALYSIS

## REPORT OF RESULTS

| | | | |
|---|---|---|---|
| Client | Foth & Van Dyke | Cl. contact | Russ Janeshek |
| Date of Order | 5/25/93 | Project # | 93W044 |
| Address | | P.O. No. | |
| Street | 2737 S. Rigde Road | Date rec'd | 6/4/93 |
| City | Green Bay | Date rept'd | 6/30/93 |
| State | WI | BTI Rep | M. Lynn Haugh |
| Zip | 54307-9012 | Growth Conditions | |
| Site Information: | | Specific Carbon Source: | Weathered gasoline 1% v/v or Diesel fuel 1.0% v/v |
| Identification: | Borgerding Site | | |
| Contaminants: | Gasoline or Diesel | Incubation Temperature: | 22 degree C |

| Sample ID | BE-CEA 06G | BE-CEA 06D | BE-CEA 07G | BE-CEA 07D |
|---|---|---|---|---|
| **CEA Results** | Gasoline | Diesel | Gasoline | Diesel |
| **Total Population** | | | | |
| Rep 1 | 1.6E+06 | 5.1E+06 | 6.2E+06 | 1.3E+06 |
| 2 | 1.5E+06 | 3.6E+06 | 4.9E+06 | 1.7E+06 |
| 3 | 1.6E+06 | 4.9E+06 | 5.5E+06 | 1.1E+06 |
| 4 | 1.7E+06 | #N/A | 4.1E+06 | 1.3E+06 |
| 5 | #N/A | #N/A | 4.6E+06 | 1.0E+06 |
| Mean | 1.6E+06 | 4.5E+06 | 5.1E+06 | 1.3E+06 |
| Std Dev | 6.9E+04 | 7.8E+05 | 8.0E+05 | 2.5E+05 |
| Coefficient of Variation | 4.3% | 17.2% | 15.9% | 20.0% |
| **Degrader' Population** | | | | |
| Rep 1 | 1.2E+05 | 3.4E+05 | 9.2E+04 | 1.5E+04 |
| 2 | 1.6E+05 | 2.3E+05 | 8.0E+04 | 1.6E+04 |
| 3 | 9.4E+04 | 2.4E+05 | 5.7E+04 | 8.0E+03 |
| 4 | 6.2E+04 | 2.2E+05 | 5.7E+04 | 1.2E+04 |
| 5 | 1.1E+05 | 2.6E+05 | 8.0E+04 | 1.4E+04 |
| Mean | 1.1E+05 | 2.6E+05 | 7.3E+04 | 1.3E+04 |
| Std Dev | 3.5E+04 | 4.9E+04 | 1.5E+04 | 3.2E+03 |
| Coefficient of Variation | 32.4% | 18.8% | 21.0% | 24.3% |
| **Nutrient Analysis** | | | | |
| pH | NR | NR | NR | NR |
| Organic Matter (%) | NR | NR | NR | NR |
| P (ppm) | NR | NR | NR | NR |
| K (ppm) | NR | NR | NR | NR |
| TKN (ppm) | NR | NR | NR | NR |
| Ammonium-N (ppm) | NR | NR | NR | NR |
| Solids (%) | NR | NR | NR | NR |
| Ca (ppm) | NR | NR | NR | NR |
| Mg (ppm) | NR | NR | NR | NR |
| Cation Ex. (meq/100g) | NR | NR | NR | NR |
| %Sand:%Silt:%Clay | NR | NR | NR | NR |
| Soil Texture | NR | NR | NR | NR |

Reviewed and approved by:
M. Lynn Haugh
Microbiological Services Manager

# Attachment 6

## Monitoring Well Construction Form and Monitoring Well Development Form

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: Borgerding Site - Beloit | Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W. | Well Name: MW-1DD |
| 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: NE 1/4 of NE 1/4 of Sec. 35, T. 1 N, R. 12 ☒ E. ☐ W. | Date Well Installed: 06/09/93 (m m / d d / y y) |
| Distance Well Is From Waste/Source Boundary: 70 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): Rick Panosh; Foth & Van Dyke and Assoc. |
| Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No | | |

A. Protective pipe, top elevation 00.0 ft. MSL
B. Well casing, top elevation -0.4 ft. MSL
C. Land surface elevation 00.0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

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

13. Sieve analysis attached? ☐ Yes ☒ No

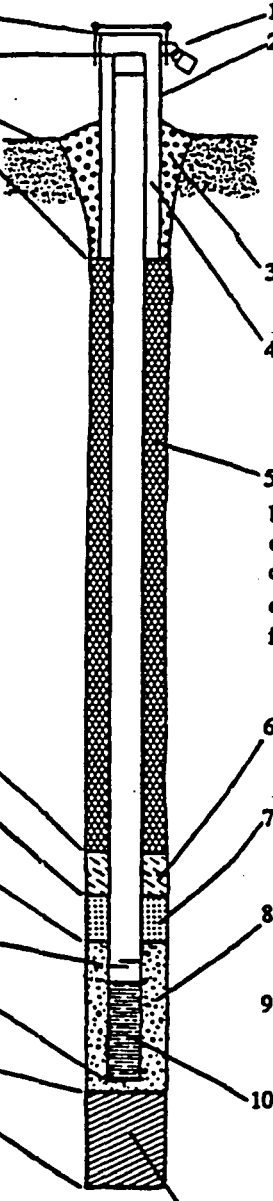
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ _____

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): Beloit Municipal Hydrant - Riverside Park

E. Bentonite seal, top _____ ft. MSL or 12.2 ft.
F. Fine sand, top _____ ft. MSL or 40.6 ft.
G. Filter pack, top _____ ft. MSL or NA ft.
H. Screen joint, top _____ ft. MSL or 45.0 ft.
I. Well bottom _____ ft. MSL or 50.0 ft.
J. Filter pack, bottom _____ ft. MSL or NA ft.
K. Borehole, bottom _____ ft. MSL or 53.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.00 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; Cast Aluminum; Other ☒ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: Gasket cap w/padlock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ _____; Filter Sand; 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. Bentonite Chips; Other ☒ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Formation Sand and Gravel
b. Volume added _____ $ft^3$
8. Filter pack material: Manufacturer, product name and mesh size
a. Formation Sand and Gravel
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 Northern Aire
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Formation Sand and Gravel; Other ☒ _____

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

Signature: _____ Firm: Foth & Van Dyke and Associates Inc.

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

# 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 |
|---|---|---|
| Borgerding Site - Beloit | Rock | MW-1DD |
| **Facility License, Permit or Monitoring Number** | **County Code** | **Wis. Unique Well Number** / **DNR Well Number** |
| _____ | 54 | _____ / _____ |

| | | Before Development | After Development |
|---|---|---|---|
| 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 | 120 min. | | |
| 4. Depth of well (from top of well casisng) | 49.6 ft. | | |
| 5. Inside diameter of well | 2.00 in. | | |
| 6. Volume of water in filter pack and well casing | 10.5 gal. | | |
| 7. Volume of water removed from well | 165.0 gal. | | |
| 8. Volume of water added (if any) | 0.0 gal. | | |
| 9. Source of water added | _____ | | |
| 10. Analysis performed on water added? (If yes, attach results) | ☐ Yes ☐ No | | |
| 11. Depth to Water (from top of well casing) | | a. 6.90 ft. | 6.93 ft. |
| Date | | b. 06/11/93 (m m d d y y) | 06/11/93 (m m d d y y) |
| Time | | c. 08:05 ☒ a.m. ☐ p.m. | 10:40 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | | 0.0 inches | 0.0 inches |
| 13. Water clarity | | Clear ☐ 10 Turbid ☒ 15 | Clear ☒ 20 Turbid ☐ 25 |
| (Describe) | | Cloudy lt.brn | |
| 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:

Developed w/Brainard-Kilman 1.7" hand pump discharging to 55-gallon steel drums (3).
Faint petro odor in development water.

| Well developed by: Person's Name and Firm | I hereby certify that the above information is true and correct to the best of my knowledge. |
|---|---|
| Name: Jim Stanley | Signature: Ruth L Parmer |
| Firm: WTD Environmental Drilling | Print Initials: R L P |
| | Firm: Foth & Van Dyke and Associates Inc. |

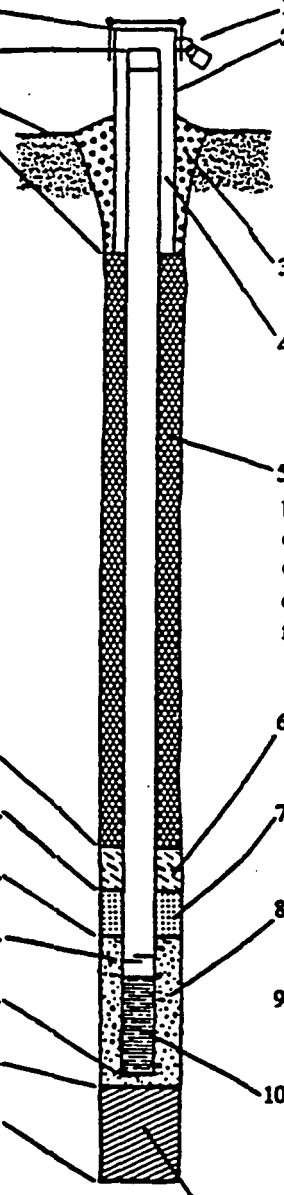
NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

State of Wisconsin
Department of Natural Resources

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: Borgerding Site - Beloit | Local Grid Location of Well: _____ ft. ☐ N ☐ S _____ ft. ☐ E ☐ W | Well Name: MW-2DD |
| 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: NE 1/4 of NE 1/4 of Sec. 35, T. 1 ☒ N, R. 12 ☐ E ☐ W | Date Well Installed: 06/11/93 (m m / d d / y y) |
| Distance Well Is From Waste/Source Boundary: 80 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): Rick Panosh; Foth & Van Dyke and Assoc. |
| Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No | | |



A. Protective pipe, top elevation 00.0 ft. MSL
B. Well casing, top elevation -0.4 ft. MSL
C. Land surface elevation 00.0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS 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): Beloit Municipal Hydrant - Riverside Park

E. Bentonite seal, top _____ ft. MSL or 12.2 ft.
F. Fine sand, top _____ ft. MSL or 41.0 ft.
G. Filter pack, top _____ ft. MSL or 42.3 ft.
H. Screen joint, top _____ ft. MSL or 45.0 ft.
I. Well bottom _____ ft. MSL or 50.0 ft.
J. Filter pack, bottom _____ ft. MSL or NA ft.
K. Borehole, bottom _____ ft. MSL or 53.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.00 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; Cast Aluminum; Other ☒
d. Additional protection? ☐ Yes ☐ No
If yes, describe: Gasket cap w/padlock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Filter Sand; 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. _____ Ft³ 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. Bentonite Chips; Other ☒
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining BB No. 7
b. Volume added 0.3 ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Formation Sand and Gravel
b. Volume added _____ ft³
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 Northern Aire
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Formation Sand and Gravel; Other ☒

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

Signature: _____ Firm: Foth & Van Dyke and Associates Inc.

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

# 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 |
|---|---|---|
| Borgerding Site - Beloit | Rock | MW-2DD |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well Number |
|---|---|---|---|
| _____ | 54 | | |

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 ___70 min.

4. Depth of well (from top of well casing) __49.6 ft.

5. Inside diameter of well __2.00 in.

6. Volume of water in filter pack and well casing __10.4 gal.

7. Volume of water removed from well 165.0 gal.

8. Volume of water added (if any) ___0.0 gal.

9. Source of water added _____

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

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. ___7.15 ft. | ___7.16 ft. |
| Date | b. 06/14/93 (m m d d y y) | 06/14/93 (m m d d y y) |
| Time | c. 11:19 ☒ a.m. ☐ p.m. | 12:50 ☐ a.m. ☒ p.m. |
| 12. Sediment in well bottom | __0.0 inches | __0.0 inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 | Clear ☒ 20 Turbid ☐ 25 |
| (Describe) | Cloudy lt.brn | |

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:

Developed w/Brainard-Kilman 1.7" hand pump discharging to 55-gallon steel drums (3). Faint petro odor in development water.

Well developed by: Person's Name and Firm

Name: Jim Stanley

Firm: WTD Environmental Drilling

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

Signature: Robert Parsons

Print Initials: R L P

Firm: Foth & Van Dyke and Associates Inc.

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

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: Borgerding Site - Beloit | Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W | Well Name: MW-3DD |
| 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: NE 1/4 of NE 1/4 of Sec. 35, T. 1 N, R. 12 ☒E ☐W | Date Well Installed: 06/09/93 (mm/dd/yy) |
| Distance Well Is From Waste/Source Boundary: 0 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): Rick Panosh; Foth & Van Dyke and Assoc. |
| Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No | | |

A. Protective pipe, top elevation ___0.0___ ft. ~~MSL~~
B. Well casing, top elevation ___-0.4___ ft. ~~MSL~~
C. Land surface elevation ___0.0___ ft. ~~MSL~~
D. Surface seal, bottom _____ ft. MSL or _1.0_ ft.

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

13. Sieve analysis attached? ☐ Yes ☒ No

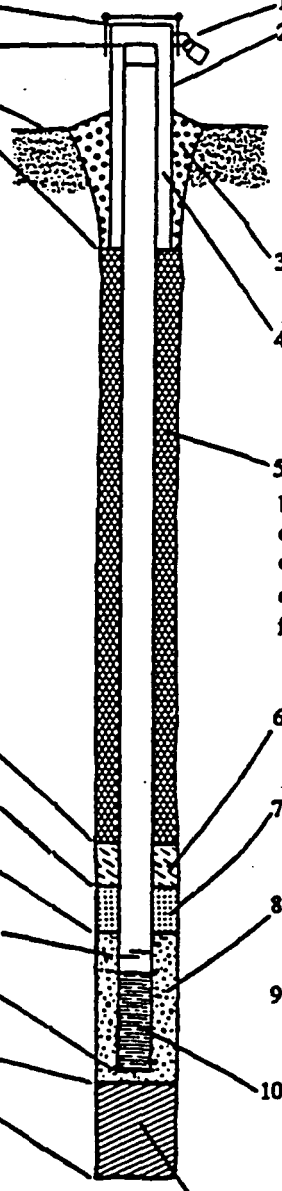
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ _____

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): Beloit Municipal Hydrant - Riverside Park

E. Bentonite seal, top _____ ft. MSL or _1.2_ ft.
F. Fine sand, top _____ ft. MSL or _41.0_ ft.
G. Filter pack, top _____ ft. MSL or _43.0_ ft.
H. Screen joint, top _____ ft. MSL or _45.0_ ft.
I. Well bottom _____ ft. MSL or _50.0_ ft.
J. Filter pack, bottom _____ ft. MSL or _47.0_ ft.
K. Borehole, bottom _____ ft. MSL or _53.0_ ft.
L. Borehole, diameter _6.0_ in.
M. O.D. well casing _2.38_ in.
N. I.D. well casing _2.00_ in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: _8.0_ in.
b. Length: _10_ ft.
c. Material: Steel ☐ 04; Cast Aluminum; Other ☒
d. Additional protection? ☒ Yes ☐ No
If yes, describe: Gasket cap w/padlock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Filter Sand; 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. Bentonite Chips; Other ☒
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining BB No. 7
b. Volume added 0.4 $ft^3$
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint Filter Sand #30
b. Volume added 0.4 $ft^3$
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 Northern Aire
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Formation Sand and Gravel; Other ☒

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

Signature: Rick Panosh | Firm: Foth & Van Dyke and Associates Inc.

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

# 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 |
|---|---|---|
| Borgerding Site - Beloit | Rock | MW-3DD |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well Number |
|---|---|---|---|
| _____ | 54 | | |

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 ___50 min.

4. Depth of well (from top of well casisng) __49.6 ft.

5. Inside diameter of well __2.00 in.

6. Volume of water in filter pack and well casing ___10.4 gal.

7. Volume of water removed from well 110.0 gal.

8. Volume of water added (if any) ___0.0 gal.

9. Source of water added _____

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

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. ___7.55 ft. | ___7.58 ft. |
| Date | b. 06/10/93 (m m d d y y) | 06/10/93 (m m d d y y) |
| Time | c. 09:05 ☒ a.m. ☐ p.m. | 10:36 ☒ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ___0.0 inches | ___0.0 inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) Cloudy Brown | Clear ☒ 20 Turbid ☐ 25 (Describe) |

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:

Developed w/Brainard-Kilman 1.7" hand pump discharging to 55-gallon steel drums (2).

Well developed by: Person's Name and Firm

Name: Jim Stanley

Firm: WTD Environmental Drilling

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

Signature: Rick Lavon

Print Initials: R L P

Firm: Foth & Van Dyke and Associates Inc.

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

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: Borgerding Site - Beloit | Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W. | Well Name: MW-11S |
| 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: NE 1/4 of NE 1/4 of Sec. 35, T. 1 ☐ N. R. 12 ☐ W. | Date Well Installed: 06/03/93 (m m / d d / y y) |
| Distance Well Is From Waste/Source Boundary: Unknown 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): Rick Panosh; Foth & Van Dyke and Assoc. |
| Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No | | |

A. Protective pipe, top elevation ___0.0_ ft. MSL
B. Well casing, top elevation ___-0.4_ ft. MSL
C. Land surface elevation ___0.0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or _1.0_ ft.

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

13. Sieve analysis attached? ☐ Yes ☒ No

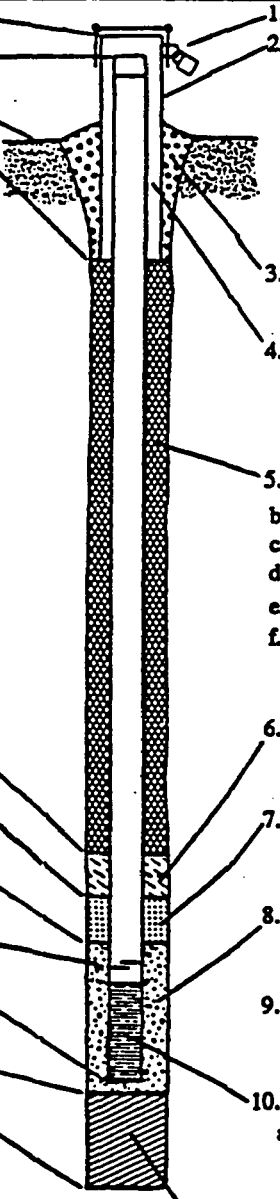
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ _____

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 _12_ ft.
F. Fine sand, top _____ ft. MSL or _NA_ ft.
G. Filter pack, top _____ ft. MSL or _35_ ft.
H. Screen joint, top _____ ft. MSL or _40_ ft.
I. Well bottom _____ ft. MSL or _140_ ft.
J. Filter pack, bottom _____ ft. MSL or _145_ ft.
K. Borehole, bottom _____ ft. MSL or _170_ ft.
L. Borehole, diameter _8.0_ in.
M. O.D. well casing _2.38_ in.
N. I.D. well casing _2.00_ 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; Cast Aluminum; Other ☒
d. Additional protection? ☐ Yes ☐ No
If yes, describe: Gasket cap w/padlock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Filter Sand; 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. _____ Ft³ 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. Bentonite Chips; Other ☒
7. Fine sand material: Manufacturer, product name & mesh size
a. NA
b. Volume added _____ ft³
8. Filter pack material: Manufacturer, product name and mesh size
a. Badger Mining 20-40 Silica
b. Volume added 1.3 ft³
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 Northern Aire
c. Slot size: 0.010 in.
d. Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Formation Gravelly Sand; Other ☒

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

Signature: Rick Panosh | Firm: Foth & Van Dyke and Associates Inc.

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

# 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 |
|---|---|---|
| Borgerding Site - Beloit | Rock | MW-11S |
| **Facility License, Permit or Monitoring Number** | **County Code** | **Wis. Unique Well Number** / **DNR Well Number** |
| _____ | 54 | |

| | Before Development | After Development |
|---|---|---|
| 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 _____ | ☐ | |
| 11. Depth to Water (from top of well casing) | a. 5.98 ft. | 11.80 ft. |
| Date | b. 06/10/93 (mm/dd/yy) | 06/10/93 (mm/dd/yy) |
| Time | c. 17:03 ☐ a.m. ☒ p.m. | 19:35 ☐ a.m. ☐ p.m. |
| 12. Sediment in well bottom | ___.__ inches | ___.__ inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 | Clear ☐ 20 Turbid ☒ 25 |
| (Describe) | Muddy<br>Dark Brown | Cloudy Brown |
| 3. Time spent developing well | 135 min. | |
| 4. Depth of well (from top of well casisng) | 13.6 ft. | |
| 5. Inside diameter of well | 2.00 in. | |
| 6. Volume of water in filter pack and well casing | 6.9 gal. | |
| 7. Volume of water removed from well | 5.0 gal. | |
| 8. Volume of water added (if any) | 0.0 gal. | |
| 9. Source of water added | _____ | |
| 10. Analysis performed on water added? (If yes, attach results) | ☐ Yes ☐ No | |
| 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:

Developed w/Brainard-Kilman 1.7" hand pump discharging to 5-gallon pail - combined into Well No. MW-11D 55-gallon well development water drum.
Very slow recovery - periodic pumping to dryness.

Well developed by: Person's Name and Firm

Name: Jim Stanley

Firm: WTD Environmental Drilling

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

Signature: Robert Palm

Print Initials: R L P

Firm: Foth & Van Dyke and Associates Inc.

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

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: Borgerding Site - Beloit | Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W | Well Name: MW-11D |
| 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: NE 1/4 of NE 1/4 of Sec. 35, T. 1 N, R. 12 ☒E ☐W | Date Well Installed: 06/03/93 (m m / d d / y y) |
| Distance Well Is From Waste/Source Boundary: Unknown 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): Rick Panosh; Foth & Van Dyke and Assoc. |
| Is Well A Point of Enforcement Std. Application? ☒ Yes ☐ No | | |

A. Protective pipe, top elevation 0.0 ft. MSL
B. Well casing, top elevation -0.3 ft. MSL
C. Land surface elevation 0.0 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

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

13. Sieve analysis attached? ☐ Yes ☒ No

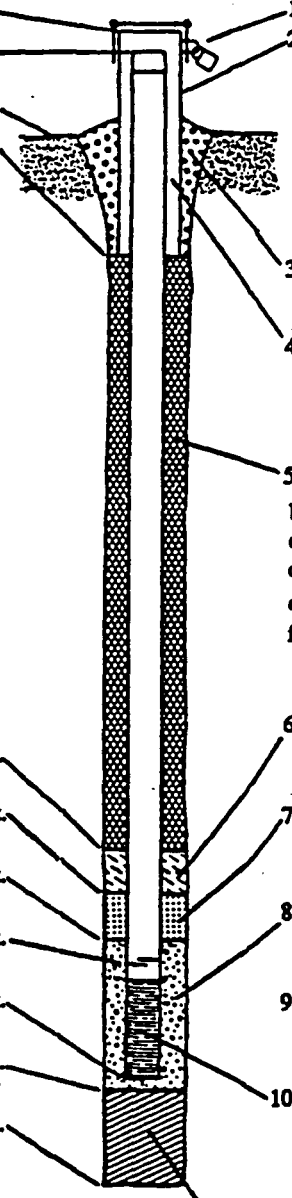
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ _____

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): Beloit Municipal Hydrant - Riverside Park

E. Bentonite seal, top _____ ft. MSL or 1.2 ft.
F. Fine sand, top _____ ft. MSL or 16.0 ft.
G. Filter pack, top _____ ft. MSL or 18.0 ft.
H. Screen joint, top _____ ft. MSL or 20.0 ft.
I. Well bottom _____ ft. MSL or 25.0 ft.
J. Filter pack, bottom _____ ft. MSL or 24.0 ft.
K. Borehole, bottom _____ ft. MSL or 27.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.00 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; Cast Aluminum; Other ☒ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: Gasket cap w/padlocks
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐ _____; Other ☒ Filter Sand
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. Bentonite Chips; Other ☒ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining BB No. 7
b. Volume added 0.4 $ft^3$
8. Filter pack material: Manufacturer, product name and mesh size
a. Badger Mining 20-40 Silica
b. Volume added 1.3 $ft^3$
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 Northern Aire
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Other ☒ Formation Sand and Gravel

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

Signature: Richard Panosh | Firm: Foth & Van Dyke and Associates Inc.

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

# MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-9(

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

| Facility/Project Name | County Name | Well Name |
|---|---|---|
| Borgerding Site - Beloit | Rock | MW-11D |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well Number |
|---|---|---|---|
| _____ | 54 | | |

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 35 min.

4. Depth of well (from top of well casisng) 24.7 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 6.1 gal.

7. Volume of water removed from well 65.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added _____

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

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. 8.63 ft. | 8.66 ft. |
| Date | b. 06/10/93 (m m d d y y) | 06/10/93 (m m d d y y) |
| Time | c. 17:15 ☐ a.m. ☒ p.m. | 19:30 ☐ a.m. ☐ p.m. |
| 12. Sediment in well bottom | 0.0 inches | 0.0 inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 | Clear ☒ 20 Turbid ☐ 25 |
| (Describe) | Cloudy Lt. Brown | Slight Yellow Tint |

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:

Developed w/Brainard-Kilman 1.7" hand pump discharging to 55-gallon steel drums (2). Faint petro odor in development water.

Well developed by: Person's Name and Firm

Name: Jim Stanley

Firm: WTD Environmental Drilling

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

Signature: Rachel Pearson

Print Initials: R L P

Firm: Foth & Van Dyke and Associates Inc.

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

...sconsin 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

| | | |
|---|---|---|
| ...ject Name: ...rding Site - Beloit | Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W | Well Name: MW-11DD |
| ...cense, Permit or Monitoring Number: _____ | Grid Origin Location: Lat. _____ Long. _____ or St. Plane _____ ft. N, _____ ft. E. | Wis. Unique Well Number / DNR Well Number |
| ...Well Water Table Observation Well ☐ 11 Piezometer ☒ 12 | Section Location of Waste/Source: NE 1/4 of NE 1/4 of Sec. 35, T. 1 ☒N ☐S, R. 12 ☐E ☒W. | Date Well Installed: 06/10/93 (mm/dd/yy) |
| ...e Well Is From Waste/Source Boundary: Unknown 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): Rick Panosh; Foth & Van Dyke and Assoc. |
| ...A Point of Enforcement Std. Application? ☒ Yes ☐ No | | |

...otective pipe, top elevation ___0.0___ ft. MSL
...ell casing, top elevation ___-0.4___ ft. MSL
...nd surface elevation ___0.0___ ft. MSL
...rface seal, bottom _____ ft. MSL or 1.0 ft.

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

13. Sieve analysis attached? ☐ Yes ☒ No

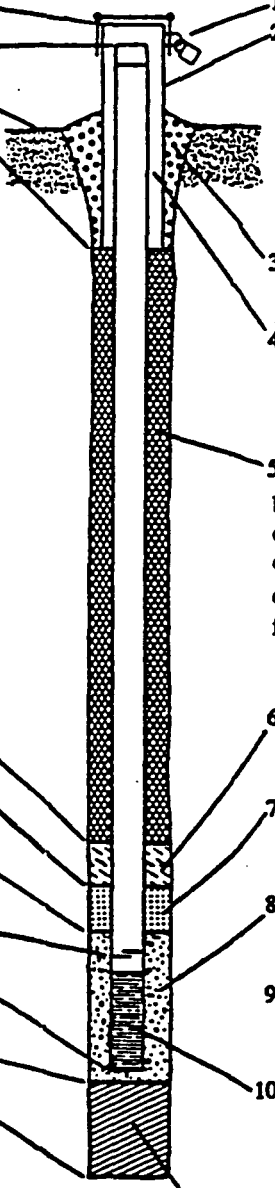
14. Drilling method used: Rotary ☒ 50; Hollow Stem Auger ☐ 41; Other ☐ _____

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): Beloit Municipal Hydrant - Riverside Park

E. Bentonite seal, top _____ ft. MSL or 12 ft.
F. Fine sand, top _____ ft. MSL or 41.0 ft.
G. Filter pack, top _____ ft. MSL or 43.0 ft.
H. Screen joint, top _____ ft. MSL or 45.0 ft.
I. Well bottom _____ ft. MSL or 50.0 ft.
J. Filter pack, bottom _____ ft. MSL or 49.0 ft.
K. Borehole, bottom _____ ft. MSL or 53.0 ft.
L. Borehole, diameter 6.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.00 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; Cast Aluminum; Other ☒
d. Additional protection? ☐ Yes ☐ No
If yes, describe: Gasket cap w/padlock
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Annular space seal ☐; Filter Sand; 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. Bentonite Chips; Other ☒
7. Fine sand material: Manufacturer, product name & mesh size
a. Badger Mining BB No. 7
b. Volume added 0.4 $ft^3$
8. Filter pack material: Manufacturer, product name and mesh size
a. Red Flint Filter Sand #30
b. Volume added 1.3 $ft^3$
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 Northern Aire
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☐ 14; Formation Sand and Gravel; Other ☒

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

Signature: Rick Panosh | Firm: Foth & Van Dyke and Associates Inc.

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

# 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 |
|---|---|---|
| Borgerding Site - Beloit | Rock | MW-11DD |

| Facility License, Permit or Monitoring Number | County Code | Wis. Unique Well Number | DNR Well Number |
|---|---|---|---|
| _____ | 54 | | |

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 ___65 min.

4. Depth of well (from top of well casisng) __49.6 ft.

5. Inside diameter of well __2.00 in.

6. Volume of water in filter pack and well casing __10.2 gal.

7. Volume of water removed from well __165.0 gal.

8. Volume of water added (if any) ___0.0 gal.

9. Source of water added _____

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

| | Before Development | After Development |
|---|---|---|
| 11. Depth to Water (from top of well casing) | a. ___8.57 ft. | ___8.62 ft. |
| Date | b. 06/11/93 (mm/dd/yy) | 06/11/93 (mm/dd/yy) |
| Time | c. 11:35 ☒ a.m. ☐ p.m. | 13:00 ☐ a.m. ☒ p.m. |
| 12. Sediment in well bottom | __0.0 inches | __0.0 inches |
| 13. Water clarity | Clear ☐ 10 Turbid ☒ 15 (Describe) Cloudy Lt. Brown | Clear ☒ 20 Turbid ☐ 25 (Describe) |

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:

Developed w/Brainard-Kilman 1.7" hand pump discharging to 55-gallon steel drums (3). Faint petro odor in development water.

Well developed by: Person's Name and Firm

Name: Jim Stanley

Firm: WTD Environmental Drilling

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

Signature: Robert L Parson

Print Initials: R L P

Firm: Foth & Van Dyke and Associates Inc.

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

SED
FINANCE
1993 JUL 26 PM 3:55

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Box 7921
Madison, Wisconsin 53707

# INVOICE FOR PROFESSIONAL SERVICES

PROJECT Bogerding Site Investigation

REQUEST NO. 1

PROJECT NO. 93 LU110

LOCATION Beloit, Wisconsin

CONTRACT NO.3783

| | | Total Fee Due To Date | Previously Submitted | Payment Due This Invoice |
|---|---|---|---|---|
| **If "lump sum" contract:** | | | | |
| Original Contract Sum | _____ | | | |
| Change Orders (List Separately) | _____ | | | |
| | _____ | | | |
| Total Contract To Date | _____ | | | |
| **If "hourly basis" contract:** | | | | |
| Maximum contract amount | $ 87,075 | $ 46,879.85 | 0 | $ 46,879.85 |
| Change Orders (List Separately) #1 | 3,005 | | | |
| (Attach itemized listing) | | | | |
| **Other Charges to contract:** | | | | |
| Additional Services: (Attach itemized listing) | _____ | | | |
| Reimbursable Expenses (Attach itemized listing) | _____ | | | |
| **TOTALS** | | $ 46,879.85 | | $ 46,879.85 |

THIS IS TO CERTIFY THAT The Firm named herein is entitled to a payment of $ 46879.85

Foth & Van Dyke
Firm Name

2737 S. Ridge Road, Green Bay, Wisconsin
Address

By Lanette Altenbach
Firm Representative

7/21/93
Date

M. L. Schmaltz
Project Manager Approval

8/17/93
Date

Program Coordinator Approval

Date

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Box 7921
Madison, Wisconsin 53707

# INVOICE FOR PROFESSIONAL SERVICES

PROJECT Bogerding Site Investigation

REQUEST NO. 1

PROJECT NO. 93 LU110

LOCATION Beloit, Wisconsin

CONTRACT NO.3783

| | | Total Fee Due To Date | Previously Submitted | Payment Due This Invoice |
|---|---|---|---|---|
| **If "lump sum" contract:** | | | | |
| Original Contract Sum | | | | |
| Change Orders (List Separately) | | | | |
| | | | | |
| Total Contract To Date | | | | |
| **If "hourly basis" contract:** | | | | |
| Maximum contract amount | $ 87,075 | $ 46,879.85 | 0 | $ 46,879.85 |
| Change Orders (List Separately) #1 | 3,005 | | | |
| (Attach itemized listing) | | | | |
| **Other Charges to contract:** | | | | |
| Additional Services: (Attach itemized listing) | | | | |
| Reimbursable Expenses (Attach itemized listing) | | | | |
| **TOTALS** | | $ 46,879.85 | | $ 46,879.85 |

THIS IS TO CERTIFY THAT The Firm named herein is entitled to a payment of $ 46,879.85

Foth & Van Dyke
Firm Name

2737 S. Ridge Road, Green Bay, Wisconsin
Address

By Lanette Altenbach
Firm Representative

7/21/93
Date

Project Manager Approval

8/17/93
Date

Program Coordinator Approval

Date

# Foth & Van Dyke


| | |
|---|---|
| Green Bay, WI | 414/497-2500 |
| Madison, WI | 608/238-4761 |
| Milwaukee, WI | 414/359-2500 |
| Minneapolis, MN | 612/942-0396 |
| St. Louis, MO | 314/434-5700 |
| Chicago, IL | 708/810-9119 |


REMIT TO:
FINANCE
P.O. Box 19012
Green Bay, WI 54307-9012

1993 JUL 26 PM 3:55

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
P O BOX 12436
MILWAUKEE WI 53212

**Invoice No:** 0054501

**Date:** July 23, 1993

**Job No:** 93W044

GMS/LLA/WDNR

## TERMS: Payable Upon Receipt - Interest Charged on Unpaid Balance.

For professional services in connection with
Borgerding Site Investigation.

Services performed through July 22, 1993

| | | |
|---|---|---|
| DATA RVW/WASTE CHARACTERIZATION | | |
| Services Performed | $2,165.72 | |
| Mileage | $120.00 | |
| Bears Photo Inc | $5.08 | |
| Oneida Environmental | $3,887.00 | |
| Communication Services | $32.39 | |
| PC Services | $12.00 | |
| | | $6,222.19 |
| BORGERDING FIELD WORK | | |
| Services Performed | $9,622.35 | |
| Mileage | $67.84 | |
| Employee Expenses | $88.01 | |
| Biorenewal Technologies Inc | $1,822.75 | |
| Federal Express Corporation | $211.88 | |
| Mayfair Rent A Car Inc | $895.35 | |
| Oneida Environmental | $1,449.00 | |
| LongYear Company | $23,263.57 | |
| Communication Services | $11.91 | |
| Office Expenses | $6.20 | |
| | | $37,438.86 |
| BORGERDING SITE REPORT | | |
| Services Performed | $3,163.00 | |
| Plotting Services | $4.00 | |
| Communication services | $6.30 | |
| CADD Services | $42.50 | |
| Office Expenses | $3.00 | |
| | | $3,218.80 |
| TOTAL AMOUNT DUE | | $46,879.85 |

# Foth & Van Dyke


| | |
|---|---|
| Green Bay, WI | 414/497-2500 |
| Madison, WI | 608/238-4761 |
| Milwaukee, WI | 414/359-2500 |
| Minneapolis, MN | 612/942-0396 |
| St. Louis, MO | 314/434-5700 |
| Chicago, IL | 708/810-9119 |


REMIT TO:
P.O. Box 19012
Green Bay, WI 54307-9012

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
P O BOX 12436
MILWAUKEE WI 53212

**Invoice No:** 0054501

**Date:** July 23, 1993

**Job No:** 93W044

GMS/LLA/WDNR

## TERMS: Payable Upon Receipt - Interest Charged on Unpaid Balance.

For professional services in connection with
Borgerding Site Investigation.

Services performed through July 22, 1993

| | | |
|---|---|---|
| DATA RVW/WASTE CHARACTERIZATION | | |
| Services Performed | $2,165.72 | |
| Mileage | $120.00 | |
| Bears Photo Inc | $5.08 | |
| Oneida Environmental | $3,887.00 | |
| Communication Services | $32.39 | |
| PC Services | $12.00 | |
| | | $6,222.19 |
| BORGERDING FIELD WORK | | |
| Services Performed | $9,622.35 | |
| Mileage | $67.84 | |
| Employee Expenses | $88.01 | |
| Biorenewal Technologies Inc | $1,822.75 | |
| Federal Express Corporation | $211.88 | |
| Mayfair Rent A Car Inc | $895.35 | |
| Oneida Environmental | $1,449.00 | |
| LongYear Company | $23,263.57 | |
| Communication Services | $11.91 | |
| Office Expenses | $6.20 | |
| | | $37,438.86 |
| BORGERDING SITE REPORT | | |
| Services Performed | $3,163.00 | |
| Plotting Services | $4.00 | |
| Communication services | $6.30 | |
| CADD Services | $42.50 | |
| Office Expenses | $3.00 | |
| | | $3,218.80 |
| TOTAL AMOUNT DUE | | $46,879.85 |

Requested 09:17:38 07/22/93 by, SILBZINSKI J F FV

Prepared 09:17:34 07/22/93

INVOICE SUPPLEMENT - BILLABLE COSTS (BL000)

PAGE 1

RECORDED COSTS THROUGH 7/22/93 - INVOICE #: 54501

CLIENT: WDNR WISCONSIN DEPARTMENT OF
SCOPE ID: 93W044 BORGERDING SITE INVESITGATION
BILLING LINE #: 01 DATA RVW/WASTE CHARACTERIZATION

CLIENT LIAISON: GMS GARY M SIKICH
SCOPE LIAISON: LLA LANETTE L ALTENBACH
BILLING METHOD: 3

| | --- COST DATES --- FROM | TO | LABOR HOURS | TOTAL $ | |
|---|---|---|---|---|---|
| JUDITH A SCHIEL | 5/11/93 | 5/11/93 | .5 | 18.70 | |
| JOSEPH F SILBZINSKI | 4/26/93 | 4/26/93 | 1.0 | 51.00 | |
| KIM M WILL | 5/12/93 | 5/12/93 | .5 | 15.73 | |
| LANETTE L ALTENBACH | 4/22/93 | 5/21/93 | 10.0 | 814.49 | |
| NANCY A JAKUBS | 5/13/93 | 5/24/93 | 1.0 | 41.14 | |
| RICHARD L PANOSH | 5/04/93 | 5/20/93 | 18.5 | 1,224.66 | |
| TOTAL LABOR * * * * * * * * * * * * | | | 31.5 | 2,165.72 | * |
| MILEAGE | 5/04/93 | 5/20/93 | 375 MILES | 120.00 | |
| BEARS PHOTO INC | 6/05/93 | 6/05/93 | | 5.08 | |
| ONEIDA ENVIRONMENTAL | 6/14/93 | 6/28/93 | | 3,887.00 | |
| COMMUNICATION SERVICES | 5/11/93 | 6/17/93 | | 32.39 | |
| PC SERVICES | 5/12/93 | 5/12/93 | | 12.00 | |
| TOTAL EXPENSES & OTHER COSTS * * * | | | | 4,056.47 | * |
| TOTAL SUPPLEMENT CHARGES * * * * * | | | | 6,222.19 | ** |

RECORDED COSTS THROUGH 7/22/93 - INVOICE #: 54501

CLIENT: WIN9 WISCONSIN DEPARTMENT OF CLIENT LIAISON: GMS GARY M SIKICH
SCOPE ID: 93W044 BORGERDING SITE INVESITGATION SCOPE LIAISON: LLA LANETTE L ALTENBACH
BILLING LINE #: 02 BORGERDING FIELD WORK BILLING METHOD: 3

| | --- COST DATES --- FROM | TO | LABOR HOURS | TOTAL $ | |
|---|---|---|---|---|---|
| JANET E FORREST | 5/26/93 | 5/26/93 | 1.0 | 28.35 | |
| LANETTE L ALTENBACH | 5/24/93 | 6/17/93 | 13.0 | 1,058.85 | |
| RICHARD L RANOSH | 4/26/93 | 6/17/93 | 113.0 | 8,367.63 | |
| RUSSELL T JANESHEK | 5/25/93 | 5/26/93 | 1.5 | 157.32 | |
| TOTAL LABOR * * * * * * * * * * * * | | | 128.5 | 9,612.15 | * |
| MILEAGE | 5/26/93 | 6/14/93 | 212 MILES | 67.84 | |
| EMPLOYEE EXPENSES | 6/04/93 | 6/11/93 | | 88.01 | |
| BIORENEWAL TECHNOLOGIES INC | 6/30/93 | 6/30/93 | | 1,822.75 | |
| FEDERAL EXPRESS CORPORATION | 6/10/93 | 6/10/93 | | 211.88 | |
| MAYFAIR RENT A CAR INC | 6/11/93 | 6/11/93 | | 895.35 | |
| ONEIDA ENVIRONMENTAL | 6/07/93 | 6/07/93 | | 1,449.00 | |
| GOODYEAR COMPANY | 6/30/93 | 6/30/93 | | 23,263.57 | |
| COMMUNICATION SERVICES | 5/28/93 | 5/28/93 | | 4.68 | |
| TOTAL EXPENSES & OTHER COSTS * * * | | | | 27,803.08 | * |
| TOTAL SUPPLEMENT CHARGES * * * * * | | | | 37,415.23 | ** |

CLIENT: WDNR WISCONSIN DEPARTMENT OF
SCOPE ID: 93W044 BORGERDING SITE INVESITSATION
BILLING LINE #: 02 BORGERDING FIELD WORK

CLIENT LIAISON: GMS GARY M SIKICH
SCOPE LIAISON: LLA LANETTE L ALTENBACH
BILLING METHOD: 3

| | --- COST DATES --- FROM | TO | LABOR HOURS | TOTAL $ | |
|---|---|---|---|---|---|
| JOSEPH F SIUDZINSKI | 6/17/93 | 6/17/93 | .2 | 10.20 | |
| TOTAL LABOR * * * * * * * * * * * * | | | .2 | 10.20 | * |
| COMMUNICATION SERVICES | 6/17/93 | 7/15/93 | | 7.23 | |
| OFFICE EXPENSES | 7/09/93 | 7/09/93 | | 6.20 | |
| TOTAL EXPENSES & OTHER COSTS * * * | | | | 13.43 | * |
| TOTAL SUPPLEMENT CHARGES * * * * * | | | | 23.63 | ** |

CLIENT: WDNR WISCONSIN DEPARTMENT OF
SCOPE ID: 93W044 BORGERDING SITE INVESITGATION
BILLING LINE #: 04 BORGERDING SITE REPORT

CLIENT LIAISON: GMS GARY M SIKICH
SCOPE LIAISON: LLA LANETTE L ALTENBACH
BILLING METHOD: 3

| | --- COST DATES --- FROM | TO | LABOR HOURS | TOTAL $ | |
|---|---|---|---|---|---|
| BILLY B WANG | 7/14/93 | 7/14/93 | 3.0 | 102.27 | |
| CAROL A CHAMPINE | 7/15/93 | 7/15/93 | 5.0 | 141.55 | |
| LANETTE L ALTENBACH | 7/14/93 | 7/15/93 | 4.0 | 325.90 | |
| LAUREL BEATY | 7/08/93 | 7/14/93 | 6.5 | 223.79 | |
| RICHARD L PANOSH | 6/24/93 | 7/16/93 | 32.0 | 2,369.50 | |
| TOTAL LABOR * * * * * * * * * * * * | | | 50.5 | 3,163.00 | * |
| PLOTTING SERVICES | 7/14/93 | 7/15/93 | | 4.00 | |
| COMMUNICATION SERVICES | 6/17/93 | 6/17/93 | | 6.30 | |
| CADD SERVICES | 7/14/93 | 7/14/93 | | 42.50 | |
| OFFICE EXPENSES | 7/08/93 | 7/08/93 | | 3.00 | |
| TOTAL EXPENSES & OTHER COSTS * * * | | | | 55.80 | * |
| TOTAL SUPPLEMENT CHARGES * * * * * | | | | 3,218.80 | ** |