GROUNDWATER EXTRACTION AND TREATMENT SYSTEM
ANNUAL OPERATIONS REPORT FOR THE
PERIOD JULY 1, 1995 THROUGH JUNE 30, 1996

R. E. Wright Project 96003

Prepared for

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LIST OF ACRONYMS

cfm	-	cubic feet per minute
DCE	-	1,2-Dichloroethene
DEP	-	Pennsylvania Department of Environmental Protection
GAC	-	granular-activated carbon
gpd	-	gallons per day
gpm	-	gallons per minute
Harley-Davidson	-	Harley-Davidson Motor Company
NB4	-	North Building 4
NPBA	-	Northeast Property Boundary Area
NPDES	-	National Pollutant Discharge Elimination System
PCE	-	Tetrachloroethene
PTA	-	Packed Tower Aerator
PVC	-	Polyvinyl chloride
R. E. Wright	-	R. E. Wright, Inc.
RI/FS	-	remedial investigation/feasibility study
SPBA	-	Southeast Property Boundary Area
TCA	-	Trichloroethane
TCE	-	Trichloroethene
TFO	-	Thermal Fume Oxidizer
$\mu g/l$	-	micrograms per liter
VOCs	-	volatile organic compounds
WPL	-	West Parking Lot

EXECUTIVE SUMMARY

The groundwater extraction and treatment system located at Harley-Davidson Motor Company (Harley-Davidson) in York, Pennsylvania has operated continuously with few interruptions during the report period (July 1, 1995 through June 30, 1996), meeting its primary goal of: 1) preventing off-site groundwater migration in the Northeast Property Boundary Area (NPBA); 2) removing contaminated groundwater in the Trichloroethane (TCA) Tank Area; 3) removing contaminated groundwater and preventing off-site migration of groundwater in the West Parking Lot (WPL) Area; and 4) removing contaminated groundwater at the former degreaser location in the North Building 4 (NB4) Area. On average, prior to start-up of the NB4 and WPL wells (WPL groundwater extraction system) in May 1994, the system removed approximately 131 gallons per minute (gpm) of groundwater and 1.2 pounds per day of volatile organic compounds (VOCs). Following start-up (in May 1994) of the WPL groundwater extraction system through June 30, 1996, the groundwater pumping rate increased to an average of 248 gpm and VOC loadings increased to 14 pounds per day. R. E. Wright, Inc. (R. E. Wright) estimates that during the time period from November 1990 through June 1996, approximately 12,500 pounds of VOCs have been removed by the groundwater treatment system. The total amount of groundwater extracted during the report period was approximately 146 million gallons. This volume is 27% greater than the amount reported in the previous year's report (7/94 - 6/95).

Operation of extraction wells in the NPBA resulted in overlapping cones of depression resulting in a trough in the groundwater table. The trough acts as a barrier to groundwater flow, preventing off-site migration of the VOC plume. Similarly, extraction wells CW-8 and CW-16 developed a cone of depression in the TCA Tank Area, which

prevented migration of the VOC-contaminated groundwater from this area. To prevent off-site migration of VOC-contaminated groundwater in the WPL Area, four extraction wells were activated during May and June 1994. Groundwater elevations in the WPL indicate that groundwater capture is occurring as a result of the operation of the groundwater extraction system. During the report period, CW-17 was installed and started up as a replacement to the former extraction well CW-14, which became deactivated due to sediment in the well. Extraction well CW-15A, located at the northwestern corner of Building 4, has developed a cone of depression in the groundwater table and is preventing migration of groundwater from this former degreaser location.

The combined influent total VOC concentrations to the Packed Tower Aerator (PTA) averaged approximately 3,360 micrograms per liter (μg/l) during the report period. This average is greater than in past years (approximately 2,100 μg/l) and is due to commencement of groundwater extraction from the WPL Area. Trichloroethene (TCE); TCA; 1,2-dichloroethene (DCE); and tetrachloroethene (PCE) are the predominant VOCs comprising the PTA influent chemistry.

The PTA effectively removed all VOCs to non-detectable concentrations during the report period.

During the report period, the extraction wells were sampled two times for VOCs, the off-site water supplies were sampled four times for VOCs and cyanide, and the key monitoring wells were sampled once for VOCs and cyanide. Site-wide water levels were measured twice.

VOC concentrations in extraction wells in the NPBA have remained fairly constant or have decreased during the report period. The VOC concentrations in the TCA Tank Area have increased slightly throughout the report period. VOC concentrations at the WPL have decreased during the report period in extraction wells CW-9, CW-15A, and CW-17, and remained fairly constant in CW-13.

Off-site sampling of local water supplies (wells and springs) indicate the absence of VOCs and cyanide in all sampling locations except RW-5 (Giambalvo Pontiac), located south of the Harley-Davidson property, and S-6 (Hollinger Spring) located north of the property. In RW-5, the federal drinking water standards for TCE was exceeded in two of the four samples. Chloroform was detected in the four S-6 samples, at concentrations (1-2 μg/l) far below its MCL of 100 μg/l.

1.0 INTRODUCTION

The purpose of this report is to summarize the operating record for the Harley-Davidson groundwater extraction and treatment system, and to present groundwater quality data and groundwater level data monitored across the site. The Harley-Davidson facility is located in Springettsbury Township, York, Pennsylvania, as shown on Figure 1. This report covers a 12-month time period extending from July 1, 1995 through June 30, 1996.

The groundwater extraction portion of the system consists of 15 extraction wells (CW-1, CW-1A, CW-2 through CW-7, CW-7A, CW-8, CW-9, CW-13, CW-15A, CW-16, and CW-17) operating in 3 separate areas designated the Northeast Property Boundary Area (NPBA), the West Parking Lot (WPL) Area (including the North Building 4 [NB4] Area), and the Trichloroethane (TCA) Tank Area as shown on Figure 2.

Extracted groundwater is piped to the central treatment system, located in the groundwater treatment building, for processing through a Packed Tower Aerator (PTA) system prior to discharge to an unnamed tributary of the Codorus Creek (Figure 1). Figure 3 shows a schematic diagram of the system. Prior to May 1994, PTA off-gases were treated by a granular-activated carbon (GAC) filter system for removal of volatile organic compounds (VOCs) prior to discharge to the atmosphere. Since then, the VOCs have been directed from the PTA through a thermal fume oxidizer (TFO) for destruction prior to discharge.

The groundwater extraction and PTA treatment systems were brought on-line under a "friendly order" agreement with the Pennsylvania Department of Environmental Protection (DEP), dated September 11, 1990. In November 1990, 10 extraction wells in the NPBA and TCA Tank Areas were brought on-line, while ongoing studies were performed in the WPL. The WPL Area was brought on-line in May 1994. In conjunction with WPL start-up, PTA off-gases were redirected from the GAC filter to the TFO.

On December 2, 1993, National Pollutant Discharge Elimination System (NPDES) permit No. PA0085677 was issued for the system. This report satisfies Part C, Section 1, Item E of the permit.

The data presented in this report were collected by R. E. Wright, under contract to Harley-Davidson, and are summarized in the following chapter format:

1. Chapter 2.0, *Geology and Hydrogeology*, briefly summarizes the hydrogeologic conditions of the site.

2. Chapter 3.0, *Site-Wide Groundwater Monitoring*, summarizes groundwater levels and quality.

3. Chapter 4.0, *Groundwater Collection and Treatment System*, describes the design capacity of the system and presents the record of influent and effluent water quality. The VOC loadings to the PTA and TFO unit also are presented.

4. Chapter 5.0, *NPBA Groundwater Extraction System*, summarizes water levels and VOC concentrations for each extraction well in the NPBA. System performance is evaluated based upon observed trends in these data.

5. Chapter 6.0, *TCA Tank Area, Groundwater Extraction System*, describes operation and performance of extraction wells CW-8 and CW-16 located in this area. Water level and VOC concentration data are used to evaluate system performance.

6. Chapter 7.0, *West Parking Lot, Groundwater Extraction System*, describes the operation of extraction wells in this area. System performance, water level data, and VOC trends are presented.

7. Chapter 8.0, *Off-Site Water Supply*, presents the record of groundwater quality data for off-site locations. System effectiveness at preventing off-site migration is evaluated based upon these data.

8. Summary and recommendations for the groundwater remediation system are presented in Chapter 9.0, *Recommendations*.

2.0 GEOLOGY AND HYDROGEOLOGY

Two geologic rock formations underlie the site. Solution-prone, gray limestone exists in the flat lowland (western portion of the site), and a quartzitic sandstone underlying the more steeply sloping hills or upland area is present on the eastern part of the site. Groundwater beneath the site generally flows from the upland area at the eastern part of the site westward toward Codorus Creek. A detailed discussion of the geology and hydrogeology is included in R. E. Wright's February 1995 report entitled, "Groundwater Extraction and Treatment System Annual Operations Report."

3.0 SITE-WIDE GROUNDWATER MONITORING

3.1 Groundwater Table

Groundwater levels were monitored across the site twice during the reporting period (November 6, 1995 and April 24, 1996). Water levels in approximately 100 monitoring wells, extraction wells, and piezometers are currently measured on a semiannual basis. Groundwater elevation data is presented in Appendix A, Table A-1. Figure 4 illustrates the groundwater table surface elevation on November 6, 1995.

In comparison to the April 1996 water levels, the November 1995 water table was approximately 4 feet lower in the TCA Tank Area, approximately 3 to 4 feet lower in the WPL Area, and up to 25 feet lower in the NPBA Area. The difference in water levels at most of the remaining portions of the site were generally less than 10 feet lower in November 1995. Exceptions to this are found near the central and south-central portions of the site where the water table was 15 to 18 feet lower in November.

The general configuration of the water table shows a gradient generally towards the west-southwest. Gradients are relatively steep beneath the eastern half of the site which is underlain by sandstone, and relatively flat beneath the western half of the site which is comprised mostly of limestone.

The principle areas of groundwater table drawdown occur at the three extraction well areas (WPL, TCA, and NPBA) as illustrated on Figure 4. Significant groundwater table drawdown is normally maintained with few exceptions outside of infrequent shutdowns due to normal system maintenance.

3.2 Groundwater Quality

In February 1992, a key well sampling program was initiated. Monitoring wells (key wells) were selected based upon location and conditions to provide representative groundwater quality across the site. The key wells were historically sampled annually to establish a data base of groundwater quality and to monitor changes over time. Analytical results from the key monitoring well sampling event, which occurred between October 31 and November 2, 1995, are presented on Table A-2a.

In addition to the key well sampling, groundwater samples were collected by R. E. Wright from selected South Property Boundary Area (SPBA) monitoring wells as part of an environmental investigation in that area. Of the SPBA analytical results, only VOCs and cyanide are presented in Table A-2b. These samples were collected in November and December 1995.

Analytical results of two rounds (December 1995 and June 1996) of extraction well sampling are presented in Table A-3.

Plate 1 provides a geographical view of groundwater quality with respect to selected VOC compounds. The selected compounds (TCA, DCE, TCE, and PCE) represent the predominant VOCs detected in groundwater on-site. Areas containing the greatest VOC concentrations in the groundwater were found in the WPL/NB4 and TCA Tank Areas. Other areas where relatively elevated VOC concentrations were detected were at the NPBA, particularly in extraction well CW-7A, and in selected SPBA wells (MW-62D, MW-63S, MW-63D, MW-64S, and MW-64D).

General groundwater quality trends based on current and past analytical results of samples collected over the last several years from the key wells are presented below. The ability to interpret changes in VOC concentrations over time are complicated by natural fluctuations in the groundwater table (i.e., changes in groundwater flow directions) and by active pumping of the several groundwater extraction wells. However, some general trends are recognized and briefly discussed in the following paragraphs.

The predominant VOC species at the NPBA is TCE. Three monitoring wells (MW-10, MW-12, and RW-2) were sampled at the NPBA during the report period to help determine the affect of the groundwater remediation system in this area. The total VOC (TVOC) concentrations in monitoring well MW-10 increased between 1986 to 1993, and have decreased since then. In MW-12, the TVOCs significantly increased between 1987 to 1990, and have decreased to much lower concentrations since 1991, even though a relatively slight increase occurred between 1994-1995. RW-2 was sampled once during the report period. This off-site monitoring well has not been sampled for several years, so water quality trends at RW-2 cannot be established until more data is generated.

The groundwater quality in the former TCA tank area is partly determined by analysis of samples collected from five groundwater monitoring wells (MW-32S, MW32D, MW-34S, MW-35D, and MW-54). In general, TCA, TCE, and PCE have historically been the predominant VOC species detected in samples collected from these wells. More recent samples indicate the predominance of primarily TCE and TCA, suggesting that PCE is transforming to TCE by natural processes. The TVOC concentrations at MW-32S have continued to decrease since 1991. At MW-32D, the TVOC concentrations have increased. This may indicate that dissolved VOCs in this area of the site are migrating deeper into the saturated zone from a shallower source. At well MW-34S, the

TVOC trend is downward since peaking in 1993. Monitoring well MW-35D has consistently shown a downward trend in TVOC concentrations since it was first monitored in 1989. Similarly, TVOC concentrations at MW-54 have decreased since it has been sampled beginning in 1994.

The NB4 groundwater quality is indicated by TVOC concentration trends in MW-27. The primarily VOC constituent in past samples collected from MW-27 was PCE. The recent analytical results show the presence of PCE, TCE, and DCE. TCE and DCE are likely transformation products of PCE. The chemical concentration trend at this well is difficult to determine given only three analytical results; however, the TVOC concentration has decreased between the 1992 and 1995 samples.

The well located at the south end of Building 4, MW-46, allows monitoring of groundwater quality in this area. PCE and TCE have been and are currently the predominant VOCs detected in samples collected from this well. The current 1995 total VOC concentrations are far less than what was detected in the 1990 and 1991 samples.

Seven monitoring wells were sampled in the WPL area during the report period (MW-8, MW-38S, MW-38D, MW-39S, MW-39D, MW-51S, and MW-51D). TCE, PCE, DCE, and TCA have been the predominant VOC species detected in this area of the site. At monitoring well MW-8, the TVOCs were detected at relatively low concentration in the 1986 and 1990 samples, then significantly increased in the 1995 sample with TCE and PCE being the dominant VOC species. In well MW-38S, the TVOC (primarily DCE and TCE) concentrations have consistently decreased in the 1990, 1992, and 1995 samples. Monitoring well MW-38D TVOC concentrations, although similar in composition to its shallow counterpart MW-38S, have increased since 1992. This may indicate that the dissolved VOCs are migrating deeper into the aquifer at this monitoring location. At MW-39S, the TVOC concentrations have decreased since 1992. The TVOC concentrations in MW-39D have fluctuated since 1990 with the 1995 concentration being its lowest. Both TCE and DCE comprise the bulk of VOCs in these two wells. At monitoring wells MW-51S and MW-51D the TVOCs, which consist primarily of TCE, significantly decrease between the 1991 and 1995 samples.

4.0 GROUNDWATER COLLECTION AND TREATMENT SYSTEM

4.1 System Description

The groundwater collection and treatment system serves to remediate groundwater containing dissolved VOCs in three main areas of the site; NPBA, TCA tank, and WPL. Extraction wells within each of these areas remove groundwater by way of electric submersible pumps controlled by liquid level probes and control circuitry. The water level within each well is maintained between the "on" and "off" probes thus producing an area of drawdown and groundwater capture. The extracted groundwater is conveyed via underground piping to the treatment system where the dissolved VOCs are effectively removed from the groundwater.

The groundwater treatment system is housed in a 30-foot by 40-foot block building attached to the west wall of the industrial wastewater treatment plant. The process flow diagram for the system is presented in Figure 3. The treatment system consists of a 2,600-gallon equalization tank; 5 feet diameter by 47 foot high PTA capable of treating 400 gallons per minute (gpm) of water; and a TFO/incinerator for PTA off-gas treatment. A 10,000-pound vapor-phase GAC unit serves as backup to the TFO to help assure continuous operation of the groundwater remediation system. If the TFO becomes nonoperational due to normal semiannual maintenance or a system malfunction, the WPL groundwater extraction system is deactivated to prevent excessive VOC loading to the backup GAC unit.

Collected groundwater is pumped out of the equalization tank at a maximum flow rate of 400 gpm to the top of the PTA. The water is then distributed evenly over the top of the polypropylene packing and trickles down through the 36-foot packed section of the PTA. Air is moved from an outside source through the PTA column by a 4,000 cubic foot per minute (cfm) centrifugal blower. The VOCs are effectively "stripped" from the water and then destroyed by thermal oxidation as the off-gas passes through the TFO. The treated groundwater flows by gravity from the PTA sump to a storm water sewer and is ultimately discharged to an unnamed tributary of the Codorus Creek.

The groundwater treatment system is equipped with a PC-based Site Boss© monitoring system. Remote computer terminals are located in both Harley-Davidson and R. E. Wright offices where extraction well pumping rates and treatment processes can be monitored and controlled. System and extraction well pumping rates are adjusted manually at the site.

4.2 Record of Groundwater Withdrawal and Chemical Removal

Table 1 presents recorded groundwater withdrawal and total VOC removal that has been accomplished by the groundwater extraction and treatment system. A system-wide total of approximately 12,500 pounds of VOCs has been removed since the groundwater treatment system began operation in November 1990. On average, prior to start-up of WPL system in May 1994, approximately 131 gpm of groundwater and 1.2 pounds per day of total VOCs were being extracted by the system. Since the WPL system became operational, the average groundwater pumping rate increased to approximately 248 gpm with 14 pounds per day of total VOCs being removed.

The total amount of groundwater extracted during the report period was approximately 146 million gallons (399,000 gallons per day [gpd]; 277 gpm). This extraction rate is

27% greater than during the previous report period (7/94 - 6/95) where approximately 115 million gallons were extracted (315,000 gpd; 219 gpm). The primary reasons for the increased extraction volumes were due to: 1) start-up of extraction well CW-16 more than half-way into the previous reporting period; 2) operational difficulties and eventual shutdown of extraction well CW-14 during the previous report period.

The groundwater remediation system operated effectively throughout the report period with few exceptions. The TFO experienced several days of downtime in March 1996 due to freezing temperatures. The TFO has since undergone modifications to help prevent weather-related malfunctions. Consequently, the WPL groundwater extraction wells were deactivated during the time the TFO was being serviced.

From the time the groundwater remediation began operation in November 1990 until start-up of the WPL extraction system in May 1994, the PTA influent concentrations averaged approximately 700 micrograms per liter (μg/l) of total VOCs. Since start-up of the WPL system, the approximate total VOC concentration increased to 4,800 μg/l. The average total VOCs detected in the PTA influent samples during the report period were approximately 3,360 μg/l. The trend in PTA influent chemistry is illustrated on Figures 5 and 6.

The PTA effluent concentrations of VOCs have been monitored twice monthly since start-up of the system. Analytical testing results for the reporting period are presented in Table A-4 of Appendix A. The treatment system has maintained non-detectable concentrations of VOCs in the effluent.

5.0 NPBA GROUNDWATER EXTRACTION SYSTEM

5.1 Groundwater Extraction

Groundwater extraction at the NPBA commenced in November 1990. Nine groundwater extraction wells (CW-1, CW-1A, CW-2, CW-3, CW-4, CW-5, CW-6, CW-7 and CW-7A) pump to the NPBA control building where individual pumping rates are controlled and measured. The groundwater from each well is combined to a common three-inch diameter pipeline to the groundwater treatment system.

Table 2 presents a record of groundwater withdrawals for each extraction well on-site. Over 67 million gallons of groundwater were extracted from the NPBA from start-up of the system through June 30, 1996. This extraction system, during the current report period, removed approximately 10 million gallons of groundwater at an average rate of 833,000 gallons per month, or 19 gpm.

Measured groundwater levels for the current report period are presented in Table A-1. The groundwater contour map (Figure 4) shows the effect the groundwater extraction system imposed on the water table at the NPBA Area on November 6, 1995. The groundwater contours indicate a residual trough of depression is present on the groundwater surface. These contours show a deep trough of depression on the groundwater surface which demonstrates capture of local groundwater and prevention of off-site migration.

Table 3 summarizes measurements of water levels for extraction wells in the NPBA. The table also lists design "pump on" and "pump off" water level elevation. During the

November 1995 measurement round, water levels were maintained near the design drawdown levels (within five feet), except in three of the nine wells. The April 1996 measurement round indicates six of the nine extraction wells exhibited higher than designed water levels due to an iron fouling condition described below. Despite the exceedance of design levels, groundwater table depression as shown on the groundwater contour map (Figure 4) indicates capture was maintained.

5.2 System Operational Conditions

All nine wells in the NPBA generally operated continuously as shown in Table 2 and Figure 7. On occasion, records show obviously diminished groundwater extracted from an individual well. These periods of interrupted pumping were related to various repairs and maintenance of the system. The most significant maintenance item has been iron fouling of the pumps and pipelines of wells CW-2 through CW-6. Iron fouling caused high water level alarms in these wells during parts of the report period due to reduced groundwater extraction rates.

The temporary inability to maintain the desired groundwater drawdown prompted R. E. Wright to replace several groundwater extraction well pumps (which is routinely completed twice per year), and acid clean the underground conveyance piping. The piping was cleaned subsequent to the report period, and has resulted in the desired maintenance of water levels at the NPBA. Visual observation of the manifold at the NPBA control building confirms the successful cleaning of conveyance piping leading to the building. However, the three-inch diameter polyvinyl chloride (PVC) piping that conveys water from the NPBA building to the treatment building appears to be not responding to acid cleaning based upon the increasing back pressure observed at the manifold. Installation of clean-out ports in the three-inch diameter line is needed to allow mechanical cleaning of iron fouling in this line.

Harley-Davidson maintains the flow meters, y-strainers, check valves, and other components of the groundwater extraction system on a twice per month schedule. This maintenance program has successfully kept the system operational.

5.3 Groundwater Chemistry

VOC concentrations over the period of record are displayed in Figures 8 through 16. The groundwater chemistry is shown on Plate 1 and included on Appendix Tables A-2 and A-3. VOC concentrations have remained fairly constant or have decreased slightly during the report period in each well, except in CW-4 and CW-6, which both experienced slight increases.

6.0 TCA TANK AREA GROUNDWATER EXTRACTION SYSTEM

6.1 Groundwater Extraction

Groundwater extraction was initiated in November 1990 from CW-8 to prevent TCA migration and remove VOCs from the groundwater in this area. Groundwater extraction was initiated in February 1995 from CW-16 to contain and remediate groundwater beneath the degreaser area inside Building 2. Groundwater from these wells is conveyed approximately 1,000 feet through a 3-inch line to the groundwater treatment system.

Initially, extraction well CW-8 was pumped at a rate higher than necessary to maintain capture. The early goal was to reverse the direction of migration prior to initiation of groundwater pumping planned for the WPL, which would have potentially pulled the western edge of the TCA tank plume further west. Prior to pumping of the WPL, the groundwater treatment plant, which was designed to handle water from the WPL, had excess capacity. Thus, the capacity was put to use to address the TCA tank plume.

Table 2 presents a record of groundwater withdrawals for extraction wells CW-8 and CW-16. Approximately 72 million gallons of groundwater were extracted from the TCA Tank Area during the report period, averaging approximately 6.0 million gallons per month (138 gpm). The total amount of groundwater extracted during the previous report period was approximately 50 million gallons. The primary reason for the lower extraction volume is that CW-16 was started-up eight months into the previous report period (February 1995).

Groundwater elevations for the report period are presented in Table A-1 of Appendix A. The site-wide groundwater contour map (Figure 4) illustrates the cone of depression created by the TCA groundwater extraction wells. Table 3 demonstrates that designed drawdown was achieved in the TCA extraction wells. Wells CW-8 and CW-16 have been successful in preventing migration of the VOC-contaminated groundwater originating from the TCA tank and degreaser source areas.

6.2 System Operational Conditions

CW-8 has generally operated continuously during the report period as shown in Table 2. The CW-8 daily pumpage ranged between 99,000 to 285,000 gallons. CW-16 has maintained a pumping rate during the report period between 25,000 and 78,000 gallons per day (gpd). Pumpage from CW-8 and CW-16 has averaged approximately 4.7 and 1.3 million gallons per month, respectively, during the report period. Groundwater depression and capture has been maintained at the TCA Area as demonstrated by the closed contours on Figure 4.

CW-8 and CW-16 are not prone to iron fouling, so bimonthly cleaning of y-strainers is sufficient for these wells. The maintenance program has successfully kept these wells operational.

6.3 Groundwater Chemistry

As demonstrated in R. E. Wright's February 1995 operations report and as shown on Figure 17, TCA was the most prevalent VOC detected in extraction well CW-8 prior to September 1992. TCA has generally decreased in concentration since pumping began at

CW-8 in November 1990 as a result of pulling water from beyond the TCA plume and presumably as a result of mass removal. Since May 1992, TCE concentrations began to increase in the groundwater chemistry (corresponding with an increase in pumping rate), and since January 1994 TCE has become the dominant VOC detected. The observed changes in groundwater chemistry suggest that pumping has drawn the TCE from a source area separate from the TCA Tank Area.

The VOC concentrations at CW-8 have increased slightly during the report period. The VOC concentrations at CW-16, as shown on Figure 18, also increased slightly and are approximately 65 percent higher than CW-8. The VOC components which comprise both CW-8 and CW-16 are similar, indicating capture of groundwater originating from the same source area. Refer to Table A-3 in Appendix A for analytical results from samples collected during the report period.

7.0 WEST PARKING LOT GROUNDWATER EXTRACTION SYSTEM

7.1 Description

Three groundwater extraction wells (CW-9, CW-13, and CW-17) operate in the WPL Area of the Harley-Davidson property and one extraction well (CW-15A) is located near the northwest corner of Building 4. These four wells are referred to as the WPL wells. The wells are individually piped to the groundwater treatment plant so that flow control, flow measurements and water samples may be accomplished for each well at a central location. Extraction wells CW-9, CW-13, and CW-15A began operation in May 1994, and CW-17 began operating in August 1995. The purpose of the WPL groundwater extraction system is to prevent off-site migration of groundwater containing dissolved VOCs and to control the migration of VOCs in a plume located near the northwest corner of Building 4. Extracted groundwater from the WPL wells is conveyed up to 1,400 feet via underground piping to the groundwater treatment system.

CW-17 was installed in June 1995 as a replacement for extraction well CW-14, which became clogged with sediment and ceased operation in March 1994.

7.2 Groundwater Extraction

Since start-up of the WPL groundwater extraction system in May 1994, approximately 121 million gallons of groundwater have been removed through June 30, 1996. The average withdrawal rate during the report period was approximately 5.3 million gallons per month, or approximately 121 gpm with a total amount of approximately 63 million gallons. The total amount of groundwater extracted during the previous report period was approximately 54 million gallons. The reason for the lower extraction volume experienced during the previous report period was due to operational difficulties and eventual shut-down of extraction well CW-14. Pumpage data is presented in Table 2. The hydrogeology is similar to that described for the TCA Area (Section 6.2). The capture area imposed on the aquifer by pumping from the WPL wells is illustrated on Figure 4. The capture area encompasses the entire WPL Area and beyond. Groundwater elevations for the report period are shown on Table A-1.

Table 3 presents the designed drawdown levels and the calculated water table elevations for the November 1995 and April 1996 measurement rounds. Both measurement rounds demonstrate that groundwater levels were within the design limit, except for CW-9 during the April measurement which was three feet above the designed upper limit.

Pumping and groundwater elevation data from CW-9, CW-13, CW-15A, and CW-17 indicates the WPL groundwater extraction system has been successful in preventing off-site migration of local groundwater.

7.3 System Operational Conditions

The WPL extraction wells operated as designed throughout the report period with few exceptions. The TFO unit experienced several days of downtime in March 1996 due to freezing temperatures. The TFO has since been modified to help prevent weather-related malfunctions. Consequently, the WPL wells were deactivated while the TFO was undergoing repairs. Extraction well CW-9 underwent repairs in December 1995 through February 1996 to repair a minor leak in the conveyance piping. CW-17 was started up in August 1995 and has maintained fairly consistent groundwater extraction rates since September.

The only required maintenance on the WPL wells is bimonthly cleaning of the y-strainers. The current maintenance program has maintained reliable operation of extraction wells CW-9, CW-13, CW-15A, and CW-17.

7.4 Groundwater Chemistry

VOC concentrations are greatest near the north end of Building 4 (CW-15A). TCE is the dominant VOC species at the northern portion of the WPL Area, whereas PCE dominates to the south. Plate 1 presents a summary of predominant VOC distribution throughout the WPL Area, and Tables A-2 and A-3 in Appendix A detail the chemical analyses performed on groundwater samples collected during the report period.

Trends in the groundwater chemistry from the four individual WPL extraction wells are shown graphically on Figures 19 through 22. Overall, VOC concentrations have decreased over the past year in extraction wells CW-9, CW-15A, and CW-17, and remained approximately the same in CW-13.

8.0 OFF-SITE WATER SUPPLY WELL MONITORING

A regular quarterly sampling program of off-site groundwater supplies adjacent to and downgradient of the Harley-Davidson property was initiated in April 1988. Five groundwater supplies designated "RW" for a residential well and "S" for a spring sample were included in this sampling program during the report period:

1. RW-4 - Folk residence.
2. RW-5 - Giambalvo Pontiac.
3. RW-6 - Quarry on Sand Bank Road
4. S-6 - Hollinger spring.
5. S-7 - Wilhide spring.

Groundwater sampling locations RW-4, RW-6, S-6, and S-7 are located to the north of the Harley-Davidson property and RW-5 is located southwest of the site as shown on Plate 1. A complete description of baseline sampling of residential wells is contained in the R. E. Wright Environmental, Inc. report, entitled "Report of Investigations in the NPBA, TCA tank, and containment areas of the Harley-Davidson, Inc. York facility," dated August 1988.

The off-site samples were analyzed for VOCs and free and total cyanide. Analytical results for the five locations are presented in Table A-5 of Appendix A.

Analytical results of the samples collected from the off-site wells and springs indicate the absence of cyanide in all locations sampled. VOCs were not detected in any of the samples except for the RW-5 and S-6 samples.

In the RW-5 samples, the following VOCs were detected:

VOC	Concentration Range (μg/l)	*MCL (μg/l)	# Positive Results/ # Samples
Chloroform	<1 - 2	100	3/4
PCE	<1 - 2	5	3/4
TCE	3 - 13	5	4/4
* MCL - Maximum Contaminant Level (Federal Drinking Water Standard).			

As shown on the above table and in Appendix Table A-5, the federal drinking water standard is exceeded for TCE. In samples collected during the previous report period from RW-5 (July 1994 through June 1995), the following VOCs were detected:

VOC	Concentration Range (μg/l)
Chloroform	3-9
PCE	ND-8
TCE	2-57
1,2-DCE (total)	ND-2

Chloroform, PCE, and TCE concentrations have decreased in comparison to the previous report period. 1,2-DCE, which was detected in three of the five samples collected during the previous report period (July 1994 through June 1995), was not detected during the current report period.

In the four S-6 samples, chloroform was consistently detected between a concentration of one to two μg/l. The MCL for chloroform is 100 μg/l, so the presence of this compound is not considered a potential health threat.

A trip blank sample accompanied each set of off-site samples to help assure a measure of quality control. VOCs were detected in two of the four (September and December 1995) trip blanks. Low concentrations (2-4 ppb) of 1,2-dichloropropane, 1,2-DCE, and chloroform were detected in the September 1995 trip blank. According to accepted EPA data validation procedures, associated samples with detected concentrations of these analytes (up to ten times the concentration detected in the blank) should be qualified with a "B" (on Table A-5) to indicate potential contamination by the blank. The qualified samples were chloroform results for RW-5 and S-6 during the September sampling round.

49 μg/l of chloroform and 9 μg/l of dichlorobromomethane were detected in the December 1995 trip blank. Associated samples with detected concentrations of these analytes were qualified with a "B". The qualified samples were chloroform results for RW-5 and S-6 during the December 1995 sampling round.

No VOCs were detected in the March and June 1996 trip blanks.

9.0 RECOMMENDATIONS

The current bimonthly preventative maintenance program has pro-actively facilitated continuous operation of the groundwater extraction and treatment systems with few exceptions during the report period. R. E. Wright therefore recommends the current program be maintained to help assure continuous future operation of these systems.

The current groundwater monitoring program involves measuring groundwater levels and sampling/analyzing groundwater from on and off-site locations. R. E. Wright feels the current monitoring program provides sufficient data to assess the effectiveness of the collection and treatment systems.

R. E. Wright recommends the current maintenance and monitoring programs be continued during the next report period (July 1, 1996 through June 30, 1997). Maintenance of the three-inch diameter PVC conveyance line leading from the NPBA area to the groundwater treatment plant should be expanded during 1997 to ensure uninterrupted operation of the NPBA system. This may include the addition of cleanouts at two or three points along the line. An effort will be made to collect sufficient flow and pressure data to determine if the conveyance line is becoming restricted by a buildup of silt and/or encrustation. Future modifications will be recommended if necessary as additional data becomes available.

Biweekly monitoring of the Site Boss® system has continued to improve response time to system alarms and has helped optimize operation of the groundwater extraction and treatment systems. R. E. Wright recommends that the biweekly SiteBoss® monitoring be continued.

R. E. Wright's February 1995 operations report recommended an "effort be made to locate a source of VOCs near CW-1A and CW-7A, and if appropriate, initiate enhanced remediation." The upcoming site-wide remedial investigation/feasibility study (RI/FS) Work Plan includes investigations in this area. Additionally, R. E. Wright recommends measuring water levels in residential wells north of the NPBA to help characterize groundwater flow patterns in this area.

Finally, the presence of VOC's in the off-site well RW-5 (Giambalvo Pontiac), located south of the Harley-Davidson property, is currently being addressed under a separate investigation.

10.0 REFERENCES

Stose, G. W. and A. I. Jonas; 1939; *Geology and Mineral Resources of York County, Pennsylvania*; Pennsylvania Geological Survey Bulletin C-67.

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R. E. Wright Associates, Inc.; August 1987; *Groundwater Investigation at the Harley-Davidson, Inc. York Facility.*

R. E. Wright Associates, Inc.; August 1988; *Report of Investigations in the Northeastern Property Boundary, TCA Tank, and Containment Areas of the Harley-Davidson, Inc. York Facility.*

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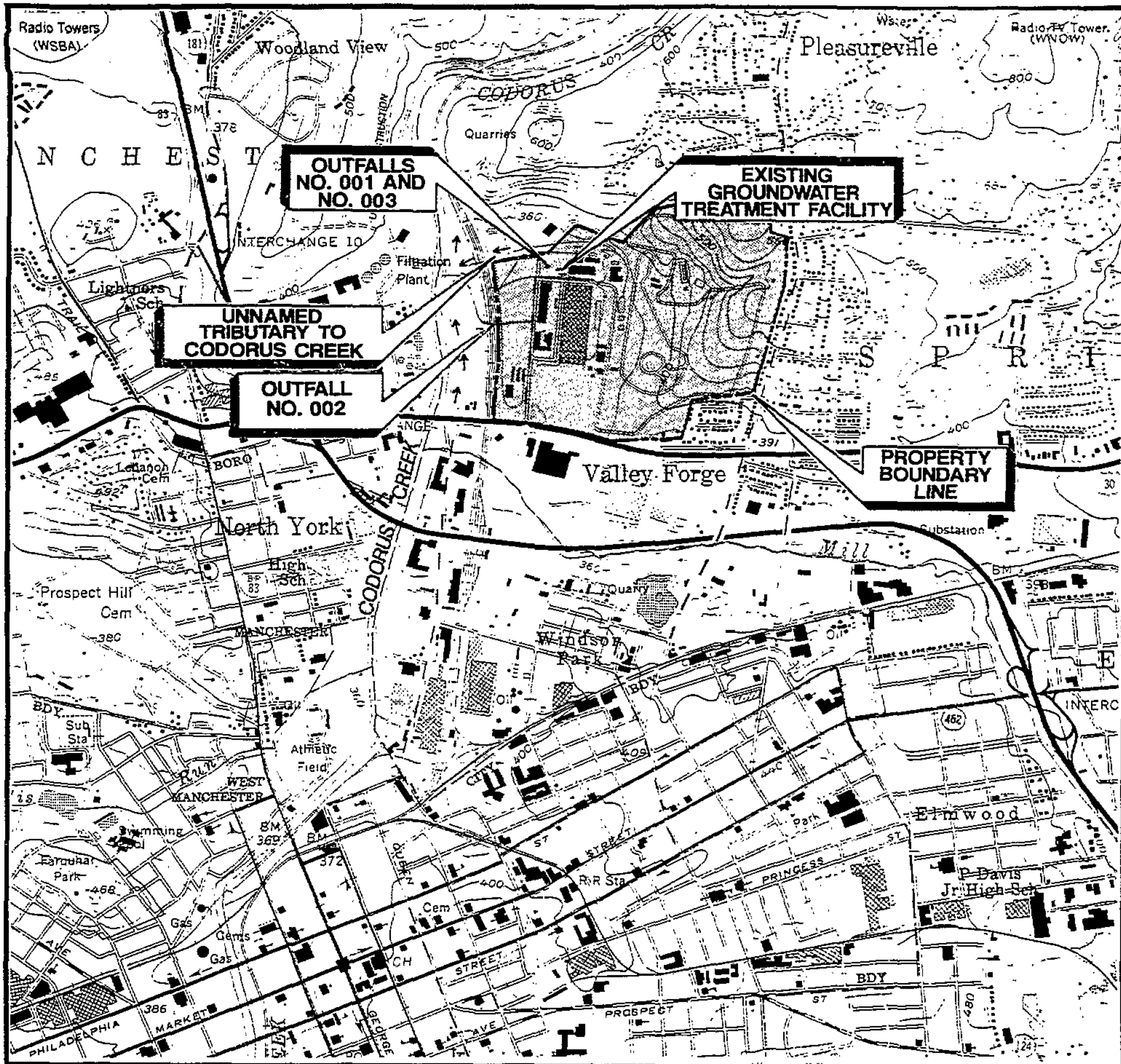
R. E. Wright Environmental, Inc.; July 1995; *Soil and Groundwater Investigation and Remediation Surrounding the Building 2 Vapor Degreaser*; *Harley-Davidson, Inc., York, Pennsylvania.*

R. E. Wright Environmental, Inc.; December 1995; *Groundwater Extraction and Treatment System Annual Operations Report*; *Harley-Davidson, Inc., York, Pennsylvania.*

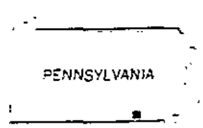
FIGURES



NOTE: BASE MAP FROM THE YORK PA USGS 7 1/2 MINUTE TOPOGRAPHIC QUADRANGLE (PR 1990)

2000' 0 2000'

SCALE IN FEET



QUADRANGLE LOCATION

FIGURE 1

HARLEY-DAVIDSON, INC. YORK FACILITY		
SITE LOCATION MAP		
drawn SS	approved MCM	drawing no. **92548-003-AA**
checked MCM	date 1/7/93	

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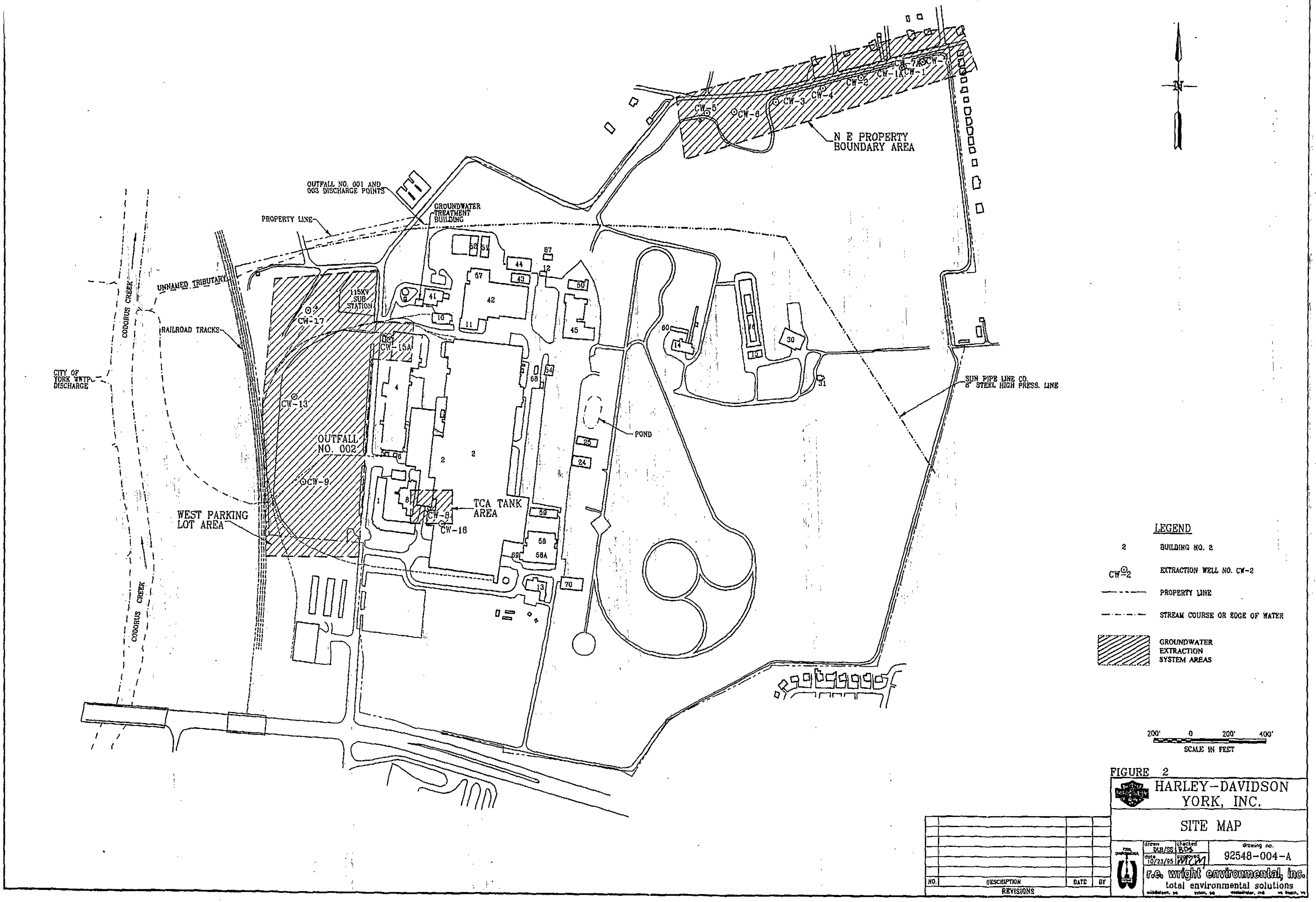
total environmental solutions
middletown, pa · wayne, pa · westminster, md


N
N E PROPERTY BOUNDARY AREA
CW-1
CW-1A
CW-2
CW-3
CW-4
CW-5
CW-6
CW-7A
OUTFALL NO. 001 AND 003 DISCHARGE POINTS
GROUNDWATER TREATMENT BUILDING
PROPERTY LINE
UNNAMED TRIBUTARY
115KV SUB STATION
CW-17
CODORUS CREEK
RAILROAD TRACKS
CW-15A
CITY OF YORK WWTP DISCHARGE
CW-13
OUTFALL NO. 002
CW-9
WEST PARKING LOT AREA
TCA TANK AREA
CW-8
CW-16
POND
SUN PIPE LINE CO. 8" STEEL HIGH PRESS. LINE
LEGEND
2 BUILDING NO. 2
CW-2 EXTRACTION WELL NO. CW-2
PROPERTY LINE
STREAM COURSE OR EDGE OF WATER
GROUNDWATER EXTRACTION SYSTEM AREAS
200' 0 200' 400'
SCALE IN FEET
FIGURE 2
HARLEY-DAVIDSON YORK, INC.
SITE MAP
drawn DLB/SS
checked BDS
date 10/23/95
drawing no. 92548-004-A
NO. DESCRIPTION DATE BY
REVISIONS
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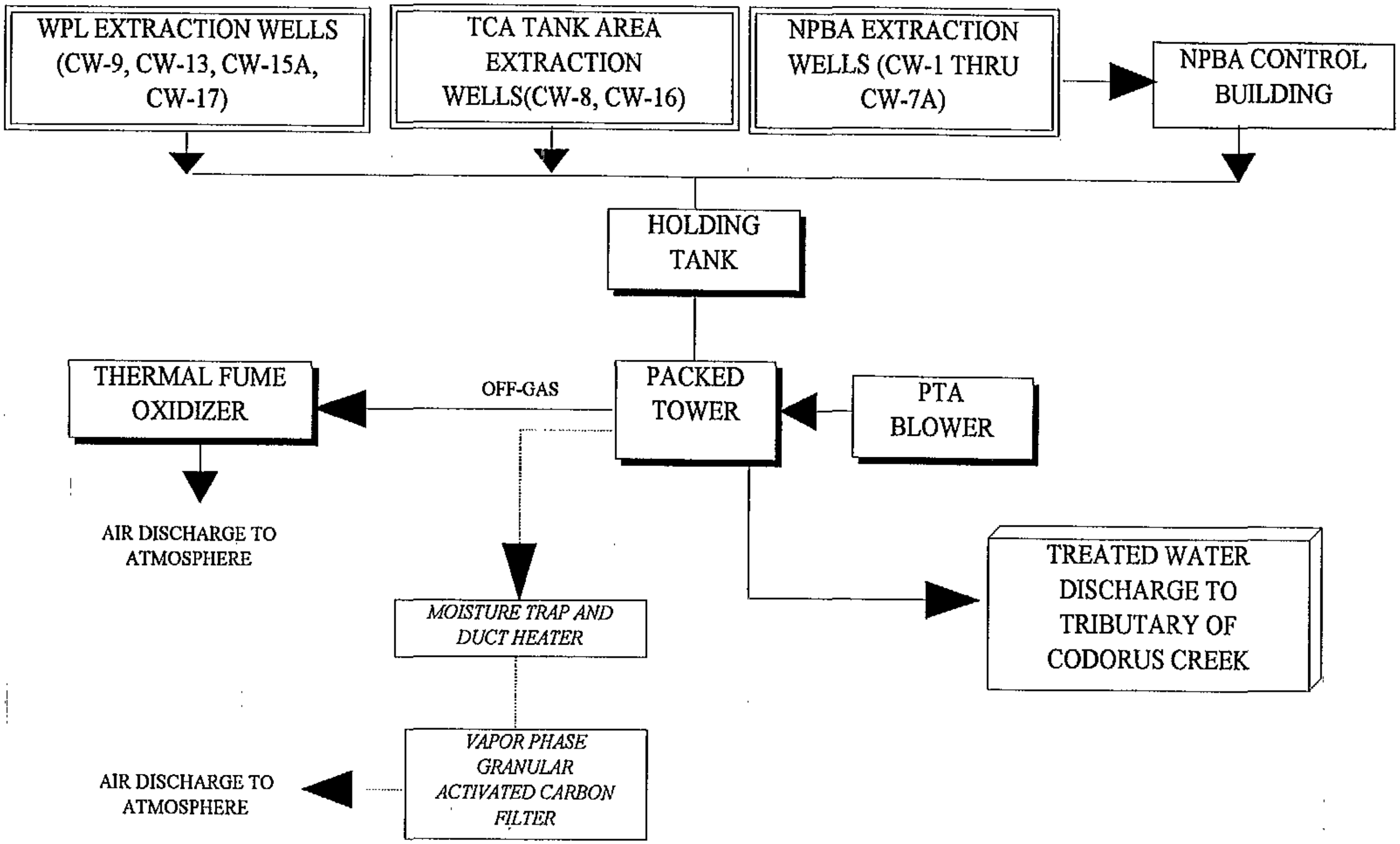
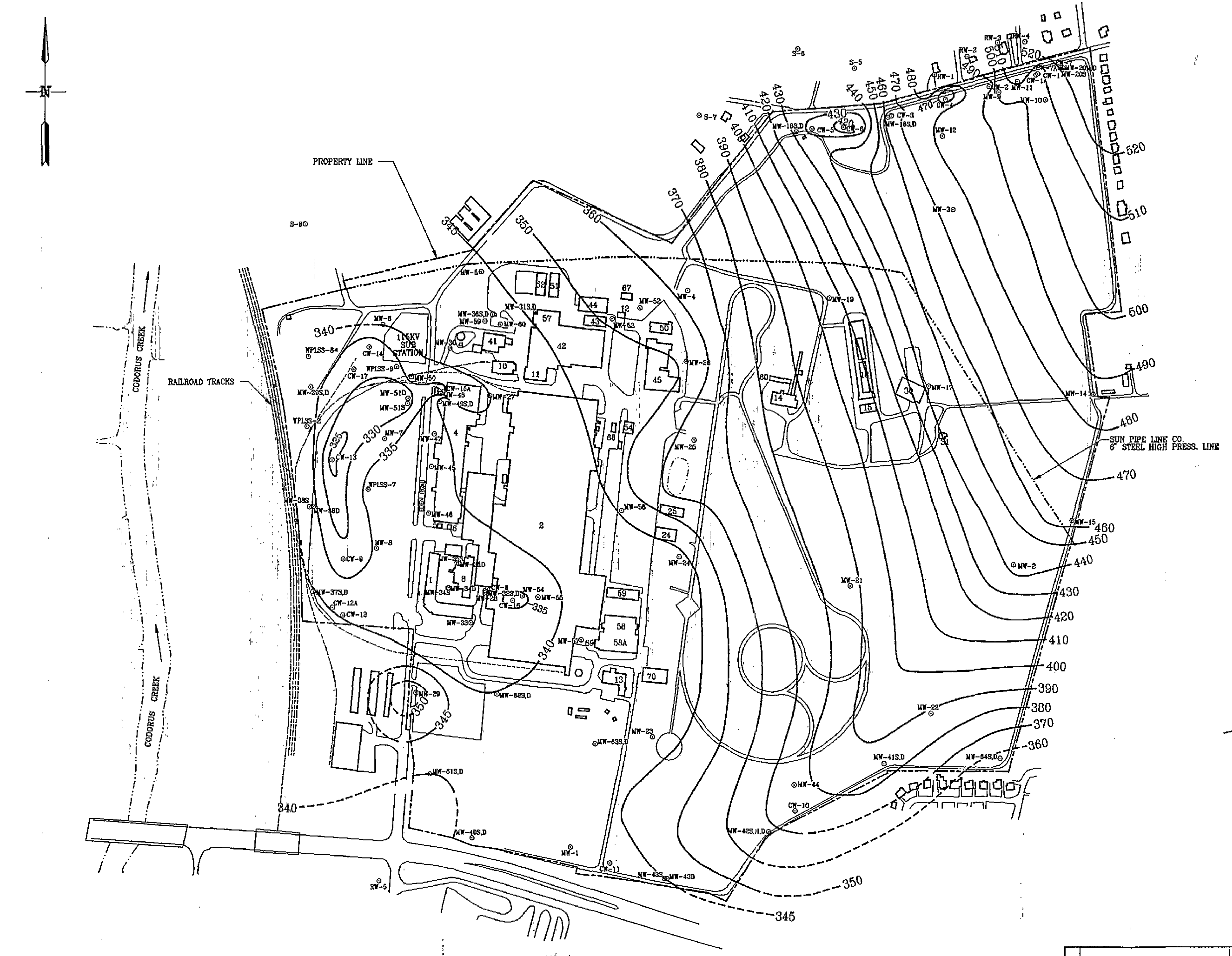
total environmental solutions

FIGURE 3
GROUNDWATER TREATMENT SYSTEM
Harley - Davidson Motor Company





11/6/95 GROUNDWATER SURFACE ELEVATIONS, AND
APPROXIMATE DAILY PUMPING RATES FROM "CW" WELLS
HARLEY-DAVIDSON MOTOR COMPANY
REWEI Project 96003

WELL ID	ELEVATION *	PUMPAGE **	WELL ID	ELEVATION *
CW-1	501.68	5,350	MW-24	342.44
CW-1A	508.85	60	MW-25	366.88
CW-2	486.88	690	MW-26	350.88
CW-3	463.21	5,660	MW-27	340.42
CW-4	465.47	4,420	MW-28	338.58
CW-5	423.16	830	MW-29	351.86
CW-6	418.23	6,370	MW-30	342.77
CW-7	501.19	670	MW-31S	345.80
CW-7A	527.36	70	MW-32S	338.54
CW-8	336.77	138,700	MW-34S	338.77
CW-9	330.93	77,120	MW-35S	<342.5
CW-10	374.76	NO	MW-36S	342.89
CW-11	341.40	NO	MW-37S	340.06
CW-12	339.10	NO	MW-38S	336.87
CW-12A	338.57	NO	MW-39S	337.40
CW-13	323.86	89,650	MW-40S	341.26
CW-14	331.68	NO	MW-41S	386.82
CW-15	335.84	NO	MW-42S	<376.4
CW-15A	331.79	5,930	MW-43S	345.47
CW-16	332.72	24,600	MW-44	377.89
CW-17	331.54	55,270	MW-45	339.26
MW-1	341.53		MW-46	339.10
MW-2	443.29		MW-47	337.00
MW-3	475.29		MW-48	<340.5
MW-4	361.65		MW-49S	340.23
MW-5	342.75		MW-50S	305.66 E
MW-6	340.45		MW-51S	333.39
MW-7	331.99		MW-52	356.14
MW-8	335.99		MW-53	352.66
MW-9	503.33		MW-54	335.29
MW-10	509.21		MW-55	337.73
MW-11	511.68		MW-56	346.22
MW-12	487.08		MW-57	341.80
MW-14	487.10		MW-59	342.62
MW-15	463.79		MW-60	344.25
MW-16S	468.22		MW-61S	340.51
MW-17	443.94		MW-62S	339.92
MW-18S	437.61		MW-63S	341.49
MW-19	405.01		MW-64S	<377.3
MW-20S	527.69		WPL-SS-2	337.83
MW-21	387.94		WPL-SS-7	337.49
MW-22	388.94		WPL-SS-8	338.17
MW-23	341.89		WPL-SS-9	DRY

NOTES:
* Elevation in feet above Mean Sea Level.
** Approximate pumpage, in gallons per day.
NO = not operational
"<" = Elevation less than reported value because well was dry at time of water level measurement.
E = Suspected measurement error - value not used in contouring.

LEGEND

—420— — — GROUNDWATER ELEVATION CONTOUR LINE; DASHED WHERE INFERRED (CONTOUR INTERVAL VARIABLE).

FIGURE 4

HARLEY–DAVIDSON INC.

GROUNDWATER ELEVATION CONTOUR MAP – NOVEMBER 6, 1995

NO.	DESCRIPTION	DATE	BY
	REVISIONS		

drawn RAM checked BES date 10/01/95 approved SMS drawing no. 96003-003-C

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total environmental solutions
middletown, pa · exton, pa · westminster, md · va beach, va

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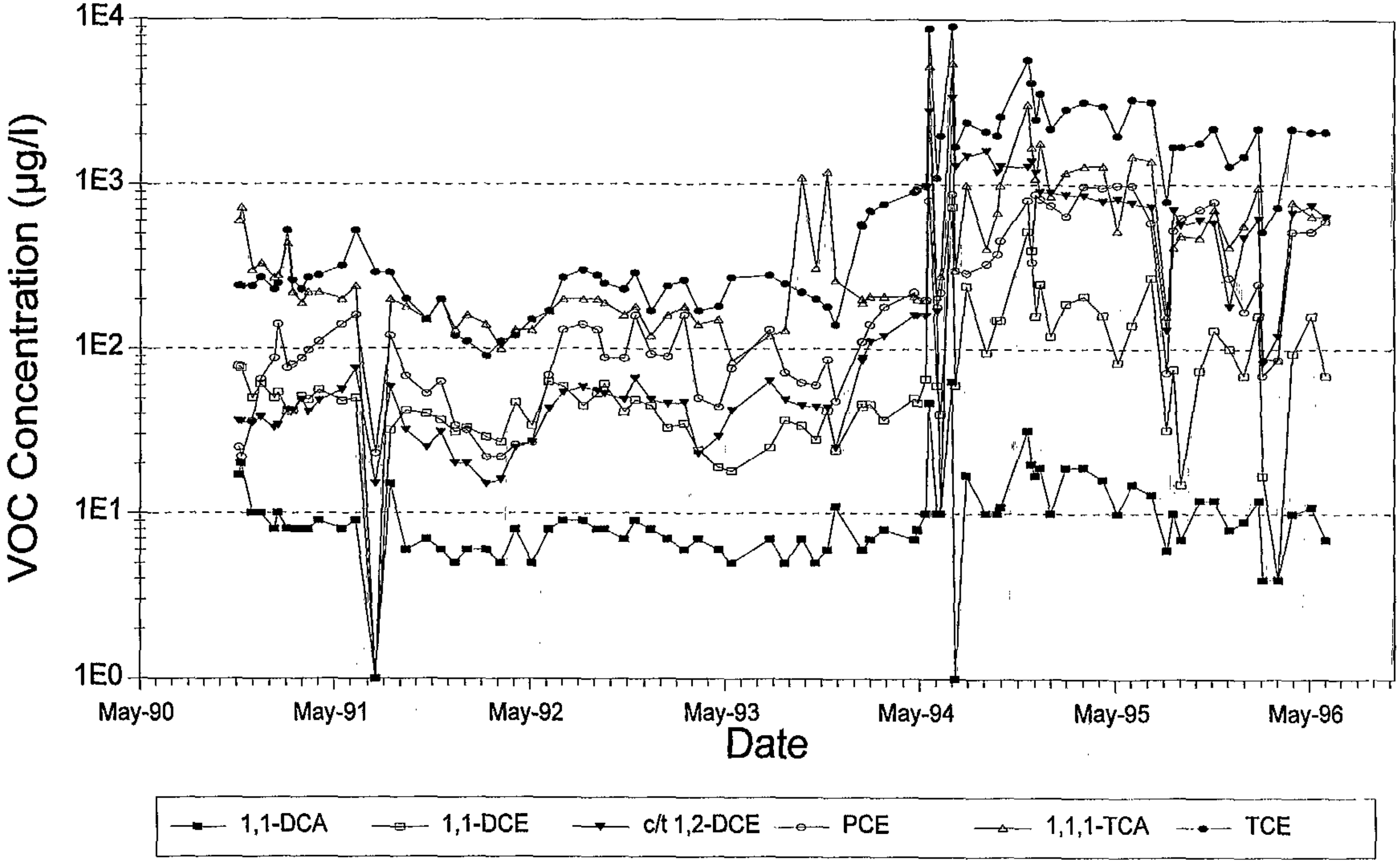
11/18/96

FIGURE 5

Record of Tower Influent Chemistry

Individual VOC Concentrations

Start-up through June 30, 1996



r.e. wright environmental, inc.

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FIGURE 6

Record of Tower Influent Chemistry

Total VOC Concentrations

Start-up through June 30, 1996

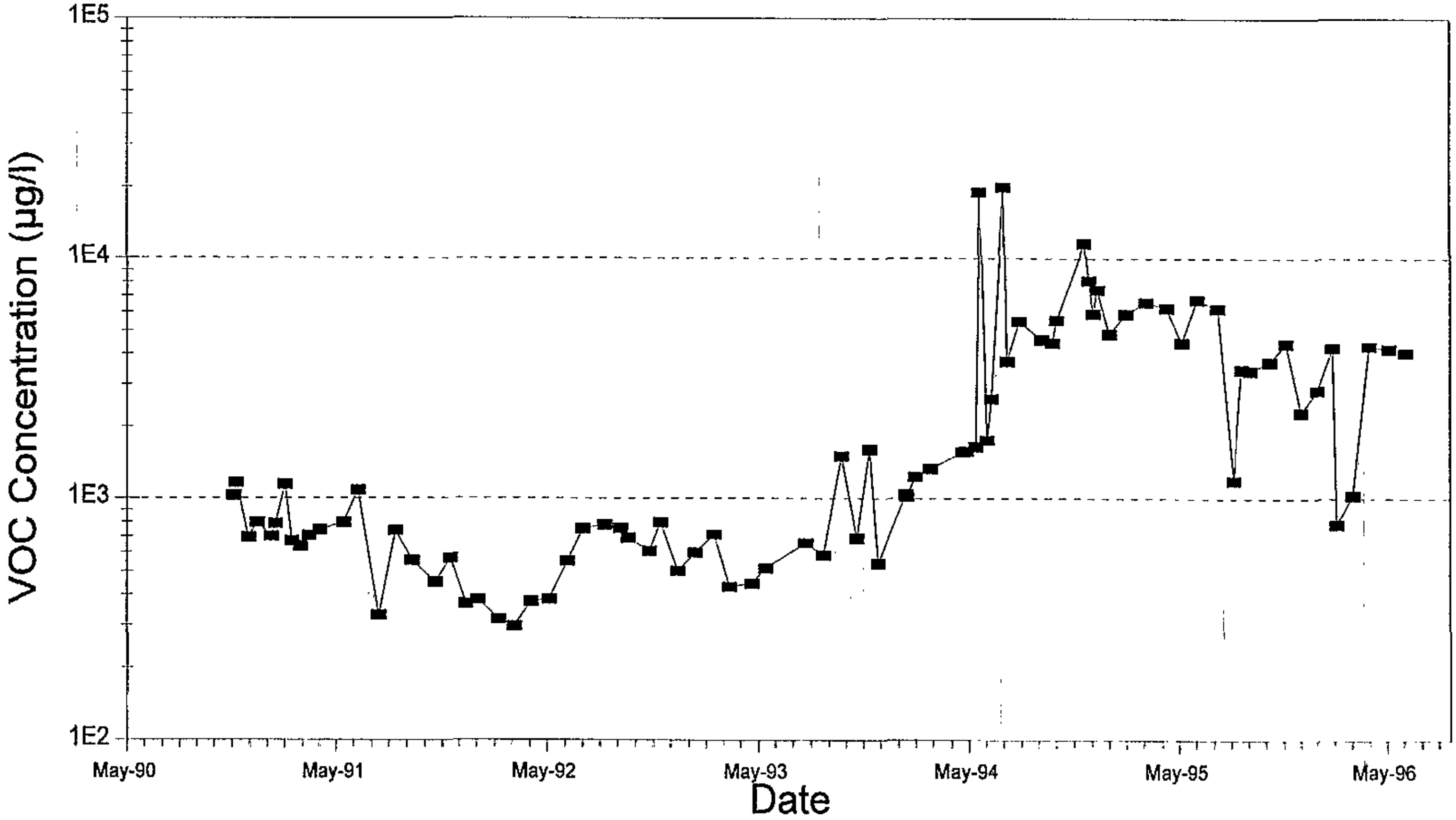

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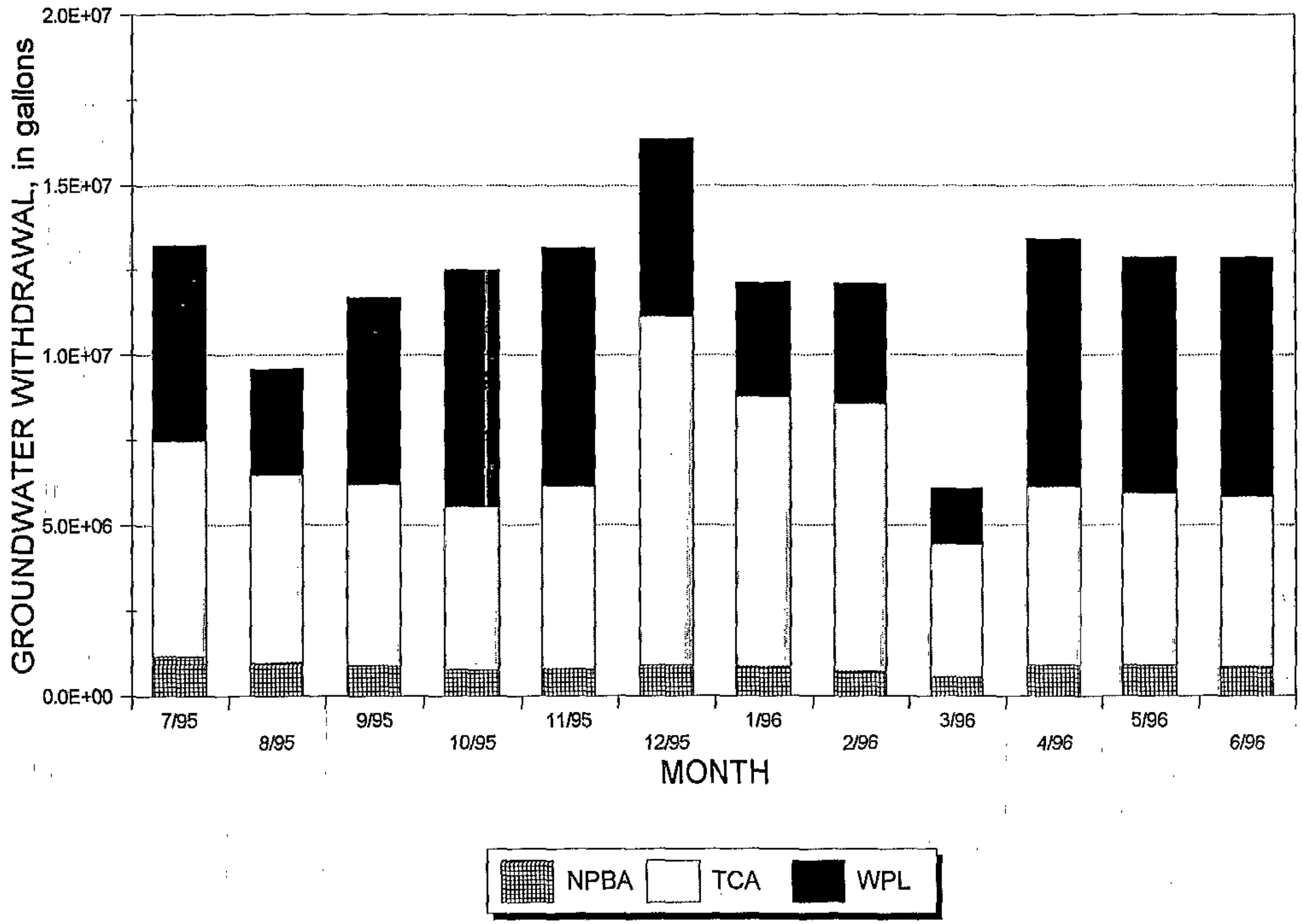
FIGURE 7
GROUNDWATER WITHDRAWALS
GALLONS PER MONTH FOR EACH EXTRACTION WELL AREA



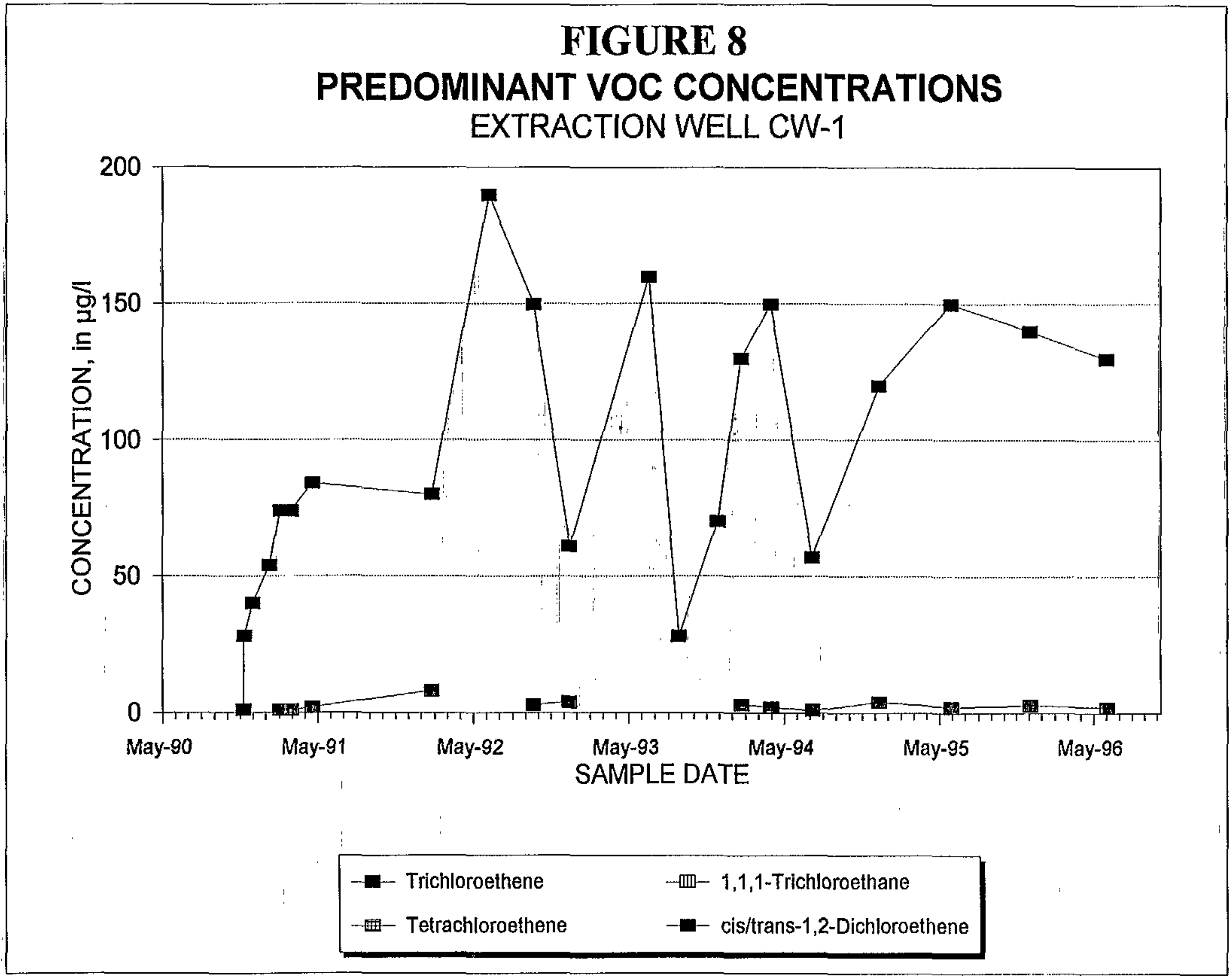


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FIGURE 9
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-1A

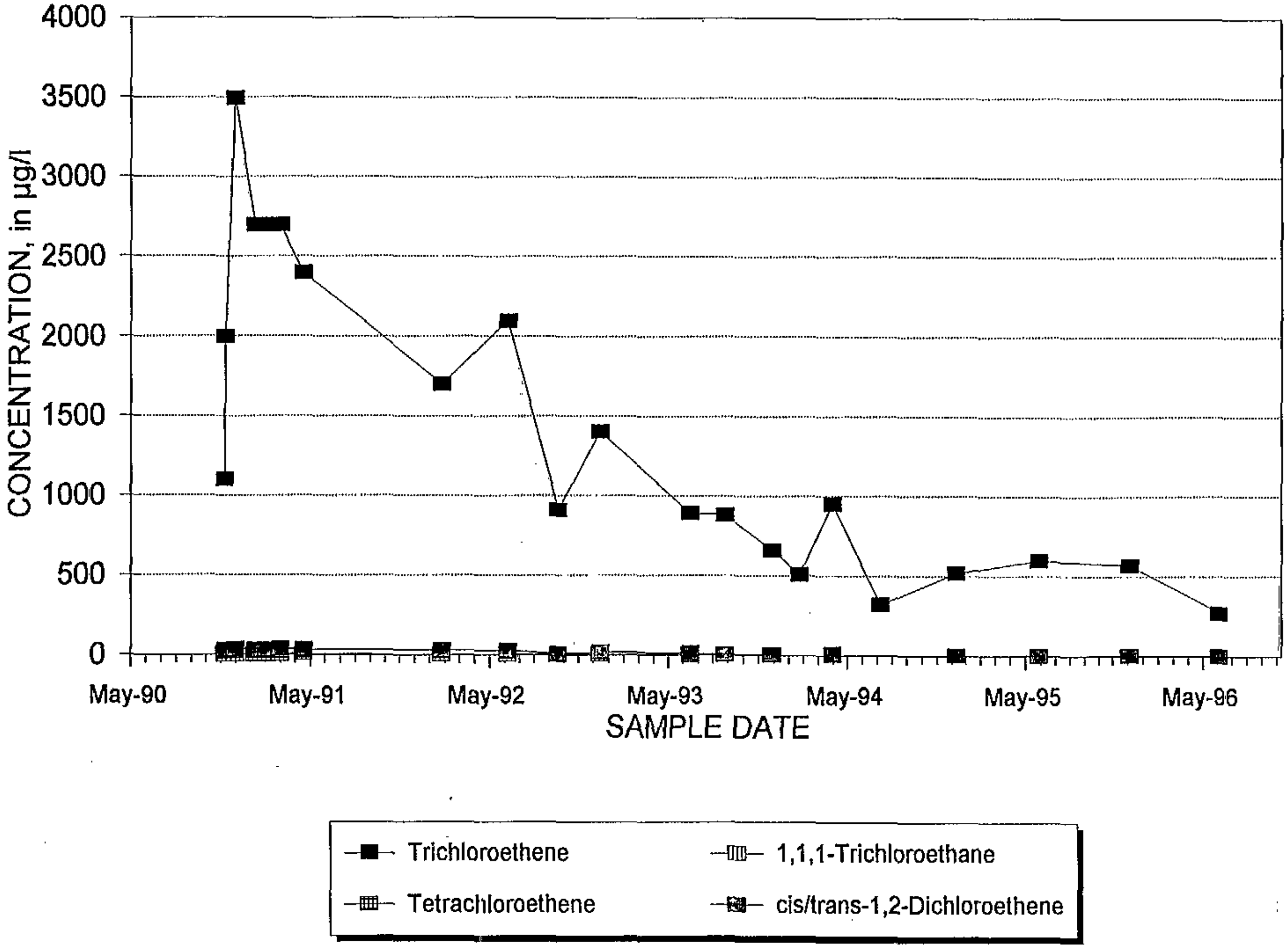


FIGURE 10

PREDOMINANT VOC CONCENTRATIONS

EXTRACTION WELL CW-2

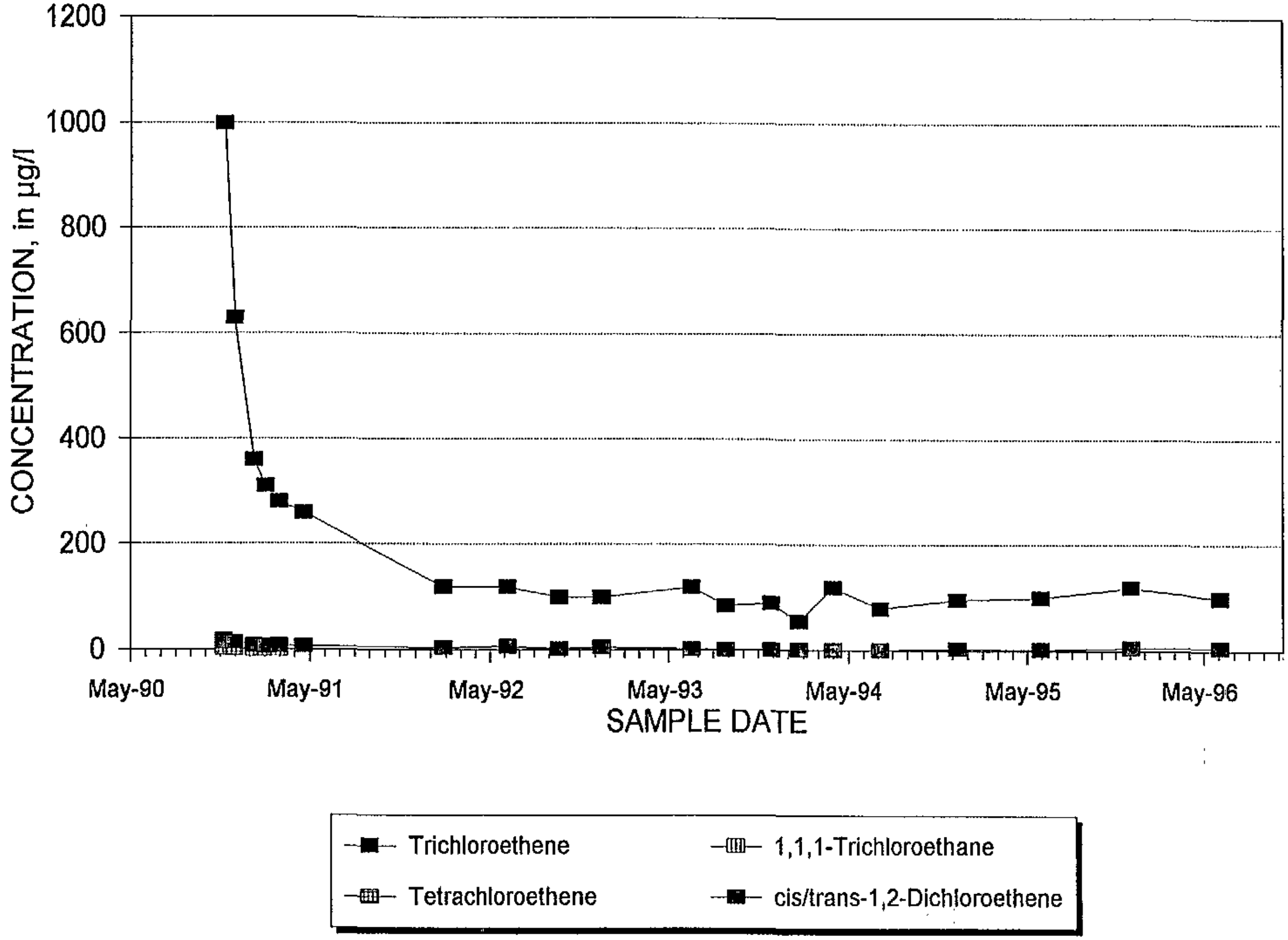


FIGURE 11
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-3

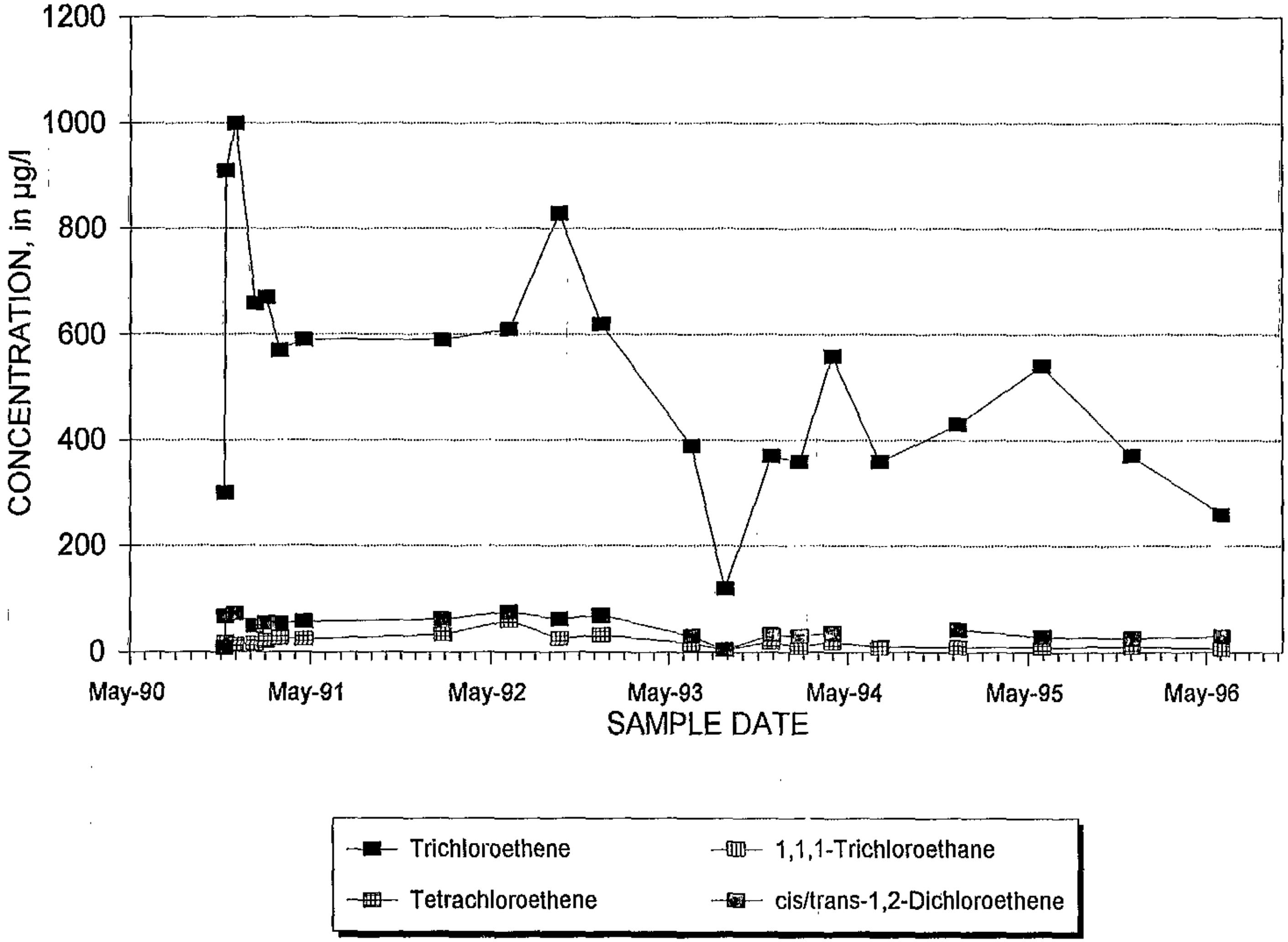


FIGURE 12
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-4

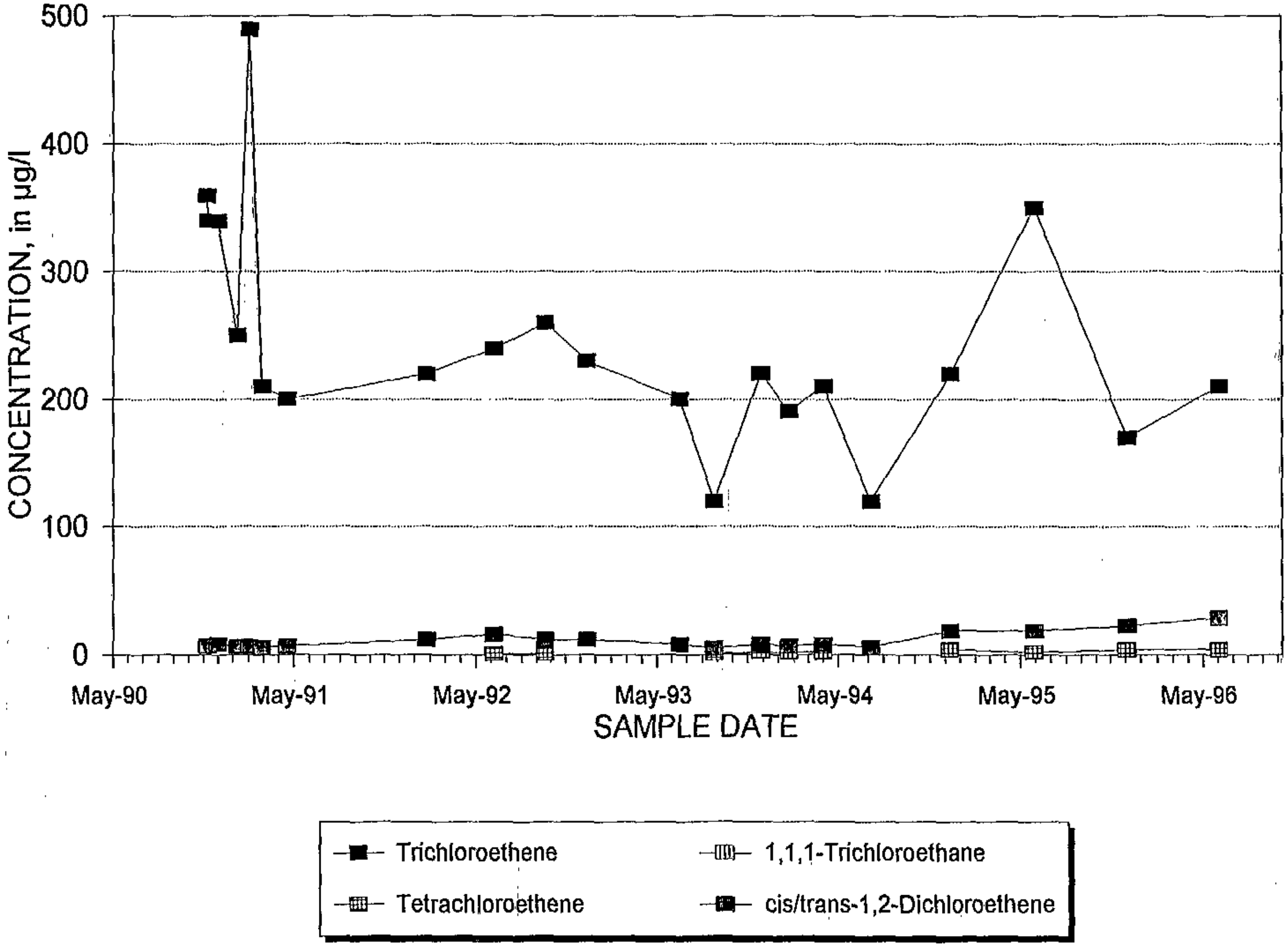


FIGURE 13
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-5

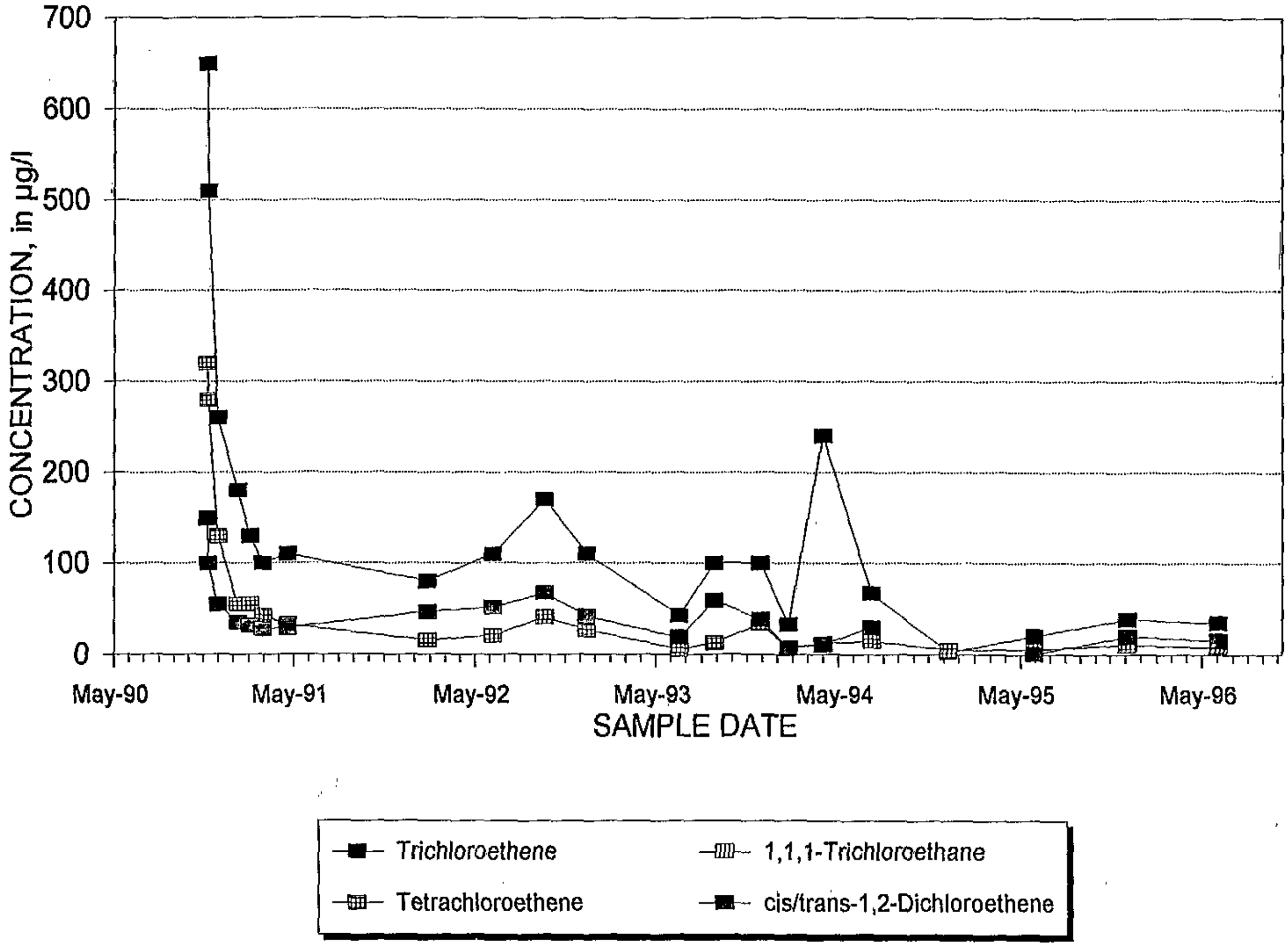
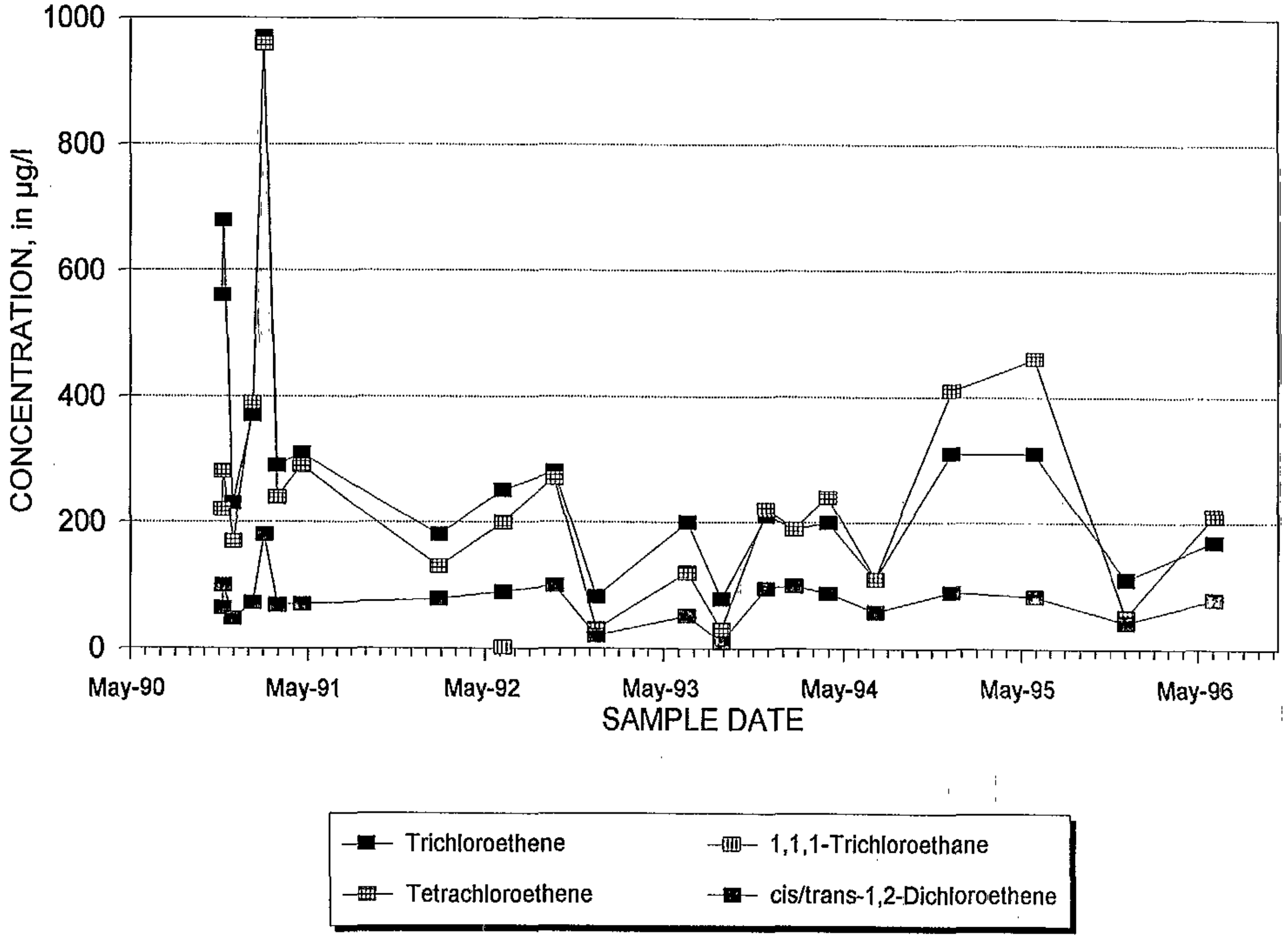


FIGURE 14

PREDOMINANT VOC CONCENTRATIONS

EXTRACTION WELL CW-6



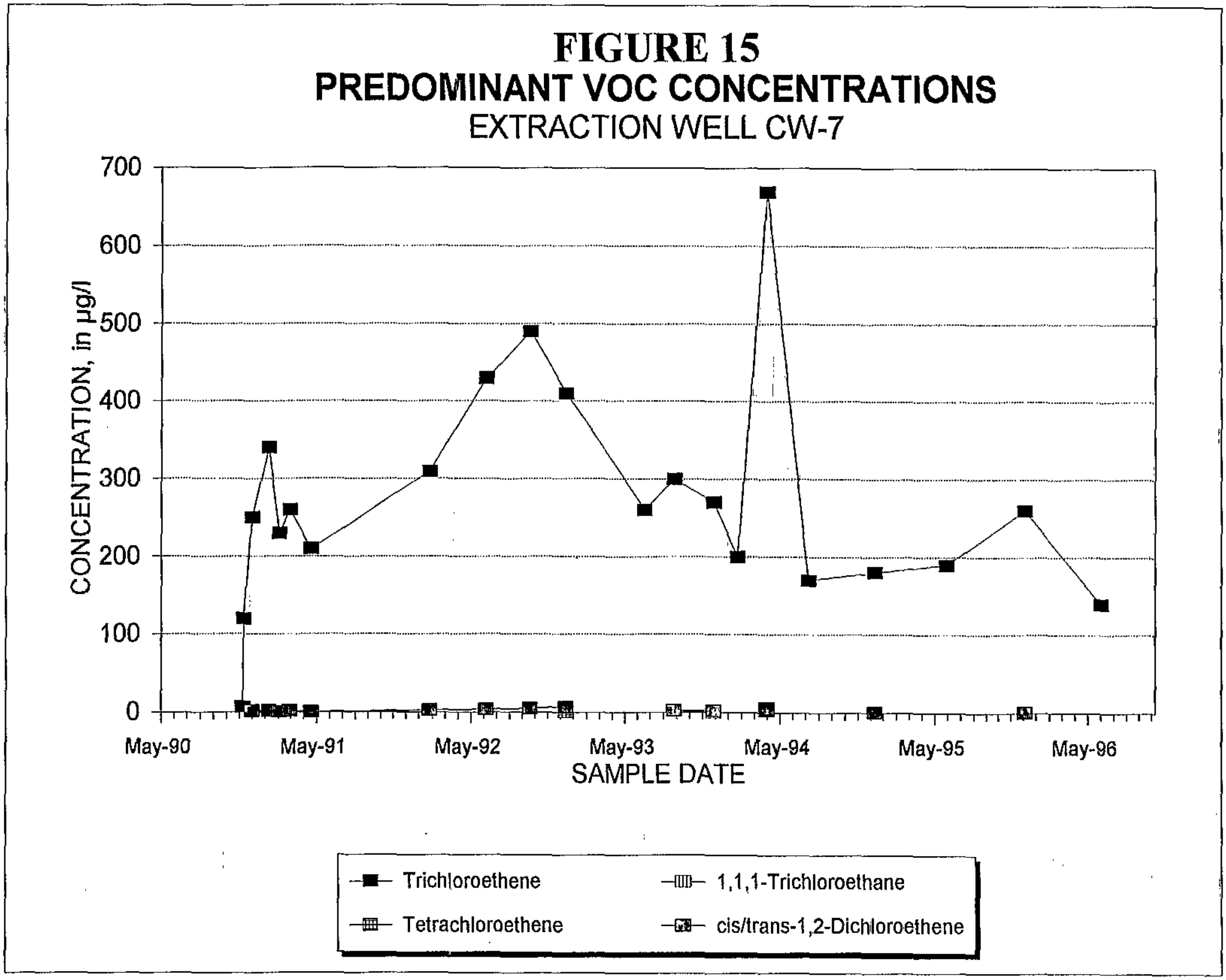


FIGURE 15
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-7
CONCENTRATION, in µg/l
700
600
500
400
300
200
100
0
May-90
May-91
May-92
May-93
May-94
May-95
May-96
SAMPLE DATE
Trichloroethene
1,1,1-Trichloroethane
Tetrachloroethene
cis/trans-1,2-Dichloroethene

FIGURE 16
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-7A

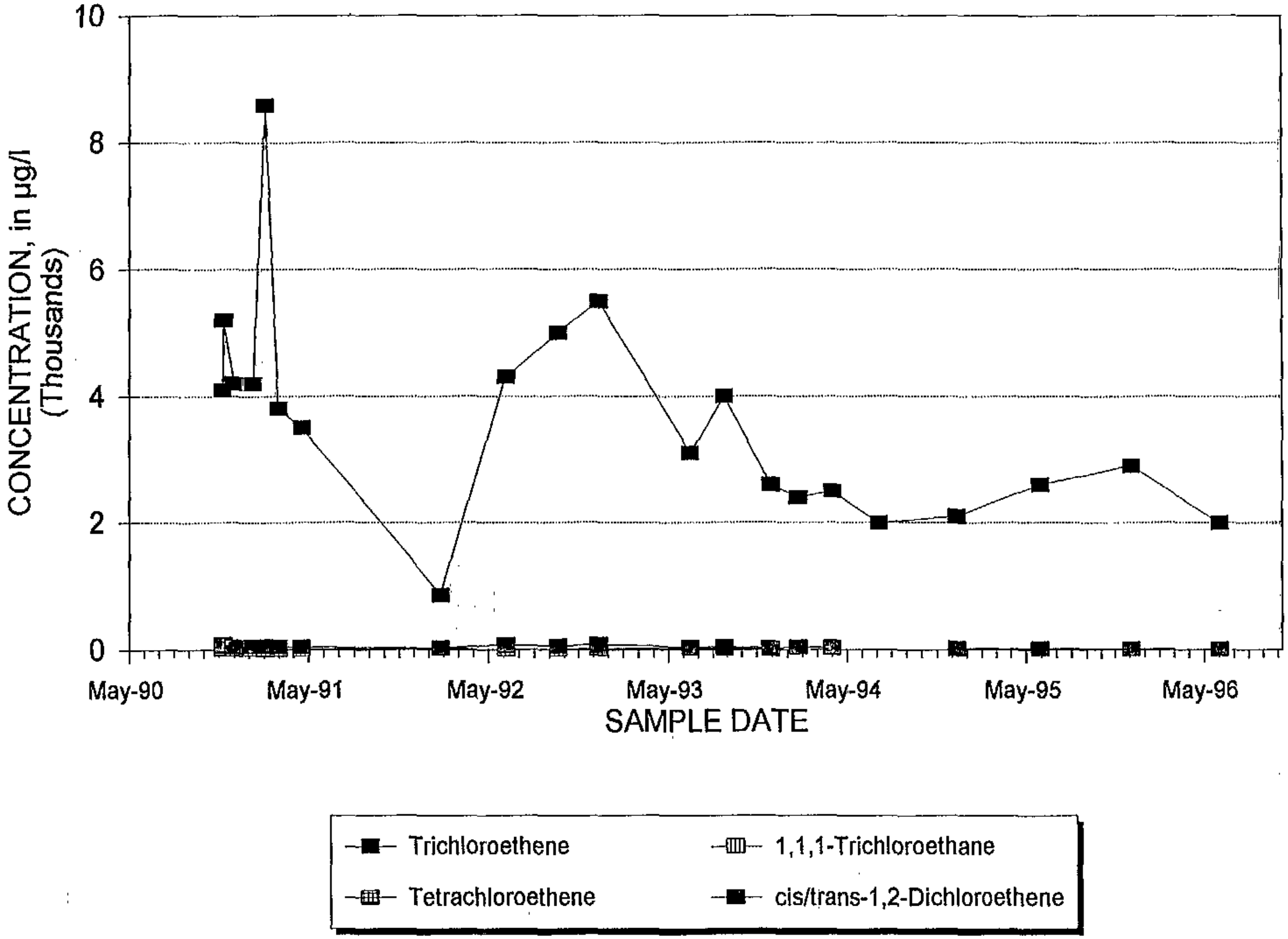


FIGURE 17
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-8

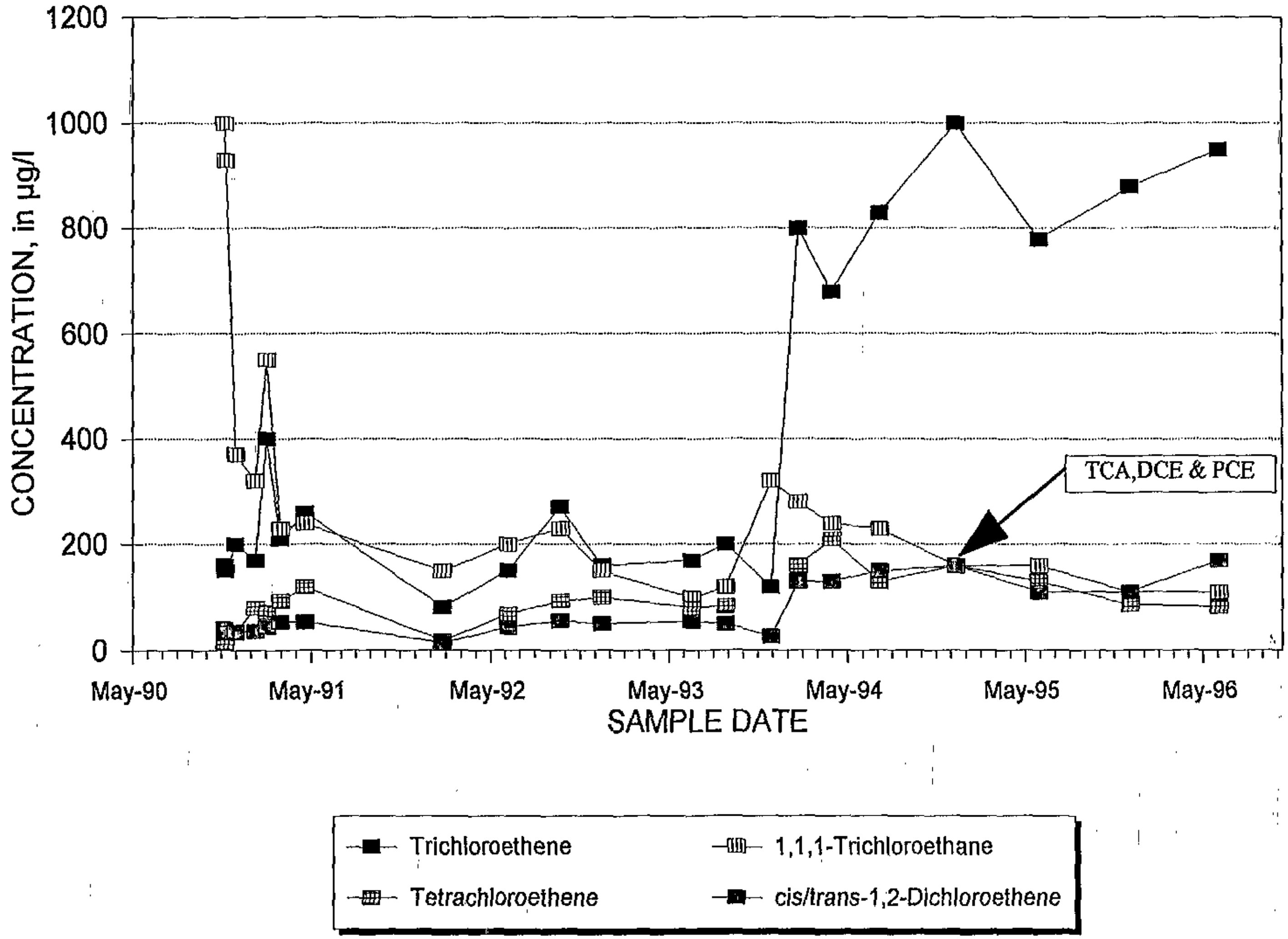


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FIGURE 18
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-16

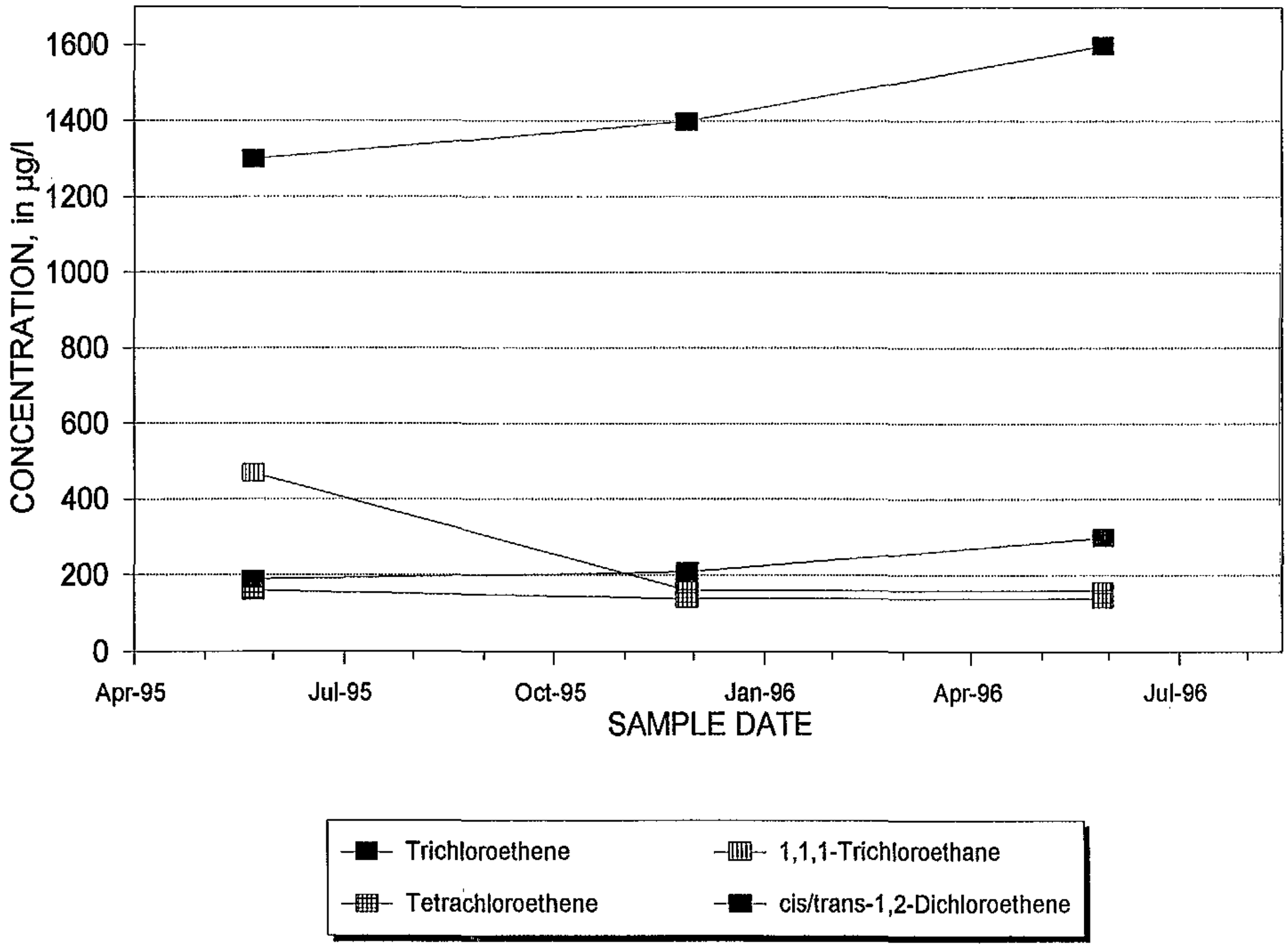

FIGURE 19
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-9

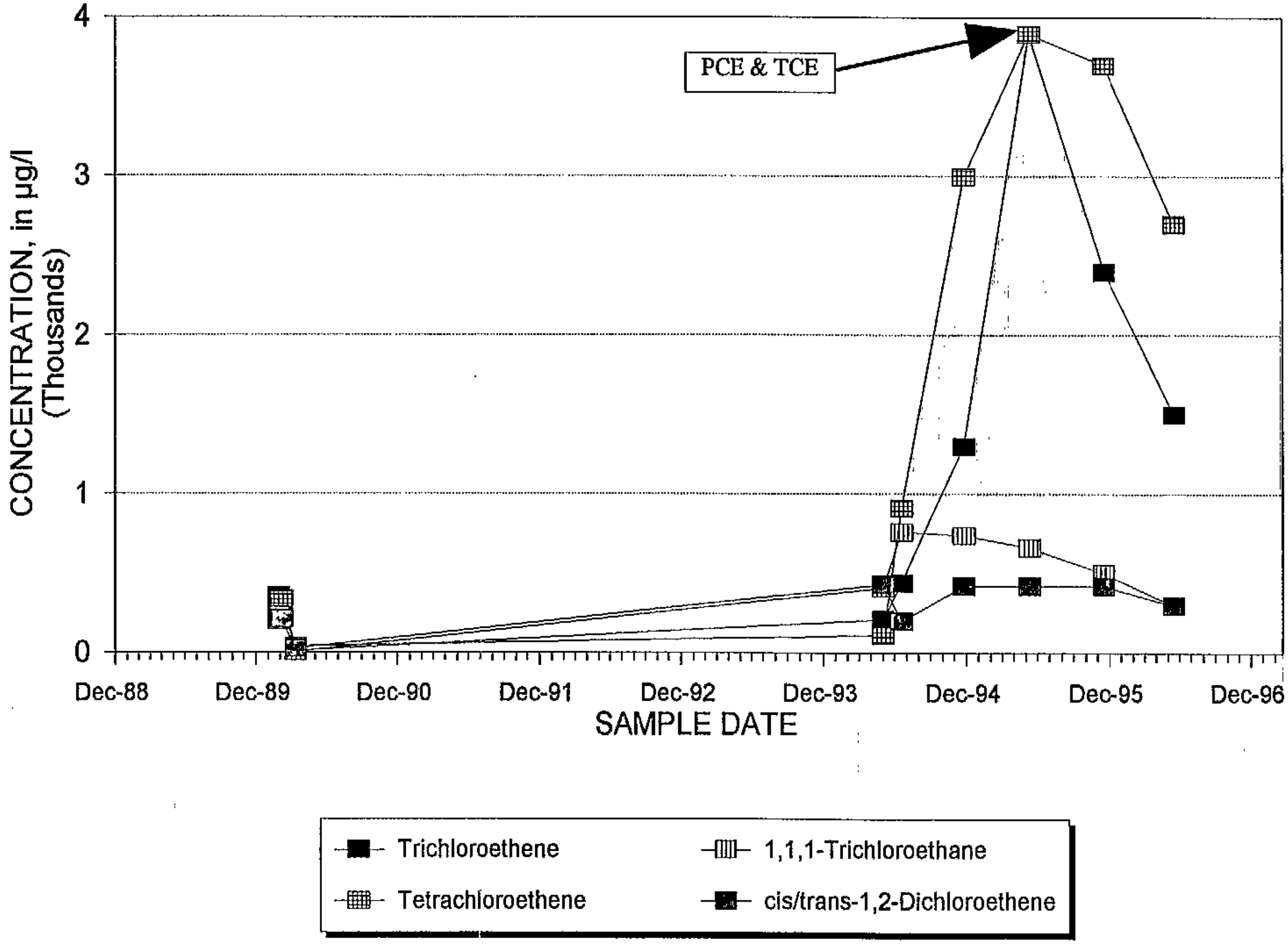

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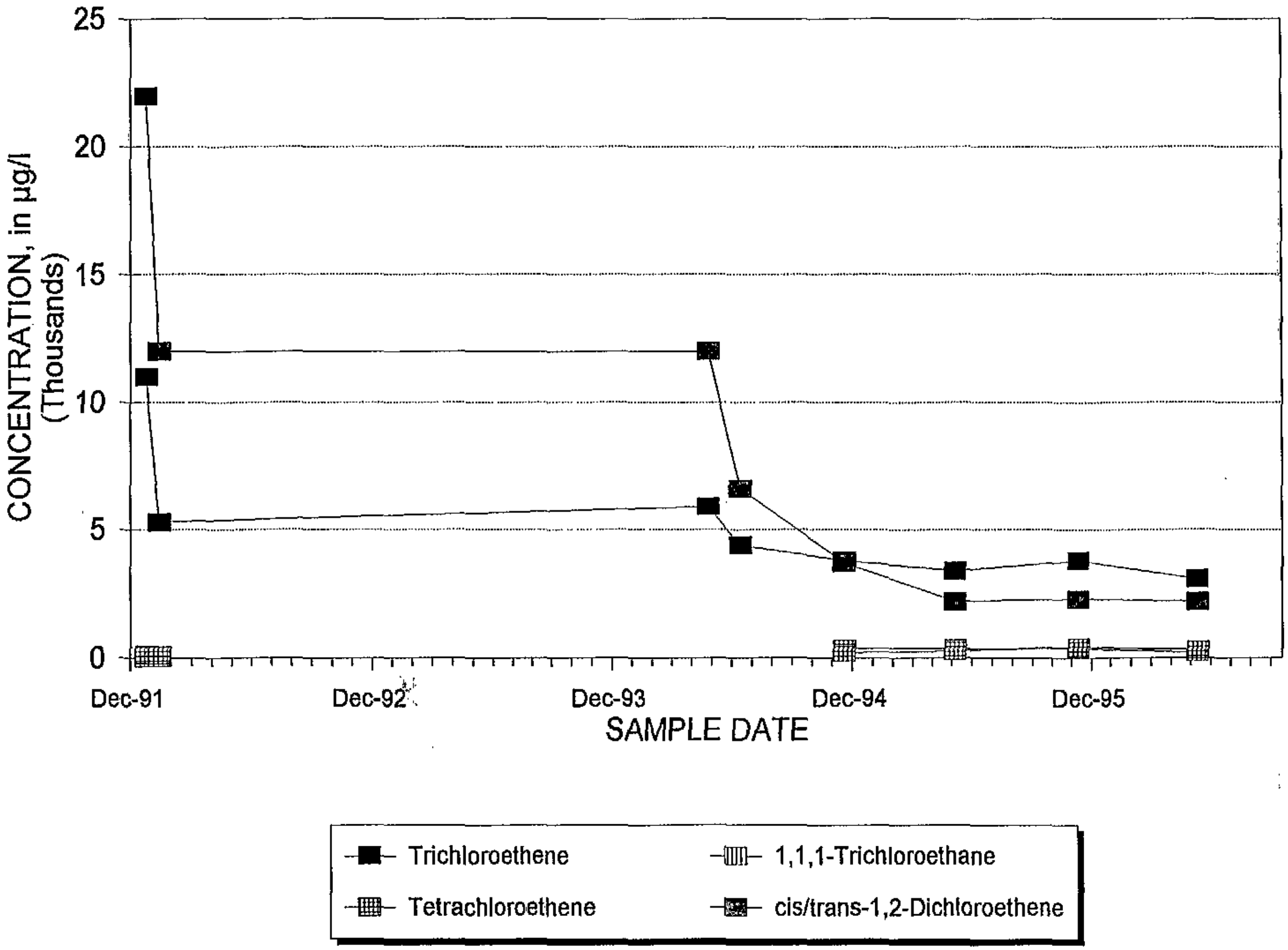
FIGURE 20
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-13



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07/09/96

r.e. wright environmental, inc.

FIGURE 21
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-15A

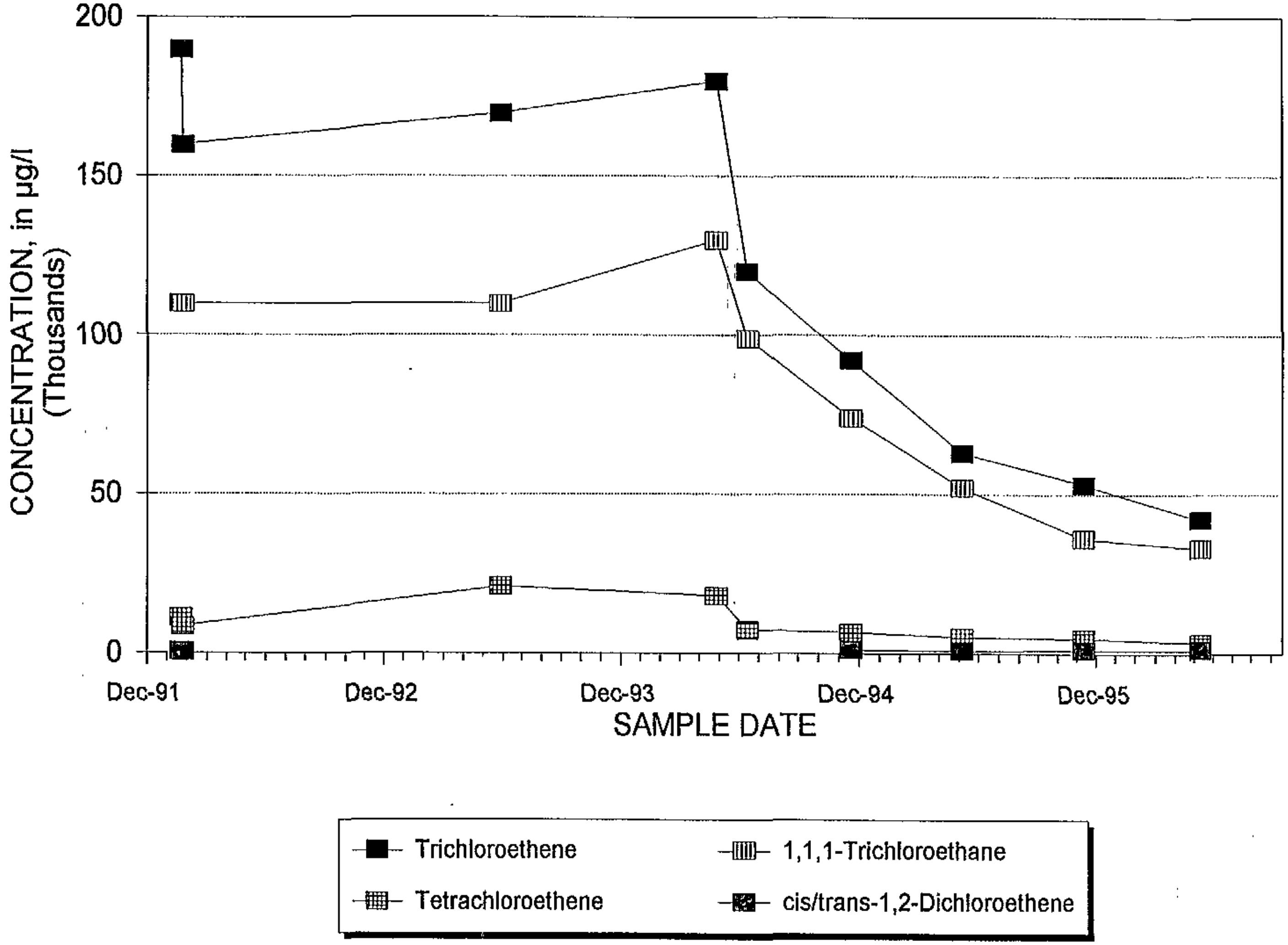
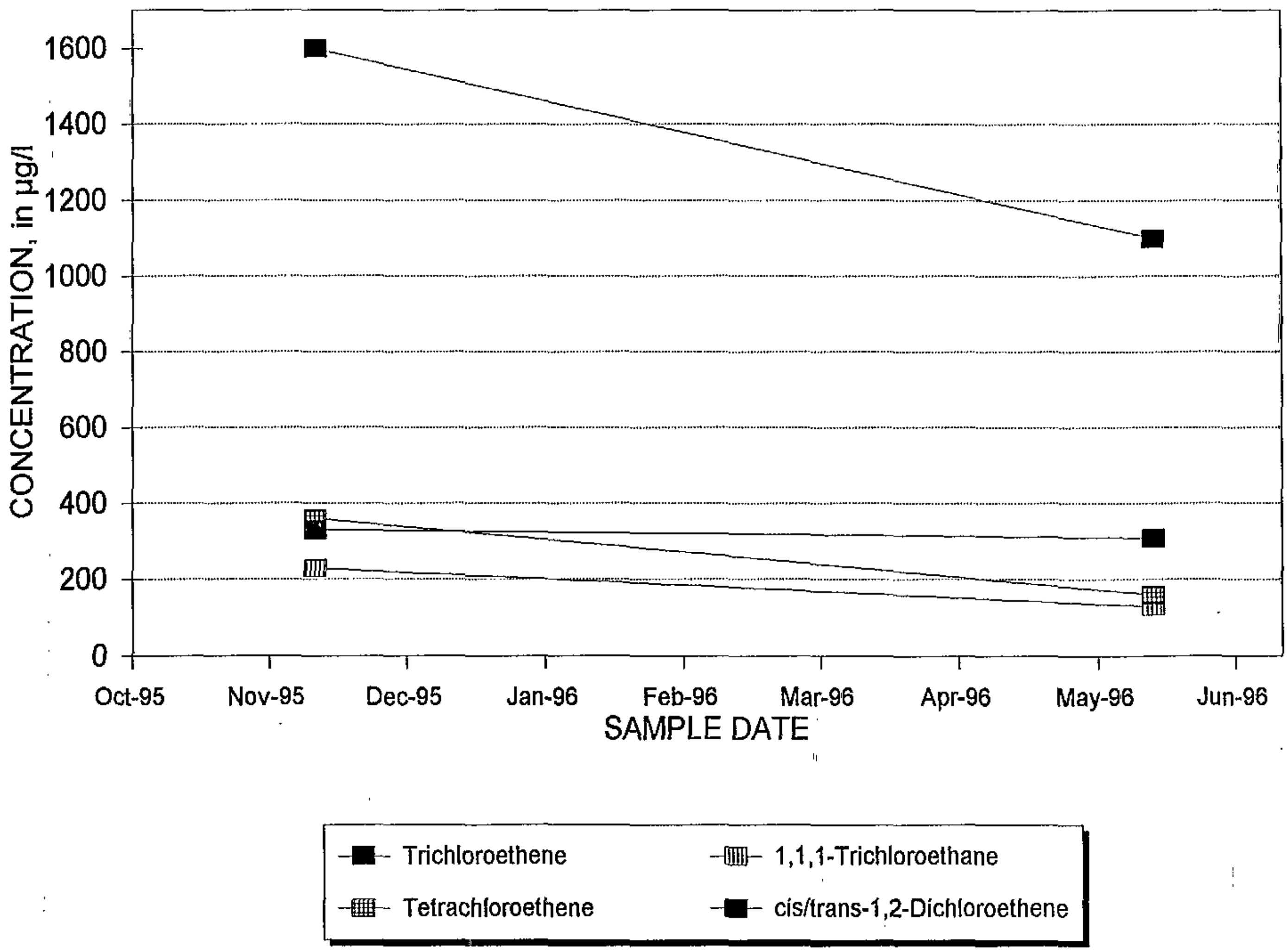


FIGURE 22
PREDOMINANT VOC CONCENTRATIONS
EXTRACTION WELL CW-17



TABLES

TABLE 1

VOCs REMOVED FROM COLLECTED GROUNDWATER

GROUNDWATER TREATMENT SYSTEM

JULY 1, 1995 - JUNE 30, 1996

Harley - Davidson Motor Company

REWEI PROJECT 96003

DATE	MONTHLY GROUNDWATER WITHDRAWAL (gallons)	AVERAGE MONTHLY TOTAL VOCs (ppb)	ESTIMATED MONTHLY VOC REMOVAL (pounds)
JUL 95	13,209,500	6,210	684
AUG 95	9,584,394	2318(1)	185
SEP 95	11,696,768	3,419	334
OCT 95	12,491,074	3,700	386
NOV 95	13,138,384	4,440	487
DEC 95	16,370,060	2,278	311
JAN 96	12,142,949	3521(1)	357
FEB 96	12,105,423	781	79
MAR 96	6,083,932	1,030	52
APR 96	13,412,438	4,308	482
MAY 96	12,865,218	4,203	451
JUN 96	12,865,539	4,061	436

ANNUAL TOTALS

YEAR	YEARLY GROUNDWATER WITHDRAWAL (gallons)		ESTIMATED YEARLY VOC REMOVAL (pounds)
1990 (NOV & DEC)	12,954,886		92
1991	62,458,393		357
1992	66,081,120		322
1993	72,198,940		421
1994	88,387,251		3,905
1995	141,357,856		5,572
JAN 96 - JUN 96	69,475,499		1,857

(1) = MONTHLY TOTAL VOCs ESTIMATED BY AVERAGING VALUES OF TWO SAMPLE ANALYSES COLLECTED DURING MONTH.

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TABLE 2

RECORD OF GROUNDWATER WITHDRAWALS

GALLONS PER MONTH FOR EACH EXTRACTION WELL
JULY 1, 1995 - JUNE 30, 1996
Harley-Davidson Motor Company
REWEI Project 96003

MONTH	NPBA EXTRACTION WELLS										TCA WELLS			WPL EXTRACTION WELLS					MONTHLY TOTAL
	CW-1	CW-1A	CW-2	CW-3	CW-4	CW-5	CW-6	CW-7	CW-7A	SUBTOTAL	CW-8	CW-16	SUBTOTAL	CW-9	CW-13	CW-15A	CW-17	SUBTOTAL	
7/95	205,214	2,008	23,261	254,951	149,309	59,427	410,088	20,208	20,573	1,145,019	3,917,700	2,414,550	6,332,250	2,523,219	2,946,087	262,925	0	5,732,231	13,209,500
8/95	93,306	747	30,727	146,873	177,165	66,924	411,254	22,288	5,001	954,285	3,877,600	1,634,950	5,512,550	1,341,749	1,575,828	125,350	74,632	3,117,559	9,584,394
9/95	148,239	431	22,664	100,411	145,474	48,226	384,104	19,934	4,655	874,138	3,762,700	1,553,530	5,316,230	2,315,006	2,717,715	177,116	296,563	5,506,400	11,696,768
10/95	153,456	1,968	23,793	174,633	147,349	35,809	215,577	19,565	1,197	773,347	3,824,300	946,330	4,770,630	2,296,738	2,662,229	157,853	1,830,277	6,947,097	12,491,074
11/95	176,245	2,553	22,197	177,689	121,726	44,978	201,153	21,311	11,321	779,173	4,416,000	949,450	5,365,450	2,227,883	2,679,174	204,170	1,882,534	6,993,761	13,138,384
12/95	215,040	2,007	19,779	193,760	122,116	56,483	244,212	22,940	14,763	891,100	8,830,800	1,398,520	10,229,320	473,308	2,609,539	203,460	1,963,333	5,249,640	16,370,060
1/96	197,044	3,993	20,225	156,915	130,612	77,139	197,180	23,909	29,998	837,015	7,163,600	774,630	7,938,230	107	1,809,964	203,867	1,353,746	3,367,704	12,142,949
2/96	206,267	5,520	27,058	36,409	103,279	93,841	178,654	24,960	47,808	723,796	6,375,000	1,469,350	7,844,350	437,351	1,793,695	175,466	1,130,765	3,537,277	12,105,423
3/96	135,883	2,088	10,447	94,419	75,711	56,427	130,977	13,782	19,935	539,669	3,060,300	829,710	3,890,010	429,687	734,294	63,277	426,995	1,654,253	6,083,932
4/96	233,813	5,074	14,259	119,919	96,321	96,553	241,217	28,381	52,914	886,451	3,946,800	1,280,700	5,227,500	2,033,932	2,988,035	296,954	1,979,566	7,298,487	13,412,438
5/96	246,729	4,310	3,936	147,659	93,817	81,562	223,875	25,125	44,491	871,504	3,804,900	1,234,190	5,039,090	1,899,706	2,849,617	278,892	1,926,409	6,954,624	12,865,218
6/96	234,225	2,580	14,394	96,726	97,829	91,689	252,625	23,210	22,894	836,172	3,852,200	1,142,150	4,994,350	1,993,052	2,860,077	191,198	1,990,690	7,035,017	12,865,539
TOTALS	2,245,461	33,279	232,740	1,700,364	1,460,708	809,058	3,090,896	263,613	275,550	10,111,669	56,831,900	15,628,060	72,459,960	17,971,738	28,226,254	2,340,548	14,855,510	63,394,050	145,965,679

TABLE 3

GROUNDWATER EXTRACTION WELL PUMPING ELEVATIONS

Harley-Davidson Motor Company

REWEI Project 96003

EXTRACTION SYSTEM LOCATION	Well No.	Reference Elevation (ft AMSL)	Range(ft AMSL)		Groundwater Elev. (ft AMSL)	
			Pump On (High)	Pump Off (Low)	11/6/95	4/24/96
NPBA	CW-1	570.88	496.4	493.4	501.68	504.68
	CW-1A	569.93	510.4	507.4	508.85	505.95
	CW-2	557.79	484.3	481.3	486.88	509.34
	CW-3	519.43	441.4	438.4	463.21	453.81
	CW-4	542.32	458.8	455.8	465.47	480.29
	CW-5	472.06	426.6	423.6	423.16	447.66
	CW-6	486.98	416.5	413.5	418.23	416.35
	CW-7	574.61	494.1	491.1	501.19	501.17
	CW-7A	574.71	524.2	521.2	527.36	527.46
WPL	CW-9	360.79	333.8	328.8	330.93	336.85
	CW-13	361.64	327.6	322.6	323.86	326.49
	CW-15A	362.57	333.5	328.5	331.79	331.47
	CW-17	361.67	335.7	330.7	331.54	334.89
TCA	CW-8	363.84	339.8	335.8	336.77	340.38
	CW-16	364.32	334.3	329.3	332.72	331.02

Notes:

ft AMSL - feet above mean sea level

APPENDIX A

Data Tables

Table A-1, Site-Wide Groundwater Level and Elevation Data
Table A-2a, Groundwater Quality Analyses, Key Monitoring Well Samples
Table A-2b, Groundwater Quality Analyses, Southern Property Boundary Area Monitoring Well Samples
Table A-3, Groundwater Quality Analyses, Extraction Well Samples
Table A-4, Water Quality Analyses, Packed Tower Aerator Samples
Table A-5, Groundwater Quality Analyses, Off-Site Samples

Table A-1

Site-Wide Groundwater Levels and Elevation Data

Harley-Davidson Motor Company

REWEI PROJECT 96003

Well	Reference Elevation (ft AMSL)	11/6/95 Depth (feet)	11/6/95 Water Level (ft AMSL)	04/24/96 Depth (feet)	04/24/96 Water Level (ft AMSL)
CW-1	570.88	69.20	501.68	66.20	504.68
CW-1A	569.93	61.08	508.85	63.98	505.95
CW-2	557.79	70.91	486.88	48.45	509.34
CW-3	519.43	56.22	463.21	65.62	453.81
CW-4	542.32	76.85	465.47	62.03	480.29
CW-5	472.06	48.90	423.16	24.40	447.66
CW-6	486.98	68.75	418.23	70.63	416.35
CW-7	574.61	73.42	501.19	73.44	501.17
CW-7A	574.71	47.35	527.36	47.25	527.46
CW-8	363.84	27.07	336.77	23.46	340.38
CW-9	360.79	29.86	330.93	23.94	336.85
CW-10	417.43	42.67	374.76	27.45	389.98
CW-11	374.30	32.90	341.40	29.33	344.97
CW-12	362.06	22.96	339.10	19.67	342.39
CW-12A	362.18	23.61	338.57	19.96	342.22
CW-13	361.64	37.78	323.86	35.15	326.49
CW-14	362.08	30.40	331.68	27.02	335.06
CW-15	362.81	26.97	335.84	25.00	337.81
CW-15A	362.57	30.78	331.79	31.10	331.47
CW-16	364.32	31.60	332.72	33.30	331.02
CW-17	361.67	30.13	331.54	26.78	334.89
MW-1	376.35	34.82	341.53	31.29	345.06
MW-2	509.44	66.15	443.29	58.48	450.96
MW-3	542.11	66.82	475.29	57.52	484.59
MW-4	397.82	36.17	361.65	23.04	374.78
MW-5	370.80	28.05	342.75	22.05	348.75
MW-6	361.06	20.61	340.45	20.03	341.03
MW-7	362.18	30.19	331.99	26.82	335.36
MW-8	360.55	24.56	335.99	20.11	340.44
MW-9	559.76	56.43	503.33	46.69	513.07
MW-10	568.75	59.54	509.21	51.16	517.59
MW-11	565.11	53.43	511.68	36.74	528.37
MW-12	536.69	49.61	487.08	32.75	503.94
MW-14	520.39	33.29	487.10	26.98	493.41
MW-15	524.90	61.11	463.79	50.33	474.57
MW-16S	517.50	49.28	468.22	40.33	477.17
MW-16D	517.50	18.07	499.43	5.50	512.00
MW-17	458.03	14.09	443.94	10.60	447.43
MW-18S	465.37	27.76	437.61	22.60	442.77
MW-18D	465.37	27.85	437.52	22.96	442.41
MW-19	428.20	23.19	405.01	18.95	409.25
MW-20S	575.34	47.65	527.69	39.37	535.97
MW-20M	575.21	40.85	534.36	40.90	534.31
MW-20D	575.21	46.52	528.69	37.17	538.04
MW-21	426.76	38.82	387.94	20.33	406.43
MW-22	448.57	59.63	388.94	51.51	397.06
MW-23	374.07	32.18	341.89	27.63	346.44
MW-24	375.44	33.00	342.44	27.24	348.20
MW-25	381.73	14.85	366.88	6.86	374.87
MW-26	377.52	26.64	350.88	17.07	360.45
MW-27	362.26	21.84	340.42	17.10	345.16
MW-28	363.96	25.38	338.58	27.61	336.35
MW-29	365.63	13.77	351.86	13.93	351.70
MW-30	364.99	22.22	342.77	16.90	348.09
MW-31S	368.31	22.51	345.80	13.64	354.67
MW-31D	368.31	22.76	345.55	13.77	354.54
MW-32S	363.46	24.92	338.54	21.17	342.29
MW-32D	363.46	24.21	339.25	20.71	342.75

Table A-1

Site-Wide Groundwater Levels and Elevation Data

Harley-Davidson Motor Company

REWEI PROJECT 96003

Well	Reference Elevation (ft AMSL)	11/6/95 Depth (feet)	11/6/95 Water Level (ft AMSL)	04/24/96 Depth (feet)	04/24/96 Water Level (ft AMSL)
MW-33	364.94	26.47	338.47	22.46	342.48
MW-34S	362.12	23.35	338.77	19.67	342.45
MW-34D	362.12	23.49	338.63	19.76	342.36
MW-35S	361.58	dry	--	18.51	343.07
MW-35D	361.59	22.91	338.68	19.15	342.44
MW-36S	372.30	29.41	342.89	23.14	349.16
MW-36D	372.30	29.57	342.73	23.82	348.48
MW-37S	360.83	20.77	340.06	dry	--
MW-37D	360.83	25.31	335.52	20.12	340.71
MW-38S	359.47	22.60	336.87	18.55	340.92
MW-38D	359.48	23.46	336.02	19.90	339.58
MW-39S	361.56	24.16	337.40	20.72	340.84
MW-39D	361.56	25.36	336.20	21.40	340.16
MW-40S	375.83	34.57	341.26	31.12	344.71
MW-40D	375.83	34.56	341.27	31.14	344.69
MW-41S	426.08	39.26	386.82	32.60	393.48
MW-41D	426.08	39.25	386.83	32.62	393.46
MW-42S	411.39	dry	--	21.77	389.62
MW-42M	411.39	37.04	374.35	21.77	389.62
MW-42D	411.39	67.69	343.70	40.27	371.12
MW-43S	380.93	35.46	345.47	26.63	354.30
MW-43D	381.31	35.90	345.41	27.57	353.74
MW-44	417.37	39.48	377.89	24.75	392.62
MW-45	361.13	21.87	339.26	18.34	342.79
MW-46	360.25	21.15	339.10	17.63	342.62
MW-47	361.74	24.74	337.00	21.18	340.56
MW-48	362.85	dry	--	dry	--
MW-49S	363.02	22.79	340.23	18.02	345.00
MW-49D	363.02	22.44	340.58	17.62	345.40
MW-50S	363.92	58.26 E	305.66 E	22.94	340.98
MW-50D	363.92	26.17	337.75	22.92	341.00
MW-51S	363.46	30.07	333.39	26.53	336.93
MW-51D	363.86	35.13	328.73	26.72	337.14
MW-52	368.52	12.38	356.14	2.70	365.82
MW-53	368.25	15.59	352.66	4.95	363.30
MW-54	364.98	29.69	335.29	24.15	340.83
MW-55	364.89	27.16	337.73	23.82	341.07
MW-56	373.03	26.81	346.22	22.76	350.27
MW-57	366.02	24.22	341.80	20.32	345.70
MW-59	373.19	30.57	342.62	24.75	348.44
MW-60	369.15	24.90	344.25	18.78	350.37
MW-61S	373.87	33.36	340.51	29.88	343.99
MW-61D	373.87	34.00	339.87	30.84	343.03
MW-62S	371.28	31.36	339.92	27.34	343.94
MW-62D	371.27	31.66	339.61	27.76	343.51
MW-63S	374.95	33.46	341.49	29.9	345.05
MW-63D	374.96	33.38	341.58	29.76	345.20
MW-64S	417.26	dry	--	37.73	379.53
MW-64D	417.27	61.44	355.83	54.96	362.31
PSB-17	368.60	NM	--	NM	--
WPL-SS-2	363.21	25.38	337.83	23.01	340.20
WPL-SS-7	361.92	24.43	337.49	25.66	336.26
WPL-SS-8	365.26	27.09	338.17	24.16	341.10
WPL-SS-9	364.46	dry	--	dry	--

NOTES:
NM = Not Measured
E = Suspected Measurement Error.

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All missing
Added detects

TABLE A - 2a

GROUNDWATER QUALITY ANALYSES

KEY MONITORING WELL SAMPLES (July 1, 1995 - June 30, 1996)

VOLATILE ORGANIC COMPOUND AND CYANIDE CONCENTRATIONS

Harley-Davidson Motor Company

Sample ID		MW-8	MW-10	MW-12	MW-27	MW-32D	MW-32S	MW-34S	MW-35D
Lab ID		7819204	7819201	7825002	7829506	7829504	7829505	7829508	7829507
Sample Date		10/31/95	10/31/95	11/01/95	11/02/95	11/02/95	11/02/95	11/02/95	11/02/95
Parameter	Units								
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
1,1,2-TRICHLOROETHANE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
1,2-DICHLOROPROPANE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
2-BUTANONE	µg/l	N.D.@200	N.D.@100	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@200	N.D.@100	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10
2-HEXANONE	µg/l	N.D.@200	N.D.@100	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10
4-METHYL-2-PENTANONE	µg/l	N.D.@200	N.D.@100	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10
ACETONE	µg/l	N.D.@200	N.D.@100	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10
BENZENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
BROMOMETHANE	µg/l	N.D.@40	N.D.@20	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2
BROMOFORM	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
CARBON DISULFIDE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
CHLOROMETHANE	µg/l	N.D.@40	N.D.@20	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2
CARBON TETRACHLORIDE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
CHLOROETHANE	µg/l	N.D.@40	N.D.@20	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2
DIBROMOCHLOROMETHANE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
ETHYLBENZENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
METHYLENE CHLORIDE	µg/l	N.D.@40	N.D.@20	N.D.@10	N.D.@30	N.D.@20	N.D.@20	N.D.@2	N.D.@2
STYRENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
TOLUENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
VINYL ACETATE	µg/l	N.D.@200	N.D.@100	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10
XYLENES, TOTAL	µg/l	N.D.@100	N.D.@50	N.D.@25	N.D.@50	N.D.@50	N.D.@50	N.D.@5	N.D.@5
CIS-1,3-DICHLOROPROPENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
CIS/TRANS 1,2-DICHLOROETHENE	µg/l	610	N.D.@10	27	120	730	100	37	39
TRANS-1,3-DICHLOROPROPENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
1,1,1-TRICHLOROETHANE	µg/l	430	N.D.@10	N.D.@5.0	N.D.@10	260	910	25	49
1,1-DICHLOROETHANE	µg/l	23	N.D.@10	N.D.@5.0	N.D.@10	64	70	2	5
1,1-DICHLOROETHENE	µg/l	92	N.D.@10	N.D.@5.0	N.D.@20	210	260	5	11
1,2-DICHLOROETHANE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
CHLOROFORM	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	6 B	9 B
DICHLOROBROMOMETHANE	µg/l	N.D.@20	N.D.@10	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1
TETRACHLOROETHENE	µg/l	2400	N.D.@10	N.D.@5.0	270	260	150	120	69
TRICHLOROETHENE	µg/l	2600	530	360	160	2700	460	150	140
VINYL CHLORIDE	µg/l	N.D.@40	N.D.@20	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2
TOTAL VOCs	µg/l	6155	530	387	550	4224	1950	345	322
CYANIDE, FREE	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005
CYANIDE, TOTAL	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005

Sample ID		MW-38D	MW-38S	MW-39D	MW-39S	MW-46	MW-51D	MW-51S	MW-54	RW-2(Sigler)	Field Blank	Field Blank	Trip Blank	Trip Blank
Lab ID		7819203	7819202	7825003	7825004	7829509	7829502	7829503	7825005	7819205	7825006	7829510	7825001	7829501
Sample Date		10/31/95	10/31/95	11/01/95	11/01/95	11/02/95	11/02/95	11/02/95	11/01/95	10/31/95	11/01/95	11/02/95	11/01/95	11/02/95
Parameter	Units													
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROETHANE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	50	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROPROPANE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
2-BUTANONE	µg/l	N.D.@100	N.D.@10	N.D.@50	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@100	N.D.@10	N.D.@50	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
2-HEXANONE	µg/l	N.D.@100	N.D.@10	N.D.@50	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
4-METHYL-2-PENTANONE	µg/l	N.D.@100	N.D.@10	N.D.@50	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
ACETONE	µg/l	N.D.@100	N.D.@10	N.D.@50	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@10	15	12	18	13
BENZENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
BROMOMETHANE	µg/l	N.D.@20	N.D.@2	N.D.@10	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
BROMOFORM	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CARBON DISULFIDE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROMETHANE	µg/l	N.D.@20	N.D.@2	N.D.@10	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
CARBON TETRACHLORIDE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROETHANE	µg/l	N.D.@20	N.D.@2	N.D.@10	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
DIBROMOCHLOROMETHANE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
ETHYLBENZENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
METHYLENE CHLORIDE	µg/l	N.D.@20	N.D.@2	N.D.@10	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
STYRENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TOLUENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
VINYL ACETATE	µg/l	N.D.@100	N.D.@10	N.D.@50	N.D.@50	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
XYLENES, TOTAL	µg/l	N.D.@50	N.D.@5	N.D.@25	N.D.@25	N.D.@50	N.D.@50	N.D.@50	N.D.@50	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5
CIS-1,3-DICHLOROPROPENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CIS/TRANS 1,2-DICHLOROETHENE	µg/l	740	N.D.@1	230	230	250	2000	480	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TRANS-1,3-DICHLOROPROPENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,1-TRICHLOROETHANE	µg/l	220	N.D.@1	N.D.@5.0	7 B	12	560	440	29000 B	N.D.@1	2	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHANE	µg/l	50	3	N.D.@5.0	N.D.@5.0	N.D.@10	84	20	1000	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	280	260	4900	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHANE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	100	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROFORM	µg/l	N.D.@10	N.D.@1	N.D.@5.0	7 B	20 B	N.D.@10	N.D.@10	14 B	N.D.@1	2	2	17	15
DICHLOROBROMOMETHANE	µg/l	N.D.@10	N.D.@1	N.D.@5.0	N.D.@5.0	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TETRACHLOROETHENE	µg/l	95	N.D.@1	10	38	1300	190	1100	60	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TRICHLOROETHENE	µg/l	1200	6	300	310	440	3000	3000	880	50	N.D.@1	N.D.@1	N.D.@1	N.D.@1
VINYL CHLORIDE	µg/l	N.D.@20	N.D.@2	N.D.@10	N.D.@10	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TOTAL VOCs	µg/l	2305	9	540	592	2022	6114	5300	36004	50	19	14	35	28
CYANIDE, FREE	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	0.02	N.D.@0.005	0.02	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.A.
CYANIDE, TOTAL	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	0.02	N.D.@0.005	0.02	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.A.

N.D.@1- Not detected at indicated concentration.
N.A. - Not analyzed.
B - Analyte detected in associated trip blank.

TABLE A - 2b

GROUNDWATER QUALITY ANALYSES

SOUTHERN PROPERTY BOUNDARY AREA MONITORING WELL SAMPLES (July 1, 1995 - June 30, 1996)

VOLATILE ORGANIC COMPOUND AND CYANIDE CONCENTRATIONS

Harley-Davidson Motor Company

Sample ID		MW-1	MW-2	MW-21	MW-22	MW-23	MW-24	MW-28	MW-29	MW-33	MW-37D	MW-37D(dup)	MW-37S	MW-40D	MW-40S	MW-41D
Lab ID		7798402	7814208	7808505	7803607	7803602	7803603	7808503	7803604	7808504	7814401	7814402	7814310	7798403	7816201	7814301
Sample Date		10/24/95	10/27/95	10/26/95	10/25/95	10/25/95	10/25/95	10/26/95	10/25/95	10/26/95	10/27/95	10/27/95	10/27/95	10/24/95	10/30/95	10/27/95
Parameter	Units															
1,1,1-TRICHLOROETHANE	µg/l	2	N.D.@1	6	7	N.D.@1	43	560	N.D.@1	3	1700	1600	73	3	4	4
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@5	N.D.@100	N.D.@5	N.D.@10	N.D.@1	N.D.@5	N.D.@10	N.D.@1	N.D.@1	N.D.@5000	N.D.@5000	N.D.@20	N.D.@1	N.D.@1	N.D.@5
1,1,2-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@50	N.D.@50	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROTRIFLUOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	15	N.D.@1	N.D.@1	39	35	10	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@1	1	2	N.D.@1	11	73	N.D.@1	1	200	190	6	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHENE (TOTAL)	µg/l	3	1	N.D.@1	N.D.@1	N.D.@1	89	34	N.D.@1	4	280	260	40	20	7	N.D.@1
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	3	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROPROPANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,3-DICHLOROPROPYLENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
2-BUTANONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@200	N.D.@200	N.D.@10	N.D.@10	N.D.@10	N.D.@10
2-HEXANONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4-METHYL-2-PENTANONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
ACETONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BENZENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@5	N.D.@2	N.D.@2	N.D.@2	N.D.@100	N.D.@100	N.D.@2	N.D.@2	N.D.@2	N.D.@2
BROMOMETHANE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BENZENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BROMOFORM	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@40	N.D.@40	N.D.@2	N.D.@2	N.D.@2	N.D.@2
CARBON DISULFIDE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
CHLOROMETHANE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
CARBON TETRACHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@50	N.D.@1	N.D.@1	N.D.@200	N.D.@200	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROFORM	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	8	N.D.@1	22	N.D.@20	N.D.@20	4	10	N.D.@1	N.D.@1
DIBROMOCHLOROMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@5	N.D.@2	N.D.@2	N.D.@2	N.D.@100	N.D.@100	N.D.@2	N.D.@2	N.D.@2	N.D.@2
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@20	N.D.@2	N.D.@2	N.D.@100	N.D.@100	N.D.@2	N.D.@2	N.D.@2	N.D.@2
ETHYLBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
METHYL BROMIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@5	N.D.@5	N.D.@5	N.D.@5
METHYL CHLORIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@5	N.D.@5	N.D.@5	N.D.@5
METHYLENE CHLORIDE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@40	N.D.@40	N.D.@2	N.D.@2	N.D.@2	N.D.@2
STYRENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
TETRACHLOROETHENE	µg/l	9	360	7	55	N.D.@1	10	41	N.D.@1	3	20000	19000	220	2	2	9
TOLUENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@40	N.D.@40	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TRICHLOROETHENE	µg/l	33	120	81	120	9	630	240	N.D.@1	26	6000	5600	64	92	64	75
VINYL ACETATE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1
XYLENES, TOTAL	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
CIS-1,3-DICHLOROPROPENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
TRANS 1,2-DICHLOROETHENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
TRANS-1,3-DICHLOROPROPENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
TOTAL VOCs	µg/l	47	481	95	184	9	783	974	0	59	28219	26685	417	127	77	88
CYANIDE, FREE	mg/l	N.D.@0.005	2.8	N.D.@0.005	0.01	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005
CYANIDE, TOTAL	mg/l	N.D.@0.005	2.8	N.D.@0.005	0.01	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005

N.D.@1- Not detected at indicated concentration.

N.A. - Not analyzed

B - Analyte detected in associated trip blank.

TABLE A - 2b

GROUNDWATER QUALITY ANALYSES

SOUTHERN PROPERTY BOUNDARY AREA MONITORING WELL SAMPLES (July 1, 1995 - June 30, 1996)

VOLATILE ORGANIC COMPOUND AND CYANIDE CONCENTRATIONS

Harley-Davidson Motor Company

Sample ID		MW-41S	MW-42D	MW-42M	MW-43D	MW-43S	MW-44	MW-55	MW-56	MW-57	MW-61D	MW-61D	MW-61S	MW-61S	MW-62D	MW-62D	MW-62S
Lab ID		7814210	7814303	7814302	7803606	7803605	7808502	7814209	7814308	7814309	7814202	7997803	7814201	7997802	7814204	7997804	7814203
Sample Date		10/27/95	10/27/95	10/27/95	10/25/95	10/25/95	10/26/95	10/27/95	10/27/95	10/27/95	10/27/95	12/29/95	10/27/95	12/29/95	10/27/95	12/29/95	10/27/95
Parameter	Units																
1,1,1-TRICHLOROETHANE	µg/l	3	4	1	N.D.@1	N.D.@1	1	8400	48	2	3	N.D.@1	N.D.@1	N.D.@1	75	84	30
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@5	N.D.@5	N.D.@10	N.D.@5	N.D.@1	N.D.@1	N.D.@10	N.D.@5	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
1,1,2-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@5	N.D.@1	N.D.@1	N.D.@10	N.D.@5	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
1,1,2-TRICHLOROTRIFLUOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	130	22	4	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
1,1-DICHLOROETHENE	µg/l	N.D.@1	1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	7100	10	49	3	N.D.@1	N.D.@1	N.D.@1	35	39	10
1,2-DICHLOROETHENE (TOTAL)	µg/l	N.D.@1	N.D.@1	2	22	N.D.@1	N.D.@1	78	100	8	1	1	N.D.@1	N.D.@1	120	140	98
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	16	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
1,2-DICHLOROPROPANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
1,3-DICHLOROPROPYLENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2-BUTANONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@50	N.D.@100	N.D.@100
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@50	N.D.@100	N.D.@100
2-HEXANONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@50	N.D.@100	N.D.@100
4-METHYL-2-PENTANONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@50	N.D.@100	N.D.@100
ACETONE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@50	N.D.@100	N.D.@100
BENZENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@2	N.D.@2	N.D.@20	N.D.@10	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
BROMOMETHANE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@20	N.D.@20
BENZENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BROMOFORM	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
CARBON DISULFIDE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
CHLOROMETHANE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@20	N.D.@20
CARBON TETRACHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@100	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	2	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
CHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@20	N.D.@20
CHLOROFORM	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	25	N.D.@1	1	6	6 B	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
DIBROMOCHLOROMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@2	N.D.@2	N.D.@20	N.D.@10	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@50	N.D.@2	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
ETHYLBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
METHYL BROMIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
METHYL CHLORIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
METHYLENE CHLORIDE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@20	N.D.@20
STYRENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
TETRACHLOROETHENE	µg/l	14	6	15	15	1	1	35	5	21	N.D.@1	N.D.@1	N.D.@1	N.D.@1	26	28	12
TOLUENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	2	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
TRICHLOROETHENE	µg/l	110	120	230	810	3	17	990	570	110	16	14	4	2	830	990	610
VINYL ACETATE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@50	N.D.@100	N.D.@100
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@10	N.D.@20	N.D.@20
XYLENES, TOTAL	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@25	N.D.@50	N.D.@50
CIS-1,3-DICHLOROPROPENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
TRANS 1,2-DICHLOROETHENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
TRANS-1,3-DICHLOROPROPENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@5.0	N.D.@10	N.D.@10
TOTAL VOCs	µg/l	127	131	248	847	4	19	16774	755	195	33	21	4	2	1086	1281	760
CYANIDE, FREE	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	0.01	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.A.
CYANIDE, TOTAL	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	0.01	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.A.

N.D.@1- Not detected at indicated concentration.

N.A. - Not analyzed

B - Analyte detected in associated trip blank.

TABLE A - 2b

GROUNDWATER QUALITY ANALYSES

SOUTHERN PROPERTY BOUNDARY AREA MONITORING WELL SAMPLES (July 1, 1995 - June 30, 1996)

VOLATILE ORGANIC COMPOUND AND CYANIDE CONCENTRATIONS

Harley-Davidson Motor Company

Sample ID		MW-62S	MW-63D	MW-63D	MW-63S	MW-63S	MW-64D	MW-64D	MW-64S	CW-10	CW-11	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Field Blank
Lab ID		7997805	7814206	7997806	7814205	7993302	7814207	7993301	7997807	7803601	7798401	7808501	7814403	7814404	7816202	7997901	7997801
Sample Date		12/29/95	10/27/95	12/29/95	10/27/95	12/28/95	10/27/95	12/28/95	12/29/95	10/25/95	10/24/95	10/26/95	10/27/95	10/27/95	10/30/95	12/29/95	12/29/95
Parameter	Units																
1,1,1-TRICHLOROETHANE	µg/l	33	46	40	110	95	N.D.@10	N.D.@10	N.D.@10	5	5	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@5	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROETHANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROTRIFLUOROETHANE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.A.
1,1-DICHLOROETHANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	11	17	25	42	46	N.D.@10	N.D.@10	N.D.@10	N.D.@1	1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHENE (TOTAL)	µg/l	85	150	150	250	250	N.D.@10	N.D.@10	N.D.@10	1	10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.A.
1,2-DICHLOROETHANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROPROPANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,3-DICHLOROPROPYLENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.A.
2-BUTANONE	µg/l	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@200	N.D.@100	N.D.@100	N.D.@100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@200	N.D.@100	N.D.@100	N.D.@100	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
2-HEXANONE	µg/l	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@200	N.D.@100	N.D.@100	N.D.@100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10
4-METHYL-2-PENTANONE	µg/l	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@200	N.D.@100	N.D.@100	N.D.@100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10
ACETONE	µg/l	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N.D.@200	N.D.@100	N.D.@100	150	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10
BENZENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@5	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@1	N.D.@1
BROMOMETHANE	µg/l	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@40	N.D.@20	N.D.@20	N.D.@20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@2	N.D.@2
BENZENE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BROMOFORM	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@1	N.D.@1
CARBON DISULFIDE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1
CHLOROMETHANE	µg/l	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@40	N.D.@20	N.D.@20	N.D.@20	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@2	N.D.@2
CARBON TETRACHLORIDE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROETHANE	µg/l	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@40	N.D.@20	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@2
CHLOROFORM	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	12	10
DIBROMOCHLOROMETHANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@5	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@1	N.D.@1
DICHLOROBROMOMETHANE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@1	N.D.@1
ETHYLBENZENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@1	N.D.@5	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
METHYL BROMIDE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.A.
METHYL CHLORIDE	µg/l	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.A.
METHYLENE CHLORIDE	µg/l	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@40	N.D.@20	N.D.@20	N.D.@20	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	2200	N.D.@2
STYRENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1
TETRACHLOROETHENE	µg/l	11	17	15	43	37	370	370	390	36	2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TOLUENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@1	N.D.@1
TRICHLOROETHENE	µg/l	570	930	1000	1600	1500	1800	2100	1500	450	150	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
VINYL ACETATE	µg/l	N.D.@100	N.D.@100	N.D.@100	N.D.@100	N D.@200	N.D.@100	N.D.@100	N.D.@100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@10	N.D.@10
VINYL CHLORIDE	µg/l	N.D.@20	N.D.@20	N.D.@20	N.D.@20	N.D.@40	N.D.@20	N.D.@20	N.D.@20	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@2
XYLENES, TOTAL	µg/l	N.D.@50	N.D.@50	N.D.@50	N.D.@50	N D.@100	N.D.@50	N.D.@50	N.D.@50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@5	N.D.@5
CIS-1,3-DICHLOROPROPENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1
TRANS 1,2-DICHLOROETHENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1
TRANS-1,3-DICHLOROPROPENE	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@10	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@1	N.D.@1
TOTAL VOCs	µg/l	710	1160	1230	2045	1928	2170	2470	2040	492	168	0	0	0	0	2212	10
CYANIDE, FREE	mg/l	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@0.00
CYANIDE, TOTAL	mg/l	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.A.	N.A.	N.A.	N.A.	N.D.@0.00

N.D.@1- Not detected at indicated concentration.
N.A. - Not analyzed
B - Analyte detected in associated trip blank.

TABLE A-3

GROUNDWATER QUALITY ANALYSES

EXTRACTION WELL SAMPLES (July 1, 1995 - June 30, 1996)

VOLATILE ORGANIC COMPOUND AND CYANIDE CONCENTRATIONS

Harley-Davidson Motor Company

Sample ID		CW-1	CW-1	CW-1A	CW-1A	CW-2	CW-2	CW-3	CW-3	CW-4	CW-4	CW-5	CW-5	CW-6	CW-6	CW-7
Lab ID		7938306	8476908	7938307	8476909	7938308	8477001	7938309	8477002	7938310	8477003	7938201	8477004	7938202	8477005	7938203
Sample Date		12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95
Parameter	Units															
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@10	N.D.@5	N.D.@5	N.D.@1	N.D.@5	N.D.@5	N.D.@20	N.D.@100	N.D.@1
1,1,2-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@1	N.D.@1	N.D.@2	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROTRIFLUOROETHAN	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROPROPANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,3-DICHLOROPROPYLENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
BENZENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@5	N.D.@2	N.D.@2	N.D.@5	N.D.@5	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
BROMOFORM	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
CARBON TETRACHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
DIBROMOCHLOROMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@5	N.D.@2	N.D.@2	N.D.@5	N.D.@5	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
ETHYLBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
METHYL BROMIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5
METHYL CHLORIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5
METHYLENE CHLORIDE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TOLUENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
1,1,1-TRICHLOROETHANE	µg/l	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*	*N.D.@1*
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHENE (TOTAL)	µg/l	3	2	6	1	6	6	27	30	23	29	20	16	42	78	1
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROFORM	µg/l	N.D.@1	N.D.@1	2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TETRACHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	2	N.D.@1	N.D.@1	11	7	4	4	11	8	52	210	N.D.@1
TRICHLOROETHENE	µg/l	140	130	570	270	120	99	370	260	170	210	39	35	110	170	260
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TOTAL VOCs	µg/l	143	132	578	273	126	105	408	297	197	243	70	59	204	458	261

Sample ID		CW-7	CW-7A	CW-7A	CW-8	CW-8	CW-9	CW-9	CW-13	CW-13	CW-15A	CW-16A	CW-16	CW-16	CW-17	CW-17
Lab ID		8477006	7938204	8477007	7938205	8477008	7938208	8477009	7938209	8477010	7938207	8477011	7938206	8477012	7938210	8477013
Sample Date		05/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96	12/07/95	06/06/96
Parameter	Units															
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@50	N.D.@10	N.D.@2000	N.D.@1000	N.D.@100	N.D.@100	N.D.@1000	N.D.@1000	N.D.@100	N.D.@50	N.D.@50	N.D.@50
1,1,2-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@20	N.D.@20	N.D.@10	N.D.@5	N.D.@20	N.D.@10	N.D.@50	N.D.@20	N.D.@500	N.D.@5000	N.D.@20	N.D.@20	N.D.@20	N.D.@10
1,1,2-TRICHLOROTRIFLUOROETHAN	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@10	N.D.@25	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
1,2-DICHLOROPROPANE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
1,3-DICHLOROPROPYLENE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
2-CHLOROETHYLVINYL ETHER	µg/l	*N.D.@10*	*N.D.@50*	*N.D.@50*	*N.D.@10*	*N.D.@10*	*N.D.@50*	*N.D.@50*	*N.D.@50*	*N.D.@50*	*N.D.@1000*	*N.D.@1000*	*N.D.@10*	*N.D.@10*	*N.D.@50*	*N.D.@50*
BENZENE	µg/l	N.D.@2	N.D.@50	N.D.@50	N.D.@20	N.D.@10	N.D.@50	N.D.@20	N.D.@100	N.D.@50	N.D.@1000	N.D.@1000	N.D.@50	N.D.@50	N.D.@50	N.D.@20
BROMOFORM	µg/l	N.D.@2	N.D.@10	N.D.@10	N.D.@2	N.D.@2	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@200	N.D.@200	N.D.@2	N.D.@2	N.D.@10	N.D.@10
CARBON TETRACHLORIDE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@10	N.D.@10	N.D.@50	N.D.@20	N.D.@40	N.D.@20	N.D.@5000	N.D.@2000	N.D.@20	N.D.@10	N.D.@20	N.D.@10
CHLOROETHANE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
DIBROMOCHLOROMETHANE	µg/l	N.D.@2	N.D.@50	N.D.@50	N.D.@20	N.D.@10	N.D.@50	N.D.@20	N.D.@100	N.D.@50	N.D.@1000	N.D.@1000	N.D.@50	N.D.@50	N.D.@50	N.D.@20
ETHYLBENZENE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
METHYL BROMIDE	µg/l	N.D.@5	N.D.@25	N.D.@25	N.D.@5	N.D.@5	N.D.@25	N.D.@25	N.D.@25	N.D.@25	N.D.@500	N.D.@500	N.D.@5	N.D.@5	N.D.@25	N.D.@25
METHYL CHLORIDE	µg/l	N.D.@5	N.D.@25	N.D.@25	N.D.@5	N.D.@5	N.D.@25	N.D.@25	N.D.@25	N.D.@25	N.D.@500	N.D.@500	N.D.@5	N.D.@5	N.D.@25	N.D.@25
METHYLENE CHLORIDE	µg/l	N.D.@2	N.D.@10	N.D.@10	N.D.@2	N.D.@2	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@200	N.D.@200	N.D.@2	N.D.@2	N.D.@10	N.D.@10
TOLUENE	µg/l	N.D.@2	N.D.@10	N.D.@10	N.D.@2	N.D.@2	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@200	N.D.@200	N.D.@2	N.D.@2	N.D.@10	N.D.@10
1,1,1-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@5	N.D.@5	110	110	500	300	370	220	36000	33000	160	160	230	130
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@5	N.D.@5	8	5	27	10	12	8	240	140	10	6	13	12
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@5	N.D.@5	47	22	94	14	110	38	5400	3400	110	39	150	47
1,2-DICHLOROETHENE (TOTAL)	µg/l	N.D.@1	19	11	110	170	420	300	2300	2200	1100	1200	210	300	330	310
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@10	N.D.@10	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
CHLOROBENZENE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
CHLOROFORM	µg/l	*N.D.@1*	*N.D.@5*	*N.D.@5*	*7*	*N.D.@1*	*N.D.@5*	*N.D.@5*	*N.D.@20*	*N.D.@25*	*N.D.@100*	*N.D.@100*	*3*	*N.D.@1*	*N.D.@5*	*N.D.@5*
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@10	N.D.@10	N.D.@5	N.D.@5	N.D.@20	N.D.@10	N.D.@20	N.D.@10	N.D.@2000	N.D.@1000	N.D.@10	N.D.@5	N.D.@10	N.D.@10
TETRACHLOROETHENE	µg/l	N.D.@1	16	11	87	82	3700	2700	430	320	4800	3500	140	140	360	160
TRICHLOROETHENE	µg/l	140	2900	2000	880	950	2400	1500	3800	3100	53000	42000	1400	1600	1600	1100
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@5	N.D.@5	N.D.@1	N.D.@1	5	N.D.@5	47	31	N.D.@100	N.D.@100	N.D.@1	N.D.@1	N.D.@5	N.D.@5
TOTAL VOCs	µg/l	140	2935	2022	1249	1339	7146	4824	7069	5917	100540	83240	2033	2245	2683	1759

N.D.@1 - Not detected at indicated concentration.

TABLE A-4
WATER QUALITY ANALYSES
PACKED TOWER AERATOR SAMPLES (July 1, 1995 - June 30, 1996)
VOLATILE ORGANIC COMPOUND CONCENTRATIONS
Harley - Davidson Motor Company

Sample ID		PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.
Lab ID		7463103	7511801	7555202	7595602	7632108	7714401	7761501	7809801	7853202	7893102	7938402	7976501
Sample Date		07/13/95	07/27/95	08/10/95	08/24/95	09/07/95	09/28/95	10/12/95	10/26/95	11/09/95	11/22/95	12/07/95	12/21/95
Parameter	Units												
1,1,1-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHENE (TOTAL)	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@2	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROFORM	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TETRACHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TRICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TOTAL VOCs	µg/l	0	0	0	0	0	0	0	0	0	0	0	0

Sample ID		PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.	PTA Effl.
Lab ID		8011802	8045801	8077501	8098902	8144101	8185601	8219906	8282302	8354001	8393402	8445701	8476907	8528701
Sample Date		01/04/96	01/18/96	01/31/96	02/07/96	02/22/96	03/07/96	03/19/96	04/04/96	04/26/96	05/09/96	05/24/96	06/06/96	06/21/96
Parameter	Units													
1,1,1-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHENE (TOTAL)	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROFORM	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TETRACHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TRICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TOTAL VOCs	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample ID		PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.	PTA Infl.
Lab ID		7463104	7555201	7595601	7632107	7761502	7853201	7938401	8011801	8077502	8098901	8185602	8282301	8393401	8476906
Sample Date		07/13/95	08/10/95	08/24/95	09/07/95	10/12/95	11/09/95	12/07/95	01/04/96	01/31/96	02/07/96	03/07/96	04/04/96	05/09/96	06/06/96
Parameter	Units														
1,1,1-TRICHLOROETHANE	µg/l	1400	160	420	490	480	710	420	570	970	88	86	790	650	640
1,1-DICHLOROETHANE	µg/l	13	6	10	7	12	12	8	9	12	4	4	10	11	7
1,1-DICHLOROETHENE	µg/l	270	32	75	15	74	130	100	69	160	17	4	94	160	69
1,2-DICHLOROETHENE (TOTAL)	µg/l	730	130	700	570	610	590	180	480	620	82	120	680	750	640
1,2-DICHLOROETHANE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@10	N.D.@5	N.D.@10	N.D.@5	N.D.@1	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5
CHLOROBENZENE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@1	N.D.@5	N.D.@1	N.D.@1	N.D.@5	N.D.@5	N.D.@5
CHLOROFORM	µg/l	N.D.@25	N.D.@5	N.D.@25	N.D.@25	N.D.@5	N.D.@25	N.D.@10	N.D.@10	N.D.@25	1	N.D.@1	N.D.@5	N.D.@50	N.D @5
DICHLOROBROMOMETHANE	µg/l	N.D.@10	N.D.@10	N.D.@20	N.D.@10	N.D.@10	N.D.@25	N.D.@10	N.D.@20	N.D.@50	N.D.@5	N.D.@2	N.D @10	N.D.@20	N.D.@20
TETRACHLOROETHENE	µg/l	590	72	530	630	710	790	270	170	250	69	86	520	520	600
TRICHLOROETHENE	µg/l	3200	790	1700	1700	1800	2200	1300	1500	2200	520	730	2200	2100	2100
VINYL CHLORIDE	µg/l	7	N.D.@5	10	7	14	8	N.D.@5	15	16	N.D.@1	N.D.@1	14	12	5
TOTAL VOCs	µg/l	6210	1190	3445	3419	3700	4440	2278	2813	4228	781	1030	4308	4203	4061

N.D.@1 - Not detected at indicated concentration.

TABLE A-5

GROUNDWATER QUALITY ANALYSES

OFF-SITE SAMPLES (July 1, 1995 - June 30, 1996)

VOLATILE ORGANIC COMPOUND AND CYANIDE CONCENTRATIONS

Harley - Davidson Motor Company

Sample ID		RW-4	RW-4	RW-4	RW-4	RW-4	RW-5	RW-5	RW-5	RW-5	RW-5	S-6	S-6	S-6	S-6
Lab ID		7632104	7938301	8185704	8219904	8476903	7632101	7938304	8185706	8219905	8476904	7632105	7938302	8185703	8219903
Sample Date		09/07/95	12/07/95	03/07/96	03/19/96	06/06/96	09/07/95	12/07/95	03/07/96	03/19/96	06/06/96	09/07/95	12/07/95	03/07/96	03/19/96
Parameter	Units														
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,1,2-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,1,2-TRICHLOROTRIFLUOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,2-DICHLOROPROPANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,3-DICHLOROPROPYLENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@10	N.D.@10	N.D.@10	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.A.
BENZENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.
BROMOFORM	µg/l	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.
CARBON TETRACHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
CHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
DIBROMOCHLOROMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.
ETHYLBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
METHYL BROMIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.
METHYL CHLORIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.
METHYLENE CHLORIDE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.
TOLUENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.
1,1,1-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,2-DICHLOROETHENE (TOTAL)	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@2	N.D.@1	N.D.@1	N.A.
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
CHLOROFORM	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	2 B	2 B	1	N.A.	N.D.@1	2 B	1 B	2	N.A.
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.
TETRACHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	2	2	2	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
TRICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	13	10	5	N.A.	3	N.D.@1	N.D.@1	N.D.@1	N.A.
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.
TOTAL VOCs	µg/l	0	0	0	N.A.	0	17	14	8	N.A.	3	2	1	2	N.A.
CYANIDE, FREE	mg/l	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005
CYANIDE, TOTAL	mg/l	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005

Sample ID		S-6	S-7	S-7	S-7	S-7	S-7	RW-6	RW-6	RW-6	RW-6	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Lab ID		8476901	7632103	7938303	8185702	8219902	8476902	7632102	7938305	8219901	8489601	7632106	7938403	8185701	8476905
Sample Date		06/06/96	09/07/95	12/07/95	03/07/96	03/19/96	06/06/96	09/07/95	12/07/95	03/19/96	06/11/96	09/07/95	12/07/95	03/07/96	06/06/96
Parameter	Units														
1,1,2,2-TETRACHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1,2-TRICHLOROTRIFLUOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROPROPANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	2	N.D.@1	N.D.@1	N.D.@1
1,3-DICHLOROPROPYLENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
2-CHLOROETHYLVINYL ETHER	µg/l	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.A.	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10	N.D.@10
BENZENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
BROMOFORM	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
CARBON TETRACHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
DIBROMOCHLOROMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
ETHYLBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
METHYL BROMIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5
METHYL CHLORIDE	µg/l	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.A.	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5	N.D.@5
METHYLENE CHLORIDE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
TOLUENE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2
1,1,1-TRICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,1-DICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHENE (TOTAL)	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
1,2-DICHLOROETHANE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@2	N.D.@1	N.D.@1	N.D.@1	2	N.D.@1	N.D.@1	N.D.@1
CHLOROBENZENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
CHLOROFORM	µg/l	1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	4	49	N.D.@1	N.D.@1
DICHLOROBROMOMETHANE	µg/l	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.A.	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	N.D.@2	8	N.D.@2	N.D.@2
TETRACHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TRICHLOROETHENE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
VINYL CHLORIDE	µg/l	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.A.	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1	N.D.@1
TOTAL VOCs	µg/l	1	0	0	0	N.A.	0	0	0	0	0	8	58	0	0
CYANIDE, FREE	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.A.	N.A.	N.A.
CYANIDE, TOTAL	mg/l	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.D.@0.005	N.A.	N.A.	N.A.	N.A.

N.D.@1 - Not detected at indicated concentration.
N.A. - Not analyzed.
B - Analyte detected in associated trip blank.

PLATE 1

HARLEY-DAVIDSON INC.

SELECTED VOC CHEMISTRY
JULY 1, 1995 THROUGH JUNE 30, 1996

NO.	DESCRIPTION	DATE	BY

REVISIONS

drawn RAM | checked | drawing no. 96003-004-C
date 10/03/96 | approved SWS

r.e. wright environmental, inc.
total environmental solutions
middletown, pa · exton, pa · westminster, md · va beach, va