

July 25, 2007

Janet DiMaggio
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711



RE: WDNR BRRTS No. 03-28-176509
Work Plan for Supplemental Hydrogeologic Investigation
D.B. Oak Facility, 700-710 Oak Street, Ft. Atkinson, Wisconsin

Dear Ms. DiMaggio:

NewFields has prepared this work plan for additional investigation to identify the vertical and lateral extent of groundwater contamination for the DB Oak facility in Fort Atkinson, Wisconsin (see Figure 1). The proposed investigation has been prepared in response to a request by Wisconsin Department of Natural Resources (WDNR) in a letter dated September 8, 2006. Our work plan includes a description of our technical approach, scope of work, and schedule.

1.0 TECHNICAL APPROACH

In a letter dated September 8, 2006 the WDNR requested additional investigation to identify the vertical and lateral extent of groundwater contamination. In that letter the WDNR requested additional monitoring points to define the vertical extent of contamination at the following locations shown on Figure 2:

- At the MW-2/2A well nest;
- At the MW-7/7A well nest; and,
- At a location north of the MW-7/7A well nest.

Additionally, the WDNR indicated that additional investigation will be needed to define the vertical extent of contamination at the MW-3/3A/3B well nest.

Previous site investigation results indicate that subsurface soil units consist of shallow interbedded silty clay, silt, clay sand, and sand units. These shallow fine grained soil interbedded units extend from the surface to depths ranging from approximately 10 feet below ground surface (bgs) on the north side of the property (the MW-4 well nest) to about 30 feet bgs on the south side (the MW-2 well nest). These units are underlain by a high permeability outwash sand that extends across the subject property. This outwash sand unit was encountered to the limits of exploration at MW-2A (42 feet bgs), MW-4A (40 feet bgs), and MW-7A (45 feet bgs). At the MW-3/3A/3B well nest, the outwash sand was encountered to a depth of 40 feet below ground surface (bgs). A clay/silt and

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sandy silt unit was encountered from 40 to 61 feet. It is underlain by a silt unit to 77 feet, and silty sand to the maximum depth of 80 feet. At the MW-6/6A location (located several hundred feet southwest of the site) a silty sand/silt unit was encountered to an approximate depth of 10 feet bgs. These soils are underlain by a dense silty sand unit, which likely represents a glacial till deposit, encountered to the limits of exploration (41 feet bgs). Subsurface soil units are shown on Figure 3.

Elevated concentrations of chlorinated volatile organic compounds (CVOCs) were detected in soil samples collected from shallow borings advanced on the east side of the DB Oak facility building. These soil sample results indicate that there is a source for groundwater contamination near the MW-4/4A and MW-3/3A/3B well nest¹. Groundwater samples collected from existing monitoring wells indicate that the contaminants have migrated vertically at the MW-3/3A/3B well nest, but not at the MW-4/4A well nest. Samples collected from down gradient piezometers MW-2A and MW-7A indicate that contaminants are migrating laterally from the source area located on the east side of the facility building.

2.0 SCOPE OF WORK

In accordance with the WDNR's September 8, 2006 letter request for additional site investigation, NewFields recommends the following tasks.

Task 1 –Project Preparation

NewFields will also update the site-specific health and safety plan and make arrangements for subcontractor (drilling and laboratory) services needed to complete the project. Additionally, NewFields will update the access agreement with the current property owner and obtain clearance for buried utilities with the statewide utility identification service (Digger's Hotline).

¹ Documents from late summer / fall 2006 in the WDNR file suggested that elevated concentrations of VOCs detected in samples collected from MW-3B, a deep piezometer screened below a silt unit, may be the result of "down dragging" contaminants from a near surface contaminant zone while advancing the boring for that well. Total VOC concentrations in the March 2006 MW-3B sample exceeded 20,000 µg/l, including 17,000 µg/l for tetrachloroethene (PCE). Total VOCs exceeded 38,000 and 22,000 µg/l in the March 2006 MW-3 and MW-3A samples, respectively; these included PCE at 28,000 µg/l in the MW-3 sample, and 4,200 µg/l in the MW-3A sample. Wells MW-3 and MW-3A were installed in borings advanced with hollow stem augers, and MW-3B was advanced in a boring advanced with mud rotary. Although "down dragging" is possible, the magnitude and relative concentrations between parent and degradation compounds strongly indicate that contaminants migrated vertically or laterally from an up gradient source. The vertical distribution of contaminants is likely influenced by the adsorption of contaminants onto subsurface soil units containing appreciable amounts of fines.

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Task 2 – Zone Sampling and Monitoring Well Installation

Zone sampling will be completed at the following four well locations to identify the vertical extent of groundwater contamination:

- At the MW-2/2A well nest;
- At the MW-3/3A/3B well nest;
- At the MW-7/7A well nest; and,
- At the proposed MW-8 location (north of the MW-7/7A well nest).

Groundwater samples will be collected at each location as the boring is advanced. At the MW-2/2A and MW-7/7A locations, samples will be collected at depths of 60, 80, and 100 feet bgs. At the MW-3/3A/3B location, samples will be collected at 100, 120, and 140 feet bgs. At the MW-8 location, samples will be collected at depths of 30, 60, 80, and 100 feet bgs.

Soil cuttings will be visually classified in accordance with the Unified Soil Classification System and descriptions will be recorded on a field log to identify subsurface soil units as the borehole is advanced. Once the sample depth has been reached, a well point will be installed as a temporary well in the borehole, and the casing will be pulled back three to five feet allowing the formation to collapse around the well point. The sample interval will be sealed off with a packer, and groundwater samples will be collected with a peristaltic pump connected to the tubing inserted to the bottom of the temporary well. All samples will be collected in laboratory provided containers, placed on ice, and shipped to a Wisconsin-certified environmental laboratory. All groundwater samples will be submitted within 24 hours of sample collection for quick turnaround VOC analysis by Method 8260.

Zone samples will be used to select well screen depths; well screens will be placed at intervals below the lowest concentrations detected. Per WDNR's request, NewFields will supervise the installation of additional monitoring wells. For the purpose of preparing this work plan, we have assumed six additional monitoring wells as follows²:

- Deep piezometer MW-2B installed at a depth of 85 feet bgs adjacent to existing wells MW-2/MW-2A;
- Deep piezometer MW-3C installed at a depth of 150 feet bgs adjacent to existing wells MW-3/MW-3A/MW-3B;
- Deep piezometer MW-7B installed at a depth of 85 feet bgs adjacent to existing wells MW-

² Final well screen depths will be determined based on the results of the zone sampling.

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7/MW-7A;

- Water table observation well MW-8 installed at a depth of on the west side of the DB Oak property adjacent to Oak Street, between 150 and 175 feet north of the MW-7/MW-7A well nest;
- Intermediate piezometer MW-8A installed at a depth of 45 to 50 feet bgs adjacent to proposed wells MW-8; and,
- Deep piezometer MW-8B installed at a depth of 85 feet bgs adjacent to proposed wells MW-8/MW-8A.

Water table well MW-8 will be constructed with 2-inch diameter schedule 40 PVC well casing and screen, and installed at a depth between 15 and 20 feet below ground surface (between 7 and 8 feet below the water table) with a 10-foot well screen having 0.010-inch slot size openings. Piezometers MW-2B, MW-3C, MW-7B, MW-8A, and MW-8B will be constructed with 2-inch diameter schedule 40 PVC well casing and screen, and installed with 5-foot well screens having 0.010-inch slot size openings (schedule 80 PVC well casing will be used for construction of wells installed below a depth of 100 feet). If the borehole is advanced below the well screen depth, bentonite will be placed in the borehole below the well screen. A sand pack will be placed around each well screen as the drill casing is removed. A bentonite seal will be placed above each sand pack, and the annular space above the seals will be backfilled with bentonite; bentonite slurry tremied in place will be used to backfill the annular space above the sand pack and seal for all wells installed below a depth of 50 feet. All wells will be installed with protective well covers. Soil cuttings will be placed in 55-gallon drums, and temporarily stored on-site until arrangements for disposal can be made.

Task 3 - Well Development and Groundwater Sample Collection

Following well installation, NewFields will develop each well by surging and purging 10-well volumes. In the event that the wells bail dry, five well volumes will be removed. Purge water will be placed in 55 gallon drums, and temporarily stored on-site until arrangements for disposal can be made. The reference elevation of each new well will also be surveyed by NewFields relative to existing site datum. Soil boring logs, well construction forms, and well development forms will be completed for each proposed well. All drilling, well abandonment, well construction, and well development will be completed in accordance with Wisconsin Administrative Code NR 141 requirements.

NewFields will collect groundwater samples from the 13 existing wells and six proposed wells a minimum of one week following well development. Prior to sample collection, groundwater elevations will be measured in all site wells to determine groundwater elevations at the time of sample collection. All samples will be submitted to a Wisconsin certified laboratory and analyzed



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for VOCs by Method 8260. In accordance with WDNR guidance, two duplicate samples and a trip blank will also be analyzed for VOCs.

Task 4 – Report Preparation

NewFields will prepare a final site investigation report following completion of the supplemental hydrogeologic investigation. Per Wisconsin Administrative Code ch. NR 716 requirements, this report will include soil boring logs, well construction forms, well development forms, and site maps showing well locations, groundwater elevations, and isoconcentration contours. Laboratory results for groundwater samples will be tabulated, and laboratory reports will be appended to the report. The results from all existing and proposed wells will be used to summarize the vertical and lateral extent of groundwater contamination, or to recommend additional investigation if needed.

3.0 SCHEDULE

The zone sampling and monitoring well installation has been tentatively scheduled to begin on September 4, 2007. Groundwater samples will be collected from all site wells within one week following well installation and development. The supplemental site investigation report will be prepared for client review approximately four weeks following well installation.

If you have any questions please call us at (608) 442-5223.

Sincerely,

NEWFIELDS

A handwritten signature in black ink, reading "David P. Trainor".

David P. Trainor
Principal

A handwritten signature in black ink, reading "Mark S. McColloch".

Mark S. McColloch, P.G.
Senior Geologist

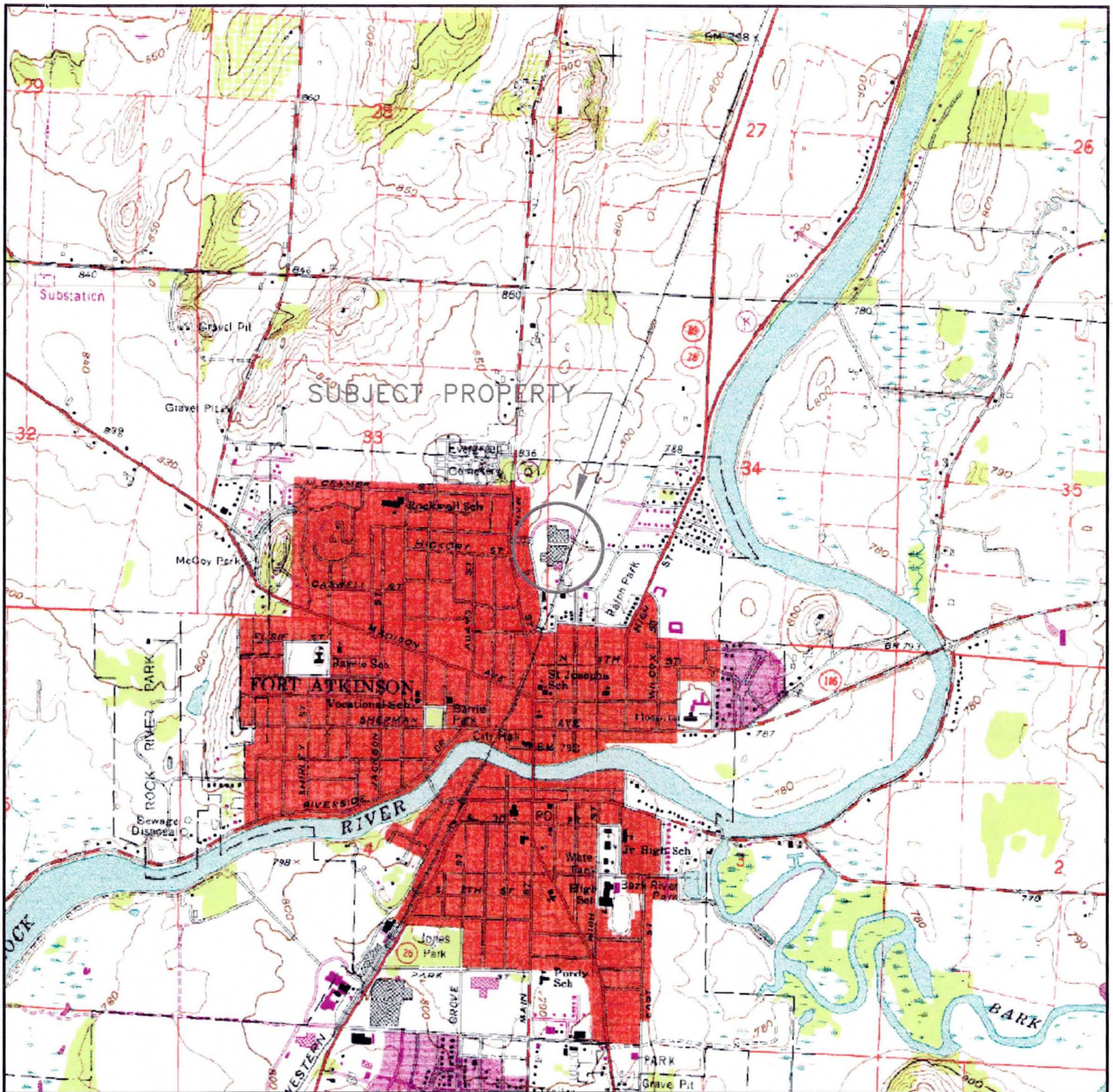
cc: Mr. Mark T. Chiado, Gardner Denver, Inc



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NewFields\projects-msm\DB Oak\DB_OAK_Fort_Atkinson_july_07_workplan

FIGURES



BASE MAP SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE,
FORT ATKINSON, WISCONSIN, DATED 1987.



QUADRANGLE
LOCATION

NORTH
SCALE: 1"=2400'

FORMER THOMAS FACILITY FORT ATKINSON, WISCONSIN

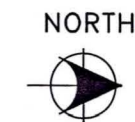
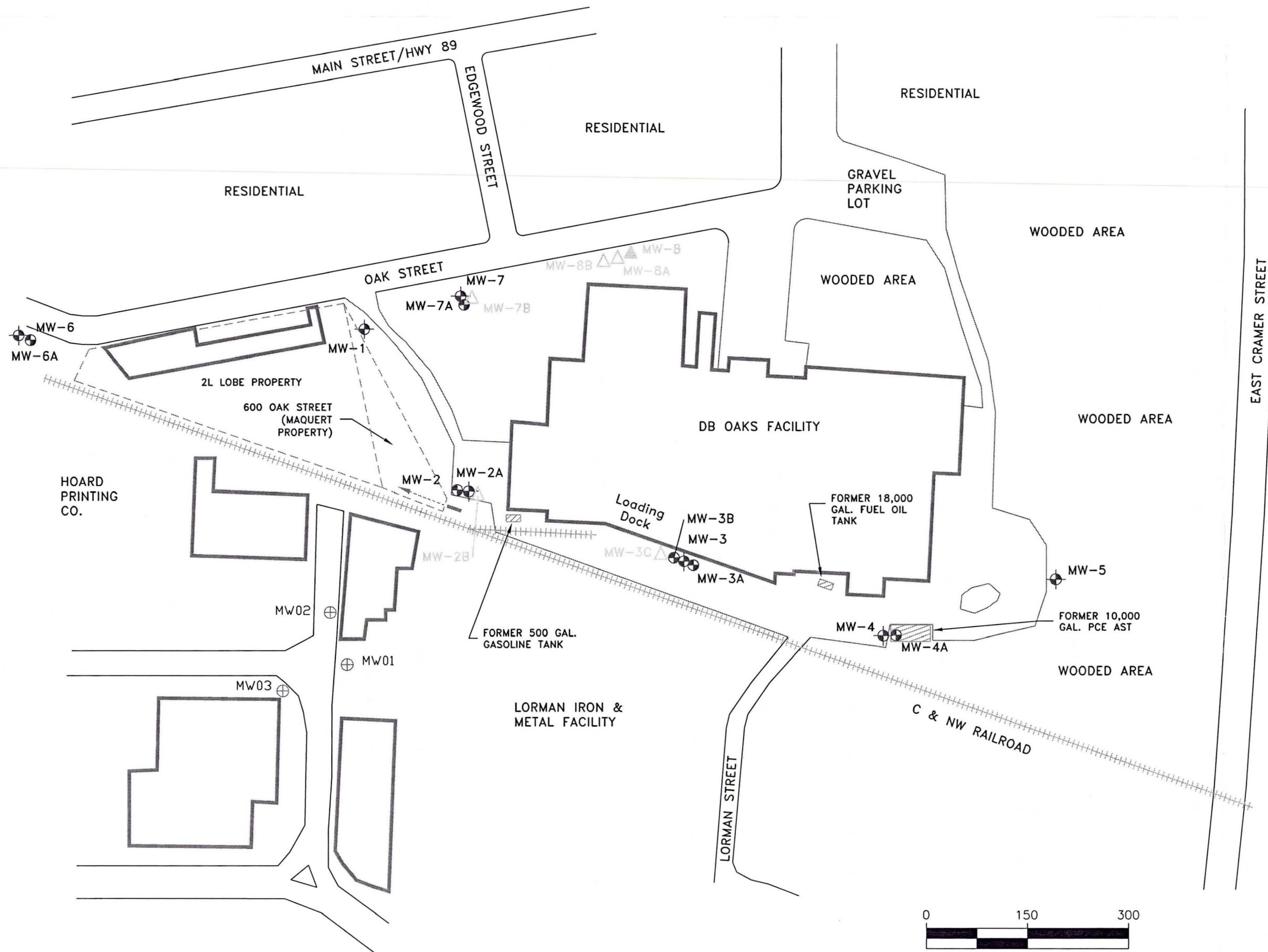
FIGURE 1
SITE LOCATION

DRN. BY DDZ
DATE 09.FEB.2005

PROJECT NO. 0451-002-800

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C:\PROJECTS\THOMAS\FORTATKINSON\CADFILES\JULY2007PROPOSAL\FIG2



LEGEND

- EXISTING MONITORING WELL
- EXISTING PIEZOMETER
- ABANDONED MONITORING WELL ASSOCIATED WITH LORMAN IRON & METAL
- FORMER TANKS
- CULVERT
- SURFACE DITCH/DIRECTION OF FLOW
- PROPOSED MONITORING WELL
- PROPOSED PIEZOMETER

SOURCES:

ATEC, SITE PLAN AND GEOPROBE BORINGS, MARCH 30, 1995.

AERIAL PHOTO, APRIL 21, 1996.

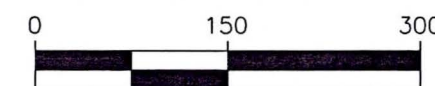


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FIGURE 2
SITE MAP & PROPOSED WELL LOCATIONS

FORMER THOMAS INDUSTRIES
FORT ATKINSON, WISCONSIN

JULY 25, 2007



SCALE: 1" = 150'
SCALE IS APPROXIMATE

