

November 12, 2015

Mr. Jeff Ackerman  
Wisconsin Department of Natural Resources  
3911 Fish Hatchery Road  
Fitchburg, Wisconsin 53711

RE: WDNR BRRTS No. 03-28-176509  
Work Plan for Off-site Well Installation and Sediment Sample Collection  
DB Oak Facility, 700-710 Oak Street, Ft. Atkinson, Wisconsin

Dear Mr. Ackerman:

On behalf of Gardner Denver, enclosed for review is a Work Plan for additional off-site well installation. The lateral and vertical extent of off-site groundwater contamination was identified during a site investigation completed in June 2015. Additional wells are recommended to further evaluate groundwater flow conditions. Proposed well locations are shown on Figure 1. - NO 3

The June off-site investigation included collection of groundwater samples from Geoprobe borings concurrent with the collection of samples from existing wells. Samples were collected in accordance with recommendations presented in the 2014 Annual Groundwater Monitoring Report dated May 12, 2015. In addition to groundwater samples, additional soil vapor extraction (SVE) monthly effluent air samples, outfall surface water samples and a sediment sample were collected. The SVE system has operated almost continuously since March 26<sup>th</sup> 2014. SVE, groundwater, outfall surface water and sediment sample results are summarized below.

## **1.0 SVE, GROUNDWATER, AND SURFACE WATER/SEDIMENT RESULTS**

### **1.1 SVE Sample Results**

Elevated concentrations of chlorinated volatile organic compounds (CVOCs) were detected while the SVE system was connected to Zone B laterals. Low concentrations were also detected while connected to Zone A, C, D, and E laterals. Additional effluent samples were collected between February and October while the SVE system was connected to the Zone B lateral. A figure showing monthly effluent sample results and SVE lateral pipe zones is included as Attachment A.

SVE samples collected between January and October 2015 indicate unsaturated zone contamination remains at the Zone B lateral area. Seepage from the unsaturated zone at this area may also contribute to CVOCs detected in shallow groundwater and surface water. CVOC

*Shannon map*

concentrations at TW-02 indicate that operation of the SVE system at lateral B has resulted in improved groundwater quality. Between September 2014 and September 2015 CVOCs at TW-02 declined as follows:

- PCE declined from 220 µg/L to 60 µg/L;
- TCE declined from 180 µg/L to 39 µg/L;
- cis-1,2-DCE declined from 660 µg/L to 470 µg/L, and
- Vinyl chloride declined from 230 µg/L to 130 µg/L.

Effluent concentrations also declined in July and August, but increased in September and October. Increases in September and October likely correspond to a decline in the water table elevation, which resulted in removal of CVOCs from the 'smear zone' (the zone between the seasonal groundwater high and low). These results indicate that removal of contaminant mass from the unsaturated zone has caused a slight improvement in groundwater quality at TW-02. Additional SVE air samples and groundwater samples will be needed to evaluate continued operation of the SVE system.

## 1.2 Groundwater Sample Results

Samples were collected from existing wells in June and September and during the June off-site investigation. For the off-site investigation, S&W (S&W) obtained a permit from the City of Fort Atkinson off-site borings within the City right-of-way. The off-site investigation consisted of the collection of groundwater samples from borings advanced as follows:

- GP-100 and GP-101 near the southeast corner of the DB Oak building between TW-01 and the MW-2 well nest;
- GP-102 and GP-103 at the west end of Lorman Street;
- GP-104 through GP-109 along Ralph Street, and
- GP-110 through GP-115 at Ralph Park east of Jefferson Street.

Between June 16 and June 18 attempts were made to collect two samples from each boring. Shallow samples were collected between 15 and 20 feet below grade, and deep samples were collected 30 and 35 feet below grade<sup>1</sup>. Shallow samples were collected at all locations except GP-102 and GP-112; temporary wells installed at both borings were damaged preventing sample collection. Deep samples were collected at GP-106, GP-107, and GP-108 using an extractable well screen on the lead drill rod. No deep groundwater samples were collected at GP-104, GP-105, GP-109, and GP-110. Insufficient groundwater volumes prevented samples at GP-104 and

<sup>1</sup> The 2014 Annual Report included a recommendation to collect deep groundwater samples at depths between 35 and 40 feet below grade; however, hard drilling prevented direct push borehole advancement below 35 feet.

GP-105. The lead drill rod was bent preventing the screen from extracting at GP-109, and the drill rod encountered refusal at 25 feet at GP-110. After damaging the extractable well screen rod beyond repair, temporary wells were installed at the remaining borings (GP-103, GP-104, GP-111, GP-112, GP-113, and GP-114).

Groundwater samples were collected in laboratory containers, held on ice, shipped along with the completed chain-of-custody forms to Northern Lake Service, Inc. and analyzed for VOCs by USEPA Method 8260. Duplicate samples and a trip blank that accompanied the samples were analyzed for VOCs for quality control. Results for June are summarized in Tables 1 and 2, and results for September are summarized in Table 3<sup>2</sup>. Well locations are shown on Figure 1, and Geoprobe boring locations are shown on Figures 2 and 3.

As with previous results, tetrachloroethene (PCE), trichloroethene (TCE) cis-1,2-dichloroethene (c-DCE), and vinyl chloride were detected in June and September samples. These results indicate that degradation rates within the treatment zone vary by location. Rapid declines were observed at TW-01 and MW-3 following initial treatment in June 2009, and at wells TW-02, TW-03, MW-3A, MW-3B, and MW-4 following supplemental treatment in May 2011. An evaluation of contaminant concentration trends will be completed in next year's annual report following collection of March 2016 samples. Trends through September 2015 are also shown graphically on time versus concentration graphs shown in Attachment B.

During the off-site investigation, PCE was detected at a low concentration below the 0.5 µg/L PAL in the deep sample at GP-102, and at 37.7 µg/L at off-site well MW-9. No PCE was detected in December 2014 or March 2015 MW-9 samples. TCE was detected in shallow samples at GP-103 and GP-104 at concentrations below the 5.0 µg/L ES; no TCE was detected at MW-9. Vinyl chloride was detected at MW-9, MW-9A, GP-100, GP-101, GP-103, GP-104, and GP-111, and cis-1,2-DCE was detected at MW-9, MW-9A and at borings GP-101, GP-102, GP-103, GP-104, GP-107, and GP-11. June groundwater elevation and isoconcentration contours for cis-1,2-DCE for the shallow groundwater (between 10 and 20 feet below grade) are shown on Figures 2. Elevations and cis-1,2-DCE isoconcentration contours for "A" horizon piezometers (between 30 and 45 feet below grade) are shown on Figure 3.

The highest concentration of cis-1,2-DCE was detected at shallow well MW-9 (2,300 µg/L) and at lower concentrations in shallow samples at GP-102 (60 µg/L), GP-104 (16 µg/L), GP-107 (0.90 µg/L), and GP-111 (3.8 µg/L) (see Figure 2). Cis-1,2-DCE was detected at piezometer MW-9A (358 µg/L) and at lower concentrations in deep samples collected at GP-102 (0.53 µg/L), GP-103 (0.39 µg/L), and GP-111 (180 µg/L) (see Figure 3).

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<sup>2</sup> Laboratory reports will be included with the final report.

CVOCs in shallow groundwater at the east side of the DB Oak building are lower than pre-treatment concentrations. Low concentrations of CVOCs remain at GP-100, GP-101, TW-01, and MW-03 at the south end of the treatment area, while elevated CVOCs remain at TW-02 near the center of the treatment area. Elevated concentrations also remain at TW-03 and MW-04 at the north end of the treatment area. Because the water table is at a shallow depth at the center and north end of the site and a storm drain passes through the plume area, contaminated groundwater likely seeps into the storm drain at these areas. As described above continued operation of the SVE system has resulted in a decline in CVOCs at MW-2.

### 1.3 Outfall Surface Water and Sediment Sample Results

Surface water samples were collected from the storm drain, outfall, and drainage swale concurrent with June groundwater samples as follows:

- At the outfall adjacent to SP-01 near the MW-2 well nest;
- At the storm sewer manhole north of SP-01 between MW-3 and TW-02, and
- At the drainage swale south of SP-01 prior to discharge to the culvert beneath the rail line near the west end of Lorman Street<sup>3</sup>.

Shown on map  
↓ ↓

Surface water samples were also collected at the outfall adjacent to SP-01 and at the storm sewer manhole north of SP-01. At that time, ponded water was present. No sample was collected south of SP-01 because the drainage swale was dry.

Surface water sample results indicate that CVOCs are present in storm water discharging to the drainage swale. CVOC concentrations decline between the on-site storm sewer and the outfall at SP-01, but remain in surface water prior to discharge at the outfall at Lorman Street. Storm sewers and SP-01 are shown on Figure 1.

A sediment sample SED-1 was collected on October 7<sup>th</sup> at the outfall near SP-01 to evaluate CVOC concentrations in sediment at the outfall. The sediment sample was collected between 6 and 12-inches below grade; the outfall area and drainage swale were dry at that time. VOCs were detected in the SED-1 sample as follows:

- Chlorobenzene at 61 µg/kg;
- 1,2-Dichlorobenzene at 53 µg/kg;

<sup>3</sup> The southern-most surface water sample was north (upstream) of another outfall pipe observed at the west side of the drainage swale.



- 1,1-Dichloroethene at 60 µg/kg;
- cis-1,2-Dichloroethene at 18,000 µg/kg;
- trans-1,2-Dichloroethene at 290 µg/kg;
- Ethylbenzene at 180 µg/kg;
- p-Isopropyltoluene at 73 µg/kg;
- Methylene chloride at 64 µg/kg;
- Naphthalene at 99 µg/kg;
- n-Propylbenzene at 88 µg/kg;
- Tetrachloroethene at 96,000 µg/kg;
- Toluene at 210 µg/kg;
- Trichloroethene at 14,000 µg/kg;
- Trichlorofluoromethane at 450 µg/kg;
- 1,2,4-trimethylbenzene at 210 µg/kg;
- 1,3,5-trimethylbenzene at 75 µg/kg;
- Vinyl chloride at 1,200 µg/kg;
- o-Xylene at 180 µg/kg, and
- meta, para-Xylene at 490 µg/kg.

Contaminants in sediment at the outfall are likely the result of historic releases at the east side of the DB Oak building, conveyed through the storm drain to the drainage swale. Sediment contamination at the outfall likely contributes to groundwater contamination at the MW-2 well nest.

## **2.0 GOVERNMENT RECORDS AND HISTORICAL AERIAL PHOTOGRAPH REVIEW**

In addition to the off-site investigation, Shannon & Wilson performed the following:

- Review of available historical government records to identify potential chlorinated solvents south (i.e. downgradient) to the DB Oak property (i.e. TSCA, RCRA, manifest reporting via an EDR database search.), and
- Review of historical maps and aerial photographs to determine the presence of a former drainage swale at the current Lorman Street alignment.

Information obtained from this review is summarized below.

## **2.1 Records Review**

Shannon & Wilson reviewed historical records identified by Environmental Data Resources (EDR). The EDR report consists of a radius search of all available government records. The DB Oak property and adjacent parcels were identified in several databases. A summary of the records search follows:

### **DB Oak Property**

Wand Corporation (a prior tenant) was listed in the RCRA non-generator, SPILLS, and SHWIMS (Solid & Hazardous Waste Information Management System) databases. None of these listings included information regarding chlorinated solvent use by Wand Corporation.

Wand Corporation was also identified as an active Environmental Repair Program (ERP) site. The ERP listing is for site investigation, remediation, and post remediation monitoring currently performed by Gardner Denver.

### **W. D. Hoard Property**

W. D. Hoard (Hoard Printing) was listed in the RCRA Conditionally Exempt Small Quantity Generator (CESQG), SHWIMS, TIER2, and MANIFEST databases indicating that the printing facility uses hazardous chemicals and generated reportable quantities for off-site disposal. The facility was also listed in the AIRS database. Information in the EDR database report indicates the facility has air permits for VOC emissions. However, none of these listings included information regarding chlorinated solvent use by Hoard Printing.

### **Lorman Metals Property**

The Lorman property was identified as a SWRCY (Recycling Center Listing) site with a NPDES permit for storm water, and as a SHWIMS and TIER2 site indicating that the facility uses reportable quantities of hazardous chemicals. Additionally, the property is also listed in several databases as a LUST site, a SPILLS site, a Closed Remediation Site (CRS), and an Activity Use Limitation (AUL) site. These listings are for closed underground storage tanks formerly used for petroleum and used oil.

Information in the EDR database regarding the LUST listing indicates that chlorinated VOCs were detected in groundwater. No other listings included information regarding chlorinated solvent use at the Lorman property.

There are no listings for the Lorman parcel at Oak Street (west of the Hoard property).

### **Uncle Josh Bait Shop (UJB) Property.**

The UJB property was identified as a closed ERP site and listed as a CRS and AUL site. WDNR closed the site in 2012 with continuing obligations for soil contamination discovered at the property during a 2010 site investigation. An off-site exemption was granted for groundwater contamination encountered at the property.

## **2.2 Historical Aerial Photographs**

Shannon & Wilson also reviewed historical aerial photographs provided by EDR. The following is a summary of observations:

- **1937 Aerial Photograph.** The DB Oak and Lorman properties are undeveloped agricultural fields. A drainage swale is present at the south end of the Lorman property. This drainage swale extends west-northwest as it crosses the southwest corner of the Lorman property and the adjacent field to the east. Buildings are present at the Hoard property and residential buildings are present along Clarence and Ralph Streets. The former Modern Machine & Tool building is present south of the DB Oak and west of the Hoard parcels; this parcel is currently owned by Lorman. A disturbed area (cutting or filling) is present at the southeast quadrant of the current intersection of Lorman and Clarence Streets near the current UJB property. The remainder of the UJB property is vacant.
- **1940 Aerial Photograph.** A building is present at the south end of the DB Oak property (southern third of the existing building). A light colored area, most likely a low lying wetland area, is present at the southeast corner of the current Lorman property. The Lorman property remains as an undeveloped agricultural field shown on the 1937 aerial photo. Adjacent parcels south of current Lorman Street are as shown on the 1937 aerial photograph.
- **1955 Aerial Photograph.** The existing building at the DB Oak property along with adjacent driveways and parking lots are present. A building, roads, and the scrap yard are present at the west half of the Lorman property. The light colored wetland area at the southeast corner of the current Lorman property and a drainage swale are also present. The east half of the Lorman property remains as an undeveloped agricultural field on the 1940 aerial photo. A building is present at the southeast quadrant at the intersection of Lorman and Clarence Streets near the current UJB property. The remainder of the UJB and Hoard properties is as shown on the 1940 aerial photograph.

By 1963, Lorman had expanded onto the western half of its existing property. The existing building at the southeast corner of the Lorman property was constructed between 1971 and 1979,

and by 1979 the existing UJB building was expanded to its current footprint. Two former buildings were present at the Hoard property at the footprint of the existing building. Both buildings were removed prior to construction of the existing building at the Hoard property between 1955 and 1963. A large parking lot was present between 1963 and 1986 prior to the construction of the southern section of the existing building between 1986 and 1992. Aerial photographs are included as Attachment C.

Previous site investigations completed at the DB Oak property indicate that potential source areas for off-site groundwater contamination include the former PCE above ground tank (near MW-4), the east side of the DB Oak facility (near MW-3), and the storm water outfall near MW-2. Potential off-site sources of contamination include former USTs at the Lorman facility the maintenance building at the southwest corner of the Lorman property, and the former Modern Machine & Tool facility. Potential off-site sources are discussed below.

### **3.0 SUMMARY AND CONCLUSIONS**

Previous investigations identified source areas at the east side of the DB Oak facility building. Source areas include the former PCE tank near the MW-4 well nest and the area near the MW-3 well nest. Elevated concentrations of PCE and TCE were detected in soil and shallow groundwater at both areas. Samples collected at piezometers MW-4A and 4B indicate that contamination is limited to shallow depths at MW-4. However, elevated CVOCs at MW-3A and MW-3B indicate that contaminants migrated vertically at MW-3. PCE and TCE concentrations declined significantly at both source areas following initial treatment in June 2009 and again following supplemental treatment in May 2011. Declining PCE and TCE concentrations correspond to increasing concentrations of cis-1,2-DCE and vinyl chloride.

Low concentrations of CVOCs remain in shallow groundwater at TW-01 and MW-3 at the south end of the treatment zone, but elevated CVOCs remain at TW-02 near the center of the treatment zone, and at TW-03 and MW-04 at the north end of the treatment zone. Because groundwater is encountered at a shallow depth at the center and north end of the site, and a storm drain passes through the plume area, contaminated groundwater is likely seeping into the storm drain. Surface water sample results confirm CVOCs are present in storm water discharging to the drainage swale. CVOC concentrations decline between the on-site storm sewer near TW-02 and the outfall near the MW-2 well nest, but remain in surface water prior to discharge at the outfall at Lorman Street. Nevertheless operation of the SVE system has removed contaminant mass from the unsaturated zone and improved groundwater quality at TW-02. Continued operation of the SVE system will remove additional mass from the unsaturated zone, and further improve groundwater quality.

Low CVOC concentrations at GP-100 and GP-101 and elevated CVOC concentrations at the MW-2 well nest indicate a source may be present at the outfall area. A sediment sample SED-1 was collected on October 7<sup>th</sup> near SP-01 to evaluate CVOC concentrations at the outfall. Elevated petroleum and chlorinated VOCs were detected indicating that these contaminants are likely the result of historic releases at the east side of the DB Oak building. Contaminants transported via the storm drain to the drainage swale likely degrade groundwater quality at the MW-2 well nest. Additional sediment samples are needed to identify the vertical and lateral extent.

Groundwater samples collected in June 2015 from off-site Geoprobe borings confirm the lateral extent has been identified. Groundwater samples collected at existing wells indicate that PCE and TCE remain at the DB Oak property. However, samples collected at off-site borings and at off-site well nest MW-9 indicate that no elevated PCE and TCE have migrated beyond the DB Oak property boundary. Groundwater results also indicate that elevated concentrations of degradation products cis-1,2-DCE and vinyl chloride are also present at the DB Oak site and at adjacent downgradient properties. The highest off-site concentrations of cis-1,2-DCE and vinyl chloride were detected at the MW-9 well nest in September 2015. Concentrations at MW-9 and MW-9A have increased since these wells were installed in November 2014.

Off-site groundwater results indicate that cis-1,2-DCE and vinyl chloride at the MW-9 well nest may originate from the source areas identified at the DB Oak property, the Lorman property, or from the former Modern Machine & Tool facility (also owned by Lorman). Elevated concentrations of cis-1,2-DCE and vinyl chloride were also detected at piezometers installed at the UJB property<sup>4</sup>. In June 2012 prior to well abandonment, samples were collected at six UJB wells concurrent with sample collection at DB Oak wells. Low concentrations of CVOCs were detected at shallow UJB wells, but elevated concentrations of cis-1,2-DCE were detected at deep UJB wells MW-1A and MW-4A. Results indicate that contaminants at UJB well MW-4A may originate at the DB Oak property. However, contamination at UJB well MW-1A may be from a source at the southwest corner of the Lorman site. The lateral extent of cis-1,2-DCE shown on Figures 2 and 3 incorporates June 2012 results from the UJB wells.

Based on the evaluation of recent and historic groundwater monitoring results, and review of government records and historical aerial photographs, other potential sources for off-site groundwater contamination are summarized below.

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<sup>4</sup> Soil and groundwater contamination was discovered at the UJB property in 2010. WDNR conditionally closed the site in 2012, and all UJB wells were abandoned .

Potential Source Area	Rationale
Hoard Printing and former Modern Machine & Tool sites.	<p>Groundwater elevations between MW-6 and MW-9 indicate that flow is to the east-northeast indicating a potential source area to the west. MW-9 is downgradient of the Hoard Printing building and a former building observed on aerial photographs between 1937 and 1955. There is no evidence of chlorinated solvent use at the Hoard Printing facility; however, previous site use is unknown.</p> <p>The Hoard property and MW-9 are downgradient from the former Modern Machine and Tool facility; buildings at this parcel currently owned by Lorman are also present on historic photographs.</p> <p>However, MW-9 is also downgradient from source areas at the DB Oak site. Low levels of cis-1,2-DCE at GP-103 indicate contaminants are migrating from the DB Oak site. Contaminants may be migrating beneath GP-103 (the sample was collected 15 feet below grade) at higher concentrations comparable to the concentrations detected at MW-9.</p>
Lorman Property (Former UST)	<p>PCE, TCE, and cis-1,2-DCE were detected from all three wells installed for the LUST site investigation. PCE and TCE were also detected at low concentrations (below the 5 µg/L ES) at these wells. The highest concentration of cis-1,2-DCE was detected at MW-3 (171 µg/L) in 1995 at the northwest corner of the UJB property (adjacent to former UJB wells MW-4 and MW-4A). Concentrations declined below the 70 µg/L ES during subsequent events between 1996 and 2001. No deep wells were installed for the LUST site investigation.</p> <p>However, CVOCs may have migrated in shallow groundwater from the DB Oak property, or from the maintenance garage area at the southeast corner of the Lorman property. Groundwater flow was to the southwest during April 2001.</p>
Lorman Property (Maintenance Building at southeast corner of the property)	<p>Elevated CVOCs at UJB piezometer MW-1A indicate a nearby source area. Elevated cis-1,2-DCE and vinyl chloride indicate the release is old and that significant degradation of PCE or TCE has occurred. CVOCs were detected at former piezometer MW-1A at the east side of the UJB building, but were not detected at MW-1 or at former wells MW-6 and -6A installed north of Lorman Street. These results indicate a smaller localized source compared to the DB Oak source area. Potential source areas at the Lorman site include the existing maintenance building and a former drainage and low lying area beneath that building.</p> <p>However, CVOCs at former well MW-4A at the northwest corner of the UJB property may be from the DB Oak site. MW-1A is also downgradient from the former PCE tank at the DB Oak site. Additional wells will be needed at the Lorman site to evaluate migration between former PCE tanks and UJB property.</p>
Outfall at southeast corner of the DB Oak property near MW-2 well nest	<p>CVOCs are present in surface water samples collected at the DB Oak property. The storm water pipe runs through the shallow groundwater plume at the east side of the DB Oak property, and groundwater may be seeping into the pipe. It is unknown how long CVOCs have been present in surface water, and if remedial activities influenced surface water contaminant levels (i.e. The storm drains are old and in poor condition; installation of the SVE system may have improved the hydraulic connection between groundwater and the storm drains).</p> <p>CVOCs at MW-2 and MW-2A near the outfall may be impacted by historic surface water releases. Elevated CVOCs were detected at MW-2 and MW-2A before and after treatment in 2009 and 2011, despite significant declines at up gradient wells TW-01 and MW-3. Discharges to the outfall may have also resulted in off-site contamination. Aerial photographs show a drainage swale crossing the Lorman property prior to installation of the storm sewer beneath Lorman Street.</p>



#### 4.0 WELL INSTALLATION AND SEDIMENT SAMPLE COLLECTION

Groundwater samples collected from off-site Geoprobe borings and at the MW-9 well next indicate the lateral extent of contamination has been identified. However, additional off-site water table wells and piezometers are recommended to verify groundwater flow conditions as follows:

- MW-10 and MW-10A at the northwest corner of the Hoard Printing property;
- MW-11 at the north end of the Hoard property, and
- MW-12 and MW-12A.

All wells will be installed in boreholes advanced with 4¼ inch ID hollow stem augers utilizing a rotary drill rig. Soil samples will be collected at five-foot intervals, visually classified in accordance with the Unified Soil Classification system and recorded on field boring logs. Wells MW-10, MW-11, and MW-12 will be installed as water table observation wells approximately 20-feet below grade (between 7 and 8 feet below the water table) with ten-foot well screens. Wells MW-10A and MW-12A will be installed as piezometers with five-foot well screens placed between 40 and 45 feet below grade. Each well will be constructed with two-inch diameter schedule 40 PVC well casing and 0.010 slot size screens. A sand pack will be placed around each well screen as the augers are removed, a bentonite seal placed above the sand pack, and each well encased in a flush mount protective casing cemented in place.

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

Following well development, groundwater samples will be collected from each well. Samples will be submitted to a Wisconsin certified laboratory and analyzed for VOCs by Method 8260. In accordance with WDNR guidance, duplicate and trip blank samples will also be analyzed for VOCs.

Concurrent with well installation additional sediment samples will be collected at the outfall near the MW-2 well nest. Three soil borings will be advanced within the drainage swale to identify the lateral and vertical extent of contamination at the outfall. The first boring will be advanced within 5-feet of the outfall, and additional borings will be advanced 15 and 25 to the south. A

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total of nine sediment samples will be collected from borings collected at depths between 0.5 and 1.5 feet, between 2 and 4, and between 5 and 6 feet below grade.

## 5.0 SCHEDULE

Well installation will be completed following WDNR's response to this work plan. We anticipate well installation prior to collection of groundwater samples in March 2016. The 2015 annual report will include a summary of the groundwater monitoring samples collected between June 2015 and March 2016, June 2015 off-site investigation results, and well installation documentation.

The primary constituent detected in off-site groundwater is cis-1,2-DCE. A Vapor Action Level (VAL) for cis-1,2-DCE has not been established, but VAL's have been established for PCE, TCE, and vinyl chloride. A vapor intrusion investigation may be needed for PCE and vinyl chloride at nearby residential buildings, depending on the results from the proposed off-site wells. These wells should be installed prior to the vapor intrusion investigation to further evaluate shallow groundwater flow conditions and contaminant transport.

If you have any questions please call me at (608) 442-5223 extension 8157.

Sincerely,

SHANNON & WILSON, INC.



Mark S. McColloch, P.G.  
Senior Associate

cc: Mr. Stephen McClure, Gardner Denver, Inc.

Table 1	June 2015 VOC Groundwater Sample Results
Table 2	June 2015 VOC Groundwater Sample Results – Geoprobe Borings
Table 3	September 2015 VOC Groundwater Sample Results
Attachment A	SVE Lateral Pipe And Effluent Air Results
Attachment B	Time Versus Concentration Plots for DB Oak Wells
Attachment C	Historic Aerial Photographs

## TABLES

**Table 1 (Page 1 of 3)**  
**June 2015 VOC Groundwater Sample Results**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	TW-01	TW-02	TW-03	IW-01	MW-1	MW-2	MW-2A	MW- 2A DUP#1	MW-2B
Benzene	0.5	5	--	<3.8	<22	--	--	<38	<34	<38	--
Chlorobenzene	20	100	--	<3.8	<21	--	--	<38	<32	<38	--
Chloroethane	80	400	--	<12	<120	--	--	<120	<180	<120	--
cis-1,2-Dichloroethene (c-DCE)	7	70	--	<b>160</b>	<b>428</b>	--	--	<b>1,800</b>	<b>3,630</b>	<b>2,000</b>	--
trans-1,2-Dichloroethene (t-DCE)	20	100	--	<3.5	<22	--	--	<35	<34	<35	--
Ethylbenzene	140	700	--	<3.5	<33	--	--	<35	<53	<35	--
Isopropylbenzene	--	--	--	<3.8	<23	--	--	<38	<36	<38	--
Methylene Chloride	0.5	5	--	<b>15</b>	<19	--	--	<b>180</b>	<29	<b>150</b>	--
Tetrachloroethene (PCE)	0.5	5	--	<12>	<36.8>	--	--	<72>	<b>135</b>	<44	--
Toluene	160	800	--	<4.0	<22	--	--	<40	<34	<40	--
Trichloroethene (TCE)	0.5	5	--	<b>19</b>	<20.6>	--	--	<b>120</b>	<71>	<33	--
1,2,4-Trimethylbenzene	--	--	--	<3.3	<22	--	--	<33	<35	<33	--
1,3,5-Trimethylbenzene	--	--	--	<4.1	<7.4	--	--	<41	<12	<41	--
Total Trimethylbenzene	96	480	--	<3.3	<7.4	--	--	<33	<12	<33	--
o-Xylene	--	--	--	<3.4	<25	--	--	<34	<39	<34	--
m,p-Xylene	--	--	--	<7.9	<11	--	--	<79	<35	<33	--
Total Xylene	400	2,000	--	<3.4	<11	--	--	<34	<12	<41	--
Vinyl Chloride (VC)	0.02	0.2	--	<b>30</b>	<b>488</b>	--	--	<39	<b>53.9</b>	<b>1,700</b>	--
Total VOCs			--	<b>236</b>	<b>975.4</b>	--	--	<b>2,172</b>	<b>3,890</b>	<b>3,850</b>	<b>0.19</b>

PAL Preventive Action Limit per Wisconsin Admin. Code sec. NR 141.10.  
ES Enforcement Standard per Wisconsin Admin. Code sec. NR 141.10.

All units reported in µg/L.

All detected constituents are shown in bold

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**Table 1 (Page 2 of 3)**  
**June 2015 VOC Groundwater Sample Results**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	MW-3	MW-3A	MW-3B	MW-3C	MW-4	MW-4A	MW-4B	MW-5	MW-6	MW-6A
Benzene	0.5	5	<0.423>	<340	<54	--	<68	--	--	--	--	--
Chlorobenzene	20	100	<0.506>	<320	<52	--	<65	--	--	--	--	--
Chloroethane	80	400	<1.5	<330	<300	--	<370	--	--	--	--	--
cis-1,2-Dichloroethene (c-DCE)	7	70	<b>1.63</b>	<b>14,700</b>	<b>1,160</b>	--	<b>6,010</b>	--	--	--	--	--
trans-1,2-Dichloroethene (t-DCE)	20	100	<0.27	<340	<54	--	<67	--	--	--	--	--
Ethylbenzene	140	700	<0.822>	<510	<82	--	<100	--	--	--	--	--
Isopropylbenzene	--	--	<0.325>	<360	<58	--	<73	--	--	--	--	--
Methylene Chloride	0.5	5	<0.23	<290	<46	--	<58	--	--	--	--	--
Tetrachloroethene (PCE)	0.5	5	<0.411>	<330	<b>3,380</b>	--	<66	--	--	--	--	--
Toluene	160	800	<0.417>	<340	<54	--	<67	--	--	--	--	--
Trichloroethene (TCE)	0.5	5	<0.362>	<230	<b>1,440</b>	--	<46	--	--	--	--	--
1,2,4-Trimethylbenzene	--	--	<0.28	<350	<56	--	<70	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	<0.096>	<120	<18	--	<23	--	--	--	--	--
Total Trimethylbenzene	96	480	<0.096>	<120	<18	--	<23	--	--	--	--	--
o-Xylene	--	--	<b>1.73</b>	<390	<63	--	<79	--	--	--	--	--
m,p-Xylene	--	--	<b>2.98</b>	<170	<28	--	<35	--	--	--	--	--
Total Xylene	400	2,000	<b>4.71</b>	<170	<28	--	<35	--	--	--	--	--
Vinyl Chloride (VC)	0.02	0.2	<0.483>	<b>2,360</b>	<b>218</b>	--	<b>4,560</b>	--	--	--	--	--
Total VOCs			<b>9.702</b>	<b>17,060</b>	<b>6,198</b>	--	<b>10,570</b>	--	--	--	--	--

PAL Preventive Action Limit per Wisconsin Admin. Code sec. NR 141.10.  
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**Table 1 (Page 3 of 3)**  
**June 2015 VOC Groundwater Sample Results**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	MW-7	MW-7A	MW-7B	MW-8	MW-8A	MW-8B	MW-9	MW-9A	Outfall at SP-01	Surface Water South of SP-01	Storm Sewer North of SP-01
Benzene	0.5	5	--	<2.7	--	--	--	--	<22	<6.8	<2.7	<2.7	<2.7
Chlorobenzene	20	100	--	<2.6	--	--	--	--	<21	<6.5	<2.6	<2.6	<2.6
Chloroethane	80	400	--	<15	--	--	--	--	<120	<37	<15	<15	<15
cis-1,2-Dichloroethene (c-DCE)	7	70	--	<b>187</b>	--	--	--	--	<b>2,300</b>	<b>358</b>	<b>100</b>	<b>113</b>	<b>187</b>
trans-1,2-Dichloroethene (t-DCE)	20	100	--	<2.7	--	--	--	--	<i>&lt;25.4&gt;</i>	<6.7	<2.7	<2.7	<2.7
Ethylbenzene	140	700	--	<4.1	--	--	--	--	<33	<10	<4.1	<4.1	<4.1
Isopropylbenzene	--	--	--	<2.9	--	--	--	--	<23	<7.3	<2.9	<2.9	<2.9
Methylene Chloride	0.5	5	--	<2.3	--	--	--	--	<19	<5.8	<2.3	<2.3	<2.3
Tetrachloroethene (PCE)	0.5	5	--	<b>70.8</b>	--	--	--	--	<i>&lt;37.7&gt;</i>	<6.6	<b>83.5</b>	<b>141</b>	<b>339</b>
Toluene	160	800	--	<2.7	--	--	--	--	<22	<6.7	<2.7	<2.7	<2.7
Trichloroethene (TCE)	0.5	5	--	<b>32</b>	--	--	--	--	<15	<4.6	<b>59.2</b>	<b>36.2</b>	<b>110</b>
1,2,4-Trimethylbenzene	--	--	--	<2.8	--	--	--	--	<22	<7.0	<2.8	<2.8	<2.8
1,3,5-Trimethylbenzene	--	--	--	<0.92	--	--	--	--	<7.4	<2.3	<0.92	<0.92	<0.92
Total Trimethylbenzene	96	480	--	<0.92	--	--	--	--	<7.4	<2.3	<0.92	<0.92	<0.92
o-Xylene	--	--	--	<3.2	--	--	--	--	<25	<7.9	<3.2	<3.2	<3.2
m,p-Xylene	--	--	--	<1.4	--	--	--	--	<11	<3.5	<1.4	<1.4	<1.4
Total Xylene	400	2,000	--	<1.4	--	--	--	--	<11	<3.5	<1.4	<1.4	<1.4
Vinyl Chloride (VC)	0.02	0.2	--	<2.0	--	--	--	--	<b>85.6</b>	<i>&lt;16.8&gt;</i>	<b>9.9</b>	<i>&lt;5.0&gt;</i>	<b>52.1</b>
Total VOCs			--	<b>289.8</b>	--	--	--	--	<b>2,448.7</b>	<b>374.8</b>	<b>256.8</b>	<b>295.2</b>	<b>692.3</b>

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**Table 2 (Page 1 of 2)**  
**June 2015 VOC Groundwater Sample Results – Geoprobe Borings**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	G-100 15 ft.	G-101 14 ft.	G-102 35 ft.	G-103 15 ft.	G-103 35 ft.	G-104 14 ft.	G-105 15 ft.	G-106 15 ft.	G-106 35 ft.	G-107 20 ft.	GP-Dup#1 G-107 20 ft.	G-107 35 ft.
Benzene	0.5	5	<0.29	<7.2>	<0.29	<0.29	<0.29	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Bromoform			<0.25	<5.0	<0.25	<0.25	<0.33>	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
n-Butylbenzene			<0.20	<4.0>	<0.20	<0.20	<0.20	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28	<0.28
Chlorobenzene	20	100	<0.19	<25	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Chloroethane	80	400	<1.2	<5.1	<1.2	<1.2	<1.2	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
1,1-Dichloroethane			<0.25	<4.9	<0.25	<0.25	<0.25	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
1,1-Dichloroethene			<0.25	<5.0	<0.25	<0.25	<0.25	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
cis-1,2-Dichloroethene (c-DCE)	7	70	<0.30	<9.7>	<0.53>	60	<0.39>	16	<0.22	<0.22	<0.22	0.90	0.97	<0.22
trans-1,2-Dichloroethene (t-DCE)	20	100	<0.25	<5.0	<0.25	1.8	<0.25	<0.30>	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Ethylbenzene	140	700	<0.25>	<4.7	<0.22	<0.22	<0.22	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Isopropylbenzene	--	--	<0.24	<4.8	<0.24	<0.24	<0.24	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Methylene Chloride	0.5	5	<0.25	<5.1	<0.25	<0.25	<0.25	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Naphthalene	10	100	<0.34	<17>	<0.34	<0.34	<0.34	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
n-Propylbenzene			<0.27	21	<0.27	<0.27	<0.27	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
Tetrachloroethene (PCE)	0.5	5	<0.21	<4.3	<0.23>	<0.21	<0.21	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Toluene	160	800	<0.20>	<3.8	<0.29>	<0.44>	<0.20>	<0.42>	<0.29>	<0.24>	<0.44>	<0.22	<0.22	<0.22
Trichloroethene (TCE)	0.5	5	<0.31	<6.1	<0.31	<0.93>	<0.31	3.2	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
1,2,4-Trimethylbenzene	--	--	<0.52>	130	<0.21	<0.21	<0.21	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
1,3,5-Trimethylbenzene	--	--	<0.26	44	<0.26	<0.26	<0.26	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
Total Trimethylbenzene	96	480	<0.52>	174	<0.21	<0.21	<0.21	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
o-Xylene	--	--	<0.26	<7.5>	<0.26	<0.26	<0.26	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
m,p-Xylene	--	--	<0.42	<26>	<0.42	<0.42	<0.42	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Total Xylene	400	2,000	<0.26	33.5	<0.26	<0.26	<0.26	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Vinyl Chloride (VC)	0.02	0.2	7.5	44	<0.16	2.5	<0.16	0.95	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

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**Table 2 (Page 2 of 2)**  
**June 2015 VOC Groundwater Sample Results – Geoprobe Borings**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	G-108 18 ft.	G-108 35 ft.	G-109 18 ft.	G-110 20 ft.	G-111 17 ft.	G-111 35 ft.	G-112 35 ft.	G-113 15 ft.	G-113 35 ft.	GP-Dup#2 G-113 35 ft.	G-114 15 ft.	G-114 35 ft.
Benzene	0.5	5	<0.19	<0.19	<0.19	<i>0.75</i>	<0.29	<i>3.3</i>	<0.29	<0.29	<0.29	<0.19	<0.29	<0.19
Bromoform			<0.17	<0.17	<0.17	<0.17	<0.25	<0.25	<0.25	<0.25	<0.25	<0.17	<0.25	<0.17
n-Butylbenzene			<0.28	<0.28	<0.28	<0.28	<0.20	<0.20	<0.20	<0.20	<0.20	<0.28	<0.20	<0.28
Chlorobenzene	20	100	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19
Chloroethane	80	400	<0.59	<0.59	<0.59	<0.59	<1.2	<1.2	<1.2	<1.2	<1.2	<0.59	<1.2	<0.59
1,1-Dichloroethane			<0.21	<0.21	<0.21	<0.21	<0.25	<0.36>	<0.25	<0.25	<0.25	<0.21	<0.25	<0.21
1,1-Dichloroethene			<0.15	<0.15	<0.15	<0.15	<0.25	0.98	<0.25	<0.25	<0.25	<0.15	<0.25	<0.15
cis-1,2-Dichloroethene (c-DCE)	7	70	<0.22	<0.22	<0.22	<0.22	3.8	180	<0.30	<0.30	<0.30	<0.22	<0.30	<0.22
trans-1,2-Dichloroethene (t-DCE)	20	100	<0.18	<0.18	<0.18	<0.18	<0.25	4.8	<0.25	<0.25	<0.25	<0.18	<0.25	<0.18
Ethylbenzene	140	700	<0.17	<0.17	<0.17	<0.17	<0.22	<0.27>	<0.22	<0.22	<0.22	<0.17	<0.22	<0.17
Isopropylbenzene	--	--	<0.19	<0.19	<0.19	<0.19	<0.24	<0.24	<0.24	<0.24	<0.24	<0.19	<0.24	<0.19
Methylene Chloride	0.5	5	<0.18	<0.18	<0.18	<0.18	<0.25	<0.25	<0.25	<0.42>	<0.25	<0.18	<0.25	<0.18
Naphthalene	10	100	<0.27	<0.27	<0.27	<0.28>	<0.34	<0.34	<0.40>	<0.34	<0.34	<0.27	<0.34	<0.27
n-Propylbenzene			<0.18	<0.18	<0.18	<0.18	<0.27	<0.27	<0.27	<0.27	<0.27	<0.18	<0.27	<0.18
Tetrachloroethene (PCE)	0.5	5	<0.22	<0.22	<0.22	<0.22	<0.21	<0.21	<0.21	<0.21	<0.21	<0.22	<0.21	<0.22
Toluene	160	800	<0.22	<0.22	<0.22	2.5	<0.39>	0.74	<0.35>	<0.18	<0.18	<0.22	<0.23>	<0.22
Trichloroethene (TCE)	0.5	5	<0.17	<0.17	<0.17	<0.17	<0.31	<0.31	<0.31	<0.31	<0.31	<0.17	<0.31	<0.17
1,2,4-Trimethylbenzene	--	--	<0.17	<0.17	<0.17	<0.28>	<0.21	<0.21	<0.21	<0.21	<0.21	<0.17	<0.21	<0.17
1,3,5-Trimethylbenzene	--	--	<0.21	<0.21	<0.21	<0.21	<0.26	<0.26	<0.26	<0.26	<0.26	<0.21	<0.26	<0.21
Total Trimethylbenzene	96	480	<0.17	<0.17	<0.17	<0.28>	<0.21	<0.21	<0.21	<0.21	<0.21	<0.17	<0.21	<0.17
o-Xylene	--	--	<0.17	<0.17	<0.17	<0.32>	<0.26	<0.26	<0.26	<0.26	<0.26	<0.17	<0.26	<0.17
m,p-Xylene	--	--	<0.40	<0.40	<0.40	<0.60>	<0.42	<0.42	<0.42	<0.42	<0.42	<0.40	<0.42	<0.40
Total Xylene	400	2,000	<0.17	<0.17	<0.17	0.92	<0.26	<0.26	<0.26	<0.26	<0.26	<0.17	<0.26	<0.17
Vinyl Chloride (VC)	0.02	0.2	<0.20	<0.20	<0.20	<0.20	<0.27>	18	<0.16	<0.16	<0.16	<0.20	<0.16	<0.20

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**Table 3 (Page 1 of 3)**  
**September 2015 VOC Groundwater Sample Results**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	TW-01	TW-02	TW-02 DUP#2	TW-03	IW-01	MW-1	MW-2	MW-2A	MW-2B
Chlorobenzene	20	100	<0.19	<7.7	<9.6	<15	<0.19	--	<38	<38	<0.19
cis-1,2-Dichloroethene (c-DCE)	7	70	<b>&lt;0.35&gt;</b>	<b>470</b>	<b>460</b>	<b>1,300</b>	<0.30	--	<b>2,400</b>	<b>2,000</b>	<b>5.6</b>
trans-1,2-Dichloroethene (t-DCE)	20	100	<0.18	<15>	<14>	<14	<0.25	--	<35	<35	<0.18
Ethylbenzene	140	700	<0.17	<7.0	<8.7	<14	<0.22	--	<35	<35	<0.17
Isopropylbenzene	--	--	<0.19	<7.5	<9.4	<15	<0.24	--	<38	<38	<0.19
Tetrachloroethene (PCE)	0.5	5	<0.22	<b>60</b>	<b>51</b>	<17	<0.21	--	<b>170</b>	<44	<b>13</b>
Toluene	160	800	<0.20	<14>	<10	<27>	<0.18	--	<40	<40	<0.20
Trichloroethene (TCE)	0.5	5	<0.17	<b>39</b>	<b>35</b>	<13	<0.31	--	<b>370</b>	<33	<b>7.8</b>
1,2,4-Trimethylbenzene	--	--	<0.17	<6.7	<8.4	<13	<0.21	--	<33	<33	<0.17
1,3,5-Trimethylbenzene	--	--	<0.21	<8.2	<10	<16	<0.26	--	<41	<41	<0.21
Total Trimethylbenzene	96	480	<0.17	<6.7	<8.4	<13	<0.21	--	<33	<33	<0.17
o-Xylene	--	--	<0.17	<6.9	<8.6	<14	<0.26	--	<34	<34	<0.17
m,p-Xylene	--	--	<0.40	<16	<20	<32	<0.42	--	<79	<79	<0.40
Total Xylene	400	2,000	<0.17	<6.9	<8.6	<14	<0.26	--	<34	<34	<0.17
Vinyl Chloride (VC)	0.02	0.2	<b>0.86</b>	<b>130</b>	<b>130</b>	<b>1,000</b>	<b>1.4</b>	--	<39	<b>&lt;47&gt;</b>	<0.20
Total VOCs			<b>1.21</b>	<b>728</b>	<b>690</b>	<b>2,327</b>	<b>1.40</b>	<b>0.00</b>	<b>2,940</b>	<b>2,047</b>	<b>26.40</b>

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**Table 3 (Page 2 of 3)**  
**September 2015 VOC Groundwater Sample Results**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	MW-3	MW-3A	MW-3B	MW-3C	MW-4	MW-4A	MW-4B	MW-5	MW-6	MW-6A
Chlorobenzene	20	100	<0.32>	<240	<39	<0.19	<97	<0.19	--	--	--	--
cis-1,2-Dichloroethene (c-DCE)	7	70	<b>1.1</b>	<b>13,000</b>	<b>980</b>	<b>1.4</b>	<b>9,700</b>	<0.64>	--	--	--	--
trans-1,2-Dichloroethene (t-DCE)	20	100	<0.34>	<310	<50	<0.25	<130	<0.25	--	--	--	--
Ethylbenzene	140	700	<0.51>	<280	<44	<0.22	<110	<0.22	--	--	--	--
Isopropylbenzene	--	--	<0.22>	<300	<48	<0.24	<120	<0.24	--	--	--	--
Tetrachloroethene (PCE)	0.5	5	<0.22	<270	<b>2,600</b>	<0.21	<110	<0.34>	--	--	--	--
Toluene	160	800	<0.20	<250>	<45>	<0.32>	<110>	<0.18	--	--	--	--
Trichloroethene (TCE)	0.5	5	<0.17	<380	<b>1,300</b>	<0.31	<510>	<0.40>	--	--	--	--
1,2,4-Trimethylbenzene	--	--	<0.19>	<260	<41	<0.21	<100	<0.21	--	--	--	--
1,3,5-Trimethylbenzene	--	--	<0.21	<330	<51	<0.26	<130	<0.26	--	--	--	--
Total Trimethylbenzene	96	480	<0.19>	<260	<41	<0.21	<100	<0.21	--	--	--	--
o-Xylene	--	--	<0.41>	<320	<51	<0.26	<130	<0.26	--	--	--	--
m,p-Xylene	--	--	<0.61>	<520	<83	<0.42	<210	<0.42	--	--	--	--
Total Xylene	400	2,000	<1.02>	<320	<51	<0.26	<130	<0.26	--	--	--	--
Vinyl Chloride (VC)	0.02	0.2	<b>1.7</b>	<b>2,500</b>	<b>230</b>	<0.18>	<b>8,000</b>	<0.16	--	--	--	--
Total VOCs			<b>5.40</b>	<b>15,750</b>	<b>5,155</b>	<b>1.90</b>	<b>18,320</b>	<b>1.38</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

PAL Preventive Action Limit per Wisconsin Admin. Code sec. NR 141.10.  
ES Enforcement Standard per Wisconsin Admin. Code sec. NR 141.10.

All units reported in µg/L.  
All detected constituents are shown in bold  
Concentrations exceeding the PAL are in red italics.  
Concentrations exceeding the ES are shaded.  
< - Detected below Limit of Detection.  
< > Detected above Limit of Detection, but below Limit of Quantitation



**Table 3 (Page 3 of 3)**  
**September 2015 VOC Groundwater Sample Results**  
**DB Oak Facility, Fort Atkinson, Wisconsin**

Constituent	PAL	ES	MW-7	MW-7A	MW-7B	MW-8	MW-8A	MW-8B	MW-9	MW-9 DUP#1	MW-9A	Outfall at SP-01	Surface Water South of SP-01	Storm Sewer North of SP-01
Chlorobenzene	20	100	<0.19	<1.9	<0.19	--	--	--	<38	<48	<4.8	<0.19	--	<9.6
cis-1,2-Dichloroethene (c-DCE)	7	70	<0.30	<b>160</b>	<b>&lt;0.77&gt;</b>	--	--	--	<b>3,400</b>	<b>4,100</b>	<b>290</b>	<b>18</b>	--	<b>250</b>
trans-1,2-Dichloroethene (t-DCE)	20	100	<0.25	<2.5	<0.18	--	--	--	<35	<44	<4.4	<0.18	--	<8.9
Ethylbenzene	140	700	<0.22	<2.2	<0.17	--	--	--	<35	<47	<4.4	<0.17	--	<8.7
Isopropylbenzene	--	--	<0.24	<2.4	<0.19	--	--	--	<38	<47	<4.7	<0.19	--	<9.4
Tetrachloroethene (PCE)	0.5	5	<b>&lt;0.30&gt;</b>	<b>71</b>	<b>6.4</b>	--	--	--	<44	<55	<5.5	<b>9.4</b>	--	<b>630</b>
Toluene	160	800	<0.18	<b>&lt;2.4&gt;</b>	<0.20	--	--	--	<b>&lt;61&gt;</b>	<50	<b>&lt;7.5&gt;</b>	<0.20	--	<50
Trichloroethene (TCE)	0.5	5	<0.31	<b>45</b>	<b>1.5</b>	--	--	--	<33	<42	<4.2	<b>3.1</b>	--	<b>170</b>
1,2,4-Trimethylbenzene	--	--	<0.21	<2.1	<0.17	--	--	--	<33	<42	<4.2	<0.17	--	<8.4
1,3,5-Trimethylbenzene	--	--	<0.26	<2.6	<0.21	--	--	--	<41	<51	<5.1	<0.21	--	<10
Total Trimethylbenzene	96	480	<0.21	<2.1	<0.17	--	--	--	<33	<42	<4.2	<0.17	--	<8.4
o-Xylene	--	--	<0.26	<2.6	<0.17	--	--	--	<34	<43	<4.3	<0.17	--	<8.6
m,p-Xylene	--	--	<0.42	<4.2	<0.40	--	--	--	<79	<99	<9.9	<0.40	--	<20
Total Xylene	400	2,000	<0.27	<2.6	<0.17	--	--	--	<34	<43	<4.3	<0.17	--	<8.6
Vinyl Chloride (VC)	0.02	0.2	<0.16	<1.6	<b>&lt;0.23&gt;</b>	--	--	--	<b>230</b>	<b>280</b>	<4.9	<b>1.5</b>	--	<b>39</b>
Total VOCs			<b>0.30</b>	<b>278.40</b>	<b>8.90</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3,691</b>	<b>4,380</b>	<b>297.50</b>	<b>32.0</b>	<b>0.00</b>	<b>1,089</b>

PAL Preventive Action Limit per Wisconsin Admin. Code sec. NR 141.10.  
ES Enforcement Standard per Wisconsin Admin. Code sec. NR 141.10.

All units reported in µg/L.

All detected constituents are shown in bold

Concentrations exceeding the PAL are in red italics.

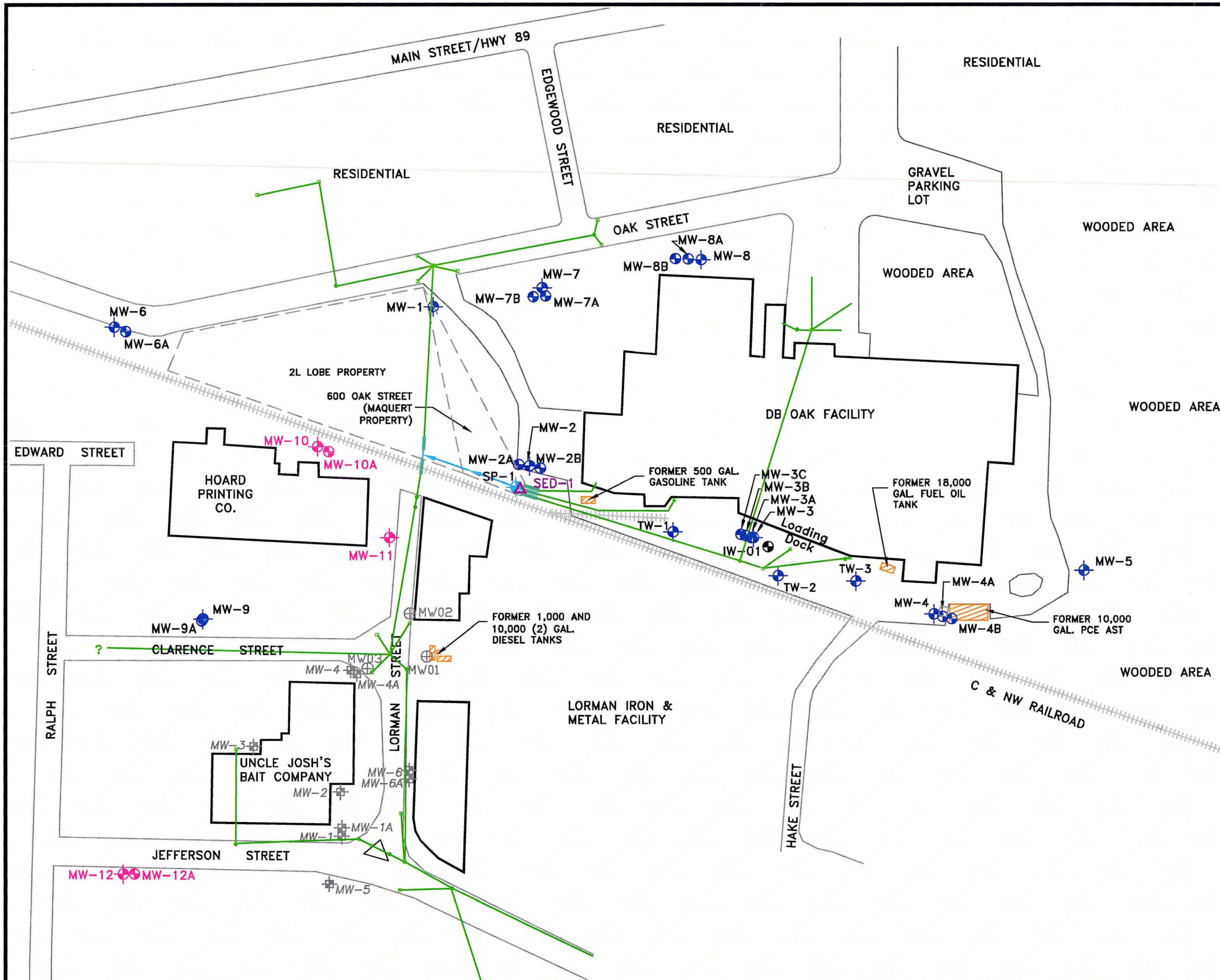
Concentrations exceeding the ES are shaded.

< - Detected below Limit of Detection.

<> Detected above Limit of Detection, but below Limit of Quantitation

## FIGURES

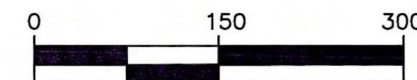




## LEGEND

- SAND POINT WELL
- MONITORING WELL
- PIEZOMETER
- PROPOSED MONITORING WELL/PIEZOMETER
- ABANDONED MONITORING WELL (UNCLE JOSH'S BAIT COMPANY)
- ABANDONED MONITORING WELL (LORMAN IRON & METAL)
- FORMER TANKS
- STORM SEWER (APPROXIMATE)
- CULVERT
- SURFACE DITCH/DIRECTION OF FLOW
- SEDIMENT SAMPLE

NORTH



SCALE: 1" = 150'  
SCALE IS APPROXIMATE

### SOURCES:

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

AERIAL PHOTO, APRIL 21, 1996.

AERIAL PHOTO, 2005.

GOOGLE EARTH AERIAL PHOTO, SEPT. 2010

**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS  
2110 Luann Lane - Suite 101  
Madison, Wisconsin 53713  
Phone (608) 442-5223

DRAWN: DDZ, DAN PROJECT 42-1-37320 APPROVED: MSM

**FIGURE 1  
SITE MAP  
WITH PROPOSED INVESTIGATION WELLS**

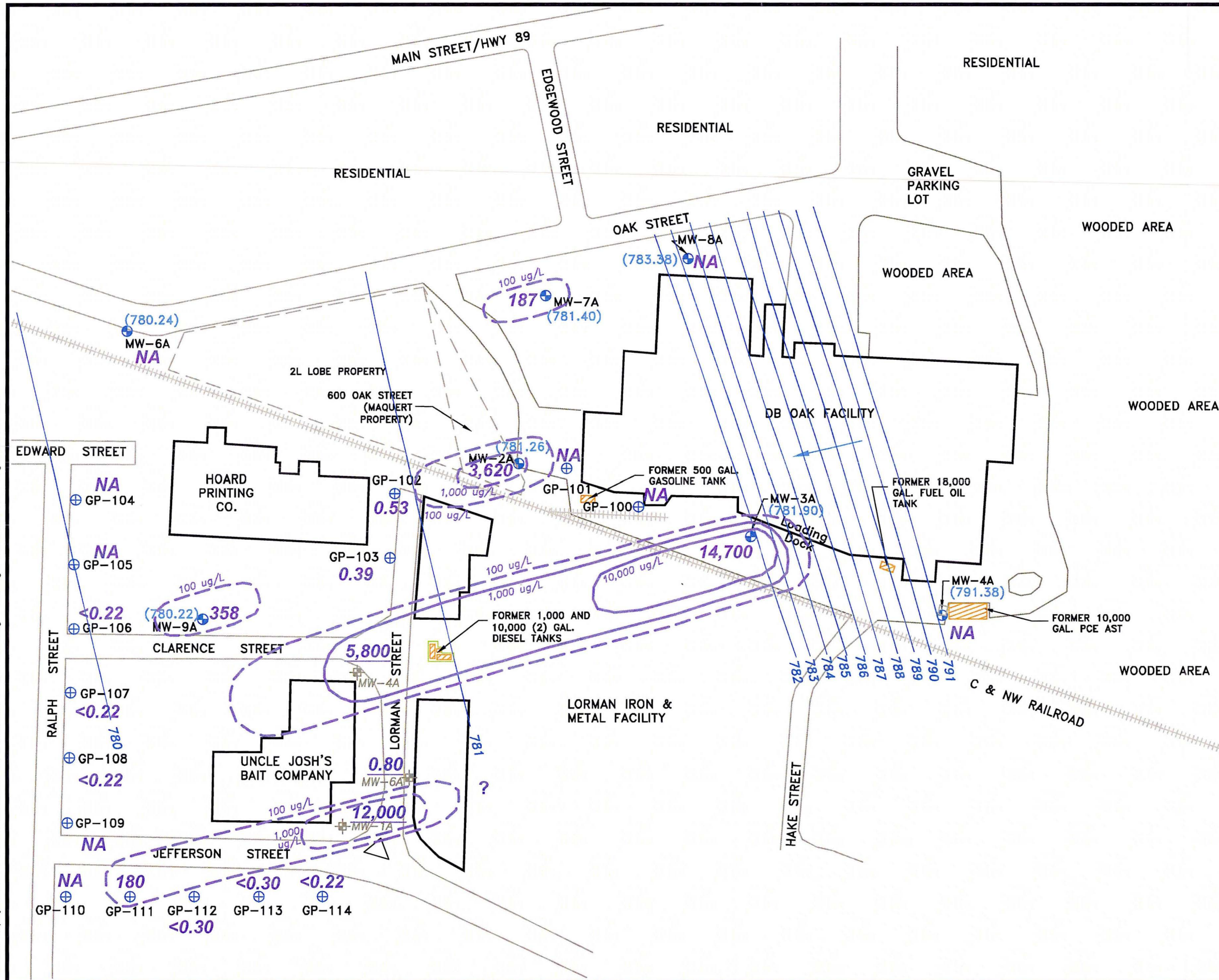
FORMER THOMAS INDUSTRIES  
700-710 OAK STREET, FORT ATKINSON, WISCONSIN







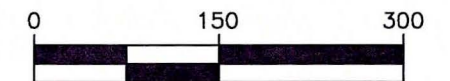
Filename: C:\projects\42-1-37320 GardnerDenver-DB OAK\CAD\SITE-2014-2015.dwg Tab: Fig 3 Date: 9/8/2015 Login: Dave Nemetz



## LEGEND

- EXISTING PIEZOMETER
- PROBE BORING (TEMPORARY SCREEN set at 35')
- ABANDONED PIEZOMETER (UNCLE JOSH'S BAIT COMPANY)
- FORMER TANKS
- FORMER EXCAVATION
- GROUNDWATER ELEVATION (MEASURED JUNE 18, 2015)
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER CIS-1,2-DCE in ug/L  
NA = no analysis (Sampled June 16-18, 2015 except underlined values at UNCLE JOSH'S from June 2012)
- GROUNDWATER CIS-1,2-DCE CONTOUR (DASHED WHERE INFERRED)

NORTH



SCALE: 1" = 150'  
SCALE IS APPROXIMATE

### SOURCES:

- ATEC, SITE PLAN AND GEOPROBE BORINGS, MARCH 30, 1995.
- AERIAL PHOTO, APRIL 21, 1996.
- AERIAL PHOTO, 2005.
- GOOGLE EARTH AERIAL PHOTO, SEPT. 2010

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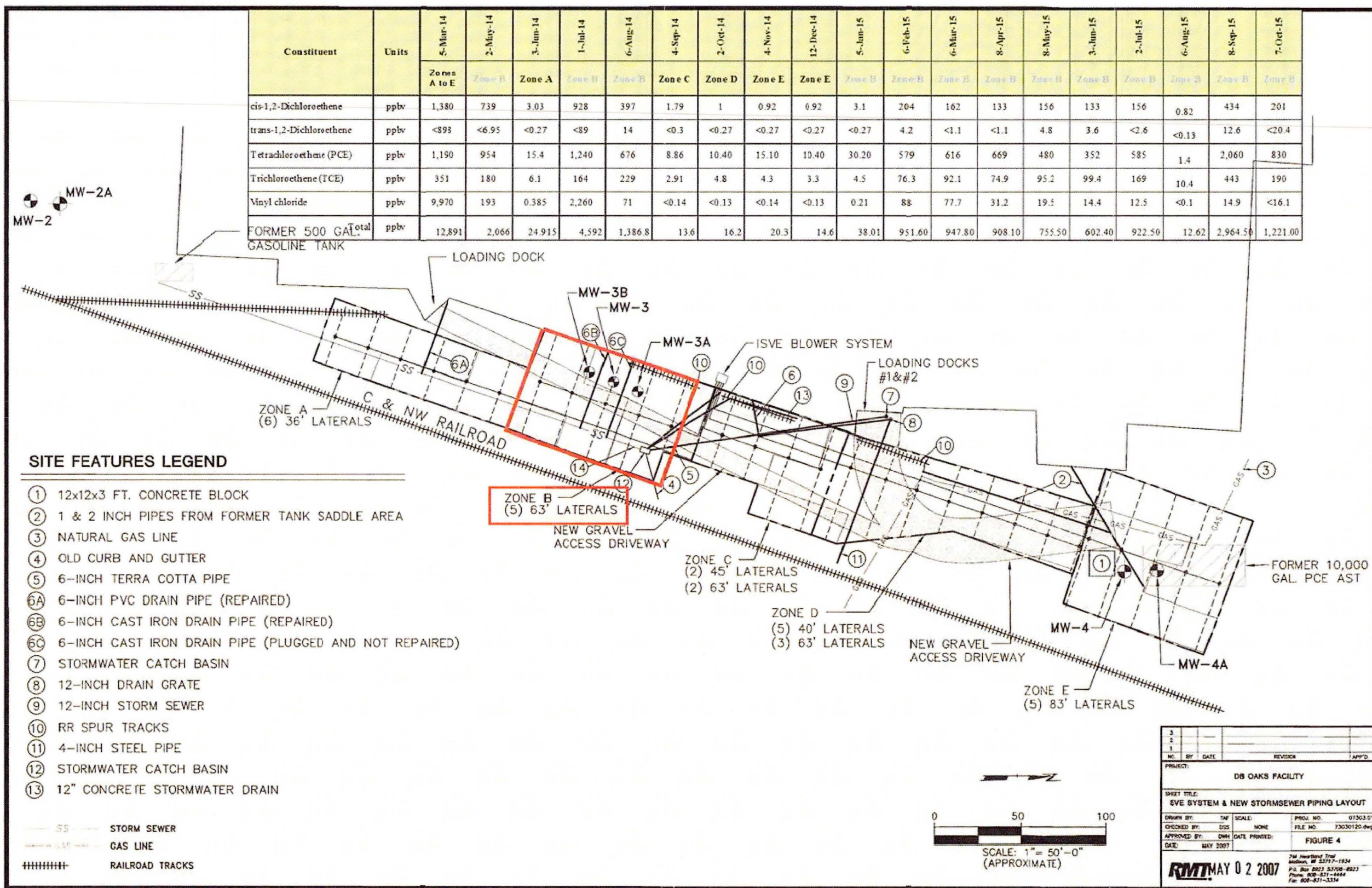
DRAWN: DDZ, DAN PROJECT 42-1-37320 APPROVED: MSM

**FIGURE 3**  
**GROUNDWATER ELEVATIONS & CIS-1,2-DCE**  
**"A" HORIZON PIEZOMETERS**  
**(JUNE 2015)**

FORMER THOMAS INDUSTRIES  
700-710 OAK STREET, FORT ATKINSON, WISCONSIN

**ATTACHMENT A**  
**SVE LATERAL PIPE AND EFFLUENT AIR RESULTS**



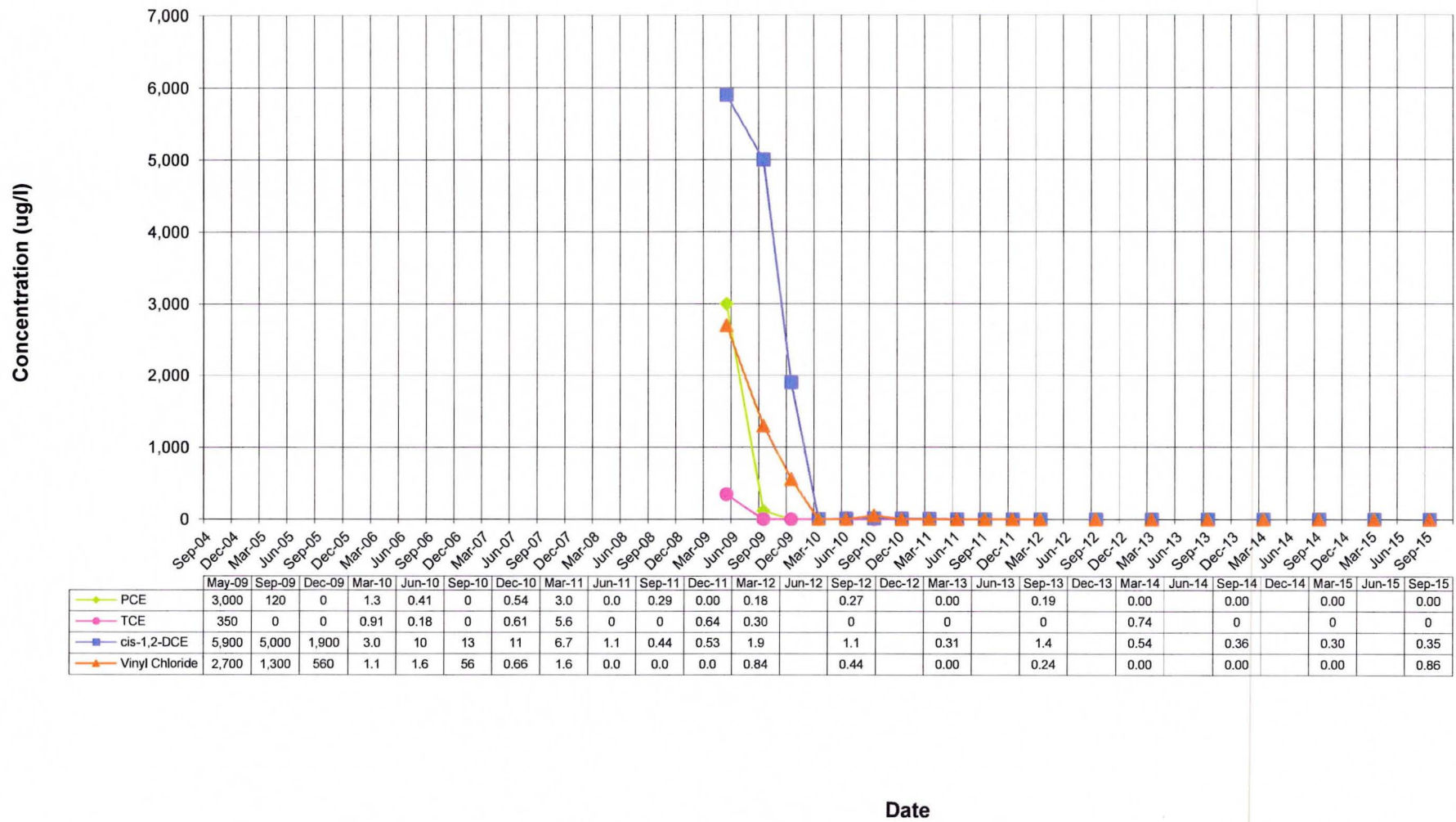


**ATTACHMENT B**

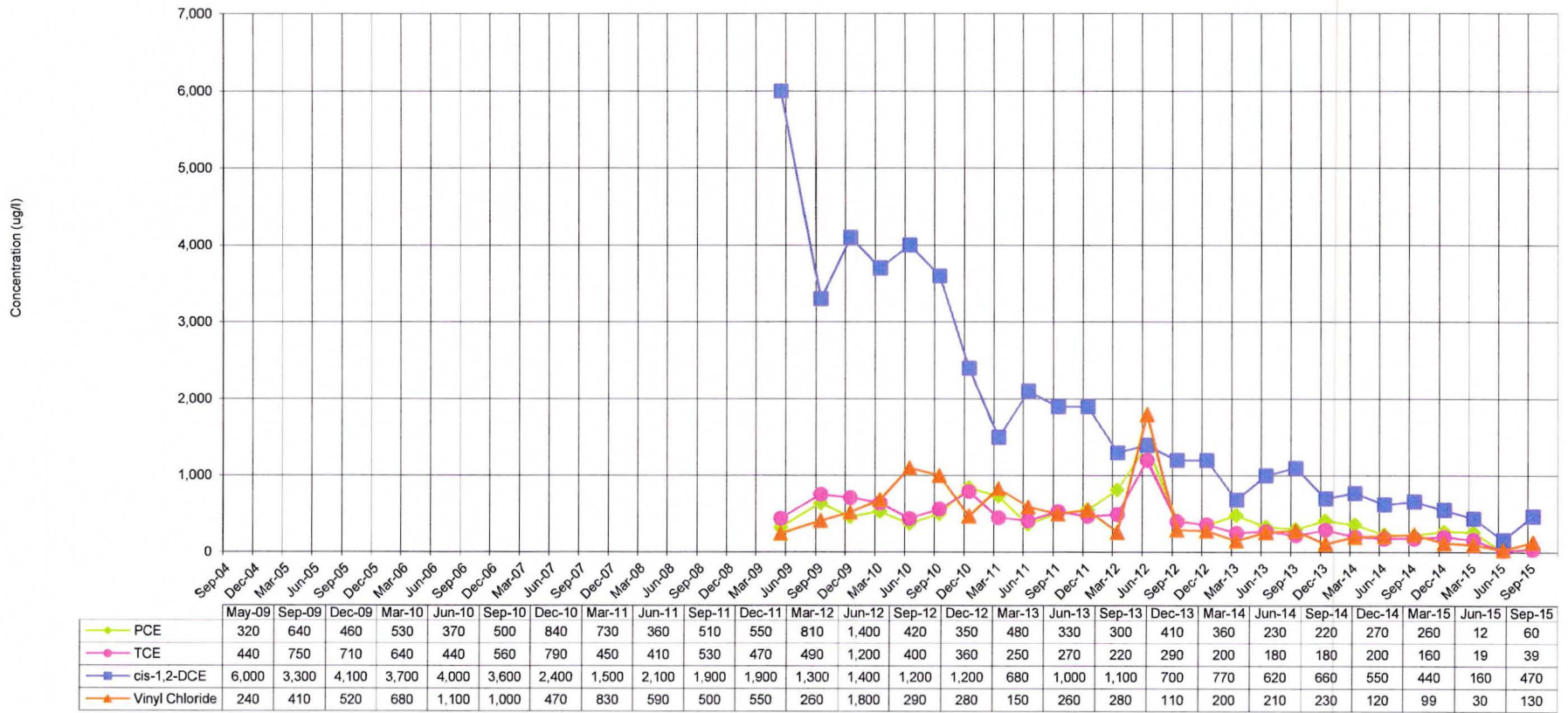
**TIME VERSUS CONCENTRATION PLOTS  
FOR DB OAK WELLS**



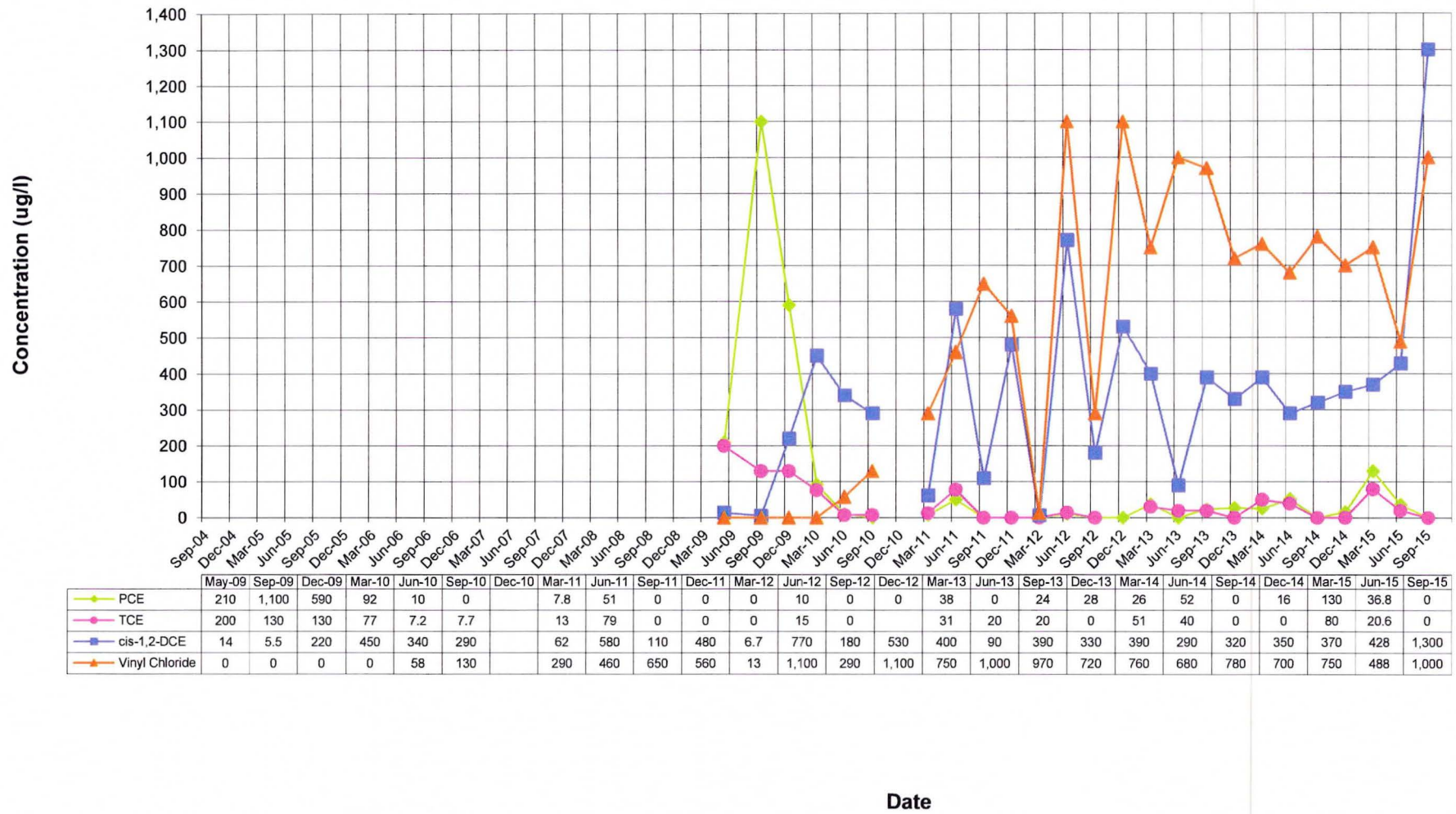
# **DB Oak** **Time vs. Concentration at TW-01**



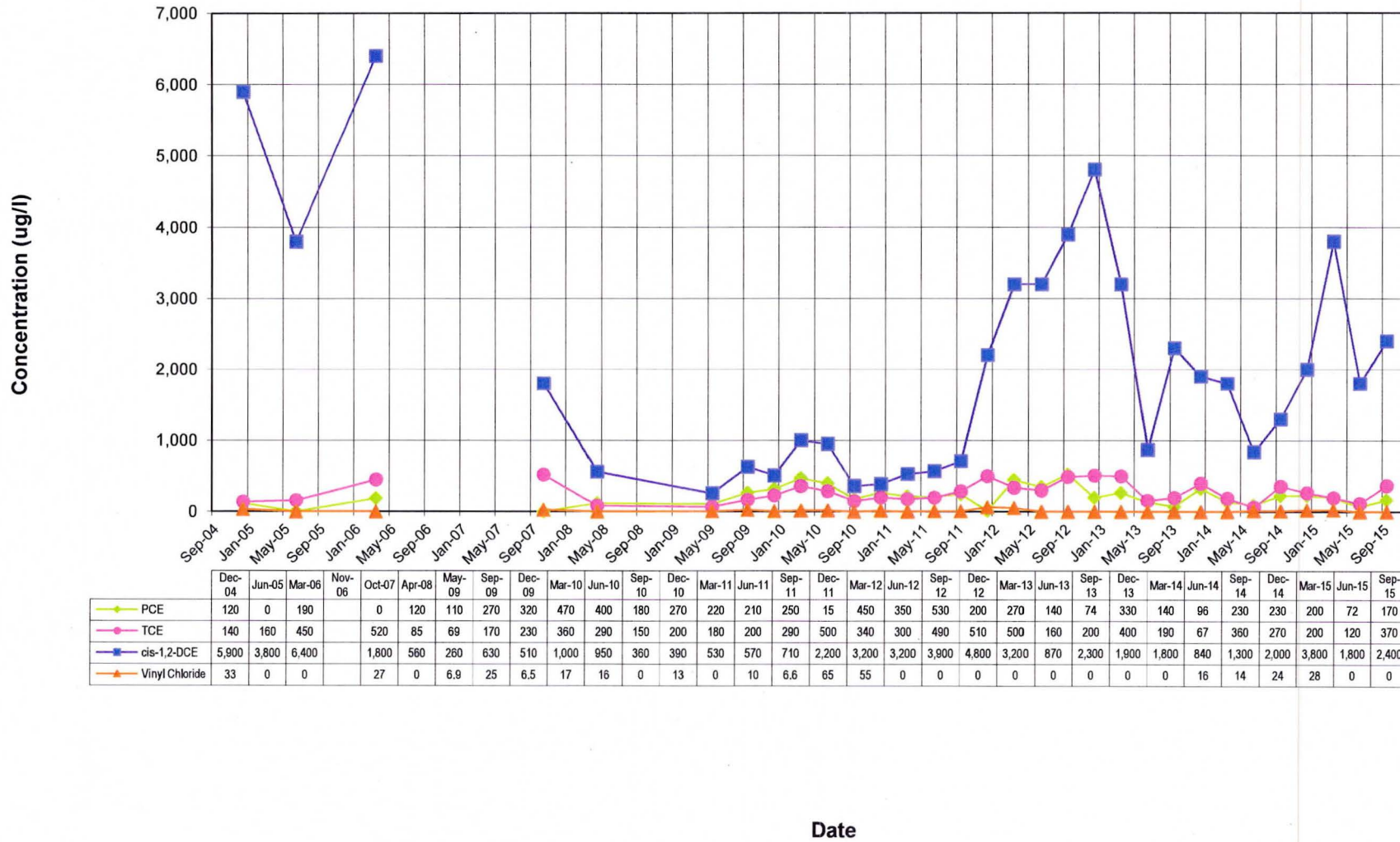
# DB Oak Time vs. Concentration at TW-02



# DB Oak Time vs. Concentration at TW-03

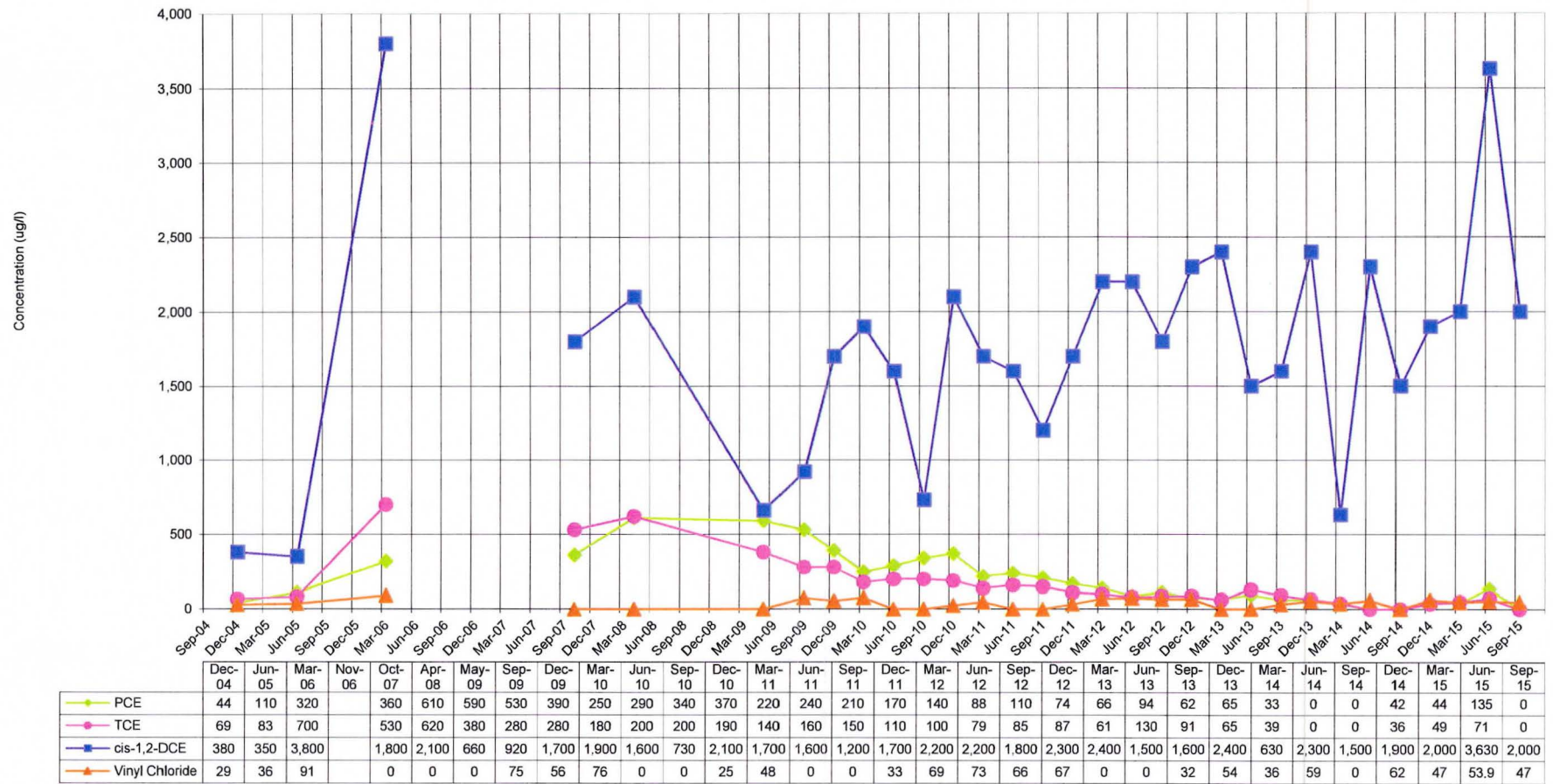


# DB Oak Time vs. Concentration at MW-2



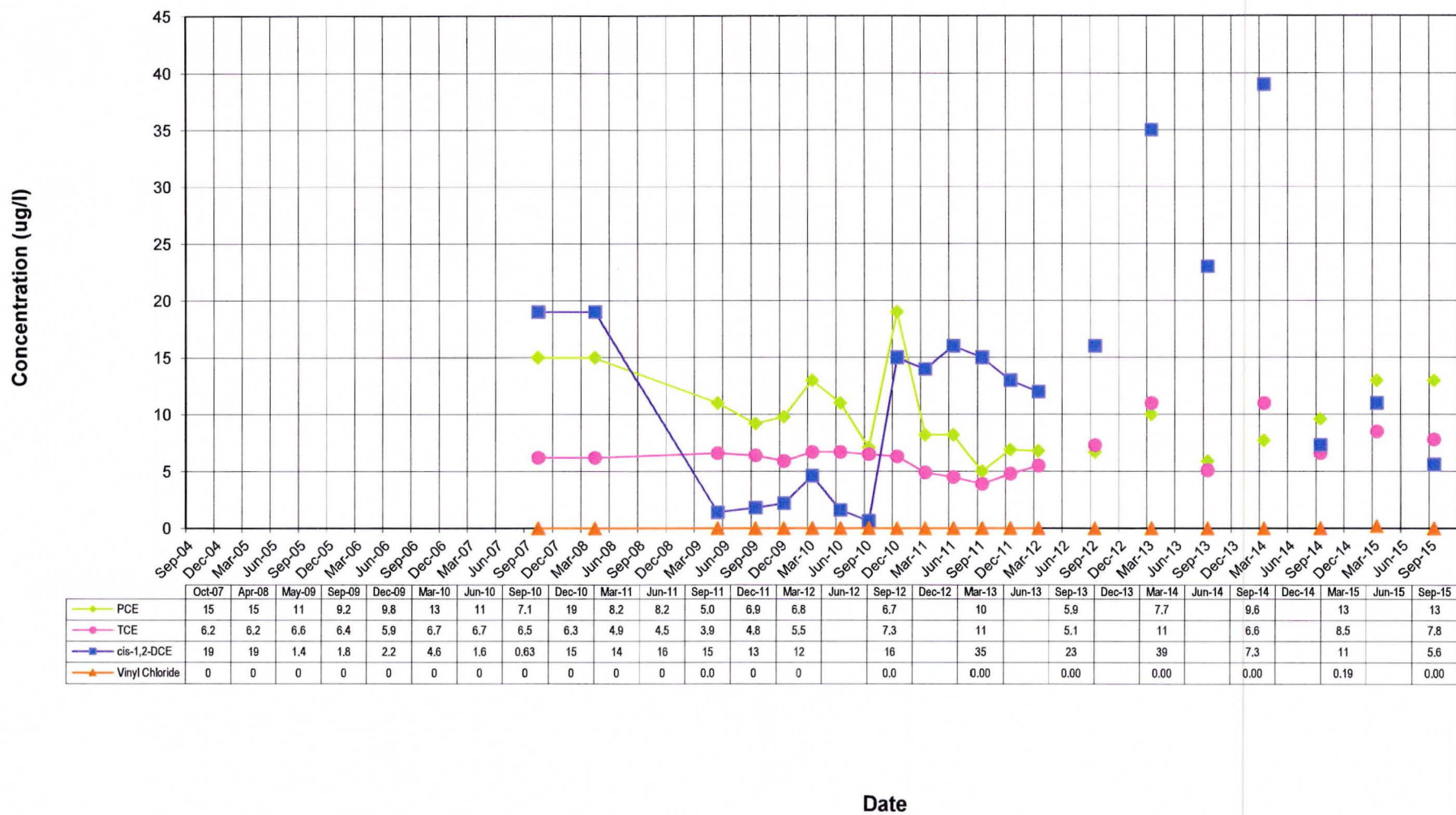


# DB Oak Time vs. Concentration at MW-2A

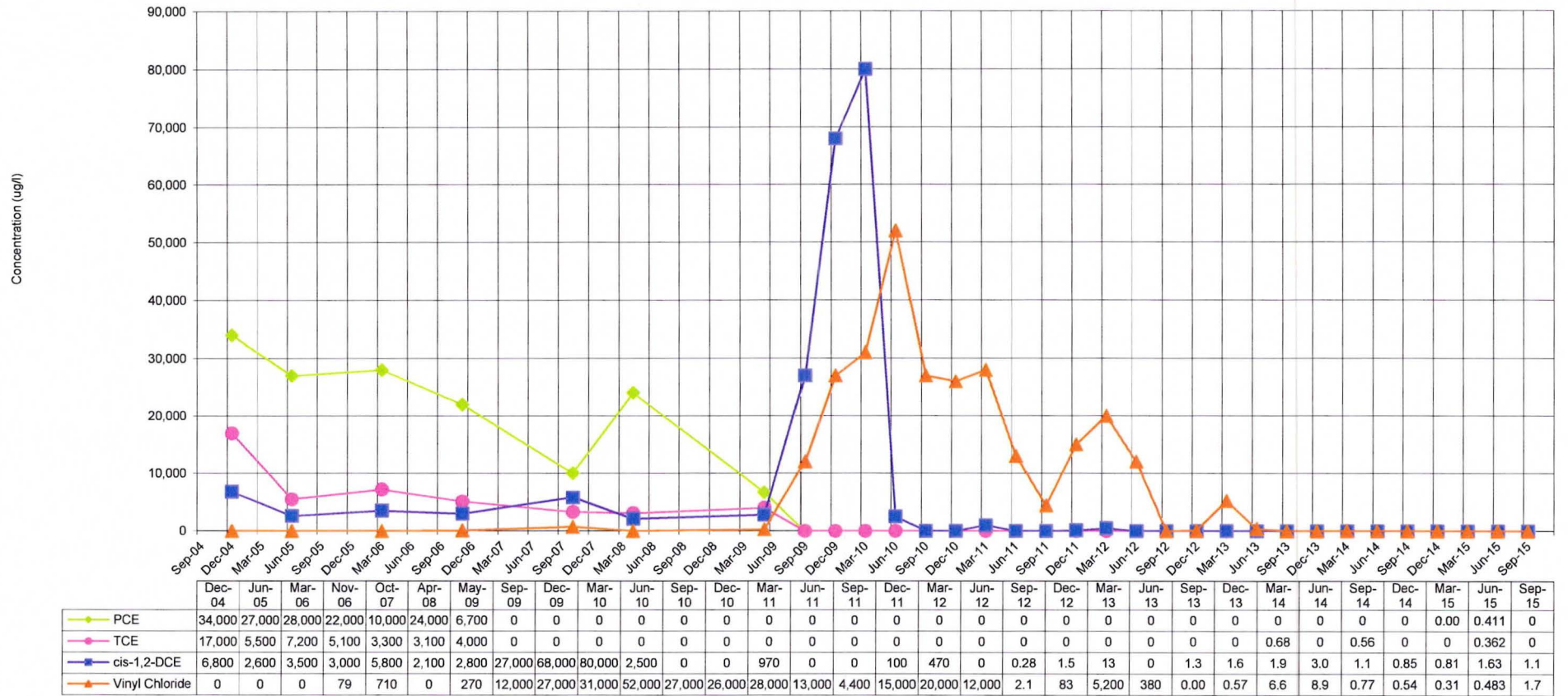


Date

**DB Oak**  
**Time vs. Concentration at MW-2B**

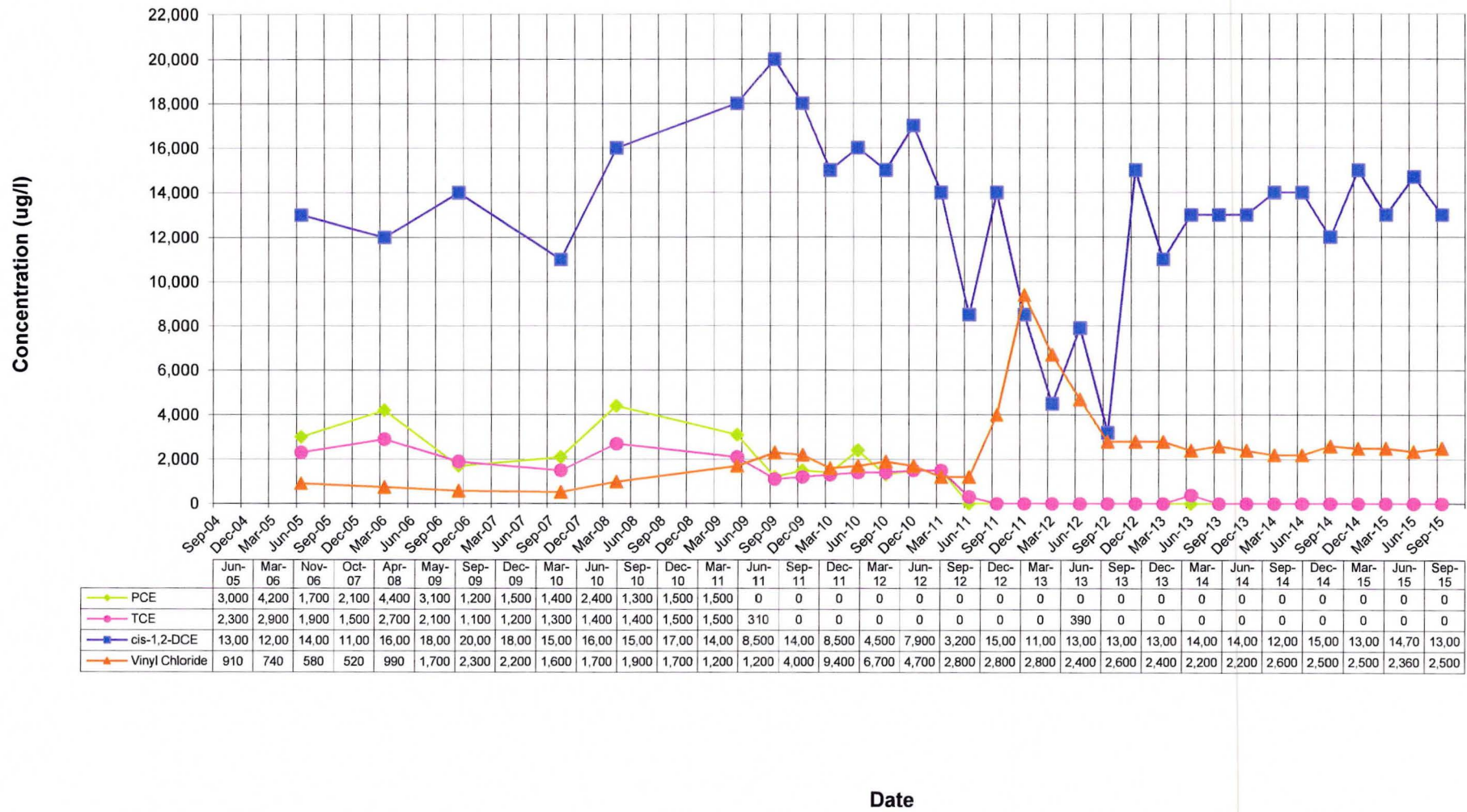


# DB Oak Time vs. Concentration at MW-3



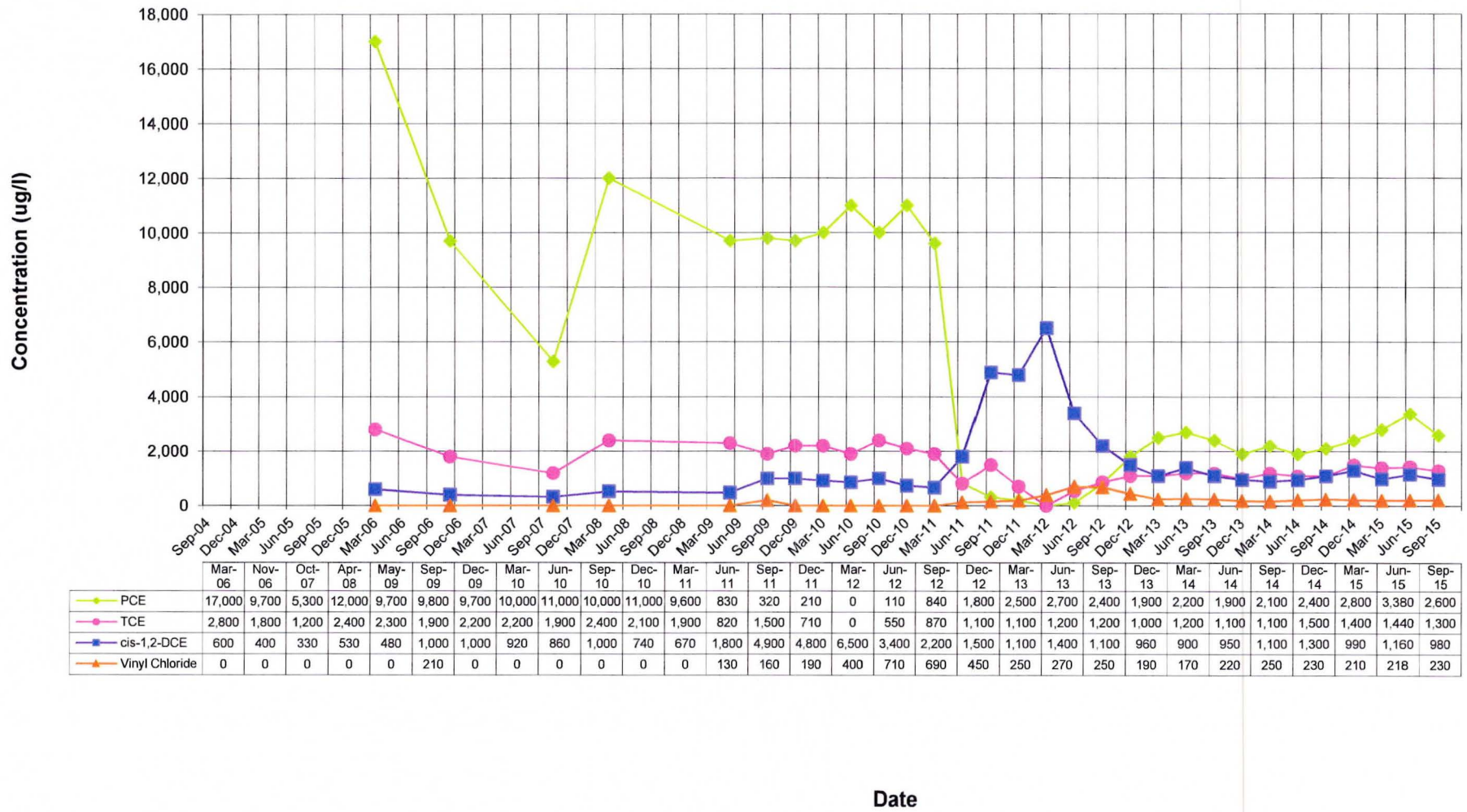
Date

# DB Oak Time vs. Concentration at MW-3A

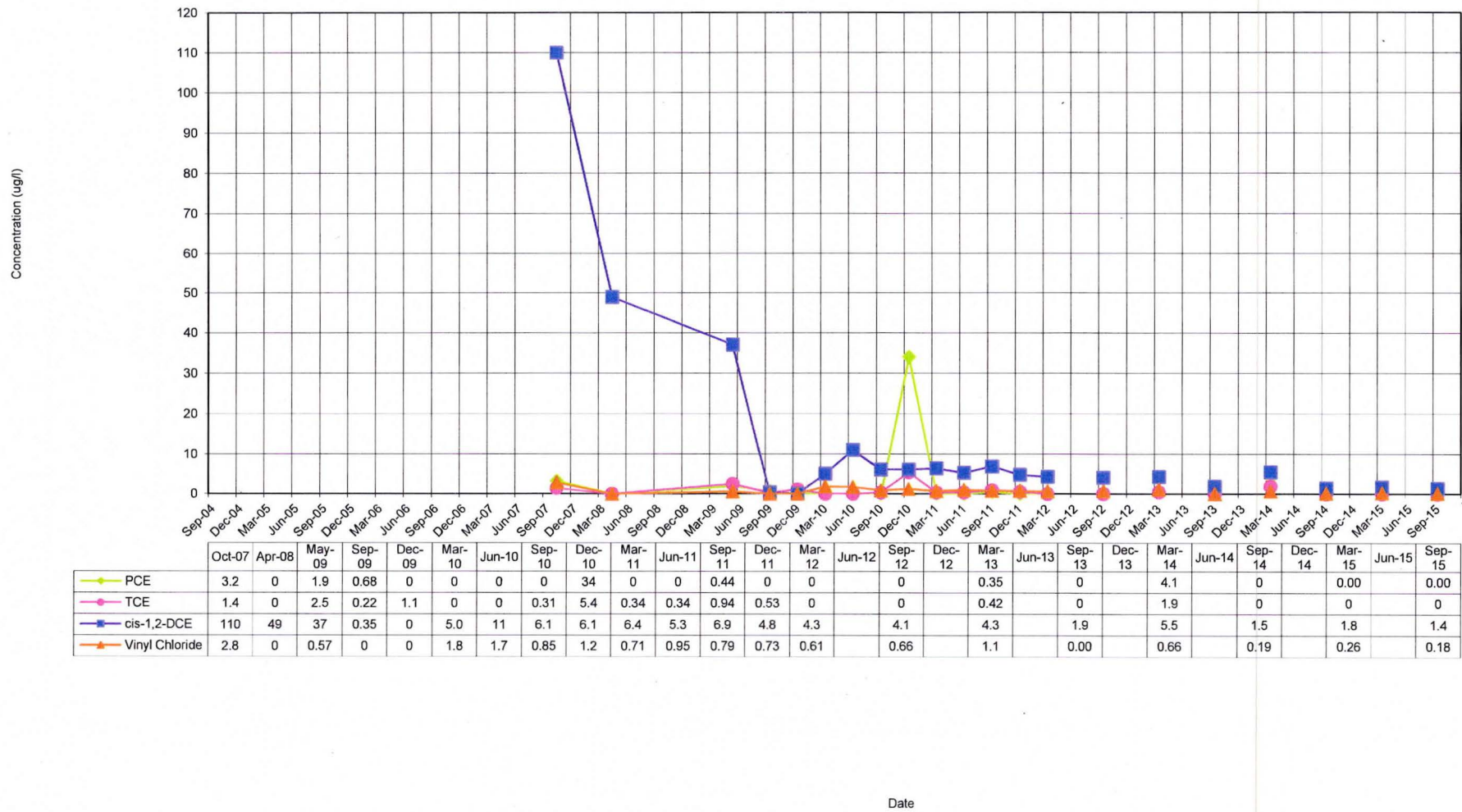




# DB Oak Time vs. Concentration at MW-3B



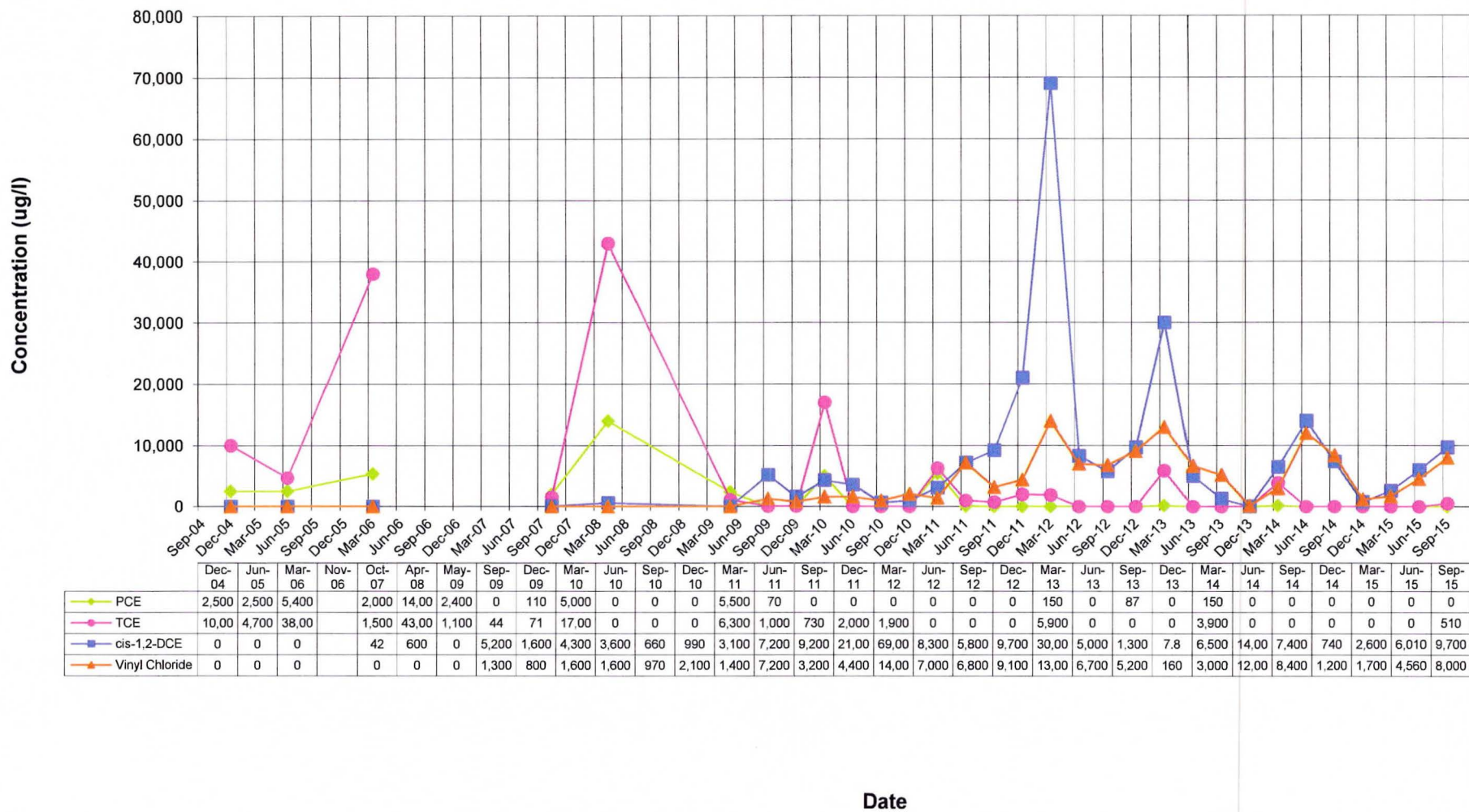
# DB Oak Time vs. Concentration at MW-3C



## Concentration (ug/l)



# DB Oak Time vs. Concentration at MW-4

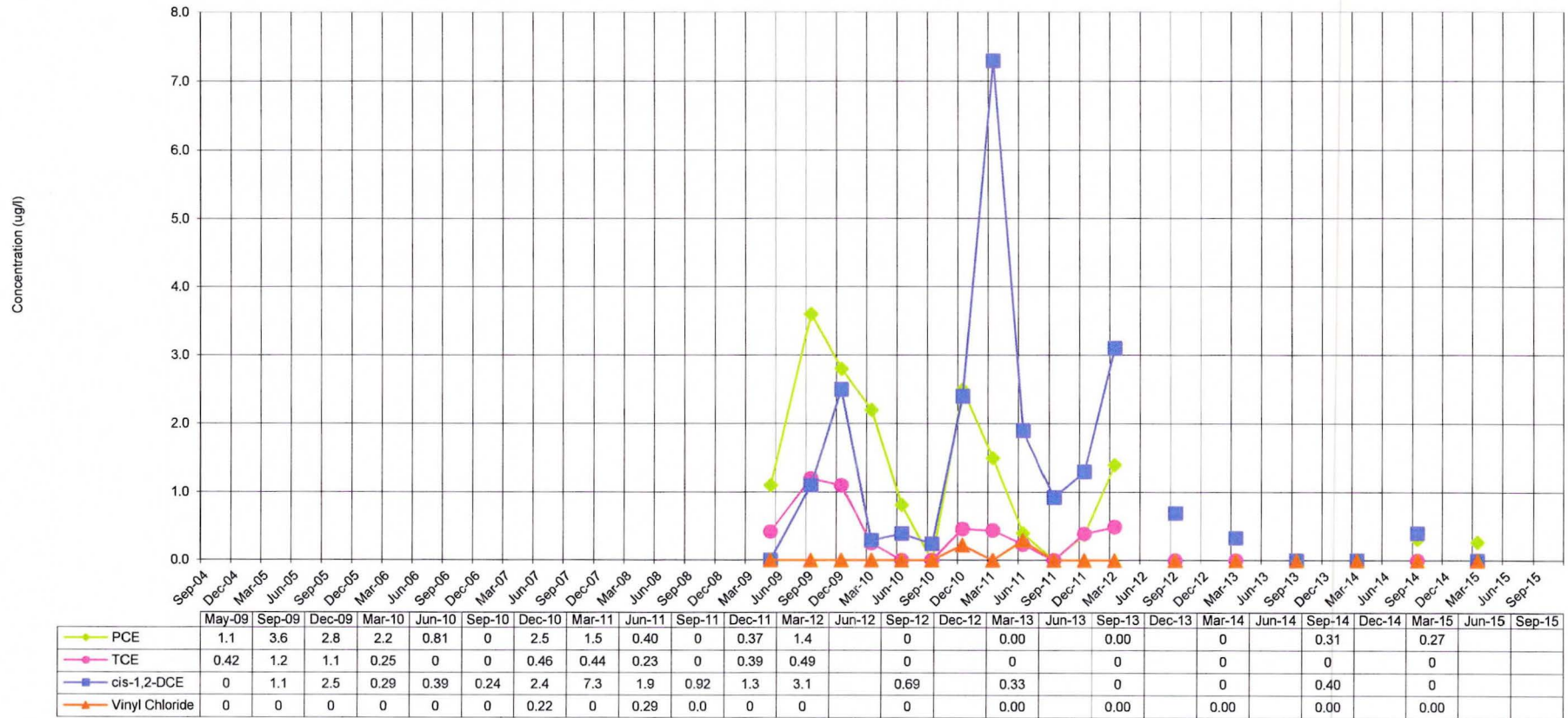




## Concentration (ug/l)

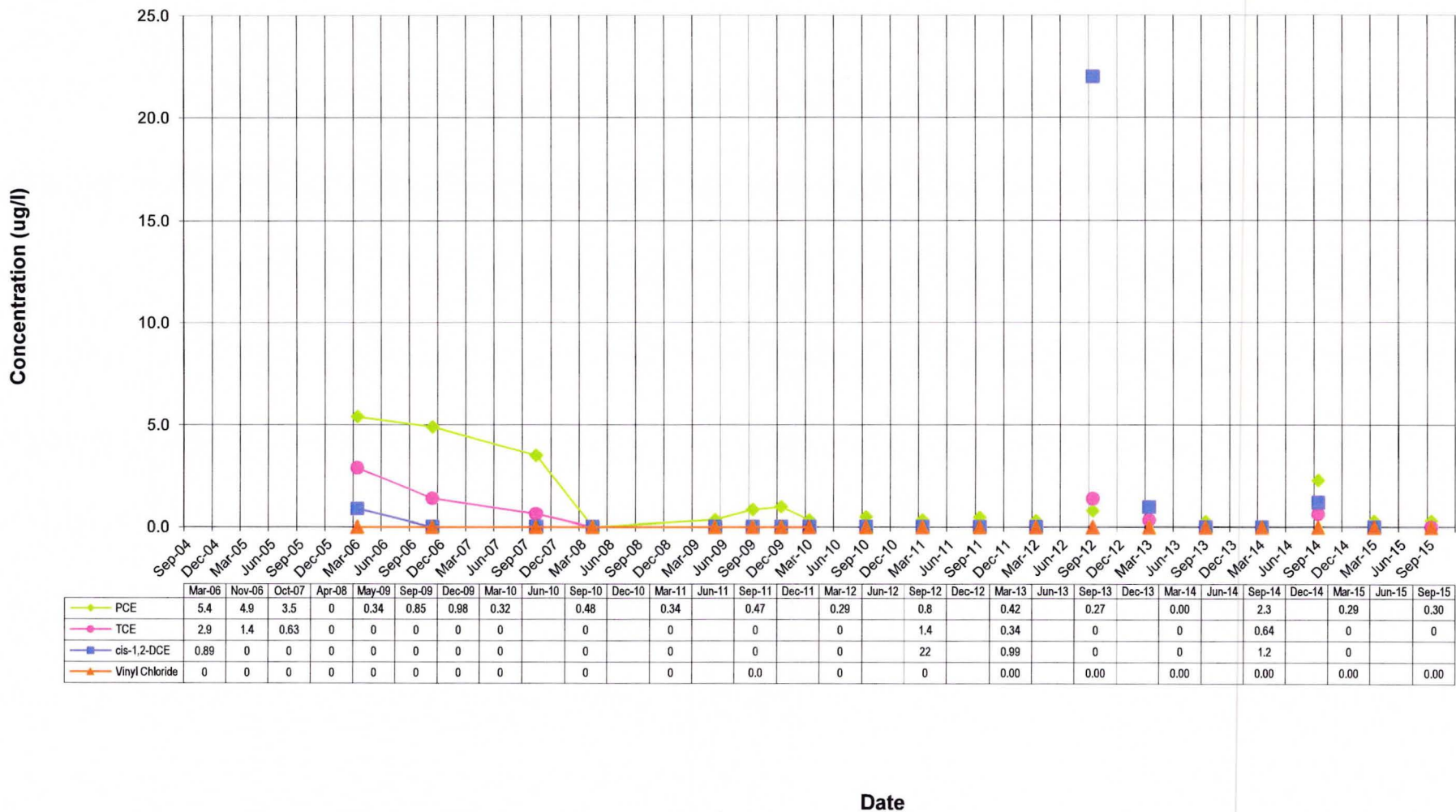


# **DB Oak** **Time vs. Concentration at MW-4B**

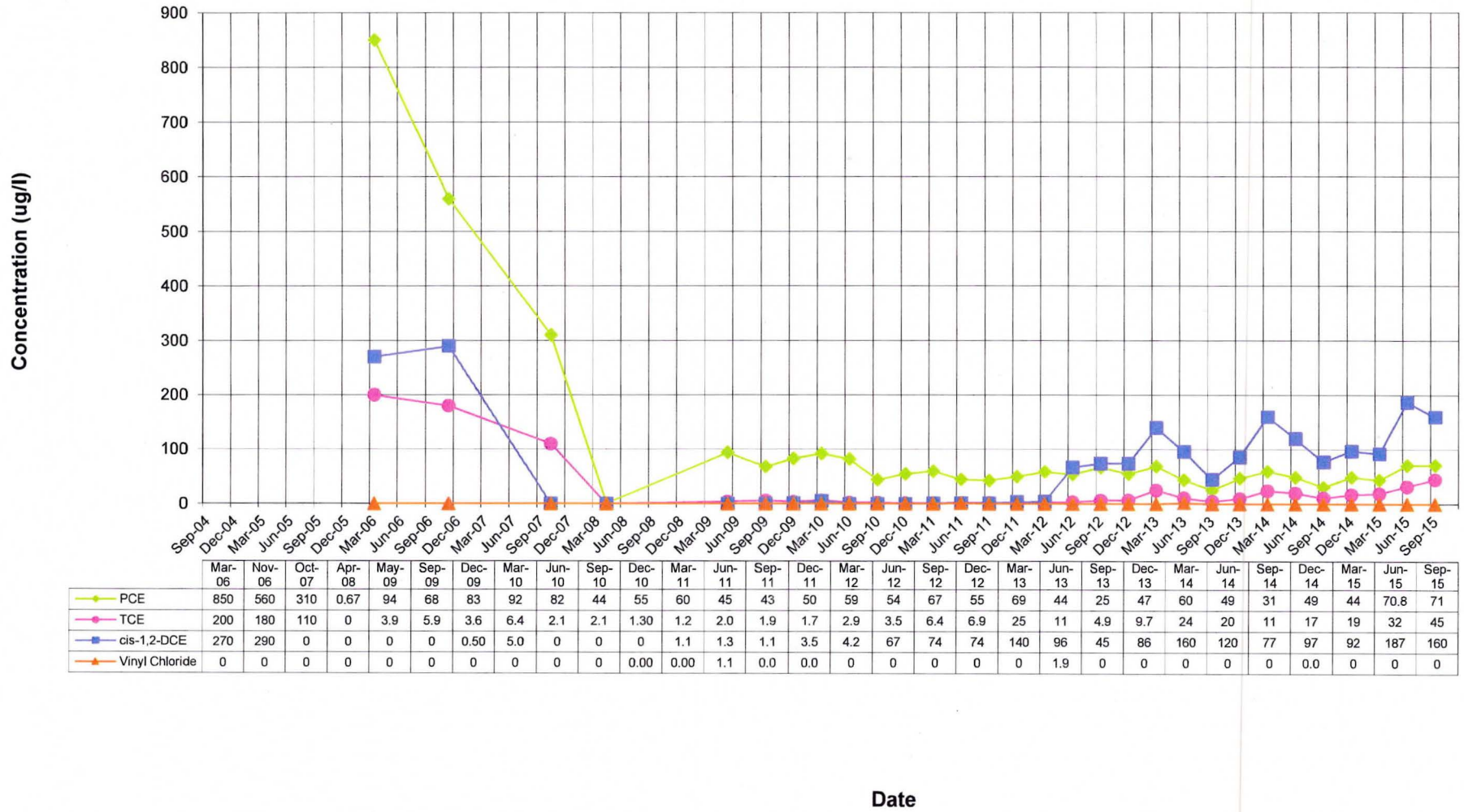


Date

**DB Oak**  
**Time vs. Concentration at MW-7**

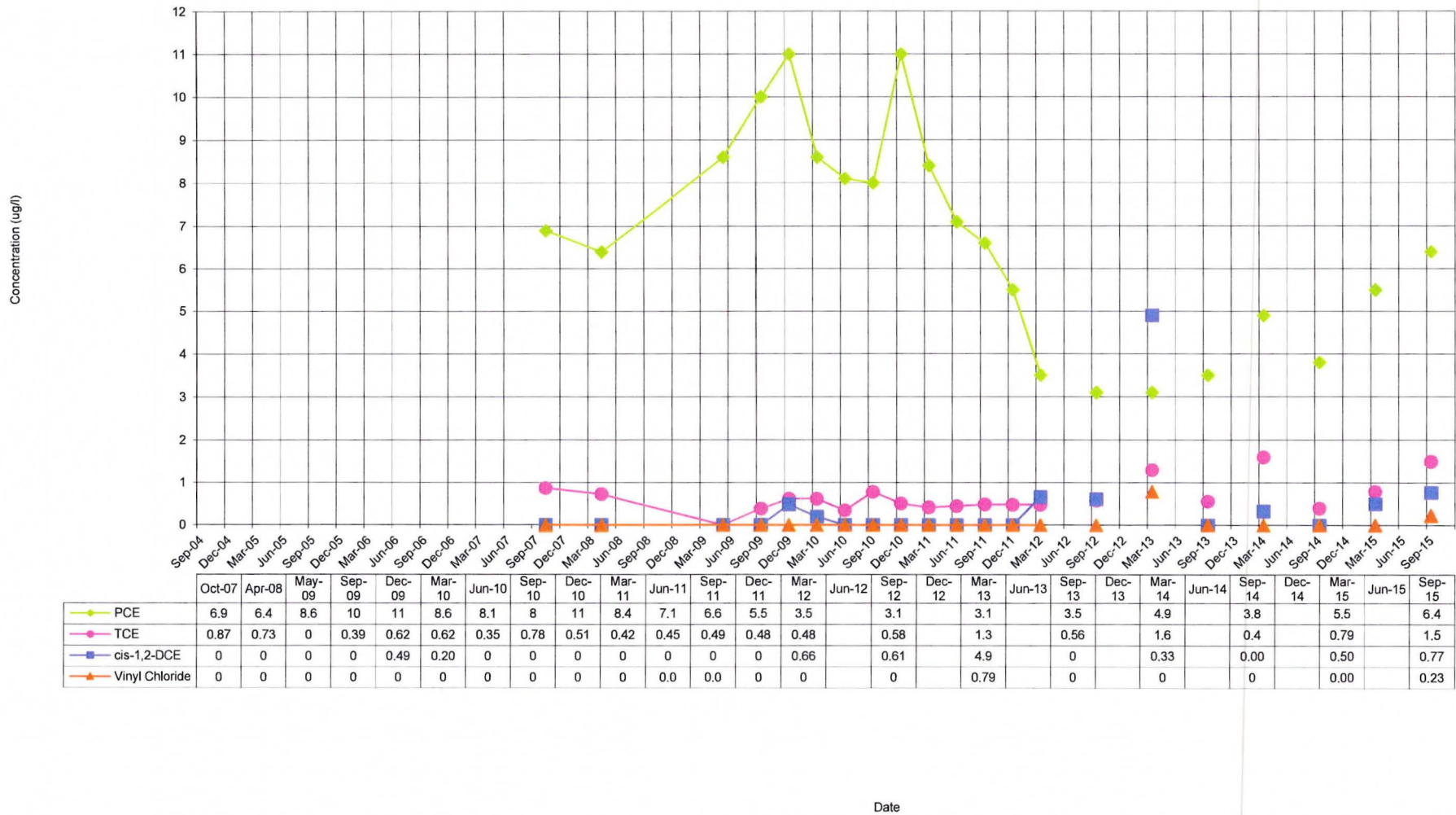


# DB Oak Time vs. Concentration at MW-7A

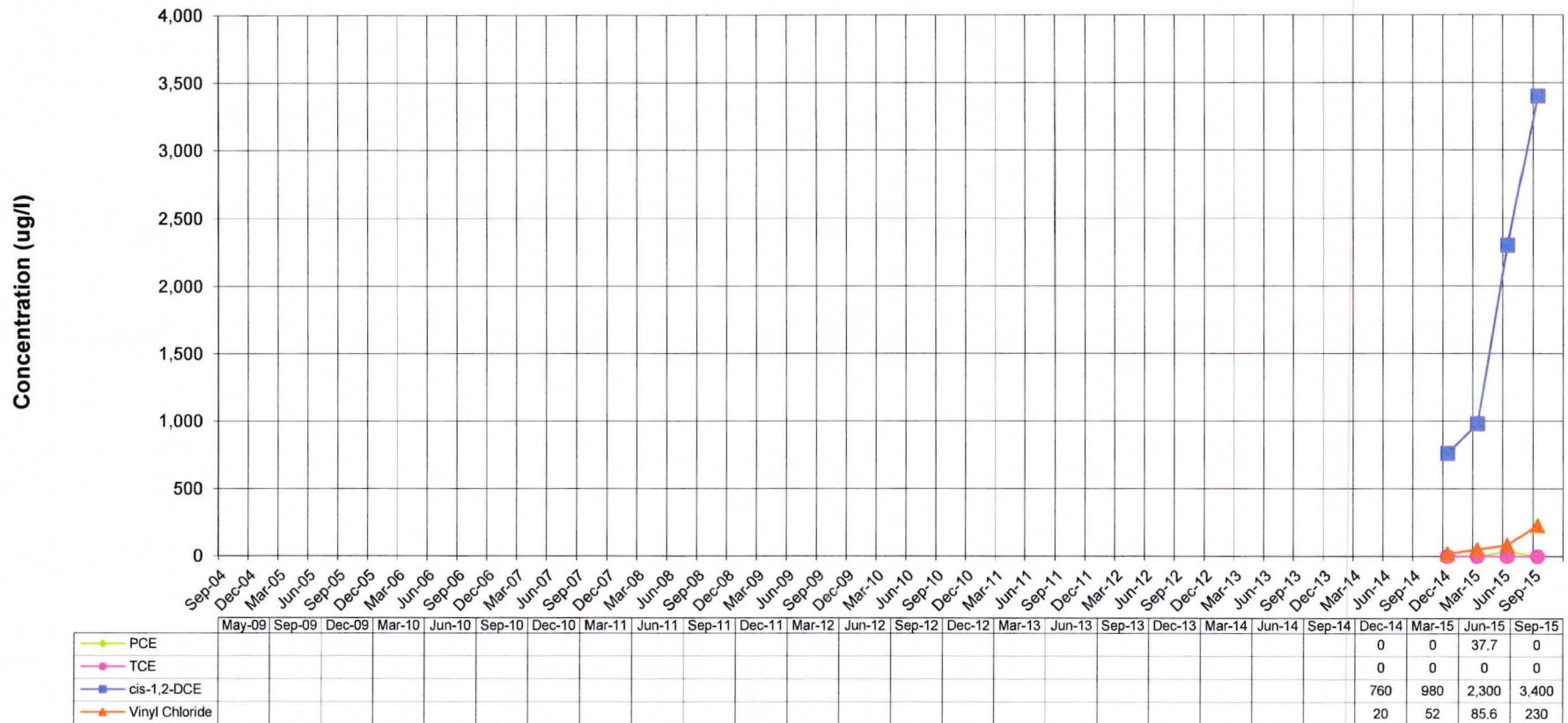




# DB Oak Time vs. Concentration at MW-7B



# DB Oak Time vs. Concentration at MW-9



Date

# DB Oak Time vs. Concentration at MW-9A



Date



**ATTACHMENT C**  
**HISTORIC AERIAL PHOTOGRAPHS**

DB Oak Property

Drainage Ditch

Drainage Swale

Modern Machine & Tool  
(Currently Lorman)

Uncle Josh Bait Shop  
(showing fill at northwest  
corner)

Hoard Printing  
Property (Prior to  
grocery store)

INQUIRY #: 4286511.9

YEAR: 1937

1" = 500'







DB Oak Property

Drainage Ditch

Drainage Swale  
(crossing wetland area?)

Modern Machine & Tool  
(Currently Lorman)

Uncle Josh Bait Shop  
(showing fill at northwest corner)

Hoard Printing  
Property (Prior to  
grocery store )

INQUIRY #: 4286511.9  
YEAR: 1940  
= 500'







DB Oak Property

Drainage Swale  
(crossing disturbed  
area at SW corner of  
Lorman property)

Drainage Ditch

Modern Machine & Tool  
Currently Lorman)

Uncle Josh  
Bait Shop  
(showing fill  
at northeast  
corner)

Hoard Printing  
Property (Prior to  
grocery store )

INQUIRY #: 4286511.9  
YEAR: 1955  
= 500'







Modern Machine & Tool

F42T

116

INQUIRY #: 4286511.9  
YEAR: 1963  
= 500'







INQUIRY #: 4286511.9

YEAR: 1971

| = 750'







DB Oak Property

Lorman

Drainage Ditch

Drainage Swale  
(Prior to Storm  
Sewers)

Modern Machine & Tool

Uncle Josh  
Bait Shop

Hoard Printing Property  
(Grocery Store prior to  
Hoard)

INQUIRY #: 4286511.9

YEAR: 1979

| = 500'



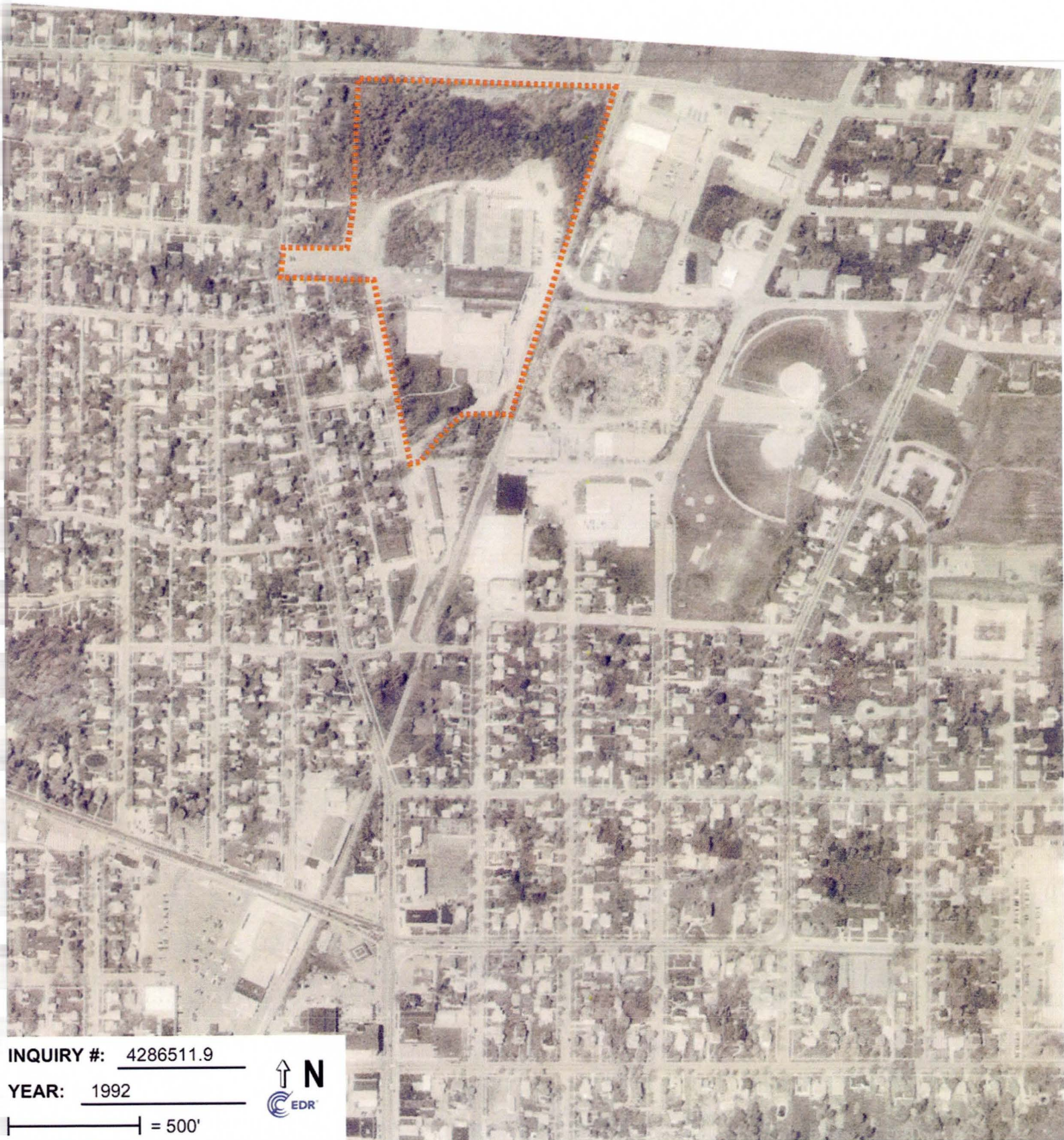




INQUIRY #: 4286511.9  
YEAR: 1986  
| = 500'







INQUIRY #: 4286511.9

YEAR: 1992

| = 500'







NQUIRY #: 4286511.9

YEAR: 2010

| = 500'

