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REMEDIAL INVESTIGATION (RI) REPORT

Barrels Inc. Site
Lansing, Michigan

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SECTION 1

1.0 INTRODUCTION

This Remedial Investigation report for the Barrels, Inc. Site has been prepared by Conestoga-Rovers & Associated on behalf of the Barrels Inc. Site Participating PRP Group. This report is submitted to the Michigan Department of Natural Resources (MDNR) in accordance with the Consent Decree dated March 1, 1993, and the Remedial Investigation/Feasibility Study (RI/FS) Work Plan, dated December 1992.

After completing the Phase I field work defined in the approved RI/FS Work Plan a draft Phase I RI was prepared and submitted to the MDNR on July 7, 1994. On July 7, 1994 MDNR requested additional field work to further define the distribution of certain parameters detected at the Barrels Inc. Site in the soil and groundwater. The Phase II investigation was described in the Final Phase II Scope of Work (SOW) dated July 26, 1994, and the Scope of Additional Field Work (SOAW) dated November 15, 1994.

This RI Report includes the results of both Phase I and Phase II RI field investigations conducted at the Site.

1.1 SITE DESCRIPTION

The Barrels, Inc. Site is a 2.3-acre former drum reclamation facility located in an industrial area in the northern section of the City of Lansing, Ingham County, Michigan. The Site location plan is presented on Figure 1.1. Figure 1.2 presents a Plan of the Site. The Site is bounded to the north and east by a CSX Transportation (CSXT) railway line (formerly Chesapeake and Ohio) and to the west and south by existing industrial properties.

Drainage from the Site is primarily eastward into a ditch along the railway track, at the rear of the property. The ditch invert has a depth of about 1 to 3 feet below the surrounding grades. Figure 1.2 presents the location of the drainage ditch.

1.1.1 Site Background

Figure 1.3 is reproduced from a historical CSXT plan (date unknown) which indicates that the southern portion of the Site was used as a coal yard by the Cahill Coal Company. The western portion of the Site, along with other properties along Larch Street, were used by Cutler Oil Company/Gulf Refining Company, presumably for the storage and distribution of petroleum products.

Barrels, Inc. began operations on the Site around 1961 and continued until 1980, when the Site was abandoned. The Barrels, Inc. reclamation process consisted of: cleaning drums in a caustic solution, rinsing, repairing and repainting. Spills to surface soils allegedly occurred at the loading dock and drum storage areas. The spills at the loading dock allegedly consisted of the contents of the caustic tank which contained the cleaning solution and residual materials which allegedly remained in most of the drums. Any releases which occurred in the drum storage area would have consisted of residual materials which were spilled during drum movement, or overflowed when drums occasionally became filled with rainwater.

A total of five groundwater monitoring wells were installed in and around the Site in 1982. Three of the monitoring wells (MW1, MW2, and MW3) were installed by the U.S. EPA on properties adjacent to the Site. The remaining two wells (EDI-4 and EDI-5) were installed on the CSXT portion of the property by CSXT. Locations of formerly existing wells (Pre-RI) are presented on Figure 1.4. Wells EDI-4 and EDI-5 have been renamed as MW4 and MW5, respectively. Logs for the Pre-RI wells are presented in Appendix A.

In 1986, a drum removal action and a surface soil sampling program were conducted by the MDNR. Following the soil sampling, the surface soils in the drum storage area were removed to a depth of approximately six inches. Nine underground petroleum storage tanks were also removed by the MDNR from the Barrels, Inc. property in 1986.

Eight of the tanks were removed from an area east of the existing wooden shed, and one tank was removed from the west side of the Site, near the entrance to the facility.

Subsequent surface soil sampling was conducted by the MDNR in 1987. The analytical results from the 1987 sampling indicate that the surface soils contained variable concentrations of base neutral extractable organics [or semi-volatile organic compounds (SVOCs)], pesticides, PCBs and inorganics. The data tables as presented in the MDNRs Work Plan, dated March 1992, are provided in Appendix B. Similar compounds were reported in samples obtained from surface scrapings of the floor slab in the main building.

1.1.2 Adjacent Land Use

The Barrels, Inc. Site is located in an industrial/commercial area, as indicated on Figure 1.2. All adjacent property land uses are industrial or commercial. As a result, environmental conditions at the Site are affected by off-Site adjacent and upgradient land uses. Adjacent and upgradient land uses which may affect the Site include: possible underground storage tank(s) located on the Chocola Cleaning Materials property, Motor Wheel manufacturing plant, Kent Electronics and two landfills located north of the Site which have been designated Superfund Sites.

Figure 1.2 also presents the locations of former USTs, based on information obtained from the MDNR and the local fire marshall.

It is noted that this area is served with a municipal water supply and municipal storm and sanitary sewers.

1.1.3 Buildings

A schematic of the main building is presented on Figure 1.5. The building is rectangular and has an office area in the front, a loading and unloading dock in the center and a drum restoration area at the rear. The building has a total floor area of approximately 5,200 square feet.

The Barrels, Inc. drum cleaning process included a caustic (wash) tank and flush tank, a 2,000-gallon free standing tank, an open box tank, a 1,500-gallon UST for spillage collection and two 500-gallon tanks/sumps. The sumps are connected to a drain pipe which discharges to the sanitary sewer. The free standing tank is reported to have been used as a flocculation tank. The purpose of the open box tank is unknown.

A "wood shed" is located to the south of the main building and consists of a dilapidated office and garage structure. Remnant electrical switches and piping were observed within and along the side of this structure.

1.1.4 Drum Storage Area

During the operation of the Barrels, Inc. Site, drums destined for recycling were stored on the east side of the Site. During 1986 the MDNR removed all remaining drums from the Site and excavated the top six inches of soil. The soils were then disposed off Site. Surface soil samples obtained in the area in 1987 by the MDNR indicate that some soil contamination remained. Reported compounds included SVOCs, pesticides, PCBs and inorganics.

The parameter groups which were identified by the MDNR: SVOCs, pesticides, PCBs and inorganics, are parameters that tend to attenuate on soil particles and are not particularly mobile in groundwater. This suggests that the contamination in the drum storage area is likely to be a shallow surface soil problem.

1.1.5 Caustic Tank (Loading Dock/Process Tank) Area

Spills from the caustic tank located at the rear of the main building occasionally overflowed the loading dock and allegedly spilled onto the soils at the rear of the building. The spills allegedly consisted of the caustic wash liquid, but may have also contained residual materials from the drums. A tile field is reported to be located at the rear of the building to collect infiltrating spilled liquids. Fluids collected by the tile field drained into a 1,500-gallon UST located at the southeast corner of the building. This UST is referred to as the caustic overflow UST.

1.1.6 Underground Storage Tank Area

In 1986, nine underground storage tanks (USTs) were removed from the Site by the MDNR as described in earlier sections. Eight of the USTs were located to the east of the "wood shed", as presented on Figure 1.2. The north UST was located on the west side of the main building. The locations of the USTs located on Barrels, Inc. property presented on Figure 1.2 are based on MDNR field notes for the tank removals. The location of four additional suspected USTs on the Chocola Cleaning materials property are based on information obtained from the local fire marshall.

MDNR notes and a video recording of the UST removal at the Barrels property indicated that significant quantities of oil, gasoline and petroleum contaminated water from the USTs were spilled into the open excavation during the tank removals.

1.1.7 Drainage Ditch

The property drains eastward into a drainage ditch along the CSXT railway line. Soils eroded by Site drainage could settle as sediment into the drainage ditch. The location, and flow direction, of the drainage ditch is presented on Figure 1.2.

1.2 REMEDIAL INVESTIGATION OBJECTIVES

Specific objectives of the RI include:

1. investigate the nature and extent of contamination in the drum storage area, loading dock area and UST locations;

2. investigate the nature and extent of contamination within the building, including the floor slab, drains and existing tanks;

3. investigate the drainage ditch between the Site and C&O railroad tracks, with respect to impact from Site contaminated runoff;

4. investigate the hydrogeologic conditions at the Site; and

5. investigate groundwater quality at the Site.

1.3 REPORT ORGANIZATION

The following summarizes the organization for the remainder of this report.

Section 2.0 Field Investigation Summary

This section presents an overview of field work conducted during the Phase I and Phase II investigations.

Section 3.0 Regional Setting

This section presents information on regional geology and hydrogeology.

Section 4.0 Subsurface Conditions

This section presents subsurface information on site specific soils, groundwater and bedrock encountered in the boreholes and monitoring wells installed at the Site during the Phase I and Phase II investigations.

Section 5.0 Environmental Conditions

This section presents chemical distribution in Site soils and groundwater, for a list of Chemicals of Concern.

Section 6.0 Waste Residuals

The results of waste residual sampling are presented in this section.

Section 7.0 Nature and Extent of Contamination

This section presents an evaluation of site conditions encountered with respect to the objectives of the investigation.

Section 8.0 Calculations and Recommendations

Conclusions and Recommendations based on the data presented in this report are made in this Section.

SECTION 2

2.0 FIELD INVESTIGATION SUMMARY

This section presents a summary of field activities completed during the Phase I and Phase II remedial investigation. Type and location of sample and QA/QC procedures will be described.

2.1 RECONNAISSANCE AND SURVEY

During the Site reconnaissance conducted as part of the Phase I work, the following activities were conducted:

1. assessment and inspection of existing monitoring/extraction wells;
2. measurement of water levels in all existing wells;
3. reconnaissance at the Site and surrounding area;
4. documentation of Site conditions;
5. determination of accessibility of drilling locations;
6. determination of the nature and extent of vegetation; and
7. staking at locations for field investigation.

Site surveying was conducted by Darrell Hughes and Associates under direct supervision of CRA for both Phase I and Phase II tasks. A base plan was developed in Phase I, updated in Phase II and is utilized throughout this report to present the results of the investigations.

Site survey tasks included:

1. preparation of an accurate Site plan showing all existing buildings, fences, property lines, etc.;
2. accurately locating existing and new boreholes and monitoring wells; and
3. Conducting an elevation survey of all existing and new boreholes and monitoring wells, based on geodetic elevation datum.

2.2 SOIL SAMPLE COLLECTION

As indicated in Section 1.2, areas of the Site with possible soil contamination include the Drum Storage Area, the Caustic Tank Area, the UST area and the Drainage Ditch. Soil sampling was performed in these areas at proposed locations as stated in the Phase I and Phase II (SOW and SOAW) work plans with minor changes where drilling equipment access was limited. Drum Storage Area boreholes are identified with the prefix DS, Caustic Tank Area boreholes with the prefix CT, UST Area boreholes with the prefix US and Drainage Ditch boreholes are identified with the prefix DD. The Phase I soil sampling tasks were completed between May 11 and May 28, 1993. The Phase II soil sampling tasks were completed between August 8 and December 7, 1994.

Continuous sampling was conducted at each borehole using standard 2-foot long, 2-inch diameter split spoon samplers. Samples were retained for analysis based on visible contamination, odor and Photoionization Detector (PID) response. Specific sampling methodologies used in each Site area presented in the following subsections. A log was made of the subsurface conditions encountered at each borehole including soil types, depths, chemical staining and other relevant field observations. Borehole stratigraphic logs are presented in Appendix C.

The boreholes were advanced using 4 1/4-inch inside diameter hollow stem augers, a dry drilling method consistent with MDNR, Environmental Response Division (ERD), Draft Hydrogeologic Study Guidance Document dated November 1990, Section 6.3, and prevailing soil conditions. All drilling was completed by Mateco Drilling Company of Grand Rapids, Michigan using a CME45 track mounted drilling rig. Upon completion of sampling, all boreholes were filled with cement bentonite grout. All soil cuttings were collected and containerized in 55-gallon drums. The drums were staged on Site on a polyethylene mat near the southeast corner of the main building. The drums will be characterized and properly disposed, on completion of the investigation.

Upon opening each split spoon sampler, soil samples were immediately screened for any volatile organic compounds using a PID.

A second method of PID assessment of the soils was used to confirm the results of the PID readings of the split spoons. A portion of each sample (approximately four ounces) was placed into an 8-ounce sample jar and covered with aluminum foil. Each jar was maintained at a temperature of about 20°C for greater than one hour. The volatile organic concentration in the sample jar headspace was then measured by inserting a PID probe through the foil. The split spoon PID results are presented in the Borehole Logs. The results of the headspace analysis are presented in Table 2.1. No significant difference was reported between the two methods.

All soil samples were collected, preserved, documented and handled using procedures defined in the Quality Assurance Project Plan (QAPP). All QAPP quality control and decontamination procedures were abided by.

2.2.1 Drum Storage Area

2.2.1.1 Phase I

Soil borings were completed at 14 locations in the Drum Storage Area as shown on Figure 2.1. The borings were numbered DS-1 to DS-14. To ensure representative coverage, boreholes were located on a grid that was approximately 100 feet on each side.

Boreholes in the Drum Storage Area were advanced to a maximum depth of three feet into the first confining layer where native clay was encountered. Where native clay was not encountered, the borings were completed to 20 feet. Borehole depths ranged from about 6 to 20 feet below the ground surface.

From each borehole where native clay was encountered, the following samples were retained for chemical analysis:

- the top six inches of the soil sample overlying the native clay;
- the second six inches of native clay;
- the native clay from the last six inches of the boreholes (i.e. 2.5 to 3 feet into the native clay); and
- the sample with the highest PID reading.

If a clay layer was not encountered, the borehole was advanced to the first water table or a maximum depth of 20 feet and the following samples were analyzed:

- a sample from within the top three feet of the surface;
- the sample with the highest PID reading; and
- the last sample from the borehole.

In either previous situation, boring and sampling continued if visual, olfactory or initial PID readings indicated the presence of contamination.

Continuous split spoon sampling continued until two successive apparently unimpacted split spoon samples were obtained.

2.2.1.2 Phase II

The Phase II investigation of the Drum Storage Area was conducted to further define the vertical extent of detected compounds at Boreholes DS-2 and DS-4, and to further define the horizontal extent of detected compounds and analytes by the installation of Boreholes DS-15, DS-16, DS-17, DS-18, DS-19 and DS-20. The sampling depths and analytical requirements were presented in the Phase II SOW and SOAW, and are reproduced on Table 2.2. The purpose of each sample collection and analysis in the Phase II program is presented on Table 2.3. Some parameters were analyzed for total and TCLP concentrations to determine actual soil concentrations which are protective of groundwater.

2.2.2 Caustic Tank (Loading Dock/Process Tank) Area

2.2.2.1 Phase I

In the Caustic Tank area, soil borings were completed at three locations as shown on Figure 2.2.

Each of the three soil borings were drilled 3 feet into the first confining layer encountered below the collection tank invert. The boreholes were extended to depths range from 10 to 18 feet below ground surface.

In either previous situation, boring and sampling continued if visual, olfactory or initial PID readings indicated the presence of contamination.

The surface sample, along with either the highest PID reading or the most visibly contaminated sample and the bottom sample from each borehole were submitted for chemical analysis.

2.2.2.2 Phase II

The Phase II investigation of the Caustic Tank area was conducted to further define the vertical extent of compounds reported at CT-2. The sampling depths and analytical requirements were presented in the Phase II SOW and are reproduced on Table 2.2. Parameters were analyzed for total and TCLP concentrations to determine actual soil concentrations which are protective of groundwater.

2.2.3 Underground Storage Tank Area

2.2.3.1 Phase I

Soil borings in the UST area were completed at six locations as shown on Figure 2.3.

Each of the six boreholes were advanced to a minimum of six feet into the native soil. Borehole depths ranged from about 10 to 22 feet below the ground surface.

Sampling continued if visual, olfactory or initial PID readings indicated the presence of contamination. The sample with the highest PID reading and the bottom sample from each borehole were submitted for chemical analysis.

2.2.3.2 Phase II

The Phase II investigation of the UST area was conducted to further define the vertical extent of compounds and analytes reported at Borehole US-3 and to further define the horizontal extent of detected compounds and analytes by the installation of Boreholes US-7, US-8, MW-11 and MW-13. The sampling depths and analytical requirements were presented in the Phase II SOW and SOAW and are reproduced on Table 2.2. Parameters were analyzed for total and TCLP concentrations to determine actual soil concentrations which are protective of groundwater.

2.2.4 Drainage Ditch

2.2.4.1 Phase I

Soil borings (DD-1 to DD-5) in the drainage ditch area were completed at the five locations shown on Figure 2.4. Location DD-1 is

upgradient from the Site and is considered to represent background conditions.

Due to the overhead utility lines, access to the drainage ditch was limited. Therefore all soil sampling was completed using a General 500 post hole auger. Standard 2-foot long, 2-inch diameter split spoon samplers were used to obtain soil samples at continuous depth intervals. The split spoons were driven using a 15-lb hand operated hammer. Upon opening each split spoon sampler, soil samples were immediately screened for any volatile organic compounds using a PID.

Each borehole was drilled to a minimum depth of three feet into the first native confining layer encountered or to the first water table encountered or to a maximum depth of 20 feet. Borehole depths ranged from about 6 to 10 feet below ground surface.

From each borehole, the following samples were retained for chemical analysis:

- a sediment sample with the highest PID reading;
- a native soil sample with the highest PID readings;
- the last sample from the borehole.

In either previous situation, boring and sampling continued if visual, olfactory or initial PID readings indicated the presence of contamination.

2.2.4.2 Phase II

The Phase II investigation of the drainage ditch was conducted to further define the upgrade horizontal condition by the installation of Borehole DD-6, the vertical extent of compounds and analytes reported at Boreholes DD-2 and DD-4, and to define the downgrade horizontal extent of analytes by the installation of Borehole DD-7. The sampling depths and analytical requirements were presented in the Phase II SOW and SOAW

and are reproduced on Table 2.2. Parameters were analyzed for total and TCLP concentrations to determine actual soil concentrations which are protective of groundwater.

2.2.5 Background Boreholes

2.2.5.1 Phase I

A single background drainage ditch borehole was installed during the Phase I RI. This borehole was numbered DD-1, and was installed upgrade of the site (to the north).

2.2.5.2 Phase II

Two boreholes were completed to investigate background inorganic conditions, on the CSXT property located northwest of the Site, as presented on Figure 2.5.

Both boreholes were advanced 10 feet below the ground surface. A representative portion of each 2-foot sample was retained for chemical analysis.

2.3 PHYSICAL TESTING OF CLAY

An undisturbed sample of clay was obtained from the first confining layer encountered at MW2, MW7, MW8, and MW9, using a thin walled Shelby Tube Sampler. The Shelby Tube was pushed two feet into the native clay confining layer. The tubes were sealed and shipped to Materials Testing Consultants, Inc. of Grand Rapids, Michigan. The samples were subjected to grain size distribution and falling head permeability testing. The grain size analysis was conducted using ASTM Test Method D 421 and D 422. The permeability testing was conducted using a falling head method. The results of clay physical testing are presented on Appendix D.

2.4 MONITORING WELL INSTALLATION

2.4.1 Phase I

Ten groundwater monitoring wells were installed at the locations presented on Figure 2.6 as part of the Phase I investigation. Six monitoring wells were installed at new locations, four monitoring wells were installed adjacent to existing monitoring wells. The wells were installed between May 27 and June 16, 1993. Monitoring well stratigraphic and construction logs are presented in Appendix E. Table 2.3 presents monitoring well completion details.

Soil sampling was conducted during the drilling of boreholes for installation of monitoring wells. All soil samples were collected using a CME-45 track mounted drilling rig. Borings were advanced utilizing 4 1/4-inch inside diameter hollow steam augers. Standard 2-foot long, 2-inch diameter split spoon samplers were used to obtain soil samples on a continuous depth basis. Upon opening each split spoon sampler, soil samples were immediately screened for volatile organic compounds using a PID. No soil samples were retained for chemical analysis, since no saturated sample had any evidence of contamination.

Phase I monitoring well installations included a background well cluster MW9, water table wells at existing locations MW2, MW3, MW4 (formerly ED1-4), and MW5 (formerly ED1-5), two new water table wells MW6 and MW8, and one new on-Site monitoring well cluster MW7. The location of each well is presented on Figure 2.6. The background well cluster included a well at the water table and a well with the top of the screen installed at a depth of approximately 20 feet below the water table. The boreholes for well MW6 and MW8 were advanced to bedrock, approximately 60 feet BGS to obtain deep stratigraphic information.

All monitoring wells installed at the Site consisted of 2-inch black steel or stainless steel riser pipe with stainless steel screens. The

black steel pipe was utilized only above the water table. Only stainless steel materials were utilized below the water table. The screens placed at the water table were 10 feet long straddling the water table at mid-screen. If placed below the water table, a well screen with a length of three feet was used.

A clean quartz sand pack was installed around each well screen. The sand pack extended to two feet above the top of the screen. A 2-foot bentonite plug was placed on the sandpack. The remainder of the borehole annulus was backfilled with bentonite cement grout. Lockable protective caps were installed over each monitoring well.

Each monitoring well was developed with a pre-cleaned stainless steel bailer in accordance with requirements defined in the Quality Assurance Project Plan (QAPP). Field measurements of pH, conductivity and temperature were taken after each well volume was removed. Well development continued until three consecutive consistent readings were observed.

Following well development, all wells were surveyed and groundwater elevations in each well were measured. Groundwater levels were routinely measured during the remainder of the field investigation.

Purge water and development water were collected and transferred to a 1,700-gallon tank.

2.4.2 Phase II

The Phase II investigation included the installation of five new monitoring well clusters, upgradient and down gradient of the Site. The installations included monitoring well clusters of two wells, one screened across the water table and one screened below the water table, at MW10, MW11, MW12, MW13, and MW14. The locations of the wells are presented on Figure 2.6. The installation protocol presented on the QAPP and described above in Section 2.4.1 were utilized.

At MW11 and MW13, a third well was constructed and screened across a perched water zone which was encountered at a depth of approximately 20 feet below grade.

2.5 GROUNDWATER SAMPLING

2.5.1 Phase I

One round of groundwater sampling was completed on 15 wells. Monitoring wells sampled in Phase included MW1-47, MW2-36, MW2-45, MW3-33, MW3-46, MW4-34, MW4-50, MW5-34, MW5-50, MW6-32, MW7-33, MW7-48, MW8-34, MW9-33 and MW9-45. All wells were purged by bailing or pumping until at least three borehole volumes were removed from each well.

A second confirmatory round of sampling was conducted for wells MW2-36, MW5-34, MW6-32, and MW7-33, for a well specific parameter list.

2.5.2 Phase II

During the Phase II investigation, all Phase I wells and wells at MW10, MW11, and MW12 were subjected to two sampling rounds. The SOAW wells, MW13 and MW14, were sampled once during the second Phase II sampling round.

2.5.3 Sampling Protocol

Groundwater samples were collected from each of the 27 monitoring wells following well development in accordance with the following protocols:

i) new disposable latex gloves were worn by sampling personnel at each monitoring well;

ii) the depth of water was measured to the nearest 0.01 foot using an electric measuring tape, cleaned in accordance with the QAPP;

iii) the pH, temperature and conductivity of the groundwater was recorded;

iv) wells were purged using a low volume electric pump or a bottom filling stainless steel bailer;

v) groundwater samples were obtained using a bottom filling stainless steel bailer, cleaned in accordance with the QAPP; and

vi) all samples collected for inorganic analysis were passed through a final filter with a 0.45 micron opening size.

The pH, conductivity and temperature were obtained following removal of each casing volume. Purging continued until these parameters had stabilized. All purging was consistent with the procedures outlined in the MDNR, ERD, Draft Hydrogeologic Study Guidance Document, Section III, C.8. All purge groundwater generated during purging was stored in a 1,700-gallon tank, located near the main building. The stored purge water was tested and properly disposed of with permission from the MDNR.

All groundwater samples were collected, documented, and handled using procedures outlined in the Quality Assurance Project Plan (QAPP) February, 1993. All QAPP quality control and decontamination procedures were followed.

2.6 SINGLE WELL RESPONSE TEST (SWRT)

The hydraulic conductivity of the Upper Sand Aquifer was evaluated utilizing the single well response test (SWRT). The SWRT

involves inducing a change in the water level in a well by introducing a slug of known volume. As the water level returned to its static level, measurements were collected with a Telog data collection system with a 10 pgsi pressure transducer. The measurements were collected at one second intervals.

An analysis of the (SWRT) data was completed to determine hydraulic conductivity at each well's screened interval utilizing the Bouwer-Rice method for unconfined aquifers. Calculations of hydraulic conductivity, based on measurements taken, were generated using the AquaTESOLV computer program and are included in Appendix F.

2.7 WASTE RESIDUAL SAMPLING

Composite grab samples of waste residuals were collected from each of the nine locations designated in the RI/FS Work Plan, within or near the main building. The locations that these samples were taken from are presented on Figure 2.7. One additional sample was obtained from a small square metal tank structure which had a fume hood above it. These waste residual samples consisted of liquids and sludges which remained at the base of the sampled tanks from the drum cleaning and reclamation process. When sludges were encountered several aliquots of material were collected using appropriate sampling equipment. These aliquots were thoroughly mixed in a stainless steel bowl and the sample was placed in an appropriate sample container and sealed with a Teflon lined cap. When liquids were encountered, samples were collected using the sample jar designated for the analysis. All sampling protocol was completed in accordance with the MDNR approved Quality Assurance Project Plan (QAPP).

Decontamination of equipment was performed in Accordance with the QAPP.

As presented on Figure 2.7, a composite grab sample was obtained from each of the following locations:

i) the five process tanks (5 samples);

ii) the two sumps (two samples);

iii) the floor drains which connect the process tanks and sumps (one sample);

iv) scrapings of residual materials on the floor (one sample; and

v) the manhole located on the west side of the main building (one sample).

The waste residual sludge/liquid was submitted to ENCOTEC, Inc. in Ann Arbor, Michigan for RCRA hazardous waste characteristics analysis, including reactivity, corrosivity, and ignitability and TCLP for volatiles, semi-volatiles, pesticides, herbicides, metals and PCBs.

2.8 PHASE II SURFICIAL SOIL PCB ANALYSIS

Surficial soil sampling was undertaken at the Site to collect data on the surficial distribution of PCBs in the Caustic Tank and Drainage Ditch areas, which reported PCBs during Phase I work. Samples were collected from the Site using pre-cleaned stainless steel spoons at the 36 locations identified on Figure 2.8. The collected samples were analyzed on Site with a commercially available immunoassay field soil screening kit purchased from Ensys Inc. The soil samples were analyzed in strict accordance with the procedure outlined in the User's Guide, by qualified CRA personnel. Three of the samples were submitted to ENCOTEC Inc., in Ann Arbor, Michigan, for analysis of PCBs to correlate the results obtained using the Ensys Inc. kit. The results of the assessment are provided in Appendix G.

2.9 DATA VALIDATION

All chemical analyses including priority pollutants, current, reactivity, ignitability, corrosivity and TCLP were performed by ENCOTEC labs of Ann Arbor Michigan.

Analytical results of the field investigation were assessed and validated by CRA's Quality Assurance Officer (QAO) based upon a review of standard quality control criteria presented in the QAPP. Laboratory validation reports are presented in Appendix H. All analyses included strict adherence to Chain of Custody protocol. Field chain of custody forms are presented in Appendix I.

The following provides a summary and definition of the qualifiers used in the Barrels Inc. databases.

B - analyte present in method blank
E - estimated value as reported by lab
J - value is an estimated quality for detected analytes
ND - analyte is a non-detect, associated value being the quantitation limit
R - data was unusable for non-detected analytes
S - results due to secondary dilution
UJ - analyte was checked for, but not detected, value is an estimate

As noted in the QA/QC memo of October 14, 1993, which is attached as Appendix J, inconsistencies in compound concentration profiles indicate that an error in sample labeling may have occurred for Boreholes DS-4, DS-8 and DD-1. The data from the lower depths was switched to provide a supportable concentrations profile.

Methylene Chloride and Bis(2-ethylhexyl)phthalate were found to be common laboratory contaminants and are excluded from the data when found at low concentrations.

SECTION 3

3.0 REGIONAL SETTING

3.1 REGIONAL GEOLOGY

3.1.1 Overburden

Present day topography of Ingham County is characterized by gentle morainic hills and relatively flat undulating ground moraine. Most of the glacial drift in this area consists of unconsolidated clay, sand and gravel. Figure 3.1 indicates that the surficial geology in the area of the Site consists of glacial moraines and outwash channels. The regional unconsolidated materials are predominantly fine grained materials that would generally result in relatively low groundwater velocities. Regional geologic information indicates that the drift stratigraphy consists of about 50 to 100 feet of overburden soils (drift) overlying bedrock. The bedrock consists of interbedded sandstone, shale and limestone of the Saginaw Formation.

3.1.2 Bedrock

The bedrock geology throughout Ingham County consists of the Saginaw formation of the Pennsylvanian age which directly underlies the glacial deposits. Regionally, the formation is composed of sandstone, siltstone, coal, shale and minor amounts of limestone (Kelly, 1936). Bedrock is found at an average depth of 50 to 100 feet BGS.

3.2 REGIONAL HYDROGEOLOGY

3.2.1 Surface Drainage

Regionally, the Site is located within the Grand River Drainage Basin. Most of the northern part of Ingham County is drained by the Red Cedar River and its major tributaries, Sycamore Creek, Deer Creek, Doan Creek and Sloan Creek. The western part of the county is drained by the

Grand River and the southern part is drained by several tributaries of Portage Creek (Vanlier, 1969). The Barrels Inc. Site drains toward the Grand River.

3.2.2 Hydrogeology

Figures 3.2 and 3.3 provide regional information on aquifer characteristics. These figures are reproduced from the Hydrogeologic Atlas of Michigan, 1981.

Figure 3.2 depicts the Lansing area as being part of a Category IIIB aquifer. Category IIIB is described in the Hydrogeologic Atlas of Michigan as an area where the overburden soils consist of interbedded aquifers, aquicludes and aquitards at depth, but where there may not be an aquifer near the surface.

Figure 3.3 presents regional aquifer vulnerability to surface contamination. The Site is located in an area where the local first usable aquifer is protected from surface contamination by impervious materials (silt and clay). The aquifer in the area of the Site is a Category IIIB aquifer and is not located near the surface.

SECTION 4

4.0 SUBSURFACE CONDITIONS

The following section provides a summary of the subsurface conditions encountered in the boreholes and monitoring wells placed at the Site during Phase I and Phase II. The summary presentation is based on the areas of the Site with possible soil contamination as presented in Section 2.2. Complete details of subsurface conditions encountered are presented on the borehole and monitoring well logs provided in Appendices C and E.

4.1 SITE SOILS

This section will present the subsurface soil conditions encountered at the Site. The soils encountered within the boreholes generally consisted of surficial fill materials overlying a clay stratum, which in turn overlies an interbedded clay and sand sequence. Table 4.1 presents a summary of soil physical details. A brief description of the findings from each area of the Site is presented in the following subsections of Section 4 which relates soil conditions across the Site.

4.1.1 Drum Storage Area

Boreholes placed in the Drum Storage Area were given the designation DS. Boreholes installed during Phase I were numbered DS-1 through DS-14, while the Phase II boreholes were numbered DS-15 through to DS-20.

4.1.1.1 Drum Storage Area - Fill Materials

Fill materials were encountered at each borehole location, including Boreholes DS-1 through DS-20. These materials consist mainly of a random mixture of sand and gravel, sand and silt, silt and gravel, and waste materials, ranging in depth from 2 to 7.5 feet below ground surface.

Coal was encountered within the fill at Boreholes DS-1, DS-10, DS-13, DS-16, DS-18, DS-19 and DS-20. At Boreholes DS-1 and DS-20, the coal was fragmented and contained within a matrix of sand. At Borehole DS-10 coal was found in a 4-inch thick seam of powder. At Borehole DS-13 a 1.7-foot thick seam of coal was encountered. At Borehole DS-16, a 0.5-foot coal and gravel layer was encountered 1 foot below ground surface. At Borehole DS-18, two 2-inch coal layers were encountered within the first 1.5 feet of the borehole. At DS-19, a 0.4-foot thick layer of coal was encountered at the 1-foot depth of the borehole.

4.1.1.2 Drum Storage Area - Sand

Sand was encountered within Boreholes DS-3, DS-4, DS-5, DS-6, DS-12, DS-15, DS-16, DS-18, DS-19 and DS-20 below the fill materials.

A sand stratum was encountered between the fill materials and an underlying clay layer (depth 3 to 4 feet) in Boreholes DS-5, DS-6, and DS-16. Within Borehole DS-4 a sand stratum was encountered below the clay layer at a depth of about 7 feet. At Boreholes DS-3 and DS-12, sand soils were encountered below the fill materials, extending to depths of about 12 to 20 feet. At Boreholes DS-15, DS-18, and DS-19, alternating sand and silt layers were encountered to depths ranging from 4 to 12 feet.

4.1.1.3 Drum Storage Area - Clay

Clay soils, in the context of this report, indicate soils capable of creating a suitable confining layer to limit the downward migration of contaminants. As such, included in this broad category are materials with very low permeabilities ranging from low plasticity materials containing large amounts of silt, to materials with higher plasticity containing extensive amounts of clay.

Clay soils were encountered at each of the drum storage boreholes except Boreholes DS-3, DS-12, DS-15, DS-17, DS-18, and DS-19, at depths of about 3 to 8 feet. The clay was penetrated at Boreholes DS-4 and DS-16. At Borehole DS-4, the clay had a thickness of 3 feet and at Borehole DS-16, the clay had a thickness of 9 feet. At the remaining boreholes the clay was not fully penetrated, but had thicknesses which were greater than 2 to 6 feet. The permeability of the clay materials has been measured to be approximately 10^{-8} cm/sec indicating that it is a confining layer.

Samples of the shallow clay were obtained at MW2, MW7 and MW9. These locations were chosen due to their proximity to boreholes where clay was encountered. A sample at MW8 was obtained to determine the permeability of shallow native soil at a location where clay was not encountered (i.e. DS-3). The results of soil physical testing are presented in Appendix D. A summary of the grain size distribution and falling head permeability analysis conducted on each sample is presented on Table 4.1. The permeability of the clay stratum ranges from 1.0×10^{-8} to 5.7×10^{-8} cm/sec. This indicates that the clay is an effective barrier.

4.1.2 Caustic Tank Area

Boreholes placed in the Caustic Tank Area were given the designation CT (i.e. CT-1 to CT-3).

4.1.2.1 Caustic Tank Area - Fill Materials

Fill materials were encountered in the Caustic Tank area at Boreholes CT-1, CT-2 and CT-3. These fill materials consist of sands and gravel with little clay and silt ranging in depth from 1.8 to 5.8 feet below the ground surface. Fill also contained black slag material, and an occasional black oily stained seam. Odors were noted in several of the fill samples.

4.1.2.2 Caustic Tank Area - Sand

Sand was encountered at all of the Boreholes. Borehole CT-1 has a layer of sand with some clay that underlies the fill from 3.0 to 5.0 feet below ground surface. Borehole CT-2 has an interbedded clay and sand unit extending down from 8 feet to 12 feet below ground surface. Borehole CT-3 has an interbedded sand and silt unit from 8.5 to 18.0 feet below the ground surface.

4.1.2.3 Caustic Tank Area - Clay

Clay was encountered at each of the boreholes placed in the Caustic Tank area. Borehole CT-1 encountered a clay layer which contained occasional sand seams extending from 5 to 10 feet below the ground surface. Borehole CT-2 had a clay layer which also contained occasional sand seams extending from 1.8 to 8 feet below ground surface, followed by interwoven sand and clay layers. Borehole CT-3 had three clay layers at depths of 5.8 to 8.5, 10.5 to 12.5 and 14.8 to 18 feet.

4.1.3 Underground Storage Tank Area

Boreholes placed in the Underground Storage Tank Area were given the designation US. Boreholes installed during Phase I were numbered US-1 through US-6, while the four Phase II boreholes were numbered US-7, US-8, MW-11 and MW-13 which were later developed into monitoring well clusters.

4.1.3.1 Underground Storage Tank Area - Fill Materials

Fill was encountered in the underground storage tank area at each borehole ranging in depth from 0.8 to 10.5 feet below ground surface. The fill materials consist of sand and gravel with some asphalt

material encountered at borehole US-1. Petroleum staining and oily liquid were detected at Borehole US-3, within the fill materials.

4.1.3.2 Underground Storage Tank Area - Sand

Sand was encountered underlying the fill at each borehole. At boreholes US-1, US-2, US-5 and US-6 sand soils were found to be interbedded with clay at depths from 16.0 to 22.0 feet below the ground surface. At boreholes US-3 and US-4 sand lenses were encountered within the clay. At Borehole US-7, alternating sand and clay layers were found at depths of 7 to 12 feet, at the foot of the clay layer. At Borehole US-8, a layer of sand was encountered at the 2- to 4-foot depth. At Boreholes MW-11 and MW-13 sand was encountered below the clay layer.

4.1.3.3 Underground Storage Tank Area - Clay

A significant shallow clay layer was encountered at all Boreholes except US-2. The clay layer was encountered at a depth of approximately 2 to 6 feet, and generally had a thickness of approximately 2 to 8 feet.

4.1.4 Drainage Ditch

The boreholes placed in the Drainage Ditch Area were given the designation DD. Boreholes installed during Phase I were numbered DD-1 through DD-5, and the two Phase II Boreholes were numbered DD-6 and DD-7. Borehole DD-1 was installed upgradient from the Site and is considered to represent background conditions in the drainage ditch.

4.1.4.1 Drainage Ditch - Fill Materials

Along the drainage ditch, a fill layer was encountered at each borehole, ranging in depth from 0.5 to 3.0 feet below ground surface. The fill consisted of sands and gravels with some clay. Also encountered in the fill were fragments of slag, brick and coal.

4.1.4.2 Drainage Ditch - Sand

Sand was encountered beneath the fill at Boreholes DD-1, DD-5, DD-6, and DD-7. This sand contains some silt and traces of clay and extends to a depth of approximately 4 to 5 feet below the ground surface. At Borehole DD-2 a sand seam was encountered within a clay stratum. At Borehole DD-7, sand was encountered between the depths of 0.5 and 11.5 feet, interbedded with silt and clay layers.

4.1.4.3 Drainage Ditch - Clay

A shallow clay confining stratum was encountered at each borehole except DD-6, at a depth ranging from approximately 2 to 5 feet. Borehole DD-2 encountered two clay layers extending from 2.2 to greater than 6 feet below the ground surface. At boreholes DD-3, DD-4 and DD-5, clay underlies the fill and extends from about 8.0 to 10.0 feet below the ground surface. At Borehole DD-7, a 1.2-foot clay layer was encountered at a depth of 10.3 feet below the ground surface.

4.1.5 Background Conditions Investigation

As a part of the Phase II investigation, two background boreholes were installed and given the designation BG-1 and BG-2.

4.1.5.1 Background Fill Materials

Fill materials were encountered at both of the boreholes. Consisting of silty soil materials, extending to a depth of 2 to 6 feet. At Borehole BG-1, gravel, coal, and sand were identified in the silt fill material, while at BG-2, a 4-inch coal layer was encountered at the surface, and sand seams in the fill at the 4- to 6-foot depth within the silt fill.

4.1.5.2 Background Sand

Sand was encountered at both boreholes. At Borehole BG-1, sand was encountered from the 5-foot to the 10-foot depth. At Borehole BG-2, sand was encountered from the 6-foot to the 10-foot depth.

4.1.6 Monitoring Wells

The soils encountered during the installation of monitoring wells consisted of surficial fill materials overlying a clay stratum, which in turn overlies an interbedded clay and sand sequence which extends to a depth of about 30 feet below grade. Underlying the interbedded sequence, a sand and gravel stratum (aquifer) was encountered which extended to a depth of approximately 54 feet. Below the sand and gravel a gray clay till aquitard was encountered, which extends to a sandstone bedrock.

4.1.6.1 Monitoring Wells - Fill Materials

Each of the monitoring well borings encountered fill materials at the ground surface, generally extending to a depth of less than 3 feet. However, at MW5, fill materials extended to a depth of approximately 12 feet.

The fill composition varied throughout the Site, but generally consisted of earth materials with traces of organics.

Coal was encountered within the fill materials at MW5, MW6 and MW7. At MW7 the coal was encountered in a stratum of about 2 feet thickness.

4.1.6.2 Monitoring Wells - Clay

A shallow confining clay stratum was encountered in each of the monitoring well borings, except at MW3, MW5, MW-10, and MW-12. The clay had a thickness of about 2.5 to 5 feet. As discussed previously, undisturbed samples of the clay were obtained from MW2, MW7 and MW9 and were subjected to falling head permeability tests. The testing indicated that the clay has a permeability of approximately 10^{-8} cm/sec, making it a confining layer.

4.1.6.3 Monitoring Wells - Interbedded Sand/Clay

A sequence of interbedded sand and clay was encountered below the confining clay stratum at each of the monitoring wells. The sequence extended to the top of the sand aquifer at a depth of about 30 feet below grade. This sequence was generally below the depths of the boreholes, and as such was only encountered in 3 of the 40 boreholes drilled.

The thickness of the individual clay layers ranged from about 0.5 to 2 feet. These layers had similar physical properties as the clay confining layer. As such, the interbedded clay would also act as a barrier to restrict downward migration.

Perched groundwater conditions were encountered within the interbedded sand/clay stratum during the installation of Monitoring Wells MW11 and MW13. The perched condition consisted of a 1 to 2-foot layer of groundwater located at a depth of approximately 20 feet below grade. A distinct petroleum odor was detected in groundwater obtained from the perched zone at MW11, but was not observed at MW13.

4.1.6.4 Monitoring Wells - Sand

A stratum of clean sand was encountered below the interbedded sand/clay sequence at each of the monitoring wells. This sand stratum was fully penetrated at MW6 and MW8, and was found to extend to a depth of about 54 feet.

The sand was found to be saturated below a depth of approximately 27 to 30 feet and is considered to be a sand aquifer.

4.1.6.5 Monitoring Wells - Clay Till

A clay till was encountered below the sand aquifer at MW6 and MW8. The till extended to the bedrock surface at a depth of about 58 to 64 feet. This stratum is a low permeability barrier and a lower boundary aquitard to the aquifer.

4.1.7 Site Soils Summary

Five cross-sections of the Site were prepared based on the subsurface soils conditions encountered in the borings completed on the Site. Figure 4.1 presents the location of the cross-sections, and Figures 4.2 to 4.6 present the sections.

Using these cross-sections the various strata encountered at the Site will be described to provide background for the following sections of the report.

The cross-sections indicate the following:

1) fill materials are encountered throughout the Site;

2) a confining clay layer underlies the fill materials across a majority of the site, having a thickness of 4 to greater than 10 feet;
3) the clay stratum is underlain by an interbedded sand/clay and sand/silt sequence, followed by a sand aquifer;
4) the sand aquifer was underlain by a dense clay till of about 7 to 10 feet thickness; and
5) finally, the overburden was underlain by bedrock at a depth of about 60 feet.

The shallow confining clay stratum as described below, is generally found to be continuous, with the possible exceptions at locations US-2, DS-3, DS-15, DS-17, DS-18, BG-1, BG-2, and MW5.

At the location of Borehole US-2, and other locations of former petroleum underground storage tanks, excavations of soils conducted during the installation and removal of the tanks may have extended into and through the confining clay layer. This is illustrated on Figure 4.2, which indicates that the fill at US-2 extends well into the clay unit.

At DS-3, the clay stratum was not encountered to a depth of about 12 feet. However, the boring for MW8, which was done within 25 feet of DS-3, encountered a clay layer at a depth of about 7 feet (reference Figures 4.2 and 4.3). Figure 4.2 suggests that a thin clay stratum may underlay DS-3, however, this has not been verified. The lack of a clay stratum at DS-3 is not the result of any excavation there, since several feet of native sand were encountered above the clay. The clay may thin (pinch out) between MW8 and DS-3, to the point where it may be non-existent at DS-3.

At MW5 fill materials are found to penetrate the clay stratum extending to a depth of about 12 feet. It is suspected that an excavation was conducted at this location in the past. The purpose of an excavation at this location is not known.

Boreholes BG-1 and BG-2 are located to the north of the Site, in the vicinity of MW-10. The logs for MW-10 indicate that a clay layer exists at 14.5 feet below the ground surface. In this area, the shallow clay layer

may be located below the 10-foot depth to which these two boreholes were installed.

Boreholes DS-12 and DS-18 are located to the south of the Site. Borehole DS-17 is located near DS-14 and MW-5. MW-5 may have had an excavation conducted in its vicinity, and may not be representative of the soils in the area, but a clay layer was encountered in DS-14 from 3 feet to 10 feet below the ground surface. This absence of a clay layer at DS-17 may indicate that an excavation has also been conducted in its vicinity as the first 8 feet of soil encountered were fill material.

Borehole DS-18 is not close to any other boreholes. The lack of a shallow clay layer may indicate that a prior excavation has been conducted in the area, or that the clay layer exists at a deeper depth.

At Borehole DS-15, no clay was detected to the 10-foot depth. At Boreholes in the vicinity, DS-4, DS-6, DD-3, and MW-6, a clay layer was detected in between the depths of approximately 4 to 7 feet. As no clay was detected in DS-15, there may have been an excavation previously at its location, or the clay layer may pinch or thin out or may be located at greater depth at this borehole.

4.2 BEDROCK

Two borings were drilled until a gray sandstone, bedrock, was encountered. Bedrock was encountered at 58.5 feet below the ground surface at MW6-32 and 64.0 feet below the ground surface at MW8-34. At these boring locations the type of bedrock encountered was a gray medium grained sandstone which is consistent with descriptions of Saginaw Formation lithology.

4.3 GROUNDWATER

Groundwater conditions at the Site have been characterized through monitoring conducted within the previously (Pre-RI) existing and new wells at the Site.

4.3.1 Well Development and Purging

Details of well development are presented on Table 4.2. Generally the wells could not be developed to clear conditions. This is due to the nature of the soils in which the wells are screened. The wells are generally installed within the sand aquifer, however, some wells straddle the interbedded sand/clay stratum.

Each well was purged prior to sampling groundwater. The purging criteria was discussed in Section 2.0 and is presented in the QAPP. The results of the purging are presented on Table 4.3. As with the well development results, the purging results indicate that the water could generally not be purged to a clear condition. However, it is noted that conductivity, temperature and pH had stabilized prior to sampling groundwater.

4.3.2 Single Well Response Tests

The radial permeability of the screened soils at each monitoring well was measured by means of a single well response test. This test is also known as a slug test, or rising or falling head test. The procedure for the test was described in Section 2.0 and the QAPP.

The results of the permeability testing are presented on Table 4.4 as well as Appendix F. The range of permeability measured is 6.7×10^{-6} cm/sec to 1.1×10^{-1} cm/sec. The majority of the test results fall within the range expected for sand or sand and gravel.

4.3.3 Groundwater Elevations

Table 4.5 presents the results of the water level measurements taken at the Site. Based on this data, Figure 4.7 was developed which shows the groundwater contours and also indicates an approximate groundwater flow direction.

The direction of groundwater flow across the Barrels Site is approximately south to south-west. The MDNR's Work Plan for the Site indicated a westerly groundwater flow direction, but discounted MW2 in their evaluation. The new data indicates that the water level at MW2 is consistent with other water levels measured, and should be considered.

4.3.4 Groundwater Flow Rate

The mean horizontal hydraulic conductivity (K_h) across the Site was calculated from the single well response tests to be about 4×10^{-2} cm/sec, or 113 ft/day.

Using Figure 4.7, a groundwater gradient of about 0.0027 ft/ft was measured.

Assuming an average porosity (n) of about 0.3, the following flow rate was calculated:

$$v = \frac{K_h i}{n} \qquad \text{where: } K_h = 113 \text{ ft/day; } i = .0027 \text{ ft/ft; } n = 0.3$$

Therefore: $v = 1.0$ ft/day

Therefore, the groundwater flow rate is approximately 1.0 ft/day an approximate south/southwest direction, as indicated on Figure 4.7.

SECTION 5

5.0 ENVIRONMENTAL CONDITIONS

The purpose of this section is to summarize reported analytical results with respect to the geologic conditions encountered at the Site. Each of the reported compounds will be compared against definition criteria to determine a list of parameters of concern.

5.1 DEFINITION CRITERIA

Each of the compounds detected in the soils and groundwater at the Site will be compared to the Michigan Natural Resources and Environmental Protection Act 451, Part 201 Residential Cleanup criteria, as defined in Environmental Response Division (ERD) Draft Operational Memorandum #8, Revision 4 dated June 5, 1995 and errata sheet dated June 8, 1995 and the Part 201 Industrial Cleanup criteria as defined in ERD Draft Operational Memorandum #14 Revision 2, dated June 6, 1995, errata sheet dated June 8, 1995. For metals in soils, a background criteria was also calculated as permitted by Part 201. Background calculations for groundwater were not possible due to a limited number of sampling points upgradient of the Site.

Tables 5.1 and 5.2 present the appropriate soil and groundwater definition criteria for all compounds detected on Site.

For clay soils, background conditions were calculated for inorganics by conducting a statistical evaluation of soil samples which were found to be clean of all organic constituents. These samples are presented on Table 5.3. Table 5.4 presents the results of the background calculations. The statistical evaluation equation used is taken from the MDNR's April 1994 Verification of Soil Remediation Document. The background criteria is the mean of the designated background sample concentrations, plus three times the standard deviation of the data. Also, the calculated background concentrations were compared to the Acceptable Default Values presented in the MDNR's September 30, 1993 MERA Operational Memo #15, Default Type A Cleanup Criteria. The higher of the two numbers was chosen.

For sand soils, the default values were utilized due to an insufficient number of background samples for Site specific calculations.

5.2 PARAMETERS OF CONCERN

Lists of Parameters of Concern for the Barrels, Inc. Site were developed using the definition criteria presented in Section 5.1. Tables 5.5 and 5.6, present the Parameters of Concern for soils and groundwater respectively. The lists include only substances which were detected at concentrations above the Part 201 criteria or in the case of inorganics in soil, the background criteria. The discussion within the remainder of this RI Report will generally be limited to the Parameters of Concern.

It is noted that the compound curene [4,4'-methylene - bis(2 chloroaniline)] was not detected in any soil or groundwater sample and as such is not a Parameter of Concern.

Zinc was not selected as a groundwater parameter of concern because it was detected only in wells of galvanized steel construction. The galvanizing process uses zinc which has been known to affect groundwater samples from these types of wells.

Appendix K presents the Environmental Fate and Transport of the Parameters of Concern. This includes the physical and chemical properties of each parameter.

5.3 SOILS

During the field activities, subsurface soil samples were collected from the four areas of possible soil contamination at the Site in order to define the extent of vertical penetration of contaminants. These

areas include the drum storage area, the loading dock/process tank area, the underground storage tank area and the drainage ditch area.

The following subsections will discuss analytical results from soil samples. A summary of the reported VOCs, SVOCs, Inorganics and PCB/Pesticides are presented in Tables 5.7, 5.8, 5.9 and 5.10. Drawings 1, 2, 3 and 4 present the reported compounds and indicate which parameters exceed the definition criteria discussed. A table of all samples obtained, and parameters analyzed for, is presented in Appendix L.

A point form summary of results is presented in the following subsections of Section 5.3.

5.3.1 Drum Storage Area

A total of 20 boreholes were drilled during the Phase I and Phase II investigations and samples collected at various depths from the ground surface down to 26 feet, to determine the nature and extent of reported compounds.

5.3.1.1 Drum Storage Area VOCs

Drawing 1 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported VOCs

DS-3, DS-5, DS-7, DS-9, DS-10, DS-13, DS-17, and DS-18.

Boreholes Containing VOCs Below Part 201 Residential Criteria

DS-1, DS-2, and 2A, DS-6, DS-8, DS-11, and DS-14.

Boreholes Containing VOCs Above Part 201 Residential Criteria

DS-4 and 4a, and DS-12.

Discussion of VOCs Above Part 201 Residential Criteria

Soil samples obtained from Borehole DS-4 contained reported concentrations of Tetrachloroethene. Tetrachloroethene was reported in each of the four samples obtained at DS-4. Samples collected at the 2 to 4-foot, 4 to 6-foot, and 6 to 8-foot depths, reported concentrations of Tetrachloroethene above the Part 201 Residential 20X Drinking Water criteria only, not above Industrial. Samples collected at 8 to 10-foot and 14 to 16-foot depths did not exceed any of the criteria. This indicates a limit to downward migration of Tetrachloroethene.

Soil samples obtained from Borehole DS-12 contained the reported compounds, 1,2-Dichloroethene and Tetrachloroethene above Part 201 Residential 20X Drinking Water criteria. All compounds were reported in a sample of fill material obtained at a depth between 4 to 6 feet. Tetrachloroethene and 1,2-Dichloroethene were each found to have concentrations above the Part 201 Residential 20X Drinking Water Value criteria. However, all parameters had concentrations below the Part 201 Residential and Industrial Direct Contact Cleanup criteria. The fill was found to be underlain by interbedded sand and clay soils at a depth of 6 to 8 feet. A sample obtained at a depth of 18 to 20 feet reported no VOCs. This suggests that the downward migration of the VOCs is limited to a depth of less than 18 feet.

Borehole DS-17 was installed during Phase II to determine the horizontal extent of trichloroethene to the south of DS-14. No VOCs were reported above detection limits at DS-17.

5.3.1.2 Drum Storage Area SVOCs

Drawing 2 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported SVOCs

DS-3, DS-6, and DS-18.

Boreholes Containing SVOCs Below Part 201 Residential Criteria

DS-7 and DS-14.

Boreholes Containing SVOCs Above Part 201 Residential Criteria

DS-1, DS-2, DS-4, DS-5, DS-8, DS-9, DS-10, DS-11, DS-12, and DS-13.

Discussion of SVOCs Above Part 201 Residential Criteria

In all borings except DS-12 the parameters exceeding Part 201 Residential criteria are Polynuclear Aromatic Hydrocarbons (PAHs). These compounds tend to attenuate strongly on soil and consequently all of the criteria exceedences occur in the 0 to 2-foot samples except at DS-4 where they appear in the 2 to 4-foot sample but not in the 4 to 6-foot sample.

At DS-12, a phthalate compound, Di-n-octyl phthalate exceeded the Part 201 Residential criteria in the 0 to 2-foot sample only.

Part 201 Industrial criteria were not exceeded in any borehole.

5.3.1.3 Drum Storage Area Pesticides/PCBs

Drawing 3 presents a summary of the reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Pesticides/PCBs

DS-3, DS-6, DS-8, DS-10, and DS-13.

Boreholes Containing Pesticides/PCBs - Below Part 201 Residential Criteria

DS-1, DS-4, DS-5, DS-7, DS-11, DS-12, and DS-14.

Boreholes Containing Pesticides/PCBs Above Part 201 Residential Criteria:

DS-2.

Discussion of Pesticides/PCBs Above Part 201 Residential Criteria

Pesticides/PCBs exceeded Part 201 Residential Direct Contact criteria at one location in the drum storage area. Alpha-Chlordane and Gamma-Chlordane exceeded the Part 201 Residential criteria at DS-2 in the 0 to 2-foot sample only.

No PCBs were detected in the drum storage area soil samples. None of the reported pesticides exceeded the Part 201 Industrial criteria.

5.3.1.4 Drum Storage Area Inorganics

Drawing 4 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Inorganics

None

Boreholes Containing Inorganics Below Background or Part 201 Residential Criteria

DS-3, DS-6, DS-15, and DS-19.

Boreholes Containing Inorganics Above Background or Part 201 Residential Criteria

DS-1, DS-2, DS-2a, DS-4, DS-4a, DS-5, DS-7, DS-8, DS-9, DS-10, DS-11, DS-12, DS-13, DS-14, DS-16, DS-17, DS-18, DS-20.

Discussion of Inorganics Above Background or Part 201 Residential Criteria

Inorganics consisting of metals and cyanide are reported in every sample collected at the Site. Exceedences for at least one parameter are reported in 16 of 20 borehole locations. In all cases a vertical and horizontal boundary to Site related criteria exceedence has been established.

The most frequent inorganic exceedence is Arsenic. Lead, Mercury and Zinc are also frequently exceeded.

5.3.2 Caustic Tank Area

A total of three boreholes were drilled and sampled within the area of the Caustic Tank Area at the east end of the main building.

5.3.2.1 Caustic Tank Area VOCs

Drawing 1 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported VOCs

None.

5.3.2.3 Caustic Tank Area Pesticides/PCBs

Drawing 3 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Pesticides/PCBs

None.

Boreholes Containing Pesticides/PCBs Below Part 201 Residential Criteria

None.

Boreholes Containing Pesticides/PCBs Above Part 201 Residential Criteria

CT-1, CT-2, and CT-3.

Discussion of Pesticides/PCBs Above Part 201 Residential Criteria

The PCB, Aroclor 1254 was reported above Part 201 Residential criteria in all three boreholes and above the Part 201 Industrial Criteria in the 0 to 2-foot samples of CT-1 and CT-3. In each case, the vertical extent has been defined by non-detected samples.

5.3.2.4 Caustic Tank Area Inorganics

Drawing 4 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Inorganics

None.

Boreholes Containing Inorganics Below Background or Part 201 Residential Criteria

None.

Boreholes Containing Inorganics Above Background or Part 201 Residential Criteria

CT-1, CT-2, and CT-3.

Discussion of Inorganics Above Background or Part 201 Residential Criteria

Several metals exceed Background criteria in each borehole. Antimony exceeds Part 201 Residential 20X Drinking Water criteria in the 0 to 2-foot sample of boreholes CT-1 and CT-2.

The vertical extent of parameters exceeding Part 201 Residential criteria has been defined for each borehole. No samples exceed the Part 201 Industrial Criteria.

5.3.3 Underground Storage Tank Areas

Nine boreholes were drilled at eight locations during the Phase I and Phase II investigations, within the two areas identified as Underground Storage Tank Areas. Samples were collected and subjected to VOC, SVOCs, Pesticide/PCB, and Inorganics analysis.

5.3.3.1 Underground Storage Tank Area VOCs

Drawing 1 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported VOCs

US-7 and MW13.

Boreholes Containing VOCs Below Part 201 Residential Criteria

US-4 and US-6.

Boreholes Containing VOCs Above Part 201 Residential Criteria

US-1, US-2, US-3, US-3a, US-5, US-8, and MW11.

Discussion of VOCs Above Part 201 Residential Criteria

VOCs reported in the US series of boreholes are all non-chlorinated aromatic volatiles commonly referred to as BETX (benzene, ethylbenzene, toluene, xylene). These compounds were found to exceed the Part 201 Residential 20X Drinking Water criteria but not the Part 201 Residential or Industrial Direct Contact criteria. These compounds are frequently associated with liquid petroleum hydrocarbon fuels such as gasoline. At US-3 these compounds were found to penetrate to depths up to 14 feet at concentrations exceeding the Part 201 Residential criteria. The generally deeper penetration of compounds in the underground storage tank area is also due to extensive excavation of the clay layer that occurred to first install and later remove the USTs.

No VOC was measured at concentrations above the Part 201 Industrial criteria.

5.3.3.2 Underground Storage Tank Area SVOCs

Drawing 2 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported SVOCs

US-7 and MW-13.

Boreholes Containing SVOCs Below Part 201 Residential Criteria

None.

Boreholes Containing SVOCs Above Part 201 Residential Criteria:

US-1, US-2, US-3, US-3a, US-4, US-5, US-6, US-8, and MW11.

Discussion of SVOCs Above Part 201 Residential Criteria

SVOCs reported above Part 201 Residential 20X Drinking Water criteria in the US boreholes are generally PAHs. The most frequently reported parameter is naphthalene followed by phenanthrene.

N-Nitrosodiphenylamine is reported at concentrations exceeding Part 201 Residential 20X Drinking Water criteria at US-3/US-3a, US-8, and MW11.

The PAHs are consistent with liquid petroleum hydrocarbon fuel leakage.

None of the parameters measured exceed the Part 201 Residential or Industrial Direct Contact criteria.

5.3.3.3 Underground Storage Tank Area Pesticides/PCBs

Drawing 3 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Pesticides/PCBs

US-1, US-2, US-3, US-3a, US-4, US-5, US-6, US-7, and US-8.

Boreholes Containing Pesticides/PCB's Below Part 201 Residential Criteria

None.

Boreholes Containing Pesticides/PCB's Above Part 201 Residential Criteria

None.

5.3.3.4 Underground Storage Tank Area Inorganics

Drawing 4 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Inorganics

None.

Boreholes Containing Inorganics Below Background or Part 201 Residential Criteria

US-1, US-2, US-5, and US-6.

Boreholes Containing Inorganics Above Background or Part 201 Residential Criteria

US-2, US-3, US-4, US-8, and MW-13.

Discussion of Inorganics Above Background or Part 201 Residential Criteria

Inorganics are reported above Background or Part 201 Residential criteria at three locations that are in close proximity to one another on the south side of the "wood shed". Lead is reported at concentrations exceeding Part 201 Residential criteria at all 3 locations.

Arsenic is reported at US-4 and US-8. Mercury and Zinc are also reported at US-4.

None of the inorganics were reported to exceed Part 201 Industrial criteria.

5.3.4 Drainage Ditch Area

Seven boreholes were drilled and sampled along the alignment of the drainage ditch during the Phase I and II investigations conducted at the Site. Boreholes DD-1 and DD-6 are upgradient from the Barrels Inc. Site.

5.3.4.1 Drainage Ditch Area VOCs

Drawing 1 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported VOCs

DD-1, DD-2, DD-3, DD-4, DD-6, and DD-7.

Boreholes Containing VOCs Below Part 201 Residential Criteria

DD-5.

Boreholes Containing VOCs Above Part 201 Residential Criteria

None.

5.3.4.2 Drainage Ditch Area SVOCs

Drawing 2 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported SVOCs

DD-7.

Boreholes Containing SVOCs Below Part 201 Residential Criteria

DD-1, DD-2, and DD-4.

Boreholes Containing SVOCs Above Part 201 Residential Criteria

DD-3, DD-5, and DD-6.

Discussion of SVOCs Above Part 201 Residential Criteria

Several PAH compounds are reported in the 0 to 2-foot samples of boreholes located downgrade of the Barrels processing area. Concentrations generally reduce with distance. No SVOC compounds are reported in the sample farthest downgrade (DD-7) and none are reported at depths greater than 2 feet.

The upgrade location DD-6 has three PAH compounds above Part 201 Residential criteria in the 0 to 2-foot sample. This location receives urban drainage from Larch Street and other properties to the north which may be the source of the low concentrations reported.

The Part 201 Industrial criteria for Benzo(a)Pyrene is exceeded at DD-3 at the 0 to 2-foot depth only.

5.3.4.3 Drainage Ditch Area Pesticides/PCBs

Drawing 3 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Reported Pesticides/PCBs

DD-7.

Boreholes Containing Pesticides/PCBs Below Part 201 Residential Criteria

DD-5 and DD-6.

Boreholes Containing Pesticides/PCBs Above Part 201 Residential Criteria

DD-1, DD-2, DD-3, and DD-4.

Discussion of Pesticides/PCBs Above Part 201 Residential Criteria

PCB Aroclor 1254 is reported above Part 201 Residential criteria at DD-1, DD-2, DD-3 and DD-4. Concentrations are highest in the 0 to 2-foot samples at DD-2 and DD-3. Concentrations decrease with distance downgrade and are non detect at DD-5 and DD-7. Vertical penetration of concentrations exceeding Part 201 Residential criteria extend to 2 feet at DD-1, DD-3 and DD-4, and 6 feet at DD-2.

The vertical penetration of the PCBs is unusual in that this compound is usually highly attenuated on soil and a vertical distribution similar to PAHs is normally expected.

Some of the PCB concentrations exceed the Part 201 Industrial criteria.

5.3.4.4 Drainage Ditch Inorganics

Drawing 4 presents a summary of reported compounds and a comparison to established evaluation criteria.

Boreholes Containing No Inorganics

None.

Boreholes Containing Inorganics Below Background or Part 201 Residential Criteria

DD-7

Boreholes Containing Inorganics Above Background or Part 201 Residential Criteria

DD-1, DD-2, DD-3, DD-4, DD-5, and DD-6.

Discussion of Inorganics Above Background or Part 201 Residential Criteria

Several metals are reported above Background or Part 201 Residential criteria in the drainage ditch samples. The highest concentrations and largest number of individual parameter exceedences occur at DD-2 behind the former Barrels processing building. Concentrations and number of exceedences both decrease with distance downgrade until there are no exceedences at DD-7.

Most exceedences are reported in the 0 to 2-foot samples. Only DD-4 had exceedences at depth (6 to 8 feet) but, oddly, no exceedence in the 4 to 6-foot sample.

5.3.5 PCB Surficial Soil Analysis

Surficial soil sampling and immunoassay analysis for PCBs was conducted as part of the Phase II investigation. The methodology and results of the analysis are presented in Appendix G. The purpose of the analysis was to assess the lateral extent of PCB affected surficial soils.

The results of the Phase I analysis were used as a starting point for analysis. The immunoassay method provides results which

indicate whether the concentration of PCB in a soil sample is above or below 50 mg/kg. This criteria was chosen based on TSCA disposal regulations. Three samples were collected and submitted to an analytical laboratory for correlation with the immunoassay method.

Figure 5.1 presents a summary of the results of the analysis. In general only 5 of 34 samples indicated concentrations of PCBs which were greater than 50 mg/kg. Also, these samples were clustered in the following two areas:

i) east of the existing building; and
ii) east of the concrete pad.

5.4 GROUNDWATER

As indicated in Section 2.4, groundwater occurs under the Site in a limited extent perched water table and in a shallow overburden aquifer of regional extent. Each of the two groundwater units is described separately in the following subsections of Section 5.4.

Table 5.11 summarizes the detected analytes, which are also presented on Drawing 5. A Table of all groundwater samples obtained, and all parameters analyzed for, is presented in Appendix L.

5.4.1 Shallow Overburden Aquifer

Groundwater samples were collected from each well installed in the shallow overburden aquifer using methods defined in the approved QAPP.

Groundwater contours presented on Figure 4.7 indicate that groundwater flow in the Shallow Overburden Aquifer is southwesterly in the northern part of the Site, shifting to southerly in the southern part of the Site. Consequently monitoring wells MW1-47, MW8-34, MW13-33,

MW13-49, MW14-32, and MW14-47 are representative of groundwater at the farthest downgradient monitoring points available. Monitoring wells MW3-33, MW3-46, MW9-33, MW9-45, MW10-34 and MW10-51 are upgradient and/or cross-gradient of the Site and will be considered to represent background conditions. The remaining monitoring wells are under the Site.

5.4.1.1 Shallow Overburden Aquifer VOCs

Background

Several VOC are reported in groundwater upgradient or distinctly cross gradient from the Site including 1,2 Dichloroethane, 1,1 Dichloroethane, 1,2 Dichloroethene, Trichloroethene, 1,1,2 Trichloroethane, Tetrachloroethene, and Vinyl Chloride. All of the reported VOC concentrations are low. Only 1,1-Dichloroethane is repeated in consecutive monitoring events at a single sample location (MW3-33 and MW9-95).

Under The Site

Chlorinated and non chlorinated VOCs are reported in monitoring wells completed beneath the Site. The chlorinated VOCs are the same parameter list as reported for the background wells. Concentrations tend to be higher directly beneath the Site but there remains considerable variability in results between monitoring events at individual locations. The following chlorinated VOCs exceed Part 201 Residential and/or Industrial criteria under the Site on at least one monitoring event.

1,2 Dichloroethane in:	MW5-50, MW12-45, MW14-47
Vinyl Chloride in:	MW5-34, MW6-32, MW12-45

Non chlorinated VOCs reported in groundwater below the Site include Benzene, Ethylbenzene, Toluene, Xylene and Acrylonitrile.

These parameters are reported in MW2-36, MW2-45 and MW11-35. Both of these locations are in close proximity to the UST area. Acrylonitrile is reported in one sample out of three at MW2-36 and is not reported at any other location. The concentration reported exceeds the Part 201 Residential criteria. Benzene is reported above the Part 201 Residential criteria but not consistently at any single sample location.

Downgradient

1,2 Dichloroethane and total 1,2 Dichloroethene are the only VOCs reported in downgradient monitoring wells. They are both reported at one location, MW14-47. Only 1,2 Dichloroethane exceeds the Part 201 Residential criteria. 1,2 Dichloroethane is also present in the background groundwater quality as well.

5.4.1.2 Shallow Overburden Aquifer SVOCs

SVOCs were not reported in any of the groundwater samples collected from the monitoring wells.

5.4.1.3 Shallow Overburden Aquifer Pesticides/PCBs

Pesticides were reported in samples obtained from MW3-33, MW9-33, and MW9-45. These wells are upgradient or cross-gradient of the Site, and therefore the reported concentrations are not a result of Site operations.

No pesticides were reported under or downgradient from the Site.

PCB's were reported in groundwater samples collected from MW5-34 and MW7-33. However, subsequent sampling indicated that PCBs were not present in the groundwater.

5.4.1.4 Shallow Overburden Aquifer Inorganics

Under the Site

Lead is reported at concentrations exceeding Background and Part 201 Residential criteria at MW5-50 and MW6-32. The lead concentration exceedences are not reproduced in subsequent monitoring at either location.

5.4.2 Perched Groundwater

Groundwater samples were collected from each of the perched groundwater wells (MW11-21 and MW13-20) using methods defined in the approved QAPP.

The results of the analysis are presented in Appendix D, Table 5.11 and on Plan 5.

5.4.2.1 Perched Groundwater VOCs

MW11-21 is a perched aquifer well which reported concentrations of Benzene, Toluene, 1,2-Dichloroethane and 1,1,2-Trichloroethane which were greater than the Part 201 Residential criteria. These reported parameters were encountered during the initial Phase II sampling round, but not the second Phase II sampling round.

MW13-20 reported no concentrations of VOCs.

5.4.2.2 Perched Groundwater SVOCs

Two PAHs were reported at concentrations exceeding the Part 201 Residential criteria in the first monitoring of MW11-21 conducted.

These concentrations were not reproduced during a second round of monitoring at MW11-21 when all SVOCs were less than required detection limits.

SVOCs were not reported in MW13-20.

5.4.2.3 Perched Groundwater Pesticides/PCBs

Pesticides/PCBs were not reported in either perched groundwater well.

5.4.2.4 Perched Groundwater Inorganics

MW11-21 reported that Lead exceeded Part 201 Residential criteria during the first Phase II sampling round only.

SECTION 6

6.0 WASTE RESIDUALS

Table 6.1 presents a summary of all TCLP analysis conducted. The following presents an assessment of the analytical data versus RCRA requirements, as presented in Table 6.1.

Waste Residual samples were collected from the main building and analyzed as discussed in Section 2.7. The waste residual sludge/liquid was submitted for RCRA hazardous waste analysis, including reactivity, corrosivity and ignitability and TCLP for volatiles, semi-volatiles, pesticides, herbicides, metals and PCBs. Sample BTH-003 taken from the open box tank (10 feet x 12 feet x 8 feet) exceeded regulatory limits for corrosivity (1.0 S.U.), chromium (25.0 mg/L), lead (16.0 mg/L) and Mercury (0.81 mg/L). Sample BTH-004 taken from the open tank (3 feet x 4 feet x 2.5 feet) exceeded regulatory limits for cadmium (3.9 mg/L). All other samples had no detections or were under regulatory criteria for all parameters and tests.

The residual waste materials consisted of sludges and liquids which remained at the base of the tanks sampled. These wastes had very small volumes, having thickness of less than 1 or 2 inches at the base of the tanks.

SECTION 7

7.0 NATURE AND EXTENT OF CONTAMINATION

This section presents an assessment of the data obtained during the Remedial Investigation of the Barrels, Inc. Site, with respect to the volume, distribution, concentration and mobility of Site Parameters of Concern, and the existence of any data gaps. This assessment has been conducted to determine whether sufficient information is available to estimate the volume of soil and groundwater requiring remediation to an extent suitable to conduct a FS.

Drawings 1, 2, 3, 4, and 5 present detected compounds for each borehole soil sample and each monitoring well water sample.

The Drawings generally indicate that the compounds detected in the boreholes are few in number and irregularly distributed. The soil boring data also indicates that there is a substantial clay layer throughout the Site, with the exception of a few locations where the clay was excavated. Above the clay layer, the majority of contaminants were generally confined to the upper till soil materials.

Groundwater under the Site has been affected to a limited extent by the Site but it is also affected by undefined regional sources.

A summary of the Site wide distribution of the Parameters of Concern is presented in the following subsections.

7.1 Background Sources

Based on a review of the Site history and the data generated during the RI, several sources of contaminants can be attributed to off-Site conditions, or operations conducted at the Site prior to Barrels, Inc. Conditions encountered are considered to be typical for areas which have similar historical industrial uses and neighbors, such as were encountered at the Barrels, Inc. Site.

7.1.1 Soils

Past uses of the Site have contributed to the conditions encountered during the RI.

Coal discovered on Site has contributed to elevated concentrations of PAHs and inorganics in the shallow soils. Coal was also encountered in samples collected from Boreholes BG-1 and BG-2 which were installed in an area north of the Site which was considered to be unaffected by the Barrels operation. Coal was also reported in surface soil samples collected south of the site from boreholes and monitoring wells. The prevalence of coal throughout the area suggest that it is an area wide historical occurrence and not the result of Barrels, Inc. operations.

Elevated concentrations of BTEX and PAHs near the former UST areas are likely the result of spills and leaks from former USTs located on the Barrels, Inc. Site and on the Chocola Property. A known spill of potential petroleum products occurred in 1986, as the MDNR excavated and removed USTs which were not suitably emptied before removal.

7.1.2 Groundwater

Contributions of parameters of concern to groundwater from background or Pre-Barrels sources were established during the completion of the RI.

Arsenic comes from an upgradient source or sources. Figure 7.1 presents an isocontour sketch prepared using the available Arsenic data. Based on Figure 7.1, a background source of Arsenic seems to come from the northeast. Several inorganics at low concentrations reported in the groundwater may have been contributed from metals leached from coal encountered area wide at the ground surface.

The former USTs at the Site have contributed both a potential source of contaminants and a migration pathway for contaminants through the clay confining layer. As presented in Section 4.1.7, the excavations to install and remove USTs on the Barrels Site and adjacent Chocola property penetrated the clay confining layer creating possible conduits for compounds from the USTs or spilled at the surface. One such UST related compound is Benzene. Figure 7.2 presents an isocontour sketch for Benzene. The figure indicates the Benzene has not traveled extensively indicating that it may be the result of a more recent release, such as the release of petroleum products by the MDNR during UST removal operations.

Several chlorinated organic compounds were also encountered at upstream/background locations. In particular, 1,2-Dichloroethane was reported extensively throughout the Site. Figure 7.3 presents an isocontour sketch for 1,2-Dichloroethane. This compound was reported within monitoring wells installed both upgradient and downgradient of the Site, including the most downgradient well cluster MW14.

The concentration of 1,2-Dichloroethane reported at MW14 is very low at 0.006 mg/L, suggesting that the single parameter plume does not extend to a significant distance to the south. 1,2-Dichloroethane was reported in at least one monitoring event in 12 of the 27 monitoring wells installed to investigate the Site. The distribution of 1,2-Dichloroethane is irregular in both time and space. It is reported in only one monitoring event in 5 monitoring wells where multiple (2 or 3) monitoring events have occurred. It is present in some locations including upgradient and cross gradient locations but absent from some mid Site locations. In addition, it is not reported in any of the soil samples that have been analyzed. Only one soil sample reported a potential parent material from which the 1,2-Dichloroethane could have been derived (0.051 mg/kg, 1,1,1 TCA from 6-8 feet, DS-11).

The irregular but widespread occurrence of low concentrations of 1,2-Dichloroethane in the aquifer combined with the absence of a measured source in the soil of 1,2-Dichloroethane on Site leads to

the conclusion that 1,2-Dichloroethane in the groundwater is a regional problem, not a Barrels Inc. problem.

7.2 EXTENT OF VOCs

7.2.1 Extent of VOCs in Soils

There are two distinct types of VOC contamination reported in the soils at the Barrels Inc. Site: chlorinated and nonchlorinated. Each type of VOC has a different distribution. The chlorinated VOCs tend to be reported above Part 201 Residential criteria concentrations along the east side of the Site. The non chlorinated VOCs tend to occur through the west central section of the Site.

Tetrachloroethene is reported at concentrations exceeding Part 201 criteria at DS-4. One smaller area of chlorinated VOC-containing soils in the drum storage area occurs around DS-12. This area is of limited horizontal extent. The depth at DS-12 is greater than 6 feet but less than 18 feet. PID head space readings suggest the depth would extend to approximately 12 feet where the silt content of the sand increases.

The non chlorinated VOCs, Ethylbenzene and Toluene, are reported in the soil throughout the area around the "wood shed". The area with soil concentrations above Part 201 Residential criteria extends southward from the Barrels building approximately 50 feet onto the Chocola Cleaning Materials property. The east west extent is approximately from the rear of Barrels building to Larch Street. This is an area where several underground storage tanks are known to have existed and removed by the MDNR.

In some areas, the VOCs extend beyond 14 feet at concentrations above Part 201 Residential criteria. The depth of contamination results from removal of the clay layer during underground tank installation and removal.

7.2.2 Extent of VOCs in Groundwater

Groundwater, like the soil above, contains chlorinated and non chlorinated VOCs above the Part 201 Residential criteria.

The highest concentrations are found in the perched groundwater at MW11-21. This location is adjacent to UST location where the protective clay layer has been breached allowing contaminant migration to occur more readily. As a result adjacent aquifer locations (MW2, MW11) have BETX parameters above Part 201 Residential criteria. The BETX concentrations above Part 201 Residential criteria are limited to the area under and immediately downgradient from the UST location.

Chlorinated VOCs are widely present in groundwater under the Site. However all of the parameters present under and downgradient from the Site are also present in at least one background sample. The only VOC not defined to a Part 201 Residential standard in the downgradient direction is 1,2 Dichloroethane in MW 14-47. This parameter is the single most frequently detected parameter in groundwater but it has never been detected in a soil sample on Site. The only potential parent compound for 1,2 Dichloroethane that was reported in the soil was 0.051 mg/kg 1,1,1-TCA from 6 to 8 feet in DS-11. No other soil samples had 1,1,1-TCA present.

The 1,2 Dichloroethane in groundwater is therefore concluded to be part of a larger, regional groundwater condition that is flowing into the Barrels Site.

7.2.3 VOC Data Gaps

VOCs have been defined to Part 201 criteria in Soil and Groundwater. There are no data gaps.

7.3 EXTENT OF SVOCs

7.3.1 Extent of SVOCs in Soil

SVOC parameters that exceed Part 201 Residential criteria in soils are almost exclusively PAHs. Of 18 locations where SVOC are reported above Part 201 Residential criteria, 17 have at least one PAH. Locations US-3/US-3a and US-8 also have N-Nitrosodiphenylamine and DS-12 has only Bis(2-ethylhexyl)phthalate and Di-n-octylphthalate.

The PAHs have four separate distributions. The first area is the northern one third of the Drum Storage Area, north of DS-4. PAHs are widely distributed in the top 2 feet of soil in this area.

Because of their presence in the Drum Storage area PAHs are also present above Part 201 Residential criteria in the Drainage Ditch due to runoff from the Site. The upper 2 feet of soil in the Drainage Ditch have PAHs above Part 201 Residential criteria starting at a point between DD-2 and DD-3 and ending between DD-5 and DD-7.

The third area is the southern half of the Drum Storage Area inside the existing fence. As with the northern third of the drum storage area only the top 2 feet of soil are affected.

The fourth area affected by PAHs is the UST area from the Barrels building to 50 feet onto the Chocola Cleaning Materials property. A significant difference between this area and the other three is that PAHs exceeding Part 201 Residential criteria extend to a greater depth, up to 16 feet at US-1.

7.3.2 Extent of SVOCs in Groundwater

SVOCs were not detected in the groundwater.

7.3.3 SVOC Data Gaps

The SVOCs encountered on Site generally consist of PAHs. The extent of SVOCs has been defined to a Part 201 Residential criteria boundary. There are no SVOC data gaps.

7.4 PESTICIDES/PCBs

7.4.1 Extent of Pesticides/PCB's in Soil

PCBs are present above Part 201 Residential criteria concentrations in the Caustic Tank area and southward through the north half of the Drum Storage area to the north edge of the concrete slab.

Chlordane was reported to be above the Part 201 Residential 20X Drinking Water criteria in the 0 to 2-foot sample at DS-2, only.

Exceedence of Part 201 Residential criteria is generally limited to the top 2 feet in the Drainage Ditch except at DD-2. At this location, PCBs exceeding Part 201 Residential criteria are present to a depth of 6 feet.

7.4.2 Groundwater

PCB-1254 was detected within Monitoring Wells MW5-34 and MW7-33 during the first round of Phase I sampling. Each of these wells is the water table well of a well couple, and in each case PCB is not detected in the deeper well. A second round of sampling for these wells reported no PCBs. This suggests that the detection of PCB was the result of the well installation procedure, and not actual groundwater quality.

No other Pesticides or PCB's were reported in groundwater.

7.4.3 Data Gaps

No soil or groundwater data gaps remain with respect to the definition of Pesticides/PCBs.

7.5 EXTENT OF INORGANICS

7.5.1 Extent of Inorganics - Soils

Most locations have at least one metal that exceeds Background or Part 201 Residential criteria including the two background soil borings and the upstream ditch samples. The Caustic Tank area and the Drum Storage area both have metals above the Part 201 Residential criteria. Exceedences are generally limited to the top 2 feet of soil but individual locations such as CT-1, CT-2, DS-2, DS-4, DS-8, DS-14, DS-18, and DD-4 have one or two parameters that exceed criteria to depths of 4 or 6 feet.

The Drainage Ditch generally has exceedences in the top 2 feet reflecting runoff from the Drum Storage Area. The Ditch provides a natural definition of the eastern extent of exceedences. The Part 201 Residential criteria are defined along the western side at US-5, US-6, DS-3, and MW-13. Across the south, definition end points are defined at DS-19, DS-20, and DD-7.

7.5.2 Extent of Inorganics in Groundwater

At MW5-50, the reported concentrations of Lead and Zinc were above the Part 201 Industrial Cleanup criteria.

Lead was again encountered within MW6-32 at a concentration above the Part 201 Industrial Cleanup criteria.

Zinc concentrations above evaluation criteria were encountered within the pre-existing wells MW4-50 and MW5-50. These wells were constructed using a galvanized steel riser piping. The galvanizing process uses Nickel and Zinc to plate steel to provide corrosion protection. This coating has been known to cause elevated concentrations of these metals in groundwater samples taken from wells constructed of galvanized steel.

7.5.3 Data Gaps

No data gaps remain with respect to inorganics. Arsenic was reported in the groundwater at the most downgradient wells, but at concentrations below those reported at upgradient/background wells.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

The following conclusions are made based on the data presented in this report.

1. The nature and extent of contamination in the Drum Storage area, the Caustic Tank (loading dock) area and UST locations has been adequately defined.

2. The nature and extent of contamination within the building has been adequately defined.

3. The effects of Site drainage on the Drainage Ditch have been adequately defined.

4. The hydrogeologic conditions at the Site have been adequately defined.

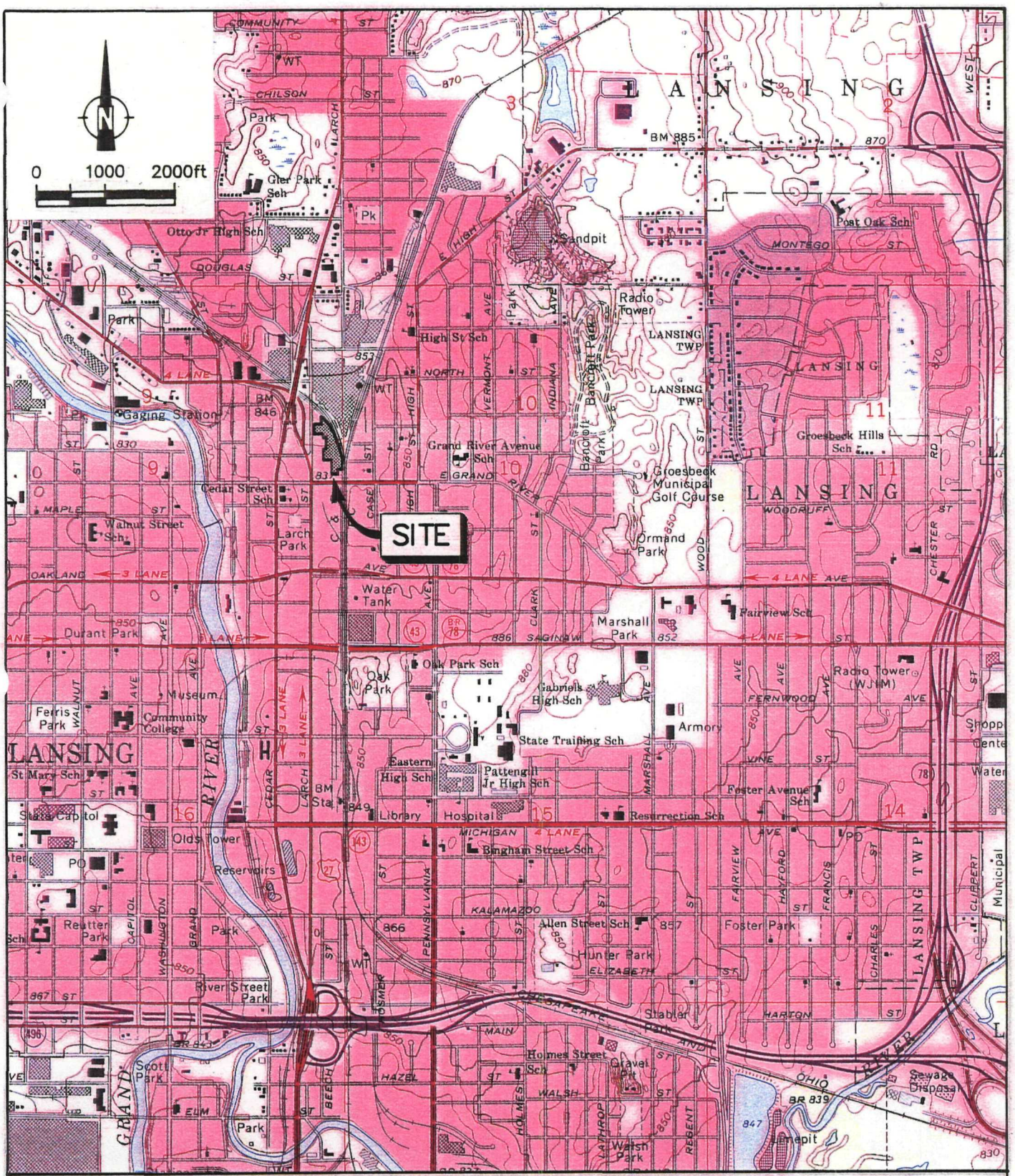
5. Groundwater quality at the Site has been adequately defined.

8.2 RECOMMENDATIONS

The following recommendation is made based on the data presented in this report.

1. A Feasibility Study should be completed as described in the MDNR approved RI/FS Work Plan.

FIGURES



SOURCE: USGS QUADRANGLE MAPS,
NORTH LANSING AND SOUTH LANSING, MICH.

CRA

figure 1.1
SITE LOCATION
BARRELS, INC. SITE
Lansing, Michigan

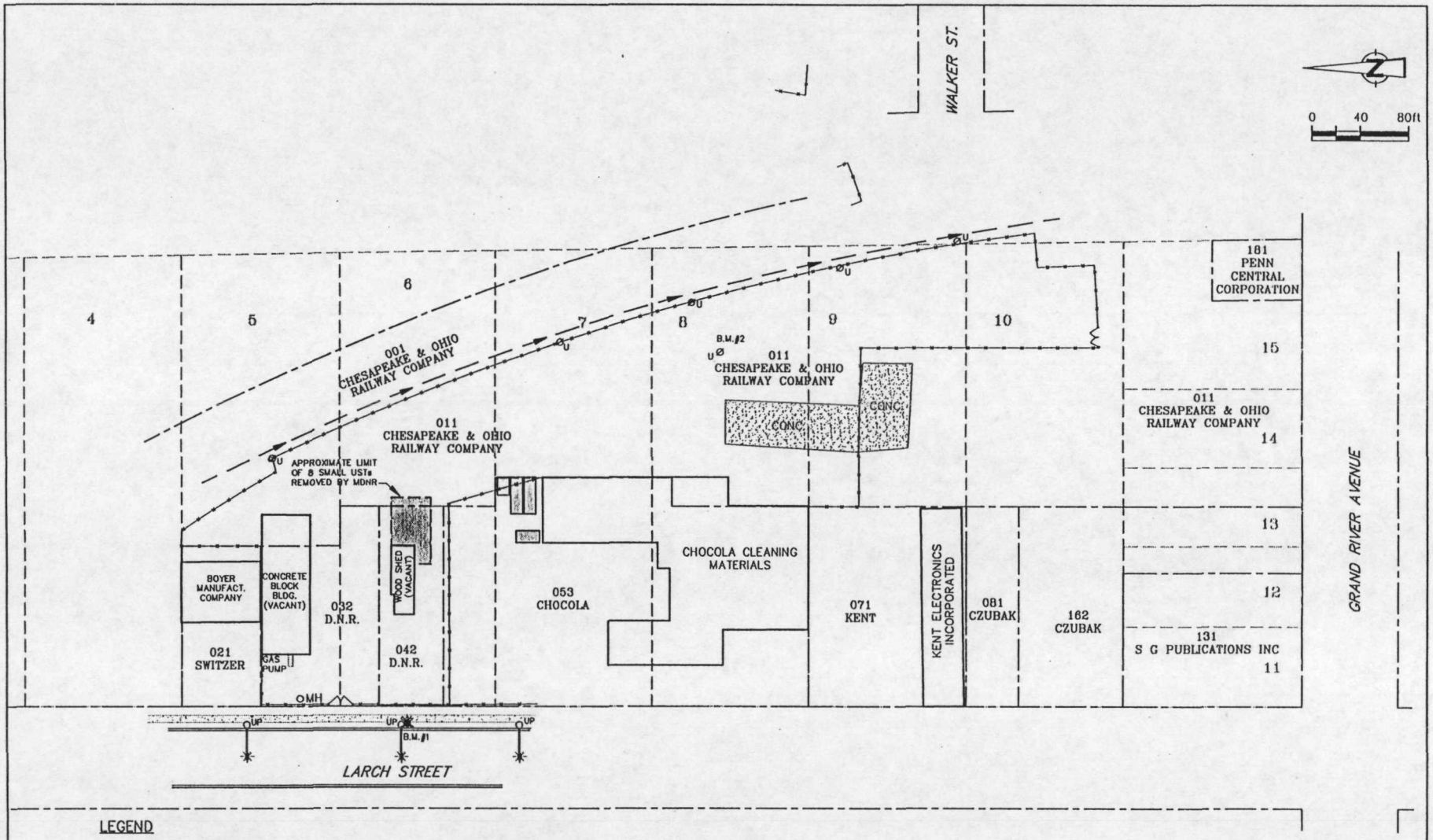


figure 1.2

SITE PLAN
BARRELS, INC. SITE
Lansing, Michigan

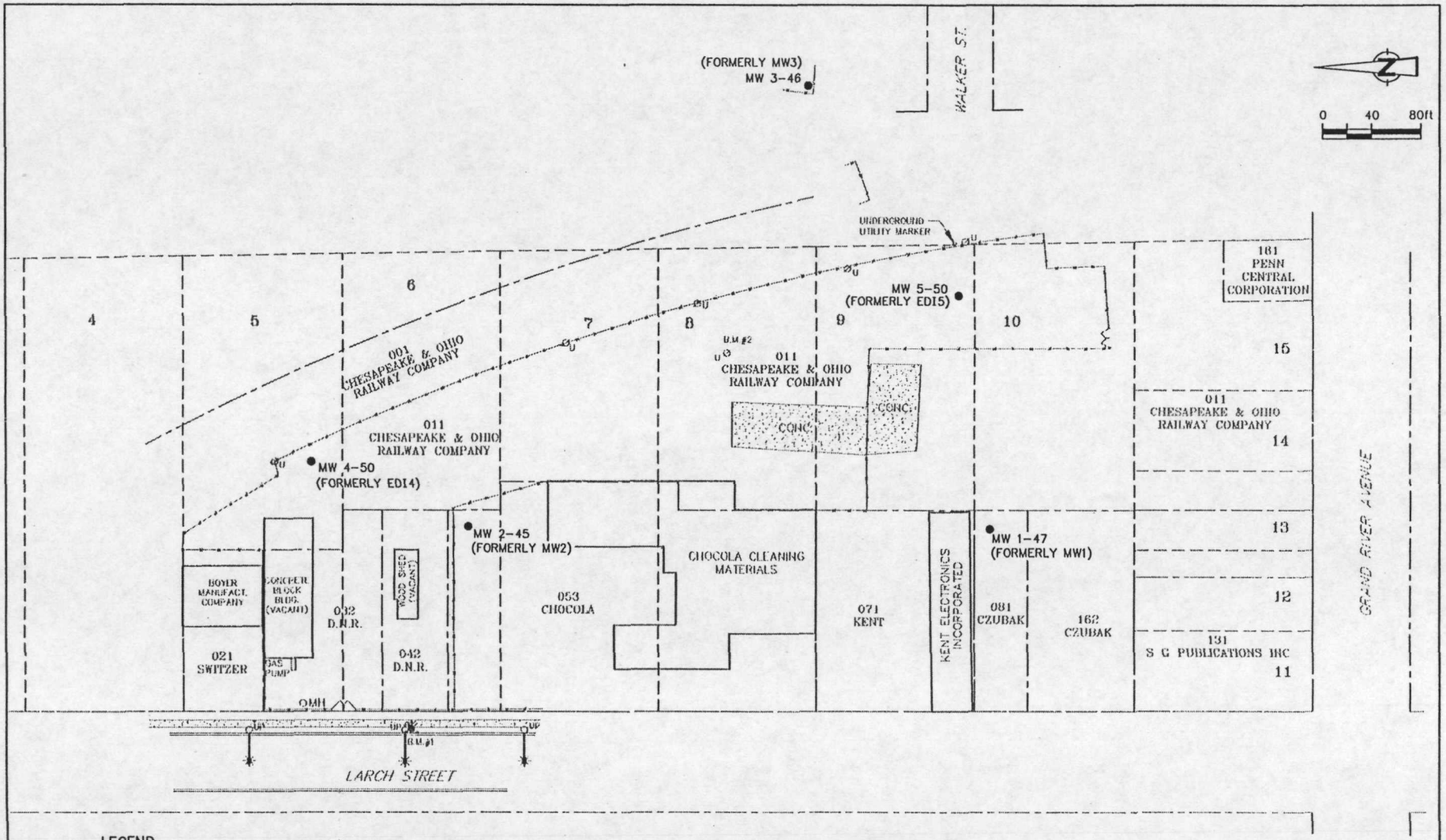
SOURCE: CSXT PLAN
DATE UNKNOWN

figure 1.3

HISTORICAL SITE USAGE
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 2/95 (W) REV.0



LEGEND

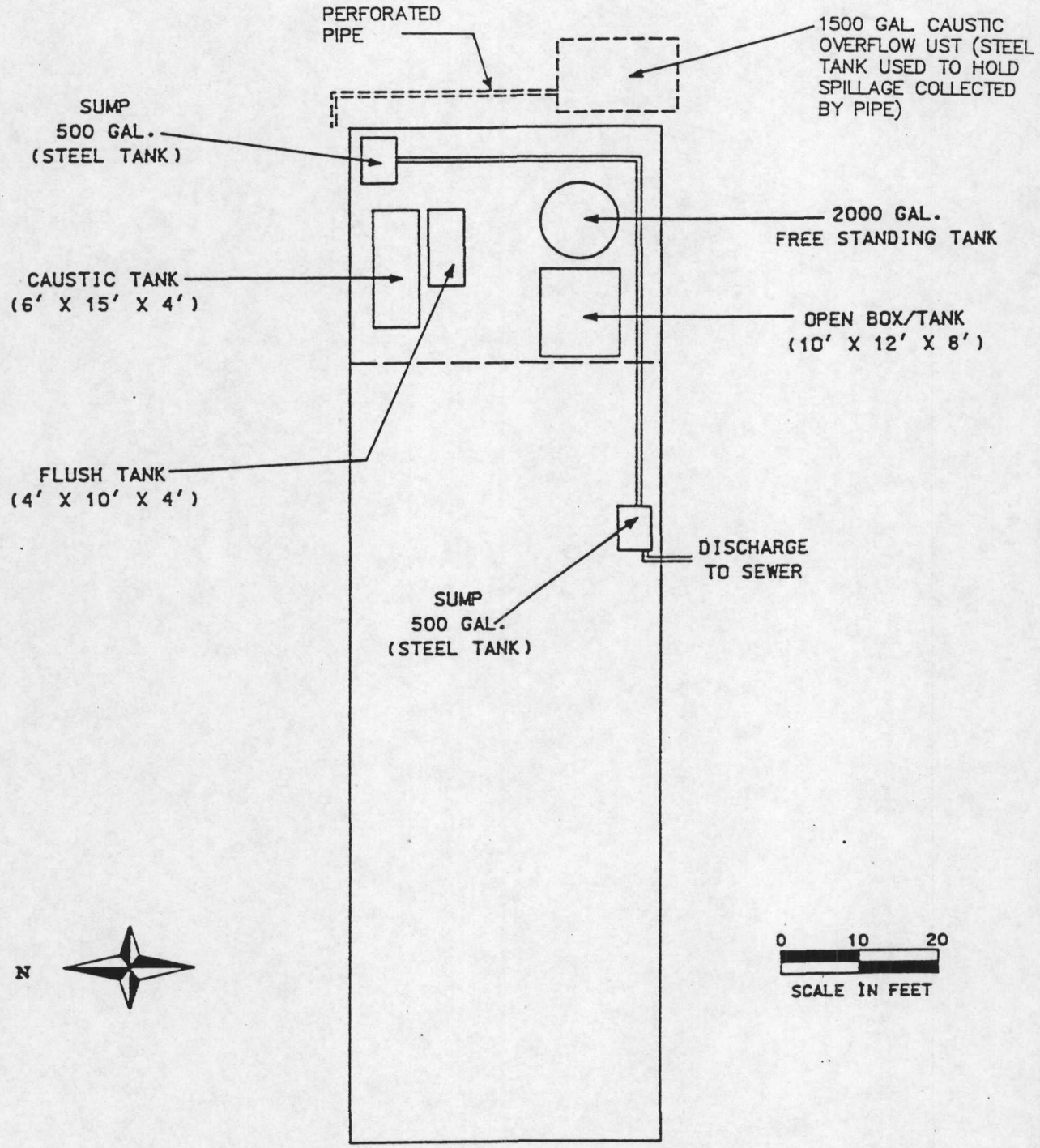
- ●MW 6-32 MONITORING WELL
- WATER HYDRANT
- $\varnothing_U$ UTILITY POLE
- UTILITY & LIGHT POLE
- CHAIN LINK FENCE
- MH MANHOLE

CRA

4869 (14) DEC 16/94(W) REV.0 (P-53)

figure 1.4

PRE-RI WELLS
BARRELS, INC. SITE
Lansing, Michigan



SOURCE: HALIBURTON NUS, FEBRUARY, 1992

figure 1.5

BUILDING SCHEMATIC
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 2/95 (W) REV.0

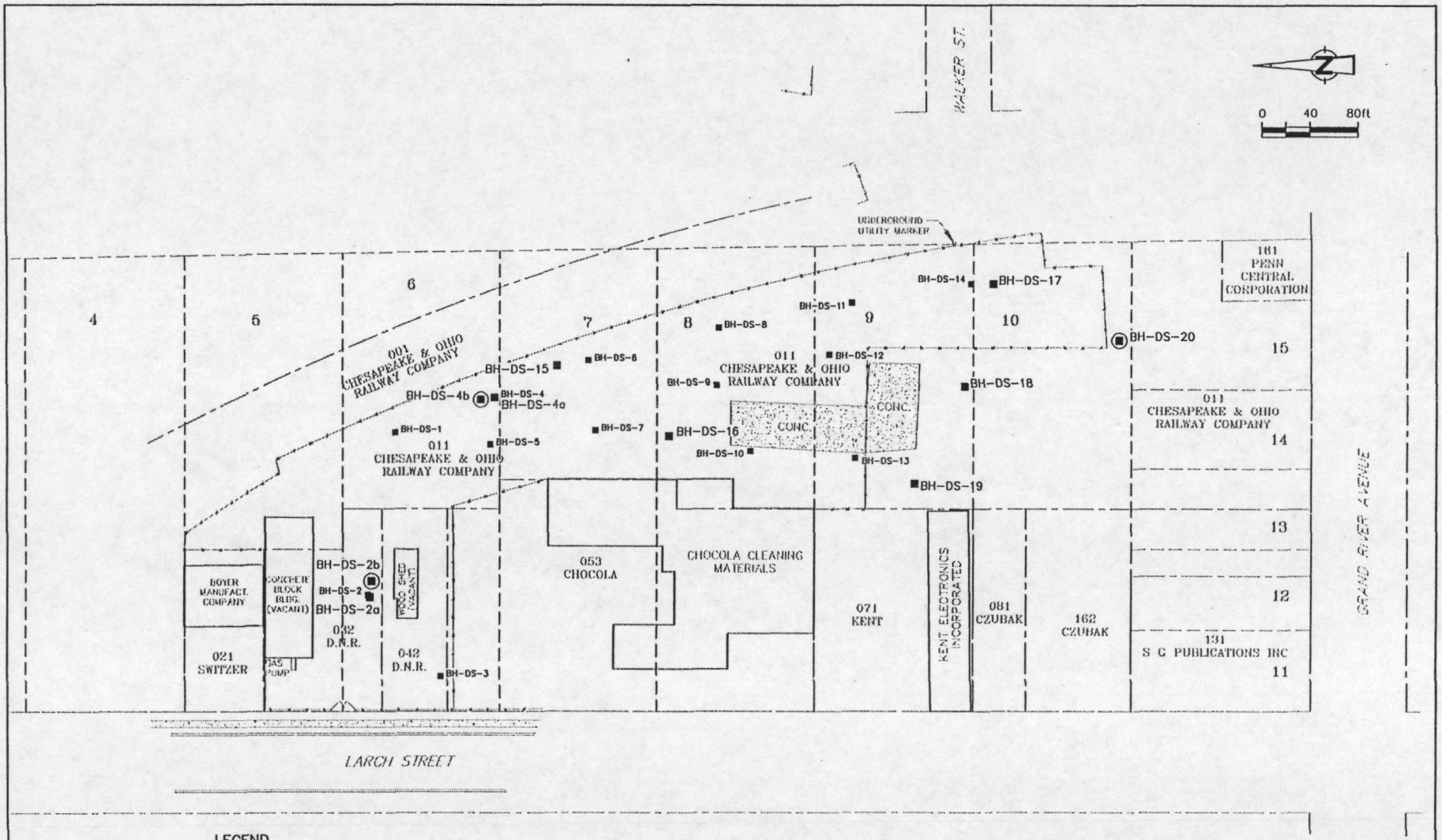


figure 2.1

DRUM STORAGE AREA BOREHOLES
BARRELS, INC. SITE
Lansing, Michigan

4869 (14) JAN 31/95(W) REV.0 (P-54)

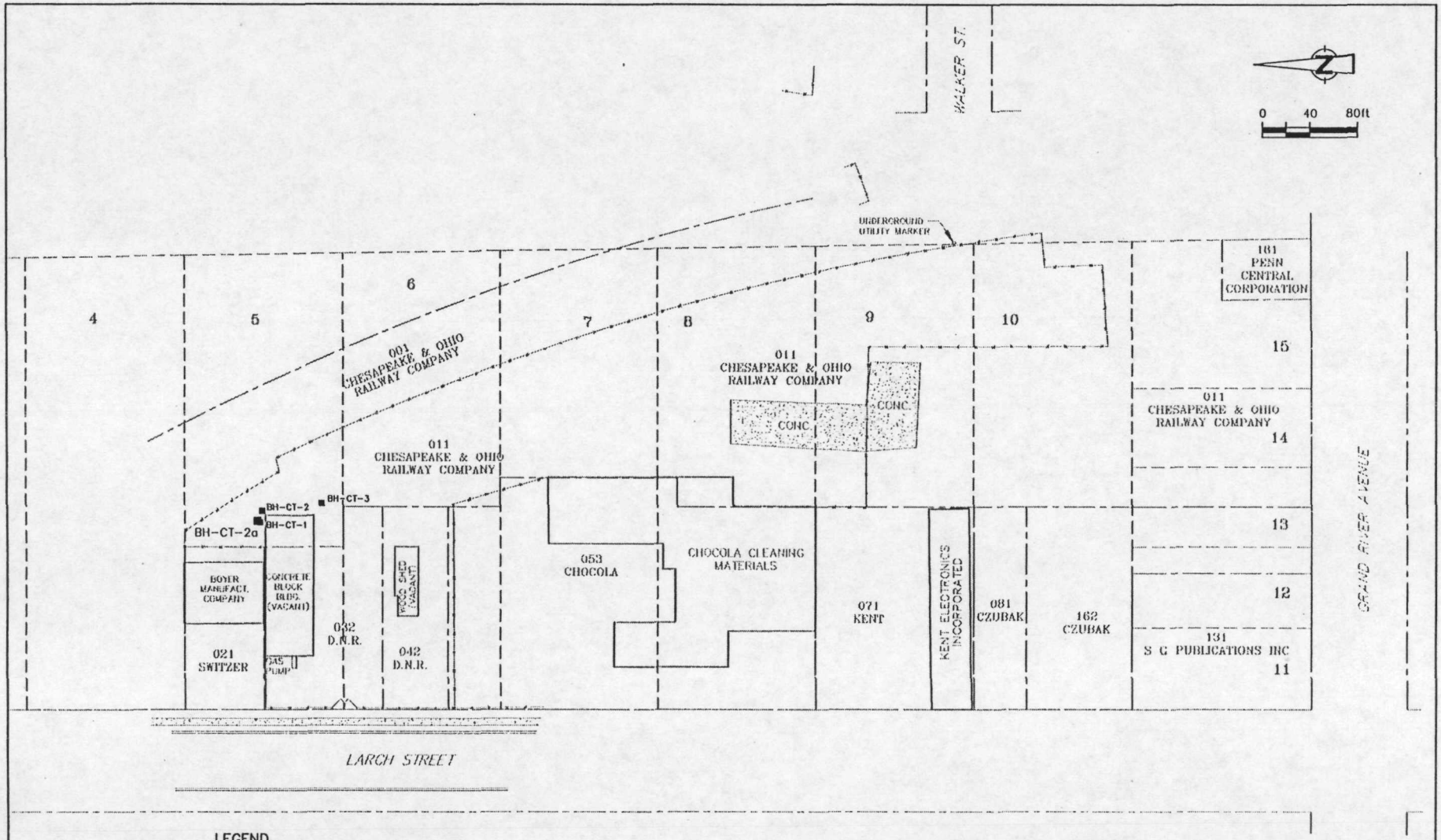
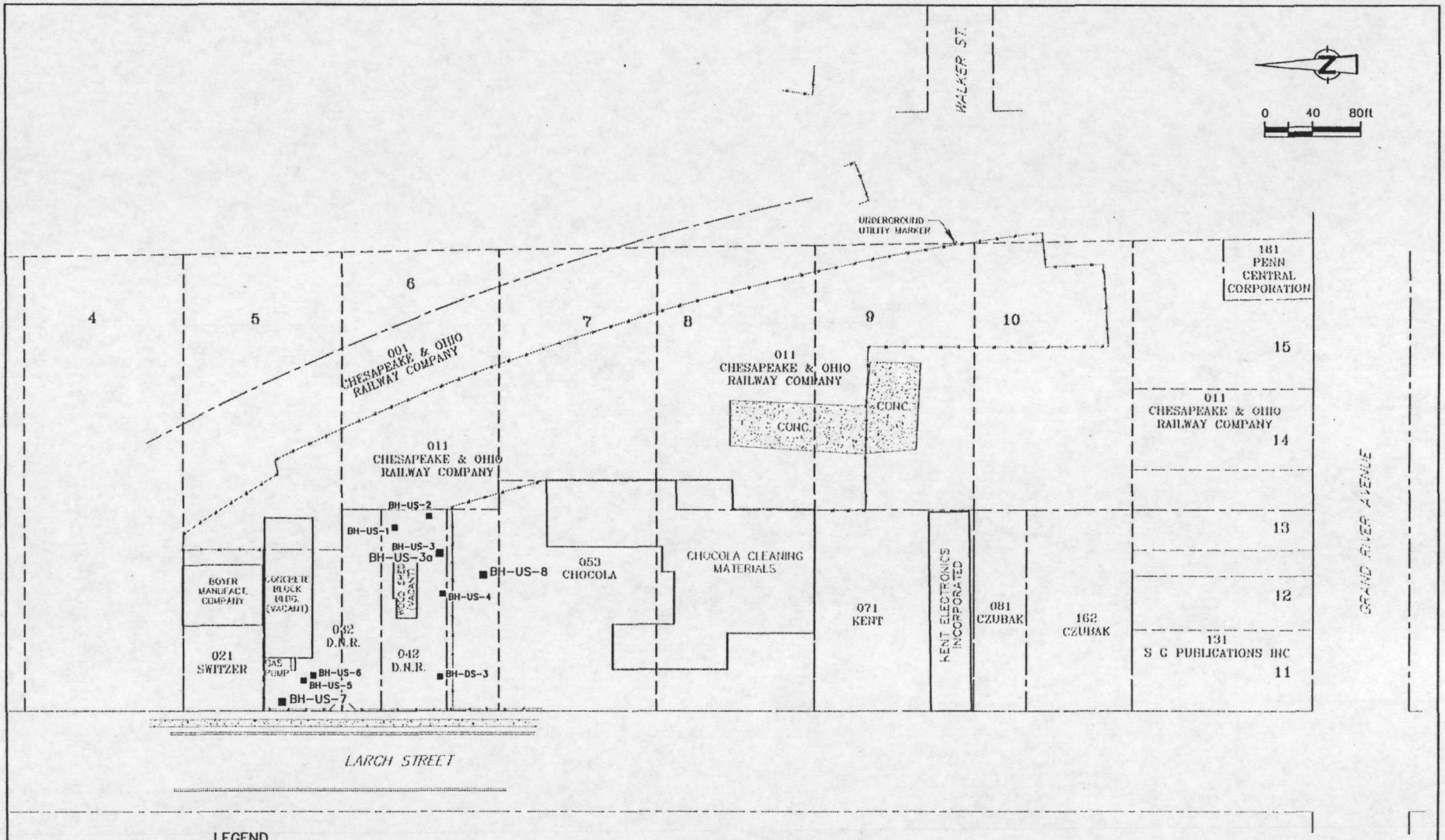


figure 2.2

LOADING DOCK/PROCESS TANK AREA BOREHOLES
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) DEC 16/94(W) REV.0 (P-55)



LEGEND

- CHAIN LINK FENCE
- ■ BH-US-3 PHASE I SOIL BORING LOCATION
- ■ BH-US-3a PHASE II SOIL BORING LOCATION

CRA

4869 (14) DEC 16/94(W) REV.0 (P-56)

figure 2.3

UNDERGROUND STORAGE TANK BOREHOLES
BARRELS, INC. SITE
Lansing, Michigan

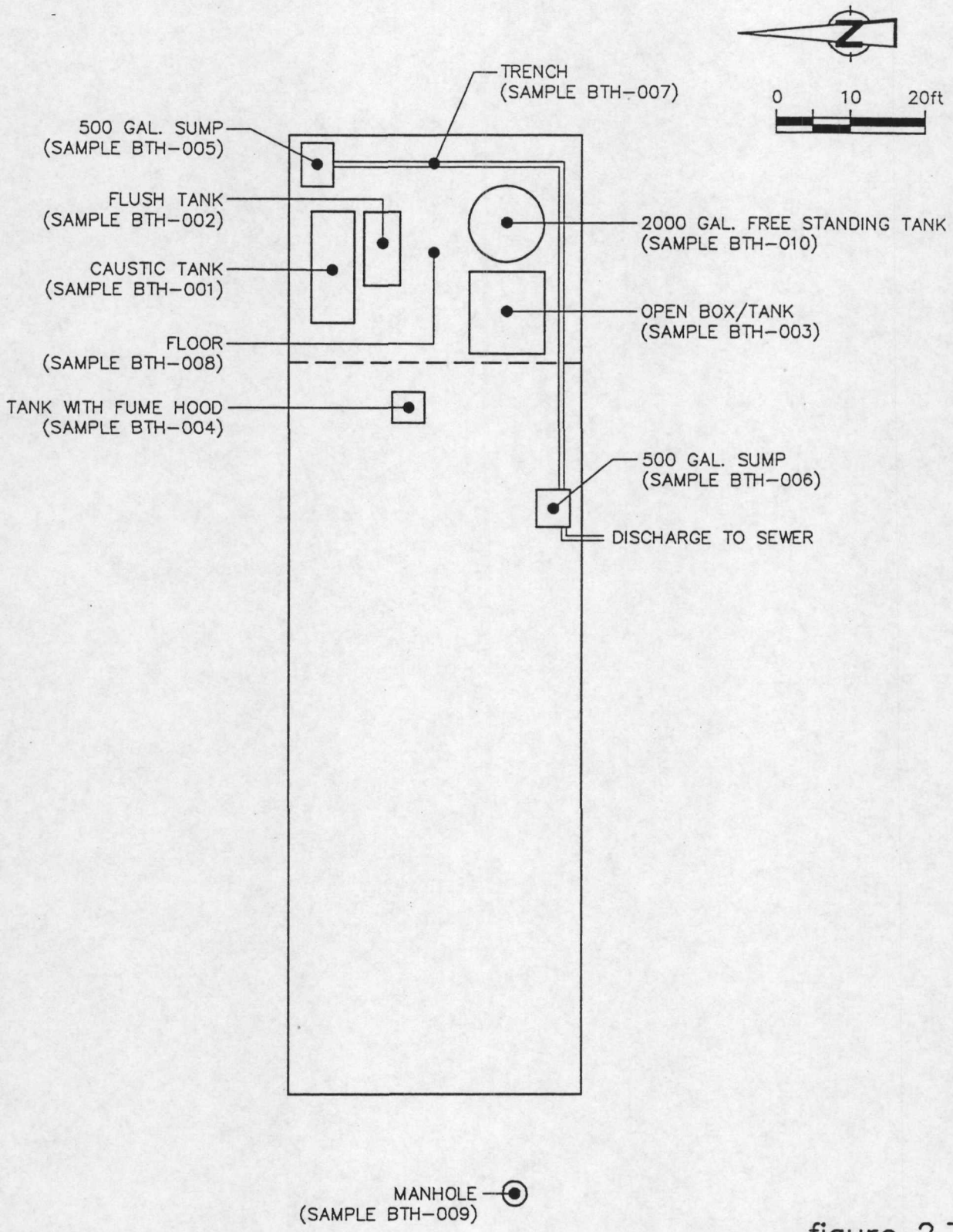


figure 2.7

SOURCE: HALIBURTON NUS, FEBRUARY 1992

WASTE RESIDUAL SAMPLING LOCATIONS
BARRELS, INC. SITE
Lansing, Michigan

CRA

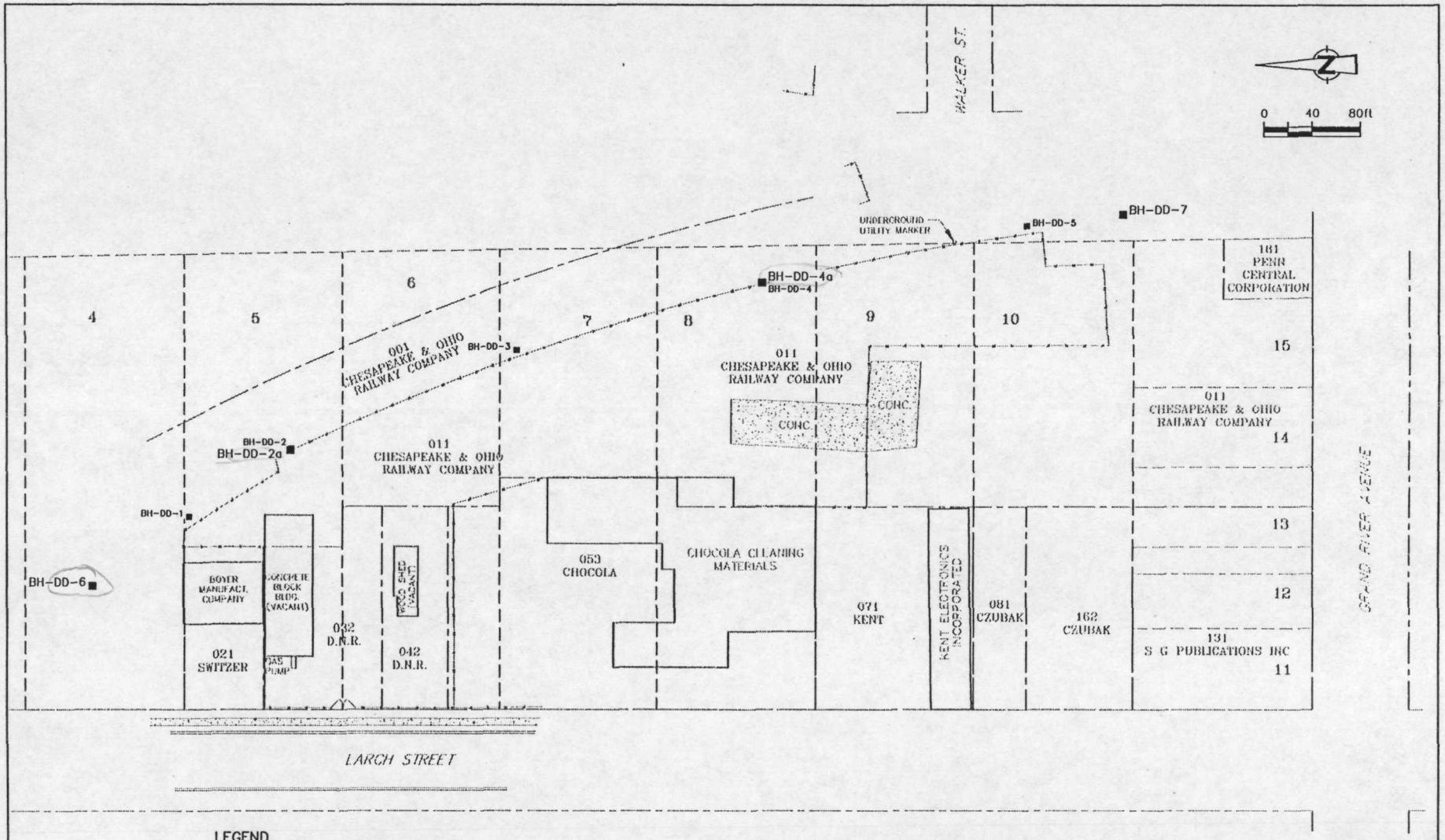


figure 2.4

DRAINAGE DITCH BOREHOLES
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) DEC 16/94(W) REV.0 (P-57)

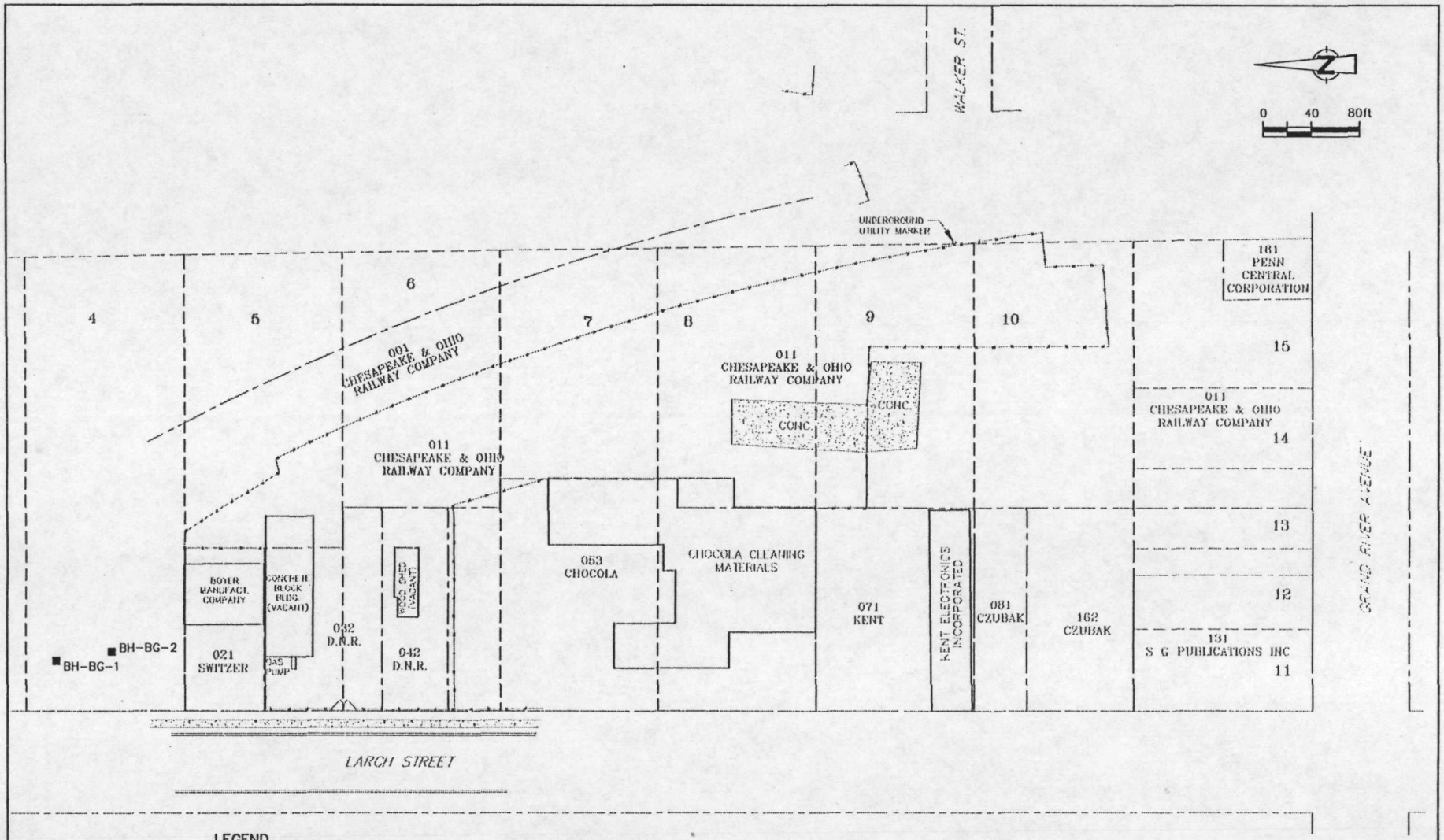
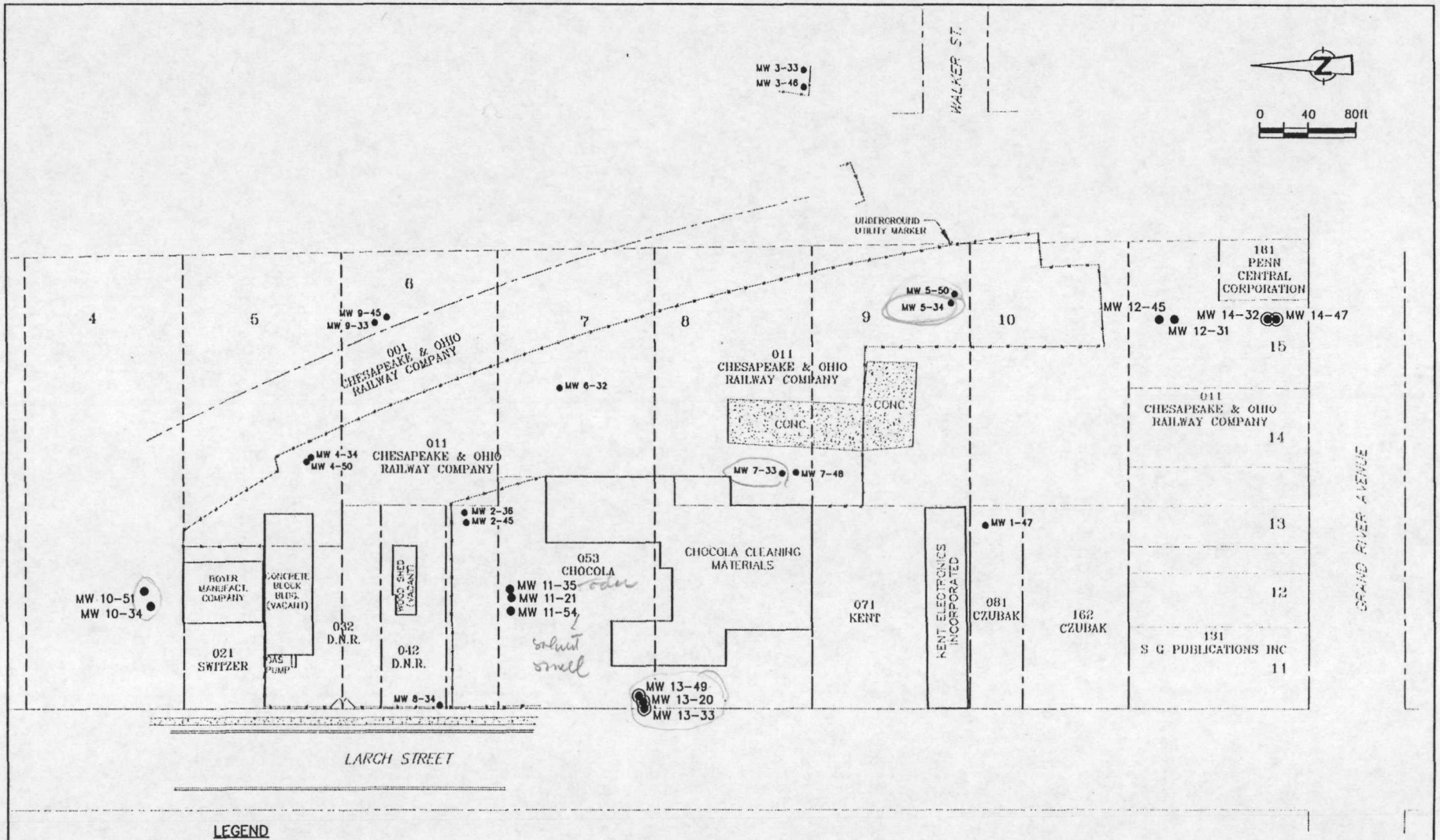


figure 2.5

BACKGROUND BOREHOLES
BARRELS, INC. SITE
Lansing, Michigan

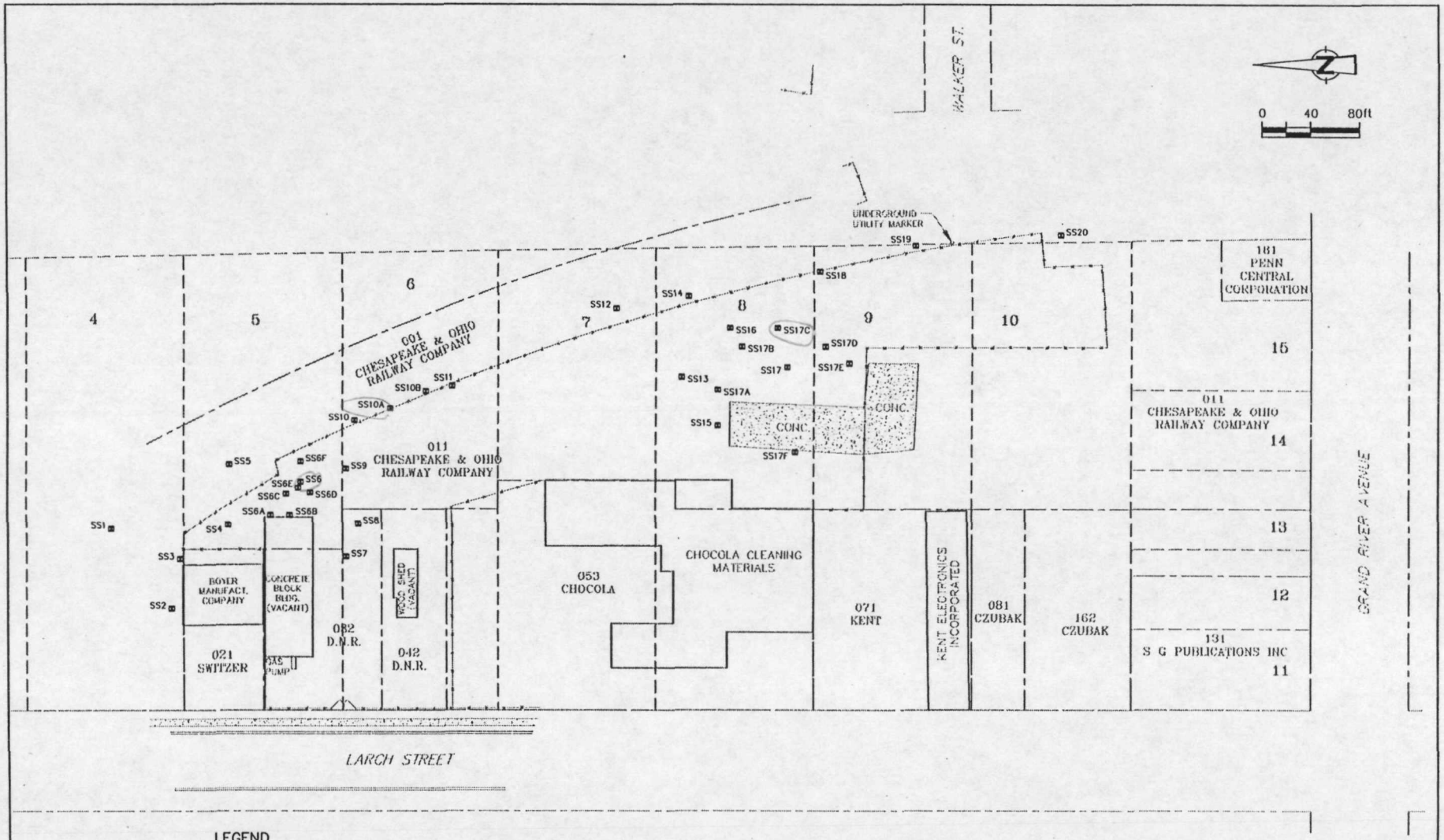


CRA

4869 (14) FEB 06/95(W) REV.0 (P-58)

figure 2.6

MONITORING WELL LOCATIONS
BARRELS, INC. SITE
Lansing, Michigan



LEGEND

CHAIN LINK FENCE

SS1 SURFICIAL SOIL SAMPLING LOCATION

figure 2.8

PCB IMMUNOASSAY SAMPLING LOCATIONS
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 03/95(W) REV.0 (P-62)

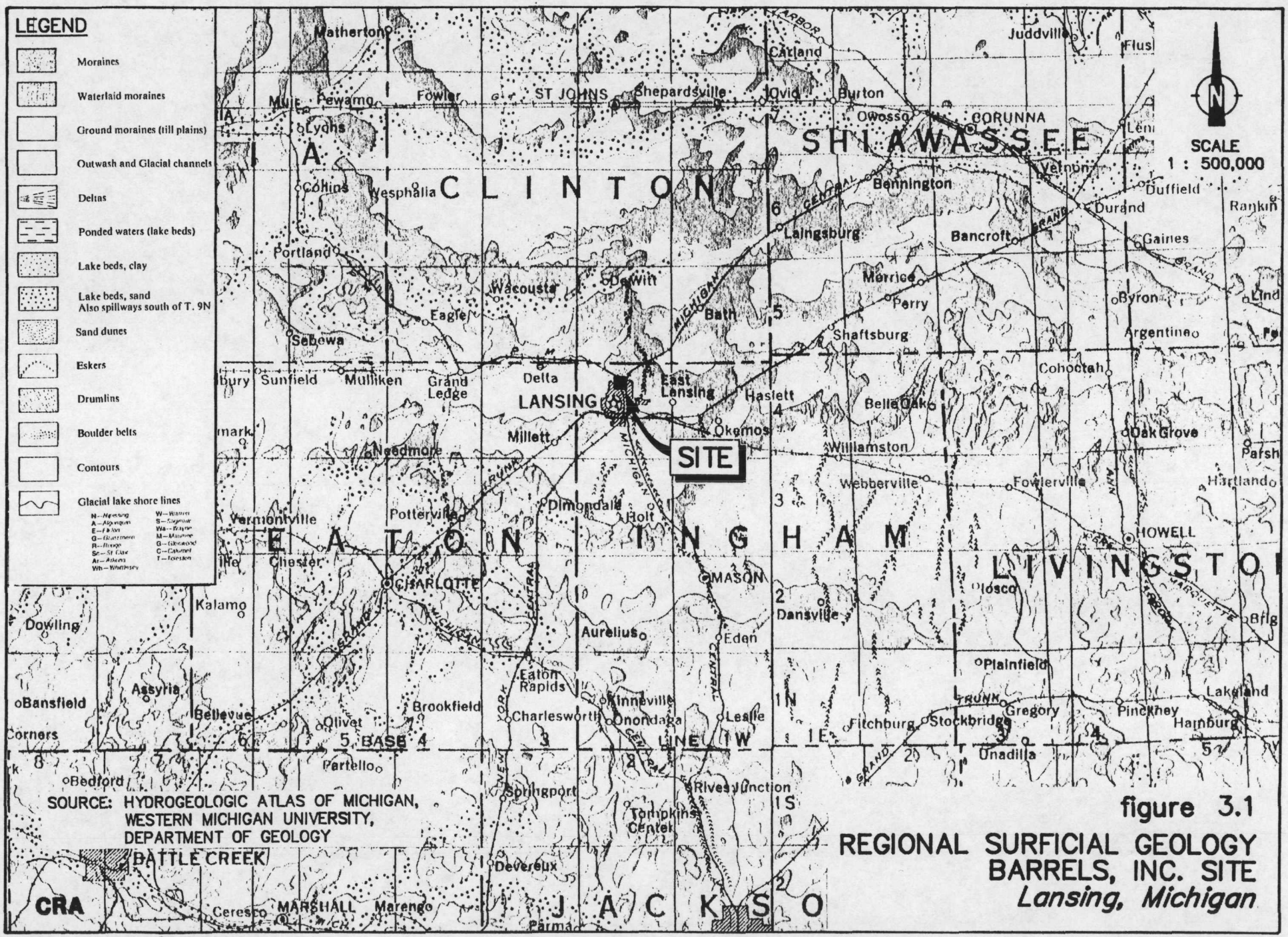


figure 3.1

REGIONAL SURFICIAL GEOLOGY
BARRELS, INC. SITE
Lansing, Michigan

4869 (14) FEB 2/95 (W) REV.0

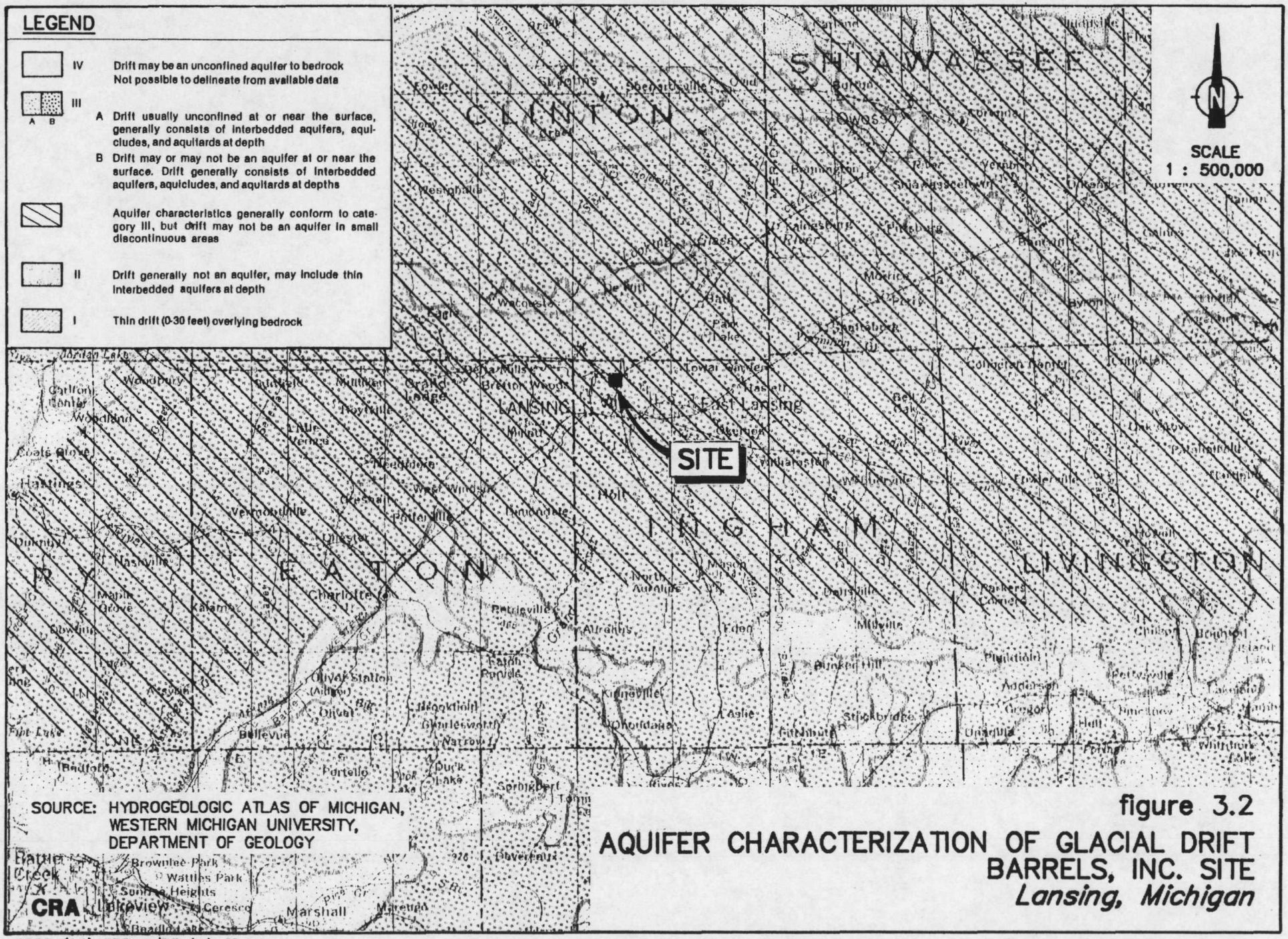
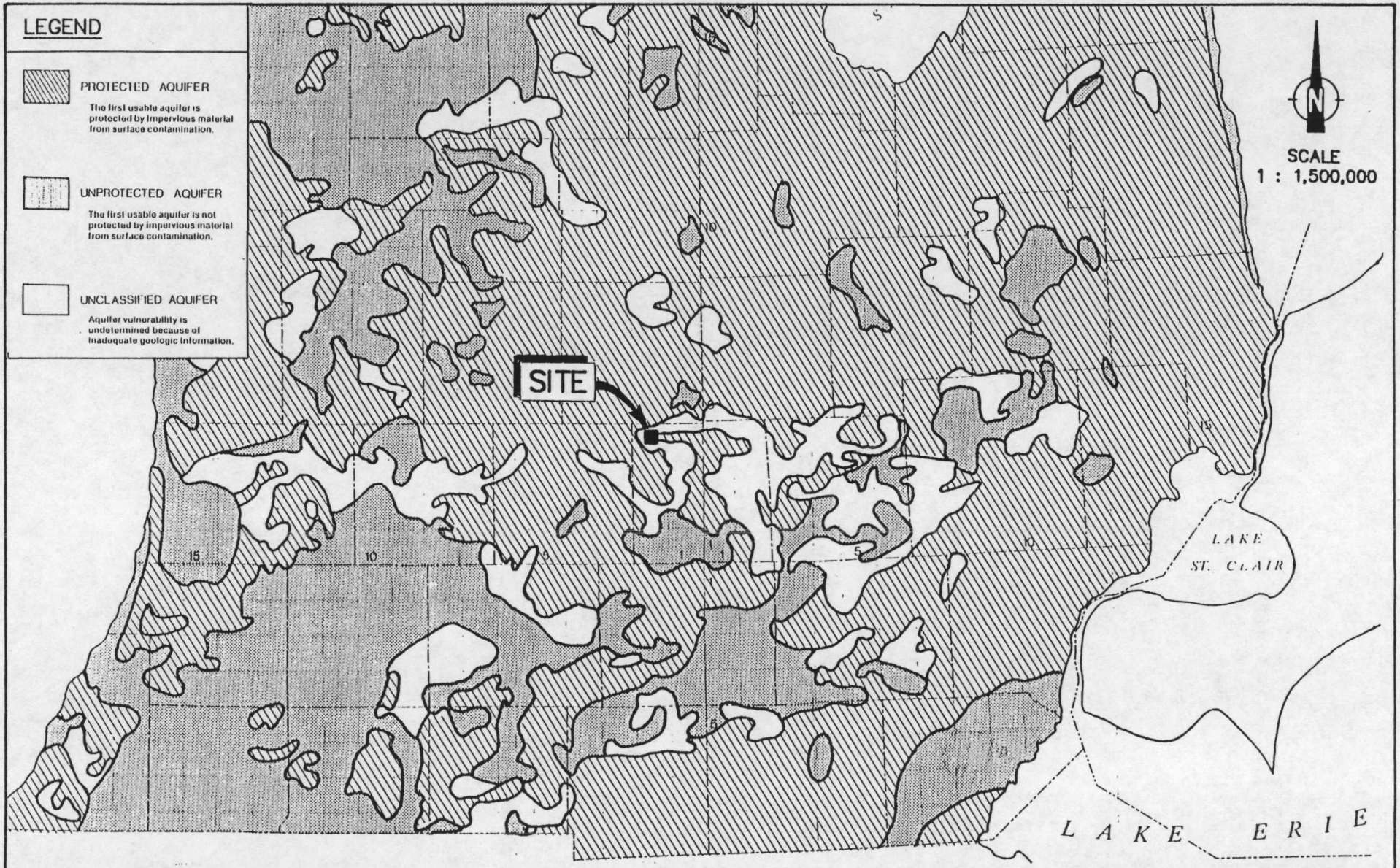


figure 3.2

AQUIFER CHARACTERIZATION OF GLACIAL DRIFT
BARRELS, INC. SITE
Lansing, Michigan

4869 (14) FEB 2/95 (W) REV.0



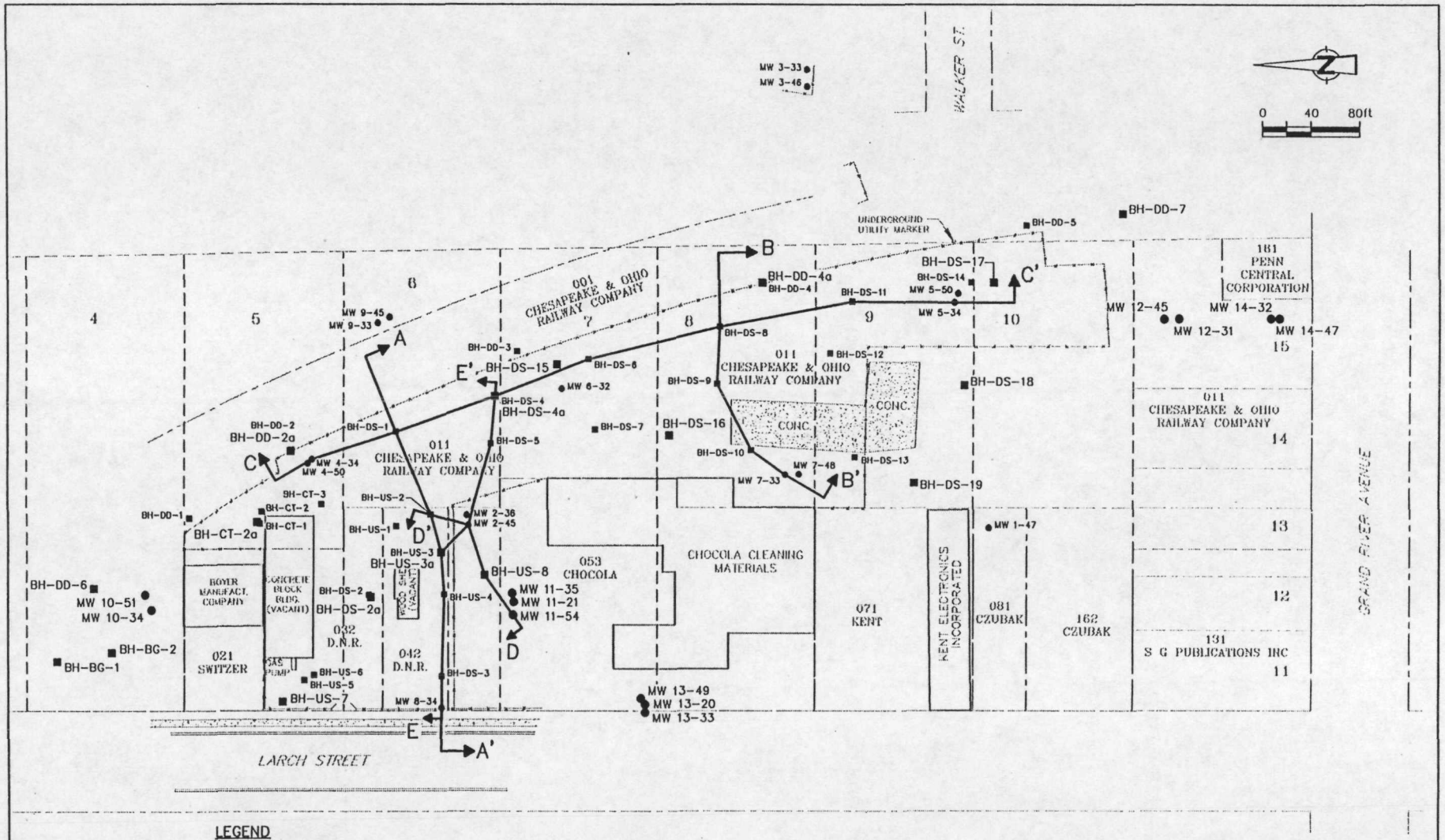
SOURCE: HYDROGEOLOGIC ATLAS OF MICHIGAN, WESTERN MICHIGAN UNIVERSITY, DEPARTMENT OF GEOLOGY

figure 3.3

AQUIFER VULNERABILITY TO SURFACE CONTAMINATION
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 2/95 (W) REV.0



LEGEND

- CHAIN LINK FENCE
- MW 4-50 ● / ■ BH-US-2 — PHASE I MONITORING WELL/SOIL BORING LOCATION
- MW 10-51 ● / ■ BH-BG-1 — PHASE II MONITORING WELL/SOIL BORING LOCATION
- A — CROSS-SECTION LOCATION

CRA

figure 4.1
CROSS-SECTION LOCATIONS
BARRELS, INC. SITE
Lansing, Michigan

4869 (14) DEC 16/94(W) REV.0 (P-60)

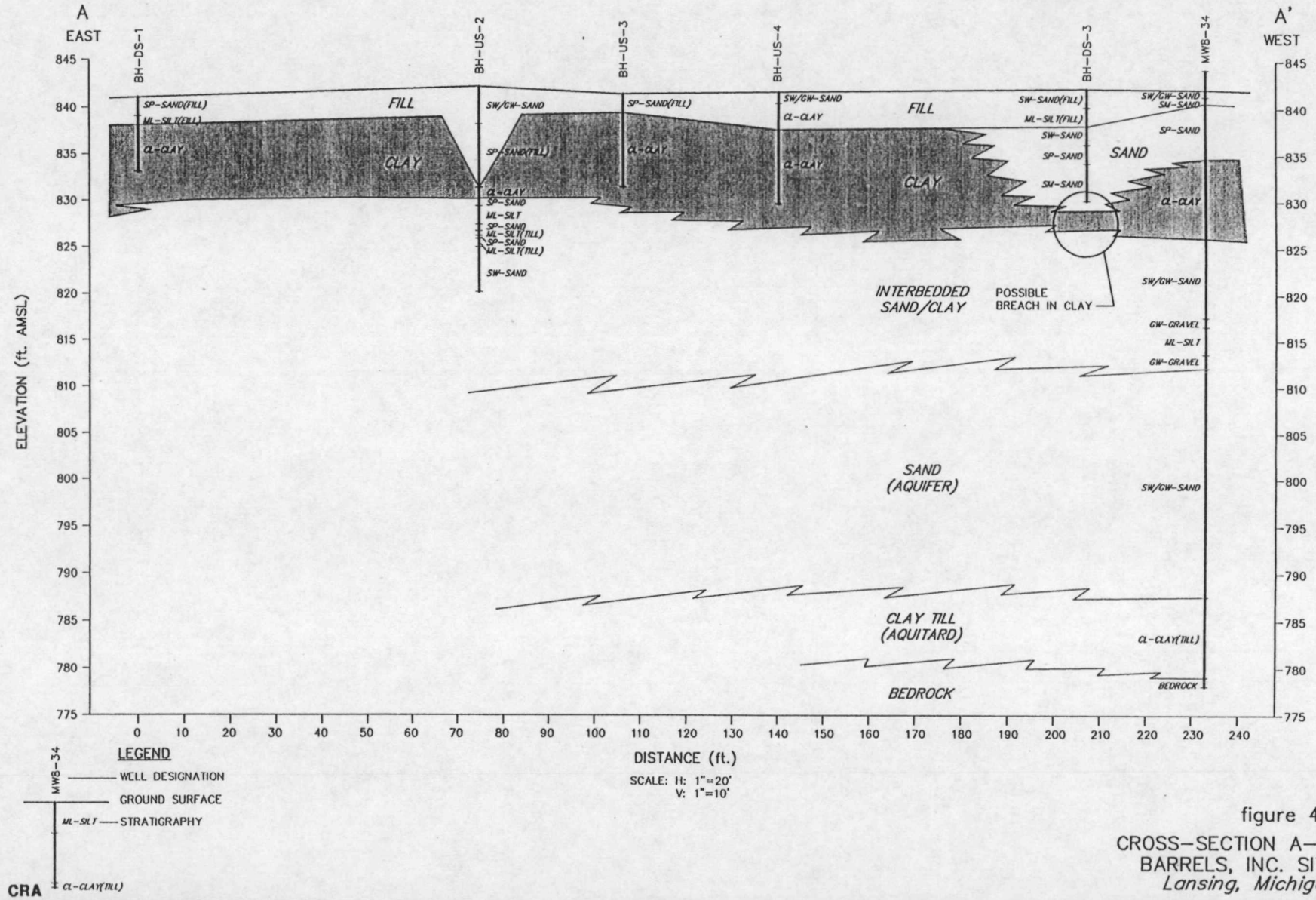


figure 4.2

CROSS-SECTION A-A'
BARRELS, INC. SITE
Lansing, Michigan

4869 (14) DEC 16/94(W) REV.0 (X-11)

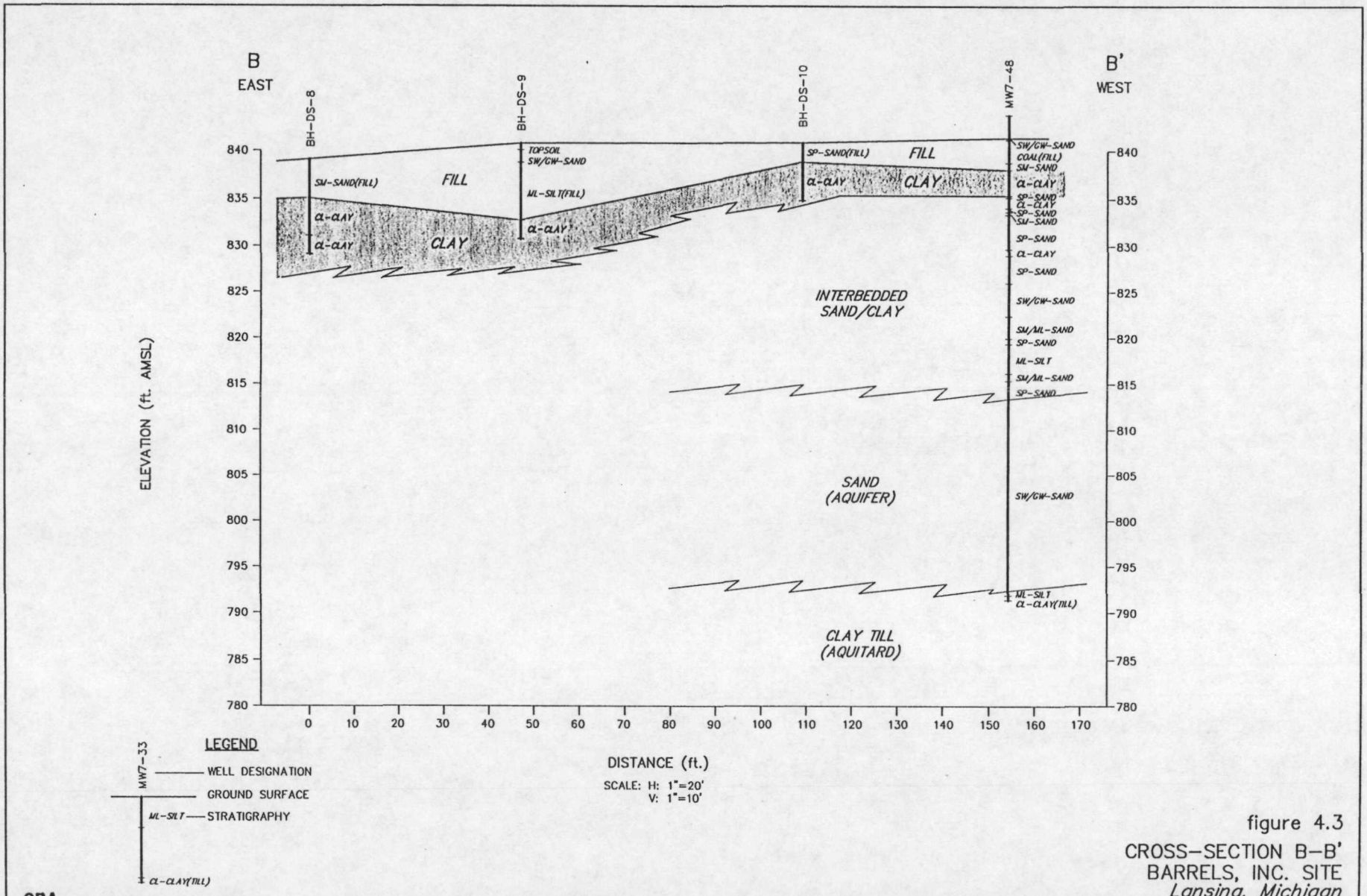


figure 4.3
CROSS-SECTION B-B'
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) DEC 16/94(W) REV.0 (X-12)

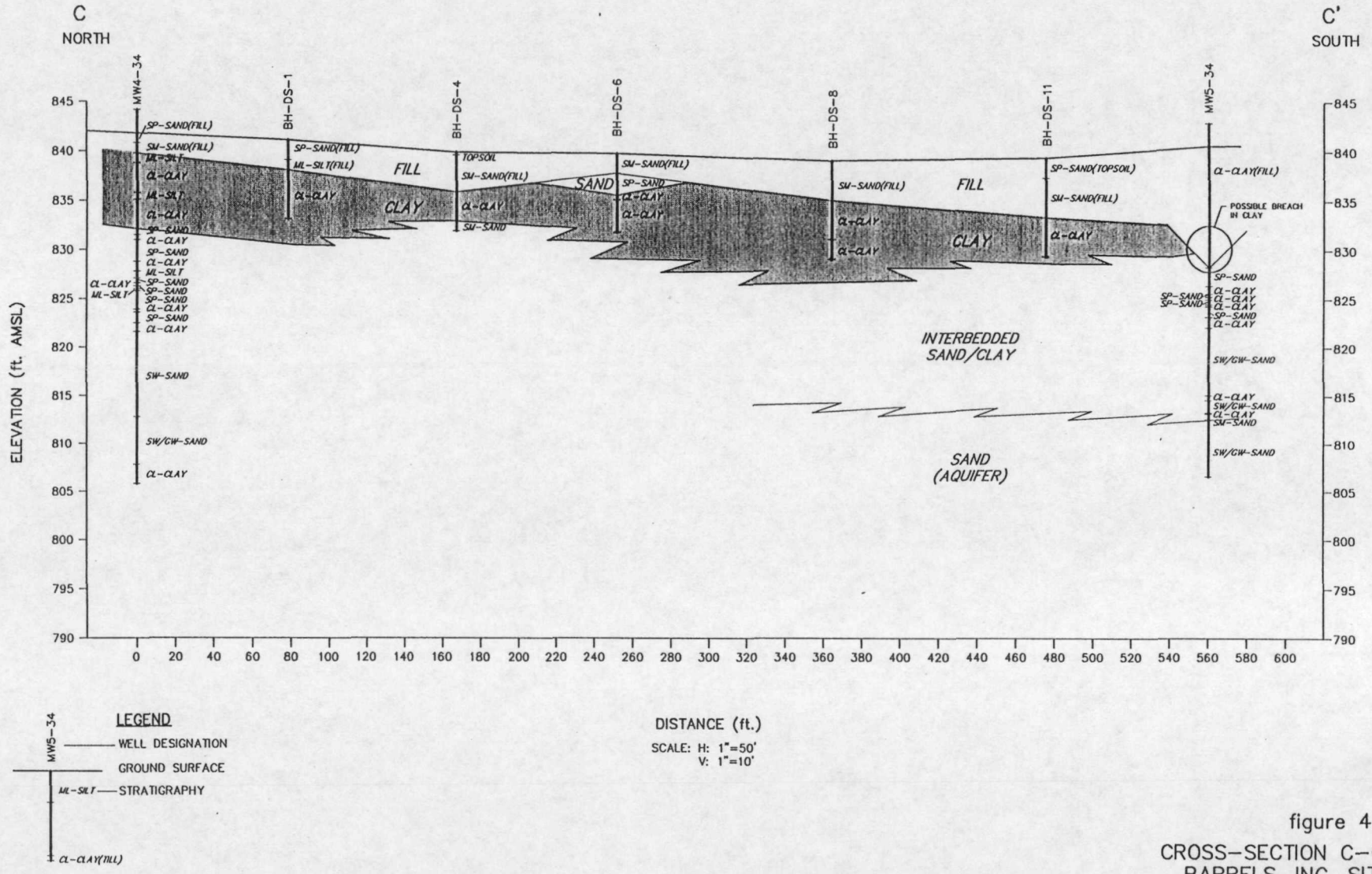
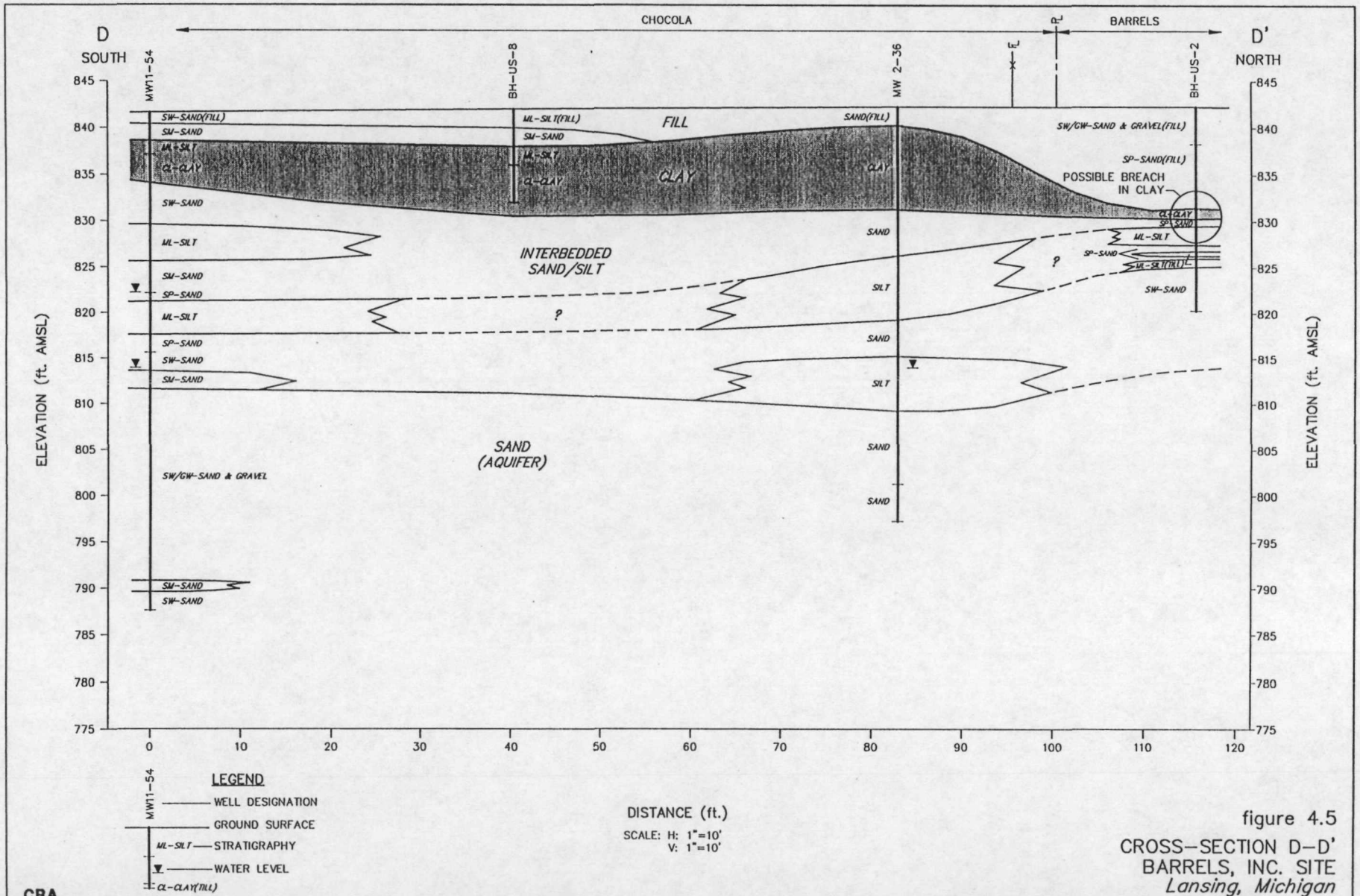


figure 4.4

CROSS-SECTION C-C'
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) DEC 16/94(W) REV.0 (X-13)



SCALE: H: 1"=10'
V: 1"=10'

figure 4.5
CROSS-SECTION D-D'
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 06/95(W) REV.0 (X-14)

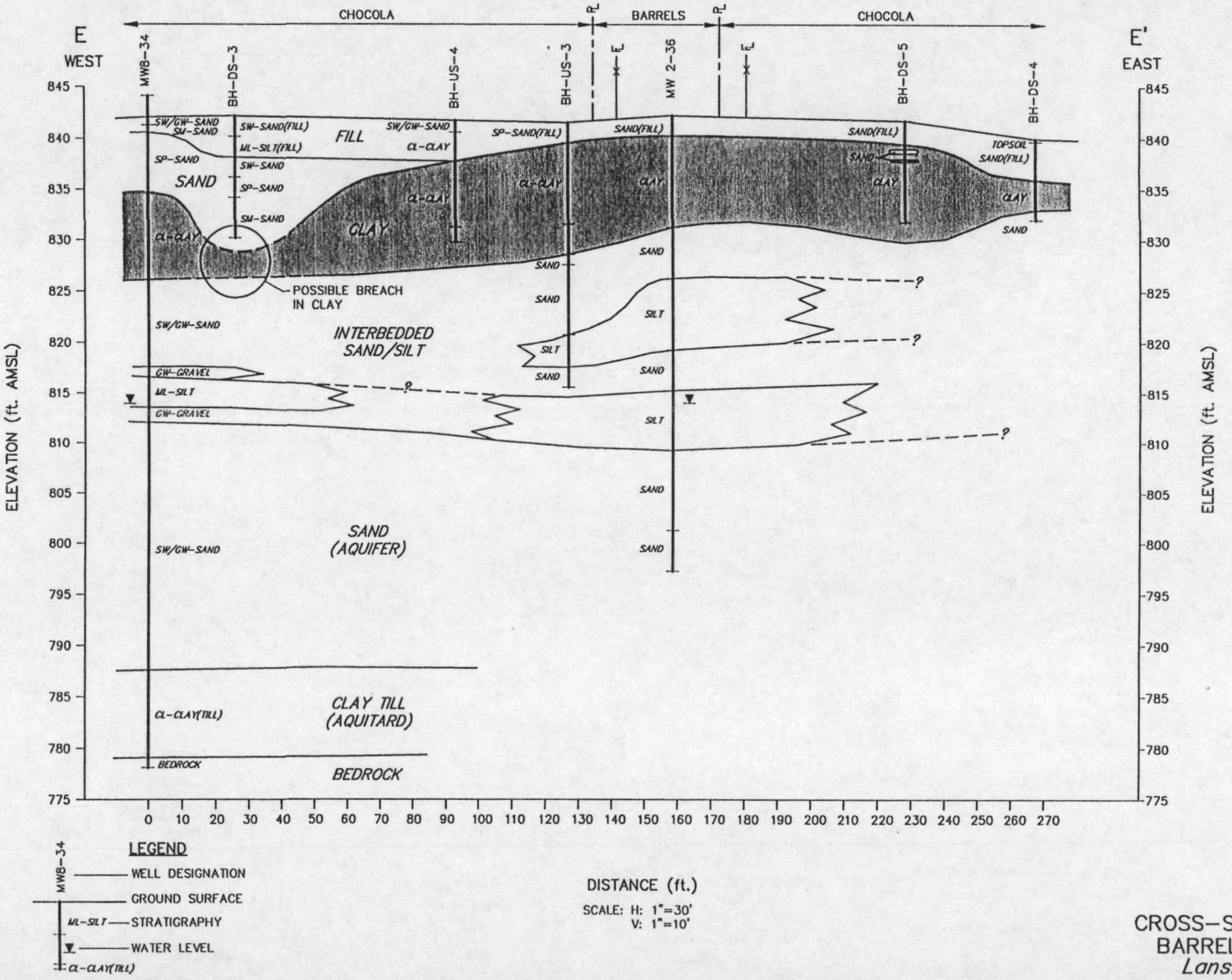
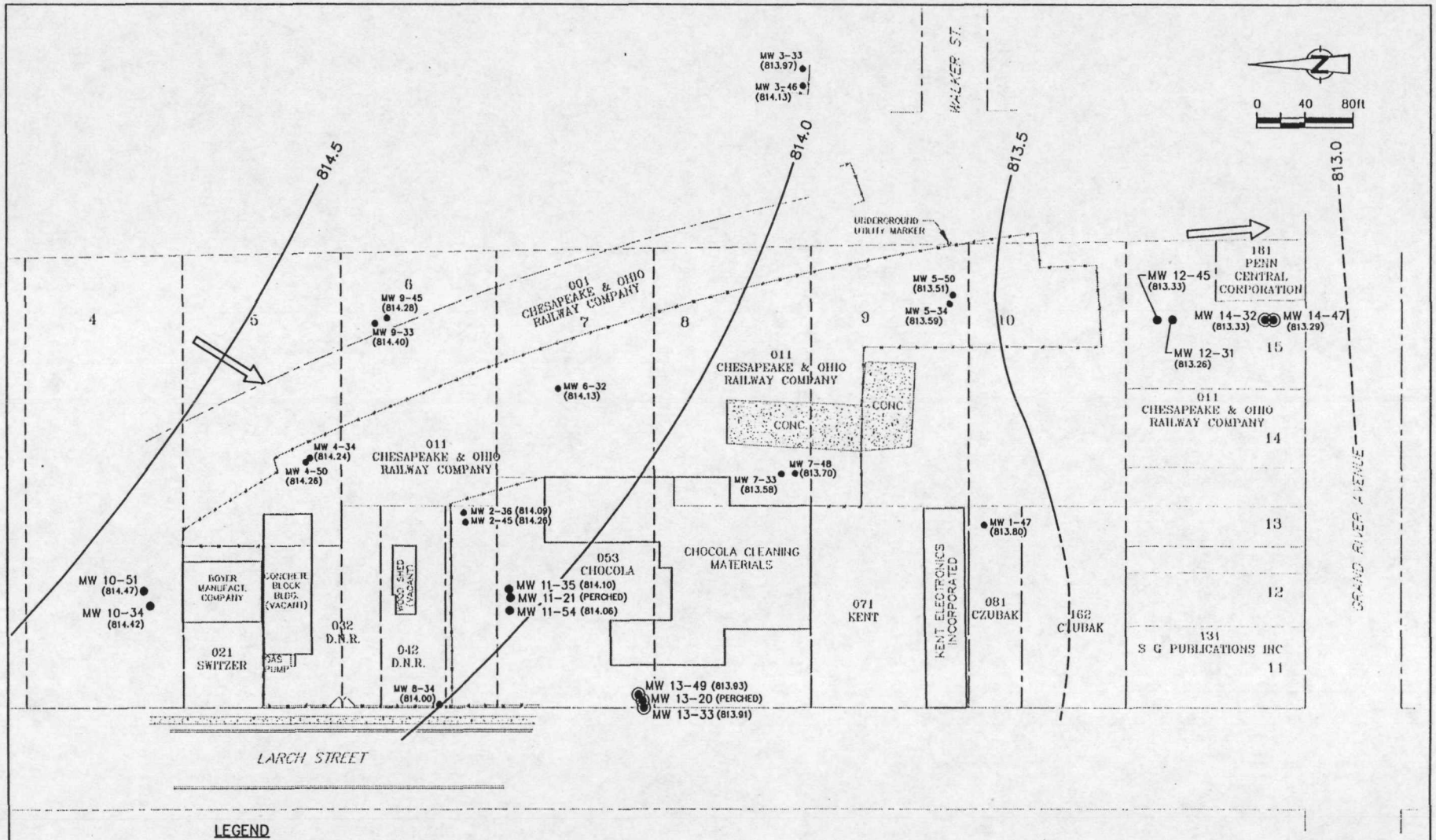


figure 4.6

CROSS-SECTION E-E'
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 06/95(W) REV.0 (X-15)



LEGEND

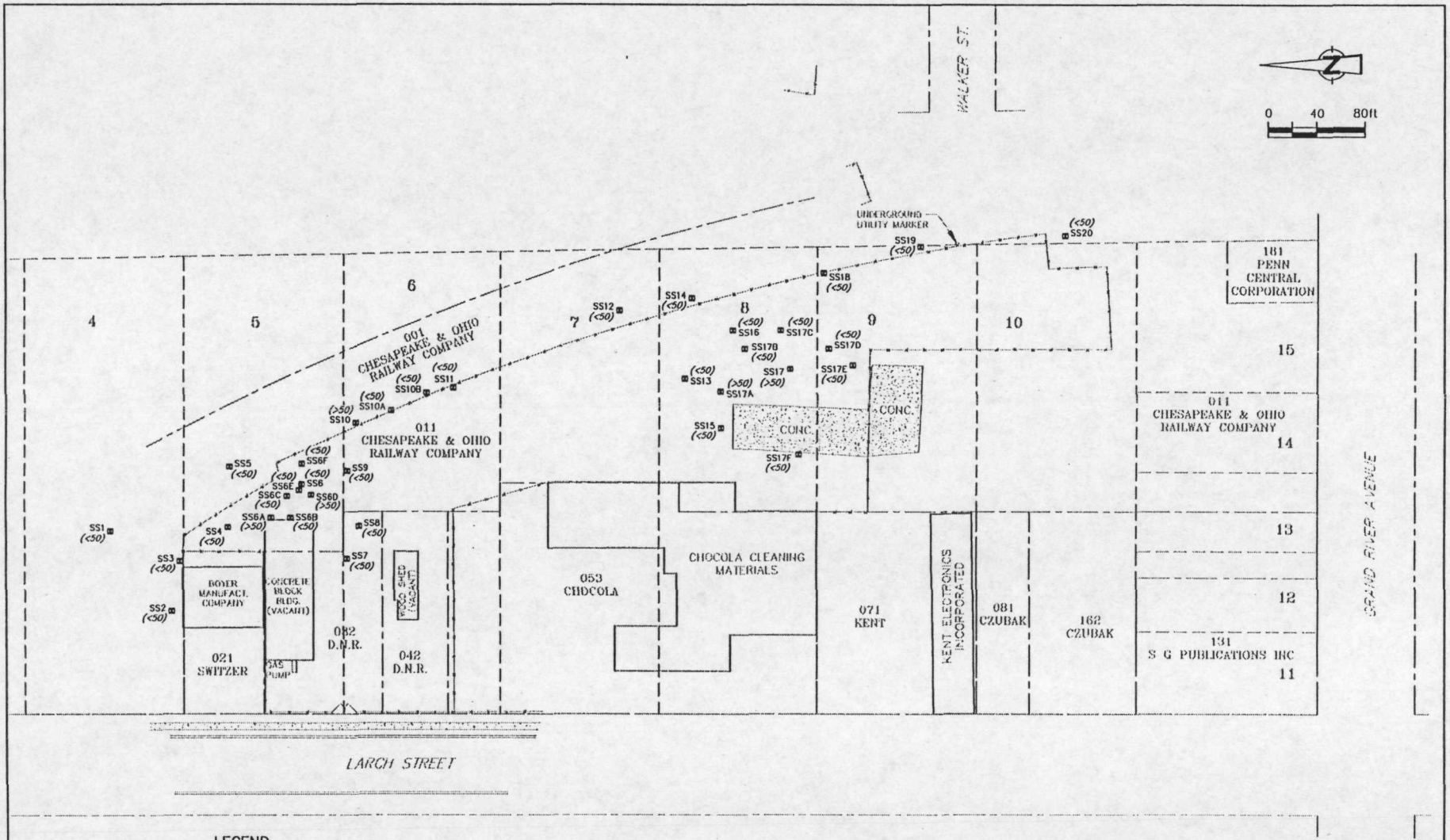
- CHAIN LINK FENCE
- MW 4-50 ● PHASE I MONITORING WELL LOCATION
- MW 10-51 ● PHASE II MONITORING WELL LOCATION
- MW 13-49 ◉ PHASE II SOAW MONITORING WELL LOCATION
- (814.32) GROUNDWATER ELEVATION
- 814.5 GROUNDWATER SURFACE CONTOUR
- DIRECTION OF GROUNDWATER FLOW

CRA

figure 4.7

PHASE II GROUNDWATER CONTOURS
BARRELS, INC. SITE
Lansing, Michigan

4869 (14) FEB 06/95(W) REV.0 (P-61)



LEGEND

CHAIN LINK FENCE

SS1 SURFICIAL SOIL SAMPLING LOCATION

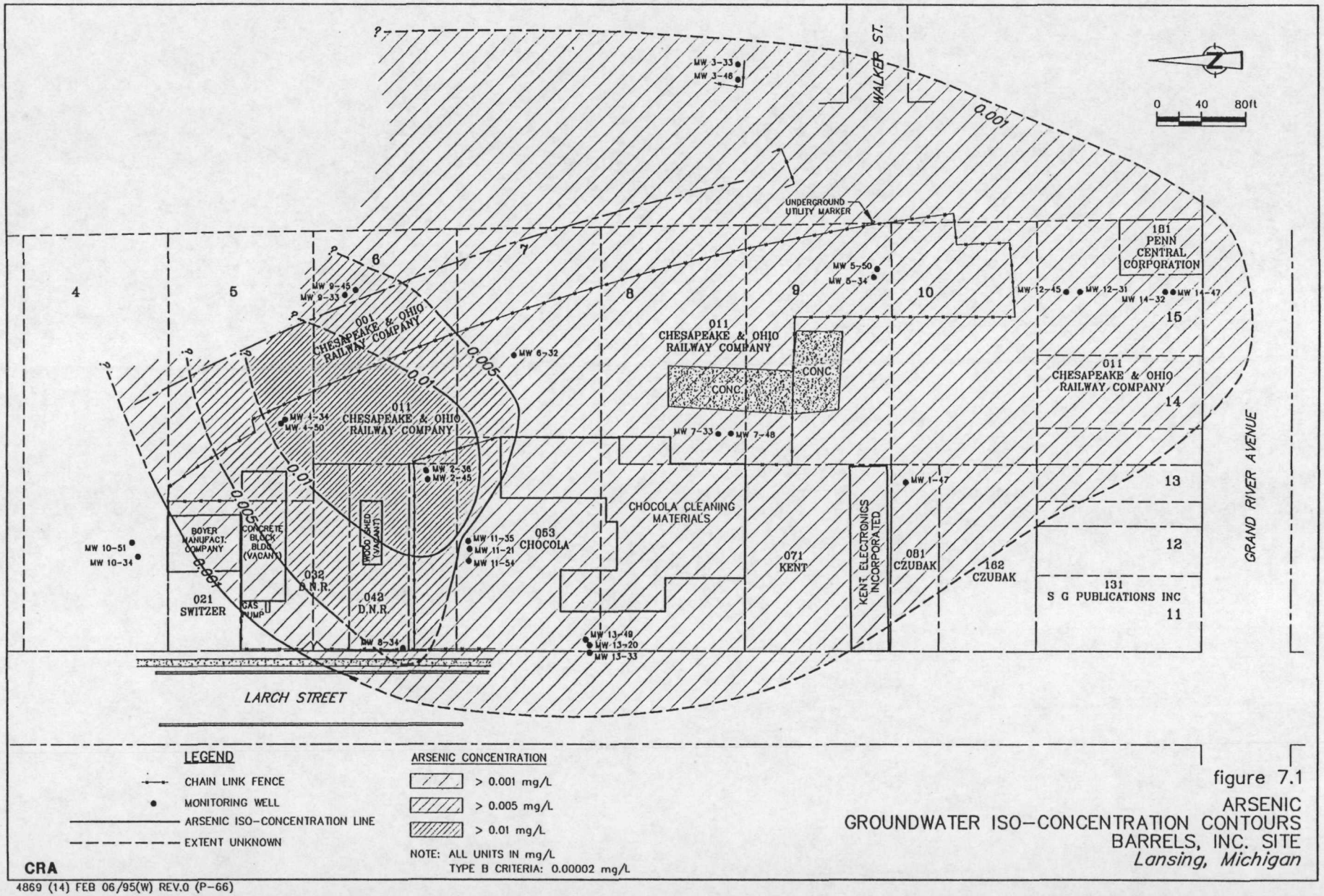
(>50) PCB 1254 SAMPLE RESULT (ppm)

figure 5.1

DETECTED IN SURFICIAL SOILS
PCB IMMUNOASSAY RESULTS
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 03/95(W) REV.0 (P-63)



LEGEND

- CHAIN LINK FENCE
- MONITORING WELL
- ARSENIC ISO-CONCENTRATION LINE
- EXTENT UNKNOWN

ARSENIC CONCENTRATION

- > 0.001 mg/L
- > 0.005 mg/L
- > 0.01 mg/L

NOTE: ALL UNITS IN mg/L
TYPE B CRITERIA: 0.00002 mg/L

CRA

4869 (14) FEB 06/95(W) REV.0 (P-66)

figure 7.1

ARSENIC
GROUNDWATER ISO-CONCENTRATION CONTOURS
BARRELS, INC. SITE
Lansing, Michigan

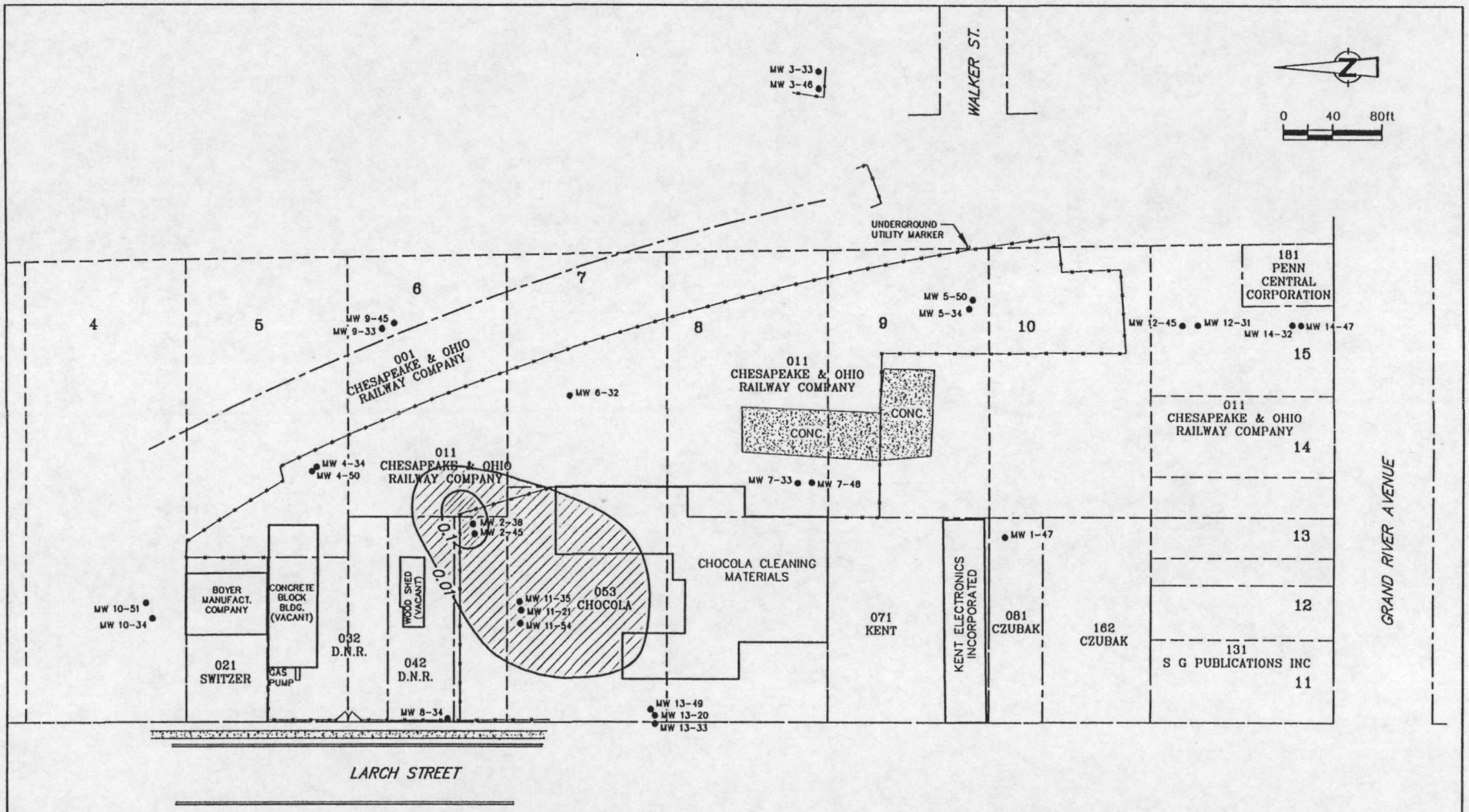


figure 7.2
BENZENE
GROUNDWATER ISO-CONCENTRATION CONTOURS
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 20/95(W) REV.0 (P-67)

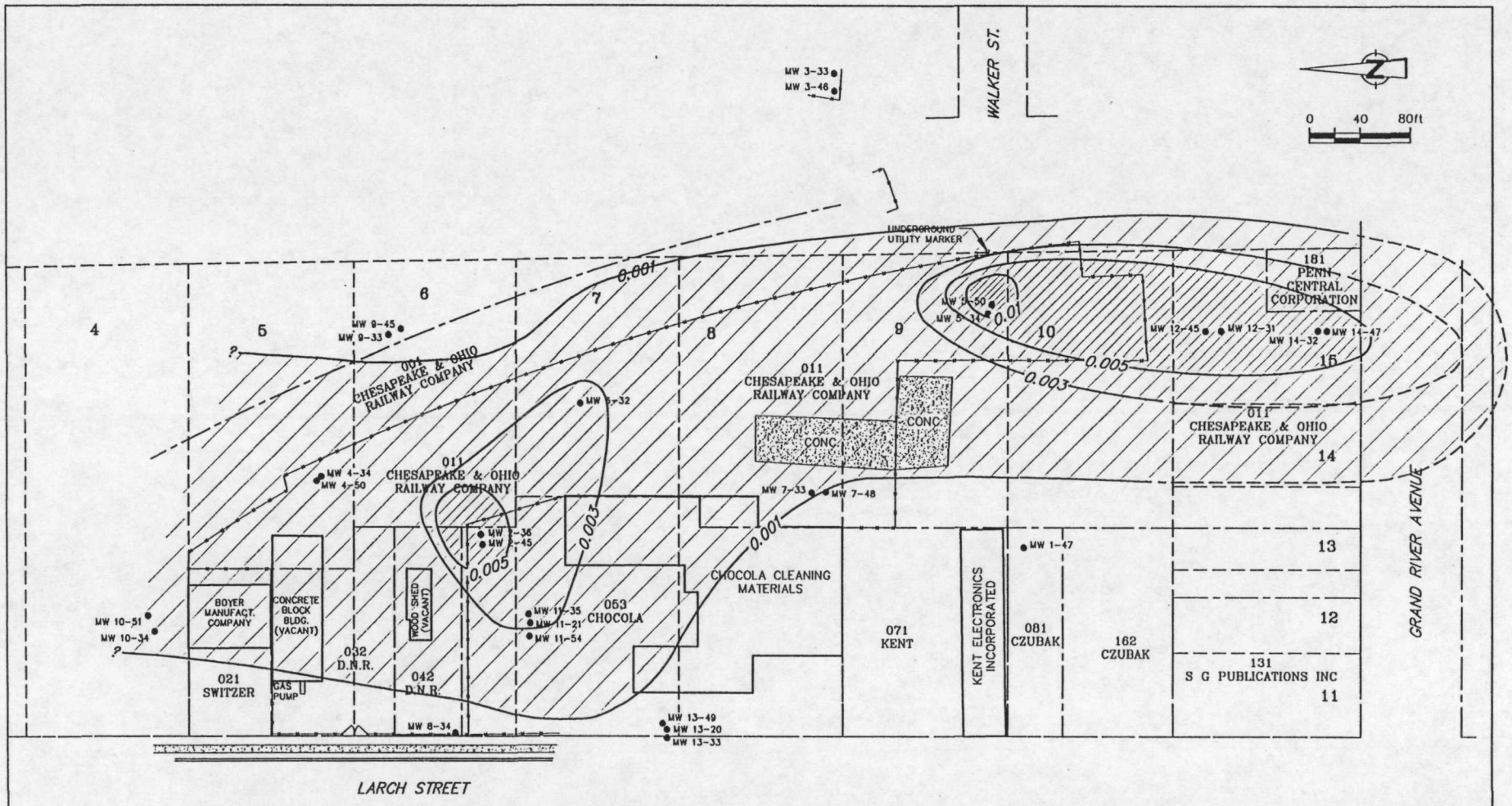


figure 7.3
1,2-DICHLOROETHANE
GROUNDWATER ISO-CONCENTRATION CONTOURS
BARRELS, INC. SITE
Lansing, Michigan

CRA

4869 (14) FEB 20/95(W) REV.0 (P-68)

TABLES

TABLE 2.1

RESULTS OF HEADSPACE ANALYSIS

BH No.	*Sample Depth (ft)*	*PID (ppm)*
DS-1	0-2	15
	2-4	22
	4-6	10
	6-8	12
DS-2	0-2	150
	2-4	70
	4-6	20
	6-8	11
	8-10	12
DS-2a	8-10	3
	10-12	3
	12-14	--
DS-2b	14-16	18
	16-18	34
	18-20	--
	20-22	20
	22-24	5
	24-26	1.5
	26-28	1.0
DS-3	0-2	6
	2-4	6
	4-6	10
	6-8	5
	8-10	5
	10-12	9
DS-4	0-2	11
	2-4	7
	4-6	8
	6-8	10
DS-4a	6-8	2
	8-10	52
	10-12	61
	12-14	132
DS-4b	12-14	0.0
	14-16	0.0
	16-18	0.5
	18-20	0.5
	20-22	0.0
	22-24	0.0
	24-26	0.5
	26-28	0.5
DS-5	0-2	25
	2-4	10
	4-6	75
	6-8	5
	8-10	5
DS-6	0-2	20
	2-4	40
	4-6	600
	6-8	150
DS-7	0-2	220
	2-4	120
	4-6	170
	6-8	500
	8-10	170
DS-8	0-2	11
	4-6	5
	8-10	8
DS-9	0-2	9
	2-4	6
	4-6	8
	6-8	8
	8-10	6
DS-10	0-2	6
	2-4	6
	4-6	5
DS-11	0-2	1
	2-4	1
	4-6	2
	6-8	1
	8-10	6
DS-12	0-2	40
	2-4	150
	4-6	300
	6-8	30
	8-10	6
	10-12	5
	12-14	5
	14-16	3
	16-18	7
	18-20	2
DS-13	0-2	100
	2-4	32
	4-6	24
DS-14	0-2	6
	2-4	4
	4-6	0
	6-8	7
	8-10	10
DS-15	0-2	0.0
	2-4	0.0
	4-6	0.0
	6-8	0.0
	8-10	0.0
DS-16	0-2	1
	2-4	0.0
	4-6	0.0
	6-8	0.0
	8-10	0.0
	10-12	0.0

TABLE 2.1

RESULTS OF HEADSPACE ANALYSIS

BH No.	*Sample Depth (ft)*	*PID (ppm)*
DS-17	0-2	0.5
	2-4	–
	4-6	0.0
	6-8	0.0
	8-10	0.0
	10-12	0.0
DS-18	0-2	9.5
	2-4	0.0
	4-6	0.0
	6-8	0.0
	8-10	0.0
	10-12	0.0
DS-19	0-2	0.0
	2-4	0.0
DS-20	0-2	0.0
	2-4	0.0
	4-6	0.0
CT-1	0-2	10
	2-4	20
	4-6	15
	6-8	12
	8-10	30
CT-2	0-2	6
	2-4	2
	4-6	1.5
	6-8	1
	8-10	9
CT-2a	8-10	2
	10-12	15
CT-3	0-2	4
	2-4	–
	4-6	10
	6-8	20
	8-10	17
	10-18 incl.	0

BH No.	*Sample Depth (ft)*	*PID (ppm)*
US-1	0-2	250
	2-4	200
	4-6	450
	6-8	430
	8-10	550
	10-12	520
	12-14	370
	14-16	500
	16-18	360
	18-20	220
	20-22	180
US-2	0-2	220
	2-4	210
	4-6	170
	6-8	115
	8-10	145
	10-12	650
	12-14	560
	14-16	540
	16-18	320
	18-20	190
	20-22	180
US-3	0-2	120
	2-4	70
	4-6	90
	6-8	80
	8-10	40
US-3a	8-10	–
	10-12	–
	12-14	–
	14-16	70
	16-18	40
	18-20	60
	20-22	60
	22-24	60
	24-26	–

BH No.	*Sample Depth (ft)*	*PID (ppm)*
US-4	0-2	150
	2-4	210
	4-6	190
	6-8	148
	8-10	220
	10-12	162
US-5	0-2	26
	4-6	30
	6-8	440
	8-10	520
	10-12	420
	12-14	40
	14-16	25
US-6	0-2	20
	2-4	20
	4-6	32
	6-8	450
	8-10	390
	10-12	210
	12-14	30
US-7	0-2	0.0
	2-4	0.0
	4-6	0.0
	6-8	3
	8-10	1
	10-12	1
US-8	0-2	0.0
	2-4	150
	4-6	10
	6-8	25
	8-10	40
DD-1	0-2	0
	2-4	0.2
	4-6	0
DD-2	0-2	0
	2-4	0.5
	4-6	0.3

TABLE 2.1

RESULTS OF HEADSPACE ANALYSIS

BH No.	*Sample Depth (ft)*	*PID (ppm)*
DD-2a	2-4	0
	4-6	0
DD-3	0-2	0
	2-4	0
	4-6	0
	6-8	0
DD-4	0-2	100
	2-4	0
	4-6	0
DD-4a	8-10	--
	10-12	0
	12-14	0
DD-5	0-2	1
	2-4	1
	4-6	1
	6-8	1
	8-10	0.5
DD-6	0-2	0
	2-4	0
DD-7	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	0
	10-12	0
BG-1	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	0
BG-2	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	0

BH No.	*Sample Depth (ft)*	*PID (ppm)*
MW-2	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	1
	10-12	0
	12-14	0
	14-16	1
	16-18	7
	18-20	1
	20-22	1
	22-24	1
	24-26	0
	26-28	0
	28-30	0
	30-32	0
	32-34	0
	34-36	0
MW-4	0-2	4
	2-4	3
	4-6	11
	6-8	4
	8-10	3
	10-12	8
	12-14	6
	14-16	8
	16-18	7
	18-20	2
	20-22	2
	22-24	1
	24-26	2
	26-28	1
	28-30	0
	30-32	1
	32-34	1
	34-36	2

BH No.	*Sample Depth (ft)*	*PID (ppm)*
MW-5	0-2	1
	2-4	2
	4-6	--
	6-8	1
	8-10	2
	10-12	30
	12-14	1
	14-16	1
	16-18	0.5
	18-20	2
	20-22	--
	22-24	3
	24-26	1
	26-28	3
	28-30	1
	30-32	2
	32-34	1
MW-6	0-2	13
	2-4	1
	4-6	0
	6-8	0
	8-10	0
	10-12	0
	12-14	0
	14-16	0
	16-18	0
	18-20	0
	20-22	0.5
	22-24	0
	24-26	0
	26-28	0
	28-30	1

TABLE 2.1

RESULTS OF HEADSPACE ANALYSIS

BH No.	*Sample Depth (ft)*	*PID (ppm)*
MW-7	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	0
	10-12	0
	12-14	0
	14-16	1
	16-18	–
	18-20	0
	20-22	1
	22-24	0
	24-26	1
	26-28	1
	28-30	2
	30-32	1
	32-34	1
	34-36	1
	36-38	0
	38-40	1
	40-42	0
	42-44	1
	44-46	0
	46-48	0
	48-50	0

BH No.	*Sample Depth (ft)*	*PID (ppm)*
MW-8	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	1
	10-12	0
	12-14	0
	14-16	1
	16-18	7
	18-20	1
	20-22	1
	22-24	1
	24-26	0
	26-28	0
	28-30	0
	30-32	0
	32-34	0
	34-36	0
	38-40	0
	40-42	0
	42-44	0
	44-46	0
	46-48	0
	50-52	0
	52-54	0
	54-56	0
MW-9	0-2	1
	2-4	1
	4-6	0
	6-8	1
	8-10	0
	10-12	0
	12-14	0
	14-16	1
	16-18	0
	18-20	2

BH No.	*Sample Depth (ft)*	*PID (ppm)*
MW-10	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	0
	10-12	0
	12-14	0
	14-16	0
	16-18	0
	18-20	0
	20-22	0
	22-24	0
	24-26	–
	26-28	0
	28-30	0
	30-32	0
	32-34	0
	34-36	0
	38-40	0
	40-42	1
	42-44	–
	44-46	3
	46-48	3
	50-52	2

TABLE 2.1

RESULTS OF HEADSPACE ANALYSIS

BH No.	*Sample Depth (ft)*	*PID (ppm)*
MW-11-54	0-2	70
	2-4	50
	4-6	–
	6-8	52
	8-10	64
	10-12	84
	12-14	10
	14-16	6
	16-18	100
	18-20	–
	20-22	70
	22-24	–
	24-26	–
	26-28	10
	28-30	100
	30-32	96
	32-34	48
	34-36	32
	36-38	25
	38-40	–
	40-42	28
	42-44	–
	44-46	–
	46-48	9
	48-50	9
	50-52	0
	52-54	3
MW-12-45	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	0
	10-12	0
	12-14	0
	14-16	0
	16-18	0
	18-20	0
	20-22	0
	22-24	0
	24-26	0
	26-28	0
	28-30	0
	30-32	0.5
	32-34	0
	34-36	0
	36-38	0
	38-40	0
	40-42	0
	42-44	0
	44-46	0
	46-48	0
	48-50	0
MW-13-49	0-22 incl	0
MW-14-32	0-46 incl	0
MW-14-47	0-2	0
	2-4	0
	4-6	0
	6-8	0
	8-10	2
	10-12	–
	12-52 incl	0

TABLE 2.2

SUMMARY OF PHASE II SOIL SAMPLING ANALYSIS REQUIRED

Borehole Number	*Sample Depth (feet)*	*VOC*	*SVOC*	*Pest./ PCB*	*Sb*	*As*	*Cd*	*Cr*	*Cu*	*Pb*	*Hg*	*Ni*	*Se*	*Ag*	*Zn*	*CN*
DS-2a	8 to 10	+		+		+		+							+	
	10 to 12	•		•		•		•							•	
DS-2b	14 to 16			•		•										
DS-4a	6 to 8	+				+										
	8 to 10	•				•										
DS-4b	14 to 16	•														
DS-15	6 to 8														+	
	8 to 10														•	
DS-16	0 to 2				•	•	•	•	•	•	•		•	•	•	•
	4 to 6				•	•	•	•	•	•	•		•	•	•	•
	8 to 10							+							+	
	10 to 12							•							•	

Notes:

- • Total Concentration.
- \+ Total and TCLP Concentration

TABLE 2.2

SUMMARY OF PHASE II SOIL SAMPLING ANALYSIS REQUIRED

Borehole Number	*Sample Depth (feet)*	*VOC*	*SVOC*	*Pest./ PCB*	*Sb*	*As*	*Cd*	*Cr*	*Cu*	*Pb*	*Hg*	*Ni*	*Se*	*Ag*	*Zn*	*CN*
DS-17	0 to 2	•			•	•	•	•	•	•	•		•	•	•	•
	4 to 6	•			•	•	•	•	•	•	•		•	•	•	•
	8 to 10	+													+	
	10 to 12	•													•	
DS-18	0 to 2	•			•	•	•	•	•	•	•		•	•	•	•
	4 to 6	•			•	•	•	•	•	•	•		•	•	•	•
	8 to 10	+													+	
	10 to 12	•													•	
DS-19	0 to 2									•					•	
	2 to 4									•					•	
DS-20	0 to 2					•	•	•	•	•	•	•	•	•	•	
	2 to 4					•	•	•	•	•	•	•	•	•	•	
	4 to 6					•	•	•	•	•	•	•	•	•	•	
DD-2a	4 to 6			+												
	6 to 8			•												
DD-4a	10 to 12			+						+					+	
	12 to 14			•						•					•	

Notes:

- • Total Concentration.
- \+ Total and TCLP Concentration

TABLE 2.2

SUMMARY OF PHASE II SOIL SAMPLING ANALYSIS REQUIRED

Borehole Number	*Sample Depth (feet)*	*VOC*	*SVOC*	*Pest./ PCB*	*Sb*	*As*	*Cd*	*Cr*	*Cu*	*Pb*	*Hg*	*Ni*	*Se*	*Ag*	*Zn*	*CN*
DD-6	0 to 2		•	•						•					•	
	2 to 4		•	•						•					•	
DD-7	0 to 2		•		•	•	•	•	•	•	•		•	•	•	
	4 to 6		•		•	•	•	•	•	•	•		•	•	•	
	8 to 10														+	
	10 to 12														•	
US-3a	12 to 14	+	+												+	
	24 to 26	•	•												•	
US-7	8 to 10	•	•													
	10 to 12	•	•													
US-8	2 to 4	•	•			•				•	•				•	
	8 to 10	•	•			•				•	•				•	
MW-11	4 to 6	•	•													
	18 to 20	•	•													
	24 to 26	•	•													
	32 to 34	•	•													
MW-13	4 to 6	•	•	•		•				•						
	18 - 20	•	•	•		•				•						

Notes:

- Total Concentration.

TABLE 2.2

SUMMARY OF PHASE II SOIL SAMPLING ANALYSIS REQUIRED

Borehole Number	*Sample Depth (feet)*	*VOC*	*SVOC*	*Pest./ PCB*	*Sb*	*As*	*Cd*	*Cr*	*Cu*	*Pb*	*Hg*	*Ni*	*Se*	*Ag*	*Zn*	*CN*
+ Total and TCLP Concentration																
CT-2a	8 to 10	+														
	10 to 12	•														
BG-1	0 to 2					•		•				•			•	
	2 to 4					•		•				•			•	
	4 to 6					•		•				•			•	
	6 to 8					•		•				•			•	
	8 to 10					•		•				•			•	
BG-2	0 to 2					•		•				•			•	
	2 to 4					•		•				•			•	
	4 to 6					•		•				•			•	
	6 to 8					•		•				•			•	
	8 to 10					•		•				•			•	

Notes:

- • Total Concentration.
- + Total and TCLP Concentration

TABLE 2.3

SUMMARY OF SOIL INVESTIGATIONS
BARRELS, INC.
LANSING, MICHIGAN

Area/Borehole No.	*Purpose*	*Results*
Drum Storage Area		
DS-2a	• vertical definition of VOCs, PCB/Pesticides, As, Cr, Zn for DS-2	• vertical definition of chlordane, As and Zn incomplete
DS-2b	• vertical definition of Pesticides and As, for DS-2	• vertical definition complete
DS-4a	• vertical definition of VOCs, Zn for DS-4	• vertical definition of PCE may require further investigation below 10-feet
DS-4b	• vertical definition of VOCs for DS-4	• vertical definition complete
DS-15	• vertical definition of Zn for DS-6 and DD-3	• TCLP for Zinc meets Type B at 6 to 8-feet • vertical definition complete
DS-16	• horizontal definition of all inorganics, vertical definition of Cr and Zn	• horizontal and vertical definitions complete
DS-17	• horizontal definition of VOCs and inorganics, and vertical definition of VOCs and Zn	• vertical definition complete • horizontal definition may not be complete in a southerly direction
DS-18	• horizontal definition of VOCs, SVOCs and inorganics, and vertical definition of VOCs and Zn	• horizontal and vertical definition complete
DS-19	• horizontal definition of Pb and Zn	• horizontal definition complete
DS-20	• horizontal definition of metals	• horizontal and vertical definition complete
<u>Drainage Ditch</u>		
DD-2a	• vertical definition of Pest/PCB for DD-2	• vertical definition complete
DD-4a	• vertical definition of Pest/PCB, Pb, Zn for DD-4	• vertical definition complete
DD-6	• background horizontal definition of SVOCs, Pest/PCB, Pb, Zn	• 0 to 2-foot sample reported elevated PAHs, Pb and Zn
DD-7	• horizontal definition for SVOCs and inorganics, and vertical definition of Zn	• horizontal definition complete

TABLE 2.3

SUMMARY OF SOIL INVESTIGATIONS
BARRELS, INC.
LANSING, MICHIGAN

Area/Borehole No.	*Purpose*	*Results*
USTs		
US-3a	• vertical definition of VOCs, SVOCs and Zn for US-3	• vertical definition complete at 24-feet
US-7	• horizontal definition of VOCs and SVOCs	• definition complete
US-8	• horizontal definition of VOCs, SVOCs, As, Pb, Hg and Zn	• horizontal definition of VOCs and SVOCs extended to MW-11 • horizontal definition of As and Pb required additional work
MW-11	• further horizontal definition of VOCs and SVOCs for US-8	• horizontal definition incomplete in the south or south westerly directions
MW-13	• further horizontal definition of VOCs, SVOCs, Pesticides, Arsenic and Lead	• definition complete
Caustic Tank		
CT-2a	• vertical definition of VOCs for CT-2	• verticale definition complete
Background		
BG-1 and BG-2	• definition of background for inorganics	• significantly elevated concentrations of As, Cr, Ni and Zn reported between 0 and 6-feet

TAB 4

MONITORING WELL COMPLETION DETAILS
BARRELS INC.

Location	*Elevation (ft. AMSL)*	*Top of Casing Elevation (ft.)*	*Depth (BGS)*	*Screen Interval*	*Formation*	*Date Completed*
PHASE I						
MW2-36	842.44	844.99	39.0	26-36	sand & gravel	6/10/93
MW3-33	841.10	839.69 (Top well Pipe)	34.0	23-33	sand & gravel	6/16/93
MW4-34	841.79	844.14	34.0	24-34	sand & gravel	6/03/93
MW5-34	840.57	842.87	34.0	24-34	sand & gravel	6/04/93
MW6-32	841.14	843.30	58.5	22-32	sand & gravel	5/27/93
MW7-33	841.30	843.57	33.0	23-33	sand & gravel	6/09/93
MW7-48	841.43	843.80	48.0	45.5-48	sand & gravel	6/08/93
MW8-34	842.05	844.14	64.0	24-34	sand & gravel	6/02/93
MW9-33	842.05	841.62 (Top of well pipe)	33.5	23.5-33.5	sand & gravel	6/15/93
MW9-45	841.96	841.71 (Top of well pipe)	47.5	42.5-45.0	sand & gravel	6/15/93
PHASE II						
MW10-34	843.50	845.98	34.0	24-34	sand & gravel	8/18/94
MW10-51	843.40	845.94	52.0	46-51	sand & gravel	8/17/94
MW11-21	841.58	841.07	23.0	10.5-20.5	sand & gravel	8/24/94
MW11-35	841.61	841.12	35.0	25-35	sand & gravel	8/30/94
MW-11-54	841.60	841.16	54.0	49-54	sand & gravel	8/30/94
MW12-31	839.60	842.06	31.0	21-31	sand & gravel	8/22/94
MW12-54	839.50	841.94	50.0	40-45	sand & gravel	8/19/94
PHASE II SOAW						
MW13-20	841.28	841.06	20.0	10-20	sand & gravel	12/7/94
MW13-33	840.96	840.42	33.5	23.5-33.5	sand & gravel	12/13/94
MW13-49	841.25	840.74	52.0	46.5-49	sand & gravel	12/12/94
MW14-31	839.00	841.75	32.0	20.5-30.5	sand & gravel	12/1/94
MW14-47	839.20	842.11	52.0	44.5-47.5	sand & gravel	11/30/94

TABLE 4.1

SUMMARY OF PHYSICAL SOIL DATA

Sample I.D.	*Depth (ft)*	*Grain Size Distribution*		*Moisture Content As Received (%)*	*Dry Unit Weight (PCF)*	*Permeability (cm/sec)*
		Material	*Percent*			
MW-2	4-6	Clay	48.1	21.2	106.4	1.0×10^{-8}
		Silt	36.9			
		Sand	15.0			
		Gravel	0.0			
MW-7	3.5-5.5	Clay	46.0	21.3	103.4	1.3×10^{-8}
		Silt	25.7			
		Sand	28.3			
		Gravel	0.0			
MW-8	9-11	Clay	11.9	9.9	108.0	5.8×10^{-5}
		Silt	18.6			
		Sand	66.3			
		Gravel	3.2			
MW-9	6-8	Clay	45.6	18.7	115.0	5.7×10^{-8}
		Silt	46.0			
		Sand	8.3			
		Gravel	0.1			

Notes:

1) Grain size distribution profiles provided in Appendix E.

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	PH	Clarity	Color	Odor
Phase I										
MW2-36	31.45	38.26	1.76	2.1	1116	17.0	7.67	—	—	—
				3.6	1036	17.4	7.34	—	—	—
				5.8	1050	16.1	7.23	—	—	—
				7.7	1048	16.9	7.20	—	—	—
				9.5	1047	16.4	7.25	—	—	—
				11.3	1069	17.1	7.46	—	—	—
MW3-33	26.50	33.0	1.73	1.8	1970	19.1	8.19	poor	brown	none
				3.6	1990	18.6	7.18	poor	brown	none
				5.4	2050	18.8	7.23	poor	brown	none
				7.2	1990	17.9	7.15	poor	brown	none
				9.0	1998	18.5	7.34	poor	brown	none
				10.8	1999	17.8	7.13	poor	brown	none
				12.6	2020	18.3	7.22	poor	brown	none
				14.4	2020	17.6	7.06	cloudy	light brown	none
				16.2	2010	17.8	7.08	cloudy	light brown	none
				18.0	2020	17.8	7.36	cloudy	light brown	none
				19.8	2020	18.3	7.28	cloudy	light brown	none
				21.6	2030	17.8	7.25	cloudy	light brown	none
MW4-34	30.41	36.58	1.50	1.6	1462	17.5	7.62	poor	grey	none
				3.2	1478	16.4	7.42	poor	grey	none
				4.7	1479	15.7	7.47	poor	grey	none
				6.3	1471	15.9	7.38	poor	grey	none
				7.9	1474	16.1	7.45	poor	grey	none
				9.5	1480	16.5	7.47	poor	grey	none

Note:
* well bailed dry, well volumes removed on 3 successive days

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	PH	Clarity	Color	Odor
MW5-34	29.75	36.47	1.23	1.3	1454	14.1	7.54	muddy	grey	none
				2.7	1451	13.4	7.22	muddy	grey	none
				3.9	1433	13.9	7.36	muddy	grey	none
				5.3	1464	13.2	7.29	muddy	grey	none
				6.6	1455	13.6	7.31	muddy	grey	none
				7.9	1451	13.2	7.29	muddy	grey	none
*MW6-32	29.08	34.02	1.33	1.3	1150	15.4	7.53	very silty	grey	none
				2.7	1254	14.5	7.43	very silty	grey	none
				4.0	1375	17.9	7.71	very silty	grey	none
				5.5	1384	17.0	7.55	very silty	grey	none
MW7-33	30.40	35.08	1.23	1.3	1187	16.8	6.98	cloudy	grey	none
				2.9	1221	16.7	7.17	cloudy	grey	none
				3.9	1196	15.0	7.11	cloudy	grey	none
				5.3	1248	16.5	7.03	cloudy	grey	none
				6.6	1276	15.7	7.12	cloudy	grey	none
				7.9	1300	16.0	7.14	cloudy	grey	none
				9.3	1350	16.2	7.15	cloudy	grey	none
MW7-48	30.45	50.36	3.18	3.2	1416	20.5	7.29	cloudy	grey	none
				6.4	1620	16.9	7.09	poor	grey	none
				9.6	1775	18.1	7.31	cloudy	grey	none
				12.8	1960	16.5	7.05	cloudy	grey	none
				16.0	1970	16.7	7.30	cloudy	grey	none
				19.2	1970	16.5	7.29	cloudy	grey	none
				22.4	1980	16.4	7.30	cloudy	grey	none

Note:
* well bailed dry, well volumes removed on 3 successive days

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Well Volume (gal)*	*Volume Removed (gal)*	*Conductivity (MS)*	*Temperature (°C)*	*PH*	*Clarity*	*Color*	*Odor*
MW8-34	31.14	36.98	0.93	1.3	2690	16.7	6.40	poor	grey	none
				2.7	2490	15.9	6.73	poor	grey	none
				3.9	2570	14.6	6.91	poor	grey	none
				5.3	2590	15.3	7.01	poor	grey	none
				6.6	2760	14.4	7.00	poor	grey	none
				7.9	2780	15.3	6.93	poor	grey	none
				9.3	3000	14.3	6.97	poor	grey	none
				10.5	2970	14.9	7.17	poor	grey	none
				11.4	3150	14.4	7.00	poor	grey	none
				13.4	3190	15.2	6.93	poor	grey	none
				14.5	3460	14.2	7.03	poor	grey	none
MW9-33	27.46	33.50	1.60	1.6	1064	19.9	7.34	poor	dark grey	none
				3.2	1015	20.3	7.35	poor	dark grey	none
				4.8	1011	18.1	7.39	poor	dark grey	none
				6.4	1009	18.3	7.30	poor	dark grey	none
				8.0	1003	18.1	7.38	poor	dark grey	none
				9.6	1007	17.9	7.41	poor	dark grey	none
MW-9-45	27.69	45.07	4.64	4.7	1960	21.4	7.04	poor	dark grey	none
				9.4	1635	20.3	7.27	poor	dark grey	none
				14.1	1758	20.4	7.22	poor	dark grey	none
				18.8	1813	20.8	7.22	poor	dark grey	none
				23.5	1875	20.6	7.32	poor	dark grey	none
				28.2	1870	20.6	7.20	poor	dark grey	none

Note:
* well bailed dry, well volumes removed on 3 successive days

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	PH	Clarity	Color	Odor
Phase II										
MW-10-34	31.51	37.00	1.00	1.0	1166	16.0	6.63	cloudy	brown	none
				2.0	1154	14.7	6.96	cloudy	brown	none
				3.0	1154	14.4	6.96	cloudy	brown	none
				4.0	1143	14.3	6.94	cloudy	brown	none
				5.0	1149	14.2	6.96	cloudy	brown	none
				6.0	1143	14.0	6.97	cloudy	brown	none
				7.0	1149	14.0	6.91	cloudy	brown	none
				8.0	1149	13.9	6.92	cloudy	brown	none
				9.0	1149	14.0	6.96	cloudy	brown	none
				10.0	1149	14.0	6.93	cloudy	brown	none
MW-10-51	31.43	54.06	3.50	3.5	1420	18.6	6.80	cloudy	grey	none
				7.0	1350	16.2	7.00	cloudy	grey	none
				10.5	1740	15.9	6.96	cloudy	grey	none
				14.0	1800	15.6	6.97	cloudy	light grey	none
				17.5	1820	15.7	6.99	cloudy	light grey	none
				21.0	1800	15.5	6.98	cloudy	light grey	none
				24.5	1800	15.5	6.98	slightly cloudy	light grey	none
				28.0	1820	15.6	7.00	slightly cloudy	light grey	none
				31.5	1790	15.8	7.07	clear	clear	none
				35.0	1790	15.9	7.11	clear	clear	none
MW-11-21	16.54	21.00	1.00	1.0	1166	16.8	6.83	cloudy w sheer	grey	none
				2.0	1009	14.9	6.77	cloudy w sheer	grey	none
				3.0	1212	15.0	6.74	cloudy w sheer	grey	none

Note:
* well bailed dry, well volumes removed on 3 successive days

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Well Volume (gal)*	*Volume Removed (gal)*	*Conductivity (MS)*	*Temperature (°C)*	*PH*	*Clarity*	*Color*	*Odor*
MW-11-35	27.07	35.44	1.40	1.5	1400	15.2	7.34	cloudy	brown	none
				3.0	1420	14.7	7.24	cloudy	brown	none
				4.5	1430	14.6	7.26	cloudy	brown	none
				6.0	1450	14.5	7.23	cloudy	brown	none
				7.5	1450	14.5	7.20	cloudy	brown	none
				9.0	1450	14.3	7.15	cloudy	brown	none
				10.5	1480	14.2	7.10	cloudy	brown	slight hydro-
				12.0	1520	14.4	7.12	cloudy	brown	carbon odour
				13.5	1500	14.1	7.11	cloudy	brown	slight hydro-
				15.0	1520	14.3	7.10	cloudy	brown	carbon odour
MW-11-54	27.15	53.54	4.20	4.2	1037	15.6	10.56	cloudy	grey	none
				8.0	1560	14.8	7.89	cloudy	grey	none
				12.0	1630	14.8	7.26	cloudy	whitish	none
				16.0	1690	14.6	7.30	cloudy	whitish	none
				20.0	1710	14.6	7.20	clear	clear	none
				24.0	1720	14.7	7.21	clear	clear	none
				28.0	1700	14.7	7.22	clear	clear	none
				32.0	1730	14.5	7.12	clear	clear	none
				36.0	1760	14.6	7.08	clear	clear	none
				40.0	1770	14.6	7.13	clear	clear	none

Note:
* well bailed dry, well volumes removed on 3 successive days

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	PH	Clarity	Color	Odor
MW-12-31	28.77	33.90	0.80	0.8	1660	14.3	6.99	cloudy	brown	none
				2.0	1620	13.3	6.99	cloudy	brown	none
				3.0	1720	12.7	6.98	cloudy	brown	none
				4.0	1710	12.4	6.92	cloudy	brown	none
				5.0	1740	12.6	6.91	cloudy	brown	none
				6.0	1740	12.5	6.89	cloudy	brown	none
				7.0	1720	12.4	6.92	cloudy	brown	none
				8.0	1710	12.4	6.88	cloudy	brown	none
				9.0	1660	12.4	6.91	cloudy	brown	none
				10.0	1680	12.3	6.86	cloudy	brown	none
MW-12-45	28.56	47.30	3.00	3.0	1091	14.3	6.83	cloudy	grey	none
				6.0	1112	13.3	6.94	cloudy	grey	none
				9.0	1106	12.9	6.89	slightly cloudy	grey	none
				12.0	1112	12.8	6.87	slightly cloudy	grey	none
				15.0	1118	12.8	6.87	slightly cloudy	grey	none
				18.0	1124	12.8	6.86	slightly cloudy	grey	none
				21.0	1124	12.8	6.89	slightly cloudy	grey	none
				24.0	1124	12.8	6.89	slightly cloudy	grey	none
				27.0	1124	12.8	6.90	slightly turbid	clear/grey	none
				30.0	1129	12.7	6.88	slightly turbid	clear/grey	none

Note:
* well bailed dry, well volumes removed on 3 successive days

SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Well Volume (gal)*	*Volume Removed (gal)*	*Conductivity (MS)*	*Temperature (°C)*	*PH*	*Clarity*	*Color*	*Odor*
Phase II SOAW										
MW-13-20	15.80	19.15	0.50	0.5	909	11.3	7.05	turbid	brown	none
				1.5	808	11.8	7.09	turbid	brown	none
				2.0	810	12.3	7.1	turbid	brown	none
				2.5	822	12.6	7.21	turbid	brown	none
				3.0	825	12.7	7.23	turbid	brown	none
				4.0	822	12.6	7.26	turbid	brown	none
				5.0	812	12.3	7.28	turbid	brown	none
				5.5	822	12.3	7.28	turbid	brown	none
				6.0	825	12.3	7.28	turbid	brown	none
MW-13-33	26.54	33.10	1.00	1.0	1249	7.9	6.94	very turbid	grey	none
				2.0	1760	9.9	7.02	very turbid	grey	none
				3.0	1780	10.4	7.06	very turbid	grey	none
				5.0	1730	10.2	7.06	very turbid	grey	none
				6.0	1770	10.2	7.08	very turbid	grey	none
				7.0	1770	10.8	7.03	very turbid	grey	none
				8.0	1780	10.9	7.04	very turbid	brown	none
				9.0	1800	10.3	7.08	very turbid	brown	none
				10.0	1760	10.7	7.09	very turbid	brown	none

Note:
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SUMMARY OF WELL DEVELOPMENT
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	PH	Clarity	Color	Odor
MW-13-49	26.78	49.48	3.60	3.5	1091	11.8	6.83	turbid	grey	none
				7.0	1099	11.8	6.95	no turbidity	light grey	none
				10.5	1136	11.6	7.00	no turbidity	clear	none
				14.0	1109	11.6	7.02	slight turbidity	light grey	none
				17.5	1126	11.0	6.94	slight turbidity	clear	none
				21.0	1166	10.6	7.01	no turbidity	clear	none
				36.0	1151	8.9	7.09	no turbidity	clear	none
				41.0	1169	8.9	7.14	no turbidity	clear	none
MW-14-32	28.45	33.08	0.71	3.0	--	--	--	very turbid	grey	none
				6.0	--	--	--	very turbid	grey	none
				9.0	--	--	--	very turbid	grey	none
				12.0	--	--	--	very turbid	grey	none
				15.0	--	--	--	very turbid	grey	none
				16.0	920	11.7	6.99	very turbid	grey	none
MW-14-47	28.84	50.64	3.49	3.0	--	--	--	very turbid	dark grey	none
				6.0	--	--	--	very turbid	dark grey	none
				9.0	--	--	--	very turbid	dark grey	none
				15.0	1034	12.3	6.92	turbid	grey	none
				18.0	992	11.9	6.96	turbid	light grey	none
				22.0	988	12.0	6.95	slightly turbid	light grey	none
				30.0	988	12.0	6.96	slightly turbid	clear	none
				36.0	992	12.0	6.96	slightly turbid	clear	none
				43.0	988	12.0	6.97	slightly turbid	clear	none

Note:
* well bailed dry, well volumes removed on 3 successive days

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE I											
MW1-47	29.71	47.00	4.55	5	3040	13.7	6.77	poor	red/brown	none	0%
				10	3040	13.9	6.44	clear	clear	none	0%
				15	3050	14.4	6.99	clear	clear	none	0%
MW2-36	31.11	38.26	1.86	1.8	2430	20.1	6.71	cloudy	poor	none	0%
				3.6	1650	17.3	7.18	cloudy	poor	none	0%
				5.4	1610	16.4	7.00	cloudy	poor	none	0%
MW2-45	31.34	47.15	4.21	5	3230	15.8	6.79	clear	clear	none	12%
				10	3270	16.3	6.78	clear	clear	none	12%
				15	3190	16.9	6.76	clear	clear	none	12%
MW3-33	37.81	33.50	1.50	1.6	3040	17.9	7.08	cloudy	light grey	none	11%
				3.2	2550	16.8	6.80	cloudy	light grey	none	11%
				4.8	2930	16.3	6.78	cloudy	light grey	none	11%
MW3-46	29.87	46.80	4.50	5 (dry)	2710	18.0	7.26	cloudy	tan	none	14%
				10 (dry)	3240	19.4	7.32	cloudy	tan	none	14%
MW4-34	30.25	36.58	1.68	1.6	3030	21.9	7.38	cloudy	brown	none	—
				3.2	2750	18.7	7.34	cloudy	brown	none	—
				4.8	2760	17.8	7.44	cloudy	grey	none	—
MW4-50	29.82	51.57	5.80	5	4100	20.4	7.01	cloudy	light grey	none	—
				10	4060	19.7	6.77	cloudy	light grey	none	—
				15	4610	19.0	6.71	cloudy	light grey	none	—

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE I											
MW5-34	29.55	36.47	1.80	1.8	2550	18.7	7.12	poor	dark grey	none	—
				3.6	2480	17.9	6.96	poor	dark grey	none	—
				5.4	2690	18.4	7.02	poor	dark grey	none	—
MW5-50	29.92	52.25	5.96	5	2630	18.6	6.73	poor	grey	none	3%
				10	2620	18.1	6.97	poor	grey	none	3%
				15	2960	23.3	7.65	cloudy	grey	none	3%
MW6-32	29.47	36.58	1.89	1.8 (dry)	1604	17.7	7.34	poor	dark grey	none	15%
MW7-33	30.31	35.08	1.27	1.5	2720	16.7	6.80	poor	dark grey	none	—
				3.0	2750	14.9	6.86	poor	dark grey	none	—
				4.5	2740	15.6	6.85	poor	grey	none	—
MW7-48	30.38	50.36	5.32	5	4440	19.3	7.30	poor	dark grey	none	—
				10	3740	19.3	7.02	poor	dark grey	none	—
				15	3930	16.9	6.98	fair	cloudy	none	—
MW8-34	30.32	36.98	1.17	1.2	7920	18.7	7.24	cloudy	brown	none	—
				2.4	7620	16.8	6.91	cloudy	grey	none	—
				3.6	7750	15.7	6.54	cloudy	grey	none	—
MW9-33	26.12	33.00	1.83	1.8	2700	17.0	6.64	cloudy	grey	none	19%
				3.6	2680	17.1	7.05	cloudy	grey	none	19%
				5.4	2690	17.1	6.89	cloudy	grey	none	19%

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE I											
MW9-45	27.59	45.07	4.60	5	1600	17.1	7.07	cloudy	light grey	none	8%
				10	1530	16.8	6.82	cloudy	light grey	none	8%
				15	1470	16.6	6.71	cloudy	light grey	none	8%
PHASE II											
MW-1-47	29.47	48.22	3.00	3.0	1580	14.0	6.88	cloudy	grey	none	–
				6.0	1580	13.9	6.90	clear	clear	none	–
				9.0	1580	13.9	6.89	clear	clear	none	–
MW-2-36	31.00	36.00	0.80	1.0	1270	14.4	6.77	cloudy	grey	none	–
				2.0	1259	14.8	6.76	cloudy	grey	none	–
				3.0	1250	14.3	6.80	cloudy	grey	none	–
MW-2-45	31.00	45.06	2.25	2.5	1540	15.5	6.98	clear	clear	rotten egg	–
				5.0	1540	15.3	7.02	clear	clear	none	–
				8.0	1540	15.2	7.06	clear	clear	none	–
MW-3-33	25.68	33.18	1.20	1.5	1350	17.5	6.85	cloudy	brown	none	–
				3.0	1340	17.2	6.85	cloudy	brown	none	–
				4.5	1320	17.2	6.88	cloudy	brown	none	–

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II											
MW-3-46	29.47	45.72	2.60	2.5	1082	17.2	6.83	cloudy	grey	sulphur	–
				5.0	1780	16.6	6.86	cloudy	grey	sulphur	–
				7.5	1720	16.2	6.80	cloudy	grey	sulphur	–
				10.0	1780	16.5	6.79	clear	clear	none	–
MW-4-34	29.92	34.61	0.75	1.0	1220	15.3	7.28	cloudy	brown	none	–
				2.0	1210	15.3	7.27	cloudy	brown	none	–
				3.0	1210	15.0	7.20	cloudy	brown	none	–
MW-4-50	29.50	51.38	3.50	3.5	1430	16.0	6.77	cloudy/sheen	brown	none	–
				7.0	1430	16.0	6.77	clear	clear	none	–
				10.5	1430	16.0	6.82	clear	clear	none	–
MW-5-34	29.08	35.33	1.00	1.0	1114	14.7	6.88	cloudy	brown	none	–
				2.0	1087	14.6	6.89	cloudy	brown	none	–
				3.0	1120	14.5	6.82	cloudy	brown	none	–
MW-5-34 DUP	29.08	50.96	3.50	3.5	1114	16.1	7.19	cloudy	brown	none	–
				7.0	1150	16.3	7.11	clear	clear	none	–
				10.5	1200	16.3	7.02	clear	clear	none	–
MW-5-50	29.63	51.51	3.50	3.5	1370	15.9	6.95	clear	clear	none	–
				7.0	1380	15.1	7.02	clear	clear	none	–
				10.5	1400	15.5	6.95	clear	clear	none	–

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II											
MW-6-32	29.47	34.16	0.75	1.0	1850	17.0	6.93	cloudy	black	none	--
				2.0	1950	16.0	7.02	cloudy	black	none	--
				3.0	1960	16.2	7.05	cloudy	black	none	--
				* well went dry after 3 gallons							
MW-7-33	29.96	32.96	0.48	0.5	1470	14.2	6.75	cloudy	grey	none	--
				1.0	1490	13.7	6.71	cloudy	grey	none	--
				1.5	1480	13.4	6.75	cloudy	grey	none	--
MW-7-48	30.07	47.57	2.80	3.0	1500	14.5	6.80	clear	clear	none	--
				6.0	1520	14.2	6.79	clear	clear	none	--
				9.0	1530	14.4	6.79	clear	clear	none	--
MW-8-34	30.16	34.00	0.75	1.0	3570	15.2	6.76	cloudy	grey	none	--
				2.0	3370	14.1	6.79	cloudy	grey	none	--
				3.0	3420	14.3	6.80	cloudy	grey	none	--
MW-9-33	27.22	35.03	1.25	1.25	809	18.4	6.97	cloudy	grey	none	--
				2.5	823	18.0	6.95	cloudy	grey	none	--
				3.75	811	18.2	7.03	cloudy	grey	none	--

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II											
MW-9-45	27.45	46.20	3.00	3.0	1141	18.0	6.80	cloudy	grey	none	--
				6.0	1270	18.0	6.76	cloudy	grey	none	--
				9.0	1200	17.9	6.78	cloudy	grey	none	--
				12.0	1260	17.9	6.79	cloudy	grey	none	--
				15.0	1150	18.0	6.85	cloudy	grey	none	--
MW-10-34	31.66	37.00	1.00	1.0	1171	13.2	7.16	cloudy	brown	none	--
				2.0	1177	13.3	7.22	cloudy	brown	none	--
				3.0	1183	13.2	7.21	cloudy	brown	none	--
MW-10-51	31.57	54.06	3.50	3.5	1870	12.3	7.09	clear	clear	none	--
				7.0	1850	13.4	7.18	clear	clear	none	--
				10.5	1850	13.5	7.23	clear	clear	none	--
MW-11-21	28.69	21.00	3.00	3.0	1013	12.6	7.07	cloudy	light brown	none	--
				6.0	1153	12.4	6.80	cloudy	grey	none	--
				9.0	1158	12.3	6.87	cloudy	grey	none	--
				12.0	1165	12.3	6.86	cloudy	grey	none	--
MW-11-35	27.14	35.89	1.40	1.5	1530	13.3	6.96	cloudy	light brown	none	--
				3.0	1490	13.3	6.95	cloudy	light brown	none	--
				4.5	1500	13.3	6.95	cloudy	light brown	none	--

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II											
MW-11-54	27.21	53.54	4.25	4.25	1590	14.3	8.56	slightly cloudy	light grey	none	--
				8.5	1740	13.9	6.95	slightly cloudy	light grey	none	--
				12.75	1770	14.0	6.91	slightly cloudy	light grey	none	--
				17.0	1760	13.9	6.88	slightly cloudy	light grey	none	--
MW-12-31	28.88	33.90	1.00	1.0	1780	11.9	6.86	cloudy	brown	none	--
				2.0	1740	11.9	6.88	cloudy	brown	none	--
				3.0	1710	11.9	6.85	cloudy	brown	none	--
MW-12-45	28.69	47.30	3.00	3.0	1013	12.6	7.07	cloudy	light brown	none	--
				6.0	1153	12.4	6.80	cloudy	grey	none	--
				9.0	1158	12.3	6.87	cloudy	grey	none	--
				12.0	1165	12.3	6.86	cloudy	grey	none	--
PHASE II	SOAW										
MW-1-47	29.45	47.11	3.00	3.0	1145	8.9	6.18	clear	clear	rotten egg	--
				6.0	1100	9.7	6.88	clear	clear	rotten egg	--
				9.0	1177	10.4	6.88	clear	clear	rotten egg	--
				12.0	1118	10.3	7.24	clear	clear	rotten egg	--
				15.0	1071	10.4	7.26	clear	clear	rotten egg	--

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II SOAW											
MW-2-36	30.95	38.95	0.80	1.0	1050	6.9	6.69	cloudy	grey	none	--
				2.0	990	7.9	6.79	cloudy	grey	none	--
				3.0	969	7.9	6.80	cloudy	grey	none	--
				4.0	967	8.5	6.82	cloudy	grey	none	--
MW-2-45	30.98	40.55	1.60	1.6	1065	11.8	6.64	clear	light brown	none	--
				3.2	1065	11.4	6.99	clear	light brown	none	--
				4.8	1077	10.6	7.16	clear	light brown	none	--
				6.4	1054	10.9	7.13	clear	light brown	none	--
				8.0	1065	10.7	7.18	clear	light brown	none	--
MW-3-33	25.68	31.93	1.00	1.0	994	8.9	6.53	clear	brown	none	--
				2.0	957	11.8	6.97	clear	brown	none	--
				3.0	956	12.6	7.03	clear	brown	none	--
				4.0	948	12.9	7.02	clear	brown	none	--
MW-3-46	29.48	46.86	3.00	3.0	1730	11.8	6.76	clear	brown	none	--
				6.0	1700	11.2	7.00	clear	brown	none	--
				9.0	1700	11.2	6.87	clear	brown	none	--
				12.0	1680	10.8	7.05	clear	brown	none	--
				15.0	1700	10.7	6.94	clear	brown	none	--

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II SOAW											
MW-4-34	29.93	36.33	1.00	1.0	1027	10.0	7.22	silty	brown	none	--
				2.0	998	10.3	7.21	silty	brown	none	--
				3.0	996	11.3	7.28	silty	brown	none	--
				4.0	1007	10.9	7.37	silty	brown	none	--
MW-4-50	29.48	51.19	3.40	10.0	1045	9.9	7.60	no turbidity	clear	none	--
				15.0	1012	11.3	7.06	no turbidity	clear	none	--
				20.0	1032	10.9	6.90	no turbidity	clear	none	--
				25.0	1016	10.8	7.05	no turbidity	clear	none	--
MW-5-34	29.30	36.65	1.00	1.0	991	7.9	6.94	clear	brown	none	--
				2.0	951	8.9	6.92	clear	brown	none	--
				3.0	931	10.1	6.89	clear	brown	none	--
				4.0	931	10.7	6.86	clear	brown	none	--
MW-5-50	29.59	51.88	3.50	3.5	1033	8.9	6.68	clear	clear	none	--
				7.0	1033	9.1	6.66	clear	clear	none	--
				10.5	1028	8.1	7.13	clear	clear	none	--
				14.0	1016	8.9	7.00	clear	clear	none	--
				17.5	1038	9.5	6.99	clear	clear	none	--
MW-6-32	29.20	34.80	1.00	1.0	1830	10.2	6.82	clear	grey	none	--
				2.0	1850	11.6	7.01	clear	grey	none	--

* well went dry after 2 gallons

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II SOAW											
MW-6-32	31.10	34.80	0.50	0.5	1810	7.9	7.19	clear	brown	none	–
DUP				1.0	1870	7.1	7.10	clear	brown	none	–
				1.5	1780	7.6	7.09	clear	brown	none	–
MW-7-33	30.03	35.03	0.80	1.0	1410	17.5	8.93	clear	grey	none	–
				2.0	1230	17.3	8.83	clear	grey	none	–
				3.0	840	4.8	7.46	clear	grey	none	–
				4.0	1060	4.2	7.19	clear	grey	none	–
				5.0	1010	4.0	7.24	clear	grey	none	–
				6.0	999	3.5	7.61	clear	grey	none	–
MW-7-48	30.13	48.80	5.40	10.0	1049	10.9	6.97	slightly turbid	clear	none	–
				14.0	1013	11.9	6.96	no turbidity	clear	none	–
				18.0	1032	11.4	6.96	no turbidity	clear	none	–
MW-8-34	30.15	36.40	1.00	1.0	3250	8.4	6.75	clear	grey	none	–
				2.0	3060	9.1	6.75	clear	grey	none	–
				3.0	3070	10.1	6.81	clear	grey	none	–
				4.0	3030	10.6	6.75	clear	grey	none	–
MW-9-33	27.29	33.45	1.25	1.0	716	13.1	6.83	cloudy	grey	none	–
				2.0	680	14.3	6.98	cloudy	grey	none	–
				3.0	673	14.3	6.99	cloudy	grey	none	–
				4.0	680	14.1	7.06	cloudy	grey	none	–
				5.0	673	13.9	7.16	cloudy	grey	none	–

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II SOAW											
MW-9-45	27.50	45.20	3.00	3.0	860	15.2	6.70	cloudy	grey	none	--
				6.0	840	14.9	6.94	cloudy	grey	none	--
				9.0	870	14.0	6.70	cloudy	grey	none	--
				12.0	887	13.4	6.95	cloudy	grey	none	--
				15.0	875	14.0	6.84	cloudy	grey	none	--
MW-10-34	31.68	36.86	1.00	1.0	965	9.4	8.50	clear	rust-colour	none	--
				2.0	934	8.0	7.38	clear	rust-colour	none	--
				3.0	939	9.0	7.12	clear	rust-colour	none	--
				4.0	939	9.0	7.12	clear	rust-colour	none	--
				5.0	939	9.0	7.14	clear	rust-colour	none	--
MW-10-51	31.60	54.08	3.50	3.5	1670	11.0	6.94	clear	clear	fuel smell	--
				7.0	1620	10.5	7.18	clear	clear	fuel smell	--
				10.5	1560	10.6	6.97	clear	clear	fuel smell	--
				14.0	1630	11.0	6.99	clear	clear	fuel smell	--
				17.5	1560	10.9	7.00	clear	clear	fuel smell	--
MW-11-35	27.17	35.20	1.00	1.0	1021	8.7	6.95	clear	light brown	none	--
				1.0	1022	10.3	6.97	clear	light brown	none	--
				1.0	1006	10.7	7.04	clear	light brown	none	--
				1.0	1016	10.7	7.04	clear	light brown	none	--
				1.0	1013	10.9	7.04	clear	light brown	none	--

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II SOAW											
MW-11-54	27.15	51.75	3.50	3.5	1560	10.8	8.79	sheen	grey	solvent smell	–
				7.0	1600	10.6	7.97	sheen	grey	solvent smell	–
				10.5	1590	10.0	7.48	sheen	grey	solvent smell	–
				14.0	1600	10.0	7.42	sheen	grey	solvent smell	–
				17.5	1600	10.0	7.51	sheen	grey	solvent smell	–
MW-12-31	28.86	33.90	1.00	1.0	2560	7.2	6.40	clear	brown	none	–
				2.0	1970	8.0	6.85	clear	brown	none	–
				3.0	1920	7.8	6.85	clear	brown	none	–
				4.0	1810	7.0	7.07	clear	brown	none	–
				5.0	1840	8.0	6.99	clear	brown	none	–
MW-12-45	28.57	47.13	3.00	3.0	934	9.9	5.98	clear	brown	none	–
				6.0	915	8.5	7.47	clear	brown	none	–
				9.0	929	8.8	7.26	clear	brown	none	–
				12.0	924	8.2	7.19	clear	brown	none	–
				15.0	910	8.7	6.98	clear	brown	none	–
MW-13-20	15.87	19.15	0.50	0.5	867	8.8	7.05	turbid	brown	none	–
				1.0	810	10.0	7.24	turbid	light brown	none	–
				1.5	773	10.3	7.30	turbid	light brown	none	–
				2.0	763	10.4	7.32	turbid	light brown	none	–
				2.5	753	11.0	7.26	turbid	light brown	none	–
				3.0	757	11.0	7.25	turbid	light brown	none	–

MONITORING WELL PURGING
BARRELS INC.
LANSING, MICHIGAN

Location	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Well Volume (gal)	Volume Removed (gal)	Conductivity (MS)	Temperature (°C)	pH	Clarity	Color	Odor	D.O.
PHASE II SOAW											
MW-13-33	26.51	33.10	1.00	1.0	1850	11.4	6.85	turbid	brown	none	--
				2.0	1780	11.1	6.96	turbid	brown	none	--
				3.0	1780	11.0	6.98	turbid	brown	none	--
				4.0	1770	11.0	6.99	turbid	brown	none	--
MW-13-49	26.83	49.84	3.60	3.5	1188	9.3	6.92	clear	clear	none	--
				7.0	1580	10.5	6.97	clear	clear	none	--
				10.5	1580	10.5	7.00	clear	clear	none	--
				14.0	1136	10.8	7.01	clear	clear	none	--
				17.5	1126	10.8	7.03	clear	clear	none	--
				20.0	1130	10.5	7.04	clear	clear	none	--
MW-14-32	28.45	33.08	0.74	1.0	996	7.1	6.96	clear	brown	none	--
				2.0	974	7.7	6.87	clear	brown	none	--
				3.0	963	7.3	7.15	clear	brown	none	--
				4.0	971	7.4	7.09	clear	brown	none	--
				5.0	975	7.5	7.01	clear	brown	none	--
MW-14-47	28.57	50.79	3.50	3.5	1000	10.1	6.99	slightly turbid	clear	none	--
				5.0	1033	9.5	7.00	no turbidity	clear	none	--
				8.5	995	11.5	6.90	no turbidity	clear	none	--
				13.0	990	11.6	6.91	no turbidity	clear	none	--

TABLE 4.4

SINGLE WELL RESPONSE TEST RESULTS

Well Designation	*Test Type*	*K (ft/sec)*	*K (cm/sec)*	*Screen Depth (ft)*
PHASE I				
MW2-36	RH	2.7E-03	8.3E-02	26 - 36
MW3-33	RH	8.6E-04	2.6E-02	23 -33
MW4-34	RH	1.0E-04	3.2E-03	24 - 34
MW4-50	FH	2.0E-03	6.2E-02	45 - 48
MW4-50	RH	1.1E-03	3.3E-02	45 - 48
MW5-34	FH	2.4E-04	7.3E-03	24 - 34
MW5-34	RH	1.4E-04	4.4E-03	24 - 34
MW6-32	RH	2.2E-07	6.7E-06	22 - 32
MW6-32	RH	3.5E-07	1.1E-05	22 - 32
MW7-33	RH	2.6E-05	7.9E-04	23 - 35
MW7-48	FH	7.5E-04	2.3E-02	45 - 48
MW7-48	FH	8.3E-04	2.5E-02	45 - 48
MW7-48	RH	7.3E-04	2.2E-02	45 - 48
MW7-48	RH	6.9E-04	2.1E-02	45 - 48
MW8-34	RH	5.3E-05	1.6E-03	24 - 35
MW8-34	FH	8.5E-05	2.6E-03	24 - 35
MW8-34	RH	3.1E-04	9.3E-03	24 - 35
MW8-34	RH	3.1E-04	9.3E-03	24 - 35
MW9-33	RH	7.3E-04	2.2E-02	23.5 - 33.5
MW9-45	FH	1.7E-04	5.1E-03	42.5 - 45.0
MW9-45	RH	3.10E-03	9.5E-02	42.5 - 45.0

Notes:
1) FH - Falling Head Test
   RH - Rising Head Test
2) Test data collected with Telog Pressure Transducer
   Results generated using AquaTESOLV, Bouwer Rice solution
3) See monitoring well logs for screened stratum

TABLE 4.4

SINGLE WELL RESPONSE TEST RESULTS

Well Designation	*Test Type*	*K (ft/sec)*	*K (cm/sec)*	*Screen Depth (ft)*
PHASE II				
MW10-34	RH	1.07E-03	3.3E-02	24-34
MW11-35	RH	6.03E-03	1.8E-01	25-35
MW11-54	FH	5.36E-04	1.6E-02	49-54
MW11-54	RH	9.08E-04	2.8E-02	49-54
MW12-31	RH	1.40E-03	4.3E-02	21-31
PHASE II SOAW				
MW13-20	RH	1.02E-03	3.1E-02	10-20
MW13-33	FH	4.17E-03	1.3E-01	23.5-33.5
MW13-33	RH	4.23E-03	1.3E-01	23.5-33.5
MW14-31	FH	2.81E-03	8.6E-02	20.5-30.5
MW14-31	RH	3.47E-03	1.1E-01	20.5-30.5
MW14-47	FH	2.54E-04	7.7E-03	44.5-47.5
MW14-47	RH	2.54E-04	7.7E-03	44.5-47.5

Notes:
1) FH - Falling Head Test
   RH - Rising Head Test
2) Test data collected with Telog Pressure Transducer
   Results generated using AquaTESOLV, Bouwer Rice solution
3) See monitoring well logs for screened stratum

SUMMARY OF WATER LEVEL MEASUREMENTS
BARRELS, INC.
LANSING, MICHIGAN

Monitoring Well No.	Top of Casing Elevation	6/11/93		6/17/93		6/21/93	
		Depth	Elevation	Depth	Elevation	Depth	Elevation
MW1-47	843.21	29.82	813.39	29.70	813.51	29.71	813.50
MW2-36	844.99	31.45	813.54	30.41	814.58	31.11	813.88
MW2-45	845.11	31.53	813.58	31.30	813.81	31.25	813.86
MW3-33	839.69	—	--	26.50	813.19	26.12	813.57
MW3-46	843.56	—	--	29.88	813.68	29.87	813.69
MW4-34	844.14	30.41	813.73	30.22	813.92	30.25	813.89
MW4-50	843.72	29.99	813.73	29.73	813.99	29.82	813.90
MW5-34	842.87	29.75	813.12	29.42	813.45	29.55	813.32
MW5-50	843.14	29.97	813.17	29.92	813.22	29.92	813.22
MW6-32	843.30	29.40	813.90	29.44	813.86	29.47	813.83
MW7-33	843.57	30.40	813.17	30.24	813.33	30.28	813.29
MW7-48	843.80	30.58	813.22	30.37	813.43	30.38	813.42
MW8-34	844.14	29.53	814.61	29.43	814.71	30.32	813.82
MW9-33	841.62	—	--	27.46	814.16	27.81	813.81
MW9-45	841.71	—	--	27.69	814.02	27.59	814.12
MW10-34	845.98	n/a		n/a		n/a	
MW10-51	845.94	n/a		n/a		n/a	
MW11-21	841.07	n/a		n/a		n/a	
MW11-35	841.12	n/a		n/a		n/a	
MW11-54	841.16	n/a		n/a		n/a	
MW12-31	842.06	n/a		n/a		n/a	
MW12-54	841.94	n/a		n/a		n/a	
MW13-20	841.06	n/a		n/a		n/a	
MW13-33	840.42	n/a		n/a		n/a	
MW13-49	840.74	n/a		n/a		n/a	
MW14-32	841.75	n/a		n/a		n/a	
MW14-47	842.11	n/a		n/a		n/a	

Note: All measurement in feet

SUMMARY OF WATER LEVEL MEASUREMENTS
BARRELS, INC.
LANSING, MICHIGAN

Monitoring Well No.	9/9/93(A.M.)		9/9/93(P.M.)		9/1/94		12/15/94	
	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation
MW1-47	29.69	813.52	29.70	813.51	29.48	813.73	29.41	813.80
MW2-36	30.94	814.05	30.95	814.04	30.97	814.02	30.90	814.09
MW2-45	31.11	814.00	31.13	813.98	30.93	814.18	30.85	814.26
MW3-33	26.52	813.17	26.50	813.19	25.72	813.97	27.69	812.00
MW3-46	29.89	813.67	29.90	813.66	29.47	814.09	29.43	814.13
MW4-34	30.02	814.12	30.02	814.12	29.95	814.19	29.90	814.24
MW4-50	29.61	814.11	29.62	814.10	29.53	814.19	29.46	814.26
MW5-34	29.37	813.50	29.37	813.50	29.30	813.57	29.28	813.59
MW5-50	29.71	813.43	29.70	813.44	29.63	813.51	29.63	813.51
MW6-32	29.27	814.03	29.28	814.02	29.19	814.11	29.17	814.13
MW7-33	30.08	813.49	30.10	813.47	30.02	813.55	29.99	813.58
MW7-48	30.22	813.58	30.27	813.53	30.13	813.67	30.10	813.70
MW8-34	30.26	813.88	30.28	813.86	30.19	813.95	30.14	814.00
MW9-33	27.31	814.31	27.31	814.31	27.31	814.31	27.22	814.40
MW9-45	27.68	814.03	27.68	814.03	27.54	814.17	27.43	814.28
MW10-34	n/a		n/a		31.66	814.32	31.56	814.42
MW10-51	n/a		n/a		31.57	814.37	31.47	814.47
MW11-21	n/a		n/a		18.91	822.16	19.2	821.87
MW11-35	n/a		n/a		27.14	813.98	27.02	814.10
MW11-54	n/a		n/a		27.21	813.95	27.1	814.06
MW12-31	n/a		n/a		28.88	813.18	28.8	813.26
MW12-54	n/a		n/a		28.69	813.25	28.61	813.33
MW13-20	n/a		n/a		n/a		15.86	825.20
MW13-33	n/a		n/a		n/a		26.51	813.91
MW13-49	n/a		n/a		n/a		26.81	813.93
MW14-32	n/a		n/a		n/a		28.42	813.33
MW14-47	n/a		n/a		n/a		28.82	813.29

Note: All measurement in feet

TABLE 5.1

SOILS DEFINITION CRITERIA

Parameter	*Type B 20X Drinking Water Value*	*Type B Direct Contact Value*	*Generic Industrial Cleanup Direct Contact Value*
VOCs (mg/kg)			
Benzene	0.024	13	.85
2-Butanone	6.4	3,600	6,800
Chlorobenzene	2.6	1,500	2,800
1,1-Dichloroethane	17	9,300	18,000
Ethylbenzene	1.5	7,500	14,000
Toluene	16	17,000	33,000
Total-1,2-Dichloroethene	1.5	860	1,600
Tetrachloroethane	0.014	7.8	49
Trichloroethene	0.044	24	150
1,1,1-Trichloroethane	4	2,200	4,200
Xylene	5.6	140,000	270,000
SVOCs (mg/kg)			
Acenaphthene	24	45,000	160,000
Acenaphthylene	0.5	930	3,200
Anthracene	140	260,000	900,000
Benzo(a)anthracene	–	1.8	21
Benzo(b)fluoranthene	–	1.8	21
Benzo(k)fluoranthene	–	18.0	210
Benzo(g,h,i)perylene	–	930	3,200
Benzo(a)pyrene	–	0.18	2.1
Bis(2-ethylhexyl)phthalate	–	92	1,100
Butyl benzyl phthalate	22	41,000	140,000
Chrysene	–	180	2,100
Dibenzo(a,h)anthracene	–	0.18	2.1
Di-n-butyl phthalate	17	31,000	110,000
Di-n-octyl phthalate	2.6	4,700	16,000
Fluoranthene	17	31,000	110,000
Fluorene	17	31,000	110,000
Indeno (1,2,3-cd)pyrene	–	1.8	21
Naphthalene	5	9,300	32,000
N-Nitrosodiphenylamine	0.14	78	510
Phenanthrene	0.5	930	3,200
Pyrene	10	190	67,000
2-Chlorophenol	0.860	480	920
':-Dimethylphenol	7	13,000	45,000
r'henol	84	47,000	89,000

TABLE 5.1

SOILS DEFINITION CRITERIA

Parameter	*Type B 20X Drinking Water Value*	*Type B Direct Contact Value*	*Generic Industrial Cleanup Direct Contact Value*	*Background*	
				Sand	*Clay*
Pesticides/PCBs (µg/kg)					
Chlordane	0.54	1,000	12,000		
4,4'-DDD	–	5,400	62,000		
4,4'-DDE	–	3,800	44,000		
4,4'-DDT	–	3,800	44,000		
Dieldrin	–	80	937		
Endrin	–	44,000	150,000		
PCB-1254	–	1,000	7,500		
Inorganics (mg/kg)					
Antimony	0.048	91	310	–	--
Arsenic	–	–	8.6	5.8	7.4
Cadmium	0.070	130	450	1.2	1.2
Chromium	2.4	4,400	4,300	18	23
Copper	20	9,800	–	32	32
Lead	–	400	400	21	21
Mercury	0.042	78	270	0.13	0.13
Nickel	11.0	20,000	68,000	20	27
Selenium	0.7	1,300	4,500	0.41	0.41
Silver	0.66	1,200	4,200	1.0	1.0
Zinc	46	86,000	300,000	47	112
Cyanide	3	5,700	20,000	0.39	0.39

TABLE 5.2

GROUNDWATER DEFINITION CRITERIA

Parameter	*Type B Drinking Water Value*	*Generic Industrial Cleanup Value*
VOCs (mg/L)		
Benzene	0.0012	0.012
1,1-Dichloroethane	0.84	2.5
1,2-Dichloroethane	0.00038	0.0038
Total-1,2-Dichloroethene	0.077	0.23
Ethylbenzene	0.68	2.0
Tetrachloroethene	0.0007	0.0068
Toluene	1.5	4.6
1,1,1-Trichloroethane	0.2	0.58
1,1,2-Trichloroethane	0.00063	0.0061
Trichloroethene	0.0022	0.022
Vinyl Chloride	0.000016	0.00016
Xylenes	13	38
Pesticides /PCBs (µg/L)		
Dieldrin	0.0022	0.022
Beta-Endosulfan	1.6	4.8
Endrin	1.2	3.5
PCB-1254	0.018	0.17
Inorganics (mg/L)		
Arsenic	0.00002	0.0002
Cadmium	0.0035	0.01
Lead	0.004	0.004
Nickel	0.53	1.6
Zinc	2.3	6.9
Cyanide	0.15	0.46

TABLE 5.3

BACKGROUND CLAY SAMPLES

Borehole No.	*Sample(s) Depth (feet)*	*As*	*Cd*	*Cr*	*Cu*	*Pb*	*Ni*	*Zn*
DS-1	6 - 8	3.8	0.05	10	12	4.8	10	43
DS-3	10 - 12	3.2	0.13	11	14	4.0	12	47
DS-5	8 - 10	3.8	0.08	11	13	6.5	14	54
DS-8	8 - 10	2.0	0.14	15	19	7.3	18	79
DS-9	8 - 10	2.6	0.13	16	19	9.0	18	82
DS-10	2 - 4	3.8	0.05	15	15	6.5	16	49
DS-10	4 - 6	5.4	0.15	20	22	8.7	19	71
DS-11	8 - 10	4.9	0.13	18	20	10.0	19	67
DS-13	2 - 4	2.3	0.06	9.4	3.7	4.8	6.0	38
DS-13	4 - 6	1.7	0.1	12	7.7	5.0	9.3	39
DD-3	6 - 8	2.7	0.14	12	19	7.9	16	81
DD-4	4 - 6	1.5	0.23	13	20	11.0	16	79
DD-4	6 - 8	1.9	0.16	9.3	17	13.0	12	82
DD-5	6 - 8	1.2	0.11	13	16	7.4	13	61
DD-5	8 - 10	5.8	0.1	15	2.0	7.0	21	67
Mean		3.11	0.117	13.3	15.8	7.53	14.6	62.6
Standard Deviation		1.44	0.047	3.15	5.1	2.51	4.2	16.5
Co-efficient of Variation		0.46	0.41	0.24	0.32	0.33	0.3	0.26
Calculated Criteria		7.41	0.26	23	31	15	27.3	112

Note: Co-efficient of Variation Test = CV = Standard Deviation / Mean

TABLE 5.4

INORGANICS BACKGROUND EVALUATION FOR CLAY (mg/kg)

Parameter	*Range of Concentrations*	*Mean of Concentrations*	*Standard Deviation*	*Co-efficient of Variation*	*Calculated Background Concentration**
Antimony	ND	–	–	–	–
Arsenic	1.2 - 5.8	3.11	1.44	0.46	7.4
Cadmium	0.05 - 0.23	0.117	0.047	0.41	0.26
Chromium	9.3 - 20	13.30	3.15	0.24	23
Copper	3.7 - 22	15.8	5.1	0.32	31
Lead	6.5 - 13	7.53	2.51	0.33	15
Mercury	–	–	–	–	–
Nickel	6.0 - 21.0	14.6	4.2	0.3	27
Selenium	ND	–	–	–	–
Silver	ND	–	–	–	–
Zinc	38 - 82	62.6	16.50	0.26	112
Cyanide	ND - 0.11 J	–	–	–	–

Notes:

* Based on MDNR's April 1994 Verification of Soil Remediation Guidance Document and calculated as Background Concentration = Mean + 3x Standard Deviation.

** Co-efficient of Variations less than 0.75 signify acceptable background calculations

TABLE 5.5

PARAMETERS OF CONCERN
SOILS

VOCs	*Pesticides/PCBs*
Tetrachloroethene	alpha-Chlordane
Trichloroethene	gamma-Chlordane
Benzene	Dieldrin
Ethylbenzene	4,4-DDD
Xylenes	PCB-1254
Vinyl Chloride	

SVOCs	*Inorganics*
Acenaphthylene	Antimony
Benzo(a) anthracene	Arsenic
Benzo(b) fluoranthene	Cadmium
Benzo (k) fluoranthene	Chromium
Benzo (ghi) perylene	Copper
Benzo(a) pyrene	Lead
Bis (2-ethylhexyl) phthalate	Mercury
Butyl benzyl phthalate	Nickel
Chrysene	Selenium
Dibenzo (a,h) anthracene	Silver
Di-n-octyl phthalate	Zinc
Fluoranthene	Cyanide
Indeno (1,2,3-cd) pyrene	
Napthalene	
Phenanthrene	
Pyrene	
2-chlorophenol	
N-Nitrodiphenylamine*	

Note:

* Indistinguishable from diphenylamine

TABLE 5.6

PARAMETERS OF CONCERN
GROUNDWATER

VOCs

Benzene
1,2-Dichloroethane
Vinyl Chloride

Inorganics

Arsenic
Lead

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2a	DS-2a	DS-4	DS-4	DS-4
Depth	0-2	4-6	0-2	6-8	8-10	10-12	10-12 DUP	0-2	2-4	4-6
Sample ID	RP-47	RP-48	RP-51	RP-53	RP-54	MAW-133	MAW-134	RP-42	RP-43	RP-45
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/9/94	8/9/94	5/17/93	5/17/93	5/17/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Benzene	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.010)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)UJ	0.13	0.22	0.041	0.012	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.014)	ND(0.010)	ND(0.010)
Tetrachloroethene	0.013	0.027	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.05	0.18	0.12
Toluene	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.014	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	0.033 J	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	0.033 J	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

J=value is estimated quantity
B=analyte present in method blank
ND=not detected; Target Detection Limit
UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-4	DS-4a	DS-4b	DS-4b	DS-6	DS-6	DS-8	DS-11	DS-12	DS-12
Depth	6-8	8-10	14-16	14-16 DUP	4-6	6-8	0-2	6-8	4-6	4-6 DUP
Sample ID	RP-44	MAW-137	MAW-003	MAW-004	RP-35	RP-36	RP-22	RP-07	RP-11	RP-12
Date Sampled	5/17/93	8/10/94	11/28/94	11/28/94	5/14/93	5/14/93	5/13/93	5/12/93	5/12/93	5/12/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	0.44	ND(0.100)	ND(1.0)	ND(1.0)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.078	ND(0.010)	ND(0.010)	ND(0.010)	1.2	0.98
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
Tetrachloroethene	0.2	0.064	0.013	0.013	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	3.0	2.5
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.051	ND(0.010)	ND(0.10)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.12 J	ND(0.10)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.015	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.10)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.20)	ND(0.20)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.30)	ND(0.30)

J=value is estimated quantity
B=analyte present in method blank
ND=not detected; Target Detection Limit
UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-14	DS-14	DS-14	DS-14	DS-17	DS-17	DS-17	DS-18	DS-18	DS-18
Depth	0-2	2-4	4-6	8-10	0-2	4-6	10-12	0-2	4-6	10-12
Sample ID	RP-01	RP-02	RP-03	RP-04	MAW-150	MAW-151	MAW-153	MAW-156	MAW-157	MAW-159
Date Sampled	5/11/93	5/11/93	5/11/93	5/11/93	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	0.076	0.078	0.015	0.021	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

J=value is estimated quantity
B=analyte present in method blank
ND=not detected; Target Detection Limit
UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-1	US-2	US-2	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4
Depth	14-16	14-16	20-22	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12
Sample ID	RP-60	RP-64	RP-65	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69
Date Sampled	5/18/93	5/18/93	5/18/93	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Benzene	ND(2.9)*	0.020 J	ND(0.010)	0.094	0.02	ND(0.010)	ND(12)*	0.047	ND(0.020)*	ND(0.010)
2-Butanone	ND(29.0)*	ND(58)UJ*	ND(0.100)	ND(0.50)*	ND(0.100)	ND(0.100)	ND(120)*	ND(0.100)	ND(0.20)*	ND(0.100)
Chlorobenzene	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
1,1-Dichloroethane	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
total-1,2-Dichloroethene	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
Ethylbenzene	16	38 J	0.034	0.26	0.068 J	0.028 J	16	ND(0.010)	0.23	0.033
Methylene chloride	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
Tetrachloroethene	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
Toluene	ND(2.9)*	ND(5.8)UJ*	ND(0.01)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12) UJ*	ND(0.010)	ND(0.020)*	ND(0.010)
1,1,1-Trichloroethane	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
Trichloroethene	ND(2.9)*	ND(5.8)UJ*	ND(0.010)	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)*	ND(0.010)
o-Xylene	9.2	2.3 J	0.034	0.33	0.021	ND(0.010)	18	ND(0.010)	ND(0.020)*	ND(0.010)
m-Xylene/p-Xylene	60	120 J	0.11	0.69	0.053	ND(0.020)	54	ND(0.020)	0.34	0.029
total Xylenes	69.2	122.3 J	0.144	1.02	0.074	ND(0.030)	72	ND(0.030)	0.34	0.029

J=value is estimated quantity
B=analyte present in method blank
ND=not detected; Target Detection Limit
UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-5	US-6	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2
Depth	8-10	4-6	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2
Sample ID	RP-70	RP-72	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84
Date Sampled	5/19/93	5/19/93	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Benzene	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(12.0)*	ND(0.500)*	ND(0.100)	ND(0.100)	ND(120)*	ND(120)*	ND(0.50)*	ND(0.100)	ND(0.100)	ND(0.100)
Chlorobenzene	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	2.5	ND(0.050)*	ND(0.010)	ND(0.010)	34	ND(12)*	0.063	ND(0.010)	0.029	ND(0.010)
Methylene chloride	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	0.31	ND(0.010)	0.091	ND(0.010)
1,1,1-Trichloroethane	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(1.2)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)*	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	3.9	0.14	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	0.26	0.014	0.037	0.019
m-Xylene/p-Xylene	11.0	0.73	ND(0.020)	ND(0.020)	120	ND(25)*	0.38	ND(0.020)	0.085	0.027
total Xylenes	14.9	0.87	ND(0.030)	ND(0.030)	120	ND(38)*	0.64	0.014	0.122	0.046

J=value is estimated quantity
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UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-2	CT-2a	CT-3	CT-3	DD-1	DD-1	DD-1	DD-2	DD-3	DD-5
Depth	8-10	10-12	0-2	4-6	0-2	2-4	4-6	2-4	0-2 DUP	0-2
Sample ID	TB-79	MAW-131	TB-80	TB-81	TB-88	TB-90	TB-89	TB-86	TB-91	TB-98
Date Sampled	5/20/93	8/9/94	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93	5/25/93	5/26/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Benzene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.050)UJ	ND(0.100)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	0.18 J	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	0.026	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	0.19 J	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.014)	0.017 B	0.016 B	0.017 B	0.017 B	0.010 B	0.013 B
Tetrachloroethene	0.026	0.010	0.073 J	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	0.015	0.021	0.69 J	0.012 J	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.032
o-Xylene	0.012	ND(0.010)	0.26 J	0.010 J	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	0.021	0.93 J	0.022 J	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	0.012	0.021	1.19 J	0.032 J	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

J=value is estimated quantity
B=analyte present in method blank
ND=not detected; Target Detection Limit
UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF VOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DD-5*	*DD-5*	*MW-11-21*	*MW-11-21*	*MW-11-21*	*MW-11-35*	*MW-11-54*	*MW-13*	*MW-13*
Depth	*6-8*	*8-10*	*4-6*	*18-20*	*18-20 DUP*	*24-26*	*32-34*	*4-6*	*18-20*
Sample ID	*TB-97*	*TB-99*	*MAW-196*	*MAW-197*	*MAW-198*	*MAW-211*	*MAW-210*	*MAW-036*	*MAW-032*
Date Sampled	*5/26/93*	*5/26/93*	*8/23/94*	*8/23/94*	*8/23/94*	*8/23/94*	*8/29/94*	*12/12/94*	*12/12/94*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter									
Benzene	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(12)*	ND(120)*	ND(12)*	ND(1)*	ND(1)*	ND(0.100)	ND(0.100)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	3.5	89 J	4.5 J	0.11	ND(0.10)*	ND(0.010)	ND(0.010)
Methylene chloride	0.011 B	0.011 B	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(1.2)*	47 J	1.7 J	0.12	ND(0.10)*	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	12	300 J	16 J	0.31	ND(0.20)*	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	12	350 J	18 J	0.43	ND(0.30)*	ND(0.030)	ND(0.030)

J=value is estimated quantity
B=analyte present in method blank
ND=not detected; Target Detection Limit
UJ=analyte checked for but not detected; value estimated
*Detection limits raised due to matrix interference

SUMMARY OF SVOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-2	DS-4	DS-4	DS-5	DS-5	DS-7	DS-8	DS-8	DS-9	DS-10
Depth	0-2	0-2	2-4	4-6	0-2	2-4	0-2	0-2	4-6	0-2	0-2
Sample ID	RP-47	RP-51	RP-43	RP-44	RP-38	RP-39	RP-29	RP-22	RP-23	RP-25	RP-18
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Base Neutral Compounds											
Acenaphthene	ND(0.33)	1.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Anthracene	ND(0.33)	ND(0.58)	0.33	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Benzo(a)anthracene	0.37	ND(0.58)	1.4	ND(0.33)	0.78	ND(0.33)	0.36	0.63	ND(0.33)	2.6	1.2
Benzo(b)fluoranthene	0.89	0.82	11	ND(0.33)	ND(0.33)	ND(0.33)	0.75	1.2	ND(0.33)	5.1	2.5
Benzo(k)fluoranthene	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	1.0	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.58)	3.3	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	2.1	0.42
Benzo(a)pyrene	0.35	0.91	6.2	ND(0.33)	0.52	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	2.7	0.78
Bis(2-ethylhexyl) phthalate	ND(0.33)	ND(0.58)	ND(0.33)	0.82	ND(0.48)	0.44	ND(1.7)	ND(2.4)	5.2	ND(1.6)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	2.1	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Chrysene	0.51	0.84	3.1	ND(0.33)	0.66	ND(0.33)	ND(0.33)	0.86	ND(0.33)	2.4	1.3
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.58)	1.1	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Fluoranthene	0.63	3.0	1.0	ND(0.33)	0.94	ND(0.33)	0.49	0.98	ND(0.33)	5.0	2.2
Fluorene	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.58)	3.1	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	2.1	0.41
Naphthalene	0.43	7.8	ND(0.33)	ND(0.33)	0.84	ND(0.33)	ND(0.33)	0.53	ND(0.33)	ND(1.6)	2.6
**N-Nitrosodiphenylamine	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Phenanthrene	0.75	5.9	0.35	ND(0.33)	1.9	ND(0.33)	ND(0.33)	1.0	ND(0.33)	4.1	3.7
Pyrene	0.63	2.2	1.6	ND(0.33)	0.91	ND(0.33)	0.47	1.0	ND(0.33)	4.8	1.7
Acid Compounds											
2-Chlorophenol	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)
Phenol	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)

E=estimated value; reported by lab
ND=not detected; Target Detection Limit
J=value is an estimated quantity for detected analytes
*Detection limits raised due to matrix interference
** Indistinguishable from Diphenylamine

SUMMARY OF SVOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-11	DS-11	DS-11	DS-12	DS-12	DS-12	DS-13	DS-14	DS-18	DS-18	US-1
Depth	0-2	2-4	6-8	0-2	4-6	4-6 DUP	0-2	0-2	0-2	4-6	14-16
Sample ID	RP-05	RP-06	RP-07	RP-10	RP-11	RP-12	RP-14	RP-01	MAW-156	MAW-157	RP-60
Date Sampled	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/13/93	5/11/93	8/11/94	8/11/94	5/18/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Base Neutral Compounds											
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Anthracene	0.55	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(a)anthracene	1.9	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(b)fluoranthene	3.5	0.41	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	0.44	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(ghi)perylene	0.98	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(a)pyrene	1.3	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Bis(2-ethylhexyl) phthalate	ND(0.33)	0.44	0.85	130	11.0 J	2.0 J	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Chrysene	1.9	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Dibenzo (a,h) anthracene	0.38	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Di-n-butyl phthalate	0.4	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	6.6	0.35	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Fluoranthene	3.6	0.36	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Indeno(1,2,3-cd) pyrene	1.4	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Naphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	11.0	ND(0.33)	ND(0.33)	ND(0.33)	36.0
**N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Phenanthrene	2.9	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	8.4	ND(0.33)	ND(0.33)	ND(0.33)	12
Pyrene	3.8	0.33	ND(0.33)	ND(3.3)	0.36	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Acid Compounds											
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)

E=estimated value; reported by lab
ND=not detected; Target Detection
J=value is an estimated quantity for
*Detection limits raised due to matr
** Indistinguishable from Diphenyl

SUMMARY OF SVOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-2	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4	US-5	US-6	US-6
Depth	14-16	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12	8-10	4-6	14-16
Sample ID	RP-64	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-72	RP-73
Date Sampled	5/18/93	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Base Neutral Compounds											
Acenaphthene	ND(6.6)	8.0	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Anthracene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Benzo(a)anthracene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Bis(2-ethylhexyl) phthalate	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	8.6
Butyl benzyl phthalate	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Chrysene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Fluoranthene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Fluorene	ND(6.6)	14.0	ND(3.3)	ND(1.6)*	11	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Naphthalene	40.0	35.0	4.8	3.6	44	ND(0.33)	37.0	1.1	34.0	8.1	ND(0.33)
**N-Nitrosodiphenylamine	ND(6.6)	14.0	7.2 J	2.1 J	16	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Phenanthrene	11	46	6.1	4.5	34	ND(0.33)	19	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Pyrene	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Acid Compounds											
2-Chlorophenol	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)
Phenol	ND(6.6)	ND(6.6)*	ND(3.3)	ND(1.6)*	ND(8.2)*	ND(0.33)	ND(6.6)*	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)

E=estimated value; reported by lab
ND=not detected; Target Detection
J=value is an estimated quantity for
*Detection limits raised due to matr
** Indistinguishable from Diphenyl

SUMMARY OF SVOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2	CT-3	CT-3	DD-1
Depth	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2	0-2	4-6	0-2
Sample ID	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84	TB-80	TB-81	TB-88
Date Sampled	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/24/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Base Neutral Compounds											
Acenaphthene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	0.72
Benzo(b)fluoranthene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	0.9
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	0.46
Bis(2-ethylhexyl) phthalate	ND(0.33)	0.59	ND(33)*	ND(1.3)*	4.0	ND(0.33)	ND(0.33)	1.2	ND(1.6)*	1.0	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	0.77
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Fluoranthene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	0.5	ND(0.33)	ND(0.33)	ND(0.33)	1.7	ND(0.33)	1.1
Fluorene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Naphthalene	ND(0.33)	ND(0.33)	290	4.5	1.0	ND(0.33)	ND(0.33)	0.93	2.3	ND(0.33)	0.68
**N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	150	31	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	ND(0.33)	75	1.4	0.54	ND(0.33)	ND(0.33)	0.44	2.3	ND(0.33)	0.53
Pyrene	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	0.66	ND(0.33)	ND(0.33)	ND(0.33)	1.6	ND(0.33)	1.0
Acid Compounds											
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	1.6	0.66	ND(0.33)	ND(0.33)	ND(1.6)*	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	1.4	0.61	0.58	0.85	ND(1.6)*	ND(0.33)	ND(0.33)
Phenol	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	2.0	ND(0.33)	ND(0.33)	0.74	ND(1.6)*	ND(0.33)	ND(0.33)

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ND=not detected; Target Detection
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** Indistinguishable from Diphenyl

SUMMARY OF SVOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-2	DD-3	DD-3	DD-4	DD-5	DD-6	DD-6	DD-6	DD-7	DD-7	DD-7
Depth	0-2	0-2	0-2 Dup	0-2	0-2	0-2	2-4	2-4 DUP	0-2	4-6	4-6 DUP
Sample ID	TB-85	TB-91	TB-100	TB-96	TB-98	MAW-173	MAW-174	MAW-175	MAW-205	MAW-206	MAW-207
Date Sampled	5/24/93	5/25/93	5/25/93	5/25/93	5/26/93	8/16/94	8/16/94	8/16/94	8/25/94	8/25/94	8/25/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Base Neutral Compounds											
Acenaphthene	ND(3.3)	ND(2.5)	2.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(3.3)	ND(2.5)	7.5 J	ND(0.33)	0.4	0.42	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(3.3)	3.3 J	11.0 J	ND(0.33)	0.65	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)anthracene	ND(3.3)	7.6 J	32.0 EJ	ND(0.33)	2.2	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	6.2	13 J	65.0 EJ	0.58	4	4.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	3.5	ND(2.5)	16.0 J	ND(0.33)	1.2	1.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(3.3)	4.9 J	22.0 J	ND(0.33)	1.7	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis(2-ethylhexyl) phthalate	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.49)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	4.4	9.5 J	41.0 EJ	0.41	2.6	2.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(3.3)	ND(2.5)	11.0 J	ND(0.33)	0.96	0.52	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(3.3)	11 J	44.0 EJ	0.36	3.5	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(3.3)	ND(2.5)	2.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(3.3)	ND(2.5)	12.0 J	ND(0.33)	0.81	1.6	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Naphthalene	ND(3.3)	ND(2.5)	3.0 J	0.54	1.3	0.48	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
**N-Nitrosodiphenylamine	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	ND(3.3)	3.4 J	13.0 J	0.48	2.2	0.75	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Pyrene	4.2	11.0 J	50.0 EJ	0.45	3.5	2.6	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acid Compounds											
2-Chlorophenol	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenol	ND(3.3)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E=estimated value; reported by lab
ND=not detected; Target Detection
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*Detection limits raised due to matr
** Indistinguishable from Diphenyl

SUMMARY OF SVOCs REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-11-21	MW-11-21	MW-11-35	MW-11-54	MW-13	MW-13	MW-13
Depth	4-6	18-20	24-26	32-34	4-6	4-6 DUP	18-20
Sample ID	MAW-196	MAW-197	MAW-211	MAW-210	MAW-036	MAW-031	MAW-032
Date Sampled	8/23/94	8/23/94	8/24/94	8/25/94	12/7/94	12/7/94	12/7/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter							
Base Neutral Compounds							
Acenaphthene	ND(6.6)*	ND(16)*	0.44 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)anthracene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis(2-ethylhexyl) phthalate	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Naphthalene	18 J	65 J	4.7 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
**N-Nitrosodiphenylamine	18 J	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	11 J	19 J	3.2 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Pyrene	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acid Compounds							
2-Chlorophenol	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenol	ND(6.6)*	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E=estimated value; reported by lab
ND=not detected; Target Detection
J=value is an estimated quantity for
*Detection limits raised due to matr
** Indistinguishable from Diphenyl

SUMMARY OF PESTICIDES/PCBs REPORTED IN SOIL BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-1*	*DS-2*	*DS-2*	*DS-2*	*DS-2a*	*DS-2a*	*DS-2b*	*DS-2b*	*DS-4*	*DS-4*
Depth	*0-2*	*0-2*	*4-6*	*8-10*	*10-12*	*10-12 DUP*	*14-16*	*14-16 DUP*	*0-2*	*2-4*
Sample ID	*RP-47*	*RP-51*	*RP-52*	*RP-54*	*MAW-133*	*MAW-134*	*MAW-009*	*MAW-010*	*RP-42*	*RP-43*
Date Sampled	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*8/9/94*	*8/9/94*	*11/29/94*	*11/29/94*	*5/17/93*	*5/17/93*
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
alpha-Chlordane	36	9100	36	4.2	3.4 J	24 S J	ND(1.7)	ND(1.7)	17	6.8
gamma-Chlordane	48	9800	41	5.1	4 J	28 S J	ND(1.7)	ND(1.7)	22	9.1
4,4'-DDD	47	6300	26	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	40	28
4,4'-DDE	ND(40)*	2600	13.0	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	11	17
4,4'-DDT	ND(79)*	ND(1,200)*	ND(4.1)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	24	ND(12)*
Dieldrin	ND(13)*	ND(1,200)*	ND(17)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(6.6)*	ND(3.3)
Endrin	ND(13)*	ND(1,200)*	ND(17)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	7.0	ND(3.3)
PCB-1254	ND(330)*	ND(12,000)*	ND(330)	ND(330)	ND(330)	ND(330)	NA	NA	ND(330)	ND(330)

S = results due to secondary dilution
E = estimated value as reported by lab
B = analyte present in method blank
J = value is an estimated quantity for detected analytes
R = data was unusable for non-detected analytes
UJ = analyte was not detected; value is an estimate
ND = not detected; Target Detection Limit
*Detection limits raised due to matrix interference

SUMMARY OF PESTICIDES/PCBs REPORTED IN SOIL BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-4*	*DS-5*	*DS-5*	*DS-5*	*DS-7*	*DS-8*	*DS-9*	*DS-9*	*DS-9*	*DS-11*
Depth	*4-6*	*0-2*	*2-4*	*4-6*	*0-2*	*4-6*	*0-2*	*2-4*	*4-6*	*2-4*
Sample ID	*RP-45*	*RP-38*	*RP-39*	*RP-40*	*RP-29*	*RP-22*	*RP-25*	*RP-26*	*RP-27*	*RP-06*
Date Sampled	*5/17/93*	*5/14/93*	*5/14/93*	*5/14/93*	*5/14/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/12/93*
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
alpha-Chlordane	38	350	ND(1.7)	25	390	ND(40)*	ND(68)*	ND(1.7)	ND(1.7)	ND(2.2)
gamma-Chlordane	44	440	5.6	30	450	ND(62)*	ND(68)*	ND(2.1)	ND(2.7)*	ND(1.7)
4,4'-DDD	110	100	ND(3.3)	ND(33)*	ND(210)*	ND(140)*	ND(220)*	ND(6.0)*	7	11.0
4,4'-DDE	25	120	ND(3.3)	ND(33)*	ND(170)*	ND(300)*	ND(310)*	7.1	ND(9.4)*	ND(7.7)*
4,4'-DDT	24	ND(66)*	ND(3.3)	ND(33)*	ND(170)*	ND(460)*	ND(800)*	ND(3.3)	ND(3.3)	ND(3.3)
Dieldrin	ND(13)	ND(66)*	ND(3.3)	ND(33)*	270	ND(66)*	ND(130)*	ND(3.3)	ND(3.3)	ND(3.3)
Endrin	ND(13)	ND(66)*	ND(3.3)	ND(33)*	ND(170)*	ND(66)*	ND(130)*	ND(3.3)	ND(3.3)	ND(3.3)
PCB-1254	ND(330)	ND(660)*	ND(330)	ND(330)	ND(1,700)*	10,000 E	13,000 E	ND(330)	ND(330)	ND(330)

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UJ = analyte was not detected; value is a
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*Detection limits raised due to matrix int

SUMMARY OF PESTICIDES/PCBs REPORTED IN SOIL BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-12	DS-12	DS-12	DS-14	CT-1	CT-1	CT-2	CT-2	CT-3
Depth	0-2	4-6	4-6 DUP	2-4	0-2	2-4	0-2	2-4	0-2
Sample ID	RP-10	RP-11	RP-12	RP-02	TB-74	TB-75	TB-84	TB-78	TB-80
Date Sampled	5/12/93	5/12/93	5/12/93	5/11/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter									
alpha-Chlordane	ND(38)*	ND(34)*	ND(3.9)*	ND(1.7)	ND(680)*	ND(8.5)*	ND(26.0)*	46 J	4000
gamma-Chlordane	ND(73)*	ND(34)*	ND(7.3)*	ND(1.7)	1900	ND(8.5)*	ND(26.0)*	67 J	5000
4,4'-DDD	490 S	520 J	120 J	ND(4.5)*	ND(1,100)*	ND(17.0)*	ND(110.0)*	ND(6.6)UJ	ND(6,600)*
4,4'-DDE	ND(230)*	ND(66)*	ND(33)*	14	ND(32,000)*	ND(180.0)*	ND(670.0)*	ND(45.0)UJ	ND(2,200)*
4,4'-DDT	ND(110)*	ND(130)*	ND(47)*	ND(11.0)*	ND(1,100)*	ND(17.0)*	ND(50.0)*	ND(6.6)UJ	ND(250.0)*
Dieldrin	ND(66)*	ND(66)*	ND(33)*	ND(3.3)	ND(1,100)*	ND(17.0)*	ND(50.0)*	ND(6.6)UJ	ND(1,800)*
Endrin	ND(66)*	ND(66)*	ND(3.3)	ND(3.3)	ND(1,100)*	ND(17.0)*	ND(50.0)*	ND(6.6)	ND(250.0)*
PCB-1254	ND(660)*	ND(660)*	ND(330)	ND(330)	48,000	1,700	2,700	370.0	43,000

S = results due to secondary dilution
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ND = not detected; Target Detection Limit
*Detection limits raised due to matrix interf

SUMMARY OF PESTICIDES/PCBs REPORTED IN SOIL BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*CT-3*	*DD-1*	*DD-1*	*DD-2*	*DD-2*	*DD-2*	*DD-2a*	*DD-3*	*DD-3*
Depth	*4-6*	*0-2*	*2-4*	*0-2*	*2-4*	*4-6*	*6-8*	*0-2*	*0-2 Dup*
Sample ID	*TB-81*	*TB-88*	*TB-90*	*TB-85*	*TB-86*	*TB-87*	*MAW-177*	*TB-91*	*TB-100*
Date Sampled	*5/20/93*	*5/24/93*	*5/24/93*	*5/24/93*	*5/24/93*	*5/24/93*	*8/16/94*	*5/25/93*	*5/25/93*
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter									
alpha-Chlordane	78	ND(26.0)*	ND(26.0)*	ND(51,000)*	ND(43.0)*	ND(51.0)*	ND(1.7)	1700 J	580 J
gamma-Chlordane	100	ND(26.0)*	ND(26.0)*	ND(51,000)*	ND(43.0)*	ND(51.0)*	ND(1.7)	ND(1,700)*	760 J
4,4'-DDD	160	ND(50.0)*	ND(50.0)*	ND(34E+4)*	ND(83.0)*	ND(99.0)*	ND(3.3)	ND(3,300)*	ND(830)*
4,4'-DDE	49	ND(72.0)*	ND(50.0)*	ND(99,000)*	ND(180.0)*	ND(99.0)*	ND(5.3)*	ND(3,300)*	ND(830)*
4,4'-DDT	ND(33.0)*	ND(50.0)*	ND(140.0)*	ND(28E+4)*	ND(87.0)*	ND(99.0)*	ND(3.3)	ND(3,300)*	ND(830)*
Dieldrin	ND(33.0)*	ND(50.0)*	ND(96.0)*	ND(39E+5)*	ND(83.0)*	ND(330.0)*	ND(3.3)	ND(3,300)*	ND(830)*
Endrin	ND(33.0)*	ND(50.0)*	ND(50.0)*	ND(99,000)*	ND(83.0)*	ND(99.0)*	ND(3.3)	ND(3,300)*	ND(830)*
PCB-1254	ND(330)	6,100	2,200	53E+6 E	20,000 E	8,300	ND(330)	58,000 J	ND(8,300)*

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UJ = analyte was not detected; value is an e
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*Detection limits raised due to matrix interf

SUMMARY OF PESTICIDES/PCBs REPORTED IN SOIL BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DD-4*	*DD-4*	*DD-4*	*DD-4a*	*DD-5*	*DD-6*	*DD-6*	*MW-13*	*MW-13*
Depth	*0-2*	*6-8*	*6-8 Dup*	*12-14*	*0-2*	*0-2*	*2-4*	*4-6*	*18-20*
Sample ID	*TB-96*	*TB-94*	*TB-101*	*MAW-167*	*TB-98*	*MAW-173*	*MAW-174*	*MAW-036*	*MAW-032*
Date Sampled	*5/25/93*	*5/25/93*	*5/25/93*	*8/15/94*	*5/26/93*	*8/16/94*	*8/16/94*	*12/7/94*	*12/7/94*
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter									
alpha-Chlordane	240	11	11	ND(1.7)-	ND(30.0)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-Chlordane	ND(310.0)*	ND(13.0)*	ND(16.0)*	ND(1.7)	ND(41.0)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
4,4'-DDD	ND(50.0)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(44.0)*	ND(5.3)*	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDE	ND(50)*	ND(3.3)	ND(3.3)	ND(3.3)	130	5.80	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDT	ND(50.0)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(200.0)*	ND(20)	ND(3.3)	ND(3.3)	ND(3.3)
Dieldrin	ND(50.0)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin	ND(50.0)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
PCB-1254	3,500	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	NA	NA

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R = data was unusable for non-detected an
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SUMMARY OF INORGANICS REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2	DS-2a	DS-2a	DS-2a
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	8-10	10-12	10-12 DUP
Sample ID	RP-47	RP-48	RP-49	RP-50	RP-51	RP-52	RP-53	RP-54	MAW-132	MAW-133	MAW-134
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/9/94	8/9/94	8/9/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	ND(0.50) R	6.3 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	NA	NA	NA
Arsenic	13	6.3	3.8	4.3	6.8	3.3	5.0	13	7.2	19	11
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	NA	NA
Cadmium	0.11	1.3	0.05	0.06	0.65	0.10	0.30	0.10	NA	NA	NA
Chromium	14	16	10	8.9	26	10	14	16	17	15	18
Copper	70	20	12	14	63	28	16	21	NA	NA	NA
Lead	3,100	8.6	4.8	4.2	160	100	7.2	8.4	NA	NA	NA
Mercury	0.29	ND(0.10)	ND(0.10)	ND(0.10)	0.25	ND(0.10)	ND(0.10)	ND(0.10)	NA	NA	NA
Nickel	15	20	10	9.9	15	6.7	15	17	NA	NA	NA
Selenium	1.8	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	NA
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	NA
Zinc	340	65	43	47	320	150	58	68	77	73	74
Cyanide	0.27 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	0.8 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	NA	NA	NA

B=analyte present in method blank
J=value is an estimated quantity for detected analytes
ND=not detected (Target Detection Limit)
R=data was unusable for non detected analytes
S=results due to secondary dilution
UJ=analyte was not detected, value is an estimate
Note: *Detection limits raised due to matrix interference

SUMMARY OF INORGANICS REPORTED IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-2b	DS-3	DS-3	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4	DS-4a	DS-4a
Depth	14-16	2-4	6-8	6-8 Dup	10-12	0-2	2-4	4-6	6-8	6-8	8-10
Sample ID	MAW-009	RP-56	RP-57	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44	MAW-136	MAW-137
Date Sampled	11/29/94	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/10/94	8/10/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	NA	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	NA	NA
Arsenic	2.5	2.5	0.71	0.77	3.2	2.7	5.3	22	6.0	7.8	1.3 J
Beryllium	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	NA
Cadmium	NA	0.12	ND(0.05)	ND(0.05)	0.13	0.76	0.36	0.12	0.11	NA	NA
Chromium	NA	11	2.5	3.2	11	10	17	7.6	18	NA	NA
Copper	NA	6.5	3.2	5.1	14	11	19	13	21	NA	NA
Lead	NA	20	1.5	2.0	4.0	21	33	4.9	8.5	NA	NA
Mercury	NA	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	4.5	2.5	0.13	ND(0.10)	NA	NA
Nickel	NA	7.5	3.0	3.4	12	8.9	18	11	19	NA	NA
Selenium	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA
Silver	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA
Zinc	NA	52	27	30	47	57	78	47	66	NA	NA
Cyanide	NA	ND(0.10)UJ	ND(0.10)UJ	0.13 J	ND(0.10)UJ	0.13 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	NA	NA

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Location	DS-5	DS-5	DS-5	DS-5	DS-6	DS-6	DS-6	DS-6	DS-7	DS-7	DS-7
Depth	0-2	2-4	4-6	8-10	0-2	2-4	4-6	6-8	0-2	2-4	6-8
Sample ID	RP-38	RP-39	RP-40	RP-41	RP-33	RP-34	RP-35	RP-36	RP-29	RP-30	RP-31
Date Sampled	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	2.1	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50) R	ND(0.50) R	ND(0.50) R	2.1 J	ND(0.50) R	ND(0.50) R
Arsenic	11	3.6	4.3	3.8	3.8	2.5	1.7	2.5	9.9	4.8	2.0
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	1.2	ND(1.0)	ND(1.0)
Cadmium	0.63	0.08	0.10	0.08	0.17	0.06 J	0.19 J	0.12 J	3.2 J	0.13 J	0.06 J
Chromium	22	14	20	11	16	6.7	13	18	130	12	14
Copper	94	16	17	13	23	6.3	7.8	22	450	16	7.5
Lead	300	7.6	18	6.5	10	5.9	7.2	9.6	420	7.1	7.4
Mercury	0.27	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Nickel	13	14	17	14	20	5.9	11	22	51	15	12
Selenium	1.5	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	0.7	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	1.1	ND(0.50)	ND(0.50)
Zinc	270	51	69	54	73	64	62	83	950	68	65
Cyanide	0.37	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	ND(0.10)	ND(0.10)UJ	0.16	ND(0.10)	ND(0.10)

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Location	DS-7	DS-8	DS-8	DS-8	DS-9	DS-9	DS-9	DS-9	DS-10	DS-10	DS-10
Depth	8-10	0-2	4-6	8-10	0-2	2-4	4-6	8-10	0-2	2-4	4-6
Sample ID	RP-32	RP-22	RP-23	RP-24	RP-25	RP-26	RP-27	RP-28	RP-18	RP-19	RP-20
Date Sampled	5/14/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	ND(0.50) R	ND(0.50)	ND(0.50)	ND(0.50)	14	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Arsenic	1.4	8.4	8.7	2.0	18	6.8	4.9	2.6	4.4	3.8	5.4
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.16 J	0.38	1.4	0.14	15	0.38	0.21	0.13	0.26	0.05	0.15
Chromium	13	17	27	15	100	20	13	16	5.6	15	20
Copper	18	25	84	19	1,200	30	17	19	16	15	22
Lead	7.8	58	200	7.3	6,400	23	7.5	9.0	25	6.5	8.7
Mercury	ND(0.10)	0.23	0.20	ND(0.10)	6.1	0.25	0.11	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Nickel	17	15	26	18	130	18	18	18	5.8	16	19
Selenium	ND(0.50)	0.57	1.7	ND(0.50)	0.75	ND(0.50)	ND(0.50)	ND(0.50)	0.7	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	2.0	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	63	110	370	79	4,100	110	60	82	110	49	71
Cyanide	ND(0.10)	1.4	0.12	ND(0.10)	0.44	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)

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Location	DS-10	DS-11	DS-11	DS-11	DS-11	DS-12	DS-12	DS-12	DS-12	DS-13	DS-13
Depth	4-6 DUP	0-2	2-4	6-8	8-10	0-2	4-6	4-6 DUP	18-20	0-2	2-4
Sample ID	RP-21	RP-05	RP-06	RP-07	RP-08	RP-10	RP-11	RP-12	RP-13	RP-14	RP-15
Date Sampled	5/13/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	ND(0.50)	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50)	ND(0.50)
Arsenic	4.3	10	4.3	2.9	4.9	9.8	7.2	6.3	2.3	4.9	2.3
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.14	1.5 J	0.23 J	0.11 J	0.13 J	0.34 J	0.4 J	0.2 J	ND(0.05)UJ	0.34	0.06
Chromium	17	26	14	16	18	15	17	17	4.3	5.3	9.4
Copper	21	180	10	19	20	16	16 J	54 J	7.6	17	3.7
Lead	11	380	53	7.0	10	12	22	17	3.4	70	4.8
Mercury	ND(0.10)	0.22	ND(0.10)	ND(0.10)	ND(0.10)	0.14	ND(0.10)	0.12	ND(0.10)	ND(0.10)	ND(0.10)
Nickel	21	59	13	17	19	14	11	16	5.0	7.7	6.0
Selenium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	1.0	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	68	1,200	110	64	67	60	78	73	27	100	38
Cyanide	ND(0.10)	0.83 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10) R	ND(0.10) R	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)

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Location	DS-13	DS-14	DS-14	DS-14	DS-14	DS-15	DS-15	DS-15	DS-16	DS-16	DS-16
Depth	4-6	0-2	2-4	4-6	8-10	6-8	8-10	8-10 DUP	0-2	4-6	4-6 DUP
Sample ID	RP-16	RP-01	RP-02	RP-03	RP-04	MAW-141	MAW-143	MAW-142	MAW-144	MAW-145	MAW-146
Date Sampled	5/13/93	5/11/93	5/11/93	5/11/93	5/11/93	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	ND(0.50)	3.5 J	0.65 J	ND(0.50) R	ND(0.50) R	NA	NA	NA	20 J	6.6 J	ND(0.50) R
Arsenic	1.7	8.8	3.8	3.3	1.5	NA	NA	NA	69	11	6.5
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	NA	NA	NA	NA	NA
Cadmium	0.1	8.8	1.2 J	0.13 J	0.16 J	NA	NA	NA	120 J	0.33 J	0.26 J
Chromium	12	53	7.4	19	16	NA	NA	NA	340	25 J	21 J
Copper	7.7	74,000	200	22	18	NA	NA	NA	15000 J	22	21
Lead	5.0	520	64	19	7.1	NA	NA	NA	5300 J	27 J	12 J
Mercury	ND(0.10)	0.11	0.23	ND(0.10)	ND(0.10)	NA	NA	NA	9.2 J	ND(0.1) UJ	0.13 J
Nickel	9.3	150	31	25	17	NA	NA	NA	NA	NA	NA
Selenium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	NA	0.65	ND(0.50)	ND(0.50)
Silver	ND(0.50)	1.2	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	NA	4	ND(0.50)	ND(0.50)
Zinc	39	7,400	310	120	63	72	60 J	67 J	23000 J	75 J	79 J
Cyanide	ND(0.10)	ND(0.10)	0.17	ND(0.10)	ND(0.10)UJ	NA	NA	NA	0.96 J	ND(0.1) UJ	0.11 J

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Location	DS-16	DS-16	DS-17	DS-17	DS-17	DS-17	DS-18	DS-18	DS-18	DS-18	DS-19
Depth	8-10	10-12	0-2	4-6	8-10	10-12	0-2	4-6	8-10	10-12	0-2
Sample ID	MAW-147	MAW-148	MAW-150	MAW-151	MAW-152	MAW-153	MAW-156	MAW-157	MAW-158	MAW-159	MAW-154
Date Sampled	8/10/94	8/10/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	NA	NA	1.7 J	0.54 J	NA	NA	ND(0.5) R	ND(0.5) R	NA	NA	NA
Arsenic	NA	NA	11	4.9	NA	NA	10	5.9	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	2.4 J	0.88 UJ	NA	NA	0.08 J	ND(0.05) UJ	NA	NA	NA
Chromium	15	16	32	10	NA	NA	5.3	9.7	NA	NA	NA
Copper	NA	NA	420 J	67 J	NA	NA	7.5 J	7 J	NA	NA	NA
Lead	NA	NA	480 J	300 J	NA	NA	3.6 J	2.4 J	NA	NA	5.8 J
Mercury	NA	NA	0.28	0.17 J	NA	NA	ND(0.1) UJ	ND(0.1) UJ	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)	NA	NA	NA
Silver	NA	NA	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)	NA	NA	NA
Zinc	65	67 J	1300 J	290 J	76	55 J	43 J	41 J	54	36 J	32 J
Cyanide	NA	NA	1.3 J	ND(0.1) UJ	NA	NA	ND(0.1) UJ	ND(0.1) UJ	NA	NA	NA

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Location	DS-19	DS-20	DS-20	DS-20	DS-20	US-1	US-1	US-2	US-2	US-2	US-3
Depth	2-4	0-2	0-2 DUP	2-4	4-6	14-16	20-22	0-2	14-16	20-22	2-4
Sample ID	MAW-155	MAW-014	MAW-015	MAW-016	MAW-017	RP-60	RP-61	RP-63	RP-64	RP-65	RP-65A
Date Sampled	8/11/94	11/29/94	11/29/94	11/29/94	11/29/94	5/18/93	5/18/93	5/18/93	5/18/93	5/18/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	NA	NA	NA	NA	NA	ND(0.50) R	ND(0.50) R	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Arsenic	NA	5.0	4.0	5.3	1.4	1.6	0.82	6.8	0.94	0.60	5.0
Beryllium	NA	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	NA	0.53	0.52	0.21	0.52	0.05 J	0.10 J	0.08 J	ND(0.05)UJ	ND(0.05)UJ	0.23
Chromium	NA	8.4	8.3	6.5	9.6	ND(2.50)	3.1	6.1	3.0	ND(2.5)	17
Copper	NA	12	9.0	1.2	8.5	4.3	5.3	11	3.4	4.0	16.0
Lead	6.7 J	30	15	3.2	6.0	8.9	2.7	5.4	7.8	2.0	24.0
Mercury	NA	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.12
Nickel	NA	6.6	7.1	3.5	8.6	2.4	2.8	7.1	2.8	2.4	13
Selenium	NA	0.83	0.56	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	47 J	120	68	9.9	19	31	26	46	31	26	97
Cyanide	NA	NA	NA	NA	NA	0.11	ND(0.10)	ND(0.10) R	ND(0.10)	ND(0.10)	0.17

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Location	US-3	US-3	US-3a	US-3a	US-3a	US-4	US-4	US-5	US-5	US-6	US-6
Depth	8-10	8-10 Dup	8-10	12-14	24-26	2-4	10-12	8-10	14-16	4-6	14-16
Sample ID	RP-66	RP-67	MAW-139	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71	RP-72	RP-73
Date Sampled	5/19/93	5/19/93	8/10/94	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	ND(0.50)	ND(0.50)	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Arsenic	6.4	7.4	NA	NA	NA	9.3	5.8	1.2	0.96	3.4	0.91
Beryllium	ND(1.0)	ND(1.0)	NA	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.11	0.11	NA	NA	NA	0.37	0.13	ND(0.05)	ND(0.05)	0.14	ND(0.05)
Chromium	20	19	NA	NA	NA	11	20	3.5	3.6	13	3.2
Copper	19	20	NA	NA	NA	28	22	4.1	6.5	16	5.9
Lead	7.6	8.7	NA	NA	NA	160	7.9	4.5	2.2	6.8	2.5
Mercury	ND(0.10)	ND(0.10)	NA	NA	NA	0.44	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Nickel	19	20	NA	NA	NA	8.8	21	3.4	4.0	14	4.0
Selenium	ND(0.50)	ND(0.50)	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	65	69	67	45	32	260	68	31	37	54	30
Cyanide	ND(0.10)	ND(0.10)	NA	NA	NA	0.30	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)UJ

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Location	US-8	US-8	CT-1	CT-1	CT-1	CT-2	CT-2	CT-2	CT-3	CT-3	CT-3
Depth	2-4	8-10	0-2	2-4	8-10	0-2	2-4	8-10	0-2	4-6	16-18
Sample ID	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84	TB-78	TB-79	TB-80	TB-81	TB-82
Date Sampled	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	NA	NA	1.1 J	ND(0.50) R	ND(0.50) R	1.8 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R
Arsenic	2.1 J	23	5.5	5.0	4.4	5.5	3.0	4.0	5.0	5.0	3.3
Beryllium	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	NA	NA	0.69 J	0.39 J	0.11 J	0.43 J	0.14 J	0.1 J	0.43 J	0.12 J	0.08 J
Chromium	NA	NA	26 J	15 J	11 J	17 J	13 J	11 J	56 J	14 J	11 J
Copper	NA	NA	24	18	14	36	12	15	100	20	13
Lead	30	15	50 J	21 J	5.1 J	100 J	30 J	5.5 J	150 J	19 J	4.8 J
Mercury	ND(0.10)	ND(0.10)	0.55	0.14	ND(0.10)	0.19	0.22 J	ND(0.10)UJ	0.15 J	ND(0.10)UJ	ND(0.10)UJ
Nickel	NA	NA	13 J	12 J	20 J	12 J	8.9 J	12 J	31 J	14 J	12 J
Selenium	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	41 J	62 J	87 J	63 J	60 J	130 J	68 J	57 J	170 J	70 J	50 J
Cyanide	NA	NA	0.36 J	0.45 J	ND(0.10)UJ	3.4 J	0.19 J	0.14 J	1.8 J	0.23 J	ND(0.10)UJ

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BARRELS INC.
LANSING, MICHIGAN
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Location	CT-3	DD-1	DD-1	DD-1	DD-2	DD-2	DD-2	DD-3	DD-3	DD-3
Depth	16-18 Dup	0-2	2-4	4-6	0-2	2-4	4-6	0-2	0-2 Dup	4-6
Sample ID	TB-83	TB-88	TB-90	TB-89	TB-85	TB-86	TB-87	TB-91	TB-100	TB-92
Date Sampled	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	3.3 J	ND(0.50) R	ND(0.50) R	3.7 J	1.4 J	ND(0.50) R
Arsenic	3.5	6.0	2.8	3.9	14	5.1	3.7	7.4	6.9	0.35
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	ND(0.05)	0.43 J	0.17 J	0.07 J	4.1 J	0.12 J	0.08 J	1.1	0.65	0.10
Chromium	15 J	9.2 J	8.5 J	13 J	220 J	14 J	9.3 J	43	35 J	8.3 J
Copper	16	29	13	12	280	22	13	77	100	14
Lead	5.6 J	82 J	5.8 J	8.1 J	1500 J	10 J	4.9 J	220	200 J	6.2 J
Mercury	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	1.0 J	ND(0.10)UJ	ND(0.10)UJ	0.49 J	0.16 J	ND(0.10)
Nickel	18 J	10 J	11 J	17 J	53 J	18 J	12 J	13	16 J	10 J
Selenium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	0.98	ND(0.50)	ND(0.50)	ND(0.50)	0.53	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	1.1	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	59 J	210 J	56 J	52 J	2,000 J	67 J	51 J	350	460	64
Cyanide	ND(0.10)UJ	0.22	ND(0.10)	ND(0.10)	4.9	ND(0.10)	ND(0.10)	7.7 J	2.3 J	ND(0.10) R

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LANSING, MICHIGAN
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Location	DD-3	DD-4	DD-4	DD-4	DD-4	DD-4a	DD-4a	DD-5	DD-5	DD-5	DD-6
Depth	6-8	0-2	4-6	6-8	6-8 Dup	10-12	12-14	0-2	6-8	8-10	0-2
Sample ID	TB-93	TB-96	TB-95	TB-94	TB-101	MAW-166	MAW-167	TB-98	TB-97	TB-99	MAW-173
Date Sampled	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	8/15/94	8/15/94	5/26/93	5/26/93	5/26/93	8/16/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	ND(0.50) R	0.64 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	NA	NA	3.1	ND(0.50)	ND(0.50)	NA
Arsenic	2.7	5.8	1.5	2.6	1.9	NA	NA	14	1.2	5.8	NA
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)	NA
Cadmium	0.14	1.3	0.23	0.15	0.16	NA	NA	1.6	0.11	0.10	NA
Chromium	12 J	24 J	13 J	11 J	9.3 J	NA	NA	13	13	15	NA
Copper	19	92	20	25	17	NA	NA	170	16	20	NA
Lead	7.9 J	230 J	11 J	33 J	13 J	3.7	4.7	370	7.4	7.0	22
Mercury	ND(0.10)	0.37	0.10	ND(0.10)	ND(0.10)	NA	NA	4.7	ND(0.10)	ND(0.10)	NA
Nickel	16 J	21 J	16 J	14 J	12 J	NA	NA	15	13	21	NA
Selenium	ND(0.50)	0.61	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	0.70	ND(0.50)	ND(0.50)	NA
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	NA
Zinc	81	550	79	130	82	34	26 J	3,500	61	67	53 J
Cyanide	0.11 J	0.57 J	ND(0.10) R	ND(0.10)	ND(0.10)	NA	NA	0.41	ND(0.10)	ND(0.10)	NA

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Location	DD-6	DD-7	DD-7	DD-7	DD-7	BG-1	BG-1	BG-1	BG-1	BG-1	BG-1
Depth	2-4	0-2	4-6	8-10	10-12	0-2	2-4	4-6	4-6 DUP	6-8	8-10
Sample ID	MAW-174	MAW-205	MAW-206	MAW-208	MAW-209	MAW-160	MAW-161	MAW-162	MAW-163	MAW-164	MAW-165
Date Sampled	8/16/94	8/25/94	8/25/94	8/25/94	8/25/94	8/15/94	8/15/94	8/15/94	8/15/94	8/15/94	8/15/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter											
Antimony	NA	ND(0.94)*	ND(0.91)*	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	4.5	4.7	NA	NA	6.6	15	12	11	3.9 J	1.4 J
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	ND(0.19)*	0.50	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	12	11	NA	NA	13 J	34 J	21 J	27 J	12 J	4.1 J
Copper	NA	18	15	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.5	7.9	9.7	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	ND(0.10)	ND(0.10)	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	39 J	88 J	29 J	37 J	13 J	3.7 J
Selenium	NA	ND(0.50)	ND(0.50)	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	ND(0.50)	ND(0.50)	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	24 J	77	64	52	61	69 J	90 J	67 J	75 J	42 J	19 J
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Location	BG-2	BG-2	BG-2	BG-2	BG-2	MW-13	MW-13
Depth	0-2	2-4	4-6	6-8	8-10	4-6	18-20
Sample ID	MAW-168	MAW-169	MAW-170	MAW-171	MAW-172	MAW-036	MAW-032
Date Sampled	8/16/94	8/16/94	8/16/94	8/16/94	8/16/94	12/7/94	12/7/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter							
Antimony	NA	NA	NA	NA	NA	NA	NA
Arsenic	22	8.8	5.4	1.2 J	1.3 J	14	2.6
Beryllium	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA
Chromium	67 J	17 J	15 J	4.6 J	3.2 J	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	15	2.1
Mercury	NA	NA	NA	NA	NA	NA	NA
Nickel	32 J	16 J	16 J	4 J	2.8 J	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA
Zinc	910 J	39 J	42 J	18 J	18 J	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA

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UJ=analyte was not detected, va
Note: *Detection limits raised du

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Location	*MW-1-47*	*MW-1-47*	*MW-1-47*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*
Sample ID	*TB-119*	*KJJ-182*	*TH-051*	*TB-116*	*BTH-001*	*KJJ-189*	*KJJ-190 DUP*	*TH-026*
Date Sampled	*6/23/93*	*8/23/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/7/94*
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	0.15	0.10	0.190	0.210	0.180
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.004	0.005	ND(0.002)*
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.006	0.006	0.004
Methylene chloride	0.003 BU	ND(0.001)	ND(0.001)	0.005 BU	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	0.009	0.002	0.009	0.008	0.009
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	0.009	ND(0.003)	0.009	0.008	0.009
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	ND(0.005)	0.049	NA	ND(0.005)	NA	0.017	0.019	NA
Naphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Phenanthrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Phenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA

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S = secondary solution

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
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Location	*MW-1-47*	*MW-1-47*	*MW-1-47*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*
Sample ID	*TB-119*	*KJJ-182*	*TH-051*	*TB-116*	*BTH-001*	*KJJ-189*	*KJJ-190 DUP*	*TH-026*
Date Sampled	*6/23/93*	*8/23/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/7/94*
Priority Pollutant Inorganics (mg/L)								
Arsenic	0.001	ND(0.001)	ND(0.001)	0.011	NA	0.019	0.019	0.018
Cadmium	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	NA	NA
Chromium	ND(0.050)	NA	NA	ND(0.050)	NA	NA	NA	NA
Lead	ND(0.003)	ND(0.003)	NA	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA
Nickel	ND(0.050)	NA	NA	0.05	NA	NA	NA	NA
Selenium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	NA
Zinc	0.05	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Cyanide	ND(0.005)	NA	NA	ND(0.005)UJ	NA	NA	NA	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Dieldrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
beta-Endosulfan	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endosulfan sulfate	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
PCB-1254	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA

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ND = not detected
* = detection limit raised due to matrix interference
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SUMMARY GROUNDWATER DATA
BARRELS INC.
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Location	*MW-2-36*	*MW-2-45*	*MW-2-45*	*MW-2-45*	*MW-3-33*	*MW-3-33*	*MW-3-33*	*MW-3-33*
Sample ID	*TH-033 DUP*	*TB-117*	*KJJ-191*	*TH-037*	*TB-120*	*TB-122 DUP*	*KJJ-200*	*TH-048*
Date Sampled	*12/7/94*	*6/22/93*	*8/24/94*	*12/8/94*	*6/23/93*	*6/23/93*	*8/25/94*	*12/12/94*
Priority Pollutant VOCs (mg/L)								
Benzene	0.220	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	0.001	0.001	0.002
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	0.003
Ethylbenzene	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	0.004 BU	ND(0.001)	.001 B	0.004 BU	0.004 BU	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	0.004	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	0.004	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	NA	ND(0.005)	0.071	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Naphthalene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Phenanthrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2,4-Dimethylphenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Phenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-2-36	MW-2-45	MW-2-45	MW-2-45	MW-3-33	MW-3-33	MW-3-33	MW-3-33
Sample ID	TH-033 DUP	TB-117	KJJ-191	TH-037	TB-120	TB-122 DUP	KJJ-200	TH-048
Date Sampled	12/7/94	6/22/93	8/24/94	12/8/94	6/23/93	6/23/93	8/25/94	12/12/94
Priority Pollutant Inorganics (mg/L)								
Arsenic	0.028	0.001	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Cadmium	NA	ND(0.0002)	NA	NA	ND(0.0002)	ND(0.0002)	NA	NA
Chromium	NA	ND(0.050)	NA	NA	ND(0.050)	ND(0.050)	NA	NA
Lead	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	ND(0.003)	NA
Nickel	NA	ND(0.050)	NA	NA	ND(0.050)	ND(0.050)	NA	NA
Selenium	NA	ND(0.005)	NA	NA	ND(0.005)	ND(0.005)	NA	NA
Zinc	NA	0.04	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
Cyanide	NA	ND(0.005)UJ	NA	NA	ND(0.005)	0.018	NA	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
Dieldrin	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
beta-Endosulfan	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
Endosulfan sulfate	NA	ND(0.01)	ND(0.01)	NA	0.028J	ND(0.01)UJ	ND(0.01)	NA
Endrin	NA	ND(0.01)	ND(0.01)	NA	0.021J	ND(0.02)*UJ	ND(0.01)	NA
PCB-1254	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-3-46*	*MW-3-46*	*MW-3-46*	*MW-4-34*	*MW-4-34*	*MW-4-34*	*MW-4-50*	*MW-4-50*
Sample ID	*TB-121*	*KJJ-201*	*TH-049*	*TB-111*	*KJJ-185*	*TH-022*	*TB-112*	*KJJ-184*
Date Sampled	*6/23/93*	*8/25/94*	*12/12/94*	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	0.001	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	0.002
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	0.004 BU	ND(0.001)	0.001 B	0.004 BU	ND(0.001)	ND(0.001)	0.003 BU	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	ND(0.005)	0.058	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	0.057
Naphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Phenanthrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Phenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-3-46*	*MW-3-46*	*MW-3-46*	*MW-4-34*	*MW-4-34*	*MW-4-34*	*MW-4-50*	*MW-4-50*
Sample ID	*TB-121*	*KJJ-201*	*TH-049*	*TB-111*	*KJJ-185*	*TH-022*	*TB-112*	*KJJ-184*
Date Sampled	*6/23/93*	*8/25/94*	*12/12/94*	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*
Priority Pollutant Inorganics (mg/L)								
Arsenic	ND(0.001)	0.001	0.002	0.011	0.01	0.009	0.004	0.005
Cadmium	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA
Chromium	ND(0.050)	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Lead	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)
Nickel	ND(0.050)	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Selenium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Zinc	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	9.9	2.1
Cyanide	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)UJ	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	ND(0.01)UJ	ND(0.01)	NA	ND(0.06)*UJ	0.02	NA	ND(0.01)	ND(0.01)
Dieldrin	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
beta-Endosulfan	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endosulfan sulfate	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endrin	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
PCB-1254	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-4-50*	*MW-4-50*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-50*
Sample ID	*MAW-024*	*MAW-027 DUP*	*TB-108*	*TB-110 DUP*	*KJJ-192*	*KJJ-193 DUP*	*TH-021*	*TB-125*
Date Sampled	*12/7/94*	*12/7/94*	*6/22/93*	*6/22/93*	*8/24/94*	*8/24/94*	*12/6/94*	*6/23/93*
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	0.003	0.002	0.002	0.002	0.003	0.003	0.012
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	0.008	0.007	0.023	0.022	0.030	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	ND(0.001)	0.005 BU	0.004 BU	ND(0.001)	ND(0.001)	ND(0.001)	0.004 BU
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.003	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.003	0.002	0.002	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	NA	NA	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	NA	ND(0.005)
Naphthalene	NA	NA	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	NA	ND(0.005)
Phenanthrene	NA	NA	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	NA	ND(0.005)
2,4-Dimethylphenol	NA	NA	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	NA	ND(0.005)
Phenol	NA	NA	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	NA	ND(0.005)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-4-50	MW-4-50	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-50
Sample ID	MAW-024	MAW-027 DUP	TB-108	TB-110 DUP	KJJ-192	KJJ-193 DUP	TH-021	TB-125
Date Sampled	12/7/94	12/7/94	6/22/93	6/22/93	8/24/94	8/24/94	12/6/94	6/23/93
Priority Pollutant Inorganics (mg/L)								
Arsenic	ND(0.001)	ND(0.001)	0.004	0.004	0.003	0.002	0.003	ND(0.001)
Cadmium	NA	NA	ND(0.0002)	ND(0.0002)	NA	NA	NA	0.0006
Chromium	NA	NA	ND(0.050)	ND(0.050)	NA	NA	NA	ND(0.050)
Lead	NA	NA	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	NA	0.008
Nickel	NA	NA	ND(0.050)	ND(0.050)	NA	NA	NA	ND(0.050)
Selenium	NA	NA	ND(0.005)	ND(0.005)	NA	NA	NA	ND(0.005)
Zinc	NA	NA	0.05	0.04	ND(0.020)	ND(0.020)	NA	21
Cyanide	NA	NA	ND(0.005)	ND(0.005)	NA	NA	NA	ND(0.005)
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	NA	NA	ND(0.03)	ND(0.02)*	ND(0.01)	ND(0.01)	NA	ND (0.01)
Dieldrin	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA	ND (0.01)
beta-Endosulfan	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA	ND (0.01)
Endosulfan sulfate	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA	ND (0.01)
Endrin	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA	ND (0.01)
PCB-1254	NA	NA	0.73 S	0.35 S	ND(0.10)	ND(0.10)	NA	ND (0.01)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-5-50*	*MW-5-50*	*MW-6-32*	*MW-6-32*	*MW-6-32*	*MW-7-33*	*MW-7-33*	*MW-7-33*
Sample ID	*KJJ-194*	*TH-050*	*TB-105*	*KJJ-195*	*TH-041*	*TB-106*	*KJJ-187*	*TH-020*
Date Sampled	*8/25/94*	*12/12/94*	*6/22/93*	*8/24/94*	*12/8/94*	*6/22/93*	*8/23/94*	*12/6/94*
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	0.009	0.010	0.003	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	ND(0.001)	0.006 BU	ND(0.001)	ND(0.001)	0.004 BU	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	0.007	0.008	0.009	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	0.061	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Naphthalene	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Phenanthrene	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dimethylphenol	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Phenol	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-5-50*	*MW-5-50*	*MW-6-32*	*MW-6-32*	*MW-6-32*	*MW-7-33*	*MW-7-33*	*MW-7-33*
Sample ID	*KJJ-194*	*TH-050*	*TB-105*	*KJJ-195*	*TH-041*	*TB-106*	*KJJ-187*	*TH-020*
Date Sampled	*8/25/94*	*12/12/94*	*6/22/93*	*8/24/94*	*12/8/94*	*6/22/93*	*8/23/94*	*12/6/94*
Priority Pollutant Inorganics (mg/L)								
Arsenic	ND(0.001)	0.002	0.002	0.003	0.003	0.002	ND(0.001)	ND(0.001)
Cadmium	NA	NA	0.0004	NA	NA	ND(0.0002)	NA	NA
Chromium	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA	NA
Lead	0.005	NA	0.009	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA
Nickel	NA	NA	0.13	NA	NA	0.06	NA	NA
Selenium	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA	NA
Zinc	5.7	NA	0.08	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Cyanide	NA	NA	0.01	NA	NA	ND(0.005)	NA	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Dieldrin	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
beta-Endosulfan	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endosulfan sulfate	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endrin	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
PCB-1254	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA	0.67	ND(0.10)	NA

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-7-48*	*MW-7-48*	*MW-7-48*	*MW-8-34*	*MW-8-34*	*MW-8-34*	*MW-9-33*	*MW-9-33*
Sample ID	*TB-107*	*KJJ-186*	*TH-023*	*TB-109*	*KJJ-183*	*TH-025*	*TB-123*	*KJJ-202*
Date Sampled	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*	*12/7/94*	*6/23/93*	*8/25/94*
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	0.005 BU	ND(0.001)	ND(0.001)	0.004 BU	ND(0.001)	ND(0.001)	0.003 BU	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	0.009	0.12	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Naphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Phenanthrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Phenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-7-48*	*MW-7-48*	*MW-7-48*	*MW-8-34*	*MW-8-34*	*MW-8-34*	*MW-9-33*	*MW-9-33*
Sample ID	*TB-107*	*KJJ-186*	*TH-023*	*TB-109*	*KJJ-183*	*TH-025*	*TB-123*	*KJJ-202*
Date Sampled	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*	*12/7/94*	*6/23/93*	*8/25/94*
Priority Pollutant Inorganics (mg/L)								
Arsenic	0.001	ND(0.001)	0.002	0.005	0.007	0.004	0.004	0.006
Cadmium	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA
Chromium	ND(0.050)	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Lead	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)
Nickel	ND(0.050)	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Selenium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Zinc	0.23	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	0.03	ND(0.020)
Cyanide	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)
Dieldrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)
beta-Endosulfan	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)
Endosulfan sulfate	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)
Endrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	0.02 J	ND(0.01)
PCB-1254	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
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Location	MW-9-33	MW-9-45	MW-9-45	MW-9-45	MW-10-34	MW-10-34	MW-10-34	MW-10-51
Sample ID	TH-046	TB-124	KJJ-203	TH-047	KJJ-213	TH-038	TH-039 DUP	KJJ-212
Date Sampled	12/12/94	6/23/93	8/25/94	12/12/94	9/1/94	12/8/94	12/8/94	9/1/94
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	0.001	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001
total-1,2-Dichloroethene	0.001	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	0.004 BU	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001 B	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.003
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.002
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	NA	ND(0.005)
Naphthalene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	NA	ND(0.005)
Phenanthrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	NA	ND(0.005)
2,4-Dimethylphenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	NA	ND(0.005)
Phenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	NA	ND(0.005)

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
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Location	MW-9-33	MW-9-45	MW-9-45	MW-9-45	MW-10-34	MW-10-34	MW-10-34	MW-10-51
Sample ID	TH-046	TB-124	KJJ-203	TH-047	KJJ-213	TH-038	TH-039 DUP	KJJ-212
Date Sampled	12/12/94	6/23/93	8/25/94	12/12/94	9/1/94	12/8/94	12/8/94	9/1/94
Priority Pollutant Inorganics (mg/L)								
Arsenic	0.007	0.006	0.006	0.006	ND(0.001)	0.002	0.002	ND(0.001)
Cadmium	NA	ND(0.0002)	NA	NA	NA	NA	NA	NA
Chromium	NA	ND(0.050)	NA	NA	NA	NA	NA	NA
Lead	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	NA	NA	ND(0.003)
Nickel	NA	ND(0.050)	NA	NA	NA	NA	NA	NA
Selenium	NA	ND(0.005)	NA	NA	NA	NA	NA	NA
Zinc	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	NA	ND(0.020)
Cyanide	NA	ND(0.005)	NA	NA	NA	NA	NA	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	NA	NA	ND(0.01)
Dieldrin	NA	.001 J	ND(0.01)	NA	ND(0.01)	NA	NA	ND(0.01)
beta-Endosulfan	NA	0.02 J	ND(0.01)	NA	ND(0.01)	NA	NA	ND(0.01)
Endosulfan sulfate	NA	ND(0.02)UJ	ND(0.01)	NA	ND(0.01)	NA	NA	ND(0.01)
Endrin	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	NA	NA	ND(0.01)
PCB-1254	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)	NA	NA	ND(0.10)

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Location	*MW-10-51*	*MW-11-21*	*MW-11-21*	*MW-11-35*	*MW-11-35*	*MW-11-35*	*MW-11-54*	*MW-11-54*
Sample ID	*TH-040*	*KJJ-217*	*MAW-056*	*KJJ-216*	*TH-030*	*TH-035 DUP*	*KJJ-218*	*TH-028*
Date Sampled	*12/8/94*	*9/1/94*	*12/14/94*	*9/1/94*	*12/7/94*	*12/7/94*	*9/1/94*	*12/7/94*
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	4.6 S	ND(0.001)	0.044	0.210	0.220	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	0.057	ND(0.001)	0.003	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	0.780	ND(0.001)	ND(0.001)	0.003	0.003	ND(0.001)	ND(0.001)
Methylene chloride	.007 B	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	0.110	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	0.007	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	0.440	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	3.5 S	ND(0.002)	0.005	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	3.940	ND(0.003)	0.007	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	NA	ND(0.020)*	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Naphthalene	NA	0.64	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Phenanthrene	NA	0.035	NA	ND(0.005)	NA	NA	ND(0.005)	NA
2,4-Dimethylphenol	NA	0.024	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Phenol	NA	0.023	NA	ND(0.005)	NA	NA	ND(0.005)	NA

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BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-10-51	MW-11-21	MW-11-21	MW-11-35	MW-11-35	MW-11-35	MW-11-54	MW-11-54
Sample ID	TH-040	KJJ-217	MAW-056	KJJ-216	TH-030	TH-035 DUP	KJJ-218	TH-028
Date Sampled	12/8/94	9/1/94	12/14/94	9/1/94	12/7/94	12/7/94	9/1/94	12/7/94
Priority Pollutant Inorganics (mg/L)								
Arsenic	ND(0.001)	0.018	0.013	0.002	0.004	0.002	0.002	0.001
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	0.007	NA	ND(0.003)	NA	NA	ND(0.003)	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	ND(0.020)	NA	ND(0.020)	NA	NA	ND(0.020)	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	NA	ND(0.02)*	NA	ND(0.01)	NA	NA	ND(0.01)	NA
Dieldrin	NA	ND(0.02)*	NA	ND(0.01)	NA	NA	ND(0.01)	NA
beta-Endosulfan	NA	ND(0.02)*	NA	ND(0.01)	NA	NA	ND(0.01)	NA
Endosulfan sulfate	NA	ND(0.02)*	NA	ND(0.01)	NA	NA	ND(0.01)	NA
Endrin	NA	ND(0.02)*	NA	ND(0.01)	NA	NA	ND(0.01)	NA
PCB-1254	NA	ND(0.2)*	NA	ND(0.10)	NA	NA	ND(0.10)	NA

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SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-12-31	MW-12-31	MW-12-45	MW-12-45	MW-13-20	MW-13-33	MW-13-49	MW-14-32
Sample ID	KJJ-215	TH-042	KJJ-214	TH-044	MAW-053	MAW-057	MAW-055	TH-043
Date Sampled	9/1/94	12/8/94	9/1/94	12/9/94	12/14/94	12/14/94	12/14/94	12/8/94
Priority Pollutant VOCs (mg/L)								
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	0.005	0.009	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	0.006	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	0.001	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	0.003	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Priority Pollutant SVOCs (mg/L)								
Bis(2-ethylhexyl) phthalate	ND(0.005)	NA	0.007	NA	NA	NA	NA	NA
Naphthalene	ND(0.005)	NA	ND(0.005)	NA	NA	NA	NA	NA
Phenanthrene	ND(0.005)	NA	ND(0.005)	NA	NA	NA	NA	NA
2,4-Dimethylphenol	ND(0.005)	NA	ND(0.005)	NA	NA	NA	NA	NA
Phenol	ND(0.005)	NA	ND(0.005)	NA	NA	NA	NA	NA

J = value is an estimate quantity for detecte
NA = not analyzed for
B = analyte present in method blank
U = analyte is a non-detect
UJ = analyte was checked for but not detect
ND = not detected
* = detection limit raised due to matrix inte
S = secondary solution

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-12-31	MW-12-31	MW-12-45	MW-12-45	MW-13-20	MW-13-33	MW-13-49	MW-14-32
Sample ID	KJJ-215	TH-042	KJJ-214	TH-044	MAW-053	MAW-057	MAW-055	TH-043
Date Sampled	9/1/94	12/8/94	9/1/94	12/9/94	12/14/94	12/14/94	12/14/94	12/8/94
Priority Pollutant Inorganics (mg/L)								
Arsenic	0.003	0.004	0.003	0.002	0.001	0.002	0.001	0.01
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Lead	ND(0.003)	NA	ND(0.003)	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	ND(0.020)	NA	ND(0.020)	NA	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Priority Pollutant Pesticides/PCB's (µg/L)								
4,4'-DDD	ND(0.01)	NA	ND(0.01)	NA	NA	NA	NA	NA
Dieldrin	ND(0.01)	NA	ND(0.01)	NA	NA	NA	NA	NA
beta-Endosulfan	ND(0.01)	NA	ND(0.01)	NA	NA	NA	NA	NA
Endosulfan sulfate	ND(0.01)	NA	ND(0.01)	NA	NA	NA	NA	NA
Endrin	ND(0.01)	NA	ND(0.01)	NA	NA	NA	NA	NA
PCB-1254	ND(0.10)	NA	ND(0.10)	NA	NA	NA	NA	NA

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UJ = analyte was checked for but not detect
ND = not detected
* = detection limit raised due to matrix inte
S = secondary solution

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	***MW-14-47***
Sample ID	***TH-045***
Date Sampled	***12/9/94***
Priority Pollutant VOCs (mg/L)	
Benzene	ND(0.001)
1,1-Dichloroethane	ND(0.001)
1,2-Dichloroethane	0.006
total-1,2-Dichloroethene	0.005
Ethylbenzene	ND(0.001)
Methylene chloride	0.001
Tetrachloroethene	ND(0.001)
Toluene	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)
Trichloroethene	ND(0.001)
Vinyl chloride	ND(0.001)
o-Xylene	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)
total Xylenes	ND(0.003)
Priority Pollutant SVOCs (mg/L)	
Bis(2-ethylhexyl) phthalate	NA
Naphthalene	NA
Phenanthrene	NA
2,4-Dimethylphenol	NA
Phenol	NA

J = value is an estimate quantity for detecte
NA = not analyzed for
B = analyte present in method blank
U = analyte is a non-detect
UJ = analyte was checked for but not detect
ND = not detected
* = detection limit raised due to matrix inte
S = secondary solution

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-14-47*
Sample ID	*TH-045*
Date Sampled	*12/9/94*
Priority Pollutant Inorganics (mg/L)	
Arsenic	0.001
Cadmium	NA
Chromium	NA
Lead	NA
Nickel	NA
Selenium	NA
Zinc	NA
Cyanide	NA
Priority Pollutant Pesticides/PCB's (µg/L)	
4,4'-DDD	NA
Dieldrin	NA
beta-Endosulfan	NA
Endosulfan sulfate	NA
Endrin	NA
PCB-1254	NA

J = value is an estimate quantity for detecte
NA = not analyzed for
B = analyte present in method blank
U = analyte is a non-detect
UJ = analyte was checked for but not detect
ND = not detected
* = detection limit raised due to matrix inte
S = secondary solution

SUMMARY OF TCLP WASTE RESIDUAL RESULTS SUMMARY OF ANALYTES BARRELS INC.

Parameter	*Units*	*Regulatory Limit*	*BTH -001*	*BTH -002*	*BTH -003*	*BTH -004*	*BTH -005*	*BTH -006*	*BTH -007*	*BTH -008*	*BTH -009*	*BTH -010*
Flashpoint	deg F	140	> 176	> 176	> 176	> 176	> 176	> 176	> 176	> 176	> 176	>200
Corrosivity	S.U.	2 - 12.5	10	9.0	1.0	9.0	9.0	7.9	8.0	7.0	7.0	7.3
Reactive Cyanide	mg/kg	250	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)	ND(200)
Reactive Sulfide	mg/kg	500	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)UJ
TCLP Testing												
Arsenic	mg/L	5.0	ND(0.5)	ND(0.5)	4.1	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.10)
Barium	mg/L	100	2.1	3.2	ND(0.5)	ND(0.5)	1.8	0.57	2.2	0.76	0.84	0.80
Cadmium	mg/L	1.0	ND(0.1)	ND(0.1)	ND(0.1)	3.9	ND(0.1)	ND(0.1)	ND(0.1)	0.16	ND(0.1)	ND(0.005)
Chromium	mg/L	5.0	ND(0.1)	ND(0.1)	25	ND(0.1)	0.15	ND(0.1)	ND(0.1)	0.36	ND(0.1)	ND(0.050)
Lead	mg/L	5.0	ND(0.1)	2.2	16	0.36	0.30	ND(0.1)	0.28	0.50	ND(0.1)	0.07
Mercury	mg/L	0.2	0.023	ND(0.02)	0.81	ND(0.02)	ND(0.02)	ND(0.02)	ND(0.02)	ND(0.02)	ND(0.02)	0.0011
Selenium	mg/L	1.0	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.10)
Silver	mg/L	5.0	ND(0.1)	ND(0.1)	0.12	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.10)
Chlorinated Pesticides												
gamma-BHC (Lindane)	mg/L	0.4	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Chlordane	mg/L	0.03	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Endrin	mg/L	0.02	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Heptachlor	mg/L	0.008	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Heptachlor Epoxide	mg/L	0.008	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Methoxychlor	mg/L	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Toxaphene	mg/L	0.5	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Herbicides												
2,4-Dichlorophenoxy-acetic acid	mg/L	10	ND(0.50)	ND(0.50)	ND(0.05)	ND(0.50)	ND(0.05)	ND(0.05)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
2,4,5-TP (Silvex)	mg/L	1.0	ND(0.05)	ND(0.05)	ND(0.01)	ND(0.05)	ND(0.01)	ND(0.01)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)

SUMMARY OF TCLP WASTE RESIDUAL RESULTS SUMMARY OF ANALYTES BARRELS INC.

Parameter	*Units*	*Regulatory Limit*	*BTH -001*	*BTH -002*	*BTH -003*	*BTH -004*	*BTH -005*	*BTH -006*	*BTH -007*	*BTH -008*	*BTH -009*	*BTH -010*
Volatiles												
Benzene	mg/L	0.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
2-Butanone	mg/L	200	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Carbon tetrachloride	mg/L	0.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chlorobenzene	mg/L	100	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chloroform	mg/L	6.0	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloroethane	mg/L	0.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethene	mg/L	0.7	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Tetrachloroethene	mg/L	0.7	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Trichloroethene	mg/L	0.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Vinyl chloride	mg/L	0.2	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Base/Neutral Extracables												
1,4-Dichlorobenzene	mg/L	7.5	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
2,4-Dichlorobenzene	mg/L	0.13	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Hexachlorobenzene	mg/L	0.13	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Hexachlorobutadiene	mg/L	0.5	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Hexachloroethane	mg/L	3.0	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Nitrobenzene	mg/L	2.0	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Pyridine	mg/L	5.0	ND(0.260)	ND(0.260)	ND(1.3)	ND(0.260)	ND(0.260)	ND(0.260)	ND(0.260)	ND(0.260)	ND(0.260)	ND(0.260)
Acid Extractables												
2-Methylphenol (o-cresol)	mg/L	200	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
3-Methylphenol (m-cresol)	mg/L	200	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.056
4-Methylphenol (p-cresol)	mg/L	200	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.056
Cresol (total)	mg/L	200	ND(0.010)	ND(0.010)	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Pentachlorophenol	mg/L	100	ND(0.250)	ND(0.250)	ND(0.50)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)
2,4,5-Trichlorophenol	mg/L	400	ND(0.250)	ND(0.250)	ND(0.50)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)	ND(0.250)
2,4,6-Trichlorophenol	mg/L	2.0	ND(0.050)	ND(0.050)	ND(0.10)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)

ND = Not Detect (Target detection limit)

APPENDICES

APPENDIX A

PRE-RI MONITORING WELL DETAILS

RECORD OF SUBSURFACE EXPLORATION

Alt & Witzig Engineering, Inc.

Boring B-1

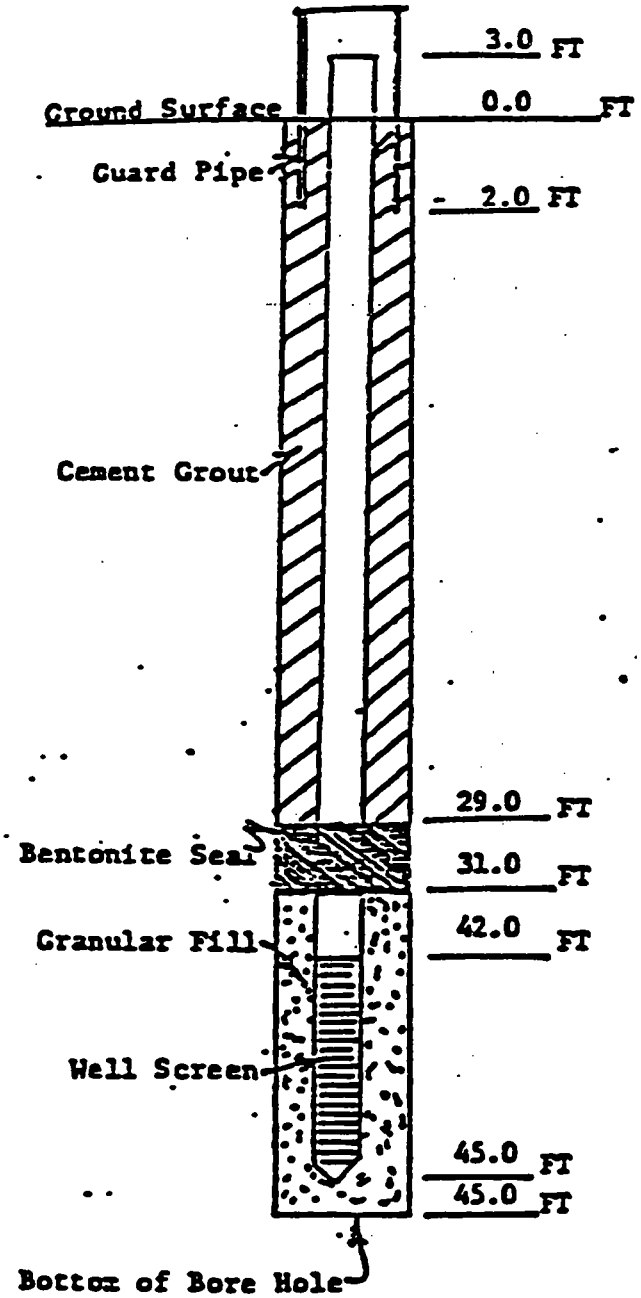
Project Name: Barrels Landfill — Date of Boring: 8-16-82

Site: Lansing; Michigan — Project No.: S2080-13

DESCRIPTION	DEPTH	SAMPLE	Blows per 6" Increment	Driller's Remarks
SURFACE				
Dark Brown to Black Dry SILT with Brick Fragments (Fill)		1SS	4-6-8	
		2SS	9-10-13	
Brown Dry Silty CLAY	5	3SS	10-15-20	
Brown to Gray Moist SAND with some Gravel	10	4SS	14-18-20	
Brown to Gray Moist Fine SAND	15	5SS	9-14-17	
Gray Moist Silty SAND with trace Clay	20	6SS	10-15-15	
	25	7SS	4-10-7	
Gray Moist Fine SAND	30	8SS	8-18-22	
Gray Moist to Wet Fine to Coarse SAND & Gravel	35	9SS	24-20-39	
	40	10SS	7-12-18	▽ On Completion
	45	11SS	9-13-22	
Boring terminated at 45.0 feet.				

WELL DIAGRAM

mw1



Project: Barrels Landfill

Lansing, Michigan

Well No: B-1

Time & Date Started: 8-16-82, 4:30 p.m.

Time & Date Completed: 8-17-82, 10:45 a.m.

Driller's Remarks:

Natural cave of sand. 50 lbs. of granular bentonite installed for seal.

Prepared For: Ecology and Environment, Inc. Chicago, Illinois		Prepared By: Alt & Witzig Engineering, Inc. Indianapolis, Indiana	
PROJECT NAME: Barrels Landfill Lansing, Michigan		PROJECT NO. S2080-13	DATE 08/82

RECORD OF SUBSURFACE EXPLORATION

Alt & Witzig Engineering, Inc.

Boring B-2

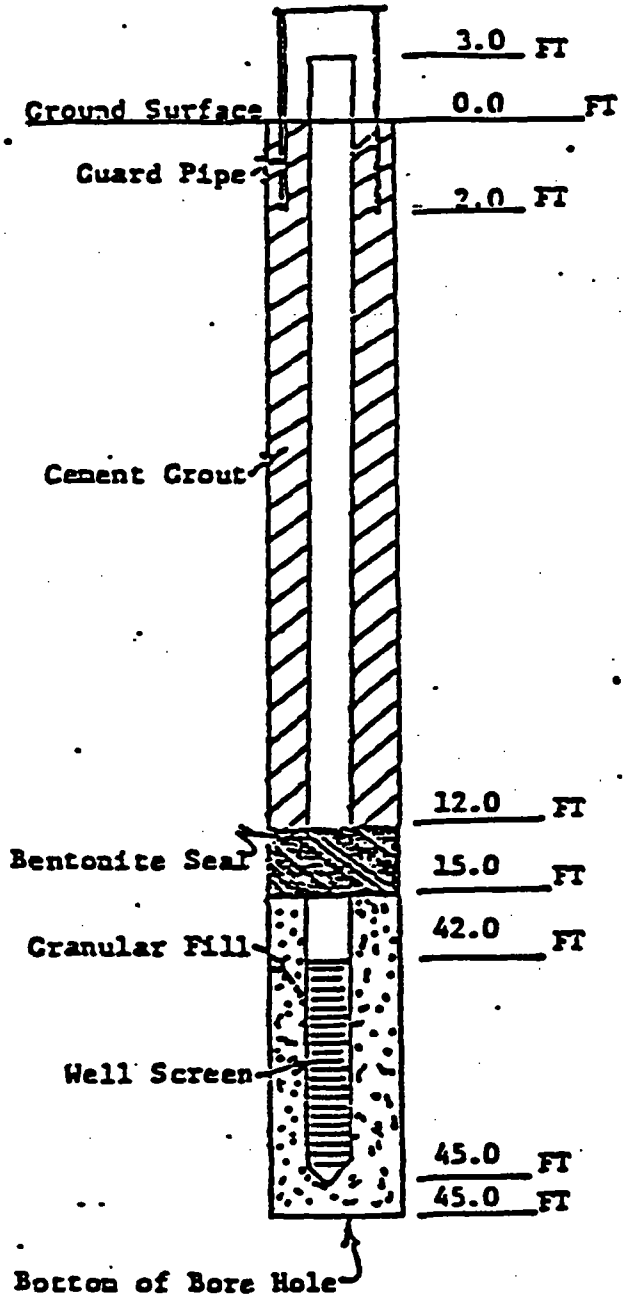
Project Name: Barrels Landfill — Date of Boring: 8-17-82

Site: Lansing, Michigan — Project No.: S2080-13

DESCRIPTION	DEPTH	SAMPLE	Blows per 6" Increment	Driller's Remarks
SURFACE				No surface sample taken
SAND & Gravel Cobbles (Fill)				
Gray Moist Silty CLAY	5	1SS	4-5-6	
		2SS	4-6-9	
	10	3SS	10-18-21	
Gray Moist Fine SAND	15	4SS	13-13-9	
Brown to Gray Clayey SILT with trace Sand & Gravel	20	5SS	28-35-37	
Gray Moist Fine Silty SAND with some Gravel	25	6SS	13-16-27	
Gray Clayey SILT with Sand Seams	30	7SS	10-25-35	
Gray Dry Fine to Coarse SAND and Gravel	35	8SS	26-24-26	
	40	9SS	10-11-15	▽ On Completion
Gray Wet Fine to Coarse SAND and Gravel	45	10SS	13-15-15	
Boring terminated at 45.0 feet.				

MW2

WELL DIACRAM



Project: Barrels Landfill
Lansing, Michigan

Well No: B-2

Time & Date Started: 8-17-82, 2:15 p.m.

Time & Date Completed: 8-17-82, 3:45 p.m.

Driller's Remarks:

Natural cave of sand to 15 feet. 50 lbs. of granular bentonite installed as seal.

Prepared For: Ecology and Environment, Inc. Chicago, Illinois		Prepared By: Alt & Witzig Engineering, Inc. Indianapolis, Indiana	
PROJECT NAME: Barrels Landfill Lansing, Michigan		PROJECT NO. S2080-13	DATE 08/82

RECORD OF SUBSURFACE EXPLORATION

Alt & Witzig Engineering, Inc.

Boring B-3

Project Name: Barrels Landfill — Date of Boring: 8-18-82

Site: Lansing, Michigan — Project No.: S2080-13

DESCRIPTION	DEPTH	SAMPLE	Blows per 6" Increment	Driller's Remarks
SURFACE				No surface sample taken.
Brown SAND & Gravel (Fill)		1SS	7-6-6	
	5	2SS	10-8-7	
Brown Dry Fine SAND	10	3SS	4-10-14	
Brown Moist Silty Sandy CLAY	15	4SS	8-8-12	
Brown Moist Fine SAND with trace Gravel	20	5SS	10-11-16	
	25	6SS	9-13-16	
Brown Wet Fine SAND	30	7SS	7-11-13	▽ On Completion
	35	8SS	- 9-13	
Gray Wet Silty CLAY				
Brown Wet Fine SAND	40	9SS	- 2-8	
Gray Clayey SILT with Sand Seams & trace Gravel (Continued)	45	10SS	50/3"	

RECORD OF SUBSURFACE EXPLORATION

Alt & Witzig Engineering, Inc.

Boring B-3 (Page 2)

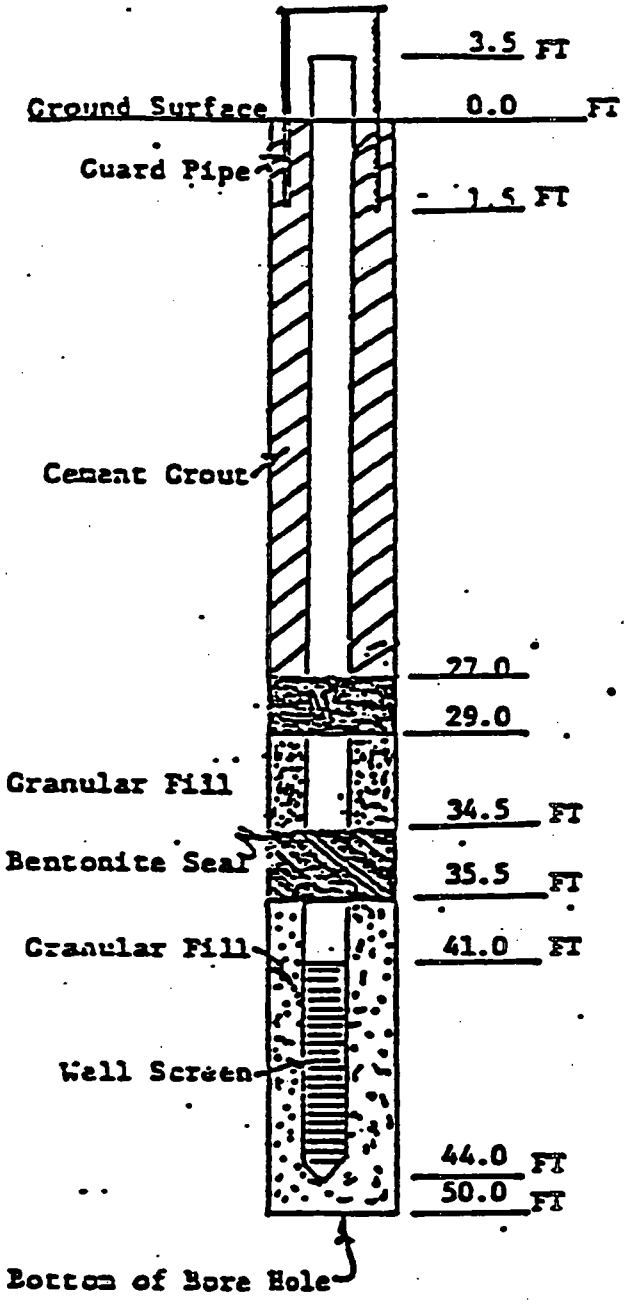
Project Name: Barrels Landfill — Date of Boring: 8-19-82

Site: Lansing, Michigan — Project No.: S20S0-13

DESCRIPTION	DEPTH	SAMPLE	Blows per 6" Increment	Driller's Remarks
SURFACE				
Gray Clayey SILT with Sand Seams & trace Gravel				
		11SS	50/3"	
	50			
Boring terminated at 50.0 feet.				
	55			

WELL DIAGRAM

MW3



Project: Barrels Landfill
Lansing, Michigan

Well No: B-3

Time & Date Started: 8-18-82, 1:45 p.m.

Time & Date Completed: 8-18-82, 4:15 p.m.

Driller's Remarks:

Granular fill is natural sand.
75 lbs. of granular bentonite installed for seal.

Prepared For: Ecology and Environment, Inc. Chicago, Illinois		Prepared By: Alt & Witzig Engineering, Inc. Indianapolis, Indiana	
PROJECT NAME: Barrels Landfill Landing, Michigan		PROJECT NO. S2080-13	DATE 08/82

Environmental Data Inc.

PROJECT NO. 20185

DATE 10/4/82

PERMIT NO. E -4

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. 82-1

SURFACE ELEV. _____

HOLE PLUGGED WITH annulus from 0-25' plugged with bentonite slurry.

BORING LOCATION

SE¼ of SE¼ of NE¼ Sec. 9
T4N R2W
Lansing Township
Ingham County

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN.	NO. BLOWS 3rd 6 IN.	NO. BLOWS 2nd 6 IN.	NO. BLOWS 1st 6 IN.	DEPTH OF TEST
0	2	Topsoil and rubble (Note: surface is about 12-18" below surrounding grade -- excavated). Core 0-2 ft.					
2	4	Clay, brown to grey, silty and sandy (fine to very fine), few pebbles. Heavily stained and mixed with black silty material. Oily odor. Core 2-4 ft.					
4	6	Clay, stiff, plastic, grey with brown mottling. Core 4-6 ft.					
6	8	Sand, very fine to medium, light brown, grading into clay, brown, stiff, silty. Core 6-8 ft.					
8	13	Sand, very fine to medium, light brown, silty; interbedded clay, brown, stiff, silty. Clay at 8 ft is mixed with a dark fine-grained [illegible] material similar to [illegible] Oily odor in upper part. Core 8-10'					
13	18	Clay, brown, very firm, plastic, silty, sandy, few fine					

GROUNDWATER

ENCOUNTERED AT _____ FT.

AFTER COMPLETION _____ FT.

AFTER 22 HRS 41.25 FT.

BORING CAVE IN _____ FT.

Developed with rod pump.

WELL DATA

CASING USED: Screen set between 45 and 48 ft.

TYPE Galvanized

DIAMETER 2"

LENGTH 48'

SCREEN LE[illegible] & SLOT SIZE [illegible] 7 slot [illegible]

HT. ABOVE GROUND

EDI-4

DATE 10/4/82

PERMIT NO. EDI-4

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. BZ-1

SURFACE ELEV. _____

HOLE PLUGGED WITH _____

BORING LOCATION

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN.	NO. BLOWS 3rd 6 IN.	NO. BLOWS 2nd 6 IN.	NO. BLOWS 1st 6 IN.	DEPTH OF TEST
		pebbles. Thin streaks of sand, very fine to medium,					
		silty somewhat clayey. Core 13-15 ft.					
18	24	Clay, grey firm, plastic, silty, somewhat sandy, occasional					
		small pebble. Core 18-20 ft.					
24	30	Sand, medium to coarse, and gravel fine to coarse; inter-					
		bedded thin lenses of clay, firm, sandy, gravelly.					
		Core 23-25 ft and 28-30 ft.					
30	35	Sand and gravel, sand is medium to coarse and gravel is fine					
		to medium. Core 33-35 ft.					
35	48	Sand and gravel as above, but better sorted and more					
		gravelly. Core 38-40 ft.					

GROUNDWATER

ENCOUNTERED AT _____ FT.

AFTER COMPLETION _____ FT.

AFTER 22 HRS 41.25 FT.

BORING CAVE IN _____ FT.

Developed with rod pump.

WELL DATA

CASING USED: TYPE Galvanized

DIAMETER 2"

LENGTH 48'

SCREEN LENGTH & SLOT SIZE 30"x36"x2
7 slot stainless st

HT. ABOVE GROUND _____

PERMIT NO. EDZ-5

PROJECT Barrels Inc. - Site Investigation

LOCATION Lansing

EQUIPMENT Stearns Acker II 8" HSK

TECHNICIAN ELC

TEST HOLE BORING NO. 16 (or Well 82-2)

SURFACE ELEV. -

HOLE PLUGGED WITH Bentonite & Cement

BORING LOCATION

See Location Map

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN.	SAMPLES T.
0.0	3.0	RUBBLE, borken glass, roots, black		
3.0	7.0	CLAY, brown to dirty brown, sandy	0	2
7.0	13.5	CLAY, mottled, brown, sandy	2	4
13.5	17.0	SAND, fine, brown	4	6
17.0	23.5	SAND, medium to coarse, gravelly	6	8
		brown to gray	8	10
23.5	23.8	CLAY, gray	13	
23.8	27.0	SAND, fine, gray	18	20
27.0	40.0	SAND & gravel	23	25
40.0	47.0	SAND & gravel, wet	28	30
			33	35
		W.L. 43.08' TOC after devel.	38	40

GROUNDWATER

ENCOUNTERED AT 40 FT.

AFTER COMPLETION 43.08 FT. TOC

AFTER ____ HRS ____ FT.

BORING CAVE IN ____ FT.

WELL DATA

CASING USED: TYPE galvan

DIAMETER 2

LENGTH ____

SCREEN LENGTH & SLOT SIZE 20x4

HT. ABOVE GROUND.

SHEET 2 OF 2

Environmental Data Inc.
ENVIRONMENTAL SCIENTISTS/ENGINEERS/GEOLOGISTS/CHEMISTS
611 CASCADE WEST PARKWAY, S.E., P.O. BOX 6010, GRAND RAPIDS, MICHIGAN 49555

CLIENT The Chessie System

PROJECT NO. 20185

DATE 10/4/82

PERMIT NO.

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. 1

SURFACE ELEV.

HOLE PLUGGED WITH

BORING LOCATION

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN.	NO. BLOWS 3rd 6 IN.	NO. BLOWS 2nd 6 IN.	NO. BLOWS 1st 6 IN.	DEPTH OF TEST
		pebbles. Thin streaks of sand, very fine to medium, silty somewhat clayey. Core 13-15 ft.					
18	24	Clay, grey firm, plastic, silty, somewhat sandy, occasional small pebble. Core 18-20 ft.					
24	30	Sand, medium to coarse, and gravel fine to coarse; interbedded thin lenses of clay, firm, sandy, gravelly. Core 23-25 ft and 28-30 ft.					
30	35	Sand and gravel, sand is medium to coarse and gravel is fine to medium. Core 33-35 ft.					
35	48	Sand and gravel as above, but better sorted and more gravelly. Core 38-40 ft.					

GROUNDWATER

ENCOUNTERED AT _____ FT.

AFTER COMPLETION _____ FT.

AFTER 22 HRS 41.25 FT.

BORING CAVE IN _____ FT.

Developed with rod pump.

WELL DATA

CASING USED: TYPE Galvanized

DIAMETER 2"

LENGTH 48'

SCREEN LENGTH & SLOT SIZE 30"x36"x2"
7 slot stainless steel

HT. ABOVE GROUND _____

Environmental Data Inc.
ENVIRONMENTAL SCIENTISTS/ENGINEERS/GEOLOGISTS/CHEMISTS
[illegible]

CLIENT The Chessie System

PROJECT NO. 20185

DATE 10/4/82

PERMIT NO. _____

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. Test Hole 2

SURFACE ELEV. _____

HOLE PLUGGED WITH natural soils

BORING LOCATION

See location map

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN.	NO. BLOWS 3rd 6 IN.	NO. BLOWS 2nd 6 IN.	NO. BLOWS 1st 6 IN.	DEPTH OF TEST	Samples taken
0.0	4.0	Topsoil - clayey - black - rubble						
4.0	6.0	Clay - mottled gray to brown, firm, plastic. Oily odor.					0-2	1 liner 2 vials
							2-4	1 liner vials
							2-6	1 liner 2 vials
								1 bottle

GROUNDWATER

ENCOUNTERED AT dry hole FT.

AFTER COMPLETION _____ FT.

AFTER _____ HRS _____ FT.

BORING CAVE IN _____ FT.

WELL DATA

CASING USED: TYPE _____

DIAMETER _____

LENGTH _____

SCREEN LENGTH & SLOT SIZE _____

HT. ABOVE GROUND _____

Environmental Data Inc.
ENVIRONMENTAL SCIENTISTS/ENGINEERS/GEOLOGISTS/CHEMISTS
611 CASCADE WEST PARKWAY, S.E., P.O. BOX 6016, GRAND RAPIDS, MICHIGAN 49505

CLIENT The Chessie System

PROJECT NO. 20185

DATE 10/4/82

PERMIT NO.

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. Test hole 3

SURFACE ELEV.

HOLE PLUGGED WITH natural soils

BORING LOCATION

See location map

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN. / NO. BLOWS 3rd 6 IN. / NO. BLOWS 2nd 6 IN. / NO. BLOWS 1st 6 IN. / DEPTH OF TEST	Samples
[illegible]	1.8	Topsoil - rubble, oily and oily odor.		
1.8	2.5	Clay brown sandy, soft, plastic	0-2	1 liner 2 vials
				1 bottle
2.5	4.0	Clay, dirty brown to black, sandy, oily odor	2-4	2 liners 2 via
				1 bottle
4.0	6.0	Topsoil	4-6	2 liners 2 bia

GROUNDWATER

ENCOUNTERED AT dry hole FT.

AFTER COMPLETION _____ FT.

AFTER _____ HRS _____ FT.

BORING CAVE IN _____ FT.

WELL DATA

CASING USED: TYPE _____

DIAMETER _____

LENGTH _____

SCREEN LENGTH & SLOT SIZE _____

HT. ABOVE GROUND _____

Environmental Data Inc.
ENVIRONMENTAL SCIENTISTS/ENGINEERS/GEOLOGISTS/CHEMISTS
811 CASCADE WEST PARKWAY, S.E., P.O. BOX 8848, GRAND RAPIDS, MICHIGAN 49508

CLIENT The Chessie System

PROJECT NO. 20185

DATE 10/4/82

PERMIT NO. _____

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. Test hole 4

SURFACE ELEV. _____

HOLE PLUGGED WITH natural soils

BORING LOCATION

See location map

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN.	NO. BLOWS 3rd 6 IN.	NO. BLOWS 2nd 6 IN.	NO. BLOWS 1st 6 IN.	DEPTH OF TEST	
0.0	2.5	Topsoil rubble, black, oily, oily odor.						Samples
2.3	4.0	Clay - mottled brown to gray - sandy, gravelly, strong oily odor					0-2	2 liners 1 vial 1 bottle
4.0	5.2	Clay - brown to black, soft, trace of sand, slight odor					2-4	1 liner 2 vials
5.2	6.0	Topsoil						1 bottle

Bore bucket slow bad

GROUNDWATER

ENCOUNTERED AT dry hole FT.

AFTER _____ FT.

AFTER _____ HRS _____ FT.

BORING CAVE IN _____ FT.

WELL DATA

CASING USED: TYPE _____

DIAMETER _____

LENGTH _____

SCREEN LENGTH & SLOT SIZE _____

HT. ABOVE GROUND _____

SHEET 1 OF 1

Environmental Data Inc.
ENVIRONMENTAL SCIENTISTS/ENGINEERS/GEOLOGISTS/CHEMISTS
811 CASCADE WEST PARKWAY, S.E., P.O. BOX 8916, GRAND RAPIDS, MICHIGAN 49508

CLIENT The Chessie System

PROJECT NO. 20185

DATE 10/4/82

PERMIT NO. _____

PROJECT Lansing Iron & Metal Lease

LOCATION Lansing, Michigan

EQUIPMENT Stearns' AD II 8" HSA

TECHNICIAN ELC

BORING NO. Test hole 5

SURFACE ELEV. _____

HOLE PLUGGED WITH natural soils

BORING LOCATION

See location map

BORING DEPTH FEET FROM	TO		NO. BLOWS LAST 12 IN. / NO. BLOWS 3rd 6 IN. / NO. BLOWS 2nd 6 IN. / NO. BLOWS 1st 6 IN. / DEPTH OF TEST	Samples
0.0	1.5	Topsoil - rubble		
.5	3.0	Sand medium to fine brown	0-2	2 vials
3.0	4.5	Clay mottled brown sandy, soft, slight odor	2-4	2 vials
4.5	5.0	Gravel wet	4-6	2 vials
5.0	7.0	Clay - dirty brown to black layers of wet gravel		
7.0		Wood fibers (unable to penetrate)		

GROUNDWATER

ENCOUNTERED AT 4.5 FT.

AFTER COMPLETION _____ FT.

AFTER _____ HRS _____ FT.

BORING CAVE IN _____ FT.

WELL DATA

CASING USED: TYPE _____

DIAMETER _____

LENGTH _____

SCREEN LENGTH & SLOT SIZE _____

HT. ABOVE GROUND _____

APPENDIX B

MDNR PRE-RI SOIL ANALYTICAL DATA

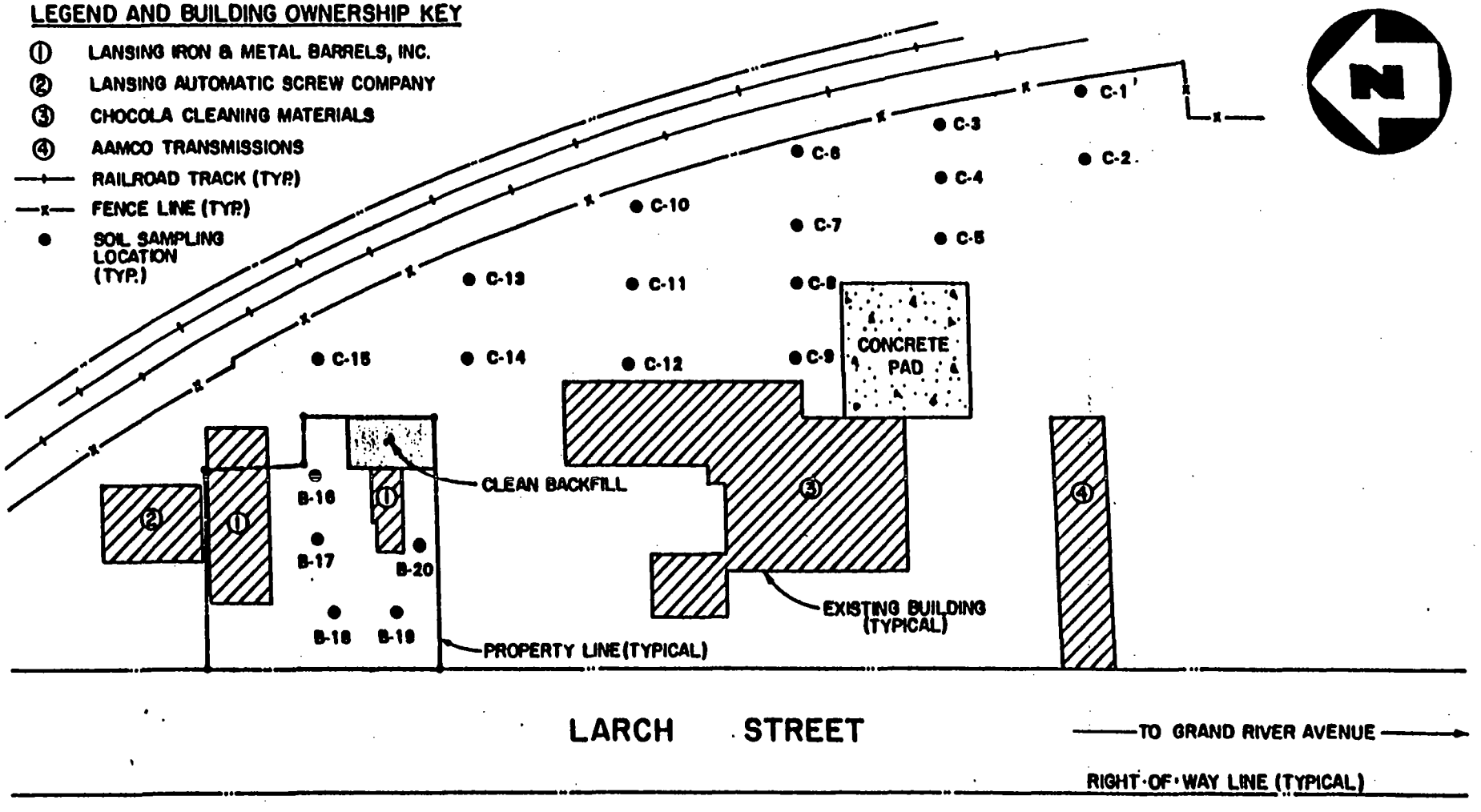


FIGURE 1

LOCATION OF SOIL SAMPLING POINTS
BARRELS DRUM ANALYSIS SITE, LANSING, MI

SCALE: 1" = 100'

NUS CORPORATION

Units in the enclosed tabulation are as follows:

Organic results - all values reported in ug/kg (ppb).

Inorganic results - all values reported in mg/kg (ppm).

Phenolic results - all values reported in mg/kg (ppm).

Curene results - all values reported in ug/kg (ppb).

Cyanide results - all values reported in mg/kg (ppm).

SAMPLE NUMBER :			01-SD-016	01-SD-017	01-SD-018	01-SD-018RA	01-SD-019	01-SD-020	01-SD-021	01-SD-021RA
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
*** VOLATILES ***										
PP	CAS NO	COMPOUND								
	67-64-1	ACETONE	R	R	R	R	R	R	R	R
	591-78-6	2-HEXANONE	4 J							
	108-10-1	4-METHYL-2-PENTANONE								
11V	71-55-6	1,1,1-TRICHLOROETHANE				J 120		15		
35V	127-18-4	TETRACHLOROETHENE		8 J						
37V	79-01-6	TRICHLOROETHENE								
39V	156-60-5	TRANS-1,2-DICHLOROETHENE								
28V	67-66-3	CHLOROFORM								
44V	75-09-2	METHYLENE CHLORIDE	R	R	R	R	R	R	R	R
*** BASE/NEUTRALS ***										
PP	CAS NO	COMPOUND								
85B	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	21000 J	16000 J	5600 J			1900	7100	
83B	84-74-2	DI-N-BUTYL PHTHALATE			220 J				400 J	
87B	85-68-7	BUTYL BENZYL PHTHALATE			5100				1900	
77B	208-96-8	ACENAPHTHYLENE								
78B	120-12-7	ANTHRACENE								
72B	56-55-3	BENZO(A)ANTHRACENE			600 J					
74B	205-99-2	BENZO(B)FLUORANTHENE			690 J					
	207-08-9	BENZO(K)FLUORANTHENE								
76B	191-24-2	BENZO(G,H,I)PERYLENE								
73B	50-32-8	BENZO(A)PYRENE			460 J					
75B	218-01-9	CHRYSENE			610 J					
86B	206-44-0	FLUORANTHENE			810 J					
81B	193-39-5	INDENO(1,2,3-CD)PYRENE								
88B	91-20-3	NAPHTHALENE								

SAMPLE NUMBER :			SI-SD-S18	SI-SD-S17	SI-SD-S16	SI-SD-S16RA	SI-SD-S19	SI-SD-S20	SI-SD-C01	SI-SD-C01RA
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
018	85-01-8	PHENANTHRENE								
048	129-00-0	PYRENE			690 J				870 J	
*** ACIDS ***										
PP	CAS NO	COMPOUND								
NO PARAMETERS FOR THIS CATEGORY										
*** PESTICIDES ***										
PP	CAS NO	COMPOUND								
012P	50-29-3	4,4'-DDT			720 J				5700	
	72-54-8	4,4'-DDD	6400 J						1300 J	
013P	72-55-9	4,4'-DDE			770 J				2400	
09P	72-20-8	ENDRIN								
01P	57-74-9	CHLORDANE		81000 J	14000		1900	3800 J		
100P	53469-21-9	AROCLOR-1242								
107P	11097-69-1	AROCLOR-1254								
111P	11096-82-5	AROCLOR-1260								

SAMPLE NUMBER :	01-00-016	01-00-017	01-00-018	01-00-018RA	01-00-019	01-00-020	01-00-C01	01-00-C01RA
LABORATORY ID NUMBER :								
DESCRIPTION:								
DATE SAMPLED:	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87
*** INORGANICS ***								
PP CAS NO COMPOUND								
0 ANTIMONY							21	
0 ARSENIC	J 0.0 MG	J 0.0 MG	J 0.0 MG		J 0.0 MG	J 0.1 MG	J 21 MG	
0 BERYLLIUM								
0 CADMIUM	J 1.0 A	J 1.0 A	J 4.2 A		J 1.2 A		J 40 A	
7 CALCIUM								
0 CHROMIUM	07	00	004		10	10	00	
10 COPPER	00	00	100		40	00	1320	
10 LEAD	107 A	102 A	011 A		110 A	00 A	0000 A	
10 MERCURY		0.0	0.01			0.01	0.40	
10 NICKEL	10 A	10 A	00 A		10 A	00 A	000 A	
10 SELENIUM							J 4.0 A	
10 SILVER			0.0				0.4	
00 SODIUM						0.0		
04 ZINC	101	100	010		00	110	00000	

SAMPLE NUMBER :		SI-SD-S16	SI-SD-S17	SI-SD-S18	SI-SD-S18RA	SI-SD-S19	SI-SD-S20	SI-SD-C01	SI-SD-C01RA
LABORATORY ID NUMBER :									
DESCRIPTION:									
DATE SAMPLED:		06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
*** GEOCHEMICAL PARAMETERS ***									
PP	CAS NO	COMPOUND							
		CYANIDE	2.8 R	2.6 R	1.6 R		1.6 R	2.4 R	2.4 R
		PHENOLICS							
		CURENE	16	8.4	7.8			16	

SAMPLE NUMBER :	SI-SD-C02	SI-SD-C02RA	SI-SD-C03	SI-SD-C03RA	SI-SD-C04	SI-SD-C04RA	SI-SD-C05	SI-SD-C06
LABORATORY ID NUMBER :								
DESCRIPTION:								
DATE SAMPLED:	06/00/87	06/00/87	06/00/87	06/00/87	06/00/87	06/00/87	06/00/87	06/00/87
*** VOLATILES ***								
PP CAS NO COMPOUND								
87-64-1 ACETONE	R	R	R	R	R	R	R	R
591-78-6 2-HEXANONE								
108-10-1 4-METHYL-2-PENTANONE			R		8			
11V 71-55-6 1,1,1-TRICHLOROETHANE								
85V 127-18-4 TETRACHLOROETHENE							760	
87V 79-01-6 TRICHLOROETHENE							48 J	
90V 156-60-5 TRANS-1,2-DICHLOROETHENE							62	
23V 67-66-3 CHLOROFORM								
44V 75-09-2 METHYLENE CHLORIDE	R	R	R	R	R	R	R	R
*** BASE/NEUTRALS ***								
PP CAS NO COMPOUND								
66B 117-81-7 BIS(2-ETHYLHEXYL)PHTHALATE	26000		50000		10000		81000	21000
68B 84-74-2 DI-N-BUTYL PHTHALATE	2300 J		8400		610 J		830 J	24000
67B 85-68-7 BUTYL BENZYL PHTHALATE	25000		8500		12000		2600 J	
77B 208-96-8 ACENAPHTHYLENE							1100 J	
78B 120-12-7 ANTHRACENE								
72B 56-55-3 BENZO(A)ANTHRACENE			5100 J				2600 J	
74B 205-99-2 BENZO(B)FLUORANTHENE							2900 J	
207-08-9 BENZO(K)FLUORANTHENE			8500					
79B 191-24-2 BENZO(G,H,I)PERYLENE							1900 J	
73B 50-32-8 BENZO(A)PYRENE			2800 J				2600 J	
76B 218-01-9 CHRYSENE			3300 J				2600 J	
39B 206-44-0 FLUORANTHENE			15000				5000 J	
81B 193-39-5 INDENO(1,2,3-CD)PYRENE							J 1700 J	
66B 91-20-3 NAPHTHALENE							1100 J	

SAMPLE NUMBER :			BI-GO-C02	BI-GO-C02RA	BI-GO-C03	BI-GO-C03RA	BI-GO-C04	BI-GO-C04RA	BI-GO-C06	BI-GO-C08
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
81B	85-01-8	PHENANTHRENE			10000				6100 J	
84B	129-00-0	PYRENE			7200				4600 J	

*** ACIDS ***

PP	CAS NO	COMPOUND

NO PARAMETERS FOR THIS CATEGORY

*** PESTICIDES ***

PP	CAS NO	COMPOUND								
92P	50-29-3	4,4'-DDT			11000		6300 J		50000	3300
	72-54-8	4,4'-DDD	13000		8400		18000		91000	450 J
93P	72-55-9	4,4'-DDE	3200 J		2200 J		2500 J		8800 J	290 J
96P	72-20-8	ENDRIN								
91P	57-74-9	CHLORDANE								
106P	53469-21-9	AROCLOR-1242							200000	
107P	11097-69-1	AROCLOR-1254					75000 J			
111P	11096-82-5	AROCLOR-1260								

SAMPLE NUMBER :	SI-SD-C02	SI-SD-C02RA	SI-SD-C03	SI-SD-C03RA	SI-SD-C04	SI-SD-C04RA	SI-SD-C05	SI-SD-C06
LABORATORY ID NUMBER :								
DESCRIPTION:								
DATE SAMPLED:	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
**** GEOCHEMICAL PARAMETERS ****								
PP CAS NO COMPOUND								
CYANIDE	0.1 R		0.0 R		0.1 R		0.0 R	0.0 R
PHENOLICS	0.0				0.7		7.1	20
CURENE	87		66		68		110	0.0

SAMPLE NUMBER :			SI-SD-C06RA	SI-SD-C07	SI-SD-C08	SI-SD-C06RA	SI-SD-C09	SI-SD-C10	SI-SD-C11	SI-SD-C12
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
VOLATILES										
PP	CAS NO	COMPOUND								
	67-64-1	ACETONE	R	R	R	R	240 B	R	R	R
	591-78-6	2-HEXANONE								
	108-10-1	4-METHYL-2-PENTANONE								
11V	71-55-6	1,1,1-TRICHLOROETHANE								
35V	127-18-4	TETRACHLOROETHENE						120		
37V	79-01-6	TRICHLOROETHENE						4 J		
30V	156-60-5	TRANS-1,2-DICHLOROETHENE								
33V	67-66-3	CHLOROFORM			23					
44V	75-09-2	METHYLENE CHLORIDE	R	R	R	R	R	R	R	R
BASE/NEUTRALS										
PP	CAS NO	COMPOUND								
68S	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE		4000 J	14000		2700	750 J	280 J	
69S	84-74-2	DI-N-BUTYL PHTHALATE			1700 J				170 J	
67S	85-68-7	BUTYL BENZYL PHTHALATE		26000	26000				250 J	
77S	208-96-8	ACENAPHTHYLENE								
78S	120-12-7	ANTHRACENE								490 J
72S	56-55-3	BENZO(A)ANTHRACENE			5100 J		700 J			1400
74S	205-99-2	BENZO(B)FLUORANTHENE							260 J	1900
	207-08-9	BENZO(K)FLUORANTHENE			6000 J					
79S	191-24-2	BENZO(G,H,I)PERYLENE							270 J	
73S	50-32-8	BENZO(A)PYRENE			5800 J				200 J	1100 J
75S	218-01-9	CHRYSENE			5700 J		700 J			1500
80S	206-44-0	FLUORANTHENE			9100 J		1100		150 J	1900
81S	193-39-5	INDENO(1,2,3-CD)PYRENE			J 1900 J				210 J	
66S	91-20-3	NAPHTHALENE					210 J			

SAMPLE TYPE

SAMPLE NUMBER :			BI-SO-C06RA	BI-SO-C07	BI-SO-C08	BI-SO-C08RA	BI-SO-C09	BI-SO-C10	BI-SO-C11	BI-SO-C12
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
81B	85-01-8	PHENANTHRENE			3500 J		1200			390 J
84B	129-00-0	PYRENE			4000 J		890 J		140 J	1900

*** ACIDS ***

PP	CAS NO	COMPOUND

NO PARAMETERS FOR THIS CATEGORY

*** PESTICIDES ***

PP	CAS NO	COMPOUND								
82P	50-29-3	4,4'-DDT							290	
	72-54-8	4,4'-DDD							99	
83P	72-55-9	4,4'-DDE							70 J	
86P	72-20-8	ENDRIN							120	
91P	57-74-9	CHLORDANE		34000			7100		990	
106P	53469-21-9	AROCLOR-1242								
107P	11097-69-1	AROCLOR-1254			100000					
111P	11096-82-5	AROCLOR-1260								1500

SAMPLE NUMBER :		SI-SD-C005A	SI-SD-C007	SI-SD-C006	SI-SD-C005A	SI-SD-C000	SI-SD-C10	SI-SD-C11	SI-SD-C12
LABORATORY ID NUMBER :									
DESCRIPTION:									
DATE SAMPLED:		00/00/87	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87	00/00/87
*** INORGANICS ***									
PP	CAS NO	COMPOUND							
5		ANTIMONY		1880					
6		ARSENIC	J 11 MN	J 82 MN		J 8.2 MN	J 8.1 MN	J 8.6 MN	J 8.6 MN
6		BERYLLIUM	1.7					1.4	
6		CADMIUM	J 8.8 N	J 88 N		J 8.8 N	J 8.7 N	J 8.8 N	
7		CALCIUM							
8		CHROMIUM	188	187		18	44	140	11
10		COPPER	1180	8880		84	81	802	18
12		LEAD	848 N	8880 N		817 N	84 N	888 N	48 N
16		MERCURY	8.88	8.8					
18		NICKEL	88 N	844 N		11 N	88 N	82 N	18 N
18		SELENIUM	J 1.8 N	J 4.1 N					
18		SILVER	8.8	8.8		8.8		8.1	
20		SODIUM							
24		ZINC	1778	7888		488	888	888	88

SAMPLE NUMBER :			BI-SO-C06RA	BI-SO-C07	BI-SO-C08	BI-SO-C08RA	BI-SO-C09	BI-SO-C10	BI-SO-C11	BI-SO-C12
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
*** GEOCHEMICAL PARAMETERS ***										
PP	CAS NO	COMPOUND								
		CYANIDE		1.4 *	3.6 *		2.2 *	2.1 *	2.2 *	2.1 *
		PHENOLICS		11			10	14		
		CURENE		26	64		12	3.0	6.7	9.0

SAMPLE NUMBER :		91-SD-C13	91-SD-C13RA	91-SD-C14	91-SD-C14RA	91-SD-C15	91-SD-C15RA
LABORATORY ID NUMBER :							
DESCRIPTION:							
DATE SAMPLED:		06/11/97	06/06/97	06/06/97	06/06/97	06/06/97	06/06/97
*** VOLATILES ***							
PP	CAS NO	COMPOUND					
	67-64-1	ACETONE	B	B	B	B	B	B
	591-78-6	2-HEXANONE			B	57		
	108-10-1	4-METHYL-2-PENTANONE						
11V	71-55-6	1,1,1-TRICHLOROETHANE						
65V	127-18-4	TETRACHLOROETHENE			B	88		
67V	79-01-6	TRICHLOROETHENE						
30V	156-60-5	TRANS-1,2-DICHLOROETHENE						
23V	67-66-3	CHLOROFORM						
44V	75-09-2	METHYLENE CHLORIDE	B	B	B	B	B	B
*** BASE/NEUTRALS ***							
PP	CAS NO	COMPOUND					
66B	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	2000 J		320000 J			
68B	84-74-2	DI-N-BUTYL PHTHALATE						
67B	85-68-7	BUTYL BENZYL PHTHALATE						
77B	208-96-8	ACENAPHTHYLENE						
78B	120-12-7	ANTHRACENE						
72B	56-55-3	BENZO(A)ANTHRACENE						
74B	205-99-2	BENZO(B)FLUORANTHENE						
	207-08-9	BENZO(K)FLUORANTHENE						
79B	191-24-2	BENZO(G,H,I)PERYLENE						
73B	50-32-8	BENZO(A)PYRENE						
76B	218-01-9	CHRYSENE						
39B	206-44-0	FLUORANTHENE						
69B	193-39-5	INDENO(1,2,3-CD)PYRENE						
66B	91-20-3	NAPHTHALENE						

SAMPLE NUMBER :	SI-SD-C18	SI-SD-C18RA	SI-SD-C14	SI-SD-C14RA	SI-SD-C16	SI-SD-C16RA
LABORATORY ID NUMBER :						
DESCRIPTION:						
DATE SAMPLED:	06/11/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
61B 85-01-8 PHENANTHRENE						
64B 129-00-0 PYRENE						

*** ACIDS ***

PP	CAS NO	COMPOUND

NO PARAMETERS FOR THIS CATEGORY

*** PESTICIDES ***

PP	CAS NO	COMPOUND				
92P	50-29-3	4,4'-DDT				
	72-54-8	4,4'-DDD				
91P	72-55-9	4,4'-DDE		3700 J		710 J
88P	72-20-8	ENDRIN	87000			
81P	57-74-9	CHLORDANE		48000		6100 J
100P	53469-21-9	AROCLOR-1242				
107P	11097-69-1	AROCLOR-1254		84000 J		
111P	11096-82-5	AROCLOR-1260				

SAMPLE NUMBER :			BI-GO-C13	BI-GO-C13RA	BI-GO-C14	BI-GO-C14RA	BI-GO-C15	BI-GO-C15RA
LABORATORY ID NUMBER :								
DESCRIPTION:								
DATE SAMPLED:			06/11/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
*** INORGANICS ***								
PP	CAS NO	COMPOUND						
2		ANTIMONY						
3		ARSENIC	J 12 PN		J 12 PN		J 8.9 PN	
4		BERYLLIUM						
5		CADMIUM	J 3.4 R		J 3.4 R		J 6.2 R	
7		CALCIUM			120		68	
8		CHROMIUM	48					
10		COPPER	174		120		99	
12		LEAD	269 R		622 R		692 R	
16		MERCURY	2.0					
18		NICKEL	32 R		30 R		32 R	
19		SELENIUM						
19		SILVER	2.2				2.1	
20		SODIUM						
24		ZINC	888		878		812	

SAMPLE NUMBER :			SI-SO-C02	SI-SO-C02RA	SI-SO-C03	SI-SO-C03RA	SI-SO-C04	SI-SO-C04RA	SI-SO-C05	SI-SO-C06
LABORATORY ID NUMBER :										
DESCRIPTION:										
DATE SAMPLED:			06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87	06/06/87
*** INORGANICS ***										
PP	CAS NO	COMPOUND								
2		ANTIMONY	42		41		18			17
3		ARSENIC	J 16 MN		J 30 MNS		J 16 MN		J 9.4 MN	J 33 MNS
5		BERYLLIUM					1.3			
6		CADMIUM	J 35 M		J 41 M		J 10 M		J 7.8 M	J 27 M
7		CALCIUM								
8		CHROMIUM	740		62		60		68	61
10		COPPER	2600		960		1300		190	500
12		LEAD	2740 M		3930 M		1000 M		674 M	600 M
15		MERCURY	1.4		0.44		1.0			
16		NICKEL	222 M		289 M		164 M		48 M	239 M
18		SELENIUM	J 3.4 N		J 3.1 N		J 1.2 N		J 1.8 N	
19		SILVER	2.2		2.4		2.1			2.4
20		SODIUM								
24		ZINC	10200		7470		4800		8300	2190

SAMPLE NUMBER :	SI-GD-G13	SI-GD-G13RA	SI-GD-G14	SI-GD-G14RA	SI-GD-G15	SI-GD-G15RA
LABORATORY ID NUMBER :						
DESCRIPTION:						
DATE SAMPLED:	04/11/87	04/08/87	04/08/87	04/08/87	04/04/87	04/08/87
*** GEOCHEMICAL PARAMETERS ***						
PP CAS NO COMPOUND						
CYANIDE	0.2 R		4.7 R		0.6 R	
PHENOLICS			50		0.6	
CURSENE					87	

APPENDIX C

BOREHOLE STRATIGRAPHIC LOGS

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-19)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-1
DATE COMPLETED: MAY 17, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.1					
	SP-SAND(FILL), coal fragments, brown to black		8" BOREHOLE	1SS		12	0-5
2.5	ML-SILT(FILL), some clay, soft, brown, moist	839.1					
	CL-CLAY, some silt, gray and brown, mottled	838.1	BENTONITE GROUT	2SS		5	0-1
5.0	- some sand, firm, damp			3SS		6	0
	- hard						
	- 4" sand seam			4SS		31	0
7.5	END OF HOLE @ 8.0 FT. BGS	833.1					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-20)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-2
DATE COMPLETED: MAY 17, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.3					
	SW-SAND(FILL), some gravel, brown	841.8					
	SP-SAND(FILL), black, moist, oil/petroleum material			1SS		12	150-500
2.5	- brown and green, moist			2SS		18	10-20
	SM-SAND, trace to some silt, brown, wet	838.3	8" ø BOREHOLE				
5.0			BENTONITE GROUT	3SS		5	10-20
	CL-CLAY, some sand, some silt, gray and brown, mottled, moist to wet	836.3		4SS		2	5
7.5	- stiff, brown, mottled, moist						
				5SS		8	0
10.0	END OF HOLE @ 10.0 FT. BGS	832.3					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-46)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-2A
DATE COMPLETED: AUGUST 9, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.30					
	For stratigraphy from 0.0 to 8.0 ft BGS see BH-DS-2						
2.5							
5.0			8"ø BOREHOLE				
7.5			BENTONITE GROUT				
		834.30					
	ML/CL-SILT and CLAY, trace fine sand, olive gray, moist			1SS		4	2
10.0	- thin fine sand seams			2SS		8	5
		830.30					
12.5	END OF HOLE @ 12.0 FT. BGS						
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: DS-2B
DATE COMPLETED: NOVEMBER 29, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	.00					
	For stratigraphic details see DS-2A						
-2.5							
-5.0			BENTONITE GROUT				
-7.5							
-10.0							
-12.5							
		-14.00					
-15.0	ML-SILT, little clay, trace fine sand, gray, moist, fine sand seams 0.03" thick	-14.50	8" Ø BOREHOLE	1SS		15	12.0
	SM-SAND, little silt, trace gravel, fine grained, gray, moist						
-17.5	- fine to medium grained, solvent/hydrocarbon odor			2SS		18	20.0
	- saturated, hydrocarbon odor						
	- 3" silt seam			3SS		17	29.0
-20.0		-20.00					
	CL-CLAY, little silt, trace medium sand, trace gravel, brown, dry, solvent odor	-20.80		4SS		23	-
-22.5	SW-SAND, little silt, trace gravel, fine to medium grained, gray, saturated			5SS		30	3.0
		-24.20					
-25.0	CL-CLAY, some silt, trace gravel, red gray, moist	-24.70		6SS		22	9.0
	SW-SAND, little gravel, coarse grained, gray, moist			7SS		38	3.0
-27.5							
	END OF HOLE @ 28ft BGS	-28.00					
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-21)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-3
DATE COMPLETED: MAY 17, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.2					
	SW-SAND(FILL), some gravel, brown, dry			1SS		23	0
2.5	ML-SILT(FILL), some silt, loose, brown, moist	840.2		2SS		6	0
5.0	SW-SAND, trace to some silt, fine to medium grained, stratified, brown	838.2	8"ø BOREHOLE	3SS		13	0-3
7.5	SP-SAND, trace silt, dense, brown, damp to moist	836.2	BENTONITE GROUT	4SS		31	0-2
10.0	SM-SAND, trace to some silt, brown, moist - some silt, brown, wet	834.2		5SS		31	0-2
12.5	END OF HOLE @ 12.0 FT. BGS	830.2		6SS		17	3-5
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-22)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-4
DATE COMPLETED: MAY 17, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	839.9					
	TOPSOIL	839.6					
	SM-SAND(FILL), some silt, compact, brown, dry, red discoloration		8" ø BOREHOLE	1SS		12	200
2.5				2SS		6	2
	CL-CLAY, some silt and sand, loose, brown, damp	835.9	BENTONITE GROUT				
5.0				3SS		8	0
	SM-SAND, trace to some silt, gray	832.9		4SS		10	0
7.5	END OF HOLE @ 8.0 FT. BGS	831.9					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-47)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-4A
DATE COMPLETED: AUGUST 10, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	840.00					
	For stratigraphy from 0.0 to 6.0 ft BGS see BH-DS-4						
2.5			8"ø BOREHOLE				
5.0		834.00					
	CL-CLAY, some silt, trace fine sand, very stiff, brown, dry	833.50	BENTONITE GROUT	1SS	X	16	0
7.5	ML-SILT, little clay, trace fine sand, very stiff, tan, dry	833.00					
	SP-SAND, *medium dense, fine grained, tan, dry*			2SS	X	22	0
10.0	END OF HOLE @ 10.0 FT. BGS	830.00					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: DS-4B
DATE COMPLETED: NOVEMBER 28, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	.00					
	For stratigraphic details see DS-4A						
-12.5	SM-SAND, some silt, fine grained, brown, dry	-12.00		1SS		24	0
-15.0	- occasional silt seams, 1 to 2" thick			2SS		-	0
				3SS		33	0
-17.5				4SS		30	0
-20.0				5SS		16	0
	SM/ML-SAND and SILT, fine grained, gray, moist	-21.00					
-22.5		-22.00		6SS		20	0
	SM-SAND, some silt, trace gravel, fine grained, gray, moist	-24.00					
-25.0	SW-SAND, little gravel, little silt, fine to coarse grained, gray, moist	-24.40		7SS		22	0
	ML-SILT, little fine sand, gray, moist	-26.50					
-27.5	SW-SAND, little gravel, coarse grained, gray, saturated	-28.00		8SS		25	0
	END OF HOLE @ 28ft BGS						
-30.0							
-32.5							

BENTONITE GROUT

8" Ø BOREHOLE

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-23)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-5
DATE COMPLETED: MAY 14, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.8					
	SP-SAND(FILL), organics, brown and black	839.5		1SS		29	0
2.5	ML-SILT, some clay, gray	839.0					
	SP-SAND, brown to gray	838.6	8"ø BOREHOLE	2SS		8	0
	ML-SILT, some clay, gray	838.0					
5.0	SP-SAND, BROWN	837.8	BENTONITE GROUT	3SS		10	0
	CL-CLAY, some silt, stiff, gray, moist						
	- firm, gray and brown, mottled, damp			4SS		9	0
7.5	- stiff, brown						
	- sand seam			5SS		15	0
10.0	END OF HOLE @ 10.0 FT. BGS	831.8					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-24)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-6
DATE COMPLETED: MAY 14, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	839.8					
	SM-SAND(FILL), compact, brown, damp		8"ø BOREHOLE	1SS		16	0
2.5	SP-SAND, trace silt, loose, brown, damp	837.8	BENTONITE GROUT	2SS		9	2-3
5.0	CL-CLAY	835.5		3SS		5	0-2
	CL-CLAY, some silt, firm, gray - stiff, gray and brown, mottled, moist	835.0		4SS		11	0
7.5	END OF HOLE @ 8.0 FT. BGS	831.8					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-25)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-7
DATE COMPLETED: MAY 14, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.7					
	SW/GW-SAND and GRAVEL(FILL), dense, brown and gray, damp			1SS		85	0
		839.7					
2.5	ML-SILT(FILL), some sand, compact, brown, damp - some clay, some silt, stiff, stiff, brown, moist		8"ø BOREHOLE	2SS		21	0
5.0	- no sand			3SS		19	0
		835.7					
	CL-CLAY, some silt, trace sand, stiff, gray and brown, mottled, moist		BENTONITE GROUT	4SS		15	0-2
7.5							
				5SS		8	0-2
10.0	END OF HOLE @ 10.0 FT. BGS	831.7					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-26)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-8
DATE COMPLETED: MAY 13, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	839.1					
2.5	SM-SAND(FILL), intermixed with ML-SILT, some clay, some black organics, brown, damp		8" ø BOREHOLE	1SS		21	0-3
				2SS		9	
5.0	CL-CLAY, some silt, gray	835.1		3SS		8	0-3
7.5			BENTONITE GROUT	NR		-	
	CL-CLAY, some silt, firm, brown, moist	831.1		4SS		5	0
10.0	END OF HOLE @ 10.0 FT. BGS	829.1					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-27)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-9
DATE COMPLETED: MAY 13, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	840.8					
	TOPSOIL	840.1					
	SW/GW-SAND and GRAVEL(FILL), brown to gray	838.8		1SS		54	0
2.5	ML-SILT(FILL), some clay, stiff, brown, moist			2SS		9	0
	- 3" clay, black		8"ø BOREHOLE				
5.0	- 3" sand seam - black - brown			3SS		4	0
			BENTONITE GROUT	4SS		5	0
7.5		832.8					
	CL-CLAY, some silt, trace sand, stiff, brown, moist - occasional minor sand seam			5SS		13	0
10.0	END OF HOLE @ 10.0 FT. BGS	830.8					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-28)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-10
DATE COMPLETED: MAY 13, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	840.9					
	SP-SAND(FILL) - 4" coal powder			1SS		22	0
		838.9					
2.5	CL-CLAY, some silt, firm, brown, mottled		8" ø BOREHOLE	2SS		5	0
			BENTONITE GROUT				
5.0				3SS		5	0
	END OF HOLE @ 6.0 FT. BGS	834.9					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-29)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-11
DATE COMPLETED: MAY 12, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	839.4					
	SP-SAND(TOPSOIL), loose, red brown, dry			1SS		13	0
		837.4					
2.5	SM-SAND(FILL), some silt, trace glass, loose, brown - stiff, damp - some sand, loose		8"ø BOREHOLE	2SS		4	0
5.0				3SS		5	0/2
		833.4					
	CL-CLAY, some silt, firm, gray and brown, mottled, moist - some sand, firm		BENTONITE GROUT	4SS		4	0/2
7.5							
				5SS		6	0/2
10.0	END OF HOLE @ 10.0 FT. BGS	829.4					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-30)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-12
DATE COMPLETED: MAY 12, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	839.9					
	SM-SAND(FILL), some silt, loose, brown and damp			1SS		11	0-70
		837.9					
2.5	ML-SILT(FILL), some silt, brown, damp - moist			2SS		4	0-20
5.0				3SS		4	0-40
		833.9					
	SM-SAND interbedded with CL-CLAY, some silt, brown, damp to moist		8"ø BOREHOLE	4SS		5	0-9
7.5		831.9					
	SP-SAND, trace silt, compact, brown, dry			5SS		23	0-5
10.0			BENTONITE GROUT	6SS		23	2-7
		827.9					
12.5	SM-SAND, some silt, trace gravel, brown, damp			7SS		15	2-7
		825.9					
	SP-SAND, trace silt, brown, damp - 2" silt seam			8SS		23	0-1
15.0	- medium grained, compact, gray						
17.5				9SS		18	0
				10SS		14	0-2
20.0	END OF HOLE @ 20.0 FT. BGS	819.9					
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-31)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-13
DATE COMPLETED: MAY 13, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.2					
	TOPSOIL	840.9					
	COAL(FILL), crushed, black			1SS		14	0-2
		839.2	8"ø BOREHOLE				
2.5	CL-CLAY, some silt, firm, brown, mottled		BENTONITE GROUT	2SS		5	0
	- some clay, some sand						
5.0				3SS		4	0
	END OF HOLE @ 6.0 FT. BGS	835.2					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-32)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-14
DATE COMPLETED: MAY 11, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	838.9					
2.5	SP-SAND(FILL), trace silt, trace black organics, brown to black - loose			1SS		18	0-1
				2SS		4	0-6
5.0	CL-CLAY, some silt, brown, mottled, moist	834.9	8"ø BOREHOLE	3SS		9	0-2
	- some black organics		BENTONITE GROUT	4SS		6	0
7.5	- stiff, gray, moist			5SS		4	0
10.0	END OF HOLE @ 10.0 FT. BGS	828.9					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-48)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-15
DATE COMPLETED: AUGUST 10, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	840.20					
	ML-SILT, little gravel, stiff, brown, dry			1SS		10	0
		838.20					
2.5	SP-SAND, trace fine gravel, medium dense, fine grained with trace coarse grains, brown, damp		8"ø BOREHOLE	2SS		9	0
		836.20					
	ML-SILT, little fine sand, little clay, stiff, gray, dry	835.70					
5.0			BENTONITE GROUT	3SS		14	0
	SM-SAND, little silt, medium dense, fine grained, tan, dry	834.20					
				4SS		12	15
7.5	ML-SILT, little clay, trace fine sand, stiff, brown, dry						
				5SS		18	3
10.0	END OF HOLE @ 10.0 FT. BGS	830.20					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-49)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-16
DATE COMPLETED: AUGUST 10, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.10					
	ML-SILT(FILL), trace fine to coarse sand, trace gravel, hard, brown, dry, glass, wood, metal fragments	840.10		1SS		31	0.5
2.5	COAL and GRAVEL(FILL)	839.60					
	SP-SAND, trace gravel, loose, fine grained, greenish gray, dry	838.10		2SS		14	0
5.0	CL-CLAY, some sand, trace gravel, firm, olive gray, moist - possible coal fragments in clay, black and brown, dry		8"ø BOREHOLE BENTONITE GROUT	3SS		8	0
7.5	- little silt, trace coarse sand, dry, oxidized orange cracks			4SS		6	0
				5SS		8	0
10.0	ML-SILT, trace fine sand, stiff, light gray, dry	831.10		6SS		9	0
12.5	END OF HOLE @ 12.0 FT. BGS	829.10					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-50)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-17
DATE COMPLETED: AUGUST 11, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	839.25					
2.5	ML-SILT(FILL), little fine sand, little gravel, black, dry, rubber, roots, glass - some gravel, trace fine sand			1SS		18	0
				2SS			
5.0	- thin fine sand seams (6.0 to 8.0 ft BGS)		8"ø BOREHOLE BENTONITE GROUT	3SS		10	3
7.5				4SS		6	3
	ML-SILT, some clay, fine grained sand stringers, tan, moist	831.25		5SS		10	2
10.0				6SS		8	0
12.5	END OF HOLE @ 12.0 FT. BGS	827.25					
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-51)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-18
DATE COMPLETED: AUGUST 11, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	841.10					
	SM-SAND, some silt, medium dense, fine grained, dark brown, dry - two 2" coal layers	839.60		1SS		20	0
2.5	ML-SILT, trace gravel, medium dense, tan, dry	839.10		2SS		6	0
	SM-SAND, some silt, loose, fine grained, brown, dry		8"ø BOREHOLE				
5.0	- medium to coarse grained sand seams with coarse gravel (4.0 to 6.0 ft BGS)			3SS		8	0
	ML-SILT, some fine sand, trace gravel, stiff, olive gray, moist	835.10	BENTONITE GROUT	4SS		11	0
7.5	- fine sand seams present - some clay, trace fine sand, no gravel			5SS		12	0
10.0	SP-SAND, little silt, very dense, fine grained, tan, dry	831.10		6SS		58	0
		829.10					
12.5	END OF HOLE @ 12.0 FT. BGS						
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-52)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DS-19
DATE COMPLETED: AUGUST 11, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.00					
	SW/GW-SAND and GRAVEL(FILL), medium dense, tan, dry	840.00	8"ø BOREHOLE	1SS		11	0
	COAL	839.60					
2.5	ML-SILT, some fine sand, stiff, brown, moist	839.00	BENTONITE GROUT	2SS		9	0
	SM-SAND, some silt, trace gravel, loose, orange brown, dry	837.00					
5.0	END OF HOLE @ 4.0 FT. BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-65)
Page 1 of 1

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: DS-20
DATE COMPLETED: NOVEMBER 29, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	.00					
	ML-SILT (FILL), some fine sand, trace gravel, trace clay, dark brown, dry, plant roots, coal pieces, metal fragments		BENTONITE GROUT	1SS		16	0
-2.5	SM-SAND, some silt, fine grained, yellow orange, dry	-2.50	8" Ø BOREHOLE	2SS		15	0
-5.0				3SS		12	0
	END OF HOLE @ 6ft BGS	-6.00					
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-16)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-CT-1
DATE COMPLETED: MAY 20, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.1					
	SW/GW-SAND and GRAVEL(FILL), little clay, brown			1SS		6	4
	- little silt, no clay, black, oily						
2.5				2SS		2	10.5
	SC-SAND, some clay, gray, moist	840.1	8"ø BOREHOLE				
5.0		838.1	BENTONITE GROUT	3SS		3	5
	CL-CLAY, little silt, gray, saturated			4SS		7	0
7.5							
	- sand seams			5SS		8	3
10.0	END OF HOLE @ 10.0 FT. BGS	833.1					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-17)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-CT-2
DATE COMPLETED: MAY 20, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.6					
	SM-SAND(FILL), some silt, little gravel, brown	842.1					
	SW/GW-SAND and GRAVEL(FILL), gray	840.8					
2.5	CL-CLAY, some silt, little sand, gray		8"ø BOREHOLE	1SS		13	9
				2SS		14	3
5.0	- gray and tan, mottled, moist		BENTONITE GROUT	3SS		6	1
7.5				4SS		7	10
	- sand seams			5SS		8	0
10.0	END OF HOLE @ 10.0 FT. BGS	832.6					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-41)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-CT-2A
DATE COMPLETED: AUGUST 9, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.20					
	For statigraphy from 0.0 to 8.0 ft BGS see BH-CT-2		8" ø BOREHOLE; BENTONITE GROUT				
2.5							
5.0							
7.5		835.20					
	CL-CLAY, some silt, olive gray, moist	834.70		1SS			0
10.0	SC-SAND, fine grained, some clay, olive gray, moist	833.20					
	CL-CLAY, little silt, olive gray, very moist	832.70		2SS		11	2
12.5	SM-SAND, some silt, trace fine gravel, fine grained, brown, moist	831.20					
	END OF HOLE @ 12.0 FT. BGS						
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-18)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-CT-3
DATE COMPLETED: MAY 20, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.1					
	SP-SAND(FILL), vegetation, tan	841.8		1SS		10	22
	SW/GW-SAND and GRAVEL(FILL), little clay, slag, gray and black, odor						
2.5				2SS		7	7
5.0				3SS		6	5
	CL-CLAY, some silt, gray and tan	836.3	8"ø BOREHOLE	4SS		17	0
7.5							
	SP-SAND, little gravel, fine grained, tan	833.6	BENTONITE GROUT	5SS		15	12
10.0							
	ML-SILT(TILL), sand seams, little gravel, gray, moist	831.6		6SS		18	30
12.5				7SS		19	10
	SP-SAND, tan, moist	828.6					
15.0	ML-SILT, some clay, trace gravel, gray and tan	827.3		8SS		14	30
17.5				9SS		17	0.5
	END OF HOLE @ 18.0 FT. BGS	824.1					
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-33)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-1
DATE COMPLETED: MAY 18, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.6					
2.5	SW/GW-SAND and GRAVEL(FILL), dense, brown and gray, dry - some black asphaltic material			1SS		50	0-70
				2SS		2	0-12
5.0	CL-CLAY, some silt, soft, gray, moist, petroleum odor - sand and gravel seam, oily material - trace sand and gravel, stiff	838.6		3SS		3	50-150
7.5			8" ø BOREHOLE	4SS		8	50-150
	SM-SAND, some silt, gray, dry, petroleum odor	833.8		5SS		10	30-100
10.0	ML-SILT, some clay, gray, moist, petroleum odor	832.6 832.1	BENTONITE GROUT	6SS		19	100-170
12.5	SM-SAND, some silt, compact, medium grained, gray, damp, petroleum odor - minor black staining - moist, oil staining			7SS		16	200-250
15.0				(8SS)		20	200
17.5	ML-SILT, some clay, stiff, brown, moist	825.4 824.8		9SS		12	50-100
	SP-SAND, compact, brown, moist, petroleum odor - dense, wet	823.9 823.3		10SS		31	30-50
20.0	ML-SILT(TILL), some clay, brown, slight petroleum odor			(11SS)		31	0-40
22.5	SP-SAND, brown, moist - some gravel, dense, brown, damp	820.6					
	END OF HOLE @ 22.0 FT. BGS						
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-34)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-2
DATE COMPLETED: MAY 15, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.3					
2.5	SW/GW-SAND and GRAVEL(FILL), compact, brown, dry			1SS		23	2-9
				2SS		6	5-14
5.0	SP-SAND(FILL), trace gravel, loose, brown, dry	838.3		3SS		2	0-20
	- no gravel			4SS		2	2-14
7.5	- trace gravel, wet		8"ø BOREHOLE	5SS		2	0-2
10.0				6SS		WH	15
	CL-CLAY, some silt, soft, gray to black, moist, petroleum odor	831.5	BENTONITE GROUT				
12.5	SP-SAND, loose, gray to black, wet, petroluem odor	830.3 829.5		7SS		6	10-110
	ML-SILT, some clay, soft, gray, petroluem odor	827.5					
15.0	SP-SAND, loose, brown, wet, petroleum odor	826.8		8SS		12	40-150
	ML-SILT(TILL), some clay, stiff, brown with red and green discoloration, petroleum odor	826.3 826.0					
17.5	SP-SAND, gray, wet, petroluem odor	825.1		9SS		26	30-70
	ML-SILT(TILL), some clay, stiff, brown, petroleum odor			10SS		34	50-100
20.0	SW-SAND, some gravel, compact, brown, moist, petroleum odor						
	- trace to some gravel, brown, moist to wet, slight petroleum odor			11SS		42	20
22.5	- some gravel, dense, gray and brown, damp	820.3					
	END OF HOLE @ 22.0 FT. BGS						
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-35)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-3
DATE COMPLETED: MAY 19, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.6					
	SP-SAND(FILL), loose, brown, dry – gray, black petroleum staining, petroleum odor	839.6		1SS		8	0-20
2.5	CL-CLAY, some silt, some sand, firm, gray, moist, petroleum odor		8"ø BOREHOLE	2SS		4	50-100
5.0	– no sand, slight petroleum odor			3SS		5	20-30
7.5	– some sand, no odor		BENTONITE GROUT	4SS		5	15-20
10.0	END OF HOLE @ 10.0 FT. BGS	831.6		5SS		12	5-11
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-53)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-3A
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.85					
	For stratigraphy from 0.0 to 8.0 ft BGS see BH-US-3						
2.5							
5.0			8"ø BOREHOLE				
7.5							
	ML-SILT, little clay, stiff, olive gray, dry, hydrocarbon odor	833.85		1SS		9	95
10.0	- sand stringers, mottled brown with gray		BENTONITE GROUT	2SS		13	50
12.5							
	SP-SAND, trace gravel, medium dense, fine grained with trace coarse grains, medium dense, tan, moist, hydocarbon odor	829.35		3SS		17	1
	SM-SAND, some silt, trace clay, trace gravel, medium dense, gray, very moist, hydrocarbon odor	827.85		4SS		21	70
15.0	- shean (16.0 to 18.0 ft BGS)			5SS		13	40
17.5							
	SP-SAND, little silt, trace gravel, medium dense, medium grained, gray, wet, hydrocarbon odor	823.85		6SS		15	60
20.0							
	ML-SILT, little clay, trace fine sand, trace gravel, very stiff, olive gray, dry	821.05		7SS		16	60
22.5	- brown with green mottling			8SS		13	60
	SP-SAND, little silt, trace gravel, trace clay, dense, medium grained, gray, moist	817.85		9SS		47	4
25.0	END OF HOLE @ 26.0 FT. BGS	815.85					
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-36)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-4
DATE COMPLETED: MAY 19, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.8					
	SW/GW-SAND and GRAVEL(FILL), loose, brown, dry	840.6		1SS		20	17-80
2.5	CL-CLAY, some silt, gray and black, petroleum odor and staining - some sand, soft, gray, moist, petroleum odor	837.8		2SS		5	30-120
5.0	CL-CLAY, some silt, firm, gray, moist, petroleum odor - gray brown		8"ø BOREHOLE	3SS		7	20-70
7.5	- occasional minor sand lense			4SS		5	15-30
10.0	- some sand, some clay, brown, damp		BENTONITE GROUT	5SS		8	50-150
12.5	END OF HOLE @ 12.0 FT. BGS	829.8		6SS		10	7-15
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-37)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-5
DATE COMPLETED: MAY 19, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	844.0					
2.5	SW-SAND(FILL), some gravel, loose, brown, dry			1SS	X	7	0
		840.0					
5.0	CL-CLAY, some silt, some sand, soft, brown, moist, slight petroleum odor - no sand, stiff		8" ø BOREHOLE	2SS	X	2	0-20
7.5				3SS	X	11	30
		835.5	BENTONITE GROUT				
10.0	SP-SAND, compact, gray to black, petroleum odor and staining			4SS	X	17	150
		833.3					
12.5	ML-SILT(TILL), some clay, gray and brown, petroleum odor - strong petroleum odor - some sand, brown, no odor			(5SS)	X	17	250
		830.7		6SS	X	22	250
15.0	SW/GW-SAND and GRAVEL, brown, dry, no odor - compact			(7SS)	X	15	15-50
		828.0					
17.5	END OF HOLE @ 16.0 FT. BGS						
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-38)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-6
DATE COMPLETED: MAY 19, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: R. PASQUALONI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.7					
	SW-SAND(FILL), some gravel, loose, brown to black, damp			1SS		9	0-2
		841.7					
2.5	ML-SILT, some clay, some sand, firm, brown, damp			2SS		6	0-2
		839.7					
5.0	SW-SAND, some gravel, brown, damp, petroleum odor	838.5	8"ø BOREHOLE	3SS		5	25-50
	CL-CLAY, some silt, soft, brown to black, moist, black oily material, strong petroleum odor						
7.5	- stiff, brown, petroleum odor			4SS		8	50-200
		835.4					
	SP-SAND, black, moist, petroleum odor			5SS		15	20-220
		834.0					
10.0	CL-CLAY, some silt, stiff, brown, moist, petroleum odor		BENTONITE GROUT				
	- some sand, trace gravel, hard, brown, damp			6SS		20	20-120
12.5	- stiff, slight petroleum odor						
		830.9		7SS		22	50-170
	SP-SAND, trace silt, compact, medium grained, brown, damp, slight petroleum odor	829.7					
15.0	SM-SAND, some silt, some gravel, compact, brown and damp			8SS		12	5-7
		827.7					
	END OF HOLE @ 16.0 FT. BGS						
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-54)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-7
DATE COMPLETED: AUGUST 9, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE N VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.40					
	SM-SAND(FILL), some silt, fine grained, brown, moist, no odor	842.40		1SS		9	0
	SP-SAND(FILL), trace fine gravel, brown, moist	841.40					
2.5	CL-CLAY, some fine sand, little coarse sand, trace fine gravel, brown with orange oxidized patches, moist			2SS		5	0
	- 1" thick sand and gravel seam, very moist		5"ø BOREHOLE				
5.0	ML/CL-SILT and CLAY, trace gravel, brown, moist	838.40		3SS		9	0
	- light gray		BENTONITE GROUT				
7.5	SP-SAND, fine grained, laminated bedding with horizion of mafic minerals, light brown, dry	836.40		4SS		22	12
		834.10		5SS		18	0
10.0	CL-CLAY, some silt, trace gravel, brown, moist	833.40					
	SP-SAND, fine grained, tan, dry	833.00		6SS		20	0.5
	CL/ML-CLAY and SILT, trace fine gravel, olive gray, dry	831.40					
12.5	END OF HOLE @ 12.0 FT. BGS						
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-55)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-US-8
DATE COMPLETED: AUGUST 16, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.00					
	ML-SILT, some clay, trace fine sand, trace gravel, stiff, brown, damp			1SS		10	0
2.5	SM-SAND, some silt, little clay, coarse sand seams, trace gravel, medium dense, black, moist, hydrocarbon odor	840.00	8"ø BOREHOLE	2SS		11	110
5.0	ML-SILT, some clay, trace fine sand, firm, olive gray to blue gray, moist, hydrocarbon odor	838.00		3SS		6	55
7.5	CL-CLAY, some silt, firm, mottled brown and gray, hydrocarbon odor - fine sand seams (8.0 to 10.0 ft BGS)	836.00	BENTONITE GROUT	4SS		4	17
10.0	END OF HOLE @ 10.0 FT. BGS	832.00		5SS		10	110
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-11)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-1
DATE COMPLETED: MAY 24, 1993
DRILLING METHOD: 3 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	842.4					
2.5	SW/GW-SAND and GRAVEL(FILL), trace clay, slag		7"ø BOREHOLE; BENTONITE GROUT	1SS			0
	SM-SAND, some silt, brown and tan, moist	839.4		2SS			
	SP-SAND, tan, wet	838.6					
5.0	CL-CLAY, some silt, tan and gray, saturated	837.4		3SS			
	END OF HOLE @ 6.0 FT. BGS	836.4					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-12)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-2
DATE COMPLETED: MAY 24, 1993
DRILLING METHOD: 3 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	841.0					
	SW/GW-SAND and GRAVEL(FILL), some clay, soft, black		7"ø BOREHOLE; BENTONITE GROUT	1SS			0
2.5	CL-CLAY, some silt, brown and gray, moist	838.8		2SS			0
5.0	SW/GW-SAND and GRAVEL, little clay, brown	836.7		3SS			0
	CL-CLAY, some silt, little gravel, brown	835.8					
	END OF HOLE @ 6.0 FT. BGS	835.0					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-42)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-2A
DATE COMPLETED: AUGUST 16, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	840.70					
2.5	For stratigraphy from 0.0 to 4.0 ft BGS see BH-DD-2		8"ø BOREHOLE				
5.0	SM/ML-SAND and SILT, little clay, trace gravel, brown, moist - medium to coarse sand seams present	836.70		1SS			0
7.5	SM-SAND, some silt, trace gravel, silt seams, fine grained, brown, moist	834.70	BENTONITE GROUT	2SS			0
10.0	END OF HOLE @ 8.0 FT. BGS	832.70					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-13)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-3
DATE COMPLETED: MAY 25, 1993
DRILLING METHOD: 3 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	838.9					
2.5	ML-SILT(FILL), some clay, little sand, trace gravel, brick fragments, black		7"ø BOREHOLE	1SS			0
	CL-CLAY, some silt, black - trace sand, trace gravel, brown and tan	835.9	BENTONITE GROUT	2SS			0
5.0				3SS			
7.5				4SS			0
	END OF HOLE @ 8.0 FT. BGS	830.9					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-14)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-4
DATE COMPLETED: MAY 25, 1993
DRILLING METHOD: 3 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	836.3					
	SM-SAND(FILL), some silt, trace clay, trace gravel, black			1SS			183
		834.3	7"ø BOREHOLE				
2.5	CL-CLAY, some silt, little sand, gray			2SS			563
			BENTONITE GROUT				
5.0				3SS			0
7.5				4SS			
	END OF HOLE @ 8.0 FT. BGS	828.3					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-43)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-4A
DATE COMPLETED: AUGUST 15, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	836.20					
	For stratigraphy from 0.0 to 10.0 ft BGS see BH-DD-4						
10.0	CL-CLAY, little silt, gray, very moist	826.20					
	SM-SAND, some silt, little gravel, fine to medium grained, brown, moist	825.70		1SS			0
12.5				2SS			0
	END OF HOLE @ 14.0 FT. BGS	822.20					
15.0							

2.5
5.0
7.5
17.5
20.0
22.5
25.0
27.5
30.0
32.5

8" ø BOREHOLE
BENTONITE GROUT

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-15)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-5
DATE COMPLETED: MAY 26, 1993
DRILLING METHOD: 3 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	838.0					
	SM-SAND(FILL), some silt, little clay, trace gravel, organics, coal fragments, red brick fragments, black			1SS			0
2.5	SP-SAND, trace clay, black	836.0		2SS			0
	ML-SILT, some clay, gray, wet	834.0	7" BOREHOLE				
5.0	CL-CLAY, little silt, gray, wet	833.0	BENTONITE GROUT	3SS			0
7.5				4SS			0
				5SS			
10.0	END OF HOLE @ 10.0 FT. BGS	828.0					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-44)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-6
DATE COMPLETED: AUGUST 16, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.20					
	ML-SILT(FILL), some coal, trace gravel, stiff, dark brown, moist		8"ø BOREHOLE	1SS	X	10	0
2.5	SM-SAND, some silt, trace gravel, medium dense, fine grained, brown, moist	841.20	BENTONITE GROUT	2SS	X	10	0
5.0	END OF HOLE @ 4.0 FT. BGS	839.20					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (◯) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-45)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-DD-7
DATE COMPLETED: AUGUST 25, 1994
DRILLING METHOD: HAND AUGER
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	837.01					
	ML-SILT(FILL), some fine sand, trace gravel, black, moist	836.51		1SS			0
	SM-SAND, some silt, little clay, trace gravel, fine grained, orange, moist	835.01					
2.5	CL-CLAY, little silt, mottled yellow orange and gray, moist	834.51 834.01		2SS			0
	SM-SAND, fine to medium grained, yellow orange, moist	833.01	5"ø BOREHOLE	3SS			0
5.0	ML-SILT, little clay, trace fine to medium sand, black, moist, wood fragments	831.01	BENTONITE GROUT	4SS			0
7.5	SM-SAND, some silt, little clay, fine to medium grained, salt and pepper color, moist	829.51		5SS			0
	SC-SAND, some clay, fine grained, greenish gray, moist	827.51					
10.0	SP-SAND, little silt, fine grained, brown, wet	827.01 826.71		6SS			0
	SC-SAND, some clay, fine grained, greenish gray, wet	825.51					
12.5	CL-CLAY, little fine sand, greenish gray, very moist						
	SC-SAND, some clay, fine grained, greenish gray, wet						
15.0	END OF HOLE @ 11.5 FT. BGS						
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-39)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-BG-1
DATE COMPLETED: AUGUST 15, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.50					
2.5	ML-SILT(FILL), little fine sand, gravel sized coal fragments, stiff, dark brown, moist,			1SS		9	0
	– little fine sand with trace coarse sand, trace gravel, brown, no coal fragments	841.50					
	SM-SAND, some silt, loose, fine grained, brown, moist	841.10	8" ø BOREHOLE	2SS		6	0
5.0	ML-SILT, some clay, trace sand, firm, brown, moist	838.50		3SS		4	0
	SM-SAND, some silt, little clay, loose, brown, very moist			4SS		13	0
7.5			BENTONITE GROUT				
				5SS		22	0
10.0	END OF HOLE @ 10.0 FT. BGS	833.50					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-40)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: BH-BG-2
DATE COMPLETED: AUGUST 16, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	843.70					
2.5	ML-SILT(FILL), little gravel, trace fine sand, very stiff, black, moist, 4" coal layer - some fine sand with trace coarse sand, trace gravel, very stiff, dark brown, dry - some clay, little fine sand, trace gravel, stiff, brown, moist - thin fine sand seams (4.0 to 6.0 ft BGS) moist		8"ø BOREHOLE	1SS		20	0
5.0				2SS		11	0
		837.70		3SS		4	0.5
7.5	SM-SAND, some silt, medium dense, fine to medium grained, brown, moist		BENTONITE GROUT	4SS		14	0
10.0	END OF HOLE @ 10.0 FT. BGS	833.70		5SS		24	0
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

APPENDIX D

SOIL PHYSICAL TESTING

4869

Rec'd CRA

JUL 20 1993

Materials Testing Consultants, INC.

693 PLYMOUTH N.E., GRAND RAPIDS, MI 49505 • PH. (616) 456-5469 • FAX (616) 456-6784

12 July 1993
Job No. T0327

Mateco Drilling Company
693 Plymouth, N.E.
Grand Rapids, Michigan 49505

Attention: Mr. Dale Eiliott

Reference: Laboratory Soils Tests,
Barrels Site (MDC Job No. 3704-93)

Dear Mr. Elliott:

Materials Testing Consultants, Inc. has completed the particle size analysis and permeability tests on the four shelby tube samples submitted on 29 June 1993. The particle size analysis was conducted using ASTM Test Methods D 421 and D 422. The permeability tests were conducted using the falling head method. Please find the enclosed grain size distribution test reports. The permeability test results were as follow:

Sample ID	Moisture Content As Received (%)	Dry Unit Weight (PCF)	Permeability (CM/SEC)
MW-2	21.2	106.4	1.0×10^{-8}
MW-7	21.3	103.4	1.3×10^{-8}
MW-8	9.9	108.0	5.8×10^{-5}
MW-9	18.7	115.0	$5.7\text{-}10^{-8}$

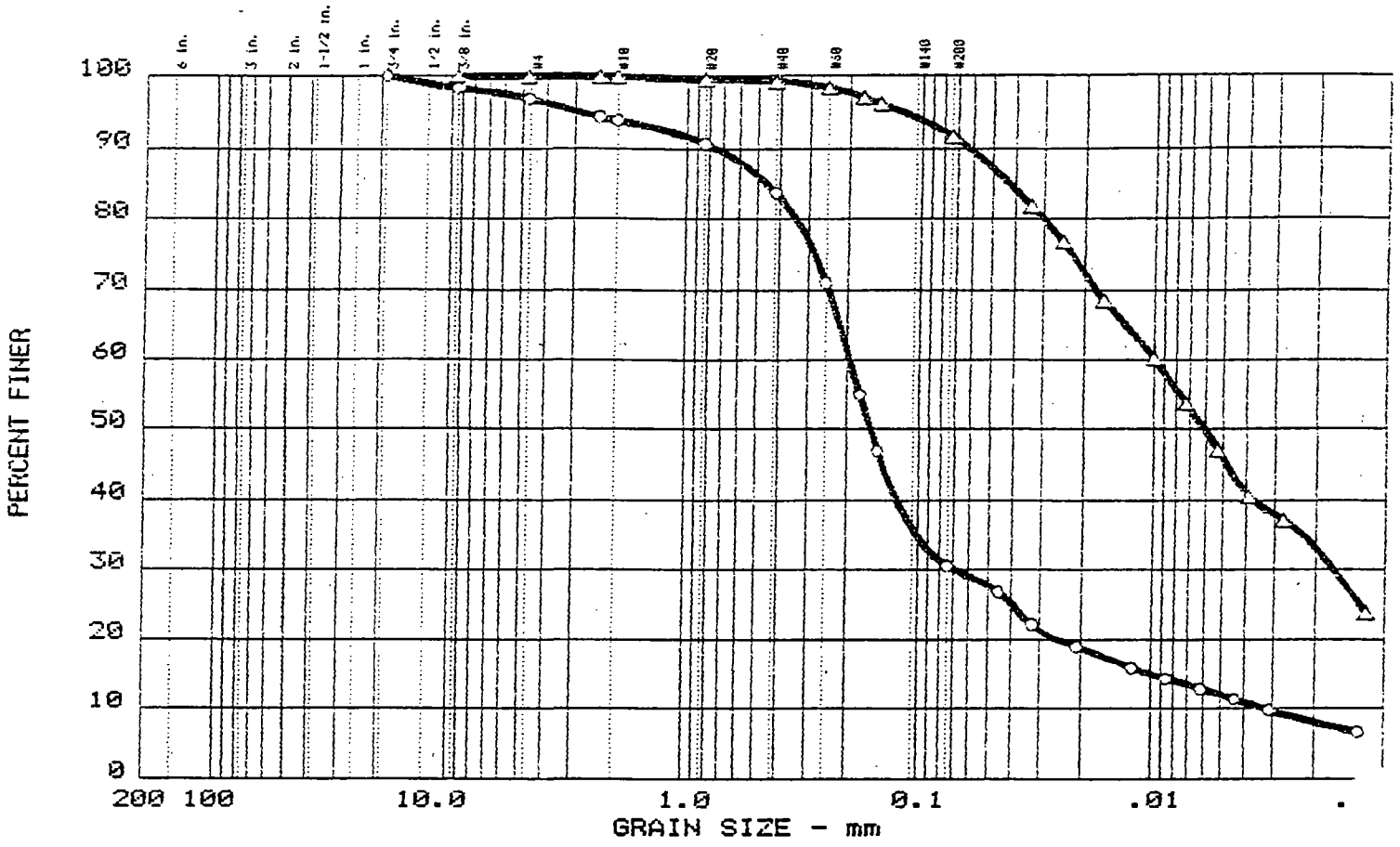
The remaining shelby tube samples will be held at Materials Testing Consultants, Inc. for a period of one month. If you have any questions or if we can be of further service, please call.

Sincerely,

MATERIALS TESTING CONSULTANTS, INC.

Peter T. Johnson, C.E.T.
Laboratory Manager

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	3.2	66.3	18.6	11.9
△	0.0	0.1	8.3	46.0	45.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.45	0.20	0.16	0.069	0.0101	0.0033	7.44	60.0
△					0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
○ F. to C. SAND, little silt, little clay, tr. grvl	SM	
△ SILT and CLAY, trace sand	CL	

Project No.: T0327
Project: Barrels Site
○ Location: MW-8
△ Location: MW-9

Date: 7-9-93

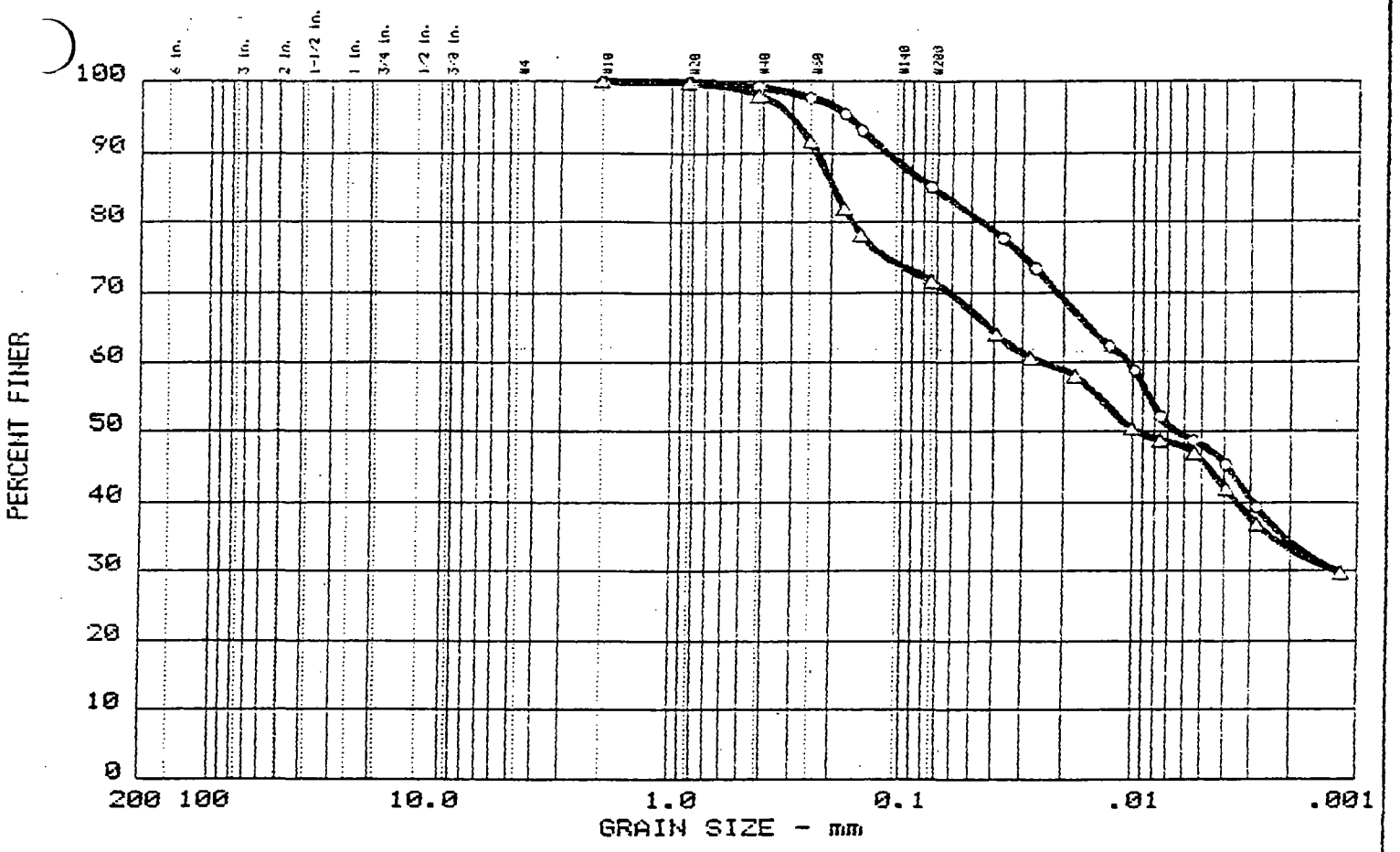
Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

MATERIALS TESTING CONSULTANTS

Fig. No.

GRAIN SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	15.0	36.9	48.1
△	0.0	0.0	28.3	25.7	46.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○					0.01	0.001				
△			0.20		0.01	0.001				

MATERIAL DESCRIPTION	USCS	AASHTO
○ CLAY and SILT, little sand	CL	
△ CLAY, some sand, some silt	CL	

Project No.: T0327
Project: Barrels Site
○ Location: MW-2
△ Location: MW-7

D[illegible]: 7-9-93

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT

MATERIALS TESTING CONSULTANTS

Fig. No.

APPENDIX E

MONITORING WELL COMPLETION DETAILS

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-01)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW2-36

DATE COMPLETED: JUNE 9, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: B. HOLBROOK

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	REFERENCE POINT (Top of Riser)	844.99
	GROUND SURFACE	842.4
	SC-SAND(FILL), little clay, trace gravel, tan - gray	
2.5	ML-SILT, some clay, trace sand, gray	840.4
	CL-CLAY, little sand, trace organics, dark brown	838.8
5.0	CL-CLAY some silt, gray and brown with greenish streaks	837.9
7.5		
	SP-SAND, fine grained, tan	833.4
10.0	- trace pyrite fragments, white and brown	
	- trace gravel, medium grained, brown, wet	
12.5		
15.0		
	CL-CLAY some silt, trace sand, gray, wet	826.6
17.5		
	SP-SAND, little clay, brown, wet - trace gravel, fine grained, brown, moist	824.4
20.0	SW-SAND, little gravel, trace clay, medium to coarse grained, brown	822.4
22.5		
	CL-CLAY, trace silt, trace gravel, gray	819.0
	SW/GW-SAND and GRAVEL	818.7
25.0		
	CL-CLAY, trace gravel, gray	816.8
	SP-SAND, trace clay, trace gravel, coarse grained, brown	816.4
27.5	- no gravel or clay, fine grained, wet	814.4
	CL-CLAY, little sand, gray, wet	814.4
	SW/GW-SAND and GRAVEL, gray	813.3
30.0	CL-CLAY some silt, gray	812.9
	SW/GW-SAND and GRAVEL, some pebbles, saturated	811.9
32.5		

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		25	
2SS		15	
3ST			
4SS		7	
5SS		16	
6SS		18	
7SS		15	
8SS		12	
9SS		14	
10SS		50	
11SS		16	
12SS		35	
13SS		15	
14SS		11	
15SS		16	
16SS		22	
17SS		34	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-01)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW2-36

DATE COMPLETED: JUNE 9, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: B. HOLBROOK

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0			8"ø BOREHOLE	17SS		34	
37.5			WELL SCREEN	18SS		11	
			SAND PACK				
	END OF HOLE @ 39.0 FT. BGS	803.4					
40.0			SCREEN DETAILS: Screened Interval: 26.0 to 36.0' BGS Length -10.0' Diameter -2.0" Slot # 10 Material -Stainless Steel Sand pack interval: 24.0 to 39.0' BGS Material -Natural				
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-02)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW3-33

DATE COMPLETED: JUNE 16, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: B. HOLBROOK

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	839.69					
	GROUND SURFACE	840.1					
	Asphalt	839.8	ROAD BOX				
	SP-SAND(FILL), little gravel, brown and black, mottled		CONCRETE SEAL	1SS		6	
2.5	- trace silt, organics, no gravel			2SS		6	
5.0	CL-CLAY, some sand, trace silt, brown	835.0		3SS		8	
	SP-SAND, fine grained, brown with traces of black	834.5		4SS		14	
7.5	CL-CLAY, some silt, sand seams, brown	832.8		5SS		20	
	SP-SAND, trace clay, trace gravel, fine grained, brown	832.1	BENTONITE GROUT	6SS		27	
10.0				7SS		18	
	- trace silt, no clay or gravel			8SS		14	
12.5				9SS		13	
15.0			2"ø BLACK IRON PIPE	10SS		18	
17.5				11SS		24	
20.0			BENTONITE PELLET SEAL	12SS		18	
22.5			8"ø BOREHOLE	13SS		19	
25.0			SAND PACK	14SS		14	
	SW-SAND, medium to coarse grained, brown, moist	814.3		15SS		14	
27.5	SW/GW-SAND and GRAVEL, saturated	812.4		16SS		21	
30.0		812.1	WELL SCREEN	17SS		16	
32.5							
	END OF HOLE @ 34.0 FT. BGS	806.1					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (oval) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-02)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW3-33
(Page 2 of 2)
DATE COMPLETED: JUNE 16, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: B. HOLBROOK

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0			SCREEN DETAILS: Screened Interval: 23.0 to 33.0' BGS Length -10.0' Diameter -2.0" Slot # 10 Material -Stainless Steel Sand pack interval: 21.0 to 34.0' BGS Material -Natural				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-03)

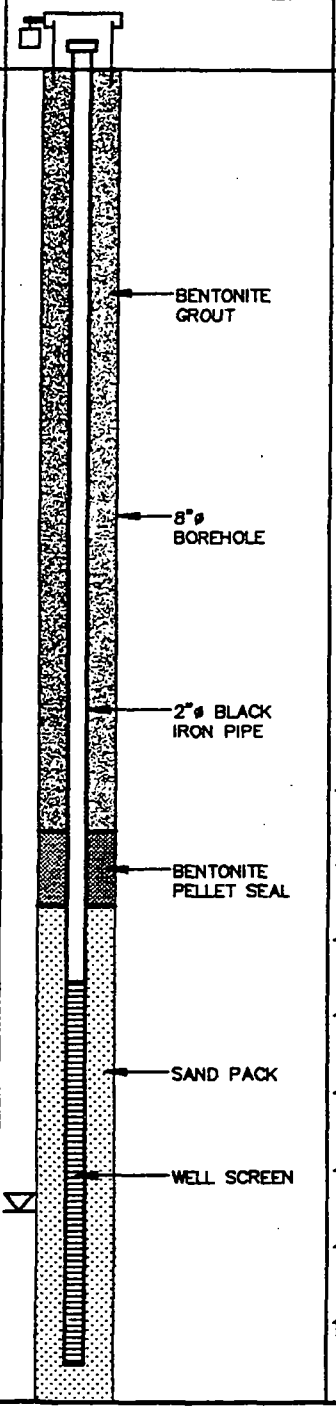
PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW4-34

DATE COMPLETED: JUNE 3, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	REFERENCE POINT (Top of Riser)	844.14
	GROUND SURFACE	841.8
	SP-SAND(FILL), little gravel, tan	840.8
	SM-SAND(FILL), some silt, little gravel, organics, brown	839.8
2.5	ML-SILT some clay, little sand, trace gravel, gray, green and black	838.8
5.0	CL-CLAY some silt, trace gravel, very soft, gray, green and brown, mosttled, moist - little sand, organics, light gray and brown, mottled	835.8
7.5	ML-SILT some sand, little clay, trace gravel, grayish brown	835.1
	CL-CLAY, some silt, trace gravel, sand seams, brownish tan	
10.0	SP-SAND, fine grained, tan	832.1
	CL-CLAY some silt, trace gravel, brown	831.5
	SP-SAND, fine grained, tan	831.0
12.5		
	CL-CLAY some silt, trace gravel, tan	828.8
	ML-SILT some clay, trace gravel, trace sand, gray	827.8
15.0	SP-SAND, trace clay, brownish tan, moist	827.1 826.6 826.3
	CL-CLAY some silt, trace gravel, gray	826.0 825.8
17.5	SP-SAND, tan	
	ML-SILT some clay, trace gravel, brownish gray	823.9 823.6
	SP-SAND, gray, damp	822.5
20.0	CL-CLAY some silt, trace gravel, gray	821.6
	SP-SAND, grayish tan, wet	
	CL-CLAY some silt, gray, moist	
22.5	SW-SAND, trace gravel, fine to coarse grained, gray and tan	
25.0		
27.5		
	SW/GW-SAND and GRAVEL, trace clay, brown and gray - saturated	812.8 811.8
30.0		
32.5		

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		10	
2SS		WH	
3SS		9	
4SS		11	
5SS		12	
6SS		17	
7SS		12	
8SS		12	
9SS		14	
10SS		10	
11SS		31	
12SS		21	
13SS		16	
14SS		19	
15SS		18	
16SS		17	
17SS		20	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-03)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW4-34

DATE COMPLETED: JUNE 3, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0	CL-CLAY some silt, trace gravel, gray (34.0 to 34.2 ft BGS)		SAND PACK; 8"ø BOREHOLE	18SS		24	
	END OF HOLE @ 36.0 FT. BGS	805.8					
37.5			SCREEN DETAILS: Screened Interval: 24.0 to 34.0' BGS Length -10.0' Diameter -2.0" Slot # 10 Material -Stainless Steel Sand pack interval: 22.0 to 36.0' BGS Material -Natural				
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-04)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW5-34

DATE COMPLETED: JUNE 3, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	842.87					
	GROUND SURFACE	840.6					
	CL-CLAY(FILL), some silt, little gravel, glass fragments, black		CONCRETE SEAL	1SS		26	
2.5	– trace gravel, trace sand, light gray			2SS		14	
5.0	– no gravel, green gray			3SS		5	
7.5	– gray and tan			4SS		6	
				5SS		7	
10.0	– copper wire fragment		BENTONITE GROUT	6SS		49	
12.5	SP-SAND, trace gravel, tan	828.3		7SS		21	
	CL-CLAY some silt, trace gravel, brown	826.4	2"ø BLACK IRON PIPE				
15.0	SP-SAND, tan	825.6 825.3		8SS		17	
	CL-CLAY some silt, brown	825.0 824.5					
	SP-SAND, tan	824.3	8"ø BOREHOLE	9SS		23	
17.5	CL-CLAY some silt, brown	823.2					
	SP-SAND, tan	822.1		10SS		26	
	CL-CLAY some silt, trace gravel, gray						
20.0	SW/GW-SAND and GRAVEL, light gray		BENTONITE PELLET SEAL	11SS		15	
22.5				12SS		15	
25.0			SAND PACK	13SS		9	
	CL-CLAY some silt, little sand, gray, damp	815.1 814.6					
	SW/GW-SAND and GRAVEL, light gray	813.3		14SS		20	
27.5	CL-CLAY some silt, some gravel, gray	813.2					
	SM-SAND some silt, gray, moist	812.6 812.6	WELL SCREEN	15SS		18	
	SW/GW-SAND and GRAVEL, light gray, damp						
30.0	CL-CLAY layer, some silt (28.7 to 29.6 ft BGS) – saturated			16SS		14	
32.5				17SS		12	
	END OF HOLE @ 34.0 FT. BGS	806.6					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-04)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW5-34

DATE COMPLETED: JUNE 3, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0			SCREEN DETAILS: Screened Interval: 24.0 to 34.0' BGS Length -10.0' Diameter -2.0" Slot # 10 Material -Stainless Steel Sand pack interval: 22.0 to 34.0' BGS Material -Natural				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-05)

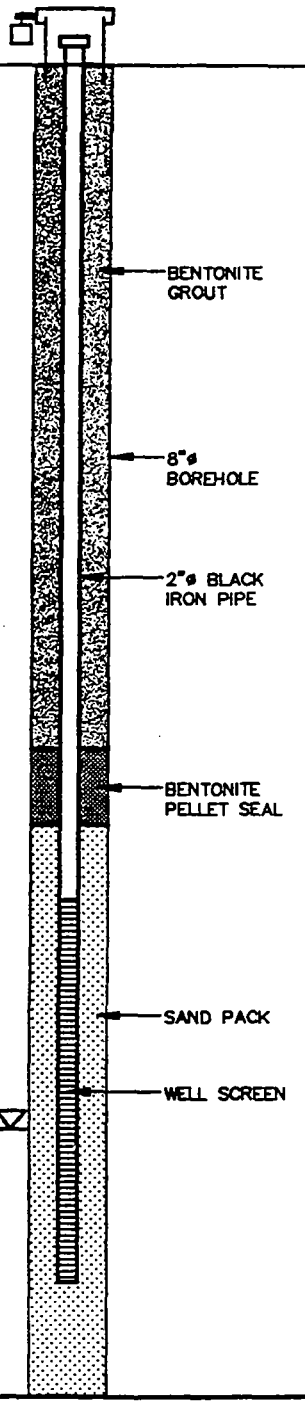
PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW6-32

DATE COMPLETED: MAY 27, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	REFERENCE POINT (Top of Riser)	843.30
	GROUND SURFACE	841.1
	SM-SAND some silt, little gravel and slag, brown	
2.5	CL-CLAY, little silt, little sand, grayish brown	838.6 / 838.1
	SP-SAND, tan gray, moist	837.1
5.0	CL-CLAY, trace silt, tan - black - brown - copper scrap (7.0 to 8.0 ft BGS)	
7.5	CL-CLAY some silt, gray	833.1
10.0	SP-SAND, tan, dry	830.8
12.5		
	ML-SILT some clay, gray, damp	827.1
15.0	SP-SAND, tan, dry	826.1
17.5	ML-SILT, gray, dry	824.6
20.0		
	SW/GW-SAND and GRAVEL, red sandstone fragments, brown	820.1
22.5	- trace clay, trace silt, gray	
25.0		
27.5	- little clay, little silt, saturated	813.1 ▽
30.0		
32.5		

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		>50	0
2SS		23	0
3SS		11	0
4SS		9	0
5SS		9	0
6SS		21	3
7SS		20	3
8SS		11	0
9SS		21	7
10SS		16	3
11SS		25	0
12SS		22	0
13SS		23	0.5
14SS		30	0
15SS		13	4
16SS		12	0
17SS		25	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

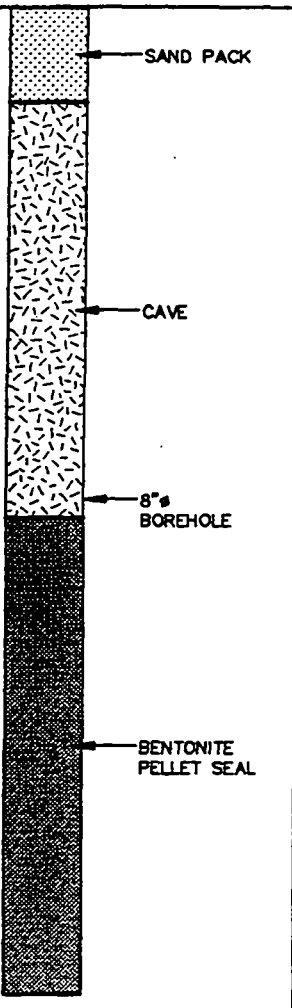
(L-05)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW6-32
(Page 2 of 2)
DATE COMPLETED: MAY 27, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
35.0	– cobble sized gravel	
37.5	– 1" to 3" interbedded gray silt layers	
40.0		
42.5		
45.0		
47.5		
50.0	ML–SILT some clay, trace gravel, gray	792.1
	SP–SAND, little gravel, gray – red sandstone fragments	791.6
	CL–CLAY(TILL), some silt, little gravel, gray	791.2
52.5	– tan sandstone fragments	
55.0	– coal and shale fragments	
57.5	SP–SAND and WEATHERED SANDSTONE	784.6
	CL–CLAY(TILL), some silt, trace gravel, gray	783.1
	SANDSTONE, gray	782.8
60.0	END OF HOLE @ 58.5 FT. BGS	782.6
62.5		
65.0		

MONITOR INSTALLATION



SCREEN DETAILS:
Screened Interval:
22.0 to 32.0' BGS
Length –10.0'
Diameter –2.0"
Slot # 10
Material –Stainless Steel
Sand pack interval:
20.0 to 35.0' BGS
Material –Natural

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
18SS		19	0
19SS		15	0
20SS		28	0
21SS		24	0
22SS		19	0
23SS		19	0
24SS		20	0
25SS		16	0
26SS		124	0
27SS		43	0
28SS		>50	0
29SS		>50	
30SS			

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

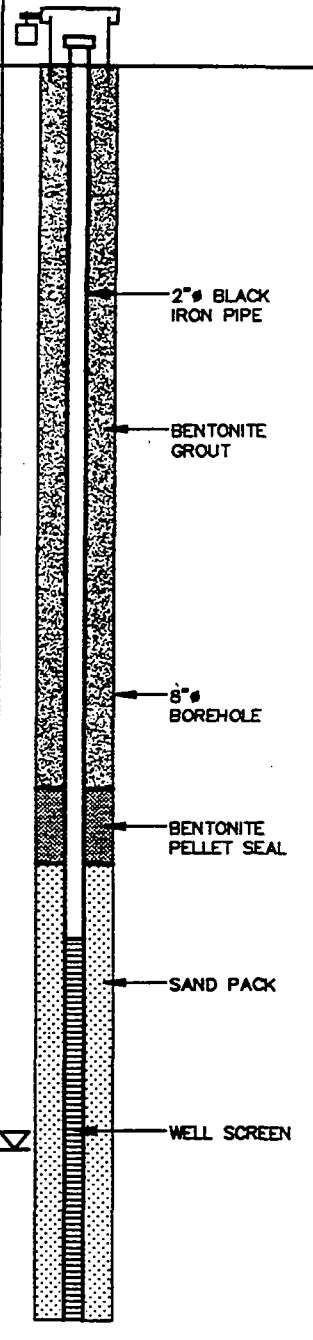
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-06)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW7-33
DATE COMPLETED: JUNE 8, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	843.57 841.3					
	For stratigraphy see MW7-48						
2.5							
5.0				1ST			
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							
	END OF HOLE @ 33.0 FT. BGS	808.3					



SCREEN DETAILS:
Screened Interval:
23.0 to 33.0' BGS
Length -10.0'
Diameter -2.0"
Slot # 10
Material -Stainless Steel
Sand pack interval:
21.0 to 33.0' BGS
Material -Natural

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

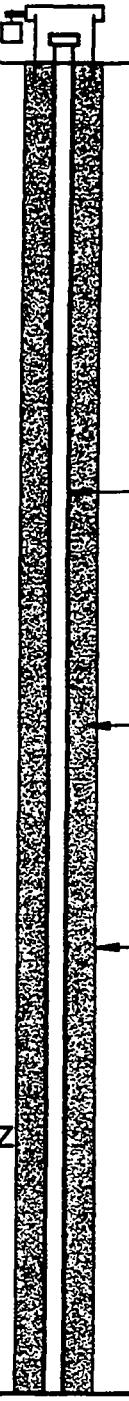
(L-07)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW7-48 (Page 1 of 2)
DATE COMPLETED: JUNE 4, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	REFERENCE POINT (Top of Riser)	843.80
	GROUND SURFACE	841.4
	SW/GW-SAND and GRAVEL(FILL), tan	841.2
	COAL(FILL), black	
2.5	SM-SAND, some silt, tan	838.8
	CL-CLAY, some silt, trace sand	838.1
5.0		
	SP-SAND, trace clay, tan	835.4
	CL-CLAY, some silt, tan	835.2
7.5	SP-SAND, trace clay, tan	834.1
	SM-SAND, some silt, trace clay, tan	833.7
	SP-SAND, fine grained, tan	833.4
10.0		
	CL-CLAY, some silt, trace sand, tan	829.7
12.5	SP-SAND, trace silt, brown	829.0
	- trace gravel, medium grained	
15.0		
	SW/GW-SAND and GRAVEL, trace clay, medium grained, brown	826.0
17.5		
	SM/ML-SAND and SILT, fine grained, light gray	822.4
20.0		
	SP-SAND, medium grained, tan	820.0
22.5	ML-SILT, trace clay, gray	819.4
25.0		
	SM/ML-SAND and SILT, trace clay, gray, damp	816.2
	SP-SAND, trace gravel, gray, damp	815.4
27.5		
	SW/GW-SAND and GRAVEL, trace clay, saturated	813.4
30.0		812.9
32.5	- little pebbles, no clay	

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		24	
2SS		7	
3SS		8	
4SS		14	
5SS		27	
6SS		21	
7SS		15	
8SS		18	
9SS		20	
10SS		51	
11SS		26	
12SS		30	
13SS		14	
14SS		10	
15SS		11	
16SS		10	
17SS		9	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-07)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW7-48
(Page 2 of 2)
DATE COMPLETED: JUNE 4, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0			BENTONITE GROUT	18SS		16	
37.5			8"ø BOREHOLE	19SS		14	
40.0			2"ø BLACK IRON PIPE	20SS		15	
42.5			BENTONITE PELLET SEAL	21SS		25	
45.0			SAND PACK	22SS		15	
47.5			WELL SCREEN	23SS		12	
50.0	ML-SILT, trace sand and gravel, moist	792.4		24SS		18	
	CL-CLAY(TILL), trace silt, trace gravel, moist	791.9		25SS		27	
	END OF HOLE @ 50.0 FT. BGS	791.4					
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

SCREEN DETAILS:
Screened Interval:
45.5 to 48.0' BGS
Length -2.5'
Diameter -2.0"
Slot # 10
Material -Stainless Steel used below water table, black riser used above.
Sand pack interval:
43.5 to 50.0' BGS
Material -Natural

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

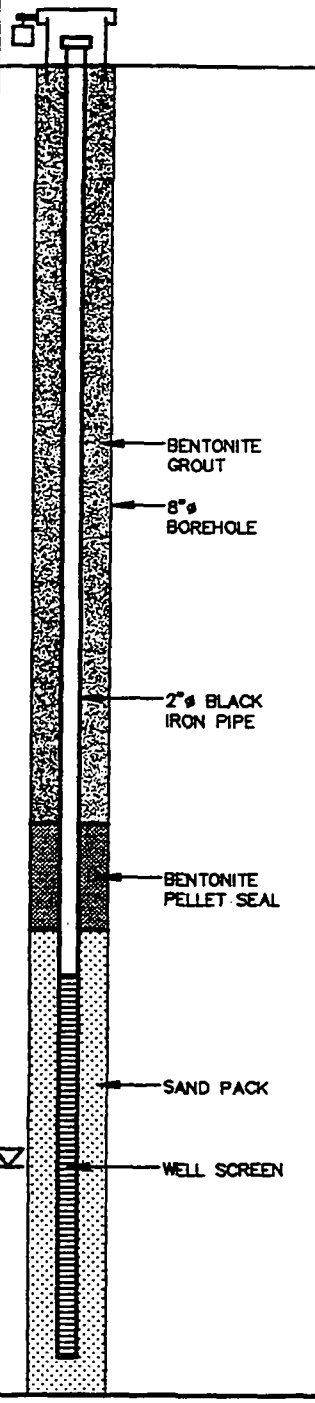
(L-08)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW8-34
(Page 1 of 3)
DATE COMPLETED: JUNE 2, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	REFERENCE POINT (Top of Riser)	844.14
	GROUND SURFACE	842.1
	SW/GW-SAND and GRAVEL, little silt, tan	
	SM-SAND, little silt, trace clay, trace gravel, dark brown	841.3
2.5	SP-SAND, trace silt, trace clay, tan, moist	840.6
5.0		
7.5	CL-CLAY, some silt, trace sand, trace gravel, brown, moist	834.7
10.0		
12.5		
15.0		
	SW/GW-SAND and GRAVEL, tan	826.1
17.5		
20.0		
22.5		
25.0	GW-GRAVEL, little sand, gray	817.6
	ML-SILT, some silt, trace gravel, gray, moist	816.6
27.5		
	GW-GRAVEL, some sand, trace clay, gray, saturated	813.6
30.0	SW/GW-SAND and GRAVEL, trace clay, gray	812.1
32.5		

MONITOR INSTALLATION



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		9	
2SS		6	
3SS		8	
4SS		16	
5SS		20	
6SS		16	
7SS		10	
8SS		15	
9SS		31	
10SS		23	
11SS		23	
12SS		18	
13SS		16	
14SS		6	
15SS		30	
16SS		17	
17SS		18	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-08)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW8-34

DATE COMPLETED: JUNE 2, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0			SAND PACK	18SS		15	
37.5	– coarser gravel			19SS		9	
40.0				20SS		8	
42.5				21SS		7	
45.0			CAVE	22SS		7	
47.5			8"ø BOREHOLE	23SS		15	
50.0				24SS		12	
52.5				25SS		23	
55.0	CL–CLAY(TILL), some silt, little gravel, gray	787.6		26SS		10	
57.5	SC–SAND, little clay, gray (57.0 to 57.5 ft BGS)			27SS		15	
60.0			BENTONITE PELLET SEAL	28SS		15	
62.5				29SS		35	
65.0	WEATHERED BEDROCK, light gray sandstone fragments, sand, interbedded glacial till	779.1		30SS		36	
	END OF HOLE @ 64.0 FT. BGS	778.1		31SS		42	
				32SS		43	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-08)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW8-34 (Page 3 of 3)
DATE COMPLETED: JUNE 2, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
67.5			SCREEN DETAILS: Screened Interval: 24.0 to 34.0' BGS Length -10.0' Diameter -2.0' Slot # 10 Material -Stainless Steel Sand pack interval: 22.8 to 35.0' BGS Material -Natural				
70.0							
72.5							
75.0							
77.5							
80.0							
82.5							
85.0							
87.5							
90.0							
92.5							
95.0							
97.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

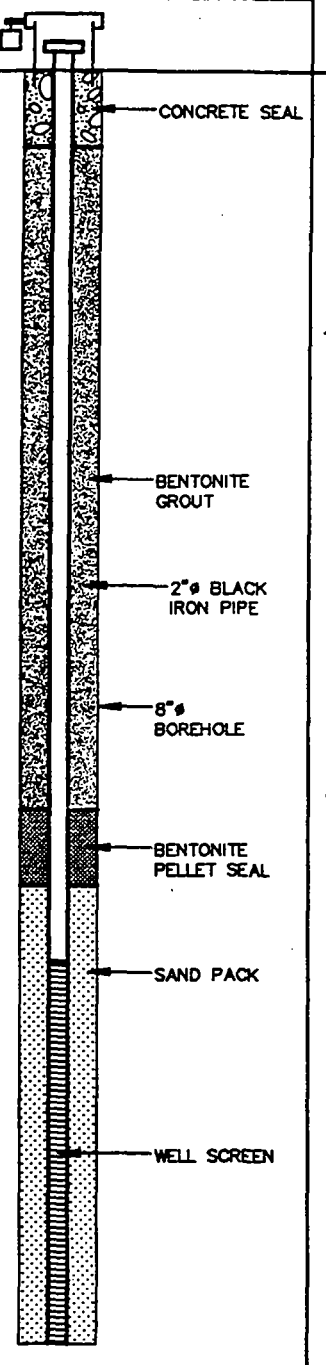
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-09)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW9-33
DATE COMPLETED: JUNE 15, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: T. BENKO

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	841.62					
	GROUND SURFACE	842.1					
	For stratigraphy see MW9-45						
2.5							
5.0							
7.5				1ST			
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							
	END OF HOLE @ 33.5 FT. BGS	808.6					



SCREEN DETAILS:
Screened Interval:
23.5 to 33.5' BGS
Length -10.0'
Diameter -2.0"
Slot # 10
Material -Stainless Steel
Sand pack interval:
21.5 to 33.5' BGS
Material -Natural

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-10)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW9-45

DATE COMPLETED: JUNE 14, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: B. HOLBROOK

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser)	841.71					
	GROUND SURFACE	842.0					
	Concrete	841.2	ROAD BOX				
	SW/GW-SAND and GRAVEL(FILL), some shales, trace clay, black	840.2	CONCRETE SEAL	1SS		9	
2.5	CL-CLAY, some sand, brown and black, mottled	840.0		2SS		12	
	SW/GW-SAND and GRAVEL, little pebbles, black, wet	838.2					
5.0	CL-CLAY, some silt, trace gravel, brown	838.0		3SS		3	
	CL-CLAY, some sand, little silt, brown, moist	836.7					
7.5	CL-CLAY, trace sand, trace silt, brown and gray, mottled	836.0		4SS		9	
	CL-CLAY, some silt, light brown			5SS		16	
10.0	SM-SAND, some silt, brown	832.4					
	SP-SAND, trace silt, fine grained, brown	832.2					
	CL-CLAY, some silt, brown and black, mottled	832.0		6SS		19	
12.5	SP-SAND, trace silt, trace gravel, fine grained, brown	831.0	8"ø BOREHOLE	7SS		29	
15.0				8SS		19	
	ML-SILT, some clay, trace sand, brown	826.3					
	SP-SAND, trace clay, brown, wet	826.0		9SS		24	
17.5			2"ø BLACK IRON PIPE				
	CL-CLAY, some silt, little sand, trace gravel, brown	824.0		10SS		14	
20.0	- gray						
	SW-SAND, trace gravel, trace silt, medium to coarse grained, gray	821.1		11SS		29	
22.5				12SS		29	
25.0	GW-GRAVEL, some sand, little pebbles, brown	817.2	BENTONITE GROUT	13SS		46	
	ML-SILT, some clay, trace gravel, saturated	815.0		14SS		22	
27.5		814.0	▽				
	SP-SAND, trace gravel, coarse grained, saturated	814.0					
	ML-SILT, some clay, gray	813.0		15SS		22	
30.0	SW-SAND, trace gravel, medium to coarse grained	812.8					
	SM-SAND, some silt, trace clay, gray, saturated	811.2		16SS		13	
32.5				17SS		16	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(L-10)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW9-45

DATE COMPLETED: JUNE 14, 1993
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: B. HOLBROOK

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0	CL-CLAY, some silt, trace gravel, gray	808.5	BENTONITE GROUT				
	SP-SAND, trace gravel, trace clay, brown, saturated	808.3		18SS		9	
	COBBLES, some gravel, some sand, little clay, saturated	806.0	2"ø BLACK IRON PIPE				
37.5	SP/GP-SAND and GRAVEL, coarse, saturated	805.0		19SS		29	
			BENTONITE PELLET SEAL				
40.0				20SS		29	
			8"ø BOREHOLE				
42.5				21SS		27	
			SAND PACK				
				22SS		38	
45.0			WELL SCREEN				
				23SS		37	
	CL-CLAY(TILL), some silt, trace gravel	796.2					
47.5				24SS		88	
	END OF HOLE @ 47.5 FT. BGS	794.5					
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

SCREEN DETAILS:
Screened Interval:
42.5 to 45.0' BGS
Length -2.5'
Diameter -2.0"
Slot # 10
Material -Stainless Steel used below water table, black riser used above.
Sand pack interval:
39.5 to 47.5' BGS
Material -Natural

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-56)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW10-34

DATE COMPLETED: AUGUST 18, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	CONCRETE SLAB		CONCRETE SEAL				
2.5	ML-SILT, some clay, trace medium sand, firm, mottled gray and brown, moist - medium sand seams present	-2.0					
5.0	SM-SAND, some silt, some clay, firm, fine grained with medium sand seams, brown, moist	-4.0	2"ø CARBON STEEL CASING				
7.5	SP-SAND, little silt, trace gravel, fine to medium grained, brown, dry - clay seams (8.0 to 10.0ft BGS)	-7.0					
10.0							
12.5	- clay layer, some silt, little gravel, trace fine to coarse sand, medium dense, brown, moist (11.0 to 14.5 ft BGS)		CEMENT/ BENTONITE GROUT				
15.0	CL-CLAY, little silt, trace fine sand, trace gravel, stiff, blue gray, moist	-14.5					
17.5			8"ø BOREHOLE				
20.0							
	SP-SAND, little silt, medium dense, fine to medium grained, brown, moist	-20.5 -21.1	BENTONITE CHIPS				
22.5	SM-SAND, some silt, trace gravel, medium dense, fine grained, brown, moist	-22.0	FINE SAND PACK				
	SW-SAND, little gravel, very dense, coarse grained, brown, moist						
25.0							
	ML-SILT, trace fine sand, very stiff, brown, dry,	-26.0					
27.5	- gray - medium grained sand seams (28.0 to 30.0 ft BGS)		COARSE SAND PACK				
30.0							
	SW-SAND, some gravel, dense, fine to coarse grained, brown, wet	-30.5	WELL SCREEN				
32.5							
	END OF HOLE @ 34.0 FT. BGS	-34.0					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-56)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW10-34 (Page 2 of 2)
DATE COMPLETED: AUGUST 18, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0	NOTES: 1. Stratigraphy taken from MW10-51.		SCREEN DETAILS: Screened Interval: 24.0 to 34.0' BGS Length -10.0' Diameter -2.0" Slot # 10 Material -Stainless Steel Sand pack interval: 22.0 to 34.0' BGS Material -# 5 Fine Sand / # 7 Coarse Sand				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-57)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW10-51 (Page 1 of 2)
DATE COMPLETED: AUGUST 17, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	CONCRETE SLAB		ROAD BOX; CONCRETE SEAL				
2.5	ML-SILT, some clay, trace medium sand, firm, mottled gray and brown, moist - medium sand seams present	-2.0		1SS		8	0
5.0	SM-SAND, some silt, some clay, firm, fine grained with medium sand seams, brown, moist	-4.0		2SS		7	0
7.5	SP-SAND, little silt, trace gravel, fine to medium grained, brown, dry - clay seams (8.0 to 10.0ft BGS)	-7.0		3SS		15	0
				4SS		17	0
10.0	- clay layer, some silt, little gravel, trace fine to coarse sand, medium dense, brown, moist, (11.0 to 14.5 ft BGS)			5SS		18	0
12.5			2"ø CARBON STEEL CASING	6SS		20	0
15.0	CL-CLAY, little silt, trace fine sand, trace gravel, stiff, blue gray, moist	-14.5		7SS		9	0
17.5				8SS		25	0
			CEMENT/ BENTONITE GROUT	9SS		27	0
20.0							
	SP-SAND, little silt, medium dense, fine to medium grained, brown, moist	-20.5 -21.1		10SS		15	0
22.5	SM-SAND, some silt, trace gravel, medium dense, fine grained, brown, moist	-22.0		11SS		57	0
	SW-SAND, little gravel, very dense, coarse grained, brown, moist No recovery			12SS		55	-
25.0		-26.0					
	ML-SILT, trace fine sand, very stiff, brown, dry		2"ø STAINLESS STEEL CASING (BELOW 26.0 FT BGS)	13SS		22	0
27.5	- gray						
	- medium grained sand seams (28.0 to 30.0 ft BGS)			14SS		15	0
30.0		-30.5	▽				
	SW-SAND, some gravel, dense, fine to coarse grained, brown, wet	-30.5	8"ø BOREHOLE	15SS		19	0
32.5				16SS		20	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-57)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW10-51

DATE COMPLETED: AUGUST 17, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0	– gravel seam (34.5 to 34.8 ft BGS)		CEMENT/ BENTONITE GROUT	17SS		40	0
	SW/GW–SAND and GRAVEL, very dense, coarse sand, brown, wet, lithic fragments	-36.0	8"ø BOREHOLE	18SS		71	0
37.5	SW–SAND, some gravel, very dense, medium to coarse grained, brown, wet	-38.0	2"ø STAINLESS STEEL CASING	19SS		51	0
40.0	No recovery			20SS		>50	0
42.5			BENTONITE CHIPS	21SS		74	0
	No recovery		FINE SAND PACK				
45.0				22SS		55	–
47.5	– little gravel, medium dense, medium grained, gray, wet		COARSE SAND PACK	23SS		47	0
			WELL SCREEN	24SS		17	0
50.0	SW/GW–SAND and GRAVEL, medium dense, gray, wet	-50.5		25SS		19	0
52.5	END OF HOLE @ 52.0 FT. BGS	-52.0					
55.0							
57.5							
60.0							
62.5							
65.0							

SCREEN DETAILS:
Screened Interval:
46.0 to 51.0' BGS
Length –5.0'
Diameter –2.0"
Slot # 10
Material –Stainless Steel
Sand pack interval:
43.5 to 52.0' BGS
Material –# 5 Fine Sand / # 7 Coarse Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

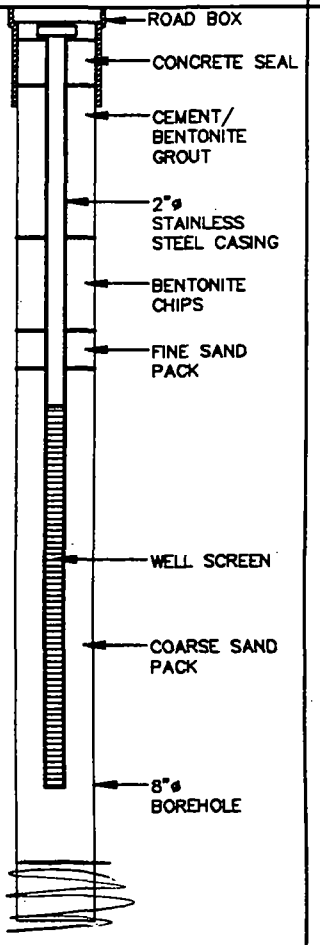
(L-58)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW11-21
DATE COMPLETED: AUGUST 24, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	SW-SAND(FILL), little gravel, little silt, medium dense, fine to medium grained, brown, moist, hydrocarbon odor	-1.2
2.5	SM-SAND, some silt, trace gravel, medium dense, fine grained, gray, moist	-3.0
	ML-SILT, some fine sand, trace gravel, stiff, olive gray, moist, hydrocarbon odor	-4.5
5.0	CL-CLAY, some silt, firm, mottled brown and olive gray, moist, hydrocarbon odor	
7.5	SW-SAND, trace gravel, medium dense, fine to coarse grained, tan, dry, hydrocarbon odor	-7.5
10.0		
12.5		
		-14.0
15.0	ML-SILT, trace gravel, trace fine sand, stiff, oilve brown, moist, slight hydrocarbon odor	
	SM-SAND, some silt, trace gravel, medium dense, fine grained, gray, wet, sheen, hydro-carbon odor	-16.0
17.5		
		-19.5
20.0	SP-SAND, little gravel, little silt, medium dense, fine to medium grained, dense, brown, moist	-20.4
	ML-SILT, some fine sand, trace gravel, stiff, gray, moist, hydrocarbon odor	
22.5		
		-24.0
25.0	SP-SAND, little silt, medium dense, fine to medium grained, gray, dry	
	END OF HOLE @ ~~24.0~~ 23.0 FT. BGS	
	~~NOTES:~~	
	~~1. Stratigraphy taken from MW11-54~~	
27.5		
30.0		
32.5		

MONITOR INSTALLATION



SCREEN DETAILS:
Screened Interval:
10.5 to 20.5' BGS
Length -10.0'
Diameter -2.0"
Slot # 10
Material -Stainless Steel
Sand pack interval:
8.5 to 21.0' BGS
Material -# 5 Fine Sand / # 7 Coarse Sand

3

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

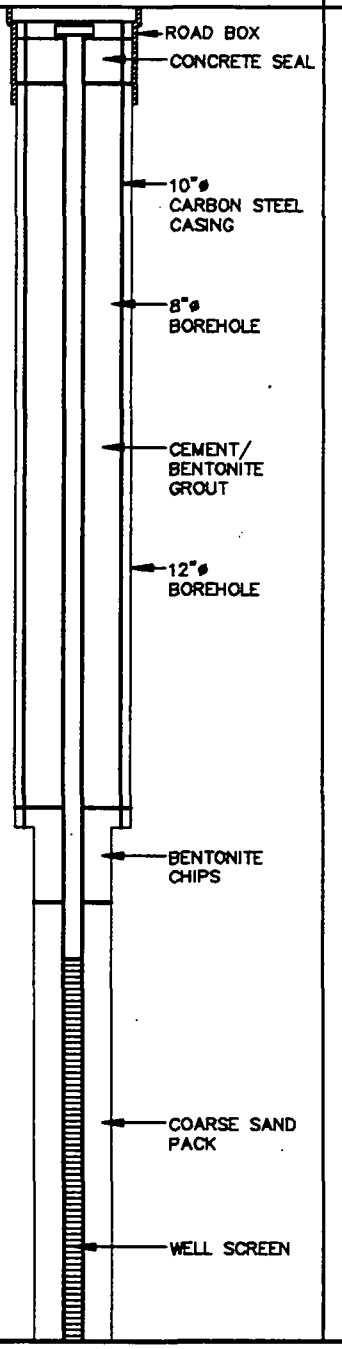
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-59)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW11-35 (Page 1 of 2)
DATE COMPLETED: AUGUST 30, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	SW-SAND(FILL), little gravel, little silt, medium dense, fine to medium grained, brown, moist, hydrocarbon odor	-1.2
2.5	SM-SAND, some silt, trace gravel, medium dense, fine grained, gray, moist	-3.0
	ML-SILT, some fine sand, trace gravel, stiff olive gray, moist, hydrocarbon odor	-4.5
5.0	CL-CLAY, some silt, firm, mottled brown and olive gray, moist, hydrocarbon odor	
7.5	SW-SAND, trace gravel, medium dense, fine to coarse grained, tan, dry, hydrocarbon odor	-7.5
10.0		
12.5		
	ML-SILT, trace gravel, trace fine sand, stiff, oilve brown, moist, slight hydrocarbon odor	-14.0
15.0		
	SM-SAND, some silt, trace gravel, medium dense, fine grained, gray, wet, sheen, hydrocarbon odor	-16.0
17.5		
	SP-SAND, little gravel, little silt, medium dense, fine to medium grained, dense, brown, moist	-19.5 -20.4
20.0	ML-SILT, some fine sand, trace gravel, stiff gray, moist, hydrocarbon odor	
22.5		
	SP-SAND, little silt, medium dense, fine to medium grained, gray, dry - ocassional silt seam	-24.0
25.0	SW-SAND, little gravel, very dense, fine to coarse grained, gray, wet, no noticable hydrocarbon odor	-26.0
27.5	SM-SAND, some silt, trace gravel, dense, fin grained, gray, wet, sheen, hydrocarbon odor	-28.0
30.0	SW/GW-SAND and GRAVEL, extremely dense, medium to coarse sand, fine well rounded gravel, gray, wet	-30.0
32.5		



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

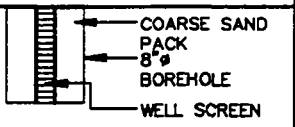
CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-59)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW11-35 (Page 2 of 2)
DATE COMPLETED: AUGUST 30, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0	END OF HOLE @ 35.0 FT. BGS NOTES: 1. Stratigraphy taken from MW11-54.	-35.0	 SCREEN DETAILS: Screened Interval: 25.0 to 35.0m BGS Length -10.0m Diameter -2.0mm Slot # 10 Material -Stainless Steel Sand pack interval: 23.5 to 35.0m BGS Material -# 5Fine Sand / # 7 Coarse Sand				
37.5							
40.0							
42.5							
45.0							
47.5							
50.0							
52.5							
55.0							
57.5							
60.0							
62.5							
65.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-60)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW11-54

DATE COMPLETED: AUGUST 30, 1994
DRILLING METHOD: 8 1/4" ID HSA / 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	SW-SAND(FILL), little gravel, little silt, medium dense, fine to medium grained, brown, moist, hydrocarbon odor	-1.2	ROAD BOX; CONCRETE SEAL	1SS	X	17	60
2.5	SM-SAND, some silt, trace gravel, medium dense, fine grained, gray, moist	-3.0		2SS	X	5	40
	ML-SILT, some fine sand, trace gravel, stiff, olive gray, moist, hydrocarbon odor	-4.5					
5.0	CL-CLAY, some silt, firm, mottled brown and olive gray, moist, hydrocarbon odor			(3SS)	X	8	40
7.5	SW-SAND, trace gravel, medium dense, fine to coarse grained, tan, dry, hydrocarbon odor	-7.5	10"ø CARBON STEEL CASING	4SS	X	13	70
				5SS	X	21	30
10.0				6SS	X	14	40
12.5			CEMENT/ BENTONITE GROUT	7SS	X	16	12
	ML-SILT, trace gravel, trace fine sand, stiff, oilve brown, moist, slight hydrocarbon odor	-14.0	12"ø BOREHOLE	8SS	X	23	4
15.0	SM-SAND, some silt, trace gravel, medium dense, fine grained, gray, wet, sheen, hydro-carbon odor	-16.0	2"ø CARBON STEEL CASING	9SS	X	15	90
17.5				(10SS)	X	23	90
	SP-SAND, little gravel, little silt, medium dense, fine to medium grained, brown, moist	-19.5	2"ø STAINLESS STEEL CASING (BELOW 19.0 FT BGS)				
20.0	ML-SILT, some fine sand, trace gravel, stiff gray, moist, hydrocarbon odor	-20.4		(11SS)	X	14	70
22.5	No recovery			12SS	/	>50	70
	SP-SAND, little silt, medium dense, fine to medium grained, gray, dry - ocassional silt seam	-24.0		(13SS)	X	17	45
25.0	SW-SAND, little gravel, very dense, fine to coarse grained, gray, wet, no noticable hydro-carbon odor	-26.0	8"ø BOREHOLE	14SS	X	63	0
27.5	SM-SAND, some silt, trace gravel, dense, fine grained, gray, wet, sheen, hydrocarbon odor	-28.0	CEMENT/ BENTONITE GROUT	15SS	X	33	50
30.0	SW/GW-SAND and GRAVEL, extremely dense, medium to coarse sand, fine well rounded gravel, gray, wet	-30.0		16SS	X	85	90
32.5				(17SS)	X	36	25

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS (○) WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-60)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW11-54 (Page 2 of 2)
DATE COMPLETED: AUGUST 30, 1994
DRILLING METHOD: 8 1/4" ID HSA / 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
35.0			2"ø STAINLESS STEEL CASING	18SS		21	60
37.5	No recovery		CEMENT/ BENTONITE GROUT	19SS		8	20
				20SS		12	–
40.0			8"ø BOREHOLE	21SS		12	10
42.5	No recovery – clay seams			22SS		14	–
45.0			BENTONITE CHIPS	23SS		12	1.
	– trace silt, *medium dense*, fine to coarse gravel		FINE SAND PACK	24SS		16	2
47.5			COARSE SAND PACK	25SS		23	2
50.0							
	SM–SAND, some silt, loose, fine grained, gray, wet	*-50.8*		26SS		8	0
52.5	SW–SAND, some fine to coarse gravel, trace silt, very dense, fine to coarse grained, gray, wet	*-52.0*	WELL SCREEN	27SS		54	0
	END OF HOLE @ 54.0 FT. BGS	*-54.0*					
55.0							
57.5							
60.0							
62.5							
65.0							

SCREEN DETAILS:
Screened Interval:
49.0 to 54.0' BGS
Length –5.0'
Diameter –2.0"
Slot # 10
Material –Stainless Steel
Sand pack interval:
46.0 to 54.0' BGS
Material –# 5 Fine Sand / # 7 Coarse Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

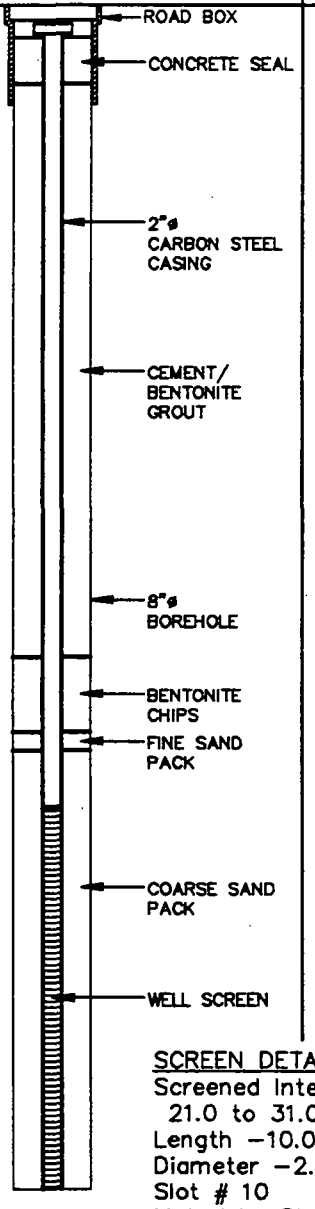
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-61)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW12-31
DATE COMPLETED: AUGUST 22, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
	ML-SILT(FILL), some gravel, trace fine sand, stiff, concrete, slag, glass	
		-1.5
2.5	ML-SILT, trace fine sand, stiff, black, dry	
		-4.0
5.0	SM-SAND, some silt, medium dense, fine grained with trace coarse grains, tan, dry	
7.5		
10.0	- silt seam	
	ML-SILT, trace fine sand, stiff, brown, dry	-10.5
	SM-SAND, some silt, medium dense, fine grained, tan, dry	-11.0
12.5		
	ML-SILT, some clay, stiff, olive gray, dry	-13.0
15.0	- trace gravel	
17.5		
	SW/GW-SAND and GRAVEL, medium dense, coarse grained sand, brown, moist	-18.0
		-18.5
20.0	SP-SAND, little silt, medium dense, fine grained, tan, moist - coarse sand seam	
22.5		
	SW-SAND, some gravel, dense, medium to coarse grained, tan, moist	-22.5
		-23.7
	ML-SILT, trace fine sand, very stiff, brown, moist	-23.9
25.0		
	SM-SAND, some silt, medium dense, fine grained, tan, moist - silt seam (25.0 to 25.4 ft BGS)	-26.0
27.5	SW-SAND, little gravel, little silt, medium dense, fine to coarse grained, gray, wet	
30.0	- some gravel, no silt, medium to coarse grained	
	END OF HOLE @ 31.0 FT. BGS	-31.0
32.5	NOTES: 1. Stratigraphy taken from MW12-45.	



SAMPLE

NUMBER	STATE	'N' VALUE	PID (ppm)

SCREEN DETAILS:
Screened Interval:
21.0 to 31.0' BGS
Length -10.0'
Diameter -2.0"
Slot # 10
Material -Stainless Steel
Sand pack interval:
19.0 to 31.0' BGS
Material -# 5 Fine Sand / # 7 Coarse Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-62)

PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW12-54

DATE COMPLETED: AUGUST 19, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	ML-SILT(FILL), some gravel, trace fine sand, stiff, concrete, slag, glass		ROAD BOX				
		-1.5	CONCRETE SEAL	1SS		14	0.5
2.5	ML-SILT, trace fine sand, stiff, black, dry			2SS		8	0
		-4.0					
5.0	SM-SAND, some silt, medium dense, fine grained with trace coarse grains, tan, dry			3SS		11	0
			CEMENT/ BENTONITE GROUT	4SS		21	0
7.5							
	- silt seam			5SS		16	0
10.0							
		-10.5					
	ML-SILT, trace fine sand, stiff, brown, dry	-11.0		6SS		14	0
	SM-SAND, some silt, medium dense, fine grained, tan, dry		2" ø CARBON STEEL CASING				
12.5				7SS		23	0
		-13.0					
	ML-SILT, some clay, stiff, olive gray, dry						
15.0				8SS		23	0
	- trace gravel						
17.5				9SS		17	0
		-18.0					
	SW/GW-SAND and GRAVEL, medium dense, coarse grained sand, brown, moist	-18.5		10SS		12	0
20.0	SP-SAND, little silt, medium dense, fine grained, tan, moist						
	- coarse sand seam		2" ø STAINLESS STEEL CASING (BELOW 20.0 FT BGS)	11SS		20	0
22.5		-22.5					
	SW-SAND, some gravel, dense, medium to coarse grained, tan, moist	-23.7		12SS		30	0
	ML-SILT, trace fine sand, very stiff, brown, moist	-23.9					
25.0		-25.0 ▽		13SS		14	0
	SM-SAND, some silt, medium dense, fine grained, tan, moist	-26.0					
	- silt seam (25.0 to 25.4 ft BGS)			14SS		15	0
27.5	SW-SAND, little gravel, little silt, medium dense, fine to coarse grained, gray, wet		8" ø BOREHOLE				
				15SS		18	0
30.0	- some gravel, no silt, medium to coarse grained						
				16SS		22	0
32.5				17SS		38	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-62)

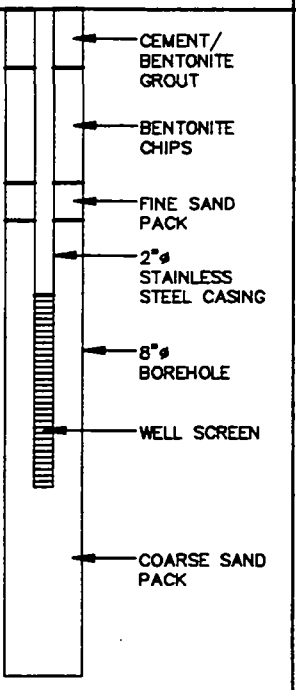
PROJECT NAME: BARRELS
PROJECT NO.: 4869
CLIENT: BARRELS INC.
LOCATION: LANSING, MICHIGAN

HOLE DESIGNATION: MW12-54

DATE COMPLETED: AUGUST 19, 1994
DRILLING METHOD: 4 1/4" ID HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL
35.0		
37.5		
40.0		
42.5		
45.0	ML-SILT, some fine sand, trace gravel, very stiff, gray, moist	-44.0
	SM-SAND, some silt, trace gravel, dense, fine grained, wet	-44.3
47.5	ML/SM-SILT and SAND, little gravel, fine grained, gray, wet	-45.0
50.0	END OF HOLE @ 50.0 FT. BGS	-50.0
52.5		
55.0		
57.5		
60.0		
62.5		
65.0		

MONITOR INSTALLATION



SCREEN DETAILS:
Screened Interval:
40.0 to 45.0' BGS
Length -5.0'
Diameter -2.0"
Slot # 10
Material -Stainless Steel
Sand pack interval:
37.0 to 38.0' BGS
Material -# 5 Fine Sand / # 7 Coarse Sand

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
18SS		19	0
19SS		12	0
20SS		21	0
21SS		11	0
22SS		27	0
23SS		47	0
24SS		61	0
25SS		>50	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ⬭ WATER FOUND ▽ STATIC WATER LEVEL ▼

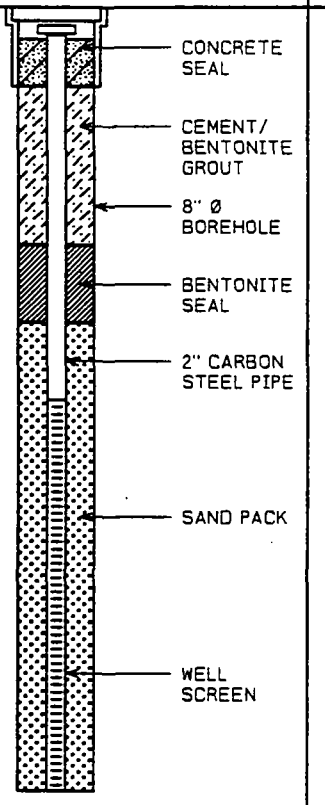
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(L-68)
Page 1 of 1

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW13-20
DATE COMPLETED: DECEMBER 7, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	REFERENCE POINT (Top of Riser) GROUND SURFACE	.00 .00					
	ML-SILT, little fine sand, trace gravel, brown, moist						
		-1.90					
2.5	SM-SAND, some silt, trace gravel, fine grained, light brown, moist	-2.50					
	CL-CLAY, some silt, trace fine sand, gray, moist						
5.0							
7.5	SM-SAND, little silt, fine grained, light brown, moist	-7.20					
10.0							
		-12.00					
12.5	ML-SILT, little fine sand and clay, trace gravel, gray, dry						
15.0							
		-16.00					
17.5	SM-SAND, some silt, fine grained, brown, saturated, no odor						
		-18.00					
	CL-CLAY, little silt, trace gravel, gray, dry	-18.20					
	SM-SAND, little silt, fine grained, brown, saturated	-19.00					
20.0		-20.00					
	ML-SILT, little fine sand, trace gravel, gray, dry						
	END OF HOLE @ 20ft BGS						
22.5	NOTES: 1. Stratigraphy taken from MW13-49.						
25.0							
27.5							
30.0							
32.5							



SCREEN DETAILS
Screened interval:
10 to 20ft BGS
Length: 10ft
Diameter: 2"
Slot Size: #10
Material: Carbon Steel
Sand Pack:
8 to 20ft BGS
Material: No.5 Sand

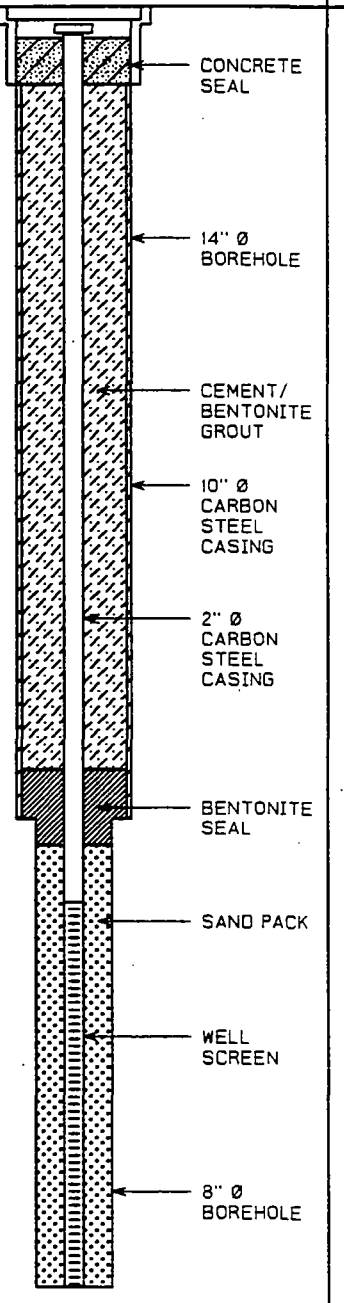
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE: REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW13-33
DATE COMPLETED: DECEMBER 13, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS
	REFERENCE POINT (Top of Riser)	.00
	GROUND SURFACE	.00
	ML-SILT, little fine sand, trace gravel, brown, moist	
		-1.90
-2.5	SM-SAND, some silt, trace gravel, fine grained, light brown, moist	-2.50
	CL-CLAY, some silt, trace fine sand, gray, moist	
-5.0		
-7.5	SM-SAND, little silt, fine grained, light brown, moist	-7.20
-10.0		
		-12.00
-12.5	ML-SILT, little fine sand and clay, trace gravel, gray, dry	
-15.0		
		-16.00
	SM-SAND, some silt, fine grained, brown, saturated, no odor	
-17.5		
		-18.00
	CL-CLAY, little silt, trace gravel, gray, dry	-18.20
	SM-SAND, little silt, fine grained, brown, saturated	-19.00
-20.0		
	ML-SILT, little fine sand, trace gravel, gray, dry	-20.70
		-21.00
	SM-SAND, little silt, trace gravel, fine grained, gray, moist	-22.00
-22.5		
	ML-SILT, little clay, trace fine sand and gravel, gray, moist	-24.00
		-24.50
-25.0	SC-SAND, some clay, trace gravel, fine grained, gray, very moist	
	SW-SAND, little silt and gravel, medium to coarse grained, gray, dry	
-27.5		
	ML-SILT, little fine sand, trace gravel, gray, moist	-28.00
	- fine sand seams 1" thick	
-30.0	SM-SAND, little silt, trace gravel, fine to medium grained, gray, saturated	
		-32.00
-32.5	ML-SILT, little fine sand, trace gravel, gray, moist	-32.40
		-33.50
	SW/GW-SAND and GRAVEL, trace silt, subrounded, gray, saturated	
	END OF HOLE @ 33.5ft BGS	



SAMPLE			
NUMBER	STATE	'N' VALUE	PID (ppm)

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW13-33
DATE COMPLETED: DECEMBER 13, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	NOTES: 1. Stratigraphy taken from MW13-49.		SCREEN DETAILS Screened interval: 23.5 to 33.5ft BGS Length: 10ft Diameter: 2" Slot Size: #10 Material: Carbon Steel Sand Pack: 22 to 33.5ft BGS Material: No.5 Sand				
38.5							
41.0							
43.5							
46.0							
48.5							
51.0							
53.5							
56.0							
58.5							
61.0							
63.5							
66.0							
68.5							

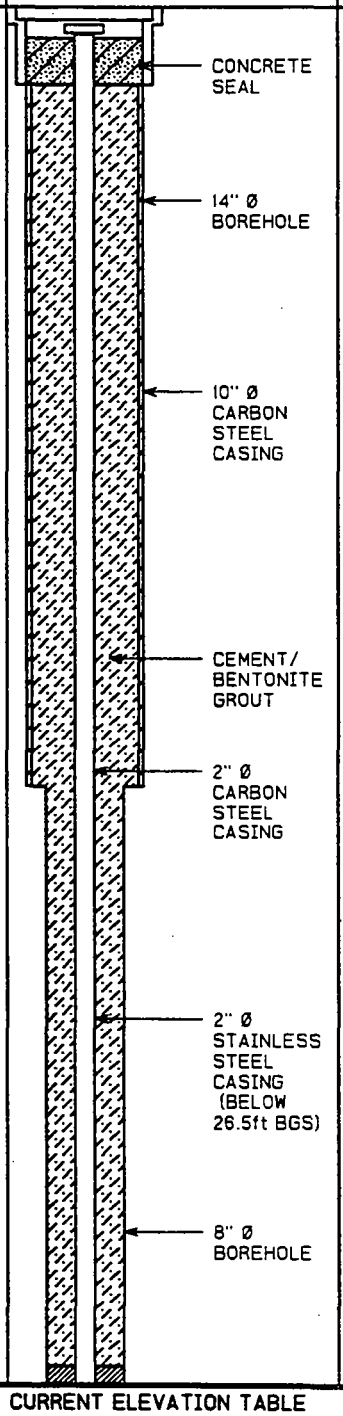
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW13-49
DATE COMPLETED: DECEMBER 12, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS
	GROUND SURFACE	.00
	ML-SILT, little fine sand, trace gravel, brown, moist	
		-1.90
-2.5	SM-SAND, some silt, trace gravel, fine grained, light brown, moist	-2.50
	CL-CLAY, some silt, trace fine sand, gray, moist	
-5.0		
		-7.20
-7.5	SM-SAND, little silt, fine grained, light brown, moist	
-10.0		
		-12.00
-12.5	ML-SILT, little fine sand, little clay, trace gravel, gray, dry	
-15.0		
		-16.00
	SM-SAND, some silt, fine grained, brown, saturated, no odor	
-17.5		
		-18.00
	CL-CLAY, little silt, trace gravel, gray, dry	-18.20
	SM-SAND, little silt, fine grained, brown, saturated	-19.00
-20.0		
	ML-SILT, little fine sand, trace gravel, gray, dry	-20.70
		-21.00
	SM-SAND, little silt, trace gravel, fine grained, gray, moist	-22.00
-22.5		
	ML-SILT, little clay, trace fine sand, trace gravel, gray, moist	-24.00
	SC-SAND, some clay, trace gravel, fine grained, gray, very moist	-24.50
-25.0		
	SW-SAND, little silt, little gravel, medium to coarse grained, gray, dry	
-27.5		
	ML-SILT, little fine sand, trace gravel, gray, moist	-28.00
	- fine sand seams 1" thick	
-30.0	SM-SAND, little silt, trace gravel, fine to medium grained, gray, saturated	
		-32.00
-32.5	ML-SILT, little fine sand, trace gravel, gray, moist	-32.40
	SW/GW-SAND and GRAVEL, trace silt, subrounded, gray, saturated	



SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
1SS		9	0
2SS		5	0
3SS		1	0
4SS		1	0
5SS		2	0
6SS		17	0
7SS		17	0
8SS		15	0
9SS		24	0
10SS		30	0
11SS		25	0
12SS		23	0
13SS		14	0
14SS		24	0
15SS		51	0
16SS		20	0
17SS		17	0
18SS		12	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

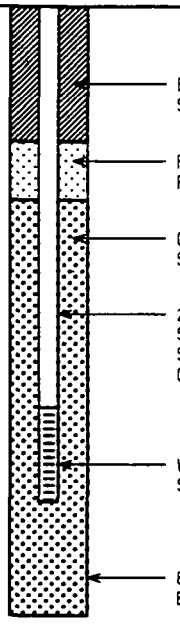
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW13-49
DATE COMPLETED: DECEMBER 12, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS
-38.5		
-41.0		
-43.5		
-46.0	SM-SAND, little silt, trace gravel, medium to coarse grained, gray, saturated	-46.00
-48.5	SW/GW-SAND and GRAVEL, gray, saturated	-48.00
-51.0		
	END OF HOLE @ 52ft BGS	-52.00
-53.5		
-56.0		
-58.5		
-61.0		
-63.5		
-66.0		
-68.5		

BOREHOLE COMPLETION



SCREEN DETAILS
Screened interval:
46.5 to 49ft BGS
Length: 2.5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
39.5 to 41ft BGS
Material: No.5 Sand
Sand Pack:
41 to 52ft BGS
Material: No.7 Sand

SAMPLE NUMBER	STATE	'N' VALUE	PID (ppm)
19SS		13	0
20SS		10	0
21SS		10	0
22SS		11	0
23SS		10	0
24SS		17	0
25SS		12	0
26SS		12	0

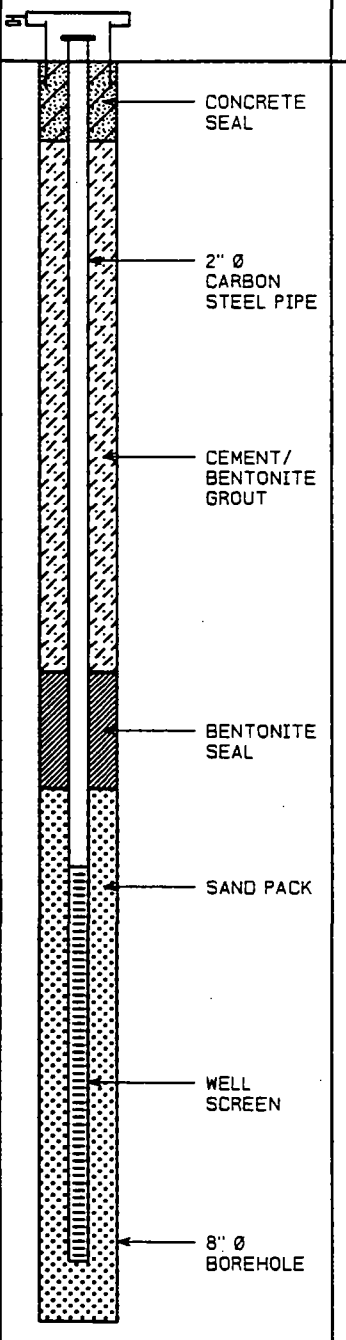
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW14-31
DATE COMPLETED: DECEMBER 1, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS
	REFERENCE POINT (Top of Riser)	*.00*
	GROUND SURFACE	*.00*
	ML-SILT (FILL), some fine sand, trace gravel, black, dry	*-1.00*
-2.5	SM-SAND, some silt, fine grained, brown, moist	
	- little silt, yellow orange, dry	
	- tan	
-5.0		
-7.5		
	- some silt, brown	
-10.0		
	CL-CLAY, little fine sand and silt, brown, moist	*-10.50*
-12.5		*-12.50*
	SM-SAND, little silt, fine grained, tan, dry	*-13.00*
	CL-CLAY, little fine sand and silt, brown, dry	
	- some silt, trace fine sand, gray, moist, fine sand seams <0.03" thick	
-15.0		*-15.20*
	SM-SAND, some silt, fine grained, tan, dry, banding	
-17.5		
	- coarse gravel seam 1.5" thick	*-20.00*
-20.0	SW-SAND, little silt, trace gravel, fine to medium grained, tan, dry	*-20.50*
	SM/ML-SAND and SILT, fine grained, brown, moist	
-22.5	- gray, saturated	*-23.30*
	SW-SAND, trace silt and gravel, fine to coarse grained, tan, moist	
-25.0		
	SW/GW-SAND and GRAVEL, medium to coarse grained, gray, saturated	*-26.00*
-27.5		
-30.0		
	END OF HOLE @ 32ft BGS	*-32.00*
-32.5	NOTES:	
	1. Stratigraphy taken from MW14-47.	



BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW14-31
DATE COMPLETED: DECEMBER 1, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
-37.5			SCREEN DETAILS Screened interval: 20.5 to 30.5ft BGS Length: 10ft Diameter: 2" Slot Size: #10 Material: Carbon Steel Sand Pack: 18.5 to 32ft BGS Material: No.5 Sand				
-40.0							
-42.5							
-45.0							
-47.5							
-50.0							
-52.5							
-55.0							
-57.5							
-60.0							
-62.5							
-65.0							
-67.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW14-47
DATE COMPLETED: NOVEMBER 30, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	.00					
	ML-SILT (FILL), some fine sand, trace gravel, black, dry	-1.00	CONCRETE SEAL	1SS		8	0
-2.5	SM-SAND, some silt, fine grained, brown, moist - little silt, yellow orange, dry			2SS		6	0
	- tan			3SS		19	0
-5.0				4SS		15	0
-7.5				5SS		19	2.0
	- some silt, brown		8" Ø BOREHOLE				
-10.0	CL-CLAY, little fine sand, little silt, brown, moist	-10.50		6SS		17	-
-12.5	SM-SAND, little silt, fine grained, tan, dry	-12.50		7SS		16	0
	CL-CLAY, little fine sand, little silt, brown, dry	-13.00	2" Ø CARBON STEEL CASING				
-15.0	- some silt, trace fine sand, gray, moist, fine sand seams <0.03" thick	-15.20		8SS		18	0
	SM-SAND, some silt, fine grained, tan, dry, banding			9SS		14	0
-17.5				10SS		22	0
-20.0	- coarse gravel seam 1.5" thick	-20.00	CEMENT/ BENTONITE GROUT				
	SW-SAND, little silt, trace gravel, fine to medium grained, tan, dry	-20.50		11SS		12	-
-22.5	SM/ML-SAND and SILT, fine grained, brown, moist			12SS		12	0
	- gray, saturated	-23.30		13SS		16	0
-25.0	SW-SAND, trace silt and gravel, fine to coarse grained, tan, moist						
	SW/GW-SAND and GRAVEL, medium to coarse grained, gray, saturated	-26.00		14SS		42	0
-27.5			2" Ø STAINLESS STEEL CASING (BELOW 27.5ft BGS)	15SS		29	0
-30.0				16SS		12	0
			BENTONITE SLURRY				
-32.5				17SS		22	0
			FINE SAND PACK	18SS		16	0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BARRELS
PROJECT NUMBER: 4869
CLIENT: BARRELS INC.
LOCATION: LANCING, MICHIGAN

HOLE DESIGNATION: MW14-47
DATE COMPLETED: NOVEMBER 30, 1994
DRILLING METHOD: 4 ¼" HSA
CRA SUPERVISOR: M. WILLIS

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. BGS	BOREHOLE COMPLETION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
-38.5			FINE SAND PACK	19SS		9	0
				20SS		10	0
		-40.00					
-41.0	SW-SAND, some gravel, coarse grained, gray, saturated		2" Ø STAINLESS STEEL CASING	21SS		18	0
-43.5	- trace silt			22SS		30	0
			COARSE SAND PACK	23SS		26	0
-46.0	- little silt and gravel, medium to coarse grained		WELL SCREEN	24SS		-	0
		-48.00					
-48.5	ML-SILT, little fine sand, trace gravel, gray, dry			25SS		-	0
-51.0			8" Ø BOREHOLE	26SS		-	0
		-52.00					
	END OF HOLE @ 52ft BGS						
-53.5							
-56.0							
-58.5							
-61.0							
-63.5							
-66.0							
-68.5							

SCREEN DETAILS
Screened interval:
44.5 to 47.5ft BGS
Length: 2.5ft
Diameter: 2"
Slot Size: #10
Material: Stainless Steel
Sand Pack:
34.5 to 39.5ft BGS
Material: No.5 Sand
Sand Pack:
39.5 to 52ft BGS
Material: No.7 Sand

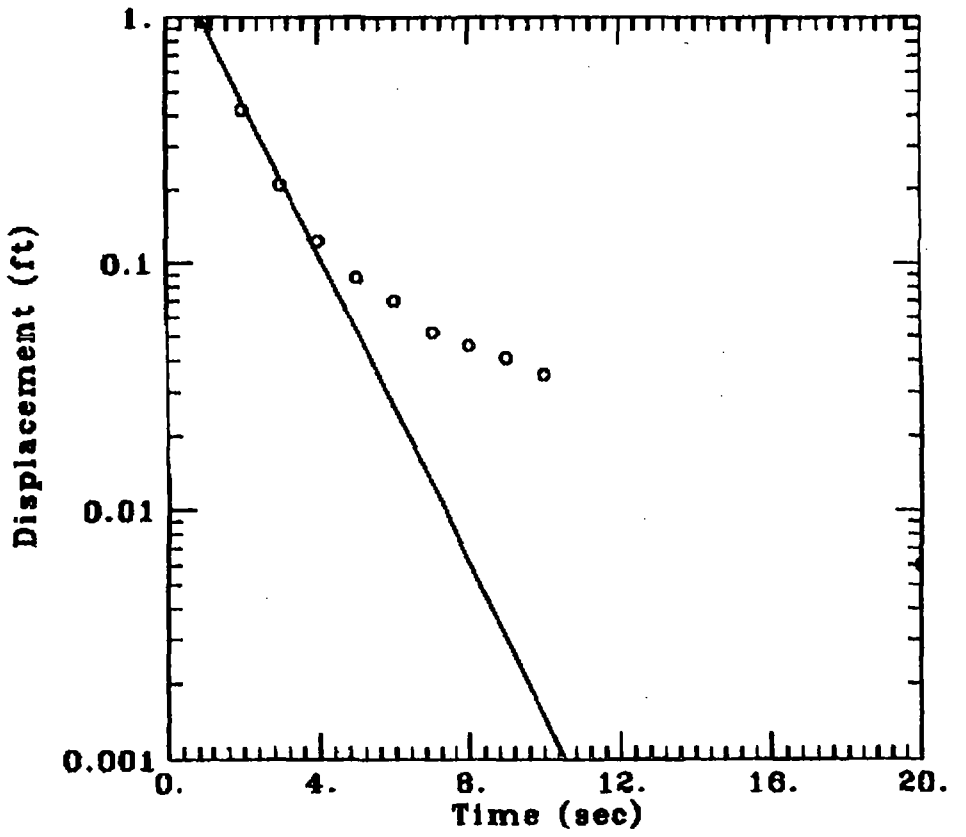
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▼ STATIC WATER LEVEL ▼

APPENDIX F

SINGLE WELL RESPONSE TEST RESULTS

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-2-36: RISING HEAD TEST#1



DATA SET:
236_r1.dat
09/03/93

AQUIFER TYPE:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATE:
07/09/93

TEST WELL:
MW2-36

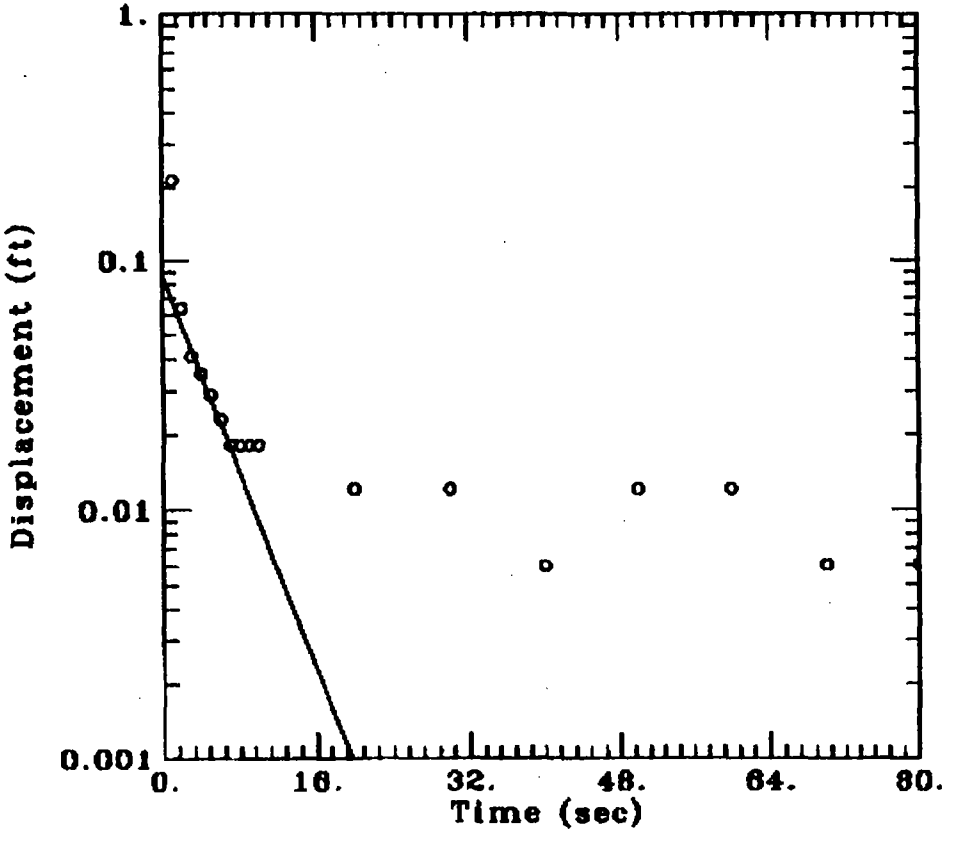
OBS. WELL:
MW2-36

ESTIMATED PARAMETERS:
K = 0.002732 ft/sec
y0 = 1.922 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.195 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 6.63 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-3-33: RISING HEAD TEST#1



DATA SET:
333_r1.dat
09/03/93

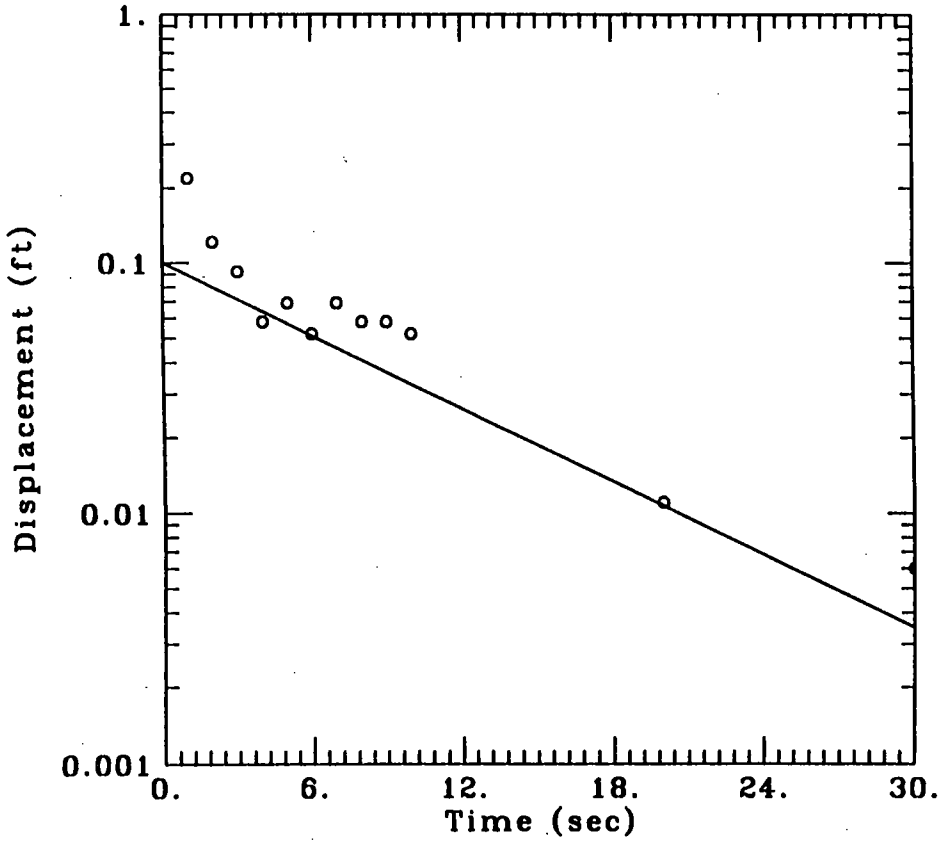
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/09/93
TEST WELL:
MW3-33
OBS. WELL:
MW3-33

ESTIMATED PARAMETERS:
K = 0.0008627 ft/sec
y0 = 0.08629 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.196 ft
rw = 0.333 ft
L = 10. ft
b = 21.66 ft
H = 6.63 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-4-34: RISING HEAD TEST#1



DATA SET:
434_R1.DAT
08/26/93

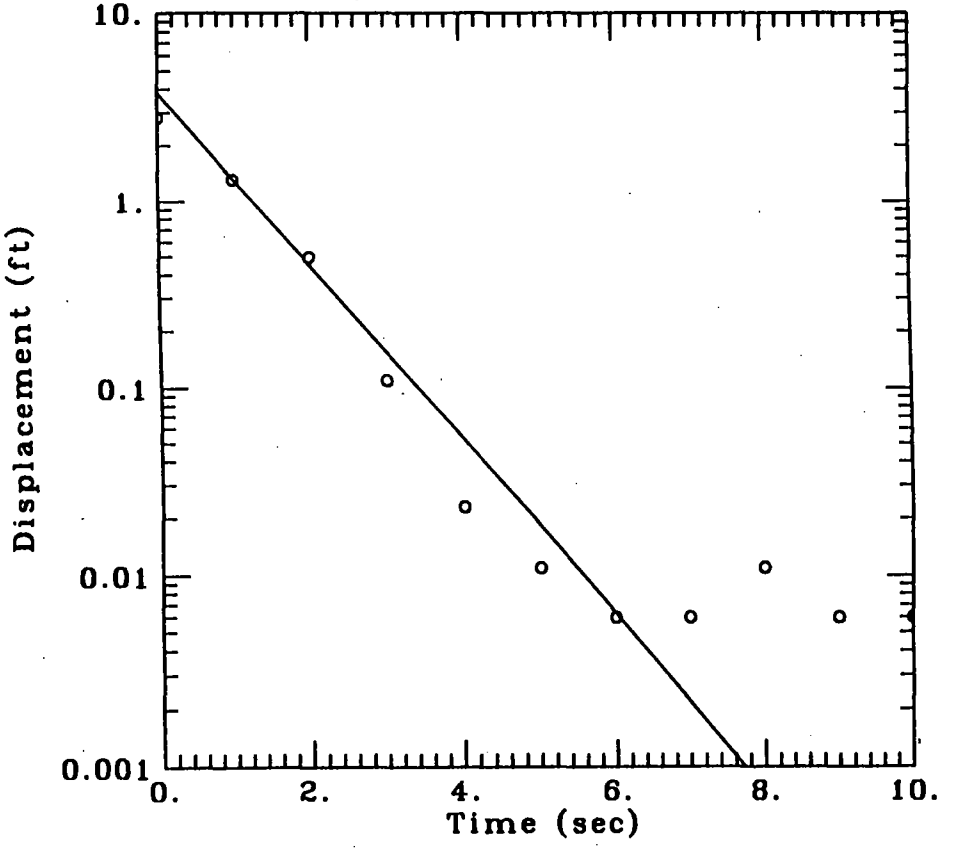
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW4-34
OBS. WELL:
MW4-34

ESTIMATED PARAMETERS:
K = 0.0004167 ft/sec
y0 = 0.09973 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.195 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 6.133 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-4-50: FALLING HEAD TEST#1



DATA SET:
450_f1.dat
08/23/93

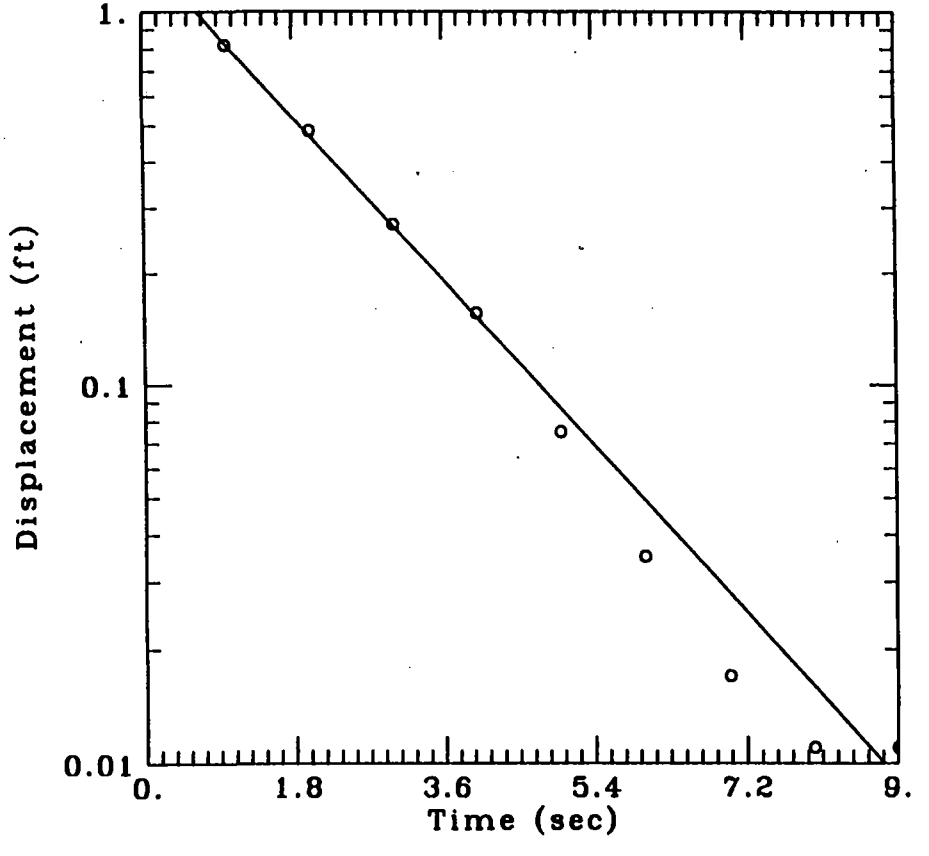
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW4-50
OBS. WELL:
MW4-50

ESTIMATED PARAMETERS:
K = 0.00203 ft/sec
y0 = 3.841 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.86 ft
H = 21.86 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-4-50: RISING HEAD TEST#1



DATA SET:
450_r1.dat
08/23/93

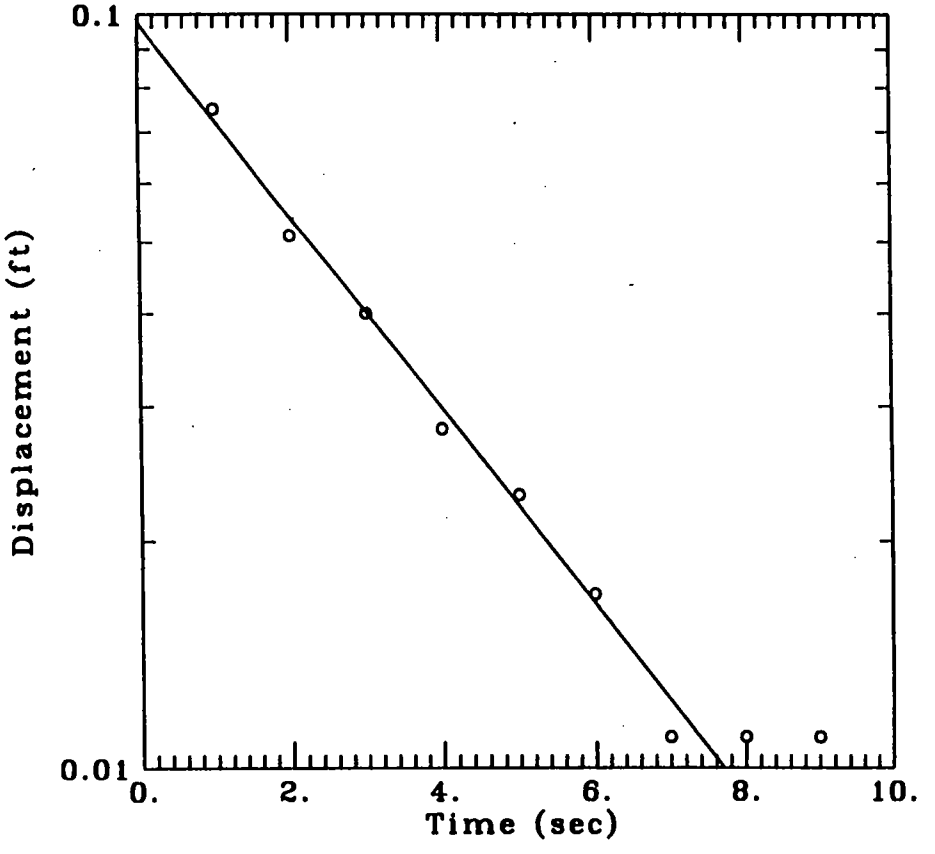
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW4-50
OBS. WELL:
MW4-50

ESTIMATED PARAMETERS:
K = 0.00107 ft/sec
y0 = 1.453 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.86 ft
H = 21.86 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-5-34: FALLING HEAD TEST#1



DATA SET:
534_F1.DAT
08/26/93

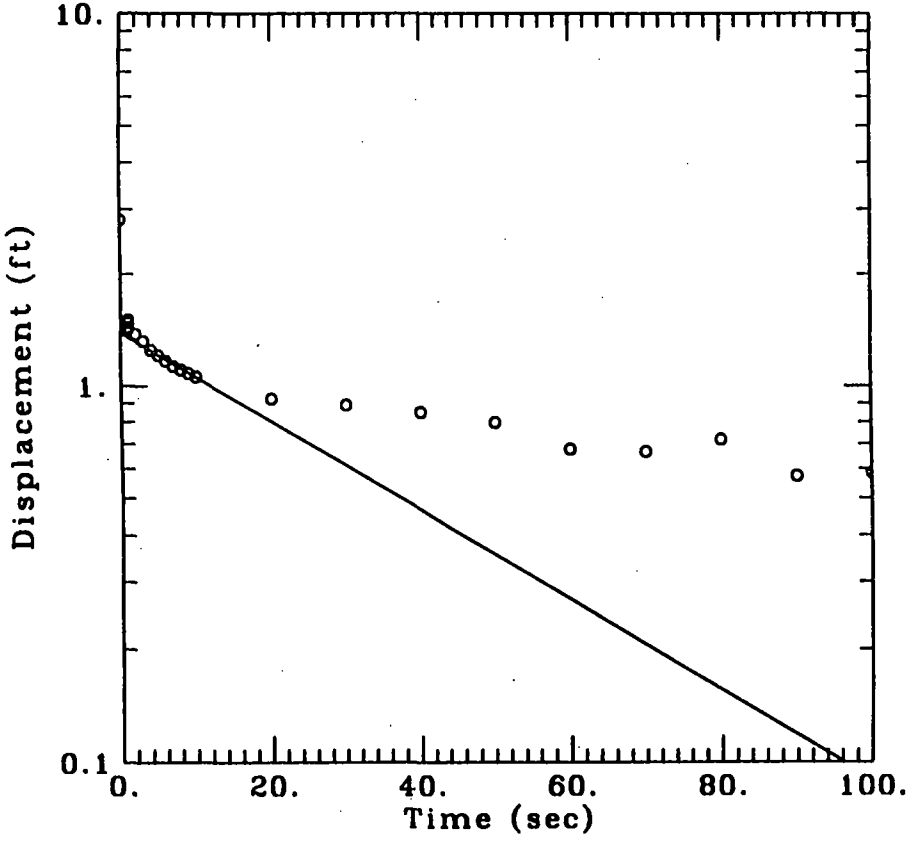
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW5-34
OBS. WELL:
MW5-34

ESTIMATED PARAMETERS:
K = 0.0001997 ft/sec
y0 = 0.09757 ft

TEST DATA:
H0 = 1.98 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 6.122 ft

Conestoga Rovers & Associates	Client: **Barrels Inc.**
Project No.: **4869**	Location: **Lansing, Michigan**

MW-6-32: RISING HEAD TEST#1



DATA SET:
632_R1.DAT
08/26/93

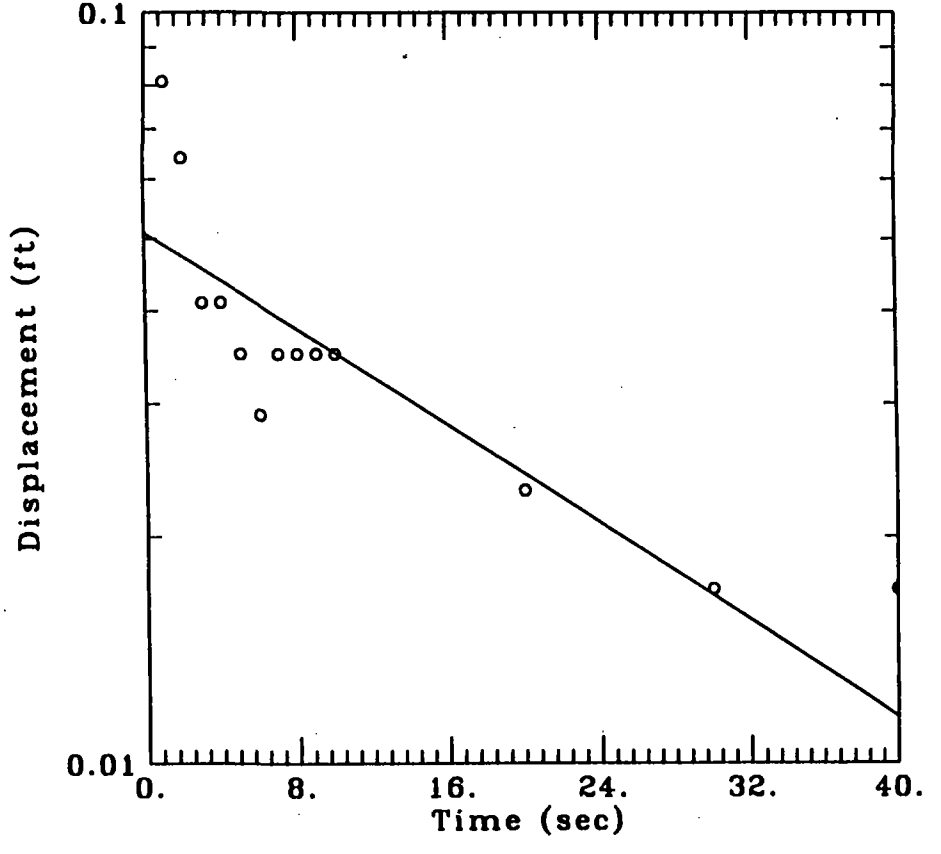
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW6-32
OBS. WELL:
MW6-32

ESTIMATED PARAMETERS:
K = 9.6128E-05 ft/sec
y0 = 1.386 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.195 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 4.967 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-7-33: RISING HEAD TEST#1



DATA SET:
733_R1.DAT
08/26/93

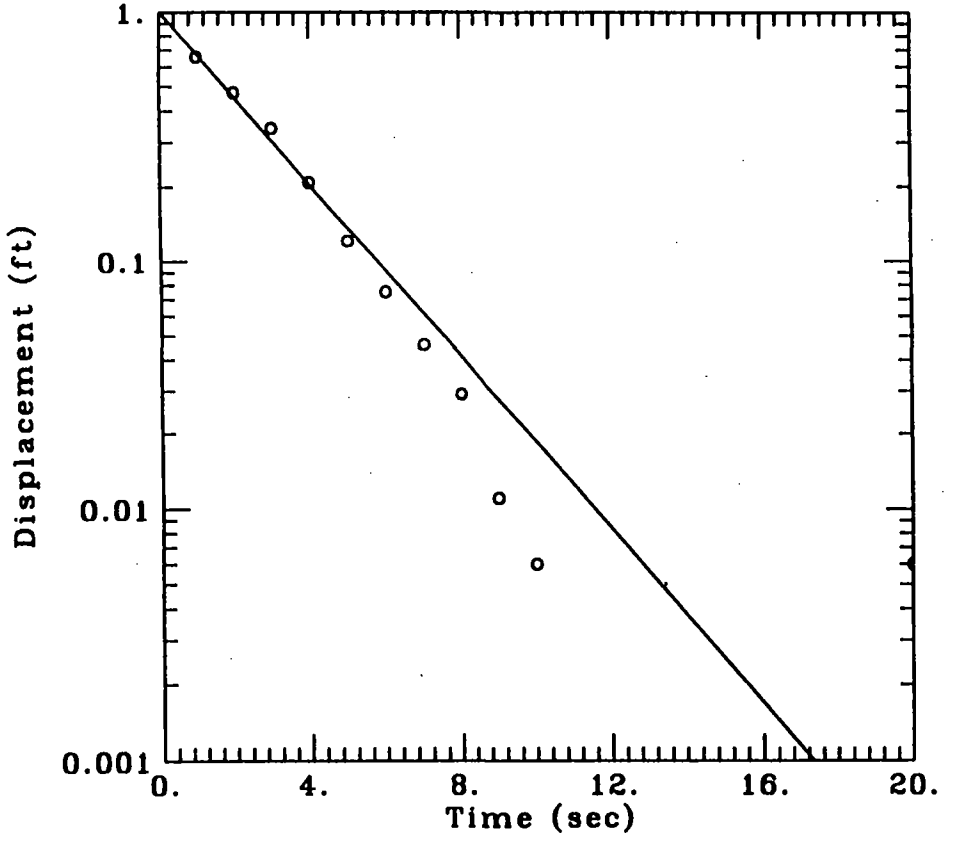
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW7-33
OBS. WELL:
MW7-33

ESTIMATED PARAMETERS:
K = 0.0001241 ft/sec
y0 = 0.05097 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.195 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 4.135 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-7-48: FALLING HEAD TEST#1



DATA SET:
748_F1.DAT
08/26/93

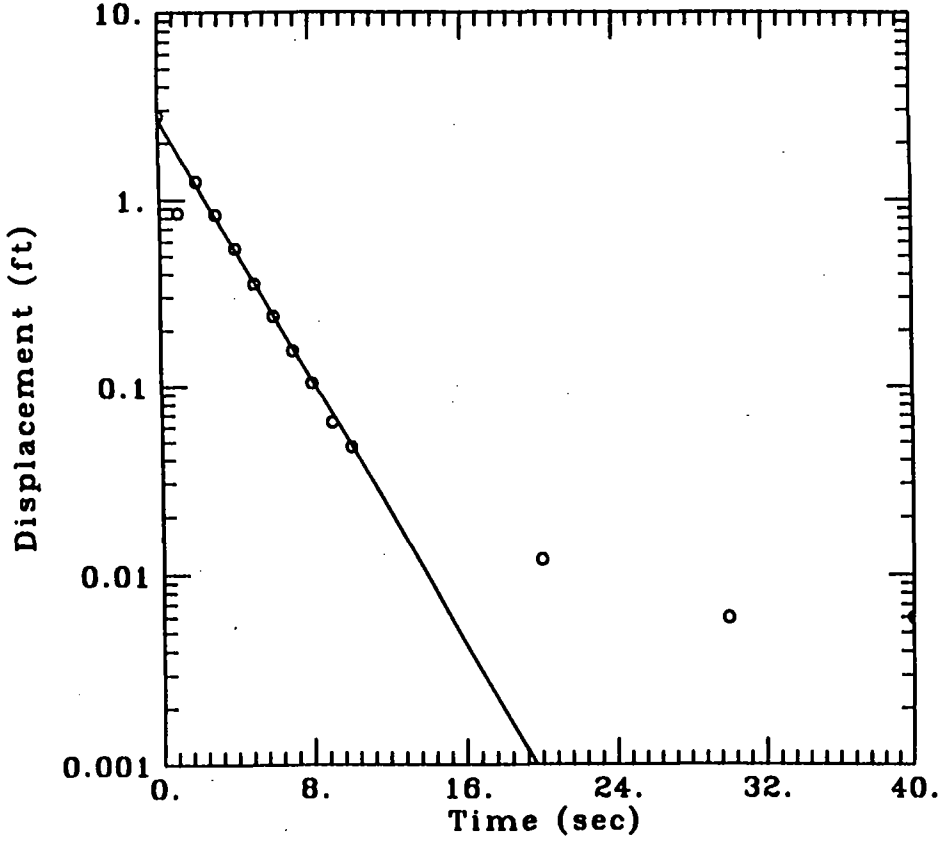
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW7-48
OBS. WELL:
MW7-48

ESTIMATED PARAMETERS:
K = 0.0005696 ft/sec
y0 = 1.011 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.68 ft
H = 15.1 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-7-48: RISING HEAD TEST#1



DATA SET:
748_R1.DAT
08/26/93

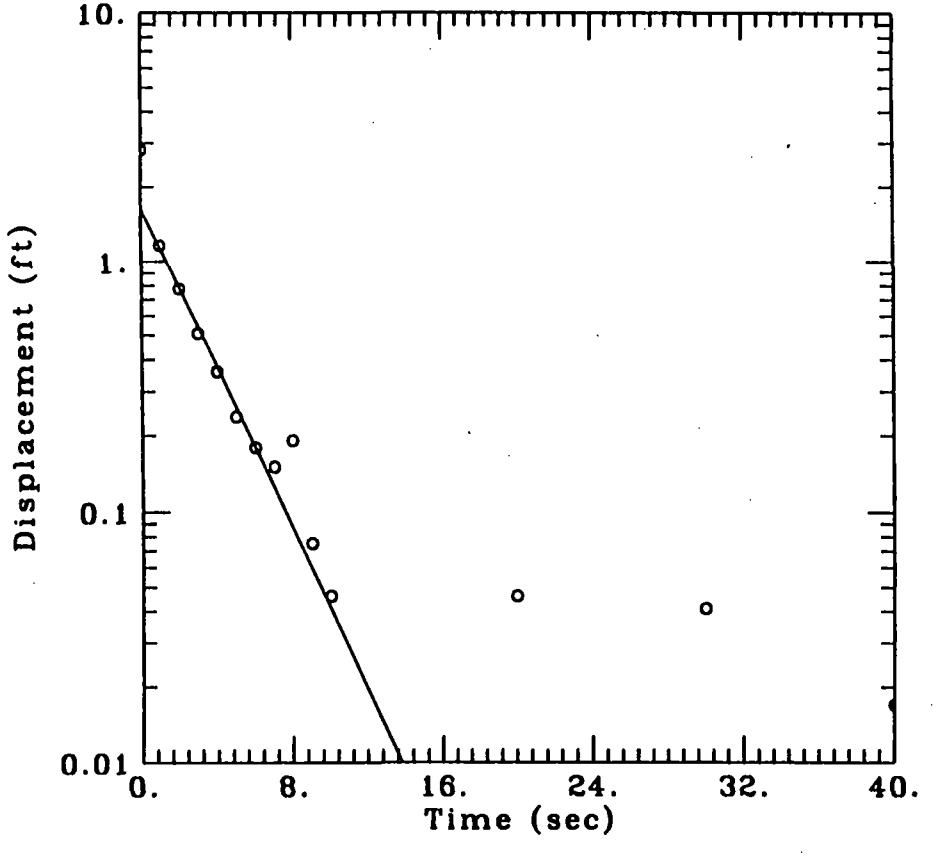
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW7-48
OBS. WELL:
MW7-48

ESTIMATED PARAMETERS:
K = 0.0005729 ft/sec
y0 = 2.673 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.68 ft
H = 15.1 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-7-48: RISING HEAD TEST#2



DATA SET:
748_R2.DAT
08/26/93

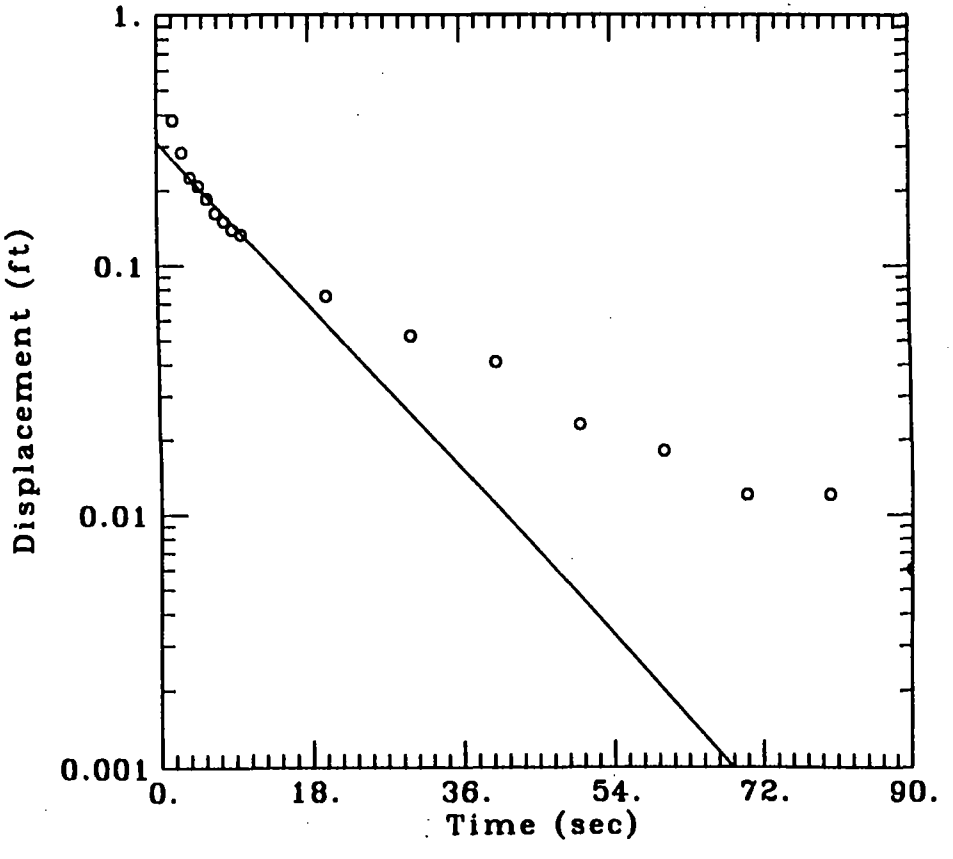
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW7-48
OBS. WELL:
MW7-48

ESTIMATED PARAMETERS:
K = 0.0005265 ft/sec
y0 = 1.644 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.68 ft
H = 15.1 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-8-34: FALLING HEAD TEST#2



DATA SET:
834_F2.DAT
08/26/93

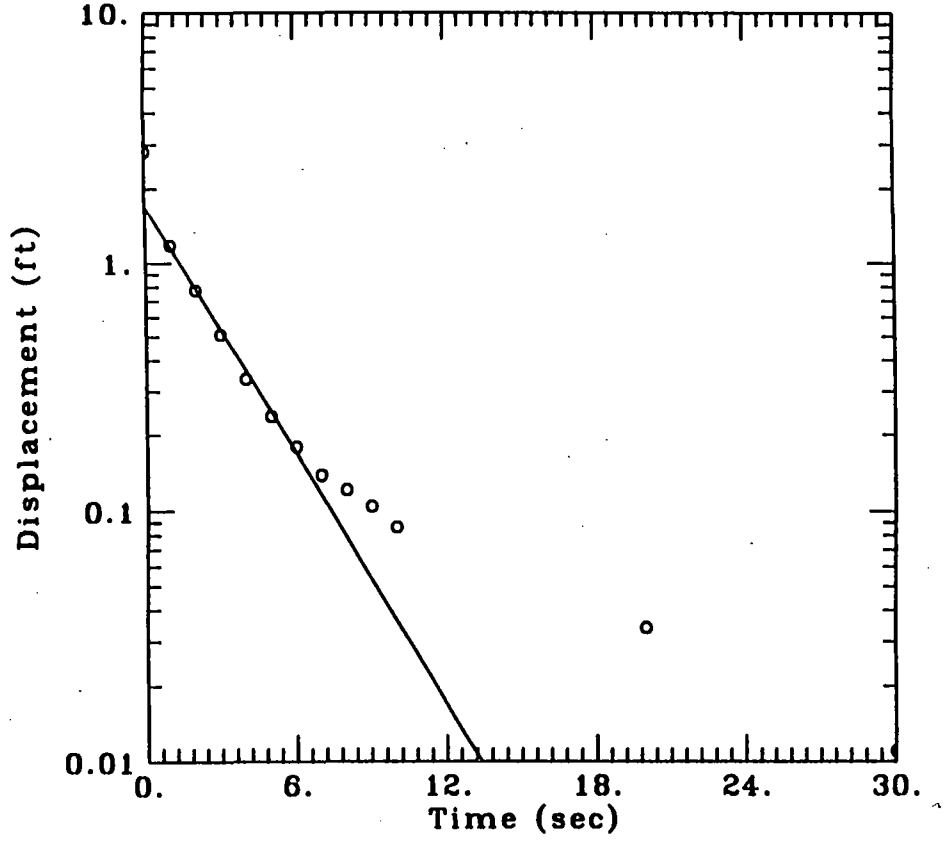
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW8-34
OBS. WELL:
MW8-34

ESTIMATED PARAMETERS:
K = 5.5778E-05 ft/sec
y0 = 0.3123 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 5.717 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-8-34: RISING HEAD TEST#1



DATA SET:
834_R1.DAT
08/26/93

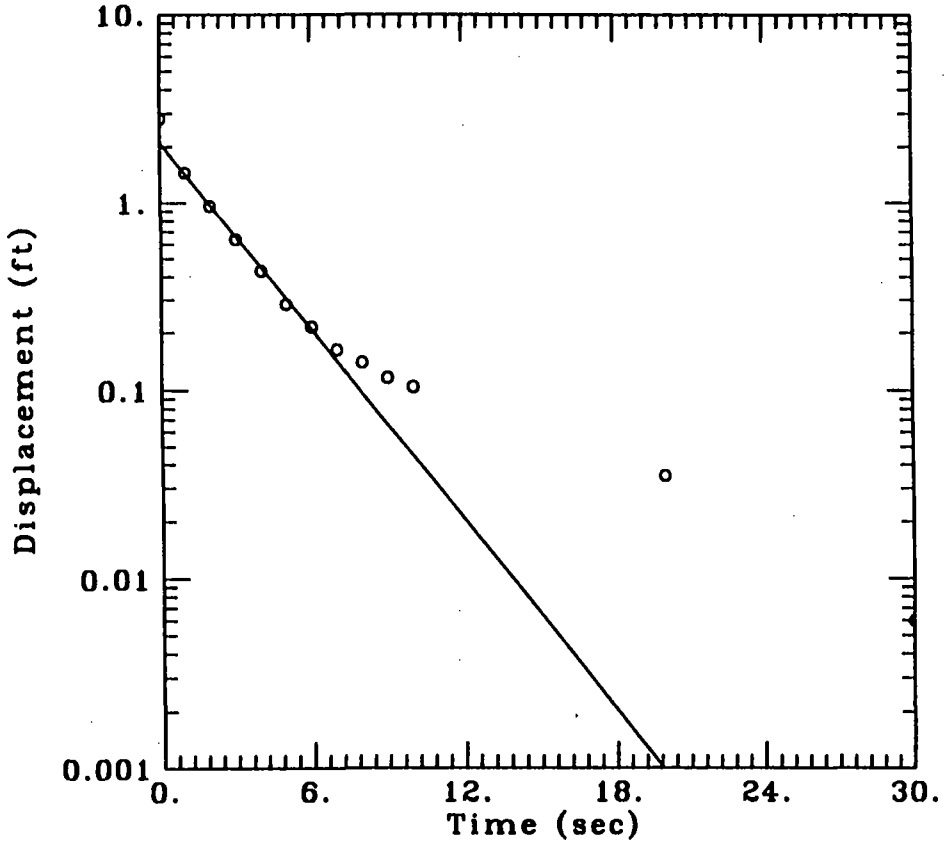
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW8-34
OBS. WELL:
MW8-34

ESTIMATED PARAMETERS:
K = 0.0002542 ft/sec
y0 = 1.695 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 5.694 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-8-34: RISING HEAD TEST#2



DATA SET:
834_R2.DAT
08/26/93

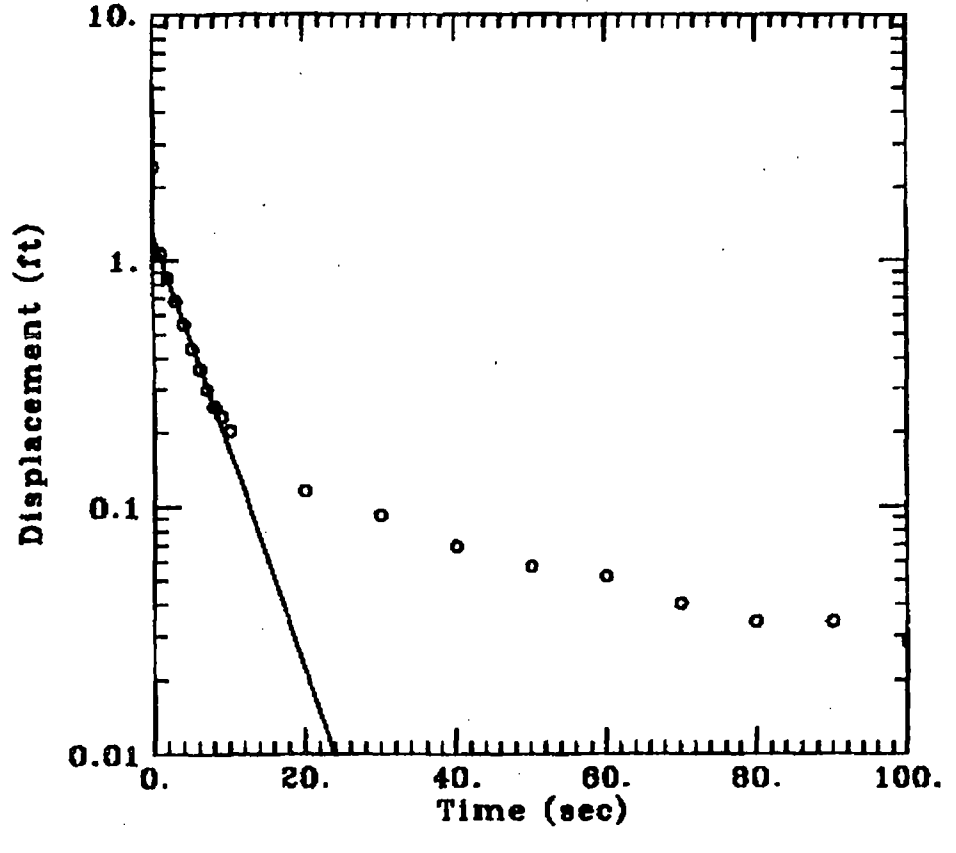
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/08/93
TEST WELL:
MW8-34
OBS. WELL:
MW8-34

ESTIMATED PARAMETERS:
K = 0.0002553 ft/sec
y0 = 2.099 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 5.706 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-9-33: RISING HEAD TEST#1



DATA SET:
S33_r1.dat
09/03/93

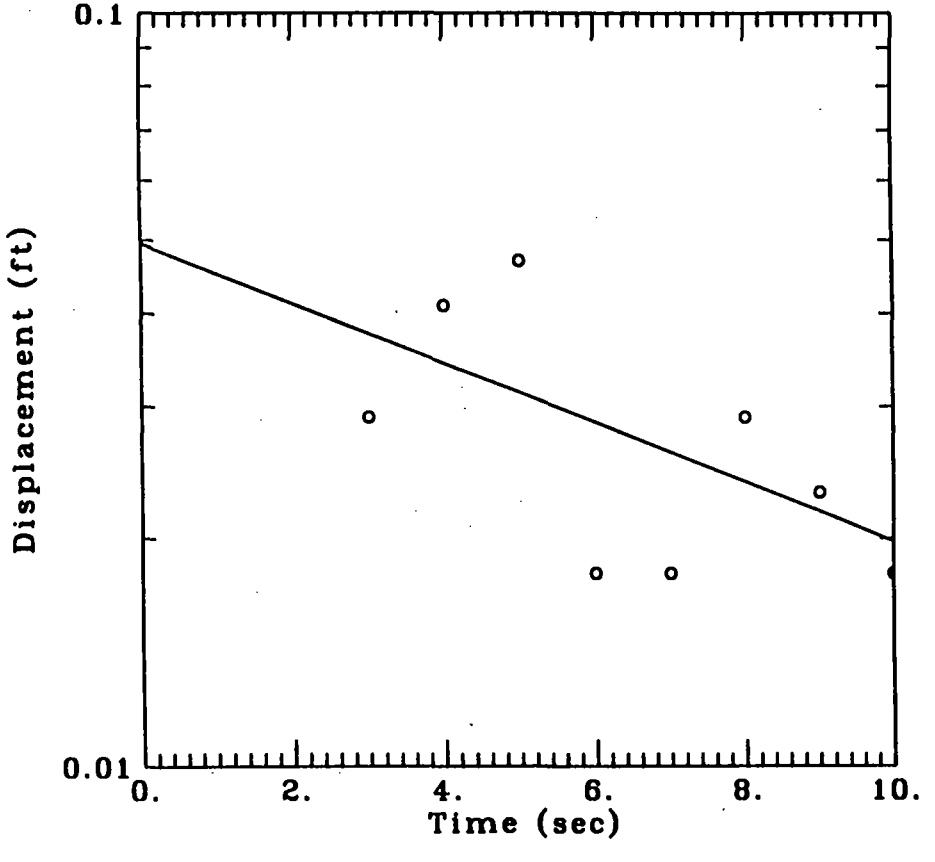
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/09/93
TEST WELL:
MW9-33
OBS. WELL:
MW9-33

ESTIMATED PARAMETERS:
K = 0.0007348 ft/sec
y0 = 1.275 ft

TEST DATA:
H0 = 2.42 ft
rc = 0.195 ft
rw = 0.333 ft
L = 10. ft
b = 21.68 ft
H = 5.532 ft

Conestoga Rovers & Associates	Client: **Barrels Inc.**
Project No.: **4869**	Location: **Lansing, Michigan**

MW-9-45: FALLING HEAD TEST#1



DATA SET:
945_F1.DAT
08/26/93

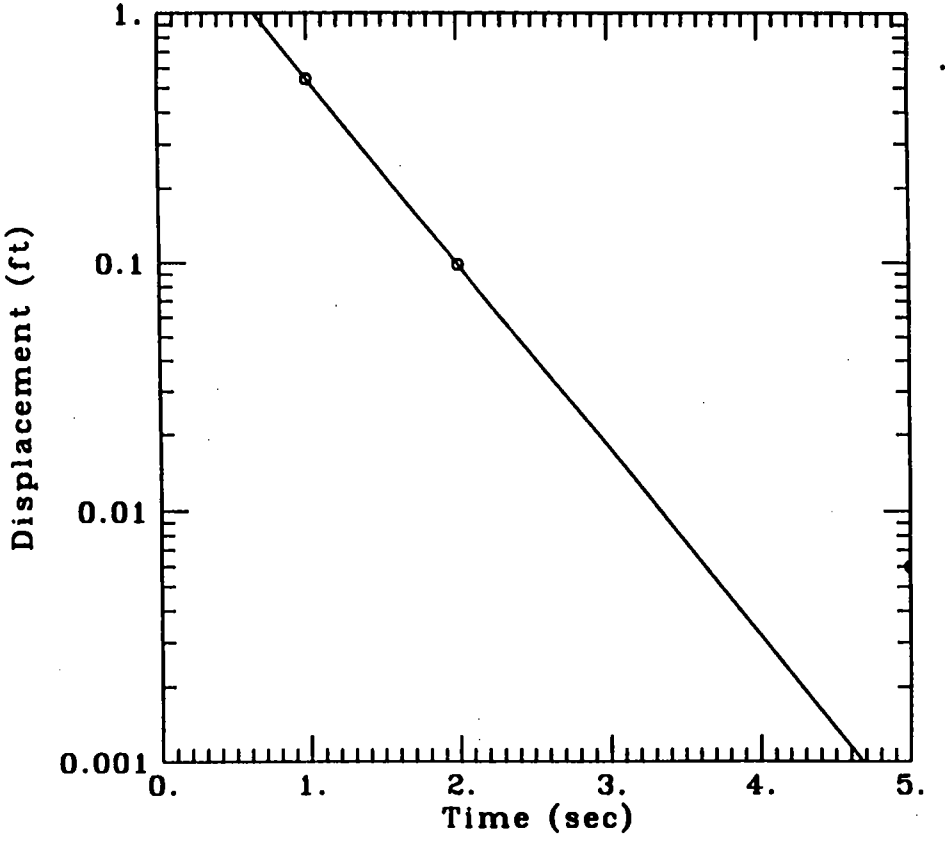
AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/09/93
TEST WELL:
MW9-45
OBS. WELL:
MW9-45

ESTIMATED PARAMETERS:
K = 0.0001346 ft/sec
y0 = 0.0495 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.68 ft
H = 16.83 ft

Conestoga Rovers & Associates	Client: Barrels Inc.
Project No.: 4869	Location: Lansing, Michigan

MW-9-45: RISING HEAD TEST#1



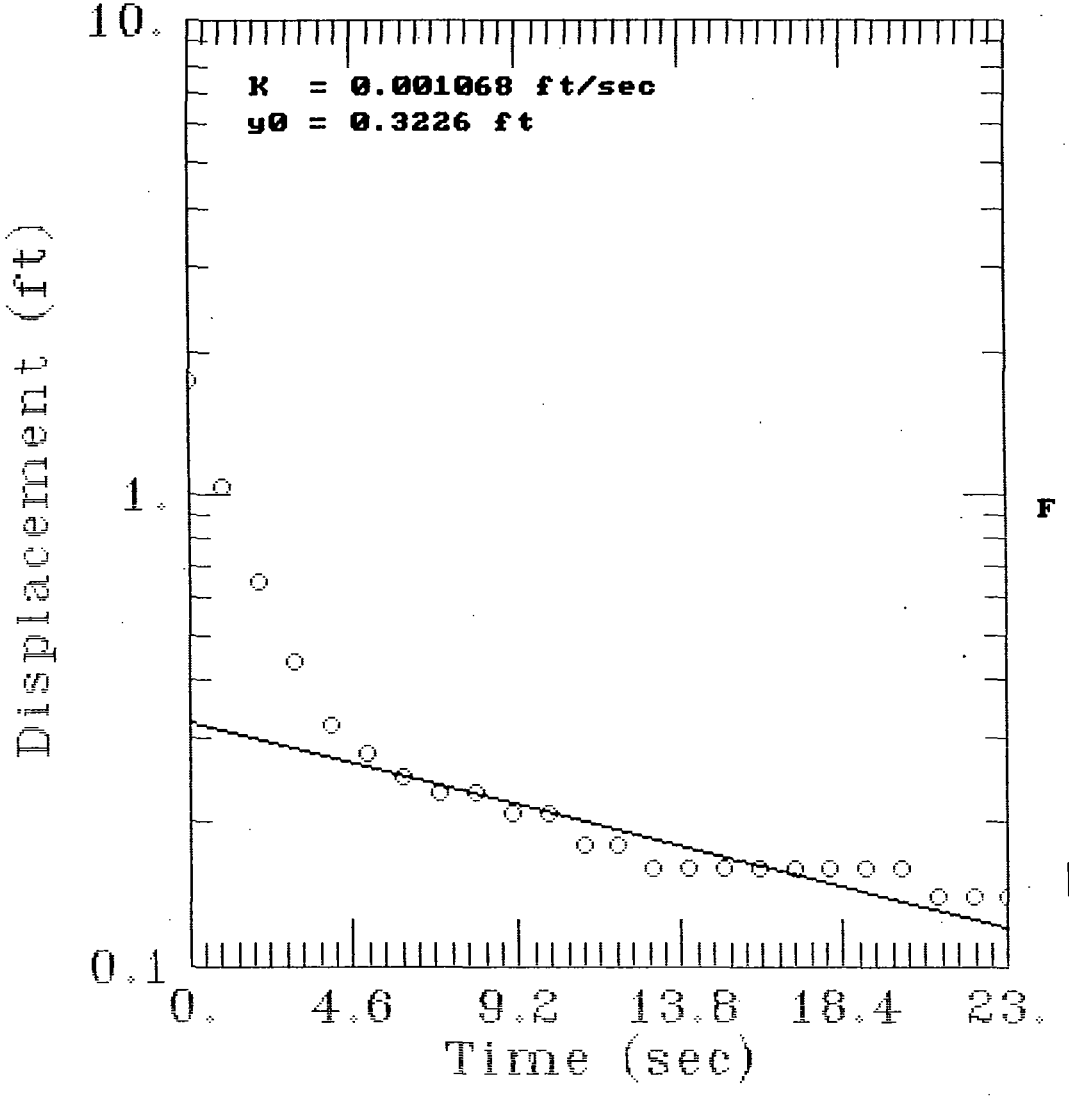
DATA SET:
945_R1.DAT
08/26/93

AQUIFER TYPE:
Unconfined
SOLUTION METHOD:
Bouwer-Rice
TEST DATE:
07/09/93
TEST WELL:
MW9-45
OBS. WELL:
MW9-45

ESTIMATED PARAMETERS:
K = 0.002515 ft/sec
y0 = 3.005 ft

TEST DATA:
H0 = 2.81 ft
rc = 0.083 ft
rw = 0.333 ft
L = 5. ft
b = 21.68 ft
H = 16.85 ft

Barrels MW-10-34 Proj. 4869 Rising



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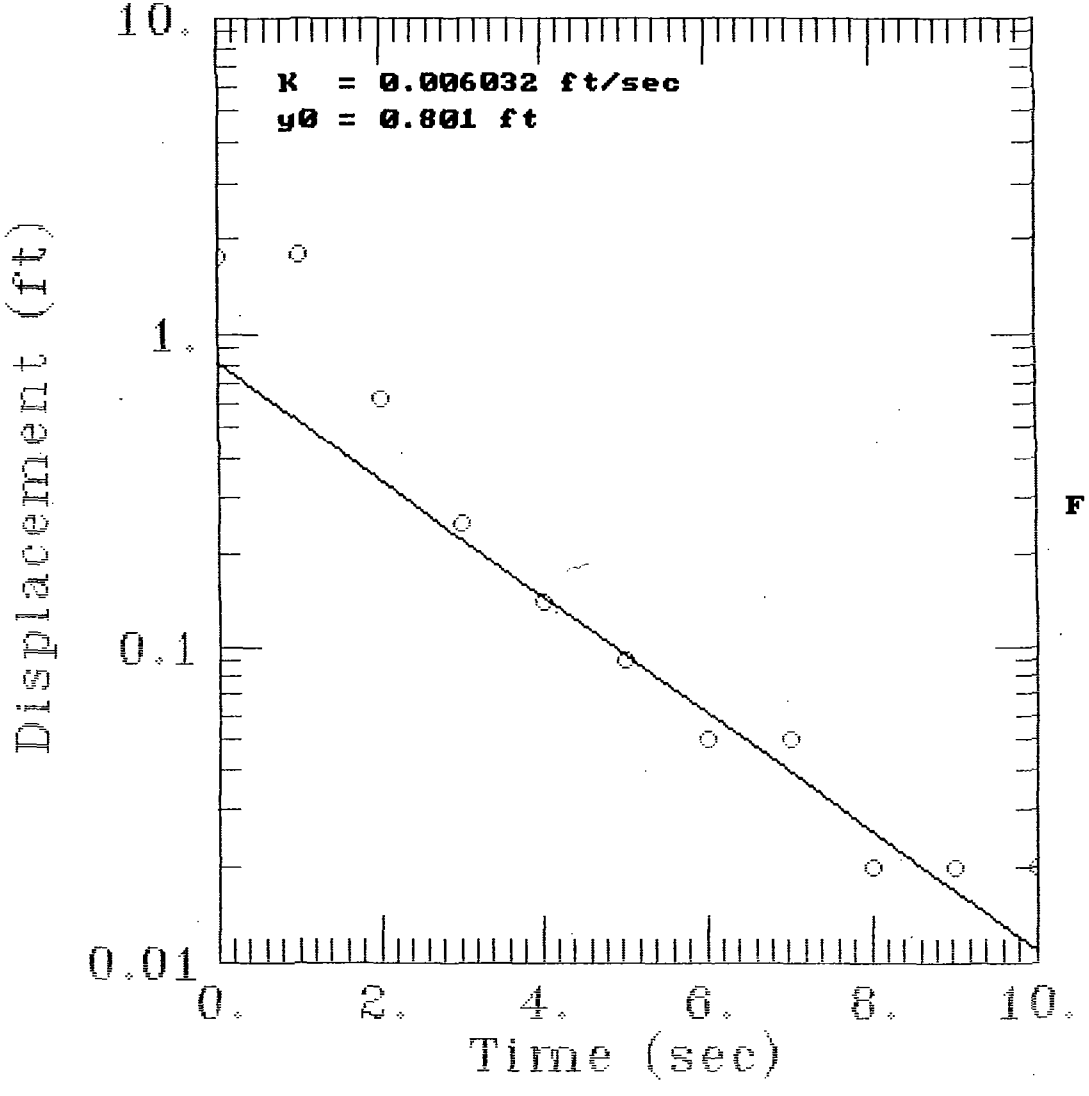
GERAGHTY & MILLER, INC.

Modeling Group

Barrels MW-11-35 Proj. 4869 Rising



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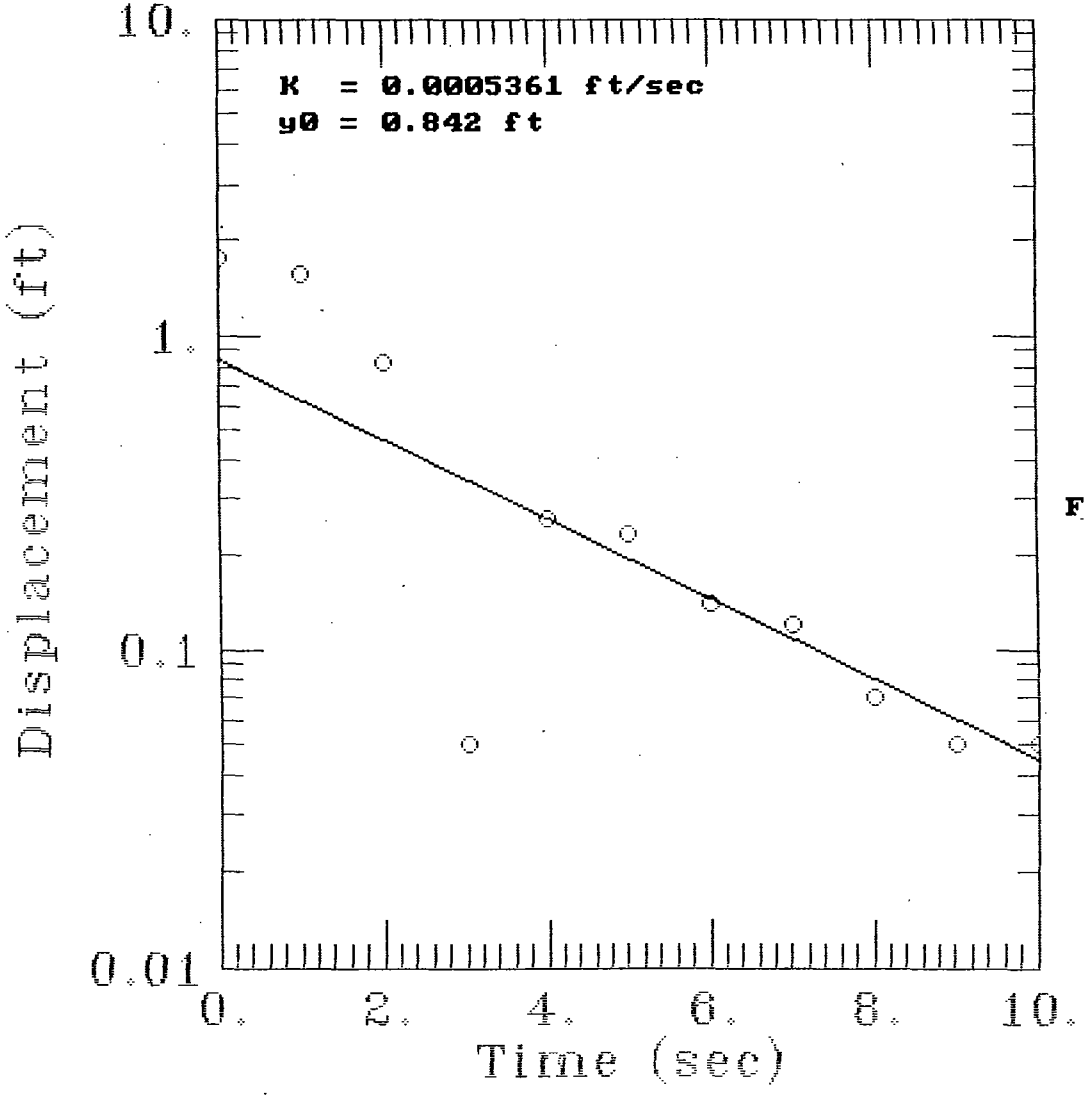
Modeling Group

Barrels MW-11-54 Proj. 4869 Falling



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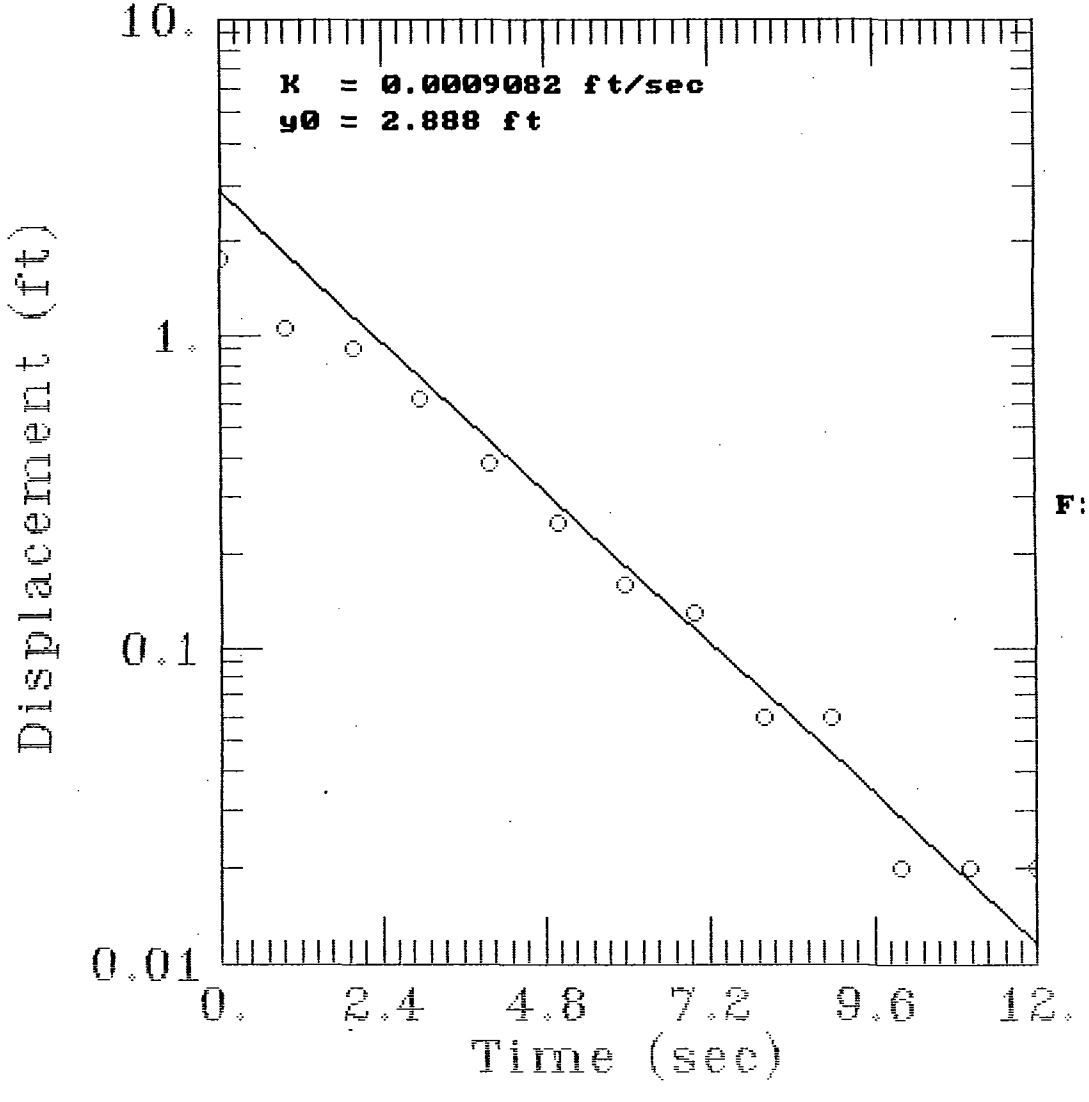
Barrels MW-11-54 Proj. 4869 Rising



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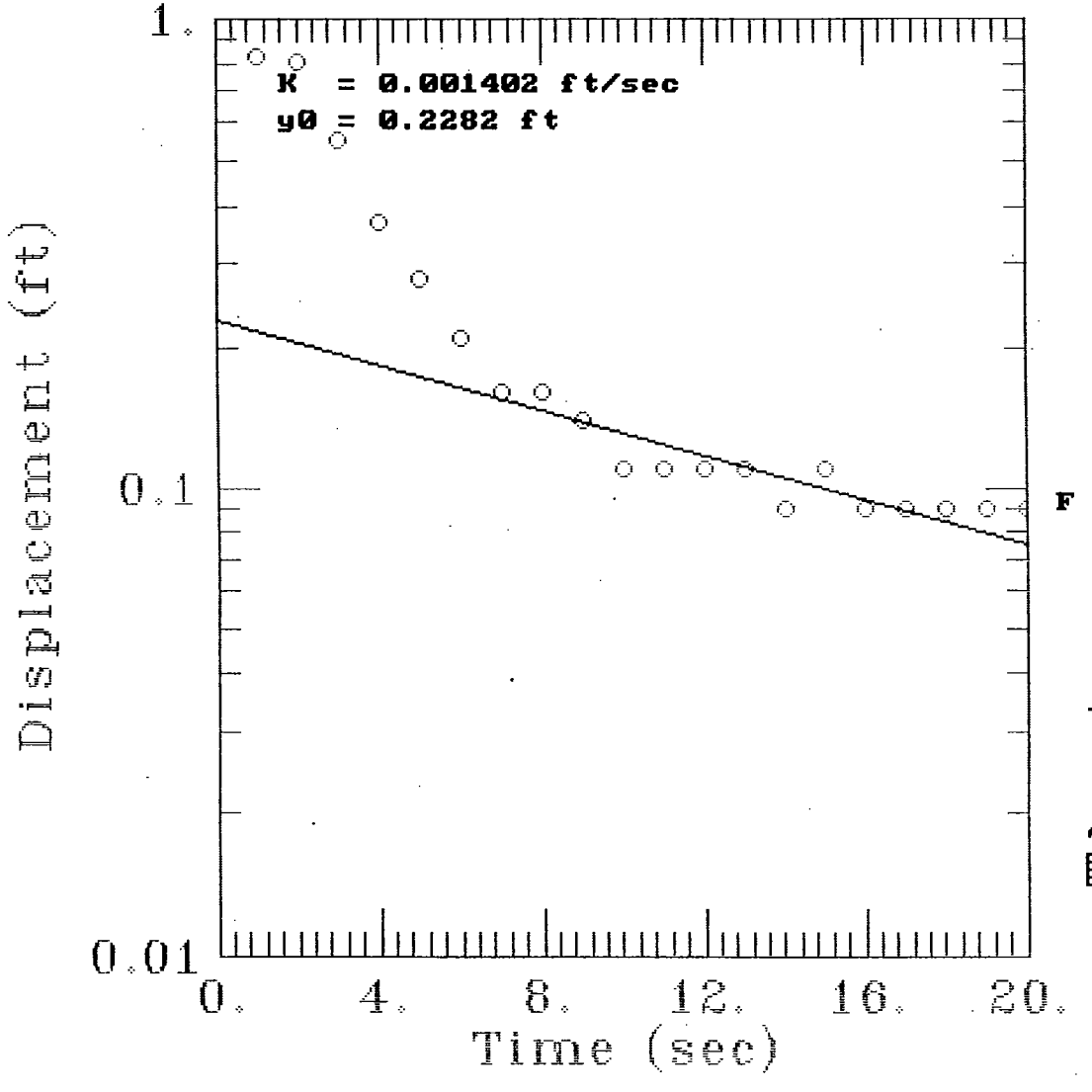
Barrels MW-12-31 Proj. 4869 Rising



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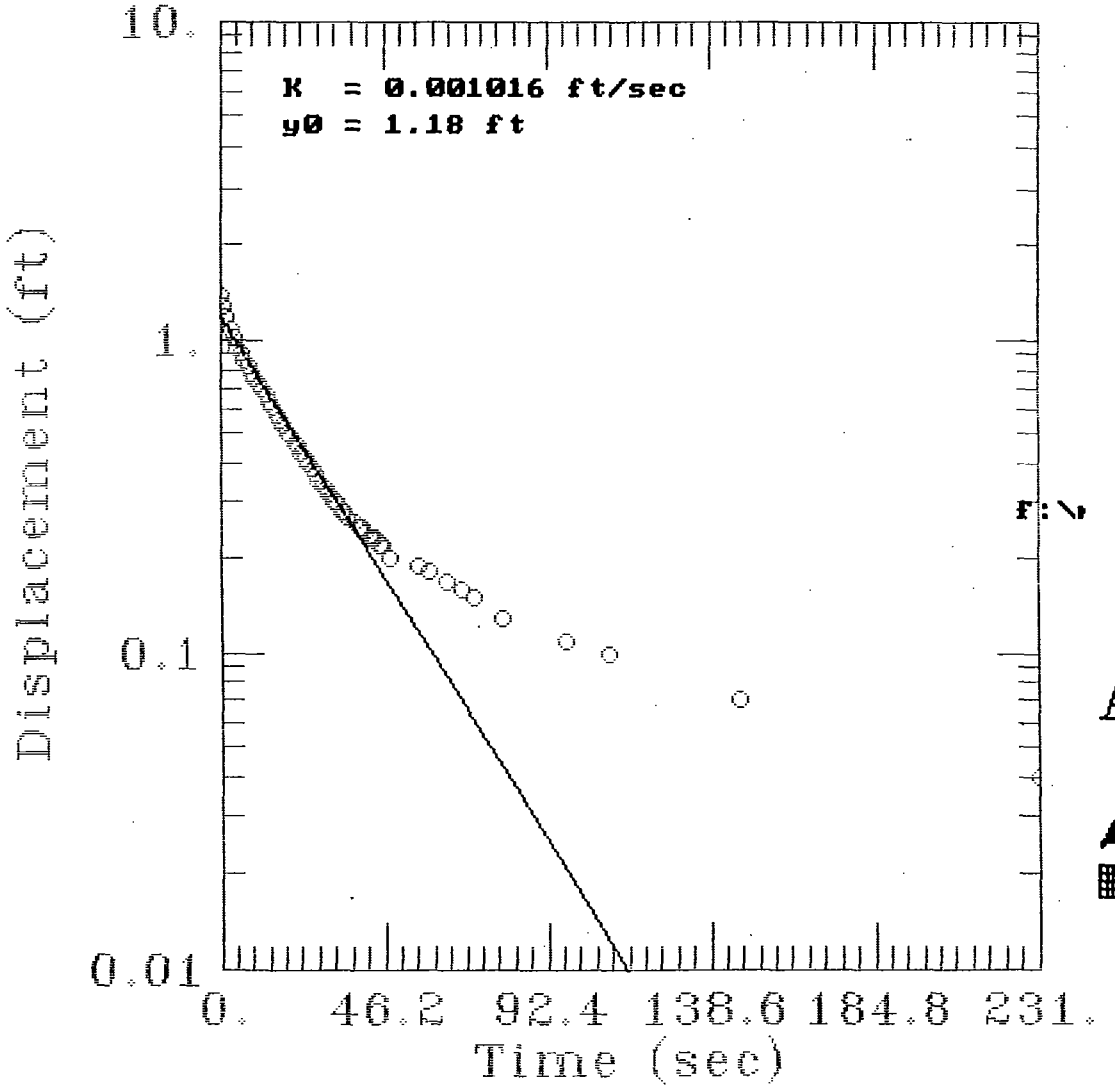
Modeling Group

Barrels MW-13-20 Proj.# 4869



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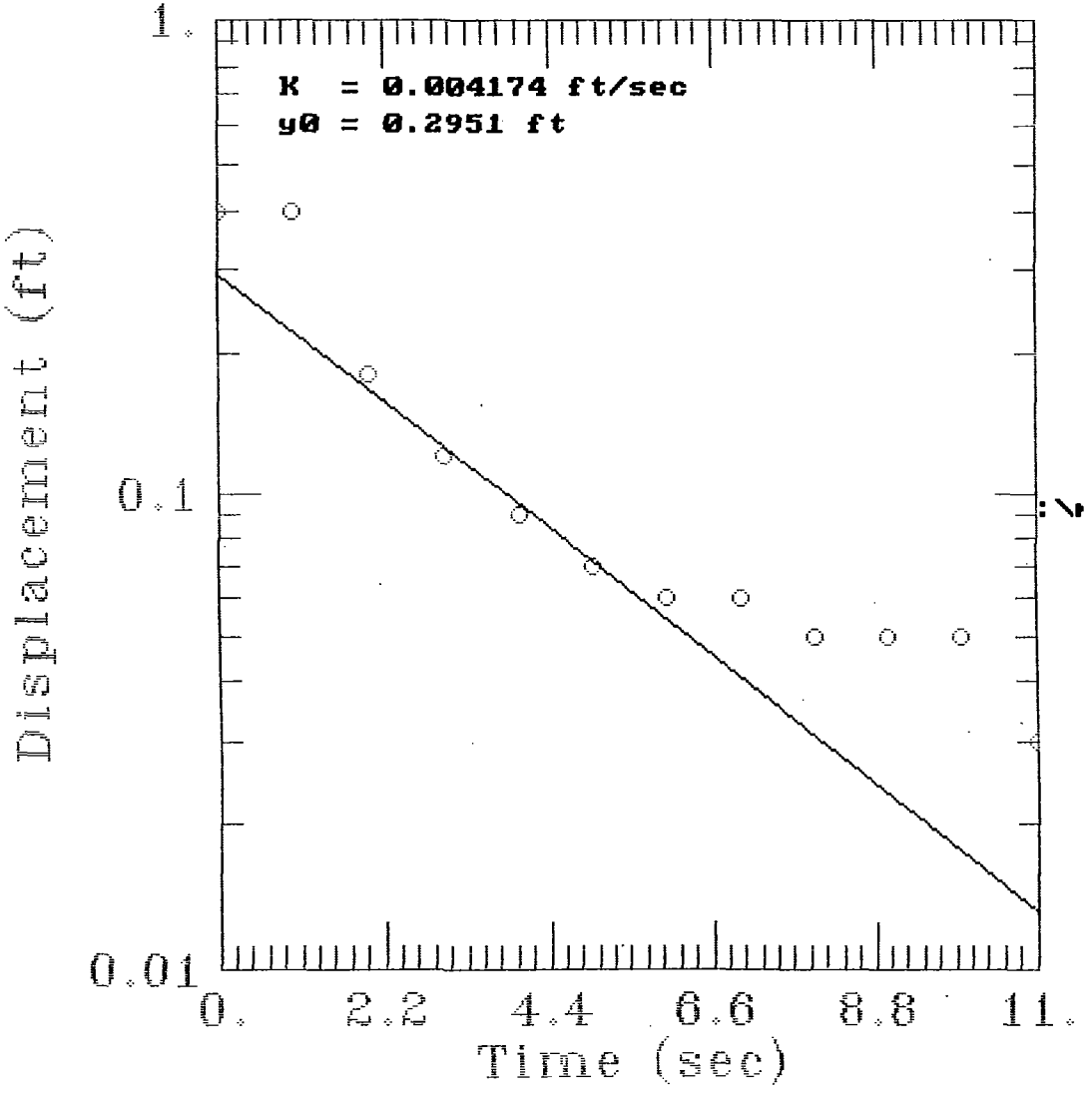
Modeling Group

Barrels MW-13-33 Proj.# 4869



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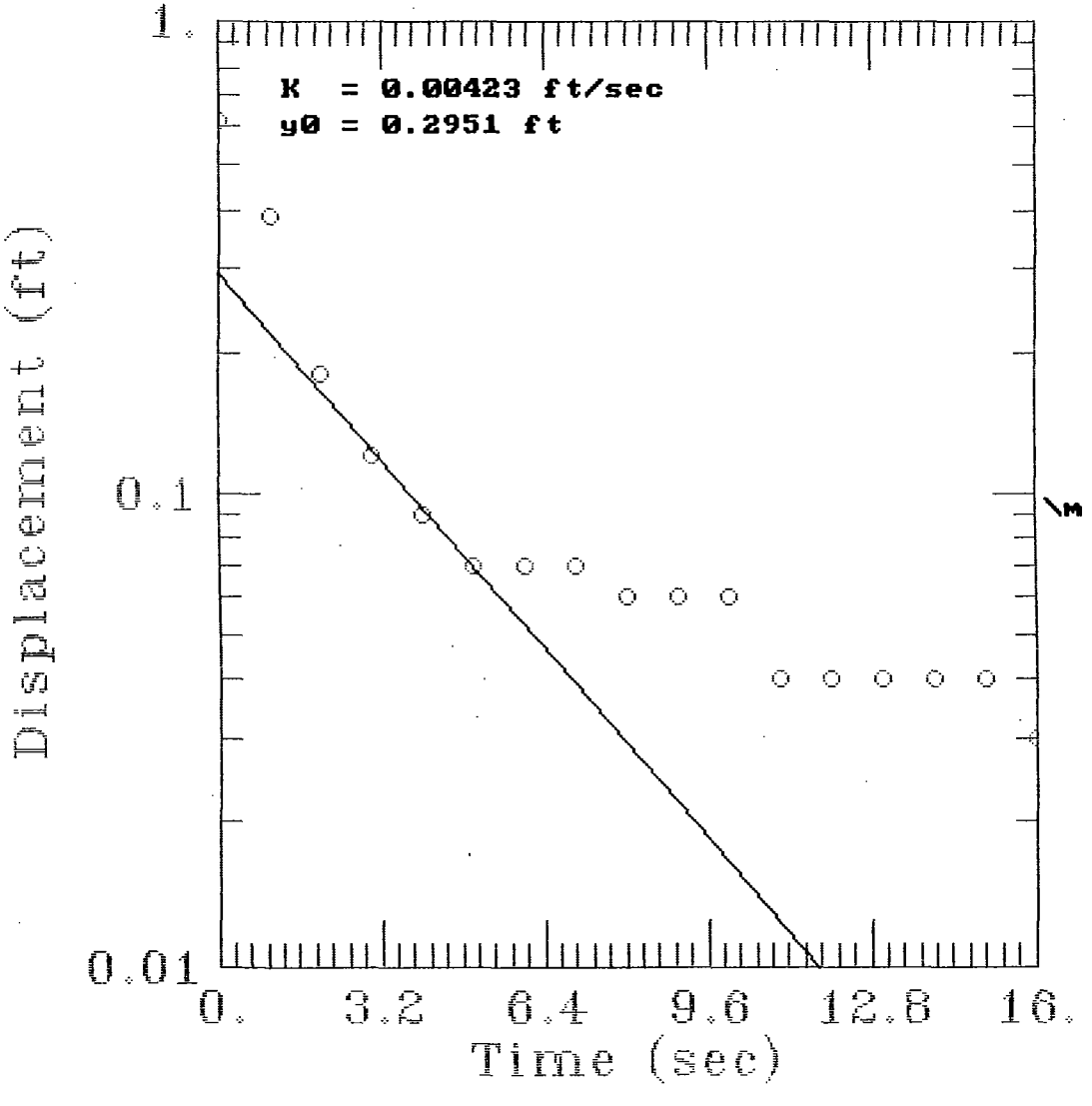
Modeling Group

Barrels MW-13-33 Proj.# 4869



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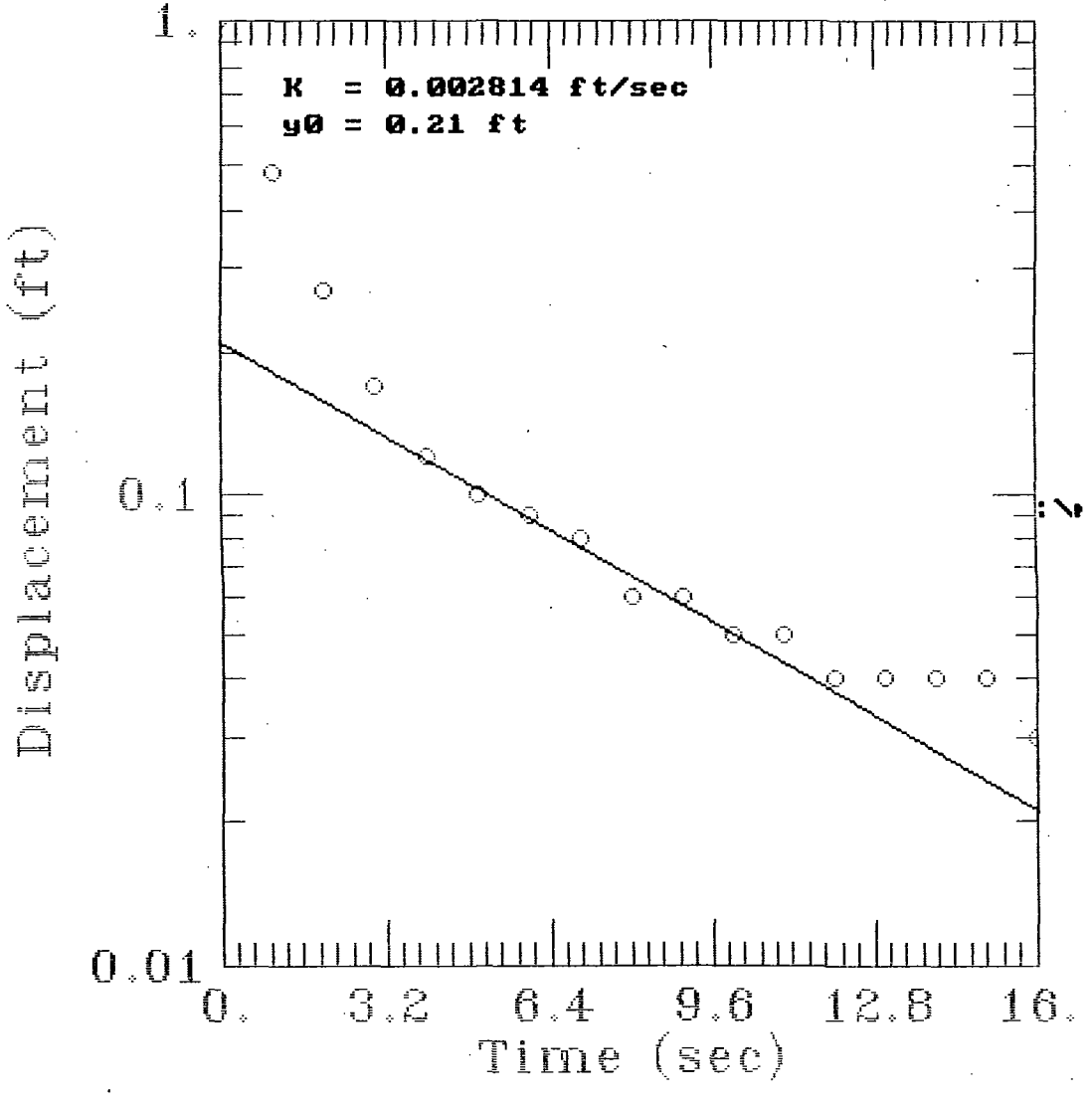
Modeling Group

Barrels MW-14-31 Proj.# 4869



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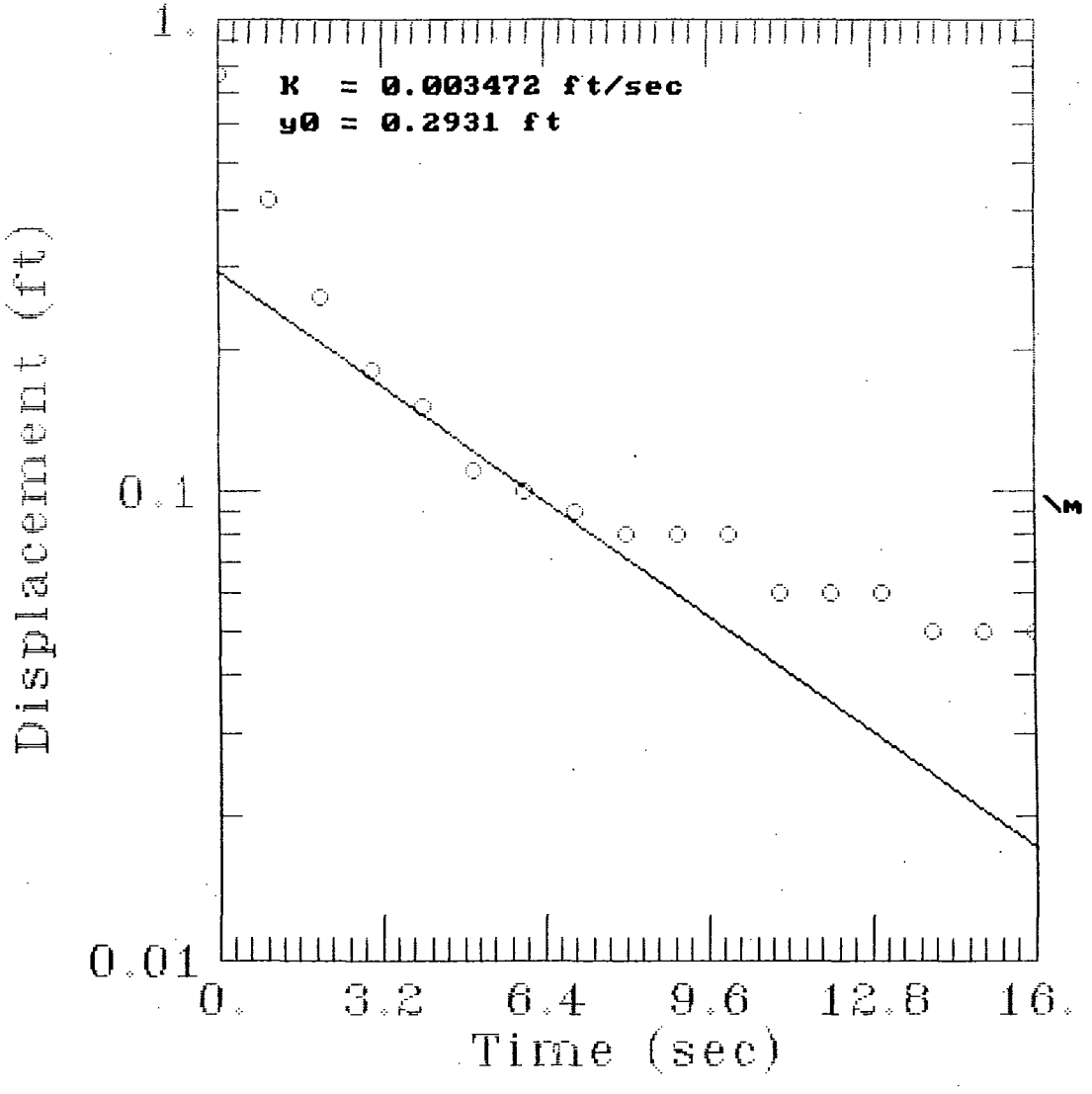
GERAGHTY & MILLER, INC.

Modeling Group

Barrels MW-14-31 Proj.# 4869



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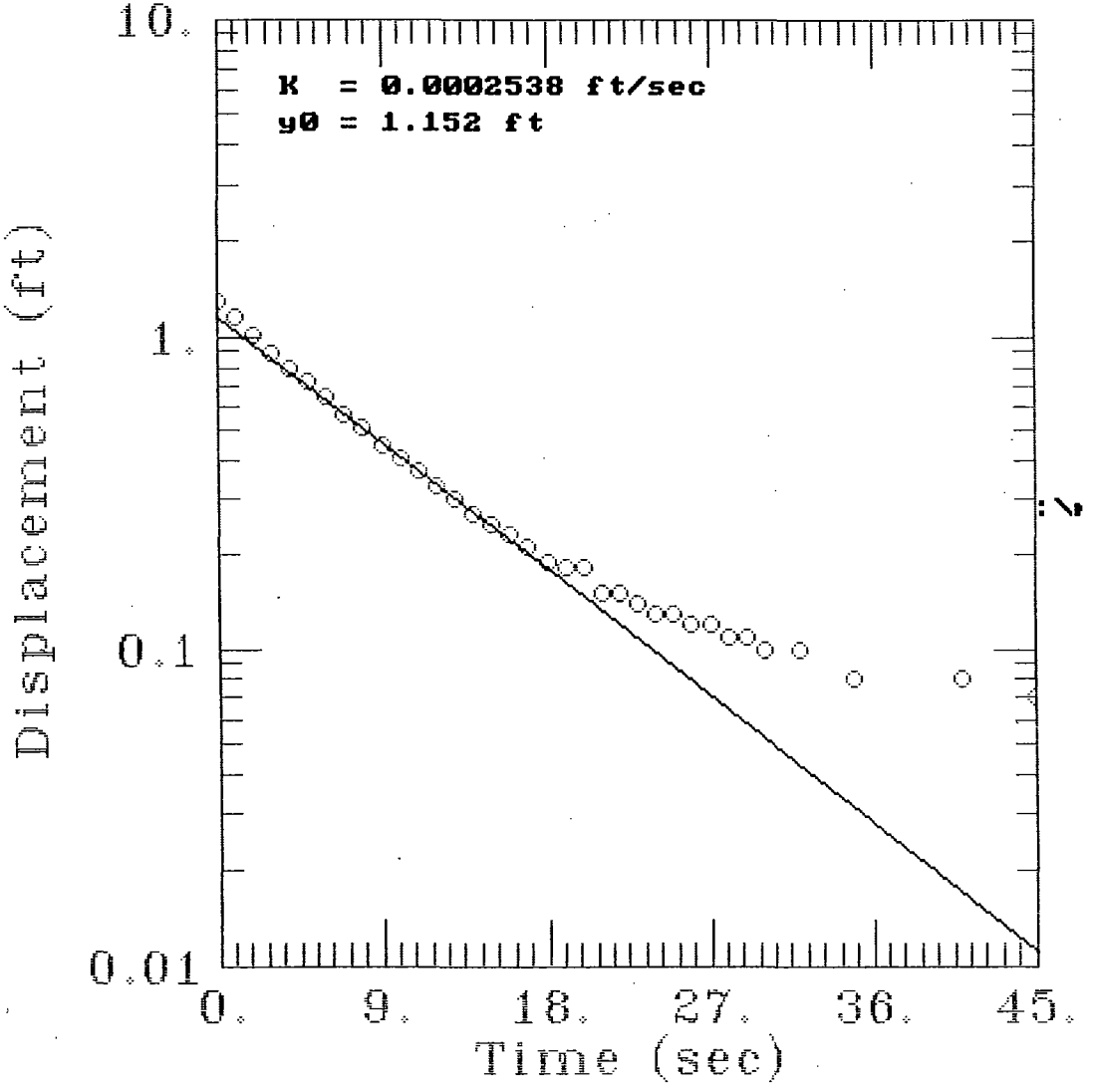
Barrels MW-14-47 Proj.# 4869



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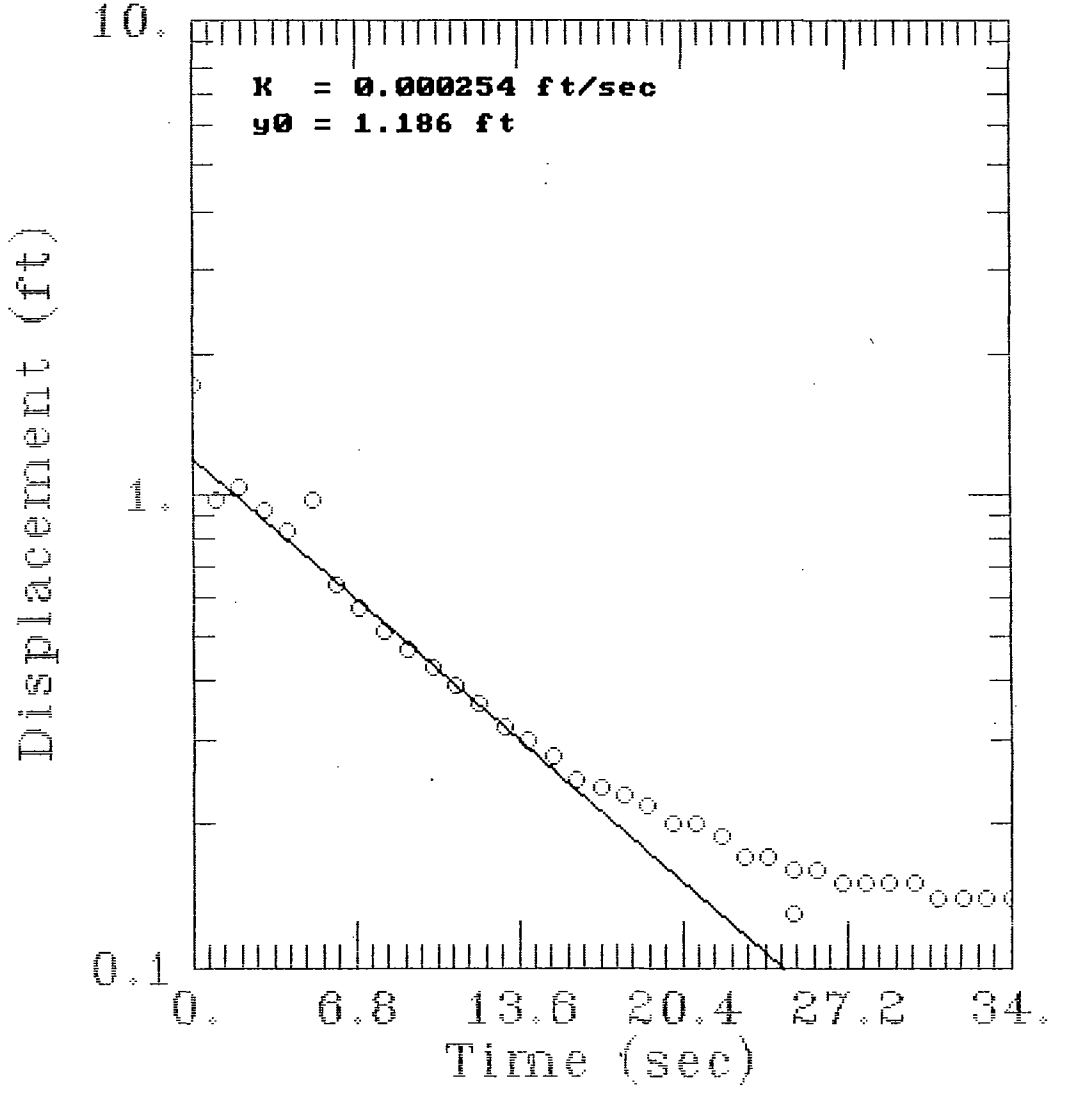
Barrels MW-14-47 f Proj.# 4869



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Modeling Group

APPENDIX G

SURFICIAL SOIL SAMPLING AND IMMUNOASSAY

M E M O

TO: Renato Pasqualoni REFERENCE NO: 4869

FROM: Lou Almeida/bjr/11 DATE: February 6, 1995

RE: Surficial Soil Sampling and Immunoassay Analysis for PCBs
Barrels Inc. Site

The following presents a summary of field activities conducted at the Barrels Inc. Site during August 17 and 18, 1994. Surficial soil sampling and subsequent immunoassay analysis of collected samples were undertaken at the Barrels Inc. Site (Site) located in Lansing, Michigan.

Thirty-six surficial soil samples were collected from the Site using pre-cleaned stainless steel spoons. The samples were collected at depths varying from 2 inches to 7.5 inches. The soil sample locations are presented on the attached plan entitled "PCB Immunoassay Results Detected in Surface Soils".

The samples were then analyzed on-Site for total PCBs using a commercially available immunoassay field soil screening kit purchased from Ensys Inc. A copy of the User's Guide is attached to this memo (see Attachment A).

The soil samples were analyzed in strict accordance with the procedure outlined in the User's Guide. A summary of the results obtained from the on-Site analyses of soil samples is presented in Table 1. The reported results are also provided in the attached plan.

As confirmation of the method results, three soil duplicate samples were submitted to Encotec located in Ann Arbor for the analysis of PCBs. Encotec analyzed the soil samples using SW-846 Method 8080 as outlined in the United States Environmental for Evaluating Solid Waste, Physical/Chemical Methods", 3rd Edition, September 1986. A summary and comparison of on-Site and off-Site results is presented in Table 2.

When comparing the Ensys generated PCB data with the data generated by Encotec, it was noted that two of the three data sets demonstrated acceptable agreement. The third sample collected from location SS17A generated a greater than 50 ppm for PCBs when analyzed by the Ensys test kit and only an 11 ppm result for Aroclor 1260 when analyzed by Encotec. Possible reasons for this poor agreement between these two analyses could arise from sample non-homogeneity or that the Ensys PCB field screening kit used PCB standards that were specific to Aroclor 1254. Overall, good agreement was observed between Ensys and Encotec results.

The Ensys results indicate and delineate three areas of surficial soils at the Site which contain PCBs at levels which exceed TSCA criteria. The first area exists east of

the Former Barrels Inc. building. The second area exists in ditch, just east of the fence line, running in a north south direction between the former Barrels Inc. building and Chesapeake and Ohio railway. The third TSCA PCB impacted area exists east of the former drum storage pad located in the south area of the site.

TABLE 1

SUMMARY OF ON-SITE IMMUNOASSAY RESULTS
BARRELS INC. SITE
LANSING, MICHIGAN

Sample Location	*Equivalent PCB-1254 Results (ppm)*
SS1	<50
SS1B	<50
SS2	<50
SS3	<50
SS4	<50
SS5	<50
SS5B	<50
SS6	<50
SS6A	>50
SS6B	<50
SS6C	<50
SS6D	>50
SS6E	<50
SS6F	<50
SS7	<50
SS8	<50
SS9	<50
SS10	>50
SS10A	<50
SS10B	<50
SS11	<50
SS12	<50
SS13	<50
SS14	<50
SS15	<50
SS16	<50
SS17	>50
SS17A	>50
SS17B	<50
SS17C	<50
SS17D	<50
SS17E	<50
SS17F	<50
SS18	<50
SS19	<50
SS20	<50

Note:

[ ] Result exceeded TSCA criteria for PCBs.

TABLE 2

COMPARISON ON ON-SITE AND OFF-SITE
CONFIRMATION PCB RESULT
BARRELS INC. SITE
LANSING, MICHIGAN

Sample Location	*On Site PCB Results (ppm)*	*Off Site Results Confirmation (mg/kg)*
SS6A	>50	410 (Aroclor 1248 and 1259)
SS10	>50	67* (Aroclor 1254)
SS17A	>50	11 (Aroclor 1260)

Note:

* Secondary dilution required to obtain result

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: CRA/Barrels, Inc.
Project Number: 33014
Method: 8080
Report Date: September 08, 1994

Sample I.D.: S-4869-081794-LMA-SS6A
Sample Date: 08/17/94
Date Received: 08/19/94
Date Extracted: 08/25/94
Date Analyzed: 09/02/94; 09/03/94
ENCOTEC I.D.: 200041103
QC Set I.D.: PSTH1908S

U = Analyte not detected.
B = Analyte present in method blank.

CHLORINATED PESTICIDES/PCBs	CAS NUMBER	CONC. (ug/Kg)	TARGET DETECTION LIMIT (ug/Kg)
Aldrin	309-00-2	U	850
alpha-BHC	319-84-6	U	850
beta-BHC	319-85-7	U	850
delta-BHC	319-86-8	U	850
gamma-BHC (Lindane)	58-89-9	U	850
alpha-Chlordane	5103-71-9	U	1,400*
gamma-Chlordane	5103-74-2	U	6,300*
4,4'-DDD	72-54-8	3,000	1,700
4,4'-DDE	72-55-9	390,000S	66,000
4,4'-DDT	50-29-3	U	1,700
Dieldrin	60-57-1	U	1,900*
alpha-Endosulfan	959-98-8	U	1,700
beta-Endosulfan	33213-65-9	U	1,700
Endosulfan sulfate	1031-07-08	U	1,700
Endrin	72-20-8	U	1,700
Endrin aldehyde	7421-36-3	U	1,700
Heptachlor	76-44-8	U	850
Heptachlor epoxide	1024-57-3	U	4,700*
Toxaphene	8001-35-2	U	85,000
PCB-1016	12674-11-2	U	170,000
PCB-1221	11104-28-2	U	170,000
PCB-1232	11141-16-5	U	170,000
PCB-1242	53469-21-9	U	170,000
PCB-1248	12672-29-6	200,000	170,000
PCB-1254	11097-69-1	210,000	170,000
PCB-1260	11096-82-5	U	170,000

Results reported on a dry weight basis.
Percent Total Solids 84.8

Note: * Target Detection Limits raised due to matrix interference. "S" flagged results are due to (secondary) dilution. When needed, second analysis dates and QC Set ID's are provided.

Form 058CSL10.BI1 Rev. 05/19/93

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: CRA/Barrels, Inc.
Project Number: 33014
Method: 8080
Report Date: September 08, 1994

Sample I.D.: S-4869-081894-LMA-SS10
Sample Date: 08/18/94
Date Received: 08/19/94
Date Extracted: 08/25/94
Date Analyzed: 08/31/94; 09/02/94
ENCOTEC I.D.: 200041104
QC Set I.D.: PSTH1908S

U = Analyte not detected.
B = Analyte present in method blank.

CHLORINATED PESTICIDES/PCBs	**CAS NUMBER**	**CONC.** (ug/Kg)	**TARGET DETECTION LIMIT** (ug/Kg)
Aldrin	309-00-2	U	170
alpha-BHC	319-84-6	U	170
beta-BHC	319-85-7	U	170
delta-BHC	319-86-8	U	170
gamma-BHC (Lindane)	58-89-9	U	170
alpha-Chlordane	5103-71-9	1,200	170
gamma-Chlordane	5103-74-2	2,000	170
4,4'-DDD	72-54-8	U	330
4,4'-DDE	72-55-9	U	1,600*
4,4'-DDT	50-29-3	U	1,100*
Dieldrin	60-57-1	U	530*
alpha-Endosulfan	959-98-8	U	330
beta-Endosulfan	33213-65-9	U	330
Endosulfan sulfate	1031-07-08	U	330
Endrin	72-20-8	U	330
Endrin aldehyde	7421-36-3	U	330
Heptachlor	76-44-8	U	170
Heptachlor epoxide	1024-57-3	U	170
Toxaphene	8001-35-2	U	17,000
PCB-1016	12674-11-2	U	33,000
PCB-1221	11104-28-2	U	33,000
PCB-1232	11141-16-5	U	33,000
PCB-1242	53469-21-9	U	33,000
PCB-1248	12672-29-6	U	33,000
PCB-1254	11097-69-1	67,000 S	66,000
PCB-1260	11096-82-5	U	33,000

Results reported on a dry weight basis.
Percent Total Solids 67.6

Note: * Target Detection Limits raised due to matrix interference. "S" flagged results are due to (secondary) dilution. When needed, second analysis dates and QC Set ID's are provided.

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: CRA/Barrels, Inc.
Project Number: 33014
Method: 8080
Report Date: September 08, 1994

Sample I.D.: S-4869-081894-LMA-SS17A
Sample Date: 08/18/94
Date Received: 08/19/94
Date Extracted: 08/25/94
Date Analyzed: 09/02/94
ENCOTEC I.D.: 200041105
QC Set I.D.: PSTH1908S

U = Analyte not detected.
B = Analyte present in method blank.

CHLORINATED PESTICIDES/PCBs	**CAS NUMBER**	**CONC.** (ug/Kg)	**TARGET DETECTION LIMIT** (ug/Kg)
Aldrin	309-00-2	U	34
alpha-BHC	319-84-6	U	34
beta-BHC	319-85-7	U	34
delta-BHC	319-86-8	U	34
gamma-BHC (Lindane)	58-89-9	U	34
alpha-Chlordane	5103-71-9	230 S	34
gamma-Chlordane	5103-74-2	280 S	34
4,4'-DDD	72-54-8	610	170
4,4'-DDE	72-55-9	U	520*
4,4'-DDT	50-29-3	390	170
Dieldrin	60-57-1	U	66
alpha-Endosulfan	959-98-8	U	66
beta-Endosulfan	33213-65-9	U	66
Endosulfan sulfate	1031-07-08	U	66
Endrin	72-20-8	U	66
Endrin aldehyde	7421-36-3	U	66
Heptachlor	76-44-8	U	34
Heptachlor epoxide	1024-57-3	U	37*
Toxaphene	8001-35-2	U	3,400
PCB-1016	12674-11-2	U	6,600
PCB-1221	11104-28-2	U	6,600
PCB-1232	11141-16-5	U	6,600
PCB-1242	53469-21-9	U	6,600
PCB-1248	12672-29-6	U	6,600
PCB-1254	11097-69-1	U	6,600
PCB-1260	11096-82-5	11,000	6,600

Results reported on a dry weight basis.
Percent Total Solids 86.3

Note: * Target Detection Limits raised due to matrix interference. "S" flagged results are due to (secondary) dilution. When needed, second analysis dates and QC Set ID's are provided.

ATTACHMENT A

ENSYS USERS GUIDE

READ TO AVOID COSTLY MISTAKES

SAMPLE DILUTION DIAGRAM

1. The sample dilution procedure in the instructions is for standard detection levels. The following diagram represents the sample dilution procedure for all other detection levels

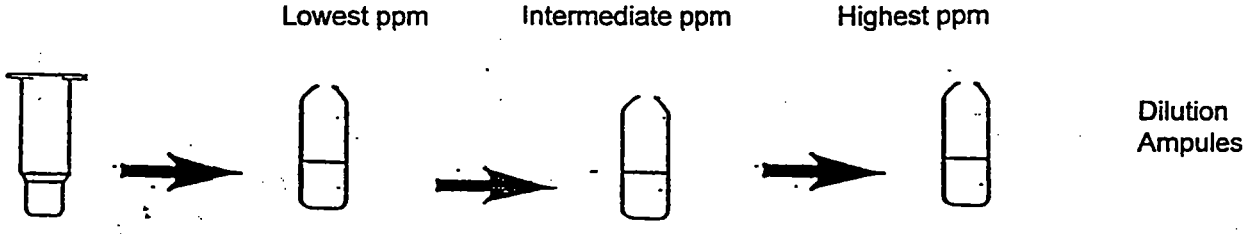
2. Your kit may include extra dilution ampules to reach high detection levels.

3. **EVERY AMPULE PROVIDED MUST BE USED!**

If there are any questions concerning the dilution procedure **please call Technical Services before running the samples to help avoid costly mistakes.**

1-800-242-7472 or 919-941-5509 (X144, 148 or 149).

EXAMPLE:



NOTE: YOUR ORDER MAY INCLUDE ADDITIONAL AMPULES IN ORDER TO ACHIEVE YOUR TEST LEVELS. ALWAYS TRANSFER FILTERED SAMPLE TO THE DILUTION AMPULE LABELLED WITH THE LOWEST PPM LEVEL AND THEN TRANSFER FROM IT TO THE NEXT HIGHER LEVEL DILUTION AMPULE .

Rev. 1 10/14/93

ENSYS INC.
ENVIRONMENTAL PRODUCTS

PCB RISC® SOIL 24 TEST CASE

RAPID IMMUNOASSAY SCREEN

User's Guide

IMPORTANT NOTICE

This method correctly identifies 95% of samples that are PCB-free and those containing 1 ppm or greater of PCBs. A sample that develops less color than the standard is interpreted as positive. It contains PCBs. A sample that develops more color than the standard is interpreted as negative. It contains less than 1 ppm PCBs.

This test system should be used only under the supervision of a technically qualified individual who is capable of understanding any potential health and environmental risks of this product as identified in the product literature. The components must only be used for the analysis of soil samples for the presence of polychlorinated biphenyls. After use, the kits must be disposed of in accordance with applicable federal and local regulations.

TROUBLE SHOOTER GUIDE

Wash Step- lack of vigorous washing may result in false positives or negatives depending on whether the wash error was committed on standard or sample tubes. *Solution*: make sure that the operator washes four times vigorously.

Pipette Calibration- an out-of-calibration pipette may result in false positives or negatives depending on whether the amount is greater or less than the specified transfer volume. *Solution*: check the calibration at least daily and after any extreme mechanical shock (such as dropping). An indication that the pipette is out of calibration is if the gold barrel is loose and will turn. (When set on 30 ml there should be about 1/4 of an inch between the white plunger and the end of the clear pipette tip.)

Air bubbles in the pipette or diluter- the presence of air bubbles in the pipette tip when transfering extracts may result in false positives or negatives depending on whether the error was committed on standard or sample tubes. *Solution*: quickly examine the pipette tip each time an aliquot is withdrawn and go back to the source and take another aliquot to displace the bubble if neccessary. Bubbles in the diluter can be in the tip or plunger assembly.

Mixing- lack of thorough mixing, when instructed, can cause inconsistent results.. *Solution*: observe the mixing times in the instructions and to mix with sufficient force to ensure that the liquid is mixed.

Timing- it important to follow the timing steps in the instructions carefully. The incubation step in the antibody tubes can vary a bit without harm to the test (± 5 minutes). The color development step timing is critical and should be no less than 2 minutes and no greater than 3 minutes.

Addition of Drops- it is important to carefully count the drops added in the color development steps. The addition of ±1 drop to the instructed 5 drops can cause variability in the results RIGHT AROUND THE DETECTION LEVELS OF INTEREST. One drop less would result in a darker color (a less dilute solution) which could result in a false negative. One drop more could result in a lighter color (a more dilute solution) and result in a false positive.

Wiping the Tubes- wiping of the tubes should be done before they are read in the spectrophotometer because smudges and fingerprints on the tubes can give potentially false negative readings.

Mixing Lot #'s- never mix lots! Each kit's components are QC'd together for optimal performance and may give inaccurate results with the components from other kits, that are not of the same lot #. Also, the user must NEVER mix components from different types of kits (ex: Petro kit buffer tubes can't be used with a PAH kit).

Storage and Operating Temperatures- temperature requirements are very important and should be strictly adhered to. This information can be found in the kit User's Guide.

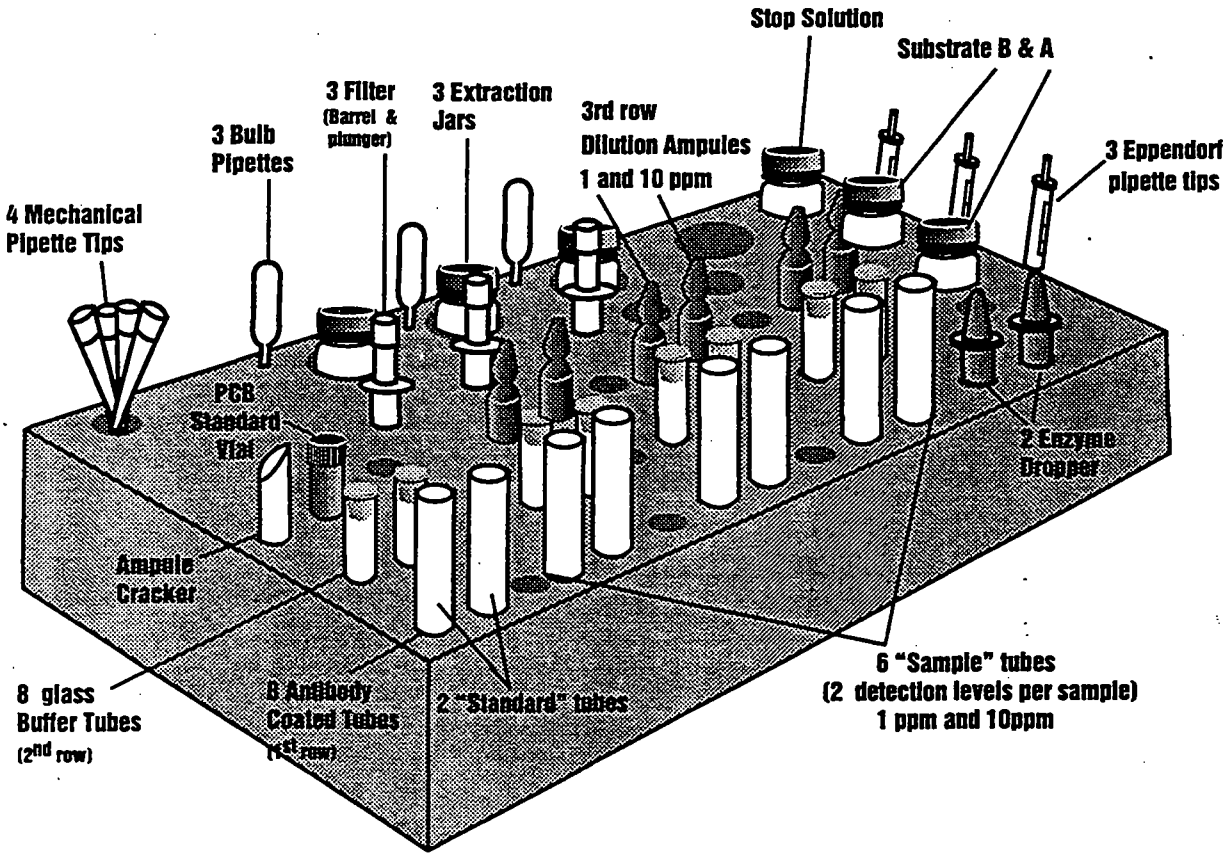
Shelf-life- each kit label contains the kit expiration date. To achieve accurate results, kits must be used prior to expiration.

WORKSTATION SET-UP

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

WORKSTATION SET-UP

- ▫ Mechanical pipette tips
- ▫ Filter barrels & plungers
- ▫ Ampule cracker
- ▫ Glass PCB buffer tubes
- ▫ Substrate A
- ▫ Eppendorf pipette tips
- ▫ Bulb pipettes
- ▫ PCB standard
- ▫ Antibody coated tubes
- ▫ Substrate B
- ▫ Extraction jars
- ▫ 1 & 10 ppm dilution ampules
- ▫ Enzyme Droppers
- ▫ Stop Solution



Workstation shows components for 3 samples tested at 2 levels

TEST PREPARATION

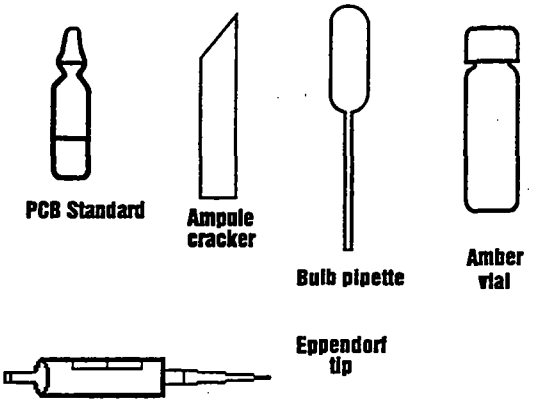
READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

READ BEFORE PROCEEDING

- Follow diagram to setup workstation.
- Items that you will need that are not provided in the test kit include: a permanent marking pen, laboratory tissue (or paper towels), a liquid waste container, and disposable gloves.
- Six sample tubes must be analyzed together in order to analyze 48 sample tubes per test kit. Do not attempt to run more than 12 tubes, two of which must be Standard tubes.
- Operate test at temperatures greater than 4° C/40° F and less than 32° C/90° F.
- Do not expose reagent set to direct sunlight.
- See table on page 9 for sensitivity to various Aroclors.

TEST PREPARATION

- Label amber vial "PCB Standard", and the current date; Standard is usable for up to 2 weeks from this date. Open PCB Standard ampule by slipping ampule cracker over top, and then breaking top at scored neck. Transfer to empty amber vial with bulb pipette. **Always cap tightly when finished using Standard.**

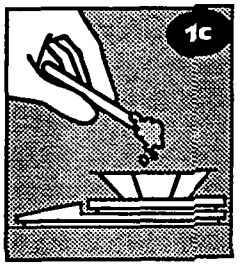


- Label all Eppendorf repeater tips. Tips can be reused for future analyses. Label the first tip "A", the second tip "B" and the third tip "Stop."

PHASE 1 EXTRACTION & PREPARATION OF THE SAMPLE

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

WEIGH SAMPLE

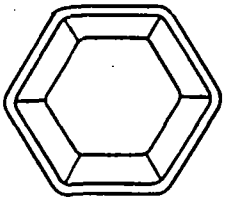


1a Place unused weigh boat on pan balance.

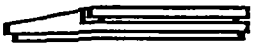
1b Press ON/MEMORY button on pan balance. Balance will beep and display 0.0.

1c Weigh out 10 ± 0.1 grams of soil.

1d If balance turns off prior to completing weighing, use empty weigh boat to retare, then continue.



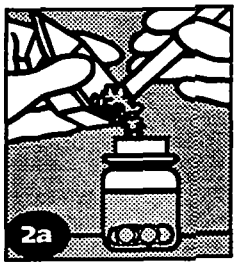
Weigh Boat



Pan balance

Wooden spatula

EXTRACT PCBS



2a Uncap extraction jar and place on a flat surface. Without contacting solvent puncture foil seal with ampule cracker or sharp object. Peel the remainder of the seal off extraction jar.

2b Using wooden spatula, transfer 10 grams of soil from weigh boat into extraction jar.

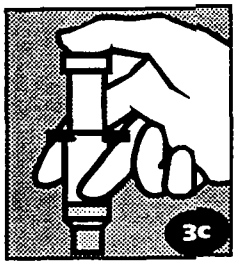
2c Recap extraction jar tightly and shake **vigorously** for one minute.

2d Allow to settle for one minute.

Repeat steps 1a - 2c for each sample to be tested.

Extraction jar

FILTER SAMPLE

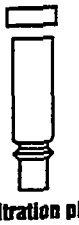


3a Disassemble filtration plunger from filtration barrel.

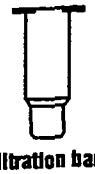
3b Insert bulb pipette into top (liquid) layer in extraction jar and draw up sample. Transfer **at least ½** bulb capacity into filtration barrel. **Do not use more than one full bulb.**

3c Press plunger firmly into barrel until adequate filtered sample is available (place on table and press if necessary).

Repeat steps 3a - 3c for each sample to be tested.



Filtration plunger



Filtration barrel

Bulb pipette

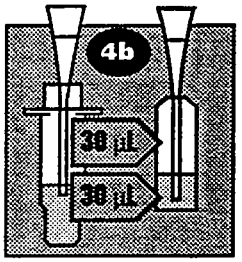
PHASE 2 SAMPLE & STANDARD PREPARATION

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

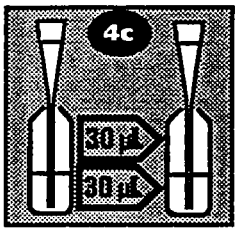
READ BEFORE PROCEEDING

- **Tap glass buffer tubes vigorously on hard surface to release buffer trapped in cap.**
- Label the glass buffer and plastic antibody coated tubes with a **permament marking pen.** Uncap glass buffer tubes.
- When using the mechanical pipette always withdraw and dispense below the liquid level.
- "Shake tubes" means to thoroughly mix the contents with special care not to spill or splash.
- When running multiple samples, change pipette tips betwen samples.

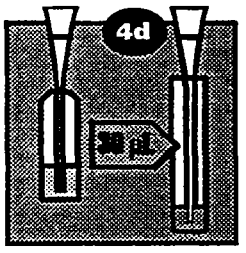
DILUTE SAMPLES AND STANDARDS

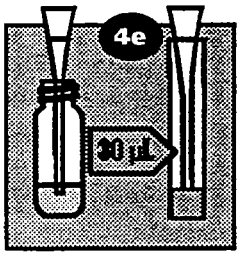


1 ppm



1 ppm 10 ppm





PCB Standard

4a Open 1 and 10 ppm* dilution ampules by slipping ampule cracker over top, and then breaking top at scored neck.

4b Withdraw 30 µL of sample from the filtration plunger using mechanical pipette and dispense at the bottom of the "1 ppm" dilution ampule. **Repeat** to transfer a total of 60 µL; gently shake ampule from side to side for 5 seconds to mix thoroughly.

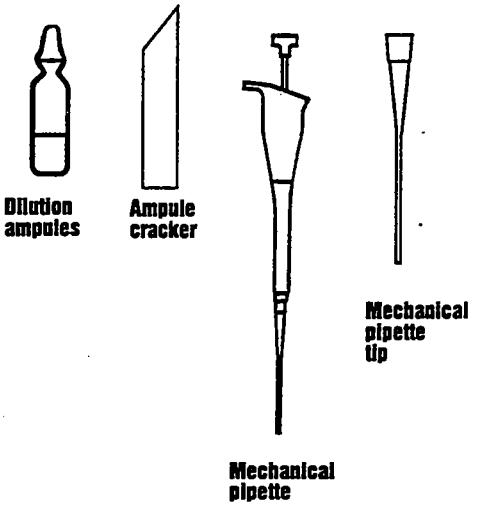
4c Withdraw 30 µL from the "1 ppm" dilution ampule using mechanical pipette and dispense at the bottom of the "10 ppm" dilution ampule. **Repeat** to transfer a total of 60 µL; gently shake ampule from side to side for 5 seconds to mix thoroughly.

4d Transfer 30 µL from each dilution ampule (starting with higher concentration dilution ampule) into a glass buffer tube. Always wipe tip after dispensing into buffer tube.

4e Change pipette tip and repeat 4b -4d for each sample.

4f Assemble new pipette tip on mechanical pipette and transfer 30 µL from Standard vial into two glass buffer tubes. Immediately replace cap on PCB Standard vial.

4g Shake all glass buffer tubes for 5 seconds.



* **For other test concentrations, follow steps 4b - 4d, transferring from lowest level dilution ampules to higher level dilution ampules. You may be provided with additional dilution ampules to achieve higher test concentrations.**

If you need assistance call technical support 1-800-242-7472

Glass buffer tubes

PCB Standard vial

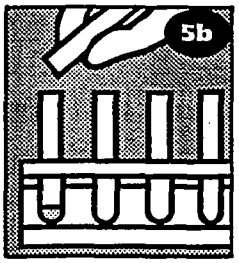
PHASE 3 THE IMMUNOASSAY

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

READ BEFORE PROCEEDING

- This phase of the procedure requires critical timing and care in handling the antibody coated tubes.

INCUBATION 1



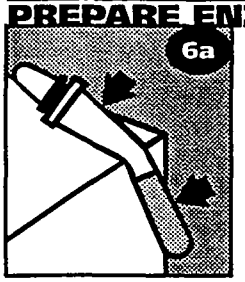
5a Set timer for exactly 10 minutes.

5b Start timing and immediately pour solution from each glass buffer tube into appropriate antibody coated tube. **Tap glass tube on antibody coated tube to remove solution.**

5c Shake all tubes for 5 seconds.

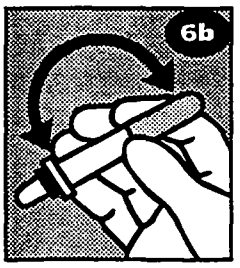
Antibody coated tubes (contained in resealable "zip-seal" aluminized pouch)

PREPARE ENZYME DROPPER



6a Crush glass ampule contained within enzyme dropper by pressing tube against hard edge.

6b Mix enzyme by turning dropper end-over-end 5 times. **Do not shake.**



6c Remove seal from enzyme dropper.

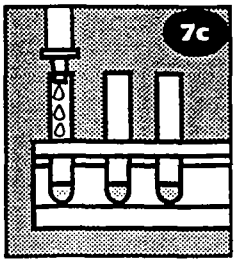
Repeat steps 6a - 6c to prepare one enzyme dropper for every 4 antibody coated tubes.

Enzyme dropper

INCUBATION II

7a Dispense first drop from enzyme dropper into liquid waste container.

Note: before dispensing drops, tap capped tip on hard surface to avoid dispensing air bubbles.



7b After the 10 minute incubation, set timer for 5 minutes.

7c Immediately dispense 3 drops of enzyme into each antibody coated tube by squeezing the dropper.

7d Shake antibody coated tubes for 5 seconds.

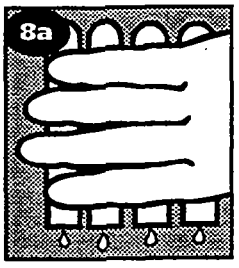
PHASE 3 THE IMMUNOASSAY

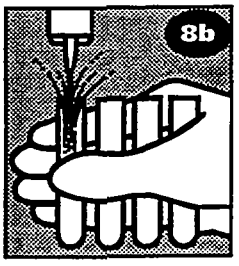
READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

READ BEFORE PROCEEDING
WASH PROCEDURE

- An accurate test requires a vigorous wash accomplished by directing a strong stream into the antibody coated tubes.
- The wash solution is a harmless, dilute solution of detergent.

WASH



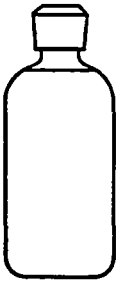


8a After the 5 minute incubation (a total of 15 minutes), empty antibody coated tubes into liquid waste container.

8b Wash antibody coated tubes by vigorously filling and emptying a total of 4 times.

8c Tap antibody coated tubes upside down on paper towels to remove excess liquid. Residual foam in the tubes will not interfere with test results.

Note: When running up to 12 antibody coated tubes, tubes can be washed in two groups - one group immediately following the other group.



Wash bottle

PHASE 3 THE IMMUNOASSAY

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

COLOR DEVELOPMENT

9a Set the Eppendorf Repeater on 2, assemble the "A" tip and fill with Substrate A (TMB, yellow label).

9b Dispense once (200 µL) into each antibody coated tube.

9c Set timer for exactly 2 1/2 minutes.

9d Assemble "B" tip, fill with Substrate B, start timer, and dispense once (200 µL H_2O_2, green label) into each antibody coated tube.

9e Shake all tubes for 5 seconds. Solution will turn blue in some or all antibody coated tubes.

9f Assemble "Stop" tip, fill with Stop Solution (red label), and stop reaction at end of 2 1/2 minutes by dispensing once (200 µL) into each antibody coated tube.

Substrate A Substrate B Stop

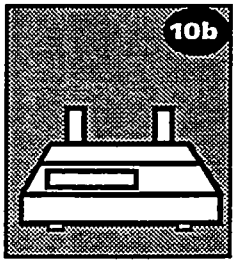
AROCLOR SENSITIVITY

Aroclor	Lowest Detection Level
1248	1.0 ppm
1254	0.4 ppm
1260	0.4 ppm
1242	2.0 ppm
1232	4.0 ppm
1016	4.0 ppm

PHASE 4 ANALYSIS OF RESULTS

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

SELECT STANDARD



10a Wipe outside of all antibody coated tubes.

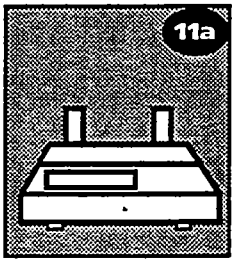
10b Place both Standard tubes in photometer.

10c Switch tubes until the photometer reading is negative or zero. Record reading.

If reading is greater than 0.3 in magnitude (+ or -), results are outside QC limits. Retest the sample(s).

10d Remove and discard tube in right well. The tube in the left well is the darker standard.

MEASURE SAMPLE



11a Place 1 ppm tube in right well of photometer and record reading.

If photometer reading is negative or zero, PCBs are present.

If photometer reading is positive, concentration of PCBs is less than 1 ppm.

11b Place 10 ppm tube in right well of photometer and record reading.

If photometer reading is negative or zero, PCBs are present.

If photometer reading is positive, concentration of PCBs is less than 10 ppm.

QUALITY CONTROL

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

System Description

Each PCB RISc Soil 24 Test Case contains enough material to perform 24 test samples, each at two detection levels.

The PCB RISc Soil Test is divided into four phases. The instructions and notes should be reviewed before proceeding with each phase.

Hotline Assistance

If you need assistance or are missing necessary Test System materials, call toll free: 1-800-242-RISC (7472).

Validation and Warranty Information

Product claims are based on validation studies carried out under controlled conditions. Data has been collected in accordance with valid statistical methods and the product has undergone quality control tests of each manufactured lot.

PCB-free soil and soil containing 1 ppm or greater of PCBs were tested with the EnSys PCB RISc analytical method. The method correctly identified 95% of these samples. A sample that has developed less color than the standard is interpreted as positive. It contains PCBs. A sample that has developed more color than the standard is interpreted as negative. It contains less than 1 ppm PCBs.

The company does not guarantee that the results with the PCB RISc Soil 24 Test Case will always agree with instrument-based analytical laboratory methods. All analytical methods, both field and laboratory, need to be subject to the appropriate quality control procedures.

EnSys, Inc. warrants that this product conforms to the descriptions contained herein. No other warranties, whether expressed or implied, including warranties of merchantability and of fitness for a particular purpose shall apply to this product.

EnSys, Inc. neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than such as is expressly set forth herein.

Under no circumstances shall EnSys, Inc. be liable for incidental or consequential damages resulting from the use or handling of this product.

How It Works

Standards, Samples, and color-change reagents are added to test tubes, coated with a chemical specific to PCBs. The concentration of PCBs in an unknown **Sample** is determined by comparing its color intensity with that of a **Standard.**

Note: PCB concentration is inversely proportional to color intensity; the lighter the color development of the sample, the higher the concentration of PCBs.

Quality Control

Standard precautions for maintaining quality control:

- Do not use reagents or test tubes from one Test System with reagents or test tubes from another Test System.
- Do not use the Test System after any portion has passed its expiration date.
- Do not attempt the test using more than 12 antibody coated tubes (two of which are **Standards**) at the same time.
- Do not exceed incubation periods prescribed by the specific steps.
- Always follow the procedure in this user's guide.
- Use EPA Method 8080 or Code of Federal Regulations Title 40, Part 136, Appendix A, Method 680 to confirm results

Storage and Handling Precautions

- Wear protective gloves and eyewear.
- Store kit at room temperature and out of direct sunlight (less than 80°F).
- Keep aluminized pouch (containing unused antibody coated tubes) sealed when not in use.
- If Stop Solution or liquid from the extraction jar comes into contact with eyes, wash thoroughly with cold water and seek immediate medical attention.
- Standard Solution contains PCBs. Test samples may contain PCBs. Handle with care.

EPPENDORF REPEATER & MECHANICAL PIPETTE

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH THE TEST

HOW TO OPERATE THE EPPENDORF REPEATER

To Set Or Adjust Volume

To determine the pipetting volume, the dial setting (1-5) is multiplied by the minimum pipetting volume of the tip.

To Assemble Pipette Tip

Slide filling lever down until it stops. Then raise the locking clamp and insert the tip until it clicks into position. Be sure the tip plunger is fully inserted into the barrel before lowering the locking clamp to affix the tip in place.

To Fill Tip

With tip mounted in position on pipette, immerse end of tip into solution. Slide filling lever upward slowly.

To Dispense Sample

Check the volume selection dial to ensure pipetting volume. Place tip inside test tube so that tip touches the inner wall of tube. Completely depress the pipetting lever.

To Eject Tip

Empty tip of any remaining solution into appropriate container. Raise locking clamp upward, and remove the tip.

For additional information regarding operation and use of repeater, please refer to your Eppendorf Repeater manual.

HOW TO OPERATE THE MECHANICAL PIPETTE

To Set Or Adjust Volume

Remove push-button cap and use it to loosen volume lock screw. Turn lower part of push-button to adjust volume up or down. Meter should read "030". Tighten volume lock screw and replace push-button cap.

To Assemble Pipette Tip

Slide larger mounting end of pipette tip onto end of pipette. Holding tip in place, press push-button until plunger rod enters pipette tip. **Ensure no gap exists between piston and plunger rod.**

To Withdraw Sample

With tip mounted in position on pipette, press push-button to first stop and hold it.

Place tip at bottom of liquid sample and slowly release push-button to withdraw measured sample. Ensure that no bubbles exist in liquid portion of sample. If bubbles exist, dispense sample and re-withdraw sample.

To Dispense Sample

Place tip into dispensing vessel (immersing end of the tip if vessel contains liquid) and slowly press push-button to first stop. (Do not push to second stop or tip will eject).

Remove tip from vessel and release push-button.

To Eject Tip

Press push-button to second stop. Tip is ejected.

For additional information regarding operation and use of pipette, please refer to your pipette manual.

APPENDIX H

DATA VALIDATION

MEMO

TO: Renato Pasqualoni

REFERENCE NO: 4869

FROM: Steven C. Day

DATE: October 14, 1993

RE: Data Concerns
Barrels, Inc. Site - Lansing, Michigan

As requested, I have reviewed the laboratory data associated with the collection of soil and water samples from the Barrels, Inc. Site to determine if the presence of methylene chloride and bis(2-ethylhexyl)phthalate was due to previous Site activities or an artifact of the laboratory analyses. In addition, I reviewed the data from three boreholes to determine if the contaminant concentration profile was due to a potential sample identification error.

Potential Laboratory Contamination

The volatile organic compounds (VOC) soil method blanks were not reported by the laboratory as containing detectable concentrations of methylene chloride. However, methylene chloride was detected in the aqueous method blank samples. The methylene chloride in the aqueous method blank samples was detected slightly above the laboratory's reporting limit of 1 µg/L.

The method used for VOC analysis is more sensitive for water samples than soil samples. This is due to the mass of water aliquot analyzed being larger than the mass of soil aliquot. Consequently, low levels (i.e., less than 10 µg/kg) of methylene chloride present in soil method blanks would not have been reported as being detected.

The USEPA guidance document for validation of organics data recognizes that methylene chloride is one of a group of common laboratory contaminants. If a common laboratory contaminant is detected in a method blank sample, the associated samples are evaluated to determine if the reported value is less than or equal to 10 times the concentration of the method blank concentration. Should this be true, the associated samples results are qualified as being non-detect with the reported value becoming the sample quantitation limit.

As previously noted, methylene chloride detected in the soil method blanks at concentrations less than 10 µg/kg would not have been reported by the laboratory. The application of the ten times criteria described above would not have been performed by the data validator and the data would remain unqualified. However, the guidance document allows the reviewer of the data to apply professional judgement in qualification of sample data due to potential laboratory contamination without the application of the ten times criteria. Due to the low, uniform

concentrations of methylene chloride detected in the samples, professional judgment would dictate that all methylene chloride results should be qualified as non-detect with the reported concentration becoming the sample quantitation limit.

The SVOC results for numerous samples indicated the presence of varying concentrations of bis(2-ethylhexyl)phthalate. The associated method blanks were not reported as containing this compound. The bis(2-ethylhexyl)phthalate soil data should be qualified using professional judgement as this compound is also recognized by the USEPA as being a common laboratory contaminant. However, due to the inconsistency of bis(2-ethylhexyl)phthalate concentrations, professional judgement would dictate that those samples with concentrations of 10 times or less the quantitation limit (less than or equal to 3.3 µg/kg) be qualified as non-detect with the reported concentration becoming the sample quantitation limit. Consequently, all samples with reported concentrations of bis(2-ethylhexyl)phthalate except samples S-051993-RP-10, S-051993-RP-11, S-051393-RP-22 and S-051993-RP-73 should be qualified. Resampling and analysis will be necessary to confirm the presence or absence of bis(2-ethylhexyl)phthalate in the four samples with concentrations greater than 3.3 µg/kg.

The sample collected from monitoring well 7 was reported to have a bis(2-ethylhexyl) phthalate concentration of 0.009 mg/L. This value is marginally greater than the laboratory reporting limit of 0.005 mg/L. No bis(2-ethylhexyl)phthalate was detected in the associated method blank and the presence of the compound may be due to random laboratory contamination. The data should be considered suspect and the data generated from the second round of groundwater sampling will confirm the presence or absence of bis(2-ethylhexyl)phthalate in the well.

Contaminant Concentration Profile

The concentration profiles of contaminants detected in three boreholes (DS-8, DD-1 and DS-4) were not as would be expected for undisturbed soil. Polynuclear aromatic hydrocarbons (PAHs) were detected in borehole DS-8 in the sample collected from a depth of 4 to 6 feet but were not detected in the sample collected from a depth of 0 to 2 feet. Considering the strong adsorption of PAHs to organic matter in the soil, the upper depth sample should have had detectable concentrations of PAHs. This reversed concentration profile also occurred for the majority of the inorganic analytes detected. This would indicate that a sample labeling error may have occurred in the field or laboratory and the data should be considered suspect.

The concentration profiles of pesticides and polychlorinated biphenyls (PCBs) in boreholes DD-1 and DS-4 were also not as would be expected. In both boreholes the presence of these compounds was not continuous with depth. This would not be possible since the organic matter in the soil would attenuate the migration of pesticides and PCBs through the soil. Again, a sample labeling error may have occurred in the field or laboratory and the data should be considered suspect.

SCD/ko/4

CRA
1801 Old Highway 8, Suite #114
St. Paul, Minnesota 55112
(612) 639-0913

MEMO

TO: Alan Van Norman

REFERENCE NO: 4869

FROM: Amber L. Poffenberger asp

DATE: August 11, 1993

RE: Data Quality Assessment and Validation for Ten Waste Residual Samples Collected June 4 and July 9, 1993 at the Barrels, Inc. Site in Lansing, Michigan.

The following details a data quality assessment and validation for ten waste residual samples collected June 4 and July 9, 1993 at the Barrels, Inc. Site in Lansing, Michigan. The samples are identified in Table 1 and were analyzed for the parameters listed in Table 2. The analyses were performed by Environmental Control Technology Corporation (ENCOTEC) of Ann Arbor, Michigan. The quality assurance criteria were established in the associated quality assurance project plan.[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 2. On the basis of sample collection dates on the chain-of-custody forms and analytical reports provided by ENCOTEC, the analyses were completed within the specified holding time periods, with the exception of reactive sulfide. Those samples which exceeded the analytical holding time are listed in Table 3. The associated data should be flagged as noted in the table.

Method Blank Samples

Contamination of the samples contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free from detectable concentrations of target analytes, indicating no significant laboratory contamination occurred.

---

[1] Application of relevant quality assurance criteria was consistent with "National Functional Guidelines for Organic Data Review", December 1990 (Revised June 1991) and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1988.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for organic analyses was monitored by surrogate recoveries. All surrogate recoveries for the analyses were within the acceptance criteria.

Check Sample Percent Recoveries

Check samples for analyses were examined to assess the accuracy of the laboratory procedures. The check sample percent recoveries were within acceptance criteria, indicating the method achieved adequate accuracy.

Field Quality Assurance/Quality Control (QA/QC)

There was no field QA/QC collected for this sampling event.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used with the qualification noted above.

ALP/ma
Enc.
cc: Steve Day, Chicago
Renato Pasqualoni, Bathurst
Brian Holbrook, Detroit

TABLE 1

SUMMARY OF SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
JUNE/JULY 1993 SAMPLING EVENT

Sample Delivery Group CRA-BI-061

WR-060493-BTH-001
WR-060493-BTH-002
WR-060493-BTH-003
WR-060493-BTH-004
WR-060493-BTH-005
WR-060493-BTH-006
WR-060493-BTH-007
WR-060493-BTH-008
WR-060493-BTH-009

Sample Delivery Group CRA-BI-071

WR-070993-BTH-010

TABLE 3

SAMPLE HOLDING TIME VIOLATIONS
BARRELS, INC. SITE
JUNE/JULY 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Method Required Holding Time*	*Sample Analyzed*	*Qualifier**
		Sample Delivery Group CRA-B1-071		
Reactive Sulfide	WR-070993-BTH-010	7 Days	13 Days	J/UJ

* Sample results should be qualified as:
J - The associated value is an estimated quantity for detected analytes.
UJ - The analyte was checked for, but not detected.
The associated value is an estimate.

Waterloo File Copy

CRA
1801 Old Highway 8, Suite #114
St. Paul, Minnesota 55112
(612) 639-0913

MEMO

TO: Alan Van Norman REFERENCE NO: 4869

FROM: Amber L. Poffenberger ALP DATE: August 16, 1993

RE: Data Quality Assessment and Validation for Soil and Water Samples Collected May and June, 1993 at the Barrels, Inc. Site in Lansing, Michigan.

The following details a data quality assessment and validation for soil and water samples collected May and June, 1993 at the Barrels, Inc. Site in Lansing, Michigan. The samples are identified in Table 1 and were analyzed for the parameters listed in Table 2. The analyses were performed by Environmental Control Technology Corporation (ENCOTEC) of Ann Arbor, Michigan. The quality assurance criteria were established in the associated quality assurance project plan.[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 2. On the basis of sample collection dates on the chain-of-custody forms and analytical reports provided by ENCOTEC, the analyses were completed within the specified holding time periods, with the exception of those samples listed in Table 3. The associated data should be qualified as noted in the table.

Method Blank Samples

Contamination of the samples contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. The majority of method blank samples were reported to be free from detectable concentrations of target analytes, indicating no significant laboratory contamination occurred. Analytes detected in the method blank samples are listed in Table 4. The associated data should be qualified as noted in the table.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for organic analyses was monitored by surrogate recoveries. The majority of surrogate recoveries for the analyses were within the

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1 Application of relevant quality assurance criteria was consistent with "National Functional Guidelines for Organic Data Review", December 1990 (Revised June 1991) and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1988.

Field Quality Assurance/Quality Control (QA/QC)

The field QA/QC collected for this sampling event consisted of one trip blank sample, eleven rinsate blank samples, and ten field duplicate sample sets.

To evaluate the possibility of contamination arising from sample transport, the environment and/or storage, a trip blank sample was submitted to ENCOTEC for VOC analysis. The trip blank yielded a positive concentration of methylene chloride, which was qualified as non-detect due to method blank contamination. As a result, none of the investigative samples should be qualified based on trip blank sample results.

As a check on cleanliness of sampling equipment, rinsate blank samples were collected as authentic samples for labeling and submission to the laboratory. The majority of rinsate blank samples yielded non-detectable concentrations of target analytes, indicating adequate decontamination of the sampling equipment occurred. Low concentrations of VOC analytes were detected in several of the rinsate blank samples. Since none of the analytes were detected in the associated environmental samples, qualification of the data based on the rinsate blank sample results was not deemed necessary.

Overall precision for the sampling event was monitored by the evaluation of field duplicate sample set results. Relative percent difference of the results were calculated and the majority were found to be acceptable. A number of analytes yielded a positive result in one sample and a non-detect result in the duplicate sample. In cases where the positive result was near the detection limit, the data should remain unqualified due to the variability in measurement of field and laboratory precision for soils, particularly near the detection limit. Field duplicate sample results are listed in Table 10. The associated data should be qualified as noted in the table.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used with the qualifications noted above.

ALP/ma
Enc.
cc: Steve Day, Chicago
Renato Pasqualoni, Bathurst
Brian Holbrook, Detroit

TABLE 1

SUMMARY OF SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Sample Delivery Group CRA-B1-051

S-051193-RP-01	S-051393-RP-21
S-051193-RP-02	S-051393-RP-22
S-051193-RP-03	S-051393-RP-23
S-051193-RP-04	S-051393-RP-24
S-051293-RP-05	S-051393-RP-25
S-051293-RP-06	S-051393-RP-26
S-051293-RP-07	S-051393-RP-27
S-051293-RP-08	S-051393-RP-28
W-051293-RP-09	S-051493-RP-29
S-051293-RP-10	S-051493-RP-30
S-051293-RP-11	S-051493-RP-31
S-051293-RP-12	S-051493-RP-32
S-051293-RP-13	S-051493-RP-33
S-051393-RP-14	S-051493-RP-34
S-051393-RP-15	S-051493-RP-35
S-051393-RP-16	S-051493-RP-36
W-051393-RP-17	W-051493-RP-37
S-051393-RP-18	S-051493-RP-38
S-051393-RP-19	S-051493-RP-39
S-051393-RP-20	S-051493-RP-40
	S-051493-RP-41

TABLE 1

SUMMARY OF SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Sample Delivery Group CRA-B1-052

S-051793-RP-42
S-051793-RP-43
S-051793-RP-44
S-051793-RP-45
W-051793-RP-46
S-051793-RP-47
S-051793-RP-48
S-051793-RP-49
S-051793-RP-50
S-051793-RP-51
S-051793-RP-52
S-051793-RP-53
S-051793-RP-54
W-051793-RP-55
S-051793-RP-56
S-051793-RP-57
S-051793-RP-58
S-051793-RP-59
S-051893-RP-60
S-051893-RP-61
W-051893-RP-62
S-051893-RP-63
S-051893-RP-64
S-051893-RP-65
S-051993-RP-65A
S-051993-RP-66
S-051993-RP-67
S-051993-RP-68
S-051993-RP-69
S-051993-RP-70
S-051993-RP-71
S-051993-RP-72
S-051993-RP-73

TABLE 1

SUMMARY OF SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Sample Delivery Group CRA-B1-053

S-052093-TB-74
S-052093-TB-75
S-052093-TB-76
L-052093-TB-77
S-052093-TB-78
S-052093-TB-79
S-052093-TB-80
S-052093-TB-81
S-052093-TB-82
S-052093-TB-83
S-052093-TB-84
S-052493-TB-85
S-052493-TB-86
S-052493-TB-87
S-052493-TB-88
S-052493-TB-89
S-052493-TB-90

Sample Delivery Group CRA-B1-054

S-052593-TB-91
S-052593-TB-92
S-052593-TB-93
S-052593-TB-94
S-052593-TB-95
S-052593-TB-96
S-052693-TB-97
S-052693-TB-98
S-052693-TB-99
S-052593-TB-100
S-052593-TB-101
L-052593-TB-103
L-052593-TB-104

TABLE 1

SUMMARY OF SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Sample Delivery Group CRA-B1-062

L-062293-TB-105
L-062293-TB-106
L-062293-TB-107
L-062293-TB-108
L-062293-TB-109
L-062293-TB-110
L-062293-TB-111
L-062293-TB-112
L-062293-TB-113
L-062293-TB-116
L-062293-TB-117
L-062393-TB-118
L-062393-TB-119
L-062393-TB-120
L-062393-TB-121
L-062393-TB-122
L-062393-TB-123
L-062393-TB-124
L-062393-TB-125
L-062293-TB-127

TABLE 2

SUMMARY OF ANALYTICAL PARAMETERS
AND HOLDING TIME PERIODS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

*Analysis - Method**	*Holding Time***
Volatile Organic Compounds (VOC) - SW 8260	
Water/Soil	14 Days
Acrylonitrile - SW 8260 modified	
Water/Soil	14 Days
Semivolatile Organic Compounds + Curene (SVOC) - SW 8270	
Water	7/40 Days***
Soil	14/40 Days***
Pesticides/Polychlorinated Biphenyls (PEST//PCB) - SW 8080	
Water	7/40 Days***
Soil	14/40 Days***
Select Metals - SW 6010/6020/7000 Series	
Water/Soil	6 Months (except Mercury - 28 Days)
Cyanide - EPA 335.2	
Water/Soil	14 Days

Notes:

* Methods were derived from:
SW - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986.
EPA - "Methods for Chemical Analysis of Water and Wastes", EPA/4-79-020, revised March 1983.

** Holding time periods are based from sample collection date to sample analysis date.

*** Seven (or fourteen) days from sample collection to sample extraction, then forty days to sample analysis.

TABLE 3

SAMPLE HOLDING TIME VIOLATIONS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Method Required Holding Time*	*Sample Analyzed*	*Qualifier**
	Sample Delivery Group CRA-B1-052			
Cyanide	S-051793-RP-42	14 Days	15 Days	J/UJ
	S-051793-RP-43	14 Days	15 Days	J/UJ
	S-051793-RP-44	14 Days	15 Days	J/UJ
	S-051793-RP-45	14 Days	18 Days	J/UJ
	W-051793-RP-46	14 Days	15 Days	J/UJ
	S-051793-RP-47	14 Days	15 Days	J/UJ
	S-051793-RP-48	14 Days	15 Days	J/UJ
	S-051793-RP-49	14 Days	15 Days	J/UJ
	S-051793-RP-50	14 Days	15 Days	J/UJ
	S-051793-RP-51	14 Days	15 Days	J/UJ
	S-051793-RP-52	14 Days	15 Days	J/UJ
	S-051793-RP-53	14 Days	18 Days	J/UJ
	S-051793-RP-54	14 Days	15 Days	J/UJ
	W-051793-RP-55	14 Days	15 Days	J/UJ
	S-051793-RP-56	14 Days	15 Days	J/UJ
	S-051793-RP-57	14 Days	18 Days	J/UJ
	S-051793-RP-58	14 Days	15 Days	J/UJ
	S-051793-RP-59	14 Days	15 Days	J/UJ
	S-051993-RP-73	14 Days	16 Days	J/UJ
VOC	S-051793-RP-51	14 Days	15 Days	J/UJ
	S-051793-RP-57	14 Days	15 Days	J/UJ
	S-051893-RP-64	14 Days	15 Days	J/UJ
Acrylonitrile	S-051993-RP-66	14 Days	21 Days	J/UJ
	S-051993-RP-68	14 Days	21 Days	J/UJ
	S-051993-RP-70	14 Days	21 Days	J/UJ
	S-051993-RP-71	14 Days	21 Days	J/UJ

TABLE 3

SAMPLE HOLDING TIME VIOLATIONS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Method Required Holding Time*	*Sample Analyzed*	*Qualifier**
	Sample Delivery Group CRA-B1-053			
Cyanide	S-052093-TB-74	14 Days	15 Days	J/UJ
	S-052093-TB-75	14 Days	15 Days	J/UJ
	S-052093-TB-76	14 Days	15 Days	J/UJ
	L-052093-TB-77	14 Days	15 Days	J/UJ
	S-052093-TB-78	14 Days	15 Days	J/UJ
	S-052093-TB-79	14 Days	15 Days	J/UJ
	S-052093-TB-80	14 Days	15 Days	J/UJ
	S-052093-TB-81	14 Days	15 Days	J/UJ
	S-052093-TB-82	14 Days	15 Days	J/UJ
	S-052093-TB-83	14 Days	15 Days	J/UJ
	S-052093-TB-84	14 Days	15 Days	J/UJ
VOC	S-052093-TB-78	14 Days	15 Days	J/UJ
	S-052093-TB-80	14 Days	17 Days	J/UJ
	S-052093-TB-81	14 Days	15 Days	J/UJ
	S-052093-TB-82	14 Days	15 Days	J/UJ
Acrylonitrile	S-052093-TB-74	14 Days	15 Days	J/UJ
	S-052093-TB-75	14 Days	15 Days	J/UJ
	S-052093-TB-76	14 Days	15 Days	J/UJ
	L-052093-TB-77	14 Days	16 Days	J/UJ
	S-052093-TB-78	14 Days	15 Days	J/UJ
	S-052093-TB-79	14 Days	15 Days	J/UJ
	S-052093-TB-80	14 Days	15 Days	J/UJ
	S-052093-TB-81	14 Days	15 Days	J/UJ
	S-052093-TB-82	14 Days	15 Days	J/UJ
	S-052093-TB-83	14 Days	15 Days	J/UJ
	S-052093-TB-84	14 Days	15 Days	J/UJ

TABLE 3

SAMPLE HOLDING TIME VIOLATIONS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Method Required Holding Time*	*Sample Analyzed*	*Qualifier**
	Sample Delivery Group CRA-B1-062			
Cyanide	L-062293-TB-112	14 Days	15 Days	J/UJ
	L-062293-TB-113	14 Days	15 Days	J/UJ
	L-062293-TB-116	14 Days	15 Days	J/UJ
	L-062293-TB-117	14 Days	15 Days	J/UJ

* Sample results should be qualified as:
J - The associated value is an estimated quantity for detected analytes.
UJ - The analyte was checked for, but not detected.
The associated value is an estimate.

TABLE 4

ANALYTES DETECTED IN METHOD BLANKS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Parameter*	*Sample ID*	*Qualifier**
	Sample Delivery Group CRA-B1-051		
VOC	Methylene Chloride	W-051393-RP-17	0.002U
		W-051493-RP-37	0.002U
	Sample Delivery Group CRA-B1-052		
VOC	Methylene Chloride	W-051793-RP-46	0.002U
	Sample Delivery Group CRA-B1-062		
VOC	Methylene Chloride	L-062293-TB-105	0.006U
		L-062293-TB-106	0.004U
		L-062293-TB-107	0.005U
		L-062293-TB-108	0.005U
		L-062293-TB-109	0.004U
		L-062293-TB-110	0.004U
		L-062293-TB-111	0.004U
		L-062293-TB-112	0.003U
		L-062293-TB-113	0.003U
		L-062293-TB-116	0.005U
		L-062293-TB-117	0.004U
		L-062393-TB-118	0.003U
		L-062393-TB-119	0.003U
		L-062393-TB-120	0.004U
		L-062393-TB-121	0.004U
		L-062393-TB-122	0.004U
		L-062393-TB-123	0.003U
		L-062393-TB-124	0.004U
		L-062393-TB-125	0.004U
		L-062393-TB-127	0.004U

* Sample results should be qualified as:
U - The analyte is non-detect , with the associated value being the quantitation limit.

TABLE 5

OUTLYING SURROGATE RECOVERIES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Surrogate Compound*	*% Recovery*	*% Recovery Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-051			
PEST/PCB	S-051193-RP-05	Dibutylchlorendate	DL**	36-150	NR
	S-051293-RP-10	Dibutylchlorendate	DL**	36-150	NR
	S-051293-RP-11	Dibutylchlorendate	DL**	36-150	NR
	S-051493-RP-29	Dibutylchlorendate	DL**	36-150	NR
VOC	S-051393-RP-14	Bromofluorobenzene	MI***	74-121	NR
	S-051493-RP-29	Bromofluorobenzene	MI***	74-121	NR

TABLE 5

OUTLYING SURROGATE RECOVERIES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Surrogate Compound*	*% Recovery*	*% Recovery Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-052			
PEST/PCB	S-051793-RP-51	Dibutylchlorendate	DL**	36-150	NR
Acrylonitrile	S-051893-RP-60	1,2-Dichloroethane-d4	MI***	60-140	NR
	S-051893-RP-64	1,2-Dichloroethane-d4	MI***	60-140	NR
SVOC	S-051793-RP-51	Nitrobenzene-d5	MI***	23-120	NR
		2-Fluorobiphenyl	MI***	30-115	NR
		Terphenyl-d14	MI***	18-137	NR
		Phenol-d5	MI***	24-113	NR
		2-Fluorophenol	MI***	25-121	NR
		2,4,6-Tribromophenol	MI***	19-122	NR

TABLE 5

OUTLYING SURROGATE RECOVERIES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Surrogate Compound*	*% Recovery*	*% Recovery Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-052 (Cont'd)			
	S-051893-RP-60	Nitrobenzene-d5	DL**	23-120	NR
		2-Fluorobiphenyl	DL**	30-115	NR
		Terphenyl-d14	DL**	18-137	NR
		Phenol-d5	DL**	24-113	NR
		2-Fluorophenol	DL**	25-121	NR
		2,4,6-Tribromophenol	DL**	19-122	NR
	S-051893-RP-64	Nitrobenzene-d5	DL**	23-120	NR
		2-Fluorobiphenyl	DL**	30-115	NR
		Terphenyl-d14	DL**	18-137	NR
		Phenol-d5	DL**	24-113	NR
		2-Fluorophenol	DL**	25-121	NR
		2,4,6-Tribromophenol	DL**	19-122	NR
	S-051993-RP-65	Nitrobenzene-d5	DL**	23-120	NR
		2-Fluorobiphenyl	DL**	30-115	NR
		Terphenyl-d14	DL**	18-137	NR
		Phenol-d5	DL**	24-113	NR
		2-Fluorophenol	DL**	25-121	NR
		2,4,6-Tribromophenol	DL**	19-122	NR

TABLE 5

OUTLYING SURROGATE RECOVERIES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Surrogate Compound*	*% Recovery*	*% Recovery Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-052 (Cont'd)			
	S-051993-RP-68	Nitrobenzene-d5	DL**	23-120	NR
		2-Fluorobiphenyl	DL**	30-115	NR
		Terphenyl-d14	DL**	18-137	NR
		Phenol-d5	DL**	24-113	NR
		2-Fluorophenol	DL**	25-121	NR
		2,4,6-Tribromophenol	DL**	19-122	NR
		Sample Delivery Group CRA-B1-053			
PEST/PCB	S-052093-TB-74	Dibutylchlorendate	DL**	36-150	NR
	S-052093-TB-79	Dibutylchlorendate	DL**	36-150	NR
	S-052493-TB-85	Dibutylchlorendate	DL**	36-150	NR
SVOC	S-052093-TB-80	Nitrobenzene-d5	DL**	23-120	NR
		2-Fluorobiphenyl	DL**	30-115	NR
		Terphenyl-d14	DL**	18-137	NR
		Phenol-d5	DL**	24-113	NR
		2-Fluorophenol	DL**	25-121	NR
		2,4,6-Tribromophenol	DL**	19-122	NR

TABLE 5

OUTLYING SURROGATE RECOVERIES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Surrogate Compound*	*% Recovery*	*% Recovery Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-053 (Cont'd)			
	S-052493-TB-85	Nitrobenzene-d5	DL**	23-120	NR
		2-Fluorobiphenyl	DL**	30-115	NR
		Terphenyl-d14	DL**	18-137	NR
		Phenol-d5	DL**	24-113	NR
		2-Fluorophenol	DL**	25-121	NR
		2,4,6-Tribromophenol	DL**	19-122	NR
		Sample Delivery Group CRA-B1-054			
PEST/PCB	S-052593-TB-100	Dibutylchlorendate	DL**	36-150	NR
VOC	S-052593-TB-100	Toluene-d8	MI***	81-117	NR
	S-052693-TB-98	Toluene-d8	MI***	81-117	NR
		Bromofluorobenzene	MI***	74-121	NR
	S-052693-TB-99	Toluene-d8	MI***	81-117	NR

TABLE 5

OUTLYING SURROGATE RECOVERIES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Surrogate Compound*	*% Recovery*	*% Recovery Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-062			
PEST/PCB	L-062393-TB-120	Dibutylchlorendate	34	51-123	J/UJ
	L-062393-TB-121	Tetrachloro-m-xylene	46	50-150	J/UJ
	L-062393-TB-122	Dibutylchlorendate	37	51-123	J/UJ
	L-062393-TB-123	Dibutylchlorendate	40	51-123	J/UJ
	L-062393-TB-124	Dibutylchlorendate	40	51-123	J/UJ

* Sample results should be qualified as:
- J - Result is an estimated value for detected analytes.
- UJ - Analyte was checked for, but not detected. The associated value is an estimated quantitation limit.
- NR - No qualification of the data was deemed necessary.

** DL - Surrogates were diluted out. Recoveries could not be calculated.

*** MI - Surrogate recovery was distorted due to matrix interference.

TABLE 6

OUTLYING CHECK SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Parameter*	*% Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
		Sample Delivery Group CRA-B1-053			
PEST/PCB	alpha-BHC	0	37-134	J/R	S-052093-TB-74;
	gamma-BHC	7	32-127	J/R	S-052093-TB-75;
	Heptachlor	13	34-111	J/UJ	S-052093-TB-76;
	Aldrin	14	42-122	J/UJ	S-052093-TB-78;
					S-052093-TB-79;
					S-052093-TB-80;
					S-052093-TB-81;
					S-052093-TB-82;
					S-052093-TB-83;
					S-052093-TB-84;
					S-052493-TB-85;
					S-052493-TB-86;
					S-052493-TB-87;
					S-052493-TB-88;
					S-052493-TB-89

* Sample results should be qualified as:

J - The sample result should be qualified as estimated for detected analytes.

UJ - The analyte was checked for, but not detected. The associated value is an estimated quantitation limit.

R - The data are unusable for non-detected analytes.

TABLE 7

OUTLYING MS/MSD RESULTS
ORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Sample ID*	*Spiking Compound*	*MS % Recovery*	*MSD % Recovery*	*% Recovery Limits*	*RPD*	*RPD Limits*	*Qualifier**
		Sample Delivery Group CRA-B1-052						
PEST/PCB	S-051793-RP-56	4,4'-DDD	91	74	31-141	20	17	J/UJ
		4,4'-DDT	88	69	25-160	24	22	J/UJ
	S-051893-RP-63	gamma-Chlordane	112	146	27-190	26	21	J/UJ
		alpha-Chlordane	116	158	27-200	31	20	J/UJ
		Sample Delivery Group CRA-B1-053						
PEST/PCB	S-052093-TB-78	delta-BHC	87	110	19-140	24	20	J/UJ
		Aldrin	65	107	42-122	50	21	J/UJ
		Heptochlor Epoxide	74	96	37-142	26	18	J/UJ
		gamma-Chlordane	MI**	MI**	27-190	NC***	21	J/UJ
		Endosulfan I	MI**	MI**	45-153	NC***	16	J/UJ
		alpha-Chlordane	MI**	MI**	27-200	NC***	20	J/UJ
		4,4'-DDE	MI**	MI**	30-145	NC***	17	J/UJ
		Dieldrin	MI**	MI**	36-146	NC***	17	J/UJ
		4,4'-DDD	79	118	31-141	39	17	J/UJ
		Endrin Aldehyde	29	45	13-159	43	22	J/UJ
		4,4'-DDT	68	131	25-160	64	22	J/UJ

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-051			
Cyanide	S-051193-RP-04	Cyanide	31	75-125	J/UJ	S-051193-RP-04; S-051193-RP-05; S-051193-RP-06; S-051193-RP-07; S-051193-RP-08;
Cyanide	S-051493-RP-36	Cyanide	30	75-125	J/UJ	S-051493-RP-33; S-051493-RP-36; S-051493-RP-37; S-051493-RP-39; S-051493-RP-40; S-051493-RP-41
Metals	S-051193-RP-04	Antimony	2	75-125	J/R	S-051193-RP-01; S-051193-RP-02; S-051193-RP-03; S-051193-RP-04; S-051193-RP-05; S-051193-RP-06;

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-051			
Cyanide	S-051193-RP-04	Cyanide	31	75-125	J/UJ	S-051193-RP-04; S-051193-RP-05; S-051193-RP-06; S-051193-RP-07; S-051193-RP-08;
Cyanide	S-051493-RP-36	Cyanide	30	75-125	J/UJ	S-051493-RP-33; S-051493-RP-36; S-051493-RP-37; S-051493-RP-39; S-051493-RP-40; S-051493-RP-41
Metals	S-051193-RP-04	Antimony	2	75-125	J/R	S-051193-RP-01; S-051193-RP-02; S-051193-RP-03; S-051193-RP-04; S-051193-RP-05; S-051193-RP-06;

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-051 (Cont'd)			
Metals	S-051193-RP-04	Antimony	2	75-125	J/R	S-051193-RP-07; S-051193-RP-08; S-051293-RP-10; S-051293-RP-11; S-051293-RP-12; S-051293-RP-13; S-051393-RP-29; S-051493-RP-30; S-051493-RP-31; S-051493-RP-32; S-051493-RP-34; S-051493-RP-35; S-051493-RP-36
Metals	S-051193-RP-04	Cadmium	66	75-125	J/UJ	S-051193-RP-02; S-051193-RP-03; S-051193-RP-04; S-051193-RP-05; S-051193-RP-06; S-051193-RP-07;

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-051 (Cont'd)			
Metals	S-051193-RP-04	Cadmium	66	75-125	J/UJ	S-051193-RP-08 S-051293-RP-10; S-051293-RP-11; S-051293-RP-12; S-051293-RP-13; S-051393-RP-29; S-051493-RP-30; S-051493-RP-31; S-051493-RP-32; S-051493-RP-34; S-051493-RP-35; S-051493-RP-36

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-052			
Cyanide	S-051893-RP-63	Cyanide	14	75-125	J/R	S-051893-RP-63
Metals	S-051793-RP-56	Antimony	11	75-125	J/R	S-051793-RP-42; S-051793-RP-43; S-051793-RP-44; S-051793-RP-45; S-051793-RP-47; S-051793-RP-48; S-051793-RP-49; S-051793-RP-50; S-051793-RP-51; S-051793-RP-52; S-051793-RP-53; S-051793-RP-54; S-051793-RP-56; S-051793-RP-57; S-051793-RP-58; S-051793-RP-59

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-052 (Cont'd)			
Metals	S-051893-RP-63	Antimony	29	75-125	J/R	S-051893-RP-60; S-051893-RP-61; S-051893-RP-64; S-051893-RP-65
Metals	S-051893-RP-63	Cadmium	68	75-125	J/UJ	S-051893-RP-60; S-051893-RP-61; S-051893-RP-63; S-051893-RP-64; S-051893-RP-65

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-053			
Metals	S-052093-TB-78	Antimony	8	75-125	J/R	S-052093-TB-74; S-052093-TB-75; S-052093-TB-76; L-052093-TB-77; S-052093-TB-78; S-052093-TB-79; S-052093-TB-80; S-052093-TB-81; S-052093-TB-82; S-052093-TB-83; S-052093-TB-84; S-052493-TB-85; S-052493-TB-86; S-052493-TB-87; S-052493-TB-88; S-052493-TB-89; S-052493-TB-90

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-053 (Cont'd)			
Metals	S-052093-TB-78	Lead	51	75-125	J/UJ	S-052093-TB-74;
		Thallium	43	75-125	J/UJ	S-052093-TB-75;
		Zinc	68	75-125	J/UJ	S-052093-TB-76;
						S-052093-TB-78;
						S-052093-TB-79;
						S-052093-TB-80;
						S-052093-TB-81;
						S-052093-TB-82;
						S-052093-TB-83;
						S-052093-TB-84;
						S-052493-TB-85;
						S-052493-TB-86;
						S-052493-TB-87;
						S-052493-TB-88;
						S-052493-TB-89;
						S-052493-TB-90

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-053 (Cont'd)			
Metals	S-052093-TB-78	Mercury	46	75-125	J/UJ	L-052093-TB-77; S-052093-TB-78; S-052093-TB-79; S-052093-TB-80; S-052093-TB-81; S-052093-TB-82; S-052093-TB-83; S-052093-TB-84; S-052493-TB-85; S-052493-TB-86; S-052493-TB-87; S-052493-TB-88; S-052493-TB-89; S-052493-TB-90

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-054			
Cyanide	S-052593-TB-102	Cyanide	15	75-125	J/R	S-052593-TB-91; S-052593-TB-92; S-052593-TB-93; S-052593-TB-95; S-052593-TB-96; S-052593-TB-100
Metals	S-052593-TB-102	Antimony	2	75-125	J/R	S-052593-TB-91; S-052593-TB-92; S-052593-TB-93; S-052593-TB-94; S-052593-TB-95; S-052593-TB-96; S-052593-TB-100; S-052593-TB-101

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-054 (Cont'd)			
Metals	S-052593-TB-102	Lead	71	75-125	J/UJ	S-052593-TB-92; S-052593-TB-93; S-052593-TB-94; S-052593-TB-95; S-052593-TB-96; S-025293-TB-100; S-025293-TB-101
			Sample Delivery Group CRA-B1-062			
Metals	L-062293-TB-114	Silver	46	75-125	J/UJ	L-062293-TB-105; L-062293-TB-106; L-062293-TB-107; L-062293-TB-108; L-062293-TB-109; L-062293-TB-110; L-062293-TB-111; L-062293-TB-112; L-062293-TB-113; L-062293-TB-116; L-062293-TB-117; L-062393-TB-118;

TABLE 8

OUTLYING MATRIX SPIKE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*MS % Recovery*	*% Recovery Limits*	*Qualifier**	*Associated Samples*
			Sample Delivery Group CRA-B1-062 (Cont'd)			
Metals	L-062293-TB-114	Silver	46	75-125	J/UJ	L-062393-TB-119; L-062393-TB-120; L-062393-TB-121; L-062393-TB-122; L-062393-TB-123; L-062393-TB-124; L-062393-TB-125

* Sample results should be qualified as:

J - Result is an estimated value for detected analytes.

UJ - Analyte was checked for, but not detected. The associated value is an estimated quantitation limit.

R - Data is deemed unusable for non-detected analytes.

TABLE 9

OUTLYING LABORATORY DUPLICATE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*RPD*	*RPD Limits*	*Qualifier**	*Associated Samples*
		Sample Delivery Group CRA-B1-053				
Metals	S-052093-TB-78	Cadmium	35	20	J	S-052093-TB-74;
		Chromium	36	20	J	S-052093-TB-75;
		Lead	26	20	J	S-052093-TB-76;
		Nickel	33	20	J	S-052093-TB-78;
						S-052093-TB-79;
						S-052093-TB-80;
						S-052093-TB-81;
						S-052093-TB-82;
						S-052093-TB-83;
						S-052093-TB-84;
						S-052493-TB-85;
						S-052493-TB-86;
						S-052493-TB-87;
						S-052493-TB-88;
						S-052493-TB-89;
						S-052493-TB-90

TABLE 9

OUTLYING LABORATORY DUPLICATE RESULTS
INORGANIC ANALYSES
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Spiked Sample ID*	*Spiking Compound*	*RPD*	*RPD Limits*	*Qualifier**	*Associated Samples*
		Sample Delivery Group CRA-B1-054				
Metals	S-052593-TB-102	Chromium	39	20	J	S-052593-TB-92; S-052593-TB-93; S-052593-TB-94; S-052593-TB-95; S-052593-TB-96; S-025293-TB-100; S-025293-TB-101
		Nickel	40	20	J	
Metals	S-052593-TB-102	Lead	40	20	J	S-052593-TB-92; S-052593-TB-93; S-052593-TB-94; S-052593-TB-95; S-052593-TB-96; S-025293-TB-100; S-025293-TB-101

* Sample results should be qualified as:
J - Result is an estimated value for detected analytes.
** MI - Recovery was distorted due to matrix interference.
*** NC - Non calculable.

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
		Sample Delivery Group CRA-B1-051			
		Samples S-051293-RP-11/S-051293-RP-12			
Metals	Arsenic	7.2	6.3	13	NR
	Cadmium	0.4J	0.2J	--	NR
	Chromium	17	17	0	NR
	Copper	16	54	109	J
	Lead	22	17	26	NR
	Mercury	ND***	0.12	NC****	NR
	Nickel	11	16	37	NR
	Zinc	78	73	6.6	NR
PEST/PCB	4,4'-DDD	520	120	125	J
VOC	total-1,2-Dichloroethene	1.2	0.98	20	NR
	Tetrachloroethene	3	2.5	18	NR
	Trichloroethene	0.12	ND***	NC****	J
SVOC	Bis (2-ethylhexyl) phthalate	11	2.0	138	J
	Di-n-octyl-phthalate	0.35	ND***	NC****	NR
	Pyrene	0.36	ND***	NC****	NR

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
		Sample Delivery Group CRA-B1-051 (Cont'd)			
		Samples S-051393-RP-20/S-051393-RP-21			
Metals	Arsenic	5.4	4.3	23	NR
	Cadmium	0.15	0.14	6.9	NR
	Chromium	20	17	16	NR
	Copper	22	21	4.7	NR
	Lead	8.7	11	23	NR
	Nickel	19	21	10	NR
	Zinc	71	68	4.3	NR
		Sample Delivery Group CRA-B1-052			
		Samples S-051793-RP-49/S-051793-RP-50			
Metals	Arsenic	3.8	4.3	12	NR
	Cadmium	0.05	0.06	18	NR
	Chromium	10	8.9	12	NR
	Copper	12	14	15	NR
	Lead	4.8	4.2	13	NR
	Nickel	10	9.9	1.0	NR
	Zinc	43	47	8.9	NR

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
		Sample Delivery Group CRA-B1-052			
		Samples S-051793-RP-57/S-051793-RP-58			
Cyanide	Cyanide	ND***	0.13	NC****	NR
Metals	Arsenic	0.71	0.77	8.1	NR
	Chromium	2.5	3.2	25	NR
	Copper	3.2	5.1	46	NR
	Lead	1.5	2	29	NR
	Nickel	3.0	3.4	13	NR
	Zinc	27	30	11	NR
		Samples S-051993-RP-66/S-051993-RP-67			
Metals	Arsenic	6.4	7.4	14	NR
	Cadmium	0.11	0.11	0	NR
	Chromium	20	19	5.1	NR
	Copper	19	20	5.1	NR
	Lead	7.6	8.7	13	NR
	Nickel	19	20	5.1	NR
	Zinc	65	69	6.0	NR

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
	Sample Delivery Group CRA-B1-052 (Cont'd)				
	Samples S-051993-RP-66/S-051993-RP-67 (Cont'd)				
VOC	Benzene	0.02	ND***	NC****	NR
	Ethylbenzene	0.068	0.028	83	J
	total Xylenes	0.074	ND***	NC****	NR
SVOC	Naphthalene	4.8	3.6	29	NR
	n-Nitrosodiphenylamine	7.2	2.1	110	J
	Phenanthrene	6.1	4.5	30	NR
	Sample Delivery Group CRA-B1-053				
	Samples S-052093-TB-82/S-052093-TB-83				
Metals	Arsenic	3.3	3.5	5.9	NR
	Cadmium	0.08J	ND***	NC****	NR
	Chromium	11J	15J	--	NR
	Copper	13	16	21	NR
	Lead	4.8J	5.6J	--	NR
	Nickel	12J	18J	--	NR
	Zinc	50J	59J	--	NR

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
		Sample Delivery Group CRA-B1-054			
		Samples S-052593-TB-91/S-052593-TB-100			
Cyanide	Cyanide	7.7J	2.3J	--	NR
Metals	Antimony	3.7J	1.4J	--	NR
	Arsenic	7.4	6.9	7.0	NR
	Cadmium	1.1	0.65	51	NR
	Chromium	43	35J	--	NR
	Copper	77	100	26	NR
	Lead	220	200J	--	NR
	Mercury	0.49	0.16	102	J
	Nickel	13	16J	--	NR
	Selenium	ND***	0.53	NC****	NR
	Zinc	350	460	27	NR
PEST/PCB	alpha-Chlordane	1700	580	98	J
	gamma-Chlordane	ND***	760	NC****	J
	Aroclor 1254	58000	ND***	NC****	J

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
	Sample Delivery Group CRA-B1-054 (Cont'd)				
	Samples S-052593-TB-91/S-052593-TB-100 (Cont'd)				
SVOC	Acenaphthene	ND***	2.0	NC****	J
	Acenaphthylene	ND***	7.5	NC****	J
	Anthracene	3.3	11	108	J
	Benzo (a) anthracene	7.6	32	123	J
	Benzo (b) fluoranthene	13	65	133	J
	Benzo (g,h,i) perylene	ND***	16	NC****	J
	Benzo (a) pyrene	4.9	22	127	J
	Chrysene	9.5	41	125	J
	Dibenz (a,h) anthracene	ND***	11	NC****	J
	Fluoranthene	11	44	120	J
	Fluorene	ND***	2.0	NC****	J
	Indeno (1,2,3-cd) pyrene	ND***	12	NC****	J
	Naphthalene	ND***	3.0	NC****	J
	Phenanthrene	3.4	13	117	J
	Pyrene	11	50	128	J

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
		Sample Delivery Group CRA-B1-054 (Cont'd)			
		Samples S-052593-TB-94/S-052593-TB-101			
Metals	Arsenic	2.6	1.9	31	NR
	Cadmium	0.15	0.16	6.5	NR
	Chromium	11J	9.3J	--	NR
	Copper	25	17	38	NR
	Lead	33J	13J	--	NR
	Nickel	14J	12J	--	NR
	Zinc	130	82	45	NR
PEST/PCB	alpha-Chlordane	11	11	0	NR
		Sample Delivery Group CRA-B1-062			
		Samples L-062293-TB-108/L-062293-TB-110			
Metals	Arsenic	0.004	0.004	0	NR
	Zinc	0.05	0.04	22	NR
PEST/PCB	Aroclor 1254	0.73	ND***	NC****	NR
VOC	1,2-Dichloroethane	0.002	0.002	0	NR
	total-1,2-Dichloroethene	0.(	0.007	13	NR

TABLE 10

FIELD DUPLICATE SAMPLE RESULTS
BARRELS, INC. SITE
MAY/JUNE 1993 SAMPLING EVENT

Analysis	*Analyte*	*Sample 1 Results (mg/Kg)**	*Sample 2 Results (mg/Kg)**	*RPD*	*Qualifier***
		Sample Delivery Group CRA-B1-062 (Cont'd)			
		Samples S-062393-TB-120/S-062393-TB-122			
Cyanide	Cyanide	ND***	0.018	NC****	NR
PEST/PCB	Endosulfan Sulfate	0.028J	ND***	NC****	NR
	Endrin	0.021J	ND***	NC****	NR
VOC	1,1-Dichloroethane	0.001	0.001	0	NR

* Results are in mg/Kg (mg/L for waters), except PEST/PCBs, which are in µg/Kg (µg/L for waters).

** Sample results should be qualified as:

J - Result is an estimated value for detected analytes.

NR - No additional qualification of the data was deemed necessary.

*** ND - Non-detect.

**** NC - Non-calculable.

CRA
1801 Old Highway 8, Suite #114
St. Paul, Minnesota 55112
(612) 639-0913

MEMO

TO: Alan Van Norman

REFERENCE NO: 4869

FROM: Amber L. Poffenberger

DATE: March 4, 1994

RE: Data Quality Assessment and Validation for Four Water Samples Collected January 26, 1994 at the Barrels, Inc. Site in Lansing, Michigan.

The following details a data quality assessment and validation for four water samples collected January 26, 1994 at the Barrels, Inc. Site in Lansing, Michigan. The samples are identified in Table 1 and were analyzed for the parameters listed in Table 2. The analyses were performed by Environmental Control Technology Corporation (ENCOTEC) of Ann Arbor, Michigan. The quality assurance criteria were established in the associated quality assurance project plan.[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 2. On the basis of sample collection dates on the chain-of-custody form and analytical reports provided by ENCOTEC, the analyses were completed within the specified holding time periods.

Method Blank Samples

Contamination of the samples contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free from detectable concentrations of target analytes, indicating no significant laboratory contamination occurred. Methylene chloride was detected in the VOC method blank sample (0.002 mg/L). However, since methylene chloride was not an analyte of interest for this analysis, qualification of the data was not deemed necessary.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for organic analyses was monitored by surrogate recoveries. Surrogate recoveries for the analyses were within the acceptance criteria.

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1 Application of relevant quality assurance criteria was consistent with "National Functional Guidelines for Organic Data Review", December 1990 (Revised June 1991) and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1988.

Check Sample Percent Recoveries

Check samples for analyses were examined to assess the accuracy of the laboratory procedures. All check sample percent recoveries were within acceptance criteria, indicating the methods achieved adequate accuracy.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results - Organic Analyses

To assess the long term accuracy and precision of the analytical method on various matrices, matrix spike percent recoveries and relative percent difference (RPD) of the spike recoveries were determined for organic analyses. The VOC MS/MSD percent recoveries and RPDs were within the acceptance criteria, indicating adequate accuracy and precision were achieved for the method. The PEST/PCB MS/MSD was performed on a non-project sample, therefore the data was not used to assess interference within the environmental samples.

Matrix Spike/Laboratory Duplicate (MS/DUP) Results - Inorganic Analyses

To assess the long term accuracy and precision of the analytical method on various matrices, matrix spike percent recoveries and relative percent differences of duplicate results were determined. Since MS/DUP analyses were performed on non-project samples, the data was not used to assess interference within the environmental sample.

Co-elution of Analytes

One analyte detected in the investigative samples have co-eluting analytes which are not able to be effectively separated under the conditions prescribed in SW 846 method 8260. The analyte is m-xylene (co-elutes with p-xylene). Whenever these analytes were encountered, the quantitative results were reported for m-xylene. The actual results may represent any combination of the analyte reported and/or the analyte with which it co-elutes.

Field Quality Assurance/Quality Control (QA/QC)

There were no field QA/QC samples collected for this sampling event.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used without qualification.

ALP/jm
Enc.
c.c. Steve Day, Chicago
Renato Pasqualoni, Bathurst
Brian Holbrook, Detroit

TABLE 1

SUMMARY OF SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
JANUARY 26, 1994 SAMPLING EVENT

GW-4869-012694-BTH-001
GW-4869-012694-BTH-002
GW-4869-012694-BTH-003
GW-4869-012694-BTH-004

TABLE 2

SUMMARY OF ANALYTICAL PARAMETERS AND HOLDING TIME PERIODS BARRELS, INC. SITE JANUARY 26, 1994 SAMPLING EVENT

*Analysis - Method**	*Holding Time***
Volatile Organic Compounds (VOC) (Benzene, Toluene, Ethylbenzene and Xylenes) - SW 8260	14 Days
Pesticides/Polychlorinated Biphenyls (PEST/ /PCB) - SW 8080	7/40 Days****
Lead - SW 7421	6 Months

Notes:

* Methods were derived from:
SW - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986.

** Holding time periods are based from sample collection date to sample analysis date.

*** Seven days from sample collection to sample extraction, then forty days to sample analysis.

MEMO

TO: Renato Pasqualoni REFERENCE NO: 4869

FROM: Nancy Bergstrom NMB DATE: November 9, 1994

RE: Data Quality Assessment and Validation for Multiple Soil Samples Collected from Barrels, Inc. Site in Lansing, Michigan

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The following details an analytical data quality assessment and validation of the data resulting from the August 9-11, 15 and 25, 1994 collection of multiple soil samples from the above-referenced Site. The samples, identified in Table 1, were analyzed for select metals by Environmental Control Technology Corporation (ENCOTEC) of Ann Arbor, Michigan. The analytical methods are identified in Table 2. The quality assurance criteria used to assess the data were established by the methods and the associated quality assurance project plan [1].

Holding Time Periods

The holding time periods for the analyses are listed in Table 3. The samples were prepared and analyzed within the required holding time periods as indicated by the sample collection and analyses dates on the chain-of-custody documents and the analytical report provided by the laboratory.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free from detectable concentrations of target analytes, indicating no laboratory contamination occurred.

Matrix Spike Percent Recoveries - Inorganics

To assess the long term accuracy and precision of the analytical methods on sample matrices, MS percent recoveries were determined. The MS percent recovery for arsenic was above the acceptance criteria but the sample concentration was greater than four times the spike concentration indicating no qualification was necessary. The remaining MS percent recoveries were within the control limits, indicating an adequate level of accuracy and precision was achieved.

---

[1]Application of quality assurance criteria was consistent with "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988.

Laboratory Duplicate Samples - Inorganics

Laboratory duplicate samples are analyzed to assess the laboratory precision based on each sample matrix. The relative percent difference (RPD) value for arsenic was calculated based on the instrument duplicate. All RPD values were within the acceptance criteria for inorganic analysis.

Check Sample Percent Recoveries

Check sample percent recoveries were examined to assess the overall performance and the accuracy of the laboratory procedures. The check sample percent recoveries were within the laboratory control limits, indicating the methods achieved an adequate level of accuracy.

Completeness

Completeness, as determined by the total number of usable results versus the total number of results was required to be 85 percent or greater. All data were considered usable and the completeness criteria was determined to have been met.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used without qualification.

NB/mk/2

Attachments

cc: Steve Day

TABLE 1

SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
LANSING, MICHIGAN

S-080994-MAW-132
S-081094-MAW-136
S-081094-MAW-139
S-081094-MAW-141
S-081094-MAW-147
S-081194-MAW-152
S-081194-MAW-158
S-081594-MAW-166
S-082594-MAW-208

TABLE 2

ANALYTICAL METHODS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Analytical Method*
Select Metals	SW-846 [1] 6010/7000 series

[1] "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986.

TABLE 3

HOLDING TIME PERIODS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Holding Time Period*
Select Metals	- 6 months from sample collection to completion of analysis

MEMO

TO: Renato Pasqualoni REFERENCE NO: 4869

FROM: Nancy Bergstrom NMB DATE: November 9, 1994

RE: Data Quality Assessment and Validation for Multiple Soil and Water Samples Collected from Barrels, Inc. Site in Lansing, Michigan

---

The following details an analytical data quality assessment and validation of the data resulting from the August 23-25, 29 and September 1, 1994 collection of multiple soil and water samples from the above-referenced Site. The samples, identified in Table 1, were analyzed for the parameters identified in Table 2 by Environmental Control Technology Corporation (ENCOTEC) of Ann Arbor, Michigan. The quality assurance criteria used to assess the data were established by the methods and the associated quality assurance project plan (QAPP).[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 3. The samples were prepared and analyzed within the required holding time periods as indicated by the sample collection and analyses dates on the chain-of-custody documents and the analytical report provided by the laboratory.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free from detectable concentrations of target analytes indicating no laboratory contamination occurred.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the analyses was monitored by surrogate compound percent recoveries. Samples W-082594-KJJ-200 through 202 for pesticides/polychlorinated biphenyls (PCB) analysis had the secondary surrogate tetrachloro-meta-xylene reported in lieu of dibutyl chlorendate with acceptable percent recoveries. Table 4 presents the data that should be qualified due to violation of surrogate recovery acceptance criteria. The remaining surrogate recoveries for the samples were within the acceptance criteria.

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[1]Application of quality assurance criteria was consistent with "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988 and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries - Organics

To assess the long term accuracy and precision of the analytical methods on the sample matrices, MS/MSD percent recoveries and the relative percent difference (RPD) of the recoveries were determined. The RPD calculated for endrin aldehyde in one pesticide/PCB MS/MSD sample violated the acceptance criteria. In addition, the RPD calculated for 1,1-dichloroethene in one volatile organic compound (VOC) MS/MSD sample violated the acceptance criteria. Table 5 presents the data which should be qualified. The remaining MS/MSD percent recovery and RPD data were within the control limits provided, indicating an adequate level of accuracy and precision was achieved.

MS Percent Recoveries - Inorganics

Matrix spike analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. One MS sample exhibited concentrations of arsenic and lead above the acceptance criteria, but the sample concentration was greater than four times the spike concentration for each analyte, indicating no qualification was necessary. The remaining MS percent recovery data were within the control limits, indicating an adequate level of accuracy and precision was achieved.

Laboratory Duplicate Samples - Inorganics

Laboratory duplicate samples are analyzed to assess the laboratory's precision based on each sample matrix. All RPD values were within the acceptance criteria for inorganics analysis.

Check Sample Percent Recoveries

Check sample (laboratory control samples) percent recoveries were examined to assess the overall performance and the accuracy of the laboratory procedures. The check sample percent recoveries were within the provided control limits, indicating the methods achieved an adequate level of accuracy.

Field Duplicate Samples

To assess the overall field and laboratory precision of the sampling and analytical effort, three field duplicate sample sets were collected. Table 6 presents the results of the detected analytes in the field duplicate samples. The RPDs calculated for field duplicate sample set S-082394-KJJ-197/198 were deemed to be unacceptable and the detected compounds in the investigative sample should be qualified as estimated (J).

Field Blank Samples

Field blank samples are analyzed to check for procedural contamination at the site which may cause sample contamination. All field blank samples were free from

detectable concentrations of target analytes, indicating the field decontamination procedures were adequate.

Trip Blank Samples

To monitor the potential for cross contamination of VOC samples during sample transport and storage, three trip blank samples were submitted with the investigative samples. Two trip blanks were received with air bubbles and one trip blank was received broken but the analyses indicated that the trip blank samples did not contain detectable concentrations of target VOCs and qualification of the sample data was unnecessary.

Completeness

Completeness, as determined by the total number of usable results versus the total number of results was required to be 85 percent or greater. All data were considered usable (with qualifications) and the completeness criteria was determined to have met.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used with the qualifications noted.

NB/lo/1

Attachments

cc: S. Day

TABLE 1

SAMPLE IDENTIFICATION NUMBERS
BARRELS, INC. SITE
LANSING, MICHIGAN

W-082394-KJJ-181
W-082394-KJJ-182
W-082394-KJJ-183
W-082394-KJJ-184
W-082394-KJJ-185
W-082394-KJJ-186
W-082394-KJJ-187
S-082394-MAW-196
S-082394-MAW-197
S-082394-MAW-198
S-082494-MAW-199
W-082494-KJJ-188
W-082494-KJJ-189
W-082494-KJJ-190
W-082494-KJJ-191
W-082494-KJJ-192
W-082494-KJJ-193
W-082494-KJJ-195
W-082594-KJJ-194
W-082594-KJJ-200
W-082594-KJJ-201
W-082594-KJJ-202
W-082594-KJJ-203
S-082594-MAW-205
S-082594-MAW-206
S-082594-MAW-207
S-082594-MAW-208
S-082594-MAW-209
S-082994-MAW-210
S-082994-MAW-211
W-090194-KJJ-212
W-090194-KJJ-213
W-090194-KJJ-214
W-090194-KJJ-215
W-090194-KJJ-216
W-090194-KJJ-217
W-090194-KJJ-218

TABLE 2

ANALYTICAL METHODS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Analytical Method*
Priority Pollutant List (PPL) VOC	SW-846[1] 8260
Toxicity Characteristic Leaching Procedure (TCLP) VOC	SW-846 8260
PPL Pesticides/PCB	SW-846 8080
Select Metals	SW-846 6010, 6020/7000 series
TCLP Metals	SW-846 6010, 6020/7000 series
Base/Neutral and Acid Extractable Compounds (BNA)	SW-846 8270
TCLP Extraction	SW-846 1311

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986 with revisions.

TABLE 3

HOLDING TIME PERIODS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Holding Time Period*
PPL VOC	- 14 days from sample collection to completion of analysis
TCLP VOC	14 days from sample collection to TCLP extraction 14 days from TCLP extraction to completion of analysis
PPL/Pesticides PCB (soil)	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis
PPL/Pesticides PCB (water)	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis
Select Metals	- 6 months from sample collection to completion of analysis
TCLP Metals (except mercury)	- 180 days from sample collection to extraction - 180 days from extraction to completion of analysis
TCLP Mercury	- 28 days from sample collection to extraction - 28 days from extraction to completion of analysis
PPL BNA (soil)	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis
PPL BNA (water)	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis

TABLE 4

QUALIFICATION OF SAMPLE DATA DUE TO VIOLATION OF SURROGATE RECOVERY ACCEPTANCE CRITERIA BARRELS, INC. SITE LANSING, MICHIGAN

Parameter	*Fraction*	*Qualifier* [1]
S-082394-MAW-196	Base/Neutral	J/NR
S-082394-MAW-197	Base/Neutral	J/NR
S-082494-MAW-199	Base/Neutral	J/NR
S-082594-MAW-205	Base/Neutral	J/NR
S-082594-MAW-206	Base/Neutral	J/NR
S-082594-MAW-207	Base/Neutral	J/NR
S-082994-MAW-210	Base/Neutral	J/NR
S-082994-MAW-211	Base/Neutral	J/NR

[1] The sample data should be qualified as:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample (for detected compounds).

NR - No qualification of non-detected compound required.

TABLE 5

QUALIFICATION OF SAMPLE DATA DUE TO VIOLATION OF
ORGANIC MS/MSD ACCEPTANCE CRITERIA
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Fraction*	*Qualifier* [1]
W-082394-KJJ-181	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082394-KJJ-182	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082394-KJJ-183	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082394-KJJ-184	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082394-KJJ-185	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082394-KJJ-186	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082394-KJJ-187	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082494-KJJ-188	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082494-KJJ-189	Endrin aldehyde	UJ
W-082494-KJJ-190	Endrin aldehyde	UJ
W-082494-KJJ-191	Endrin aldehyde	UJ
	1,1-dichloroethene	UJ
W-082494-KJJ-192	Endrin aldehyde	UJ
W-082494-KJJ-193	Endrin aldehyde	UJ
W-082594-KJJ-194	Endrin aldehyde	UJ
W-082494-KJJ-195	Endrin aldehyde	UJ
W-082594-KJJ-200	Endrin aldehyde	UJ
W-082594-KJJ-201	Endrin aldehyde	UJ
W-082594-KJJ-202	Endrin aldehyde	UJ
W-082594-KJJ-203	Endrin aldehyde	UJ

[1] The sample data should be qualified as:
UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitiation limit is approximate and may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

TABLE 6

SUMMARY OF DETECTED ANALYTES [1]
FIELD DUPLICATE SAMPLES
BARRELS, INC. SITE
LANSING, MICHIGAN

Analyte	*Investigative Sample W-082494-KJJ-189*	*Duplicate Sample W-082494-KJJ-190*	*RPD* [2]
Arsenic	0.019	0.019	0
Benzene	0.19	0.21	10
1,2-dichloroethane	0.004	0.005	22
Ethylbenzene	0.006	0.006	0
m-xylene	0.009	0.008	22
Acrylonitrile	0.005	0.001	133
Bis(2-ethylhexyl)phthalate	0.017	0.019	11

Analyte	*Investigative Sample W-082494-KJJ-192*	*Duplicate Sample W-082494-KJJ-193*	*RPD*
Arsenic	0.003	0.002	40
1,2-dichloroethane	0.002	0.003	40
total-1,2-dichloroethene	0.023	0.022	4.4
Trichloroethane	0.003	ND(0.001) [3]	NC [4]
Vinyl Chloride	0.003	0.002	40

Analyte	*Investigative Sample S-082394-KJJ-197*	*Duplicate Sample S-082394-KJJ-198*	*RPD*
Ethylbenzene	89	45	181
o-xylene	47	1.7	186
m-xylene	300	16	180
total xylenes	350	18	180

[1] Results are expressed as mg/L or mg/kg
[2] RPD = Relative percent difference
[3] *ND( )* = Not detected at the quantitation limit listed in parentheses.
[4] NC = Not calculable

MEMO

TO: Renato Pasqualoni REFERENCE NO: 4869

FROM: Nancy Bergstrom NMB DATE: January 19, 1995

RE: Data Quality Assessment and Validation for Multiple Soil and Water Samples Collected from the Barrels, Inc. Site in Lansing, Michigan

---

The following details an analytical data quality assessment and validation of the data resulting from the November and December 1994 collection of multiple soil and water samples from the above-referenced Site. The samples, identified in Table 1, were analyzed for the parameters identified in Table 2 by Environmental Control Technology Corporation (ENCOTEC) of Ann Arbor, Michigan. The quality assurance criteria used to assess the data were established by the methods and the associated quality assurance project plan (QAPP).[1]

Holding Time Periods

The holding time periods for the analyses are listed in Table 3. The samples were prepared and analyzed within the required holding time periods as indicated by the sample collection and analyses dates on the chain-of-custody documents and the analytical reports provided by the laboratory.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. Table 4 presents the data that should be qualified due to method blank contamination reported in three VOC method blank samples. The remaining method blank samples were reported to be free from detectable concentrations of target analytes indicating no additional laboratory contamination occurred.

Surrogate Compound Percent Recoveries (Surrogate Recoveries)

Individual sample performance for the analyses was monitored by surrogate compound percent recoveries. Sample GW-121494-MAW-056 was diluted for semi-volatile organic compounds (SVOC) analysis and the surrogates were diluted out of recovery range. No qualification of the sample data was deemed necessary. The remaining surrogate recoveries for the samples were within the acceptance criteria.

---

[1]Application of quality assurance criteria was consistent with "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses", February 1, 1988 and "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", July 1, 1988.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Percent Recoveries - Organics

To assess the long term accuracy and precision of the analytical methods on the sample matrices, MS/MSD percent recoveries and the relative percent difference (RPD) of the recoveries were determined. Benzene violated the acceptance criteria in one MS/MSD sample, but qualification of the data was deemed unnecessary since benzene was not detected in the associated investigative sample. The MS/MSD percent recovery reported for toluene in another MS/MSD sample was outside the acceptance criteria. No qualification of the associated data is required, however since the MS/MSD sample was from a non-project source. Table 5 presents the data which should be qualified due to violation of RPD acceptance criteria. The remaining MS/MSD percent recovery and RPD data were within the control limits provided, indicating an adequate level of accuracy and precision was achieved.

MS Percent Recoveries - Inorganics

Matrix spike analysis provides information about the effect of each sample matrix on the digestion and measurement methodology. One MS sample exhibited recoveries of arsenic above the acceptance criteria, but arsenic was not detected in the associated investigative sample, indicating no qualification was necessary. Table 6 presents the data that should be qualified due to violation of MS percent recovery criteria. The remaining MS percent recovery data were within the control limits, indicating an adequate level of accuracy and precision was achieved.

Laboratory Duplicate Samples - Inorganics

Laboratory duplicate samples are analyzed to assess the laboratory's precision based on each sample matrix. One laboratory duplicate sample violated the RPD acceptance criteria for arsenic. Therefore, the arsenic values in samples GW-120694-TH-021, -022, -023 and GW-120794-TH-025, -026, -028, -030, -033, -035 should be qualified as estimated (J). All remaining RPD values were within the acceptance criteria for inorganics analysis.

Check Sample Percent Recoveries

Check sample (laboratory control samples) percent recoveries were examined to assess the overall performance and the accuracy of the laboratory procedures. The check sample percent recoveries were within the provided control limits, indicating the methods achieved an adequate level of accuracy.

Field Duplicate Samples

To assess the overall field and laboratory precision of the sampling and analytical effort, eight field duplicate sample sets were collected. Table 7 presents the results of the detected analytes in the field duplicate sample sets.

Field Blank Samples

Field blank samples are analyzed to check for procedural contamination at the site which may cause sample contamination. Field blank sample W-112994-MAW-008 was contaminated with 4,4'-DDT but qualification of the data was deemed unnecessary since 4,4'-DDT was not detected in the associated investigative samples. Field blank sample W-120894-TH-034 was reported to contain methylene chloride but was subsequently qualified as non-detect due to method blank contamination. All remaining field blank samples were free from detectable concentrations of target analytes, indicating the field decontamination procedures were adequate.

Trip Blank Samples

To monitor the potential for cross contamination of VOC samples during sample transport and storage, six trip blank samples were submitted with the investigative samples. One trip blank sample was contaminated with methylene chloride and samples GW-120994-TH-044 and -045 should be qualified as non-detect at the limit in parentheses [U(0.001) mg/L]. No other qualification due to trip blank sample contamination was deemed necessary.

Completeness

Completeness, as determined by the total number of usable results versus the total number of results was required to be 85 percent or greater. Most data were considered usable (with qualifications) and the completeness criteria was determined to have been met.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision and may be used with the qualifications noted.

NB/ld/4

Attachments

cc: S. Day

TABLE 1

SAMPLE INDENTIFICATION NUMBERS
BARRELS, INC. SITE
LANSING, MICHIGAN

W-112894-MAW-001
W-112894-MAW-002
S-112894-MAW-003
S-112894-MAW-004
W-112994-MAW-008
S-112994-MAW-009
S-112994-MAW-010
S-112994-MAW-014
S-112994-MAW-015
S-112994-MAW-016
S-112994-MAW-017
W-112994-MAW-018
W-120694-MAW-019
GW-120694-TH-020
GW-120694-TH-021
GW-120694-TH-022
GW-120694-TH-023
W-120794-MAW-024
GW-120794-TH-025
GW-120794-TH-026
GW-120794-MAW-027
GW-120794-TH-028
W-120794-MAW-029
GW-120794-TH-030
S-120794-MAW-031
S-120794-MAW-032
GW-120794-TH-033
W-120894-TH-034
GW-120794-TH-035
S-120794-MAW-036
GW-120894-TH-037
GW-120894-TH-038
GW-120894-TH-039
GW-120894-TH-040
GW-120894-TH-041
GW-120894-TH-042
GW-120894-TH-043
GW-120994-TH-044
GW-120994-TH-045
GW-121294-TH-046
GW-121294-TH-047
GW-121294-TH-048
GW-121294-TH-049
GW-121294-TH-050
GW-121294-TH-051
W-121494-MAW-052
GW-121494-MAW-053
GW-121494-MAW-054
GW-121494-MAW-055
GW-121494-MAW-056
GW-121594-MAW-057

TABLE 2

ANALYTICAL METHODS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Analytical Method*
Target Compound List (TCL) VOC; Priority Pollutant List (PPL) VOC	SW-846[1] 8260
TCL Pesticides/PCB; PPL Pesticides	SW-846 8080
Target Analyte List (TAL) Metals; Select Metals	SW-846 6010, 6020/7000 series
TCL SVOC; PPL SVOC	SW-846 8270
Total Cyanide	SW-846 9010

[1] "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA SW-846, 3rd edition, November 1986 with revisions.

TABLE 3

HOLDING TIME PERIODS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Holding Time Period*
TCL VOC; PPL VOC	- 14 days from sample collection to completion of analysis
PPL Pesticides (soil)	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis
TCL Pesticides/PCB; PPL Pesticides (water)	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis
TAL Metals; Select Metals (except mercury)	- 6 months from sample collection to completion of analysis
PPL SVOC (soil)	- 14 days from sample collection to extraction - 40 days from extraction to completion of analysis
TCL SVOC; PPL SVOC (water)	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis
Total Cyanide	- 14 days from sample collection to completion of analysis
Mercury	- 28 days from sample collection to completion of analysis

TABLE 4

QUALIFIED SAMPLES DUE TO METHOD BLANK CONTAMINATION BARRELS, INC. SITE LANSING, MICHIGAN

Parameter	*Associated Samples*	*Qualified Sample Results* [1]
Methylene chloride	GW-120894-TH-037	U(0.001) mg/L
	GW-120894-TH-039	U(0.001) mg/L
	GW-120894-TH-040	U(0.007) mg/L
	GW-121294-TH-049	U(0.001) mg/L
	W-120894-TH-034	U(0.001) mg/L

[1] U () - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

TABLE 5

QUALIFIED SAMPLES DUE TO VIOLATION OF ORGANICS RPD ACCEPTANCE CRITERIA BARRELS, INC. SITE LANSING, MICHIGAN

Analyte	*Associated Sample*	*Qualification* [1]
1,1-Dichloroethene	GW-121494-MAW-053	UJ
	GW-121494-MAW-055	UJ
	GW-121494-MAW-056	UJ
	GW-121594-MAW-057	UJ

[1] UJ - The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

TABLE 6

QUALIFIED SAMPLES DUE TO VIOLATION OF INORGANICS MATRIX SPIKE ACCEPTANCE CRITERIA BARRELS, INC. SITE LANSING, MICHIGAN

Analyte	*Associated Sample*	*Qualification* [1]
Antimony	S-112994-MAW-014	R
	S-112994-MAW-015	R
Selenium	S-112994-MAW-015	J
	S-112994-MAW-016	UJ
	S-112994-MAW-017	UJ
Zinc	S-112994-MAW-014	J
	S-112994-MAW-015	J
	S-112994-MAW-016	J
	S-112994-MAW-017	J

[1] The sample results should be qualified as:

J - The associated value is an estimated quantity.

UJ - The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

R - The data are unusable. Analyte may or may not be present.

TABLE 7

SUMMARY OF DETECTED ANALYTES
FIELD DUPLICATE SAMPLE SETS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Investigative Sample S-112894-MAW-003*	*Duplicate Sample S-112894-MAW-004*	*RPD* [1]
Tetrachloroethene	0.013 mg/kg	0.013 mg/kg	0

Parameter	*Investigative Sample S-112994-MAW-014 (mg/kg)*	*Duplicate Sample S-112994-MAW-015 (mg/kg)*	*RPD*
Arsenic	5.0	4.0	22
Cadmium	0.53	0.52	1.9
Chromium	8.4	8.3	1.2
Copper	12	9.0	29
Lead	30	15	67
Nickel	6.6	7.1	7.3
Selenium	0.83	0.56	39
Zinc	120	68	55

Parameter	*Investigative Sample GW-120794-TH-026 (mg/L)*	*Duplicate Sample GW-120794-TH-033 (mg/L)*	*RPD*
Arsenic	0.018	0.028	43
Benzene	0.18	0.22	20
Ethylbenzene	0.004	0.002	67
m-Xylene	0.009	0.004	77
Toluene	ND [2] (0.002)	0.002	NC [3]

Parameter	*Investigative Sample GW-120794-TH-030 (mg/L)*	*Duplicate Sample GW-120794-TH-035 (mg/L)*	*RPD*
Arsenic	0.004	0.002	67
Benzene	0.21	0.22	4.6
Ethylbenzene	0.003	0.003	0
Toluene	0.002	ND (0.001)	NC

TABLE 7

SUMMARY OF DETECTED ANALYTES
FIELD DUPLICATE SAMPLE SETS
BARRELS, INC. SITE
LANSING, MICHIGAN

Parameter	*Investigative Sample GW-120894-TH-038 (mg/L)*	*Duplicate Sample GW-120894-TH-039(mg/L)*	*RPD*
Arsenic	0.002	0.002	0
Tetrachloroethane	ND (0.001)	0.001	NC

[1] RPD = Relative Percent Difference

[2] ND( ) = Not detected at the quantitation limit listed in parentheses.

[3] NC = Not calculable

APPENDIX I

CHAIN-OF-CUSTODY FORMS

CRA
CONESTOGA-ROVERS & ASSOCIATES
11677 S. Wayne Road • Suite 102
Romulus, Michigan 48174

SHIPPED TO (Laboratory name): Encotech

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels Inc.

SAMPLER'S SIGNATURE [signature] (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
WR-06	7493-BTH-003	6/17/93	1000	Open Bus Tank	Waste Residual	3	TCLP VOC
							SVOC, Pesticides
WR-06	7493-BTH-005	6/17/93	1015	500 Gallon Sump	Waste Residual	1	Metals [illegible]
							Reactivity
WR-06	7493-BTH-006	6/17/93	1030	Sump [illegible]	Waste Residual	1	Corrosivity
							Ignitability
				TOTAL NUMBER OF CONTAINERS		5	

ANTICIPATED CHEMICAL HAZARDS:
003 Reactive Corrosive

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
1 [signature] (SIGN)	6-17-93 20:33	2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY:	DATE/TIME
HAND DELIVER	CRA PERSONNEL	(SIGN)	
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000109

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11677 S. Wayne Road • Suite 102
Romulus, Michigan 48174

SHIPPED TO (Laboratory name): Encotec

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Bri Hollrook (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
WR-070993-BTH-010		7/9/93	1700	2000gal standing Tank	waste residual	4	Reactivity
							Corrosivity
							Ignitability
							TCLP VOC,
							SVOC, Pesticides,
							Metals,
							Herbicides
				TOTAL NUMBER OF CONTAINERS		4	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 Bri Hollrook (SIGN)	DATE/TIME	RECEIVED BY: 2 David J. Taylor (SIGN) 19:15 07/09/93
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000118

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11677 S. Wayne Road • Suite 102
Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENVIROTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: _____ (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
505	593TB91	5-25	855		SOIL	2	
505	593TB92	5-25	933		SOIL	2	
505	593TB93	5-25	1050		SOIL	2	
505	593TB100	5-25	855		SOIL	2	
505	593TB102MS		1051		SOIL	2	MATRIX SPIKE
505	593TB102MSD		1050		SOIL	2	MATRIX SPIKE DUP
~~505~~	~~———~~	—	—		—	—	
505	593TB103		135		H2O	8	
505	593TB104		205		H2O	8	
505	593TB96		933		SOIL	2	
505	593TB95		345		SOIL	2	
505	593TB94		410		SOIL	2	
505	593TB101		420		SOIL	2	

TOTAL NUMBER OF CONTAINERS: 36

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 _____ (SIGN)	DATE/TIME 5/25/93 1645	RECEIVED BY: 2 _____ (SIGN)
RELINQUISHED BY: 2 _____ (SIGN)	DATE/TIME _____	RECEIVED BY: 3 _____ (SIGN)
RELINQUISHED BY: 3 _____ (SIGN)	DATE/TIME _____	RECEIVED BY: 4 _____ (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN) _____	DATE/TIME _____
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN) _____	DATE/TIME _____

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Nº 000135

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS INC

SAMPLER'S SIGNATURE: Thomas Benko (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
SOS	2093TB74	5-20-93	915		SOIL	2	PP VOC/PP SVOC
SOS	2093TB75	"	920		"	2	PCB/PEST METALS
SOS	2093TB76	"	933		"	2	CYANIDE CURENE
SOS	2093TB78	84	1021		"	2	"
SOS	2093TB78MS	"	1025		"	2	"
SOS	2093TB78MSD	"	1025		"	2	"
SOS	2093TB79	"	1105		"	2	"
SOS	2093TB80	"	1307		"	2	"
SOS	2093TB81	"	1328		"	2	"
SOS	2093TB82	"	1420		"	2	"
SOS	2093TB83	"	1422		"	2	"
SOS	2093TB77	"	1006		"	8	"
SOS	2093TB78	"	1025		"	2	"
				TOTAL NUMBER OF CONTAINERS		30 32	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 Thomas Benko (SIGN)	DATE/TIME 5-20-93 1525	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT: FED X	SHIPPED BY: BENKO	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: _____ (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
505	2493TB85	5-24	225		SOIL	2	PPVOC PPSVOC RCI
505	2493TB86	"	230		"	2	PEST/METALS
505	2493TB87	"	250		"	2	CYANIDE CORENE
505	2493TB88	"	3:17		"	2	"
505	2493TB89	"	4:17		"	2	"
505	2493TB90	↓			↓	2	↓
				TOTAL NUMBER OF CONTAINERS		12	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] _____ (SIGN)	DATE/TIME: 5/24-93 1730	RECEIVED BY: [2] _____ (SIGN)
RELINQUISHED BY: [2] _____ (SIGN)	DATE/TIME: /	RECEIVED BY: [3] _____ (SIGN)
RELINQUISHED BY: [3] _____ (SIGN)	DATE/TIME: /	RECEIVED BY: [4] _____ (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN) _____	DATE/TIME: /
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN) _____	DATE/TIME: /

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Nº 000167

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTech

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels Inc

SAMPLER'S SIGNATURE [signature] (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
S05	2693T398	5-26	835		Soil	2	PPVOC
S05	2693T397	5-26	945		Soil	2	PPSVOC
S05	2693T399	5-26	1005		Soil	2	PCB/POST
							METALS TT
							CYANIDE
							CUDENE
				TOTAL NUMBER OF CONTAINERS			

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
[signature] 1 (SIGN)	526931506	2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000168

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCO Tech

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Thomas Bardo (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	062393TB175	6-23			H2O	1	PP Pest PCB
	↓	↓			↓	1	PP SVOC CURENT
						1	PP METALS
						1	TCN
				TOTAL NUMBER OF CONTAINERS			

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] Thomas Bardo (SIGN)	DATE/TIME 6-23 9 18 18	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME 6/25/1818
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000171

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): Encotec

CHAIN OF CUSTODY RECORD

PROJECT NO: 4869

PROJECT NAME: Barrels Inc.

SAMPLER'S SIGNATURE: Brian T. Holcomb (SIGN)

SEQ. NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	NO. OF CONTAINERS	REMARKS
1	WR-060493-BTH-001	6/4/93	0920	Caustic Tank	Waste Residual	2	TCLP VOC SVOC Pesticides
2	WR-060493-BTH-002	6/4/93	0940	Fluid Tank	Waste Residual	2	Herbicides MIK Corrosivity
3	WR-060493-BTH-003	6/4/93	1000	Open Box Tank	Waste Residual	2	Ignitability
4	WR-060493-BTH-004	6/4/93	1020	Open Tank	Waste Residual	2	
5	WR-060493-BTH-005	6/4/93	1040	500 Gallon Sump	Waste Residual	2	
6	WR-060493-BTH-006	6/4/93	1100	Sump Inside Tank	Waste Residual	2	
7	WR-060493-BTH-007	6/4/93	1120	Trench	Waste Residual	2	
8	WR-060493-BTH-008	6/4/93	1140	Tank Area	Waste Residual	2	
9	WR-060493-BTH-009	6/4/93	1200	manhole	Waste Residual	2	
				TOTAL NUMBER OF CONTAINERS		18	

ANTICIPATED CHEMICAL HAZARDS: Corrosivity 003 Reactive 003

RELINQUISHED BY: [1] (SIGN)	DATE/TIME 6/4/93 4:35p	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000172

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels, Inc.

SAMPLER'S SIGNATURE: Patty Pusateri (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	S-051893-RP-60	5-18-93	11:15	VS-1	Soil	2	PP VOC, SVOC,
2	S-051593-RP-61	5-18-93	11:42	VS-1	Soil	2	metals, cyanide
~~3~~	~~S-051893-RP-62~~			~~VS-2~~			PCB/Pest., current
3	S-051893-RP-62	5-18-93	2:00	VS-2	Water	8	
4	S-051893-RP-63	"	2:15	"	Soil	2	(MS/MSD)
5	S-051893-RP-63MS	"	2:15	"	"	"	"
6	S-051893-RP-63MSD	"	2:15	"	"	"	"
7	S-051893-RP-64	"	2:55	"	"	"	"
8	S-051893-RP-65	"	3:15	"	"	"	"
				TOTAL NUMBER OF CONTAINERS			

ANTICIPATED CHEMICAL HAZARDS: Spilled Petroleum Products such as Gasoline & Fuel Oil

RELINQUISHED BY: 1 Patty Pusateri (SIGN)	DATE/TIME 5-18-93 15:00	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT: Fed. Ex.	SHIPPED BY: Patty Pusateri	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000173

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11677 S. Wayne Road • Suite 102
Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: R. Pasquaroni (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	S-051493-RP-29	5-14-93	7:45	DS-7	Soil	2	PAHs SVOC metals
2	S-051493-RP-30		8:00				PCB/Pesticides
3	S-051493-RP-31		8:30				cyanide
4	S-051493-RP-32		9:00				
5	S-051493-RP-34		9:45	DS-6			
6	S-051493-RP-35		10:00				
7	S-051493-RP-36		10:10				
8	S-051493-RP-34MS		10:10				
9	S-051493-RP-36MSD		10:10				
10	W-051493-RP-37		11:30	DS-5	Water	8	
11	S-051493-RP-38		12:30		Soil		
12	S-051493-RP-39		12:40				
13	S-051493-RP-40		12:45				
14	S-051493-RP-41		1:00				
				TOTAL NUMBER OF CONTAINERS			

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 R. Pasquaroni (SIGN)	DATE/TIME	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT: Fed. Ex.	SHIPPED BY: R. Pasquaroni	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000175

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels, Inc.

SAMPLER'S SIGNATURE: [signature] (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	S-051193-RP-01	5-11-93	16:00	BH-DS-14	Soil	2	PP VOC, SVOC, metals,
2	S-051193-RP-02	↓	16:30	↓	↓	↓	PCB/Pest, cyanide
3	S-051193-RP-03	↓	16:45	↓	↓	↓	↓
4	S-051293-RP-04	5-12-93	9:30	↓	↓	↓	↓
5	S-051293-RP-05	↓	9:45	BH-DS-11	↓	↓	↓
6	S-051293-RP-06	↓	10:00	↓	↓	↓	↓
7	S-051293-RP-07	↓	10:15	↓	↓	↓	↓
8	S-051293-RP-08	↓	10:25	↓	↓	↓	↓
9	W-051293-RP-09	5-12-93	11:30	BH-DS-12-SS1	Water	3	
10	S-051293-RP-10	↓	11:40	BH-DS-12	Soil	2	
11	S-051293-RP-11	↓	1:20	↓	↓	↓	↓
12	S-051293-RP-12	↓	1:30	↓	↓	↓	↓
13	S-051293-RP-13	↓	2:30	↓	↓	↓	↓
				TOTAL NUMBER OF CONTAINERS			

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 [signature] (SIGN)	DATE/TIME 5-12-93 16:00	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT: Federal Express	SHIPPED BY: [signature]	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Nº 000176

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11677 S. Wayne Road • Suite 102
Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4569

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	S-051393-RP-14	5-12-93	8:30	DS-13	So.1	2	PP VOC, SVOC, Pest/PCB
2	S-051393-RP-15	"	8:45	"	"	"	metals, cyanide
3	S-051393-RP-16	"	9:00	"	"	"	"
4	S-051393-RP-17	"	10:30	DS-12	Water	8	"
5	S-051393-RP-18	"	9:30	"	Soil	2	"
6	S-051393-RP-19	"	9:45	"	"	"	"
7	S-051393-RP-20	"	10:30	"	"	"	"
8	S-051393-RP-21	"	10:30	"	"	"	"
9	S-051393-RP-22	5-12-93	11:00	DS-8	So.1	2	"
10	S-051393-RP-23	"	11:30	"	"	"	"
11	S-051393-RP-24	"	2:00	"	"	"	"
12	S-051393-RP-25	"	2:35	DS-9	"	"	"
13	S-051393-RP-26	"	2:45	"	"	"	"
14	S-051393-RP-27	"	3:10	"	"	"	"
15	S-051393-RP-28	"	3:00	"	"	"	"
				TOTAL NUMBER OF CONTAINERS		36	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] _____ (SIGN)	DATE/TIME 5-13-93 15:00	RECEIVED BY: [2] _____ (SIGN)
RELINQUISHED BY: [2] _____ (SIGN)	DATE/TIME _____	RECEIVED BY: [3] _____ (SIGN)
RELINQUISHED BY: [3] _____ (SIGN)	DATE/TIME _____	RECEIVED BY: [4] _____ (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN) _____	DATE/TIME _____
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN) _____	DATE/TIME _____

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Renata Pasqualoni (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº. OF CONTAINERS	REMARKS
1	S-05.793-RP-42	5-17-93	10:00	DS-4	Soil	2	PP VOC, SVOC,
2	S-05.793-RP-43	"	10:15	"	"	"	metals, Pest/PCB
3	S-05.793-RP-44	"	10:30	"	"	"	review
4	S-05.793-RP-45	"	10:50	"	"	"	"
5	W-05.793-RP-46	5-17-93	11:30	DS-1	water	8	"
6	S-05.793-RP-47	"	12:40	"	Soil	2	"
7	S-05.793-RP-48	"	12:55	"	"	"	"
8	S-05.793-RP-49	"	1:35	"	"	"	"
9	S-05.793-RP-50	"	1:35	"	"	"	"
10	S-05.793-RP-51	5-17-93	2:00	DS-2	Soil	2	"
11	S-05.793-RP-52	"	2:30	"	"	"	"
12	S-05.793-RP-53	"	2:40	"	"	"	"
13	S-05.793-RP-54	"	2:50	"	"	"	"
14	W-05.793-RP-55	5-17-93	3:30	DS-3	water	5	"
15	S-05.793-RP-56	"	3:35	"	Soil	2	(MS/MSD)
16	S-05.793-RP-57	"	4:00	"	"	"	"
17	S-05.793-RP-58	"	4:00	"	"	"	"
18	S-05.793-RP-59	"	5:00	"	"	"	"
				TOTAL NUMBER OF CONTAINERS		48	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] (SIGN)	DATE/TIME 5-17-93 5:30	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT: Fed Ex	SHIPPED BY: Pasqualoni	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4569

PROJECT NAME: Barrels Inc.

SAMPLER'S SIGNATURE: _____ (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	S-051493-RP-65	5-14-93	9:00	US-3	SOIL	2	PP VOC SVOC
2	S-051493-RP-66	"	9:15	"	"	1	PEST/PCB metals
3	S-051493-RP-67	"	9:15	"	"	"	cyanide screen
4	S-051493-RP-68	5-14-93	10:00	US-4	SOIL	2	" "
5	S-051493-RP-69	5-14-93	10:35	US-4	SOIL	2	
6	S-051493-RP-70	"	2:10	US-5	"	1	
7	S-051493-RP-71	"	3:20	US-5	"	"	
8	S-051493-RP-72	"	3:45	US-6	"	"	
9	S-051493-RP-73	"	4:30	US-6	"	"	
				TOTAL NUMBER OF CONTAINERS		18	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] _____ (SIGN)	DATE/TIME 5.14.93 | 5:30	RECEIVED BY: ② _____ (SIGN)
RELINQUISHED BY: [2] _____ (SIGN)	DATE/TIME _____	RECEIVED BY: ③ _____ (SIGN)
RELINQUISHED BY: [3] _____ (SIGN)	DATE/TIME _____	RECEIVED BY: ④ _____ (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT: Fed. Ex.	SHIPPED BY: Pasquale	RECEIVED FOR LABORATORY BY: (SIGN) _____	DATE/TIME _____
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SHIPPED TO (Laboratory name): ENCOTEC

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: Thomas Bendo (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
LOG	293T3108	6-22	1107		H20	1	PP PEST/PCB
	↓		↓		↓	1	PP SVOC
						1	TCN
						1	METALS PP
LOG	293T3109	6-22	1600			1	PCB PEST/PP
	↓	↓	↓			1	PP SVOC
						1	TCN
	↓	↓	↓			1	METALS PP
LOG	293T3110	6-22	1137			1	PP PEST/PCB
	↓	↓	↓			1	PP SVOC
						1	~~PEST~~ METCN
	↓	↓	↓		↓	1	PP METALS
				TOTAL NUMBER OF CONTAINERS		17	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 Thomas Bendo (SIGN)	DATE/TIME 6-23-93 1818	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME 6-25 1718
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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SHIPPED TO (Laboratory name): ENVIROTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: Thomas Bardo (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
0062	293TB111	6-22-93	1420		H2O	1	PP Pest PCB
	↓	↓	↓	↓	↓	1	PP SVOC
	↓	↓	↓	↓	↓	1	TCN
	↓	↓	↓	↓	↓	1	METALS PP
0063	293TB112	↓	1505	↓	↓	1	PP Pest/PCB
	↓	↓	↓	↓	↓	1	PP SVOC
	↓	↓	↓	↓	↓	1	TCN
	↓	↓	↓	↓	↓	1	METALS PP
0064	293TB113	~~↓~~	1443	↓	↓	1	PP Pest PCB
	↓	↓	↓	↓	↓	1	PP SVOC
	↓	↓	↓	↓	↓	1	METALS PP
	↓	↓	↓	↓	↓	1	TCN
				TOTAL NUMBER OF CONTAINERS		12	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] Thomas Bardo (SIGN)	DATE/TIME 6-23-93 1618	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME 6/23/93 1618
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): Encotech

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: Thomas Bentley (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
LOC2	293TB114MS	6-22	1430			1	PP Pest/PCB
	↓	↓	↓			1	PP SVOC
						1	TCN
						1	METALS PP
LOC2	293TB115MSD	6-22	1410			1	PP Pest/PCB
	↓	↓	↓			1	PP SVOC
						1	TCN
						1	METALS PP
				TOTAL NUMBER OF CONTAINERS		8	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 Thomas Bentley (SIGN)	DATE/TIME 6-23-93 1818	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME 6/23/1818
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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Romulus, Michigan 48174

SHIPPED TO (Laboratory name): EnCOTech

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Thomas Benko (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
L062	293T3116	6 22	1718		H20	1	PP Pest PCB
						1	PP METALS
						1	PP SVOC·CUDEN
						1	TCN
L062	293TB112		1740			1	PP PEST PCB
						1	PP METALS
						1	PP SVOC·CUDEN
						1	TCN
L062	393T3118	6·23	0900			1	PP PEST PCB
						1	PP METALS
						1	PP SVOC CUDEN
						1	TCN
				TOTAL NUMBER OF CONTAINERS		12	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
1 Thomas Benko (SIGN)	6-23-93 1818	2 (SIGN)
2 (SIGN)		3 (SIGN)
3 (SIGN)		4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN) [signature]	DATE/TIME
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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SHIPPED TO (Laboratory name): ENCOTEC

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: Thomas Brenda (SIGN)

SEQ. Nº	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
	LO623937B119	6-23	931		H2O	1	PP PEST PCB
						1	PP METALS
						1	PPSVOC CUREN
						1	TCN
	LO623937B120		1150			1	PP PEST PCB
	LO623937B120		1150			1	PP METALS
						1	PP VOC CUREN
						1	TCN
	LO623937B121					1	PP PEST PCB
	LO623937B121		1234			1	PP METALS
						1	PPSVOC CUREN
						1	TCN
				TOTAL NUMBER OF CONTAINERS		12	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: 1 Thomas Brenda (SIGN)	DATE/TIME 6-23-93 1818	RECEIVED BY: 2 (SIGN)
RELINQUISHED BY: 2 (SIGN)	DATE/TIME	RECEIVED BY: 3 (SIGN)
RELINQUISHED BY: 3 (SIGN)	DATE/TIME	RECEIVED BY: 4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME 6/23/93 1818
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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SHIPPED TO (Laboratory name): ENCOTECH

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: [signature] (SIGN)

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
	LOG 2393T3T22	6-23	1200			1	PPREST PCB
	↓	↓				1	PP METALS
						1	PPSVOC EUDENE
						1	TCN
	LOG 2393T3T23	6-23	1107			1	PPREST PCB
	↓	↓				1	PP METALS
						1	PPSVOC EUDENE
						1	TCN
	LOG 2393T3T24	6-23	1050			1	PPREST PCB
	↓	↓	↓			1	PP METALS
						1	PPSVOC EUDENE
						1	TCN
				TOTAL NUMBER OF CONTAINERS		12	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] [signature] (SIGN)	DATE/TIME 6-23-93 1818	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME
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SHIPPED TO (Laboratory name): ENCO Tech

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Thomas Benko (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
	L062393TB122	6-23	1200			2	VOC
	L062393TB123	↓	1107			2	VOC
	L062393TB124	↓	1050			2	VOC
	L062393TB125	↓				2	VOC
				TOTAL NUMBER OF CONTAINERS		8	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
1 Thomas Benko (SIGN)	6-23-93 1818	2 (SIGN)
2 (SIGN)		3 (SIGN)
3 (SIGN)		4 (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN) Mark Mu	DATE/TIME 6-23-93 1818
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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SHIPPED TO (Laboratory name): ENCOTEC

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: [signature]

SEQ. Nº.	SAMPLE Nº.	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
1	LOG2293TB105	6-22-93	845		H2O	2	VOC
2	LOG2293TB106	6-22-93	950			2	VOC
3	LOG2293TB107	6-2293	1027			2	VOC
4	LOG2293TB108	6-22-93	1127			2	VOC
5	LOG2293TB109	6-22	1600			2	VOC
6	LOG2293TB110	6-22	1137			2	VOC
7	LOG2293TB127	6-22				4	VOC TICP BTEX
8	LOG2293TB111		1420			2	VOC
9	LOG2293TB112		1505			2	VOC
10	LOG2293TB113		1415			2	VOC
11	LOG2293TB114MS		1430			2	VOC MS
12	LOG2293TB115MSD		1410			2	VOC MSD
13	LOG2293TB116		1718			2	VOC
14	LOG2293TB117		1740			2	VOC
15	LOG2393TB118	6-23	0900			2	VOC
16	LOG2393TB119		0931			2	VOC
17	LOG2393TB120		1150			2	VOC
18	LOG2393TB121		1234			2	VOC
				TOTAL NUMBER OF CONTAINERS		38	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] [signature] (SIGN)	DATE/TIME 6-23-93 1618	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN) [signature]	DATE/TIME 6-23-93 1616
CONDITION OF SEAL UPON RECEIPT: GENERAL CONDITION OF COOLER:		COOLER OPENED BY: (SIGN)	DATE/TIME

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SHIPPED TO (Laboratory name): ENCOTEC

CHAIN OF CUSTODY RECORD

PROJECT Nº: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Thomas Bentley (SIGN)

SEQ. Nº	SAMPLE Nº	DATE	TIME	SAMPLE LOCATOIN	SAMPLE TYPE	Nº OF CONTAINERS	REMARKS
	LO62293TB105	6-22-93	845		H2O	1	PP PEST / PCB
	↓	↓	↓	↓	↓	1	PP SVOC
	↓	↓	↓	↓	↓	1	TCN
	↓	↓	↓	↓	↓	1	METALS PP
	LO62293TB106	↓	950	↓	↓	1	PP PEST / PCB
	↓	↓	↓	↓	↓	1	PP SVOC
	↓	↓	↓	↓	↓	1	TCN
	↓	↓	↓	↓	↓	1	METALS PP
	LO62293TB107	↓	1027	↓	↓	1	PP PEST PCB
	↓	↓	↓	↓	↓	1	PP SVOC
	↓	↓	↓	↓	↓	1	TCN
	↓	↓	↓	↓	↓	1	METALS PP
		↓			↓		
				TOTAL NUMBER OF CONTAINERS		12	

ANTICIPATED CHEMICAL HAZARDS:

RELINQUISHED BY: [1] Thomas Bentley (SIGN)	DATE/TIME 6/23/93 1818	RECEIVED BY: [2] (SIGN)
RELINQUISHED BY: [2] (SIGN)	DATE/TIME	RECEIVED BY: [3] (SIGN)
RELINQUISHED BY: [3] (SIGN)	DATE/TIME	RECEIVED BY: [4] (SIGN)
ADDITIONAL SIGNATURE SHEET REQUIRED ☐		

METHOD OF SHIPMENT:	SHIPPED BY:	RECEIVED FOR LABORATORY BY: (SIGN)	DATE/TIME 6/23/93 1818
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11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (313) 942-0909

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Brian Holbrook PRINTED NAME: Brian Holbrook

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	BTEX	Lead	PCB							REMARKS
001	1/26/94		GW-4869-012694-BTH-001	water	3	X									
002	1/26/94		GW-4869-012694-BTH-002	water	1		X								
003	1/26/94		GW-4869-012694-BTH-003	water	1			X							
004	1/26/94		GW-4869-012694-BTH-004	water	1			X							
			TOTAL NUMBER OF CONTAINERS		6										

RELINQUISHED BY: 1. Brian Holbrook	DATE: 1/26/94 TIME: 1630	RECEIVED BY: 1.	DATE: TIME:
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

METHOD OF SHIPMENT: Deliver in Person

AIR BILL No.

White -Fully Executed Copy Pink -Shipper Copy
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0546

SAMPLE TEAM: Brian Holbrook
Renato Pasqualone

RECEIVED FOR LABORATORY BY:

DATE: TIME:

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratc Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: As, Cr, Ni, Zn	SVOC	Pest/PCB	PL, Zn	TCLP Pest/PCB	VOC	As, Pl, Hg, Zn	REMARKS
	08/16/94	09:15	S-081694-MAW-168	Soil		1 X							
		09:20	S-081694-MAW-169			1 X							
		09:24	S-081694-MAW-170			1 X							
		09:27	S-081694-MAW-171			1 X							
		09:33	S-081694-MAW-172			1 X							
		10:06	S-081694-MAW-173			3	X	X	X				
		10:09	S-081694-MAW-174			3	X	X	X				
		10:12	S-081694-MAW-175			1	X						
		13:18	S-081694-MAW-176			1				X			
		13:20	S-081694-MAW-177			1		X					
		14:45	S-081694-MAW-178			3	X				X	X	
		14:59	S-081694-MAW-179			3	X				X	X	
			TOTAL NUMBER OF CONTAINERS										

RELINQUISHED BY: ① _____	DATE: 08/16/94 TIME: 18:00	RECEIVED BY: ② _____	DATE: TIME:
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 017302212 4

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Goldenrod -Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY: Don Coleman
DATE: 8/17/94 TIME: 0835

Nº 3808

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

CRA

CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature]

PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	VOC	TCLP VOC	SVOC	Pest/PCB	TCLP Pest/PCB	As,Cr,Zn	TCLP As,Cr,Zn	Sb,As,Cd,Cr,Cu,Pb,Hg,Ni,Se,Ag,Zn		REMARKS
	08/09/94	10:38	S-080994-MAW-128	Soil	2	X		X							
		10:47	S-080994-MAW-129		2	X		X							
		13:20	S-080994-MAW-130		1		X								
		15:35	S-080994-MAW-131		1	X									
		15:15	S-080994-MAW-132		3		X			X		X			
		15:25	S-080994-MAW-133		3	X			X		X				
		15:30	S-080994-MAW-134	↓	3	X			X		X				
		17:00	W-080994-MAW-135	Water	6	X		X	X				X		

TOTAL NUMBER OF CONTAINERS: 21

RELINQUISHED BY: ① [signature]	DATE: 08/09/94 TIME:	RECEIVED BY: ② A Osborne	DATE: 8/10/94 TIME: 0845
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fedex

AIR BILL No. 017302ZZ53

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Goldenrod -Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY: A Osborne

DATE: 8/10/94 TIME: 0845

Nº 4098

1001(FOR...)-APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	TCLP Cr, Zn	TCLP VOC	VOC	As	TCLP As	TCLP SVOC	SVOC	TCLP Zn	Zn	Cr, Zn	As, Zn, Pb, Cr, Ni	Sb, As, Cd, Cr	REMARKS
	08/10/94	08:38	S-081094-MAW-136	soil	2		X	X	X									
		08:45	S-081094-MAW-137		2		X	X										
		10:22	S-081094-MAW-139		3	X				X		X						
		10:35	S-081094-MAW-140		3		X				X		X					
		14:00	S-081094-MAW-141									X						
		14:05	S-081094-MAW-142										X					
		14:10	S-081094-MAW-143										X					
		14:38	S-081094-MAW-144													X		
		15:05	S-081094-MAW-145													X		
		15:10	S-081094-MAW-146													X		
		15:32	S-081094-MAW-147			X												
		15:36	S-081094-MAW-148											X				
		16:45	W-081094-MAW-149	water	1										X			
															/			
			TOTAL NUMBER OF CONTAINERS															

RELINQUISHED BY: ① Marc Willis	DATE: 08/10/94 TIME: 18:00	RECEIVED BY: ② [illegible] Encotec	DATE: 8/11/94 TIME: 0840
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 893313433 5

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Goldenrod -Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY: _____ DATE: _____ TIME: _____

Nº 3797

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

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10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Enviro-Tec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	VOC	SVOC	TCLP VOC	TCLP SVOC (MS)	ZN	Pb, ZN	TCLP ZN	Sb, As, Cd, Cr, Cu, Pb, Hg, Ni, Se, As, Zn, Cr	REMARKS
	08/11/94	12:34	S-081194-MAW-150	soil	2	X						X		
		13:33	S-081194-MAW-151		4	X						X		MS/MSD (metals)
		15:45	S-081194-MAW-152		2		X				X			
		13:57	S-081194-MAW-153		4	X			X					MS/MSD (VOC)
		14:24	S-081194-MAW-154		1					X				
		14:50	S-081194-MAW-155		1					X				
		15:09	S-081194-MAW-156		3	X	X					X		
		15:28	S-081194-MAW-157		5	X	X					X		MS/MSD (SVOC)
		15:56	S-081194-MAW-158		2		X				X			
		16:00	S-081194-MAW-159		3	X			X		X			

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: ① _____	DATE: 08/11/94 TIME: 1810	RECEIVED BY: ② _____	DATE: TIME:
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 0173022264

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY: Don Coleman DATE: 8/12/94 TIME: 0845

Nº 3656

1001(FORMS, RIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Envotec

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	As, Cr, Ni, Zn	TCLP Pest/PCB	Pest/PCB	Pb, Zn	TCLP Pb, Zn	VOC	sVOC	CN	As, Zn, Cr	REMARKS
	08/15/94	12:54	S-081594-MAW-160	soil	1	X									
		13:00	S-081594-MAW-161		1	X									
		13:04	S-081594-MAW-162		1	X									
		13:06	S-081594-MAW-163		1	X									
		13:12	S-081594-MAW-164		1	X									MS/MSD
		13:20	S-081594-MAW-165		1	X									
		15:44	S-081594-MAW-166		4		X			X					
		15:55	S-081594-MAW-167		2			X	X						MS/MSD Pest/PCB
	08/16/94	12:35	W-081694-MAW-180	water	6						X	X	X	X	

TOTAL NUMBER OF CONTAINERS 18

RELINQUISHED BY: ① _____	DATE: 08/16/94 TIME: 17:00	RECEIVED BY: ② _____	DATE: TIME:
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 017302 2124

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Goldenrod -Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY: Don Coleman DATE: 8/17/94 TIME: 0835

Nº 3809

1001(FORMS)-APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: Lou Almeida PRINTED NAME: Lou Almeida

PARAMETERS

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PCBs	PH	REPORT ALL PCBS AS PER CAPP AS PER STEVE 08/30/94	REMARKS
1	08/17/94		S-4869-081794-LMA-556A	Soil	1	X			
2	08/18/94		S-4869-081894-LMA-5510	↓	1	X			
3	↓		S-4869-081894-LMA-5517A	↓	1	X			
4	↓		S-4869-081894-LMA-556C	↓	1		X		
5	↓		S-4869-081894-LMA-556E	↓	1		X		

TOTAL NUMBER OF CONTAINERS 1

RELINQUISHED BY: ① Lou Almeida	DATE: 08/18/94 TIME:	RECEIVED BY: ② Richard L Brandt	DATE: 8/19/94 TIME: 8:45
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed-Ex AIR BILL No. 0173022275

White -Fully Executed Copy
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Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Lou Almeida

RECEIVED FOR LABORATORY BY:

DATE: TIME:

№ 4099

1001(FORMS) APRIL 29, 93-REV.0-(C)(F-01)

CRA

CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature]

PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	VOC	SVOC	PCB/PEST	metals						REMARKS
	8/24/94	1730	W-082494-KJJ-195	water	6	X	X	X	X						
	8/25/94	18:05	W-082594-KJJ-194	↓	6	X	X	X	X						Amended as per Karl Johnson 08/26/94 AOW
	↓	12:05	W-082594-KJJ-200		6	X	X	X	X						
		12:10	W-082594-KJJ-201		3	X									
		15:50	W-082594-KJJ-202		3	X									
		16:00	W-082594-KJJ-203	↓	3	X									
			Trip Blank		1	X									

TOTAL NUMBER OF CONTAINERS: 28

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME
① [signature]	DATE: 08/25/94 TIME: 17:00	② [signature]	DATE: 8/26/94 TIME: 8:45
②	DATE: TIME:	③	DATE: TIME:
③	DATE: TIME:	④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex

AIR BILL No. 0173022290

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Johnson, Willis

RECEIVED FOR LABORATORY BY: ______

DATE: ______ TIME: ______

№ 3804

1001(FORM) APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Encotec

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: KJJ

PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: SVOC	PARAMETERS: PCB/PEST	PARAMETERS: Metals	REMARKS
	8/25/94	12:10	W-082594-KJJ-201	water	3	X	X	X	
		15:50	W-082594-KJJ-202		3	X	X	X	
	↓	16:00	W-082594-KJJ-203	↓	3	X	X	X	

TOTAL NUMBER OF CONTAINERS 9

RELINQUISHED BY: ①	DATE: 8/25/94 TIME: 17:00	RECEIVED BY: ② Richard L Gonzo	DATE: 8/26/94 TIME: 8:45
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed EX AIR BILL No. 6173022290

White -Fully Executed Copy
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Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: JOhnson, Willis

RECEIVED FOR LABORATORY BY:

DATE: TIME:

Nº 3805

1001(FOR APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Enecotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature]

PRINTED NAME: Marc Willis

PARAMETERS: VOC, Zn, TCLP Zn, metals

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS		VOC	Zn	TCLP Zn	metals					REMARKS
	08/25/94	08:00	S-082594-MAW-205	Soil	2	2	X			X					
		08:20	S-082594-MAW-206	(circled)	2		X			X					
		08:40	S-082594-MAW-207	(circled)	1		X								
		08:48	S-082594-MAW-208	↓	1				X						
		08:50	S-082594-MAW-209	↓	1			X							

TOTAL NUMBER OF CONTAINERS: 7

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME
① [signature]	DATE: 8/25/94 TIME: 15:00	② Richard L. [signature]	DATE: 8/26/94 TIME: 8:45
②	DATE: TIME:	③	DATE: TIME:
③	DATE: TIME:	④	DATE: TIME:

METHOD OF SHIPMENT: Fedex

AIR BILL No. 01-

White - Fully Executed Copy
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Pink - Shipper Copy
Goldenrod - Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY:

DATE: TIME:

№ 3806

1001(FORM) APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature] PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	SVOC	Pest/PCB	Metals							REMARKS
	08/23/94	1600	W-082394-KJJ-184	Water	6	X	X	X							MS/MSD
		1630	W-082394-KJJ-185	Water	3	X	X	X							

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: ① [signature]	DATE: 08/23/94 TIME: 19:00	RECEIVED BY: ② Richard L [signature]	DATE: 8/25/94 TIME: 8:35
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 0173022146

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Goldenrod -Sampler Copy

SAMPLE TEAM: Karl Johnson, Marc Willis

RECEIVED FOR LABORATORY BY:

DATE: TIME:

№ 3?98

1001(FORM) APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC	SVOC	Pest/PCB	Metals	REMARKS
	08/23/94	11:20	W-082394-KJJ-181	Water	6	X	X	X	X	
		11:10	W-082394-KJJ-182		6	X	X	X	X	
		15:10	W-082394-KJJ-183		6	X	X	X	X	
		16:00	W-082394-KJJ-184		6	X				MS/MSD
		16:20	W-082394-KJJ-185		3	X				
		18:20	W-082394-KJJ-186		3	X				
		18:30	W-082394-KJJ-187		3	X				
			TRIP BLANK		1	X				

as per Karl Johnson 08/24/94 AM

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: ① _____	DATE: [illegible] TIME: 19:00	RECEIVED BY: ② Richard L Brendle	DATE: 8/25/94 TIME: 8:35
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: FEDEX AIR BILL No. 017302214 6

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Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Karl Johnson, Marc Willis

RECEIVED FOR LABORATORY BY: _____ DATE: _____ TIME: _____

Nº 3800

1001(FORMS) APRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): ENCOTEC

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: CVOC	PCB/PCB	Metals	REMARKS
	08/23/94	18:20	W-082394-KJJ-186	Water	3	X	X	X	
	08/23/94	18:30	W-082394-KJJ-187	Water	3	X	X	X	
			TOTAL NUMBER OF CONTAINERS		6				

RELINQUISHED BY: ① _____	DATE: 08/24/94 TIME: 0900	RECEIVED BY: ② Richard L Stanley	DATE: 8/25/94 TIME: 8:35
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 017302216

White -Fully Executed Copy
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Goldenrod -Sampler Copy

SAMPLE TEAM: Karl Johnson, Marc Willis

RECEIVED FOR LABORATORY BY: _____ DATE: _____ TIME: _____

Nº 3801

1001(FORM PRIL 29, 93-REV.0-(C)(F-01)

CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Encotec

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC	SVOC	PCB/Pest	Metals	REMARKS
	8/24/94	12:50	W-082494-KJJ-189	Water	5	X	X	X	X	
		14:40	W-082494-KJJ-120		6	X	X	X	X	
		10:20	W-082494-KJJ-188		6	X	X	X	X	
		11:45	W-082494-KJJ-191		3	X				
		16:40	W-082494-KJJ-192		3	X				
		16:20	W-082494-KJJ-193		3	X				
	8/23/94	13:09	S-082394-MW-196	Soil	1	X				
		13:22	S-082394-MW-197		1	X				
		14:45	S-082394-MW-198		1	X				
			Trip Blank		1	X				As per Karl Johnson 08/26/94 Encotec instructed not to field filtered

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: ①	DATE: 8/24/94 TIME: 17:00	RECEIVED BY: ② Richard L Gonzo	DATE: 8/25/94 TIME: 8:35
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 173022150

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SAMPLE TEAM: Marc Willis, Karl Johnson

RECEIVED FOR LABORATORY BY: _____ DATE: _____ TIME: _____

Nº 3803

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CRA
CONESTOGA-ROVERS & ASSOCIATES
10400 West Higgins Road - Suite 103
Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature]

PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	VOC	SVOC	TCLP VOC							REMARKS
	08/29/94	17:28	S-082994-MAW-210	Soil	2	X	X	X							last soil samples
	08/30/94	15:55	S-082994-MAW-211	Soil	2	X	X								

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME
① [signature]	DATE: 08/30/94 TIME: 19:00	② Don Coleman	DATE: 8/31/94 TIME: 0840
②	DATE: TIME:	③	DATE: TIME:
③	DATE: TIME:	④	DATE: TIME:

METHOD OF SHIPMENT: Fedex

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SAMPLE TEAM: Marc Will

RECEIVED FOR LABORATORY BY:

DATE: TIME:

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laborc Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC	SVOC	PCB/PEST	Filtered metals*	REMARKS
	9/1/94	1200	W-090194-KJJ-216	water	6	✓	✓	✓	✓	
		1145	W-090194-KJJ-218	water	6	✓	✓	—	—	
		~~1150~~	~~W-090194-KJJ-217~~ KJJ 214			✓	KJJ			
		1015	W-090194-KJJ-215		3	✓				
		0850	W-090194-KJJ-213		3	✓				
		0845	W-090194-KJJ-212		3	✓				
		1010	W-090194-KJJ-214		6	✓	✓	✓	✓	
			TRIP BLANK		1	✓				
		1150	W-090194-KJJ-217		3	✓				
			* Filtered Metals = As, Zn, Pb							

TOTAL NUMBER OF CONTAINERS 28 31

RELINQUISHED BY: ① _____	DATE: 9/1/94 TIME: 1500	RECEIVED BY: ② _____	DATE: 9/2/94 TIME: 0850
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 017302286

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SAMPLE TEAM: Johnson, Willis

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Enecoted

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature]

PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: 5VOC	PCB/PEST	Filtered metals	REMARKS
	9/1/94	1010	W-090194-KJJ-214	water	3	X	X	X	
			Metals analysed for Zn, Pb, As						
			TOTAL NUMBER OF CONTAINERS						

RELINQUISHED BY: ① [signature]	DATE: 9/2/94 TIME: 500	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No.

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SAMPLE TEAM: J. Johnson, Willis

RECEIVED FOR LABORATORY BY: [signature]
DATE: 9/6/94 TIME: 8:40

Nº 3888

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Encotec

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: K.J. Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOCs	SVOCs	PEST/PCB	Filtered metals*	REMARKS
	9/1/94	1015	W-090194-KJJ-215	water	3	✓	✓	✓		
	1	0850	W-090194-KJJ-213	1	3	✓	✓	✓		
		0845	W-090194-KJJ-212		3	✓	✓	✓		
			TOTAL NUMBER OF CONTAINERS		9					

* Filtered Metals = As, Zn, Pb

RELINQUISHED BY: ① _____	DATE: 9/1/94 TIME: 1500	RECEIVED BY: ② _____	DATE: 9-2-94 TIME: 0850
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex AIR BILL No. 017302228 6

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SAMPLE TEAM: JOHNSON, Willis

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): Enecotec

CHAIN OF CUSTODY RECORD

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: [signature]

PRINTED NAME: Karl Johnson

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: PCB/Pest/Swc	PARAMETERS: Filtered Metals	REMARKS
	9/2/94	1150	W-090194-KJJ-217	water	2	✓	✓	

Note: Limited Sample available.
Metals analyzed for Pb, As, Zn

TOTAL NUMBER OF CONTAINERS: 2

RELINQUISHED BY: ① [signature]	DATE: 9/2/94 TIME: 1100	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex

AIR BILL No. 017302238 2

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SAMPLE TEAM: Johnson, Willis

RECEIVED FOR LABORATORY BY: [signature]
DATE: 9/6/94 TIME: 8:40

Nº 3889

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CR

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CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4160i

PROJECT NAME: Barrick

SAMPLER'S SIGNATURE:

PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: TCL VOC	TCL SVOC	TCL PEST/PCB	TAL METALS	Chloride	VOC	REMARKS
	11/28/94	12:30	MW-112894-MAW-001	water	9	X	X	X	X	X		72hr turnaround
		15:20	W-112894-MAW-002	water	3						X	
		16:35	S-112894-MAW-003	soil	1						X	72hr Turn around
		16:55	S-112894-MAW-004		1						X	MS/MSD
		16:46	S-112894-MAW-005		1						X	Hold these samples
		17:03	S-112894-MAW-006		1						X	pending the
		17:17	S-112894-MAW-007		1						X	results of sample
			Trip blank	water	1							S-112894-MAW-003

TOTAL NUMBER OF CONTAINERS: 19

RELINQUISHED BY: ① Marc Willis	DATE: 11/28/94 TIME: 18:00	RECEIVED BY: ② Ken Coleman	DATE: 11/28/94 TIME: 0830
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fedex

AIR BILL No. 0173022135

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SAMPLE TEAM: Marc Willis

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DATE: TIME:

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: BARRELS

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: Pest.	As	Metals	REMARKS
	11/29/94	10:33	W-112994-MAW-008	water	1	X			
		10:55	S-112994-MAW-009	Soil	2	X	X		72 hr turnaround
		11:00	S-112994-MAW-010		1	X	X	NO As (MAW)	MS/MSD
		11:18	S-112994-MAW-011		2	X	X		Hold for results from
		11:37	S-112994-MAW-012		2	X	X		S-112994-MAW-009
		12:03	S-112994-MAW-013		2	X	X		
		14:52	S-112994-MAW-014		1			X	
		15:03	S-112994-MAW-015		1			X	MS/MSD
		14:55	S-112994-MAW-016		1			X	
		14:59	S-112994-MAW-017		1			X	
	↓	16:00	W-112994-MAW-018	Water	1			X	

TOTAL NUMBER OF CONTAINERS: 15

RELINQUISHED BY: ① Marc Willis	DATE: 11/29/94 TIME: 17:30	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

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SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY: Jon Coleman
DATE: 11/30/94 TIME: 8:50

Nº 3891

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4867

PROJECT NAME: Barrels

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Alan Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOA	REMARKS
	12/6/94	12:15	GW-120694-MW-019	Water	4	X X	Filtered
		14:20	GW-120694-TH-020			X X	
		15:45	GW-120694-TH-021			X X	
		16:30	GW-120694-TH-022			X X	
		18:00	GW-120694-TH-023			X X	
			Trip Blank	Water	1		
			TOTAL NUMBER OF CONTAINERS		21		

RELINQUISHED BY: ① _____	DATE: 12/06/94 TIME: 19:00	RECEIVED BY: ② Don Coleman	DATE: 12-7-94 TIME: 9:38
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

METHOD OF SHIPMENT: AIR BILL No.

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SAMPLE TEAM: Alan Willis, Tim Harlow

RECEIVED FOR LABORATORY BY: Don Coleman
DATE: 12-7-94 TIME: 9:38

№ 4524

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152

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Rosemont, IL 60018 (708)299-9933

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: VOC	As	SVOC	As, Pb	REMARKS
	12/07/94	08:15	GW-120794-MW-024	Water	4	X	X			All Samples Metals Field Filtered
		09:20	GW-120794-TH-025		4	X	X			
		09:45	GW-120794-TH-026		4	X	X			
		11:25	GW-120794-MW-027		4	X	X			
		13:15	GW-120794-TH-028		8	X	X			MS/MSD
		~~14:02~~	~~GW-120794-MW-029~~ (MW)							
		16:00	GW-120794-TH-030		4	X	X			
		14:07	S-120794-MW-031		3	X (VOA)	X	X (SVOC)		SVOC ONLY MS/MSD
		14:52	S-120794-MW-032		3	X	X	X	X	
		14:02	S-120794-MW-056		3	X	X	X	X	
		13:45	GW-120794-MW-029		1		X			
		10:15	GW-120794-TH-033		4	X	X			
			~~GW-120794-TH-034~~ (MW)							
	↓	17:00	GW-120794-TH-035		4	X	X			
			Trip Blank		1					
			TOTAL NUMBER OF CONTAINERS		45					

RELINQUISHED BY: ① _____	DATE: 12/7/94 TIME: 17:01	RECEIVED BY: ② Jen Coleman	DATE: 12-8-94 TIME: 0915
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

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SAMPLE TEAM: Marc Willis, Jim Harlan

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CRA
CONESTOGA-ROVERS & ASSOCIATES, INC.
11100 Metro Airport Center Drive - Suite 160
Romulus, MI 48174 (313) 942-0909

CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: J Harlow PRINTED NAME: Tim Harlow

SEQ: No.	DATE	TIME		SAMPLE TYPE	No. OF CONTAINERS	PARAMETERS: VOA	PARAMETERS: AS	REMARKS
1	120994	945Am	GW-120994-TH-044	WATER	4	X	X	
2	120994	1300m	GW-120994-TH-045	WATER	4	X	X	
3	120994		TRIP BLANK	WATER	1	X		
			TOTAL NUMBER OF CONTAINERS					

RELINQUISHED BY: 1. J Harlow	DATE: 120994 TIME: 1230	RECEIVED BY: 1. David J. Taylor	DATE: 12/09/94 TIME: 17:55
RELINQUISHED BY: 2.	DATE: TIME:	RECEIVED BY: 2.	DATE: TIME:
RELINQUISHED BY: 3.	DATE: TIME:	RECEIVED BY: 1.	DATE: TIME:

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SAMPLE TEAM:

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DATE: TIME:

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Rosemont, IL 60018 (708)299-9933

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4867

PROJECT NAME: Barrels

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS VOA	PARAMETERS PCB	REMARKS
	12/08/94	10:15	GW-120894-TH-034	Water	4	X	X	No samples filtered as per NB 12/09/94 GW
		10:30	GW-120894-TH-037		4	X	X	
		12:50	GW-120894-TH-038		4	X	X	
		12:45	GW-120894-TH-039		4	X	X	
		13:00	GW-120894-TH-040		8	X	X	MS/MSD
		14:45	GW-120894-TH-041		4	X	X	
		12:00	GW-120894-TH-042		4	X	X	
		17:30	GW-120894-TH-043		4	X	X	
			~~Trip Blank~~		1			GW copy NB 12/09/94
			TOTAL NUMBER OF CONTAINERS		37			

RELINQUISHED BY: ① _____	DATE: 12/8/94 TIME: 19:00	RECEIVED BY: ② _____	DATE: 12/9/94 TIME: 0845
RELINQUISHED BY: ② _____	DATE: TIME:	RECEIVED BY: ③ _____	DATE: TIME:
RELINQUISHED BY: ③ _____	DATE: TIME:	RECEIVED BY: ④ _____	DATE: TIME:

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SAMPLE TEAM: Marc Willis, Tim Harlow

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CHAIN OF CUSTODY RECORD

SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: BARRELS

SAMPLER'S SIGNATURE: Tim Harlow PRINTED NAME: TIM HARLOW

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS VOA	PARAMETERS AS	REMARKS
1	121294	1015A	GW–121294–TH–046	WATER	4	X	X	
2		1030A	047		4	X	X	
3		1200	048		4	X	X	
4		1215	049		4	X	X	
5		1500	050		4	X	X	
6		1600	051		4	X	X	
7			TRIP BLANK		1	X		
			TOTAL NUMBER OF CONTAINERS		25			

RELINQUISHED BY: ① Tim Harlow	DATE: 121294 TIME: 600pm	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

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SAMPLE TEAM: Tim Harlow, DAVE COSS

RECEIVED FOR LABORATORY BY: Shawn Ostrowski JE
DATE: 12-12-94 TIME: 21:45

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SHIPPED TO (Laboratory Name): ENCOTEC

REFERENCE NUMBER: 4869

PROJECT NAME: Barrels

CHAIN OF CUSTODY RECORD

SAMPLER'S SIGNATURE: _____ PRINTED NAME: Marc Willis

SEQ. No.	DATE	TIME	SAMPLE No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: SVOC	VOC	As	REMARKS
	12/14/94	10:05	GW-121494-MAW-052	Water	1	✓			
		11:00	GW-121494-MAW-053		6	✓	✓	✓	MS/MSD (SVOC only)
		11:15	GW-121494-MAW-054		1	✓			
		15:30	GW-121494-MAW-055		4		✓	✓	
		16:00	GW-121494-MAW-056		4	✓	✓	✓	
	12/15/94	09:40	GW-121594-MAW-057		4		✓	✓	
			Trip Blank		1				
									Metals Field Filtered
			TOTAL NUMBER OF CONTAINERS		21				

RELINQUISHED BY: ① Marc Willis	DATE: 12/15/94 TIME:	RECEIVED BY: ②	DATE: 12/16/94 TIME: 0830
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fedex AIR BILL No. 282908805553

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Pink –Shipper Copy
Goldenr –Sampler Copy

SAMPLE TEAM: Marc Willis

RECEIVED FOR LABORATORY BY:
DATE: TIME: No. 4530

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APPENDIX J

QA/QC DATA

QA/QC DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

	RP-09 Rinsate Blank	*RP-17 Rinsate Blank*	*RP-37 Rinsate Blank*	*RP-46 Rinsate Blank*	*RP-55 Rinsate Blank*	*RP-62 Rinsate Blank*	*TB-77 Rinsate Blank*
Priority Pollutant VOCs (mg/kg)							
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)UJ
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	0.009	0.008	0.001	0.001	0.001	0.001	0.001
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.003
Methylene chloride	ND(0.001)	0.002 BU	0.002 B	0.002 B	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	0.003
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	0.002	0.002	0.003	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)

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	RP-09 Rinsate Blank	*RP-17 Rinsate Blank*	*RP-37 Rinsate Blank*	*RP-46 Rinsate Blank*	*RP-55 Rinsate Blank*	*RP-62 Rinsate Blank*	*TB-77 Rinsate Blank*
Priority Pollutant SVOCs (mg/kg)							
Base Neutral Compounds							
Acenaphthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Acenaphthylene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Anthracene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzidine	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(a)anthracene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(b)fluoranthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(k)fluoranthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(ghi)perylene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(a)pyrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-chloroethoxy) methane	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-chloroethyl) ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-chloroisopropyl) ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-ethylhexyl) phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Bromophenyl phenyl ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Butyl benzyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2-Chloronaphthalene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Chlorophenyl phenyl ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Chysene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Dibenz (a,h) anthracene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Di-n-butyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,2-Dichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,3-Dichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,4-Dichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
3,3'-Dichlorobenzidine	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Diethyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Dimethyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4-Dinitrotoluene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,6-Dinitrotoluene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Di-n-octyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

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1,2-Diphenylhydrazine	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Fluoranthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Fluorene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachlorobutadiene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachlorocyclopentadiene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachloroethane	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Indeno(1,2,3-cd) pyrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Isophorone	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4,4'-Methyllene-bis-(2-chloro-aniline)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Naphthalene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Nitrobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
N-Notrosodimethylamine	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
N-Nitrosodiphenylamine	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
N-Nitroso-di-n-propylamine	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Phenanthrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Pyrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,2,4-Trichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Acid Compounds							
4-Chloro-3-methylphenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2-Chlorophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4-Dichlorophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4,6-Dinitro-2-methylphenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.005)	ND(0.020)
2,4-Dinitrophenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.005)	ND(0.020)
2-Nitrophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Nitrophenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.005)	ND(0.020)
Pentachlorophenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.005)	ND(0.020)
Phenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4,6-Trichlorophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

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	RP-09 Rinsate Blank	*RP-17 Rinsate Blank*	*RP-37 Rinsate Blank*	*RP-46 Rinsate Blank*	*RP-55 Rinsate Blank*	*RP-62 Rinsate Blank*	*TB-77 Rinsate Blank*
Priority Pollutant Inorganics (mg/kg)							
Antimony	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Arsenic	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Beryllium	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Cadmium	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)
Chromium	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Copper	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
Lead	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Mercury	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)
Nickel	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Selenium	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Silver	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Thallium	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
Zinc	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Cyanide	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)UJ	ND(0.005)UJ	ND(0.005)	ND(0.005)UJ

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	RP-09 Rinsate Blank	*RP-17 Rinsate Blank*	*RP-37 Rinsate Blank*	*RP-46 Rinsate Blank*	*RP-55 Rinsate Blank*	*RP-62 Rinsate Blank*	*TB-77 Rinsate Blank*
Priority Pollutant Pesticides/PCB's (µg/kg)							
Aldrin	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
alpha-BHC	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
beta-BHC	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
delta-BHC	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
gamma-BHC (Lindane)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
alpha-Chlordane	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
gamma-Chlordane	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
4,4'-DDD	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
4,4'-DDE	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
4,4'-DDT	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Dieldrin	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
alpha-Endosulfan	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
beta-Endosulfan	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Endosulfan sulfate	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Endrin	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Endrin aldehyde	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Heptachlor	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Heptachlor epoxide	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Toxaphene	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1016	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1221	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1232	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1242	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1248	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1254	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1260	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)

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	TB-103 Rinsate Blank	TB-104 Rinsate Blank	KJJ-181 Rinsate Blank	KJJ-188 Rinsate Blank	MAW-001 Rinsate Blank	MAW-019 Rinsate Blank	TH-034 Rinsate Blank
Priority Pollutant VOCs (mg/kg)							
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)

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	TB-103 Rinsate Blank	*TB-104 Rinsate Blank*	*KJJ-181 Rinsate Blank*	*KJJ-188 Rinsate Blank*	*MAW-001 Rinsate Blank*	*MAW-019 Rinsate Blank*	*TH-034 Rinsate Blank*
Priority Pollutant SVOCs (mg/kg)							
Base Neutral Compounds							
Acenaphthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Acenaphthylene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Anthracene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzidine	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Benzo(a)anthracene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(b)fluoranthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(k)fluoranthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(ghi)perylene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Benzo(a)pyrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-chloroethoxy) methane	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-chloroethyl) ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-chloroisopropyl) ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Bis(2-ethylhexyl) phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Bromophenyl phenyl ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Butyl benzyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2-Chloronaphthalene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Chlorophenyl phenyl ether	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Chysene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Dibenz (a,h) anthracene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Di-n-butyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,2-Dichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,3-Dichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,4-Dichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
3,3'-Dichlorobenzidine	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Diethyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Dimethyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4-Dinitrotoluene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,6-Dinitrotoluene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Di-n-octyl phthalate	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

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1,2-Diphenylhydrazine	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Fluoranthene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Fluorene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachlorobutadiene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachlorocyclopentadiene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Hexachloroethane	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Indeno(1,2,3-cd) pyrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Isophorone	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4,4'-Methyllene-bis-(2-chloro-aniline)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Naphthalene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Nitrobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
N-Notrosodimethylamine	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
N-Nitrosodiphenylamine	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
N-Nitroso-di-n-propylamine	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Phenanthrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Pyrene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
1,2,4-Trichlorobenzene	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Acid Compounds							
4-Chloro-3-methylphenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2-Chlorophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4-Dichlorophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4,6-Dinitro-2-methylphenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
2,4-Dinitrophenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
2-Nitrophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
4-Nitrophenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Pentachlorophenol	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Phenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
2,4,6-Trichlorophenol	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

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	TB-103 Rinsate Blank	*TB-104 Rinsate Blank*	*KJJ-181 Rinsate Blank*	*KJJ-188 Rinsate Blank*	*MAW-001 Rinsate Blank*	*MAW-019 Rinsate Blank*	*TH-034 Rinsate Blank*
Priority Pollutant Inorganics (mg/kg)							
Antimony	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Arsenic	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Beryllium	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Cadmium	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)
Chromium	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Copper	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)	ND(0.025)
Lead	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)
Mercury	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)	ND(.0002)
Nickel	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Selenium	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Silver	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
Thallium	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
Zinc	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Cyanide	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

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Priority Pollutant Pesticides/PCB's (µg/kg)							
Aldrin	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
alpha-BHC	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
beta-BHC	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
delta-BHC	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
gamma-BHC (Lindane)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
alpha-Chlordane	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
gamma-Chlordane	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
4,4'-DDD	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
4,4'-DDE	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
4,4'-DDT	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Dieldrin	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
alpha-Endosulfan	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
beta-Endosulfan	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Endosulfan sulfate	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Endrin	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Endrin aldehyde	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Heptachlor	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Heptachlor epoxide	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Toxaphene	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1016	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1221	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1232	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1242	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1248	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1254	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
PCB-1260	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)

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APPENDIX K

ENVIRONMENTAL FATE AND TRANSPORT

K.0 ENVIRONMENTAL FATE AND TRANSPORT

This section presents the environmental fate and transport of Site parameters of concern at the Barrels Inc. Site, and discusses these with respect to:

1) physical and chemical properties;
2) potential routes of migration; and
3) migration and environmental fate.

The environments of concern and the potential pathways include:

1) soils;
2) air; and
3) sand aquifer.

The purpose of this section is to present an analysis and evaluation of the interaction of Site-related parameters of concern in the environmental media. Section K.1 presents a general description of the physical and chemical properties of Site-related parameters of concern and the influence of these properties on their environmental fate and transport. Section K.2 presents a discussion of the probable behavior and environmental fate of the parameters of concern.

K.1 PHYSICAL AND CHEMICAL PROPERTIES

The basic physical and chemical properties of the organic and inorganic chemicals of concern are presented on Table K.1

The probable behavior and environmental fate of all constituents can be assessed to some extent by evaluating the physical and chemical properties of the constituent. The mobility and persistence of these constituents are of primary importance in this evaluation. Mobility is the

TABLE K.1

SUMMARY OF PHYSIOCHEMICAL PROPERTIES
BARRELS INC.
LANSING, MICHIGAN

Chemical	*Molecular Weight* (g/mole)	*Melting Point* (°C)	*Boiling Point* (°C)	*Water Solubility** (mg/L)	*Vapor Pressure** (mm Hg)	*Henry's Law Constant* (atm-m3/mole)	*LOG Koc*	*LOG Kow*	*Fish BCF* (l/kg)
VOCs (1)									
BENZENE	78.11	5.5	80.1	1.75E+03	9.52E+01	5.59E-03	1.92	2.12	5.2
1,2-DICHLOROETHANE	98.96	-35.3	83.5	8690	64	9.80E-04	1.48	1.149	1.2
ETHYLBENZENE	106.17	-94.97	136.2	1.52E+02	7.00E+00	6.43E-03	3.04	3.15	37.5
TETRACHLOROETHENE	165.83	-22.7	121.4	1.50E+02	1.78E+01	2.59E-02	2.56	2.60	31
TOLUENE	92.1	-95.1	110.8	5.35E+02	2.81E+01	6.37E-03	2.48	2.73	10.7
TRICHLOROETHENE	131.5	-87	86.7	1.10E+03	5.79E+01	9.10E-03	2.10	2.38	10.6
VINYL CHLORIDE	62.5	-153.8	-13.4	1100	2580	2.37E-00	0.60	0.389	1.17
XYLENES (TOTAL)	106.17	-50 to 13	138.4 to 144.4	1.98E+02	1.00E+01	7.04E-03	2.38	3.26	--

Notes: NA - Not Applicable
-- - Data not available
* - Values are given for a temperature range of 20-30 C, except where otherwise specified.

References: (1) All VOC data (except where otherwise specified): Molecular weight, melting point and boiling point from Handbook of Environmental Data on Organic Chemicals, 2nd E
Other values taken from USEPA Superfund Public Health Evaluation Manual, October 1986.
(5) Taken from Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Ed., 1986.
Groundwater Chemicals Desk Reference, John N. Montgomery, Linda M. Wlkom, Lewis Publishers, Inc., 1990.

SUMMARY OF PHYSIOCHEMICAL PROPERTIES
BARRELS INC.
LANSING, MICHIGAN

Chemical	Molecular Weight (g/mole)	Melting Point (°C)	Boiling Point (°C)	Water Solubility* (mg/L)	Vapor Pressure* (mm Hg)	Henry's Law Constant (atm-m3/mole)	LOG Koc	LOG Kow	Fish BCF (l/kg)
BNAs (2)									
ACENAPHTHENE	154.21	90-95	279	3.42E+00	1.55E-03	9.20E-05	3.66	4.00	242
ACENAPHTHYLENE	182.18	249-252	--	3.93E+00	2.90E-02	1.48E-03	3.40	3.70	--
ANTHRACENE	178.23	216.2-216.4	340	4.50E-02	1.95E-04	1.02E-03	4.15	4.45	--
BENZO(A)ANTHRACENE	228	162 (8)	--	5.70E-03	2.20E-08	1.16E-06	6.14	5.60	--
BENZO(B)FLUORANTHENE	252	168 (8)	--	1.40E-02	5.00E-07	1.19E-05	5.74	6.06	--
BENZO(K)FLUORANTHENE	252	217 (8)	480 (8)	4.30E-03	5.10E-07	3.94E-05	5.74	6.06	--
BENZO(G,H,I)PERYLENE	276	222 (8)	--	7.00E-04	1.03E-10	5.34E-08	6.20	6.51	--
BENZO(A)PYRENE	252.3	179	311(at 10 mm)	1.20E-03	5.60E-09	1.15E-06	6.74	6.06	--
BIS(2-ETHYLHEXYL)PHTHALATE	391 (7)	-55	385	2.85E-01 (6)	1.20E+00(at 200 C) (6)	--	--	--	--
BUTYL BENZYL PHTHLATE	312.4	<-35	370	2.90E+00 (8)	8.60E-06 (6)	--	--	4.78 (6)	--
2-CHLOROPHENOL	128.56	9 (5)	175.6	2.85E+04 (6)	4.00E+01(at 82 C) (6)	--	--	~2.17 (6)	--
CHRYSENE	228.2	254	488	1.80E-03	6.30E-09	1.05E-06	5.30	5.61	--
DIBENZO(A,H)ANTHRACENE	278.35	266-267	524	5.00E-04	1.00E-10	7.33E-08	6.52	6.80	--
DI-N-BUTYL PHTHALATE	278.34	-35	340	1.30E+01	1.00E-05	2.82E-07	5.23	5.60	--
2,4-DIMETHYLPHENOL	122.16	26	211.5	--	--	1.70E-05 (8)	--	2.42 (8)	--
DI-N-OCTYL PHTHALATE	--	-35	220 (5)	--	--	--	--	--	--

Notes: NA - Not Applicable

-- - Data not available

* - Values are given for a temperature range of 20-30 C, except where otherwise specified.

References: (2) All BNA data (except where otherwise specified): Molecular weight, melting point and boiling point from Handbook of Environmental Data on Organic Chemicals, 2nd E
Other values taken from USEPA Superfund Public Health Evaluation Manual, October 1986.

(5) Taken from Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Ed., 1985.

(6) Taken from Handbook of Environmental Data on Organic Chemicals, 2nd Ed., 1983.

(7) Taken from USEPA Superfund Public Health Manual, October 1986.

(8) Taken from USEPA Risk Reduction Engineering Laboratory (RREL) Treatability Database, Cincinnati, Ohio.

TABLE K.1

SUMMARY OF PHYSIOCHEMICAL PROPERTIES
BARRELS INC.
LANSING, MICHIGAN

Chemical	Molecular Weight (g/mole)	Melting Point (°C)	Boiling Point (°C)	Water Solubility* (mg/L)	Vapor Pressure* (mm Hg)	Henry's Law Constant (atm-m3/mole)	LOG Koc	LOG Kow	Fish BCF (l/kg)
BNAs CONTINUED (2)									
FLUORANTHENE	202	107	250	2.06E-01	5.00E-06	6.46E-06	4.58	4.90	1150
FLUORENE	166.22 (8)	114.8 (8)	295 (8)	1.69E+00	7.10E-04	6.42E-05	3.86	4.20	1300
INDENO(1,2,3-CD)PYRENE	276.34	160-163	536	5.30E-04	1.00E-10	6.86E-08	6.20	6.50	--
NAPHTHALENE	128.16	80.2	217.9	3.00E+01 (6)	1.00E+00(at 53 C) (6)	--	--	--	--
n-NITROSODIPHENYLAMINE (8)	198.23	66.5	--	3.50E+01	1.00E-01	3.13E+00	--	2.79	
PHENANTHRENE	178.22	100	340	1.00E+00	6.80E-04	1.59E-04	4.15	4.46	2630
PHENOL	94.11	41	182	9.30E+04	3.41E-01	4.54E-07	1.15	1.46	1.4
PYRENE	202.26	149-151	393 (8)	1.32E-01	2.50E-06	5.04E-06	4.58	4.88	--
PESTICIDES/PCBs (3)									
CHLORODANE(ALPHA & GAMMA	410 (7)	--	--	5.60E-01	1.00E-05	9.63E-06	5.15	3.32	14000
4,4'-DDD	320.1	112	--	1.00E-01	1.89E-06	7.96E-06	5.89	6.20	--
4,4'-DDE	318 (7)	--	--	4.00E-02	6.50E-06	6.80E-05	6.64	7.00	51000
4,4'-DDT	354.5	108	--	5.00E-03	5.50E-06	5.13E-04	5.39	6.19	54000
DIELDRIN	381	176-177	--	1.95E-01	1.78E-07	4.58E-07	3.23	3.50	4760
PCB 1254	328.4 (8)	365-390 (8)	--	5.70E-02 (8)	7.71E-05 (8)	8.37E-03 (8)	--	6.03 (8)	--

Notes: NA - Not Applicable

-- - Data not available

* - Values are given for a temperature range of 20-30 C, except where otherwise specified.

References: (2) All BNA data (except where otherwise specified): Molecular weight, melting point and boiling point from Handbook of Environmental Data on Organic Chemicals, 2nd E
Other values taken from USEPA Superfund Public Health Evaluation Manual, October 1986.

(3) All Pesticide/PCB data (except where otherwise specified): Molecular weight, melting point and boiling point taken from Handbook of Environmental data on Organic C
Other values taken from USEPA Superfund Public Health Evaluation Manual, October 1986.

(5) Taken from Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Ed.,1985.

(6) Taken from Handbook of Environmental Data on Organic Chemicals, 2nd Ed., 1983

(7) Taken from USEPA Superfund Public Health Manual, October 1986.

(8) Taken from USEPA Risk Reduction Engineering Laboratory (RREL) Treatability Database, Cincinnati, Ohio.

SUMMARY OF PHYSIOCHEMICAL PROPERTIES
BARRELS INC.
LANSING, MICHIGAN

Chemical	Molecular Weight (g/mole)	Melting Point (°C)	Boiling Point (°C)	Water Solubility* (mg/L)	Vapor Pressure* (mm Hg)	Henry's Law Constant (atm-m3/mole)	LOG Koc	LOG Kow	Fish BCF (l/kg)
METALS (4)									
ANTIMONY	121.75	630	1635	insoluble	--	--	--	--	1
ARSENIC	74.92	615	--	insoluble	--	--	--	--	44
BERYLLIUM	9.01	1287	2970	insoluble	--	--	--	--	19
CADMIUM	112.41	320.9	765	insoluble	--	--	--	--	81
CHROMIUM	52.00	1857	2672	insoluble	--	--	--	--	16
COPPER	63.55	1083	2567	insoluble	--	--	--	--	200
CYANIDE**	27.03	-13.4	25.6	miscible	6.12E+02	--	--	0.35	0
LEAD	207.20	327	1740	insoluble	--	--	--	--	49
MERCURY (INORGANIC)	200.59	-38.87	356.58	5.60E-02	1.20E-03	1.14E-02	--	--	5500
NICKEL	58.69	1455	2730	insoluble	--	--	--	--	47
SILVER	107.87	961.93	2212	insoluble	--	--	--	--	3080
ZINC	65.38	419.58	907	insoluble	--	--	--	--	47

Notes: NA - Not Applicable
-- - Data not available
* - Values are given for a temperature range of 20-30 C, except where otherwise specified.
** - Data for hydrogen cyanide (HCN)

References: (4) All Metal data (except for Fish BCF): Taken from USEPA Risk Reduction Engineering Laboratory (RREL) Treatability Database, Cincinnati, Ohio.
Fish BCF data taken from USEPA Superfund Public Health Manual, October 1986.

potential for a chemical to migrate within various media. Persistence is a measure of how long a chemical will remain in the environment. Factors that affect the mobility and persistence of Site-related constituents include, but are not necessarily limited to:

1) physical properties, such as density;
2) chemical properties, such as water chemistry, pH and REDOX potential;
3) moisture levels; and
4) presence of microorganisms.

The water solubility is the maximum concentration of a compound that can dissolve in water at a specific temperature and pH. Compounds with high solubilities generally exhibit increased mobility.

Vapor pressure and Henry's Law Constants provide an indication of the volatility of a compound. High vapor pressures and Henry's constants indicate a general tendency for a compound to volatilize from water. Compounds with high Henry's constants generally do not persist in surface water environments.

The organic carbon partitioning coefficient (Koc) indicates the tendency of a compound to be adsorbed to organic materials in soils or sediments. High Kocs generally indicate lower mobility. PCBs have very high Kocs and are virtually immobile in organic rich soils.

The behavior of inorganic compounds is dependent upon numerous factors including water chemistry, pH and REDOX potential. Generally, inorganic compounds will precipitate as pH and alkalinity increase. Inorganic compounds may also become complexed depending upon the chemical environment.

Table K.1 presents a descriptive summary of the chemical properties which help determine the environmental fate of Site-related parameters.

Chemicals present in a groundwater system can be transported via advection and hydrodynamic dispersion. Advection refers to the process of chemical transport by the bulk flow of groundwater and depends upon the groundwater velocity.

Hydrodynamic dispersion refers to the combined processes of molecular diffusion and kinematic dispersion. Diffusion is the process whereby chemicals move under the influence of their thermal-kinetic energy from regions of high concentration to regions of low concentration. Kinematic dispersion is the process of mechanical mixing due to variations in pore velocities. Both diffusion and dispersion result in a dilution of the chemical. Diffusion is dominant at low fluid velocities while dispersion is dominant at medium to high fluid velocities.

The transport of chemicals in a groundwater system is also affected by adsorption/desorption processes. Adsorption, or sorbing, refers to the binding of chemical molecules present in the aqueous phase to subsurface material. Desorption, the reverse of adsorption, refers to the release of chemical molecules from a bound state to a free aqueous phase. While adsorption reduces the aqueous phase concentration, desorption increases it.

Adsorption/desorption processes are typically assumed to be adequately described as a reversible, instantaneous, linear equilibrium isotherm approximated by the following expression:

$$S = K'C$$

where:

S is the sorbed concentration (M/M);
K' is the equilibrium partition coefficient (dimensionless); and
C is the dissolved concentration (M/M).

Organic sorption refers to the sorption of organic compounds due to hydrophobic partitioning. In this case, S has units of chemical mass per unit mass of soil (M/M), C has units of chemical mass per unit mass of water (M/M) and K' is represented by the dimensionless "partition coefficient" K_p. Research into organic sorption has shown (Hamaker and Thompson, 1972, de Marsily, 1986) that K_p is highly related to the organic content of the subsurface material as expressed by:

$$K_p = K_{oc} f_{oc}$$

where:

K_{oc} represents the organic carbon partitioning coefficient (dimensionless); and

f_{oc} represents the fraction of organic carbon (dimensionless).

The organic carbon partitioning coefficient is a measure of the tendency for organics to be adsorbed by the subsurface media. K_{oc} is chemical specific and is largely independent of soil properties. The fraction of organic carbon represents the mass concentration (mass of carbon per unit mass of soil) of organic carbon in the porous medium and is thus a property of the subsurface material.

The impact of sorption on chemical transport may be represented by a retardation factor R. The retardation factor is the reciprocal of the ratio of the chemical transport velocity to the average linear groundwater velocity. For example, if it takes one year for a volume of groundwater to travel from a point A to another point B it would take 1/R years for a sorbing solute to travel from point A to point B.

The retardation factor may be calculated as follows [de Marsily, 1986].

Organic sorption:

$$R = 1 + \frac{P_b}{np_w} K_p$$

where:

P_b represents the dry bulk density of the porous medium (M/L^3);
p_w represents the fluid density (M/L^3); and
n represents the total porosity (dimensionless).

K.2 ENVIRONMENTAL FATE OF REPORTED SITE PARAMETERS OF CONCERN

This section provides information on the environmental fate of substances which are considered to be Parameters of Concern. These include VOCs, SVOCs, Pesticides/PCBs and Inorganics. The information on environmental fate presented is summarized from U.S. EPA Toxicological Profile reports for each substance.

K.2.1 VOCs

K.2.1.1 BTEX

BTEX (of which Benzene, Ethylbenzene and Xylene are Site Parameters of Concern) compounds released to the environment are subject to environmental fate processes including volatilization, sorption and biodegradation.

BTEX compounds have relatively low Koc values and high vapor pressures and therefore are subject to transport from a soil medium into the atmosphere or the water column via volatilization or flushing, respectively. Of the BTEX compounds, benzene has the highest potential for mobility from the soil medium (Koc of 78 ml/g, vapor pressure of 95.2 mm Hg, Henry's law constant of 5.48×10^{-3} atm-m^3/mol) whereas

xylenes has the lowest potential mobility (Koc of 240 ml/g, vapor pressure of 10 mm Hg, Henry's law constant of 7.04×10^{-3} atm-m^3/mol).

The rate of leaching of a chemical from soil to the aqueous phase is dependent upon the chemical concentration in the soil, the temperature, the chemical solubility and contact time between the source and the groundwater. The presence of significant concentrations of BTEX compounds in groundwater generally indicates that soil leaching is occurring.

BTEX compounds, once present in the groundwater, can also be attenuated or degraded by aerobic biodegradation or via volatilization into the vadose zone and ultimately the atmosphere. As discussed previously, BTEX compounds have a relatively high Henry's Law constant values and vapor pressures. Therefore volatilization to the vadose zone would be a significant process for reducing chemical concentrations in the groundwater. BTEX compounds present in the atmosphere are subject to degradation process such as reaction with hydroxyl radicals (Benzene, Ethylbenzene) or phototransformations (Xylenes).

K.2.1.2 Tetrachloroethene (PCE)

Tetrachloroethene is not known to be a naturally occurring chemical. Its main source is the dry cleaning industry which accounts for the production of 90% of its presents in the atmosphere. Metal degreasing industries are also known to produce PCE.

Environmental Fate

PCE tends to enter the environment through spills or accidental releases to the air, soil, or water. Due to its high vapor pressure and Henry's law constant, PCE will rapidly volatize. In surface water PCE evaporates with a reported half-life of anywhere from 3 hours to 14 days. PCE displays low adsorption to soils and thus is very mobile. In sandy soils PCE can leach fairly quickly to reach groundwater. PCB is not expected to

significantly biodegrade, bioconcentrate in aquatic organisms, or adsorb to sediment.

Biodegradation may occur in anaerobic soil at a very slow rate or in groundwater where acclimated populations of microorganisms exist. Trichloroethene (TCE) is the product of Tetrahcloroethene's biodegradation. Traces of dichloroethene and vinyl chloride are also present in this process.

In the atmosphere, vapor phase PCE is expected to degrade by reaction with photochemically produced hydroxyl radicals or chlorine atoms produced by photooxydation of PCE. Also, due to the solubility of PCE, it may be subject to removal from air by washout in rain.

K.2.1.3 Trichloroethene (TCE)

Trichloroethene (TCE) has a relatively high vapor pressure and will exist primarily in the vapor phase when released to the atmosphere. Its main use is for the degreasing of metals. TCE is spilled, evaporated or leaked from storage tanks into the environment from metal degreasing industries. TCE can also be found in the wastewater of metal finishing, paint and ink formulation, electrical/electronic components and rubber processing industries.

Environmental Fate

Trichloroethene is very volatile and thus evaporation is the primary removal mechanism from both soils and surface waters. Evaporation of TCE from surface water has a half-life of only minutes to a few hours depending on the turbulence. Adsorption to soils is very low making it quite mobile . Biodegradation, hydrolysis and photooxydation of TCE are slow processes and are not considered to be important removal mechanisms. Bioconcentration in aquatic organisms is negligible.

In the atmosphere, TCE is reported to persist in the air for 5 days and results in the formation of phosgene, dichloroacetyl chloride and formyl chloride.

K.2.1.4 Vinyl Chloride (VC)

Vinyl Chloride (VC) is produced in large quantities and almost exclusively used for the production of polyvinyl chloride (PVC) and other polymers. Emissions and wastewater from production and manufacturing facilities account for the majority of VC present in the environment.

Environmental Fate

Vinyl Chloride has a very high vapor pressure and a high Henry's law constant which indicates that it will rapidly volatilize from both soil and water. The reported half-life in soils of VC is between 0.2 to 0.5 days for a depth of 10 cm below the ground surface. Within water a half-life of 0.805 hours was calculated for evaporation from a river 1 m deep (with a current 3 m/sec and with a wind velocity of 3 m/sec) using the reported Henry's law constant (1.07×10^{-2} atm-m^3/mole)[1].

TCE is considered highly to very highly mobile due to its low sorption ability. Any TCE released to the soil that does not volatilize may leach through soils. TCE is not expected to hydrolyze, bioconcentrate in aquatic organisms, or adsorb to sediment.

Vinyl Chloride is resistant to biodegradation in aerobic systems, but in waters containing photosensitizers such as humic acid, rapid photodegradation will occur. In the air, VC will degrade rapidly by reacting with photochemically produced radicals. Its estimated half-life is 1.5 days.

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1 Howard Philip H. Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Lewis Publishers: Volume I, 1989, p554-555.

Chloroacetaldehyde, HCI, chloroethene epoxide, formaldehyde, formyl chloride, formic acid, and carbon monoxide are products of this reaction.

K.2.1.5 1,2-Dichloroethane

1,2-Dichloroethane is used primarily to make vinyl chloride and a number of other solvents to remove grease, glue and dirt. It is also found in commercial solvents used by industry to clean cloth, remove grease from metal, and to break down oils, fats, waxes, resins and rubber. In the household, 1,2-dichloroethane can be found in some cleaning agents and pesticides; in some adhesives, such as those used to glue wallpaper or carpeting; and in some paint, varnish and finish removers. 1,2-Dichloroethane is also added to leaded gasoline to prevent engine knock.

Environmental Fate

Due to its high vapor pressure of 78.7 mm Hg at 20°C, volatilization from soil or water will be rapid. Once in the atmosphere, 1,2-dichloroethane may be transported long distances and is primarily removed by photooxidation (half-life approximately 1 month), with the products of photooxidation being CO_2 and HCL. Direct photolysis will not be a significant removal process.

When 1,2-dichloroethane is released to water, the primary removal process is evaporation as indicated by its high vapor pressure and moderate Henry's law constant. The half-life is dependent on wind and mixing conditions. Under laboratory conditions, the half-life is estimated to be in the order of hours (Howard, 1990). Chemical and biological biodegradation is expected to be very slow. A low K_{OC} value of 16.57 mL/g and a low estimated BCF value of 8 L/kg bioconcentration in aquatic organisms will not be significant.

1,2-Dichloroethane released on land will evaporate rapidly as indicated by its high vapor pressure. Based on its low K_{OC} value

and high water solubility of 8,524 mg/L, 1,2-dichloroethane will readily leach through sandy soil into groundwater. Significant biodegradation in soil or groundwater is not expected based on laboratory experiments in aquatic systems (Howard, 1990).

K.2.2 SVOCs

K.2.2.1 PAHs

Polycyclic aromatic hydrocarbons (PAHs) are a group of chemicals formed during the incomplete combustion of coal, oil, gas, garbage, or other organic substances. PAHs are a subset of the BNAs, and are the only BNAs detected of the Chemicals of Concern. PAHs may also leach from coal disposed off or buried, through the migration of precipitation. Some PAHs are used in medicines and others are used to make dyes, plastics and pesticides. PAHs are found throughout the environment in the air, water and soil. As pure chemicals, PAHs generally exist as colorless, white or pale yellow-green solids. Most PAHs do not occur alone in the environment, rather they are found as mixtures of two or more PAHs. PAHs can occur either in the air attached to dust particles, or in soil or sediment as solids. PAHs can also be found in substances such as crude oil, coal tar pitch, creosote and road and roofing tar. PAHs generally exhibit low solubility in water, but some may readily volatilize in air.

Chemical Identity

The following 12 PAHs are considered as a group in this review of the chemical and physical properties of PAHs.

- acenaphthylene
- benzo(a)anthracene
- benzo(a)pyrene
- benzo(b)fluoranthene
- benzo(k)fluoranthene
- dibenzo(a,h)anthracene
- indeno(1,2,3-cd)pyrene
- phenanthrene
- pyrene
- fluoranthene

- chrysene
- naphthalene

Environmental Fate

PAHs released to the environment are subject to a number of environmental fate processes including volatilization, sorption, biodegradation and bioaccumulation. PAH compounds tend to be removed from the water column by volatilization to the atmosphere, adsorption to particulates or sediments, or by being accumulated by or sorbed into aquatic organisms. Adsorption of PAHs to soil and sediments increases with increasing organic carbon content, and is also directly dependent on particle size.

Environmental Evaluation of PAHs

The environmental fate of PAHs is described by U.S. EPA in the document "Ambient Water Quality Criteria for Polynuclear Aromatic Hydrocarbons" which states:

> ***"PAH will adsorb strongly onto suspended particulates and biota and their (PAH) transport will be determined largely by the hydrogeologic condition of the aquatic system. PAH dissolved in the water column will probably undergo direct photolysis at a rapid rate. The ultimate fate of those which accumulate in the sediment is believed to be biodegration and biotransformation by benthic organisms (U.S. EPA, 1979)".***

This is restated in the U.S. EPA document "Health Effects Assessment for Polycyclic Aromatic Hydrocarbons (PAHs)" which states:

> ***"The predominant mechanism that is likely to dictate the fate of most PAHs in aquatic media is sorption to particulate matter and subsequent sedimentation and microbial degradation."***

Since PAHs are most likely to stay in the sediment or soil, microbial degradation is the most likely ultimate environmental fate in contrast to photolysis and volatilization. Compounds with four cyclic rings or less are most amenable to microbial degradation. Benzo(a)pyrene (five cyclic rings) has a half life in soil inoculated with bacteria of less than eight days. The half-life reported for benzo(a)pyrene in soil reported in Superfund Public Health Evaluation Manual (SPHEM, 1986) is 420 to 480 days but there is no reference to the microbial content in the soil.

K.2.2.2 Phthalate Esters

The phthalate esters are used in virtually every major product such as construction, automotive, household products, apparels, toys and medical products. This results in wide occurrence of Phthalate Esters in the environment. Phthalate Esters are used as plasticizers for polyvinyl and cellulosic resins, primarily in polyvinyl chloride (PVC). The most commonly produced plasticizers are Bis(2-ethylhexyl) Phthalate (BEHP), Di-n-butyl Phthalate (DBP), Di-n-octyl Phthalate (DOP) and Butyl Benzyl Phthalate (BBP).

Because of its high efficiency and stability, BEHP has been used in large quantities as a plasticizer for polyvinyl chloride (PVC) and other polymers. As a result of its common use, BEHP may be found in common goods such as upholstery material, hospital sheeting, shower curtains, food packaging materials and various plastic products used daily by the general public. Pursuant to the banning of PCBs in dielectric fluids for transformers and capacitors, BEHP was selected by many manufacturers as the preferred material for dielectric fluids. BEHP is currently still used in the transformer and capacitor industry.

Environmental Fate

Atmospheric levels of phthalate esters are caused by volatilization during the manufacture and waste disposal of plastic products. Phthalate esters have high boiling points ranging from 230°C to 386°C and

low vapor pressures ranging from 1.4×10^{-4} to 6.2×10^{-8} mm Hg at 25°C. This indicates a strong affinity to adhere to atmospheric particulate matter especially organic matter and soot. A significant removal process from the atmosphere is by rain washout. Direct photolysis and photoxidation are atmospheric processes that might occur but to a very limited extent.

In the presence of a direct pollution source, the extent of contamination in water systems by phthalate esters is influenced by the compound's water solubility. The water solubility for phthalate esters ranges from a minimum value of 285 ppb to a maximum value of 13000 ppb (13 ppm).

Biodegradation in aquatic systems is quite rapid with a half-life of 2-3 weeks following a period of acclimation.

Primary removal of phthalate esters from water systems is through adsorption to suspended matter and sediments as indicated by the high organic carbon partitioning coefficient (K_{OC}). The K_{OC} values for phthalate esters range from 68 to 980,000,000. As discussed earlier, a high K_{OC} generally indicates an increased likelihood for the chemical to bind to soil or sediment rather than to remain in water. Thus, phthalate esters have significantly high K_{OC} values which is indicative of lower mobility.

The Henry's Law constants for phthalate esters range from 1.1×10^{-5} to 1.41×10^{-12} atm•m3/mol. This is indicative of the extent of chemical partitioning between air and water at equilibrium. Due to the low Henry's Law Constants for phthalate esters, its volatilization to the atmosphere from water is likely to be negligible. This is true even under conditions, such as aeration, conducive to contaminant evaporation. For BEHP, evaporation and hydrolysis are not significant aquatic processes.

The phthalate esters, including BEHP, have a strong affinity for soil solids, including organic, humic fraction of soil. Both the mineral and organic fraction of solid soil particles tend to bind BEHP and other phthalates.

Degradation of phthalates in soil is mediated by a wide variety of microorganisms capable of metabolizing phthalates to simpler molecules. Several microorganisms including the saprophytic bacterium Serratia, Penicillium lilacinuns and Enterobacter erogenous, have been shown to degrade BEHP. Serratia can use the compound as a sole source of carbon and energy.

The rates of degradation, appear to increase with decreasing alkyl chain length. Biodegradability of BEHP is less biodegradable than short (less than 6 carbons) carbon-chain length phthalate esters but more biodegradable than several other long-carbon chain phthalates (i.e. >7 carbons). Microbial transformation of phthalate esters undoubtedly accounts for the major part of their biodegradation in the environment. Phthalates are biodegraded in water, sludge and soil under aerobic conditions. The degradation of BEHP in soil occurs under aerobic conditions, but only slowly, if at all under anaerobic conditions. Studies with ^{14}C-carbonyl-labeled BEHP in aerobic freshwater hydrosoil yielded a degradation half-life of approximately 14 days.

Presence as a Laboratory Contaminant

BEHP is a common laboratory contaminant. Many studies have shown commercial organic solvents to be contaminated with BEHP. Various investigators have noted the general contamination of laboratory supplies, solvents, and reagents with BEHP to the extent that the detection limit for BEHP in investigative samples is determined by the reagent-laboratory blank.

Due to ambient conditions within the laboratory setting, BEHP contamination of investigative samples is a common occurrence. Based on this fact, BEHP concentrations determined in investigative samples must be carefully scrutinized for validation purposes. If BEHP is detected in an investigative sample and a laboratory blank, the concentration in the investigative sample must exceed the concentration found within the blank

by a factor of 10 to be considered present (i.e. multiply concentration found in laboratory blank sample by 10 to determine detection limit for investigative sample). [Reference U.S. EPA CLP-National Functional Guidelines for Organic Data Review, Revised June 1991]

K.2.2.3 2-Chlorophenol (2-CP)

2-Chlorophenol (2-CP) is a synthetic organic compound that has no known natural sources. It is used as a intermediate for dyes and higher chlorinated phenols.

Environmental Fate

2-CP has a dissociation factor of 8.52, indicating that it will exist in water and moist soils in a partially dissociated state. This decreases its mobility and increases its reactivity.

2-CP displays low to moderate adsorption to soil and sediment but still may be mobile enough to leach to the groundwater. This property is indicated by 2-CP's estimated Koc value. (see Table 7.1)

2-CP will not bioconcentrate in aquatic organisms or chemically hydrolyze. Volitilization from soil or water is relatively slow with a half-life in water of 73 days. The two major removal processes of 2-CP from water are biodegradation and photolysis near the surface. Tests involving two raw river waters reported complete removal in 13 and 36 days. Biodegradation is also an important removal process in soils, especially in clays. Removal of 2-CP from the air is accomplished through photolysis and reaction with nitrogen oxide. The vapor phase half-life is 1.96 days. To a lessor extent, washout in rain will remove 2-CP from the air.

K.2.2.4 N-Nitrosodiphenylamine

N-Nitrosodiphenylamine has been produced commercially in the United States since 1945. It was primarily used as a vulcanization retardant in the rubber-processing industry and as an intermediate in the manufacture of p-nitrosodiphenylamine. Retardants are chemicals that prevent premature vulcanization of rubber compounds during certain rubber-processing steps such as mixing and calendering. Evidence also suggests the production of N-Nitrosodiphenylamine by microorganisms in the environment.

Environmental Fate

N-Nitrosodiphenylamine has a vapor pressure of 0.1 mm Hg at 25° C and thus, it should exist almost entirely in the vapor phase in the atmosphere. In air, the main degradation pathways include photodecomposition as well as chemical reactions with hydroxyl radicals in the atmosphere (ATSDR 1992).

Solubility in water is 40 mg/L. Volatilization and microbial degradation are two major environmental fate processes in water. Volatilization from water will be slow but should be a significant transport process as indicated by its Henry's Law Constant of 6.6×10^{-4} atm•m^3/mol.

The (log Kow) logarithm of n-octanol/water coefficient for N-Nitrosodiphenylamine was estimated to range from 2.57 to 3.13, indicating a low potential for bioaccumulation.

The soil sorption coefficient (K_{OC}) for N-Nitrosodiphenylamine was estimated to range from 830 to 1830 which is indicative of low mobility in soil or sediment. Thus, significant leaching is not expected to occur in most types of soils and/or sediments. The major

degradation pathway for N-Nitrosodiphenylamine in soil is microbial degradation (ATSDR 1992)[2].

K.2.3 Pesticides/PCBs

K.2.3.1 PCBs

Polychlorinated biphenyls (PCBs) are a group of 209 stable, fat-soluble chemicals. Historically, PCBs have been used in the manufacturing of capacitors, transformers, carbonless copying paper, paints and hydraulic fluid. Presently, the use of PCBs is restricted to closed electrical systems and is being phased out as new dielectric fluids are developed and become widely available.

The PCB identified at the Barrels Inc. Site include:

Aroclor 1254.

Aroclor is the commercial name for American PCB product mixtures. Different product mixtures are further identified by codes, such as 1242 and 1254. These codes designate the percent of chlorination of the product mixture. Because the time necessary for different components of PCB mixtures to break down in the environment varies, PCB mixtures found in soils, sediments and biota have different compositions in comparison to the commercial formulations.

Environmental Fate

Environmental fate is important in determining the environmental impact of PCBs. Sorption, volatilization and bioaccumulation are important fate processes. PCBs strongly adsorb to

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2 Ref: Agency for Toxic Substances and Disease Registry, U.S. Public Health Service Toxicological Profiles. February 18, 1992.

organic rich sediment and soil. Volatilization and biodegradation are also important fate processes but may occur only at relatively slow rates.

K.2.3.2 Chlordane

Chlordane is not a naturally occurring compound. It was primarily manufactured for use as an insecticide. The general use of chlordane was first restricted in July 1983 by the USEPA. The only permitted use of chlordane was for underground termite control up until April 14, 1988 when all commercial use was canceled.

Technical grade chlordane is a mixture of at least 50 compounds, including alpha and gamma chlordane as major constituents.

Environmental Fate

Chlordane will persist in soil and has a reported half-life of 3.3 years. Based on field, soil column, and leaching tests, as well as using the estimated Koc of 5.54, chlordane is described as immobile or slightly mobile. Volatilization of the compound from soils is significant if it is sprayed onto the soil (especially moist soils), however, once chlordane is captured below the surface of the soil volatilization is negligible.

Volatilization from water, which is characterized by its Henry's law constant (see Table 7.1), is considered a significant removal process. The half-lives of chlordane from rivers, ponds and lakes have been determined to be between 3.6 and 26.6 days.

To a greater extent, the removal process of chlordane from water is adsorption to sediment (Koc-=24,600 to 15,500). Chlordane is very persistent in this state.

BFC values of above 3,200 have been observed in fish and aquatic organisms making bioconcentration a significant factor in chlordane's environmental fate.

In the atmosphere, this compound exists in the vapor phase, but 96% of the airborne reservoir of chlordane is in a sorbed state. This state allows for its long range transport. The dominating chemical removal process is the reaction with photochemically produced hydroxyl radicals. The half-life for this process is 6.2 days. The compound can be removed from the air by washout in rain.

K.2.3.3 Dieldrin

Dieldrin is a man-made compound and has been used as an insecticide mostly for corn and in smaller amounts for termite control. Dieldrin is also a product of the degradation of aldrin by the environment. Aldrin is also a man-made insecticide and both are no longer registered for general use.

Environmental Fate

Dieldrin's environmental fate is characterized by its physical properties It has a high Koc value, low vapor pressure, low water solubility and strongly adsorbs to soils, sediments and dust particles. Dieldrin is extremely persistent. It will not leach into groundwater (immobile) and takes a long time to degrade. Evaporation is slow but once in the atmosphere the compound can be carried for long distances. Dieldrin bioconcentrates well in fish animals and plants.

K.2.4 Inorganics

The final group of Site-related constituents includes a variety of inorganics which are typified by the following metals:

- antimony
- arsenic
- cadmium
- chromium
- copper
- lead
- mercury
- nickel
- selenium
- silver
- zinc
- cyanide

The following sections will present a literature review of the properties of these metals. The goals of this review will be to determine and evaluate the properties of these metals in the environment that are important in determining the environmental fate.

K.2.4.1 Antimony (Sb)

Antimony in its elemental state is a silver white metal. Both ferrous and nonferrous metal smelters produce antimony and antimony trioxide, releasing them to soil and water as slag (residue). Sludge from POTWs and from municipal refuse may also contain antimony.

Chemical Identity

Pertinent physical and chemical properties of antimony are presented in Table 7.1. The following provides additional description:

Symbol	-	Sb
Atomic Weight	-	121.75
Atomic Number	-	51
Valence States	-	3, 5

Environmental Fate

In the air, antimony and its related compounds exist as particulate or adsorbed to particulate matter. The distance traveled and the

rate of removal of antimony from the atmosphere depends on its particle size and density, and also on the height of the stack it was released from. Gravity will settle out the larger particles. Smaller particles will be removed through wet and dry deposition with rain. Since antimony is soluble most of it will dissolve in water droplets and come down as wet deposition.

Antimony released to waterways will also be in the form of particulate matter. The antimony particles are transported to, and settle out of the water in areas of active sedimentation.

Antimony adsorbs strongly to colloidal material in soil but its general adsorption capacity is unclear and is expected to vary among its related compounds. Similarly, the mobility of Antimony is unclear and apparently quite diverse. Generally, antimony deposited on the soil surface in the form of sewage sludge will accumulate primarily in the surface layers.

Specification

Antimony can exist in the natural environment in one of the three oxidation states (0, 3^+, 5^+).

Some forms of antimony may bind to inorganic and organic ligands.

K.2.4.2 Arsenic

Arsenic occurs in nature in sulfide ores, such as Arsenopyrite. Arsenic trioxide is obtained as a by-product from the smelting of copper, lead or gold ores.

Arsenic was used as a therapeutic agent as early as 400 BC.

The major current use of arsenic is for pesticides, herbicides, cotton desiccants, wood preservatives, bronzing, glass production, metal alloy production, and manufacture of integrated circuits.

Arsenic compounds may be classified into three major groups:

(1) inorganic arsenic compounds,
(2) organic arsenic compounds, and
(3) arsine gas.

The most common inorganic arsenic compounds include arsenic trioxide, sodium arsenate, arsenic trichloride, arsenic pentoxide, arsenic acid and arsenate (i.e. lead arsenate and calcium arsenate). Common organic arsenic compounds are arsanilic acid, methylarsonic acid, dimethylarsinite acid and arsenobetaine.

Environmental Fate

Arsenic generally enters the environment as a byproduct of industrial processes. It may enter the environment as particulate fall-out from smoke stacks during smelting process, discarded as residual of casting processes or wood preserving operations, etc.

Arsenic trioxide is only slightly soluble in water. Sodium arsenite and sodium arsenate are highly soluble. Depending on the pH of water, interchanges of valence may occur in water solution. Arsenic may be transformed by oxidation-reduction reactions. The most common form of arsenic in water is arsenate, which can be reduced to arsenite by microorganisms.

Arsenic is released into the atmosphere primarily as arsenic trioxide. Trivalent arsenic in the atmosphere undergo oxidation to the pentavalent state.

Arsenic levels in uncontaminated surface water and groundwater range from about 1 to 10 ppb. Much higher levels, up to 3400 ppb, have been detected in volcanic rock. Arsenic is relatively mobile.

Specification

Arsenic exists in the oxidation states -3, 0, +3, +5. It undergoes transformation to the various states by oxidation-reduction reactions, ligand exchange and biotransformations.

K.2.4.3 Cadmium (Cd)

Cadmium (Cd) is a naturally occurring element in the Earth's crust. Pure cadmium is a soft silver-white metal. The pure form of cadmium is rarely encountered. Cadmium is most often combined with other elements to form compounds such as: cadmium oxide, cadmium chloride or cadmium sulfide. These compounds are all stable solids that do not evaporate.

Most cadmium used in North America is obtained as a by-product from the smelting of zinc, lead or copper ores. Cadmium has a number of industrial applications, but it is most widely used in metal plating, pigments, batteries and plastics.

Chemical Identity

Cadmium is a naturally occurring metallic element. Its atomic number is 48 and it has a density of 8.65 g/cm^3. Pertinent physical and chemical properties of cadmium are presented in Table 7.1. The solubility of cadmium compounds in water range from quite soluble (cadmium chloride) to practically insoluble (cadmium oxide).

Environmental Fate

Cadmium enters the environment to a limited extent from the natural weathering of minerals, but to a much greater degree from pollutant sources such as discarded metal-containing products, phosphate fertilizer, and fuel combustion.

Cadmium in surface waters is usually present at less than 1 µg/L, however, industrial contamination can result in concentrations of up to 10 µg/L.

Compared to most other heavy metals, cadmium is relatively mobile in the aqueous environment. Cadmium may exist in any of the following forms:

- hydrated ion $Cd^{2+}6H_2O$
- metal - inorganic complexes CO_3^{2-},OH^-,Cl^-,$SO4^{2-}$
- metal - organic complexes humic acids

Cadmium exists only in the 2+ oxidation state in the environment (i.e. groundwater) and therefore aqueous cadmium is not strongly influenced by the oxidizing or reducing potential of water. However, CdS has a very low solubility and tends to precipitate under reducing conditions that yield sulfide.

In the groundwater environment several processes tend to keep concentrations of cadmium low. These include:

- sorption to mineral matter,
- sorption to clay,
- binding to humic matter,
- precipitation of CdS in the presence of sulfide, and
- precipitation of cadmium carbonate at high alkalinities.

The upper sand aquifer groundwater exhibits a pH>7 and has a relatively high alkalinity. As such, it would be expected that any aqueous phase cadmium would quickly be precipitated as $CdCO_3$ as it entered the upper sand aquifer.

Speciation

Cadmium speciation is similar to like metals such as zinc. Cadmium can form complexes with; hydroxide, carbonate, chloride, sulfate and humic materials. Complexes with humic materials are most important in the presence of high levels of organic materials.

K.2.4.4 Chromium (Cr)

Chromium (Cr) is a naturally occurring element found in continental crust, volcanic dust and gases. Chromium metal is a steel-gray solid and is primarily used in the steel and metallurgical industries. Chromium is also used in the following industries:

- refractory brick,
- metal finishing,
- manufacture of pigments,
- leather tanning,
- wood treatment, and
- water treatment

Society's use of this metal causes larger amounts of chromium to be emitted into the environment than from natural processes.

Chemical Identity

The physical and chemical properties of chromium are presented in Table 7.1. Chromium has an atomic weight of 51.996 g/mole. Chromium and its salts have various solubilities in water.

Environmental Fate

Chromium occurs naturally in the Earth's crust but the majority of chromium which exists in the environment is a direct result of human activity. Chromium is released to the environment as follows:

Chromium (III) 61%	*Chromium (VI)* 32%
• coal/oil combustion	• chemical manufacture
• steel production	• plating
	• metal production

Chromium is removed from the atmosphere by fallout and precipitation. There are no known chromium compounds that can volatilize from water and thus transport of chromium from the water to the atmosphere is minimal.

Most of the chromium (III) is expected to precipitate in sediments. Limited amounts of Cr (III) remains in solution as soluble complexes. Cr (VI) may be transported over a significant distance but will eventually be reduced to Cr (III) by the organic matter in the water. The residence time of chromium in lakewater is estimated to be between 4.6 and 18 years.

In soil, chromium will usually exist as $Cr_2O_3.nH_2O$ since the organic matter in the soil will convert soluble chromate to insoluble Cr_2O_3.

Speciation

In natural waters, at a neutral pH, chromium can exist in the aqueous phase at levels up to 500 ppb before $Cr(OH)_3(s)$ begins to precipitate.

K.2.4.5 Copper (Cu)

Copper (Cu) is a naturally occurring element which is used to a large extent by our society. Uses include:

- electrical wiring,
- alloys,
- plating, and
- pesticide salts.

The principal copper ores include:

- cuprite,
- chalcocite,
- chalcopyrite,
- malachite, and
- azurite.

Chemical Identity

Copper is malleable, ductile and a good conductor of heat and electricity. The properties of copper metal are presented below:

Copper - Cu

- Atomic Weight 63.54 g/mole
- Atomic Number 29
- Density 8.9 g/cm^3
- Melting Point 108.34°C
- Boiling Point 2595°C
- Oxidation States +1, +2

Environmental Fate

In water the amount of copper is dependent upon the pH and hardness. Concentrations from a few ppb to ppm have been reported (Stegavik 1975). Natural copper concentrations in soil range from 2 to 100 mg/kg (Bower, 1966).

Speciation

Copper is speciated to a high degree in the presence and absence of organic complexing agents.

K.2.4.6 Lead (Pb)

Lead (Pb) is a naturally occurring bluish-gray metal found in only limited quantities in the Earth's crust. Lead and its compounds can be detected in all parts of the environment. Lead has a wide variety of uses including:

- batteries,
- ammunition,
- metal products, and
- chemical manufacture.

Chemical Identity

The physical properties of lead are presented in Table 7.1. Additional information includes:

Symbol	-	Pb
Atomic Weight	-	207.2
Atomic Number	-	82

Metallic lead is stable in dry air. In moist air, however, it quickly forms lead monoxide, which in turn produces lead carbonate with carbon dioxide in air. In general, the properties of inorganic lead compounds are similar to those of the alkaline earth metals. The nitrate, chlorate and acetate salts are water soluble, chloride salt is slightly soluble and the sulfate, carbonate, chromate, phosphate and sulfide salts are insoluble. Lead forms stable compounds with organic compounds, especially under anaerobic conditions, which are generally insoluble in water.

Environmental Fate

It is believed that combustion of leaded gasoline is responsible for over 90 percent of the lead in the environment. Lead particles are removed from the atmosphere by wet or dry deposition. Lead is extremely persistent in both water and soil. The speciation of lead depends upon pH, temperature and the presence of humic materials. Lead is largely associated with the suspended solids and sediments (immobile forms) in aquatic systems.

Lead has the tendency to form compounds of low solubility. Hydroxide, carbonate, sulfide and sulfate may act as solubility controls in precipitating lead from water.

The amount of lead that remains in solution depends largely upon the pH and the water dissolved salt content. Equilibrium calculations show that at pH>5.4 the solubility of lead is 30 µg/L (hard water) or 500 µg/L (soft water). The presence of sulfate and carbonates will limit these levels. In the groundwaters of the upper sand aquifer the majority of any aqueous phase lead, which may leave the sludge lagoon, would be readily precipitated as $PbCO_3$ (solid).

Speciation

Lead exists in three oxidation states (0,2^+ and 4^+). Lead can precipitate as a number of compounds including, $PbS0_4$, $PbC0_3$, $Pb(OH)_2$, PbS and $Pb_3(PO4)_2$.

Lead readily forms complexes with organic ligands, which tend to increase the amount of lead which can be dissolved in water. Lead is readily adsorbed to numerous solid surfaces including organic matter, clay, silica, iron and manganese oxides.

K.2.4.7 Mercury (Hg)

Mercury (Hg) occurs as elemental mercury and as inorganic and organic compounds. Mercury metal is in a liquid state at room temperature. Mercury occurs in the Earth's crust mainly in the form of sulfides (i.e. cinnabar). Mercury has a variety of uses including:

- electrical components,
- paints,
- control systems,
- agriculture,
- density,
- laboratory, and
- military.

Chemical Identity

Mercury is a silver-white metallic liquid. Properties include:

- atomic weight 200.6 g/mole
- atomic number 80
- density 13.6 g/cm^3

- melting point -38.9°C
- boiling point 356.6°C
- oxidation states +1,+2

Metallic mercury is considered volatile.

Environmental Fate

The solubility of mercury in lipids is on the order of 5 to 50 mg/L. In the presence of oxygen, metallic mercury is rapidly oxidized to ionic form. Mercuric salts such as halides, sulfates and nitrates are water soluble. Mercuric ion is able to form many stable complexes.

Speciation

Mercury can exist in the natural environment in one of three oxidation states (0,1^+ and 2^+). Elemental mercury is relatively volatile. Both organic and inorganic mercury compounds exhibit volatility.

K.2.4.8 Nickel (Ni)

Nickel (Ni) is a naturally occurring silvery metal found in only limited amounts in the Earth's crust. Its primary uses are in the making of steel, alloys and in electroplating. Minor applications include ceramics, batteries and magnets.

Chemical Identity

Physical and chemical properties of nickel are presented in Table 7.1. Soluble compounds include nickel acetate, nickel sulfate hexahydrate, nickel nitrate hexahydrate and nickel chloride.

Environmental Fate

The mobility of nickel in aquatic media is controlled by complexation, precipitation/dissolution, adsorption/desorption, and oxidation/reduction. Nickel exists in numerous soluble and insoluble forms depending upon the chemical and physical properties of the water.

In aerobic waters with pH>9 the free aqua species of nickel predominates and soluble nickel compounds will form as a result of complexation with natural leginds (i.e. $OH^- > SO_4^{2-} > Cl^- > NH_3$).

In anaerobic waters, nickel will precipitate in the presence of sulfides.

Speciation

Nickel and nickel compounds may have valences of $0, 1^+, 2^+, 3^+$ and 4^+. Nickel can precipitate as both hydroxides and carbonates.

Nickel can be adsorbed by a variety of substances including iron and manganese oxides and organics. Complexation with organic ligands can be very important and tends to further increase the mobility of this metal.

K.2.4.9 Selenium (Se)

Selenium is a naturally occurring metal present in bedrock material. Selenium is naturally released to the environment mainly through weathering process and by leaching. It is also released from fly ash ponds and hazardous waste sites. The processing and refining at copper sulfide ores has become the main source of selenium in the atmosphere.

Chemical Identity

Pertinent physical and chemical properties of selenium are present in Table K.1. The following provides additional description.

Symbol	Se
Atomic	78.96
Atomic number	34
Density	4.79
Valence States	-2, +4 or +6

Environmental Fate

Volatile selenium compounds which partition into the atmosphere include; inorganic selenium dioxide and hydrogen selenide, and organic dimethyl selenide and dimethyl diselenide. All of these compounds will persist in the air with the exception of Hydrogen selenide, which will react rapidly and decompose to elemental selenium and water. Selenium compounds can be removed from the air through wet or dry washout in rain or snow.

The forms of selenium found in water are the salts of selenic and selenious acid. The salts are moderately to highly soluble in water and do not sorb well. These selenium compounds are very mobile. Selenium can bioaccumulate in aquatic organisms and might be able to biomagnify.

Heavy metal selenides, selenium sulfides and elemental selenium are immobile and insoluble. An increase in the pH in well oxidized soil will increase the solubility and decrease the tendency to sorb onto soil particles of the compound types mentioned above.

Aquatic organisms can convert selenium compounds to both inert and soluble forms.

Speciation

Selenium and selenium compound may have valences of 2^-, 4^+ or 6^+.

Selenite forms stable ferric oxide-selenite adsorption complexes in acid or neutral soil. Selenium also readily form complexes with organic ligands.

K.2.4.10 Silver (Ag)

Silver occurs naturally in the earths crust and can be found in seawaters in small amount. However, its presents in surface waters has increased substantially due to the activities of men. The following is a list of sources of silver.

- photographic industry
- metals production
- electrical contacts and conductors
- brazing alloys and solders
- urban refuse
- sewage treatment

Sewage sledge containing silver is placed in landfills, lagooned and spread on land for agricultural purposes. Ore processing releases silver to the air and leaching of metal tailings will release silver to the soil.

Environmental Fate

In the atmosphere silver can be found to exist in the form of; metallic silver, silver sulfide, silver sulfate, silver carbonate and silver halides. Smaller particles will be transported for long distances. It is estimated that over 50% at the silver released to the air will travel more than

100 km. Silver can be removed from the air by being deposited to the earth or surface water with precipitation.

In water silver will tend to travel as an ion and will adsorb to sediment, decaying organisms and humic material. Bioconcentration will occur in aquatic organisms but there is little potential for biomagnification.

In soils, silvers mobility is dependent on the drainage, oxidation-reduction potential and pH conditions of its medium. The presents at organic matter will reduce the mobility of silvers.

Silver is toxic to soil microorganisms and will inhibit bacterial biodegrative enzymes.

Speciation

Silver can exist in the natural environment in one of three oxidation states (0, 1^+ and 2^+).

Complexation with organic ligands will reduce silvers mobility and complexation with iron and manganese will tend to immobilize silver.

K.2.4.11 Zinc (Zn)

Zinc (Zn) is a relatively soft metal which has strong tendencies to react with both inorganic and organic compounds. The compound most commonly used in industry is zinc oxide which has low solubility in most solvents.

Chemical Identity

Zinc is a bluish-white metal with the following properties:

- atomic weight 65.4 g/mole
- atomic number 30
- density 17 g/cm^3
- melting point 420°C
- boiling point 907°C
- oxidation state +2

Zinc is used in the following applications:

- non-corrosive alloys,
- brass,
- galvanizing steel, and
- iron products.

Environmental Fate

In most unpolluted waters zinc will exist as the hydrated divalent cation. In polluted water zinc will be predominantly complexed by a number of ligands.

Zinc has a strong affinity for hydrous metal oxides, clays and organic matter. Adsorption increases proportionally to pH.

Speciation

Organic matter generally will tend to increase the solubility of zinc. Zinc can strongly adsorb to solids such as hydrous metal oxides, clays and organic matter.

K.2.4.12 Cyanide (CN)

Cyanide is released to the environment from many sources. Its industrial uses include; metal finishing and refining,

pharmaceuticals, photographic chemicals, pesticides, plastic and organic chemical manufacturing. Cyanide containing road salts and the disposal of Cyanide wastes in landfills are the largest sources of Cyanide released to the soil and water. Cyanide is also released naturally to the soil in biogenic processes such as sorghum and other plants.

Environmental Fate

Cyanide existing in water and soil will be removed mainly through volatilization. Hydrogen Cyanide, the dominating form of Cyanide, cannot be removed from the air through wet or dry deposition to the earth's surface with rain. This compound is slow to degrade in the air and can be transported over long distances. For Hydrogen Cyanide to degrade it will react with photochemically generated hydroxyl radicals. The residence time varies between 0.5 to 14.0 years. Metal Cyanide particles do not last long in the atmosphere. They are water soluble and will be washed out in both wet and dry states.

Simple metal cyanides and hydrocyanides do not bioconcentrate in aquatic organisms. The fate and form of Cyanide in water or soils is dependent on the pH level. As the pH value decreases, the Hydrogen Cyanide form becomes more prevalent.

Cyanide and its associated compounds have low soil sorption capacities, however, they are usually not detected in groundwater. The mobility of these compounds may be decrease due to fixation by trace metals through complexation, or through transformation by soil micro organisms. Under aerobic conditions Cyanides will denitrify to gaseous nitrogen.

Speciation

Metallocyanide complexes are immobile. Cyanide ions are not involved in oxidation-reduction reactions but may undergo complexation reactions with metal ions.

K.3 REFERENCES

The foregoing information on environmental fate and transport was derived in part from the following references:

1. Howard Phillip H. Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Lewis Publishers. Volume I. 1989.

2. Howard Phillip H. Handbook of Environmental Fate and Exposure Data for Organic Chemicals. Lewis Publishers. Volume II. 1989.

3. Agency for Toxic Substances and Disease Registry, U.S. Public Health Services. Toxicological Profiles. February 18, 1993.

APPENDIX L

SUMMARY OF SOIL ANALYTICAL DATA

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2	DS-2a	DS-2a
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	10-12	10-12 DUP
Sample ID	RP-47	RP-48	RP-49	RP-50	RP-51	RP-52	RP-53	RP-54	MAW-133	MAW-134
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/9/94	8/9/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)UJ	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.010)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.010)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	0.13	0.22	0.041	0.012
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detected; value estimated
* Detection limits raised due to matrix interference

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2	DS-2a	DS-2a
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	10-12	10-12 DUP
Sample ID	RP-47	RP-48	RP-49	RP-50	RP-51	RP-52	RP-53	RP-54	MAW-133	MAW-134
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/9/94	8/9/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	0.013	0.027	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.033 J	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	0.033 J	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detected; value estimated
* Detection limits raised due to matrix interference

Note: "a" = Ph II and
"b" = P SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-3	DS-3	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4	DS-4a	DS-4b
Depth	2-4	6-8	6-8 Dup	10-12	0-2	2-4	4-6	6-8	8-10	14-16
Sample ID	RP-56	RP-57	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44	MAW-137	MAW-003
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/10/94	11/28/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)UJ	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.010)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.010)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-3	DS-3	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4	DS-4a	DS-4b
Depth	2-4	6-8	6-8 Dup	10-12	0-2	2-4	4-6	6-8	8-10	14-16
Sample ID	RP-56	RP-57	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44	MAW-137	MAW-003
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	8/10/94	11/28/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.014B	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	0.05	0.18	0.12	0.2	0.064	0.013
Toluene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	0.014	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)UJ	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)UJ	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Ph- II and
"b" = P i SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-4b	DS-5	DS-5	DS-5	DS-5	DS-6	DS-6	DS-6	DS-6	DS-7
Depth	14-16 DUP	0-2	2-4	4-6	8-10	0-2	2-4	4-6	6-8	0-2
Sample ID	MAW-004	RP-38	RP-39	RP-40	RP-41	RP-33	RP-34	RP-35	RP-36	RP-29
Date Sampled	11/28/94	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-4b	DS-5	DS-5	DS-5	DS-5	DS-6	DS-6	DS-6	DS-6	DS-7
Depth	14-16 DUP	0-2	2-4	4-6	8-10	0-2	2-4	4-6	6-8	0-2
Sample ID	MAW-004	RP-38	RP-39	RP-40	RP-41	RP-33	RP-34	RP-35	RP-36	RP-29
Date Sampled	11/28/94	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.078	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	0.013	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.015	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

NA = not analyzed for
S = results due to secondary dilution
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Note: "a" = Ph- "I and
"b" = P. SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-7	DS-7	DS-7	DS-8	DS-8	DS-8	DS-9	DS-9	DS-9	DS-9
Depth	2-4	6-8	8-10	0-2	4-6	8-10	0-2	2-4	4-6	8-10
Sample ID	RP-30	RP-31	RP-32	RP-22	RP-23	RP-24	RP-25	RP-26	RP-27	RP-28
Date Sampled	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	0.44	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

NA = not analyzed for
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UJ = analyte was checked for; not detecte
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Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-7	DS-7	DS-7	DS-8	DS-8	DS-8	DS-9	DS-9	DS-9	DS-9
Depth	2-4	6-8	8-10	0-2	4-6	8-10	0-2	2-4	4-6	8-10
Sample ID	RP-30	RP-31	RP-32	RP-22	RP-23	RP-24	RP-25	RP-26	RP-27	RP-28
Date Sampled	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

NA = not analyzed for
S = results due to secondary dilution
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ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = PI II and
"b" = I ISOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-10	DS-10	DS-10	DS-10	DS-11	DS-11	DS-11	DS-11	DS-12	DS-12
Depth	0-2	2-4	4-6	4-6 DUP	0-2	2-4	6-8	8-10	0-2	4-6
Sample ID	RP-18	RP-19	RP-20	RP-21	RP-05	RP-06	RP-07	RP-08	RP-10	RP-11
Date Sampled	5/13/93	5/13/93	5/13/93	5/13/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(2.0)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(1.0)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(1.0)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(.10)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)

NA = not analyzed for
S = results due to secondary dilution
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ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-10	DS-10	DS-10	DS-10	DS-11	DS-11	DS-11	DS-11	DS-12	DS-12
Depth	0-2	2-4	4-6	4-6 DUP	0-2	2-4	6-8	8-10	0-2	4-6
Sample ID	RP-18	RP-19	RP-20	RP-21	RP-05	RP-06	RP-07	RP-08	RP-10	RP-11
Date Sampled	5/13/93	5/13/93	5/13/93	5/13/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	1.2
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	3.0
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.051	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.12 J
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.10)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.20)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.30)

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Note: "a" = Ph II and
"b" = F : SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-12	DS-12	DS-13	DS-13	DS-13	DS-14	DS-14	DS-14	DS-14	DS-17
Depth	4-6 DUP	18-20	0-2	2-4	4-6	0-2	2-4	4-6	8-10	0-2
Sample ID	RP-12	RP-13	RP-14	RP-15	RP-16	RP-01	RP-02	RP-03	RP-04	MAW-150
Date Sampled	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93	5/11/93	5/11/93	5/11/93	5/11/93	8/10/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(2.0)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(1.0)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(1.0)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

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"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-12	DS-12	DS-13	DS-13	DS-13	DS-14	DS-14	DS-14	DS-14	DS-17
Depth	4-6 DUP	18-20	0-2	2-4	4-6	0-2	2-4	4-6	8-10	0-2
Sample ID	RP-12	RP-13	RP-14	RP-15	RP-16	RP-01	RP-02	RP-03	RP-04	MAW-150
Date Sampled	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93	5/11/93	5/11/93	5/11/93	5/11/93	8/10/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	0.98	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(1.2)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(1.2)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(1.2)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	2.5	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.100)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.076	0.078	0.015	0.021	ND(0.010)
Vinyl chloride	ND(0.100)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.10)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.20)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.30)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

NA = not analyzed for
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Note: "a" = Ph- II and
"b" = P SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-17*	*DS-17*	*DS-18*	*DS-18*	*DS-18*	*US-1*	*US-1*	*US-2*	*US-2*	*US-2*
Depth	*4-6*	*10-12*	*0-2*	*4-6*	*10-12*	*14-16*	*20-22*	*0-2*	*14-16*	*20-22*
Sample ID	*MAW-151*	*MAW-153*	*MAW-156*	*MAW-157*	*MAW-159*	*RP-60*	*RP-61*	*RP-63*	*RP-64*	*RP-65*
Date Sampled	*8/11/94*	*8/11/94*	*8/11/94*	*8/11/94*	*8/11/94*	*5/18/93*	*5/18/93*	*5/18/93*	*5/18/93*	*5/18/93*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(58)*	ND(0.200)	ND(0.200)	ND(120)UJ	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)*	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	0.020 J	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(29)*	ND(0.100)	ND(0.100)	ND(5.8)UJ	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(29)*	ND(0.100)	ND(0.100)	ND(5.8)UJ	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)

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UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-17	DS-17	DS-18	DS-18	DS-18	US-1	US-1	US-2	US-2	US-2
Depth	4-6	10-12	0-2	4-6	10-12	14-16	20-22	0-2	14-16	20-22
Sample ID	MAW-151	MAW-153	MAW-156	MAW-157	MAW-159	RP-60	RP-61	RP-63	RP-64	RP-65
Date Sampled	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	5/18/93	5/18/93	5/18/93	5/18/93	5/18/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	16	ND(0.010)	ND(0.010)	38 J	0.034
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.01)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(2.9)*	ND(0.010)	ND(0.010)	ND(5.8)UJ	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	9.2	ND(0.010)	ND(0.010)	2.3 J	0.034
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	60	ND(0.020)	ND(0.020)	120 J	0.11
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	69.2	ND(0.030)	ND(0.030)	122.3 J	0.144

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Note: "a" = Ph- 'l and
"b" = Pl SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4	US-5	US-5	US-6
Depth	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12	8-10	14-16	4-6
Sample ID	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71	RP-72
Date Sampled	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(1.0)	ND(0.200)	ND(0.200)	ND(250)*	ND(0.200)	ND(.40)	ND(0.200)	ND(25.0)	ND(0.20)	ND(1.0)
Acrylonitrile	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(1.2)*	ND(0.010)	ND(0.010)UJ	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.050)
Benzene	0.094	0.02	ND(0.010)	ND(12)*	0.047	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Bromodichloromethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Bromoform	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Bromoethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
2-Butanone	ND(0.50)	ND(0.100)	ND(0.100)	ND(120)*	ND(0.100)	ND(0.20)	ND(0.100)	ND(12.0)	ND(0.100)	ND(0.050)
Carbon disulfide	ND(0.50)	ND(0.100)	ND(0.100)	ND(120)*	ND(0.100)	ND(0.20)	ND(0.100)	ND(12.0)	ND(0.100)	ND(0.50)
Carbon tetrachloride	ND(0.050)	ND(0.100)	ND(0.100)	ND(12)*	ND(0.100)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Chlorobenzene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Chloroethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
2-Chloroethylvinyl ether	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Chloroform	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Chloromethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Dibromochloromethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
1,1-Dichloroethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
1,2-Dichloroethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4	US-5	US-5	US-6
Depth	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12	8-10	14-16	4-6
Sample ID	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71	RP-72
Date Sampled	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
total-1,2-Dichloroethene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
1,2-Dichloropropane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
cis-1,3-Dichloropropene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
trans-1,3-Dichloropropene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Ethylbenzene	0.26	0.068 J	0.028 J	16	ND(0.010)	0.23	0.033	2.5	ND(0.010)	ND(0.050)
Methylene chloride	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Tetrachloroethene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Toluene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)* UJ*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
1,1,1-Trichloroethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
1,1,2-Trichloroethane	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Trichloroethene	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.020)	ND(0.010)	ND(1.2)	ND(0.010)	ND(0.050)
Vinyl chloride	ND(0.050)	ND(0.010)	ND(0.010)	ND(12)*	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.050)
o-Xylene	0.33	0.021	ND(0.010)	18	ND(0.010)	ND(0.020)	ND(0.010)	3.9	ND(0.010)	0.14
m-Xylene/p-Xylene	0.69	0.053	ND(0.020)	54	ND(0.020)	0.34	0.029	11.0	ND(0.020)	0.73
total Xylenes	1.02	0.074	ND(0.030)	72	ND(0.030)	0.34	0.029	14.9	ND(0.030)	0.87

NA = not analyzed for
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* Detection limits raised due to matrix in

Note: "a" = Ph "I and
"b" = Pl SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-6	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2	CT-2
Depth	14-16	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2	2-4
Sample ID	RP-73	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84	TB-78
Date Sampled	5/19/93	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(250)*	ND(250)*	ND(1.0)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)UJ
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(120)*	ND(120)*	ND(0.50)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)UJ
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(120)*	ND(120)*	ND(0.50)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)UJ
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-6	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2	CT-2
Depth	14-16	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2	2-4
Sample ID	RP-73	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84	TB-78
Date Sampled	5/19/93	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	34	ND(12)*	0.063	ND(0.010)	0.029	ND(0.010)	ND(0.010)UJ
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	0.31	ND(0.010)	0.091	ND(0.010)	ND(0.010)UJ
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)UJ
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(12)*	ND(12)*	0.26	0.014	0.037	0.019	ND(0.010)UJ
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	120	ND(25)*	0.38	ND(0.020)	0.085	0.027	ND(0.020)UJ
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	120	ND(38)*	0.64	0.014	0.122	0.046	ND(0.030)UJ

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UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Pha "I and
"b" = Pl SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-2	CT-2a	CT-3	CT-3	CT-3	CT-3	DD-1	DD-1	DD-1
Depth	8-10	10-12	0-2	4-6	16-18	16-18 Dup	0-2	2-4	4-6
Sample ID	TB-79	MAW-131	TB-80	TB-81	TB-82	TB-83	TB-88	TB-90	TB-89
Date Sampled	5/20/93	8/9/94	5/20/93	5/20/93	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter									
Acrolein	ND(0.200)	ND(0.200)	ND(1.0)UJ	ND(0.200)UJ	ND(0.200)UJ	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)UJ	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.050)UJ	ND(0.100)UJ	ND(0.100)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.050)UJ	ND(0.100)UJ	ND(0.100)UJ	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	0.18 J	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

NA = not analyzed for
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J = value is an estimated quantity
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ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-2	CT-2a	CT-3	CT-3	CT-3	CT-3	DD-1	DD-1	DD-1
Depth	8-10	10-12	0-2	4-6	16-18	16-18 Dup	0-2	2-4	4-6
Sample ID	TB-79	MAW-131	TB-80	TB-81	TB-82	TB-83	TB-88	TB-90	TB-89
Date Sampled	5/20/93	8/9/94	5/20/93	5/20/93	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter									
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	0.026	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	0.19 J	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)	ND(0.050)UJ	0.014 JB	ND(0.010)UJ	ND(0.010)	0.017B	0.016B	0.017B
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	0.026	0.010	0.073 J	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	0.015	0.021	0.69 J	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	0.012 J	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.050)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	0.012	ND(0.010)	0.26 J	0.010 J	ND(0.010)UJ	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	0.021	0.93 J	0.022 J	ND(0.020)UJ	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	0.012	0.021	1.19 J	0.032 J	ND(0.030)UJ	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

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* Detection limits raised due to matrix in

Note: "a" = Pha [illegible] and
"b" = Pl SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-2	DD-2	DD-2	DD-3	DD-3	DD-3	DD-3	DD-4	DD-4	DD-4
Depth	0-2	2-4	4-6	0-2	0-2 Dup	4-6	6-8	0-2	4-6	6-8
Sample ID	TB-85	TB-86	TB-87	TB-91	TB-100	TB-92	TB-93	TB-96	TB-95	TB-94
Date Sampled	5/24/93	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)

NA = not analyzed for
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Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-2	DD-2	DD-2	DD-3	DD-3	DD-3	DD-3	DD-4	DD-4	DD-4
Depth	0-2	2-4	4-6	0-2	0-2 Dup	4-6	6-8	0-2	4-6	6-8
Sample ID	TB-85	TB-86	TB-87	TB-91	TB-100	TB-92	TB-93	TB-96	TB-95	TB-94
Date Sampled	5/24/93	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	0.017B	ND(0.010)	ND(0.010)	0.010B	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)

NA = not analyzed for
S = results due to secondary dilution
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ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Ph and
"b" = Ph SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-4	DD-5	DD-5	DD-5	DD-6	MW-11-21	MW-11-21	MW-11-21	MW-11-35	MW-11-54
Depth	6-8 Dup	0-2	6-8	8-10	0-2	4-6	18-20	18-20 DUP	24-26	32-34
Sample ID	TB-101	TB-98	TB-97	TB-99	MAW-173	MAW-196	MAW-197	MAW-198	MAW-211	MAW-210
Date Sampled	5/25/93	5/26/93	5/26/93	5/26/93	8/16/94	8/23/94	8/23/94	8/23/94	8/23/94	8/29/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acrolein	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(0.200)	ND(25)*	ND(250)*	ND(25)*	ND(2)*	ND(2)*
Acrylonitrile	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Benzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Bromodichloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Bromoform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Bromoethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
2-Butanone	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(12)*	ND(120)*	ND(12)*	ND(1)*	ND(1)*
Carbon disulfide	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(12)*	ND(120)*	ND(12)*	ND(1)*	ND(1)*
Carbon tetrachloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Chlorobenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Chloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Chloroform	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Chloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Dibromochloromethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
1,1-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
1,2-Dichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*

NA = not analyzed for
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ND = not detected; Targe Detection Limit
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-4	DD-5	DD-5	DD-5	DD-6	MW-11-21	MW-11-21	MW-11-21	MW-11-35	MW-11-54
Depth	6-8 Dup	0-2	6-8	8-10	0-2	4-6	18-20	18-20 DUP	24-26	32-34
Sample ID	TB-101	TB-98	TB-97	TB-99	MAW-173	MAW-196	MAW-197	MAW-198	MAW-211	MAW-210
Date Sampled	5/25/93	5/26/93	5/26/93	5/26/93	8/16/94	8/23/94	8/23/94	8/23/94	8/23/94	8/29/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
1,1-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
1,2-Dichloropropane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Ethylbenzene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	3.5	89J	4.5 J	0.11	ND(0.10)*
Methylene chloride	ND(0.010)	0.013B	0.011B	0.011B	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Tetrachloroethene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Toluene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Trichloroethene	ND(0.010)	0.032	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
Vinyl chloride	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	ND(12)*	ND(1.2)*	ND(0.10)*	ND(0.10)*
o-Xylene	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(1.2)*	47 J	1.7 J	0.12	ND(0.10)*
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	12	300 J	16 J	0.31	ND(0.20)*
total Xylenes	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	12	350 J	18 J	0.43	ND(0.30)*

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Ph "I and
"b" = Pl SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-13*	*MW-13*
Depth	*4-6*	*18-20*
Sample ID	*MAW-036*	*MAW-032*
Date Sampled	*12/12/94*	*12/12/94*
Units	*(mg/kg)*	*(mg/kg)*
Parameter		
Acrolein	ND(0.200)	ND(0.200)
Acrylonitrile	ND(0.010)	ND(0.010)
Benzene	ND(0.010)	ND(0.010)
Bromodichloromethane	ND(0.010)	ND(0.010)
Bromoform	ND(0.010)	ND(0.010)
Bromoethane	ND(0.010)	ND(0.010)
2-Butanone	ND(0.100)	ND(0.100)
Carbon disulfide	ND(0.100)	ND(0.100)
Carbon tetrachloride	ND(0.010)	ND(0.010)
Chlorobenzene	ND(0.010)	ND(0.010)
Chloroethane	ND(0.010)	ND(0.010)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)
Chloroform	ND(0.010)	ND(0.010)
Chloromethane	ND(0.010)	ND(0.010)
Dibromochloromethane	ND(0.010)	ND(0.010)
1,1-Dichloroethane	ND(0.010)	ND(0.010)
1,2-Dichloroethane	ND(0.010)	ND(0.010)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF VOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-13*	*MW-13*
Depth	*4-6*	*18-20*
Sample ID	*MAW-036*	*MAW-032*
Date Sampled	*12/12/94*	*12/12/94*
Units	*(mg/kg)*	*(mg/kg)*
Parameter		
1,1-Dichloroethene	ND(0.010)	ND(0.010)
total-1,2-Dichloroethene	ND(0.010)	ND(0.010)
1,2-Dichloropropane	ND(0.010)	ND(0.010)
cis-1,3-Dichloropropene	ND(0.010)	ND(0.010)
trans-1,3-Dichloropropene	ND(0.010)	ND(0.010)
Ethylbenzene	ND(0.010)	ND(0.010)
Methylene chloride	ND(0.010)	ND(0.010)
1,1,2,2-Tetrachloroethane	ND(0.010)	ND(0.010)
Tetrachloroethene	ND(0.010)	ND(0.010)
Toluene	ND(0.010)	ND(0.010)
1,1,1-Trichloroethane	ND(0.010)	ND(0.010)
1,1,2-Trichloroethane	ND(0.010)	ND(0.010)
Trichloroethene	ND(0.010)	ND(0.010)
Vinyl chloride	ND(0.010)	ND(0.010)
o-Xylene	ND(0.010)	ND(0.010)
m-Xylene/p-Xylene	ND(0.020)	ND(0.020)
total Xylenes	ND(0.030)	ND(0.030)

NA = not analyzed for
S = results due to secondary dilution
J = value is an estimated quantity
B = analyte present in method blank
ND = not detected; Targe Detection Limi
UJ = analyte was checked for; not detecte
* Detection limits raised due to matrix in

Note: "a" = Pl T and
"b" = Pl . SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2	DS-3	DS-3
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	2-4	6-8
Sample ID	RP-47	RP-48	RP-49	RP-50	RP-51	RP-52	RP-53	RP-54	RP-56	RP-57
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	1.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(8.8)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	0.37	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	0.89	ND(0.33)	ND(0.33)	ND(0.33)	0.82	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	0.35	ND(0.33)	ND(0.33)	ND(0.33)	0.91	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	0.51	ND(0.33)	ND(0.33)	ND(0.33)	0.84	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(3.5)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detected analytes
* Detection limits raised due to matrix interference
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2	DS-3	DS-3
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	2-4	6-8
Sample ID	RP-47	RP-48	RP-49	RP-50	RP-51	RP-52	RP-53	RP-54	RP-56	RP-57
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	0.63	ND(0.33)	ND(0.33)	ND(0.33)	3.0	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.18)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	0.43	ND(0.33)	ND(0.33)	ND(0.33)	7.8	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.18)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.18)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	0.75	ND(0.33)	ND(0.33)	ND(0.33)	5.9	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Pyrene	0.63	ND(0.33)	ND(0.33)	ND(0.33)	2.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detected analytes
* Detection limits raised due to matrix interference
** Indistinguisha[illegible]m Diphenylamine

Note: "a" = Phase II and
"b" = Phas[illegible] OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-1	DS-1	DS-1	DS-1	DS-2	DS-2	DS-2	DS-2	DS-3	DS-3
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	2-4	6-8
Sample ID	RP-47	RP-48	RP-49	RP-50	RP-51	RP-52	RP-53	RP-54	RP-56	RP-57
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.0)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.0)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.0)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.0)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.58)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detected analytes
* Detection limits raised due to matrix interference
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4	DS-5	DS-5	DS-5	DS-5
Depth	6-8 Dup	10-12	0-2	2-4	4-6	6-8	0-2	2-4	4-6	8-10
Sample ID	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44	RP-38	RP-39	RP-40	RP-41
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	ND(0.33)	0.33	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(0.33)	1.4	ND(0.33)	ND(0.33)	0.78	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	11	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	1.0	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(0.33)	3.3	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(0.33)	6.2	ND(0.33)	ND(0.33)	0.52	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.82	ND(0.33)	0.48	0.44	ND(0.33)	ND(0.33)
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	ND(0.33)	ND(0.33)	3.1	ND(0.33)	ND(0.33)	0.66	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(0.33)	1.1	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishab' m Diphenylamine

Note: "a" = Phase " and
"b" = Phas DAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4	DS-5	DS-5	DS-5	DS-5
Depth	6-8 Dup	10-12	0-2	2-4	4-6	6-8	0-2	2-4	4-6	8-10
Sample ID	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44	RP-38	RP-39	RP-40	RP-41
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	1.0	ND(0.33)	ND(0.33)	0.94	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(0.33)	3.1	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.84	ND(0.33)	ND(0.33)	ND(0.33)
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	ND(0.33)	ND(0.33)	0.35	ND(0.33)	ND(0.33)	1.9	ND(0.33)	ND(0.33)	ND(0.33)
Pyrene	ND(0.33)	ND(0.33)	ND(0.33)	1.6	ND(0.33)	ND(0.33)	0.91	ND(0.33)	ND(0.33)	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4	DS-5	DS-5	DS-5	DS-5
Depth	6-8 Dup	10-12	0-2	2-4	4-6	6-8	0-2	2-4	4-6	8-10
Sample ID	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44	RP-38	RP-39	RP-40	RP-41
Date Sampled	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-6	DS-6	DS-6	DS-6	DS-7	DS-7	DS-7	DS-7	DS-8	DS-8
Depth	0-2	2-4	4-6	6-8	0-2	2-4	6-8	8-10	0-2	4-6
Sample ID	RP-33	RP-34	RP-35	RP-36	RP-29	RP-30	RP-31	RP-32	RP-22	RP-23
Date Sampled	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.36	ND(0.33)	ND(0.33)	ND(0.33)	0.63	ND(0.33)
Benzo(b)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.75	ND(0.33)	ND(0.33)	ND(0.33)	1.2	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	2.4	5.2
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	2.1	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.86	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-6	DS-6	DS-6	DS-6	DS-7	DS-7	DS-7	DS-7	DS-8	DS-8
Depth	0-2	2-4	4-6	6-8	0-2	2-4	6-8	8-10	0-2	4-6
Sample ID	RP-33	RP-34	RP-35	RP-36	RP-29	RP-30	RP-31	RP-32	RP-22	RP-23
Date Sampled	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.49	ND(0.33)	ND(0.33)	ND(0.33)	0.98	ND(0.33)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.53	ND(0.33)
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	1.0	ND(0.33)
Pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.47	ND(0.33)	ND(0.33)	ND(0.33)	1.0	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishab' m Diphenylamine

Note: "a" = Phase II and
"b" = Phas DAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-6	DS-6	DS-6	DS-6	DS-7	DS-7	DS-7	DS-7	DS-8	DS-8
Depth	0-2	2-4	4-6	6-8	0-2	2-4	6-8	8-10	0-2	4-6
Sample ID	RP-33	RP-34	RP-35	RP-36	RP-29	RP-30	RP-31	RP-32	RP-22	RP-23
Date Sampled	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-8*	*DS-9*	*DS-9*	*DS-9*	*DS-9*	*DS-10*	*DS-10*	*DS-10*	*DS-10*	*DS-11*
Depth	*8-10*	*0-2*	*2-4*	*4-6*	*8-10*	*0-2*	*2-4*	*4-6*	*4-6 DUP*	*0-2*
Sample ID	*RP-24*	*RP-25*	*RP-26*	*RP-27*	*RP-28*	*RP-18*	*RP-19*	*RP-20*	*RP-21*	*RP-05*
Date Sampled	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/12/93*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.55
Benzidine	ND(5.0)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	2.6	ND(0.33)	ND(0.33)	ND(0.33)	1.2	ND(0.33)	ND(0.33)	ND(0.33)	1.9
Benzo(b)fluoranthene	ND(0.33)	5.1	ND(0.33)	ND(0.33)	ND(0.33)	2.5	ND(0.33)	ND(0.33)	ND(0.33)	3.5
Benzo(k)fluoranthene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	2.1	ND(0.33)	ND(0.33)	ND(0.33)	0.42	ND(0.33)	ND(0.33)	ND(0.33)	0.98
Benzo(a)pyrene	ND(0.33)	2.7	ND(0.33)	ND(0.33)	ND(0.33)	0.78	ND(0.33)	ND(0.33)	ND(0.33)	1.3
Bis (2-chloroethoxy) methane	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Bromophenyl phenyl ether	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	2.4	ND(0.33)	ND(0.33)	ND(0.33)	1.3	ND(0.33)	ND(0.33)	ND(0.33)	1.9
Dibenzo (a,h) anthracene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.38
Di-n-butyl phthalate	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	0.4
1,2-Dichlorobenzene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(10)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishab' m Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-8	DS-9	DS-9	DS-9	DS-9	DS-10	DS-10	DS-10	DS-10	DS-11
Depth	8-10	0-2	2-4	4-6	8-10	0-2	2-4	4-6	4-6 DUP	0-2
Sample ID	RP-24	RP-25	RP-26	RP-27	RP-28	RP-18	RP-19	RP-20	RP-21	RP-05
Date Sampled	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/12/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(2.0)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(2.0)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(2.0)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(2.0)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(0.33)	5.0	ND(0.33)	ND(0.33)	ND(0.33)	2.2	ND(0.33)	ND(0.33)	ND(0.33)	3.6
Fluorene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	2.1	ND(0.33)	ND(0.33)	ND(0.33)	0.41	ND(0.33)	ND(0.33)	ND(0.33)	1.4
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(.50)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	2.6	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Nitrobenzene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	4.1	ND(0.33)	ND(0.33)	ND(0.33)	3.7	ND(0.33)	ND(0.33)	ND(0.33)	2.9
Pyrene	ND(0.33)	4.8	ND(0.33)	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	3.8
1,2,4-Trichlorobenzene	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-8*	*DS-9*	*DS-9*	*DS-9*	*DS-9*	*DS-10*	*DS-10*	*DS-10*	*DS-10*	*DS-11*
Depth	*8-10*	*0-2*	*2-4*	*4-6*	*8-10*	*0-2*	*2-4*	*4-6*	*4-6 DUP*	*0-2*
Sample ID	*RP-24*	*RP-25*	*RP-26*	*RP-27*	*RP-28*	*RP-18*	*RP-19*	*RP-20*	*RP-21*	*RP-05*
Date Sampled	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/13/93*	*5/12/93*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)
2,4-Dinitrophenol	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)
2-Nitrophenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)
Pentachlorophenol	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)
Phenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase I" and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-11	DS-11	DS-11	DS-12	DS-12	DS-12	DS-12	DS-13	DS-13	DS-13
Depth	2-4	6-8	8-10	0-2	4-6	4-6 DUP	18-20	0-2	2-4	4-6
Sample ID	RP-06	RP-07	RP-08	RP-10	RP-11	RP-12	RP-13	RP-14	RP-15	RP-16
Date Sampled	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(25)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	0.41	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	0.44	0.85	ND(0.33)	130	11.0 J	2.0 J	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(10)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-11	DS-11	DS-11	DS-12	DS-12	DS-12	DS-12	DS-13	DS-13	DS-13
Depth	2-4	6-8	8-10	0-2	4-6	4-6 DUP	18-20	0-2	2-4	4-6
Sample ID	RP-06	RP-07	RP-08	RP-10	RP-11	RP-12	RP-13	RP-14	RP-15	RP-16
Date Sampled	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	6.6	0.35	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Fluoranthene	0.36	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.50)	ND(0.1)	ND(0.1)
Naphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	11.0	ND(0.33)	ND(0.33)
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	8.4	ND(0.33)	ND(0.33)
Pyrene	0.33	ND(0.33)	ND(0.33)	ND(3.3)	0.36	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguisha m Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-11	DS-11	DS-11	DS-12	DS-12	DS-12	DS-12	DS-13	DS-13	DS-13
Depth	2-4	6-8	8-10	0-2	4-6	4-6 DUP	18-20	0-2	2-4	4-6
Sample ID	RP-06	RP-07	RP-08	RP-10	RP-11	RP-12	RP-13	RP-14	RP-15	RP-16
Date Sampled	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)	ND(8.5)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)	ND(8.5)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)	ND(8.5)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.7)	ND(1.7)	ND(1.7)	ND(0.33)	ND(8.5)	ND(1.7)	ND(1.7)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-14	DS-14	DS-14	DS-14	DS-18	DS-18	US-1	US-1	US-2	US-2
Depth	0-2	2-4	4-6	8-10	0-2	4-6	14-16	20-22	0-2	14-16
Sample ID	RP-01	RP-02	RP-03	RP-04	MAW-156	MAW-157	RP-60	RP-61	RP-63	RP-64
Date Sampled	5/11/93	5/11/93	5/11/93	5/11/93	8/11/94	8/11/94	5/18/93	5/18/93	5/18/93	5/18/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(100)	ND(5.0)	ND(5.0)	ND(100)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(b)fluoranthene	0.44	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Chrysene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(40)	ND(2.0)	ND(2.0)	ND(40)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishab' om Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-14	DS-14	DS-14	DS-14	DS-18	DS-18	US-1	US-1	US-2	US-2
Depth	0-2	2-4	4-6	8-10	0-2	4-6	14-16	20-22	0-2	14-16
Sample ID	RP-01	RP-02	RP-03	RP-04	MAW-156	MAW-157	RP-60	RP-61	RP-63	RP-64
Date Sampled	5/11/93	5/11/93	5/11/93	5/11/93	8/11/94	8/11/94	5/18/93	5/18/93	5/18/93	5/18/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(2.0)	ND(0.1)	ND(0.1)	ND(2.0)
Naphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	36.0	ND(0.33)	ND(0.33)	40.0
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
Phenanthrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	12.0	ND(0.33)	ND(0.33)	11.0
Pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-14	DS-14	DS-14	DS-14	DS-18	DS-18	US-1	US-1	US-2	US-2
Depth	0-2	2-4	4-6	8-10	0-2	4-6	14-16	20-22	0-2	14-16
Sample ID	RP-01	RP-02	RP-03	RP-04	MAW-156	MAW-157	RP-60	RP-61	RP-63	RP-64
Date Sampled	5/11/93	5/11/93	5/11/93	5/11/93	8/11/94	8/11/94	5/18/93	5/18/93	5/18/93	5/18/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(34)	ND(1.7)	ND(1.7)	ND(34)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(34)	ND(1.7)	ND(1.7)	ND(34)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(34)	ND(1.7)	ND(1.7)	ND(34)
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(34)	ND(1.7)	ND(1.7)	ND(34)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)	ND(0.33)	ND(0.33)	ND(6.6)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-2	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4	US-5	US-5
Depth	20-22	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12	8-10	14-16
Sample ID	RP-65	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71
Date Sampled	5/18/93	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	8.0	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Anthracene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Benzidine	ND(5.0)	ND(100)	ND(50)	ND(25)	ND(120)*	ND(5.0)	ND(100)	ND(5.0)	ND(50)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Benzo(b)fluoranthene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
4-Bromophenyl phenyl ether	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Chrysene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(40)	ND(20)	ND(10)	ND(50)*	ND(2.0)	ND(40)	ND(2.0)	ND(20)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and "b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-2	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4	US-5	US-5
Depth	20-22	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12	8-10	14-16
Sample ID	RP-65	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71
Date Sampled	5/18/93	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(6.6)	ND(3.0)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(6.6)	ND(3.0)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(6.6)	ND(3.0)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(6.6)	ND(3.0)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Fluoranthene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Fluorene	ND(0.33)	14.0	ND(3.3)	ND(1.6)	11	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Isophorone	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(2.0)	ND(1.0)	ND(.50)	ND(2.2)*	ND(0.1)	ND(2.0)	ND(0.1)	ND(1.0)	ND(0.1)
Naphthalene	ND(0.33)	35.0	4.8	3.6	44	ND(0.33)	37.0	1.1	34.0	ND(0.33)
Nitrobenzene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	14.0	7.2 J	2.1 J	16	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
Phenanthrene	ND(0.33)	46.0	6.1	4.5	34	ND(0.33)	19.0	ND(0.33)	ND(3.3)	ND(0.33)
Pyrene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishab' m Diphenylamine

Note: "a" = Phase " and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-2	US-3	US-3	US-3	US-3a	US-3a	US-4	US-4	US-5	US-5
Depth	20-22	2-4	8-10	8-10 Dup	12-14	24-26	2-4	10-12	8-10	14-16
Sample ID	RP-65	RP-65A	RP-66	RP-67	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71
Date Sampled	5/18/93	5/19/93	5/19/93	5/19/93	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(34)	ND(1.7)	ND(8.5)	ND(42)*	ND(1.7)	ND(34)	ND(1.7)	ND(3.3)	ND(1.7)
2,4-Dinitrophenol	ND(1.7)	ND(34)	ND(1.7)	ND(8.5)	ND(42)*	ND(1.7)	ND(34)	ND(1.7)	ND(3.3)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(6.6)	ND(0.33)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(1.7)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(34)	ND(1.7)	ND(8.5)	ND(42)*	ND(1.7)	ND(34)	ND(1.7)	ND(3.3)	ND(1.7)
Pentachlorophenol	ND(1.7)	ND(34)	ND(1.7)	ND(8.5)	ND(42)*	ND(1.7)	ND(34)	ND(1.7)	ND(3.3)	ND(1.7)
Phenol	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(6.6)	ND(3.3)	ND(1.6)	ND(8.2)*	ND(0.33)	ND(6.6)	ND(0.33)	ND(3.3)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-6	US-6	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2
Depth	4-6	14-16	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2
Sample ID	RP-72	RP-73	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84
Date Sampled	5/19/93	5/19/93	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	NA	ND(20)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	8.6	ND(0.33)	0.59	ND(33)*	ND(0.33)	4.0	ND(0.33)	ND(0.33)	1.2
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(200)*	ND(8.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguisha[illegible]m Diphenylamine

Note: "a" = Phase II and
"b" = Phas[illegible] OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-6	US-6	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2
Depth	4-6	14-16	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2
Sample ID	RP-72	RP-73	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84
Date Sampled	5/19/93	5/19/93	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	0.5	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(10)*	ND(0.4)*	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	8.1	ND(0.33)	ND(0.33)	ND(0.33)	290	4.5	1.0	ND(0.33)	ND(0.33)	0.93
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	150	31	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	75	1.4	0.54	ND(0.33)	ND(0.33)	0.44
Pyrene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	NA	NA	0.66	ND(0.33)	ND(0.33)	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-6	US-6	US-7	US-7	US-8	US-8	CT-1	CT-1	CT-1	CT-2
Depth	4-6	14-16	8-10	10-12	2-4	8-10	0-2	2-4	8-10	0-2
Sample ID	RP-72	RP-73	MAW-128	MAW-129	MAW-178	MAW-179	TB-74	TB-75	TB-76	TB-84
Date Sampled	5/19/93	5/19/93	8/9/94	8/9/94	8/16/94	8/16/94	5/20/93	5/20/93	5/20/93	5/20/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	NA	NA	NA	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	1.6	0.66	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	NA	NA	NA	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	1.4	0.61	0.58	0.85
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	NA	NA	NA	ND(6.8)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	NA	NA	NA	ND(6.8)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(0.33)	NA	NA	NA	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(1.7)	NA	NA	NA	ND(6.8)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(1.7)	ND(1.7)	NA	NA	NA	ND(6.8)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(33)*	ND(1.3)*	2.0	ND(0.33)	ND(0.33)	0.74
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	NA	NA	NA	ND(1.3)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishable from Diphenylamine

Note: "a" = Phase ** and
"b" = Phas. OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-2	CT-2	CT-3	CT-3	CT-3	CT-3	DD-1	DD-1	DD-1	DD-2
Depth	2-4	8-10	0-2	4-6	16-18	16-18 Dup	0-2	2-4	4-6	0-2
Sample ID	TB-78	TB-79	TB-80	TB-81	TB-82	TB-83	TB-88	TB-90	TB-89	TB-85
Date Sampled	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Anthracene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Benzidine	ND(5.0)	ND(5.0)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(50)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	0.72	ND(0.33)	ND(0.33)	ND(3.3)
Benzo(b)fluoranthene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	0.9	ND(0.33)	ND(0.33)	6.2
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	3.5
Benzo(a)pyrene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	0.46	ND(0.33)	ND(0.33)	ND(3.3)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(1.6)	1.0	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Chrysene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	0.77	ND(0.33)	ND(0.33)	4.4
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(10)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-2	CT-2	CT-3	CT-3	CT-3	CT-3	DD-1	DD-1	DD-1	DD-2
Depth	2-4	8-10	0-2	4-6	16-18	16-18 Dup	0-2	2-4	4-6	0-2
Sample ID	TB-78	TB-79	TB-80	TB-81	TB-82	TB-83	TB-88	TB-90	TB-89	TB-85
Date Sampled	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Fluoranthene	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	1.1	ND(0.33)	ND(0.33)	ND(3.3)
Fluorene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Isophorone	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(.50)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(1.0)
Naphthalene	ND(0.33)	ND(0.33)	2.3	ND(0.33)	ND(0.33)	ND(0.33)	0.68	ND(0.33)	ND(0.33)	ND(3.3)
Nitrobenzene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
Phenanthrene	ND(0.33)	ND(0.33)	2.3	ND(0.33)	ND(0.33)	ND(0.33)	0.53	ND(0.33)	ND(0.33)	ND(3.3)
Pyrene	ND(0.33)	ND(0.33)	1.6	ND(0.33)	ND(0.33)	ND(0.33)	1.0	ND(0.33)	ND(0.33)	4.2
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguisha' ›m Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-2	CT-2	CT-3	CT-3	CT-3	CT-3	DD-1	DD-1	DD-1	DD-2
Depth	2-4	8-10	0-2	4-6	16-18	16-18 Dup	0-2	2-4	4-6	0-2
Sample ID	TB-78	TB-79	TB-80	TB-81	TB-82	TB-83	TB-88	TB-90	TB-89	TB-85
Date Sampled	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)
Phenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(3.3)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-2	DD-2	DD-3	DD-3	DD-3	DD-3	DD-4	DD-4	DD-4	DD-4
Depth	2-4	4-6	0-2	0-2 Dup	4-6	6-8	0-2	4-6	6-8	6-8 Dup
Sample ID	TB-86	TB-87	TB-91	TB-100	TB-92	TB-93	TB-96	TB-95	TB-94	TB-101
Date Sampled	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(2.5)*	2.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(0.33)	ND(0.33)	ND(2.5)	7.5 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(0.33)	ND(0.33)	3.3 J	11.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzidine	ND(5.0)	ND(5.0)	ND(38)	ND(25)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(0.33)	ND(0.33)	7.6 J	32.0 EJ	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	ND(0.33)	ND(0.33)	13.0 J	65.0 EJ	ND(0.33)	ND(0.33)	0.58	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(0.33)	ND(0.33)	ND(2.5)	16.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(0.33)	ND(0.33)	4.9 J	22.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	0.49	ND(0.33)	ND(0.33)	ND(0.33)
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(0.33)	ND(0.33)	9.5 J	41.0 EJ	ND(0.33)	ND(0.33)	0.41	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(0.33)	ND(0.33)	ND(2.5)	11.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(15)	ND(10)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguisha' om Diphenylamine

Note: "a" = Phase ** and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-2	DD-2	DD-3	DD-3	DD-3	DD-3	DD-4	DD-4	DD-4	DD-4
Depth	2-4	4-6	0-2	0-2 Dup	4-6	6-8	0-2	4-6	6-8	6-8 Dup
Sample ID	TB-86	TB-87	TB-91	TB-100	TB-92	TB-93	TB-96	TB-95	TB-94	TB-101
Date Sampled	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(0.33)	ND(0.33)	11.0 J	44.0 EJ	ND(0.33)	ND(0.33)	0.36	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(0.33)	ND(0.33)	ND(2.5)	2.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(0.33)	ND(0.33)	ND(2.5)	12.0 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Isophorone	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.75)	ND(0.50)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	ND(0.33)	ND(0.33)	ND(2.5)	3.0 J	ND(0.33)	ND(0.33)	0.54	ND(0.33)	ND(0.33)	ND(0.33)
Nitrobenzene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	ND(0.33)	ND(0.33)	3.4 J	13.0 J	ND(0.33)	ND(0.33)	0.48	ND(0.33)	ND(0.33)	ND(0.33)
Pyrene	ND(0.33)	ND(0.33)	11.0 J	50.0 EJ	ND(0.33)	ND(0.33)	0.45	ND(0.33)	ND(0.33)	ND(0.33)
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-2	DD-2	DD-3	DD-3	DD-3	DD-3	DD-4	DD-4	DD-4	DD-4
Depth	2-4	4-6	0-2	0-2 Dup	4-6	6-8	0-2	4-6	6-8	6-8 Dup
Sample ID	TB-86	TB-87	TB-91	TB-100	TB-92	TB-93	TB-96	TB-95	TB-94	TB-101
Date Sampled	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(13)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(13)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(13)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(13)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Phenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(2.5)	ND(1.6)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-5	DD-5	DD-5	DD-6	DD-6	DD-6	DD-7	DD-7	DD-7	MW-11-21
Depth	0-2	6-8	8-10	0-2	2-4	2-4 DUP	0-2	4-6	4-6 DUP	4-6
Sample ID	TB-98	TB-97	TB-99	MAW-173	MAW-174	MAW-175	MAW-205	MAW-206	MAW-207	MAW-196
Date Sampled	5/26/93	5/26/93	5/26/93	8/16/94	8/16/94	8/16/94	8/25/94	8/25/94	8/25/94	8/23/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Base Neutral Compounds										
Acenaphthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Acenaphthylene	0.4	ND(0.33)	ND(0.33)	0.42	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Anthracene	0.65	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Benzidine	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(100)*
Benzo(a)anthracene	2.2	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Benzo(b)fluoranthene	4.0	ND(0.33)	ND(0.33)	4.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Benzo(k)fluoranthene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Benzo(ghi)perylene	1.2	ND(0.33)	ND(0.33)	1.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Benzo(a)pyrene	1.7	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Bis (2-chloroethoxy) methane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Bis (2-chloroethyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Bis (2-chloroisopropyl) ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Bis (2-ethylhexyl) phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
4-Bromophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Butyl benzyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2-Chloronaphthalene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
4-Chlorophenyl phenyl ether	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Chrysene	2.6	ND(0.33)	ND(0.33)	2.2	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Dibenzo (a,h) anthracene	0.96	ND(0.33)	ND(0.33)	0.52	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Di-n-butyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
1,2-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
1,3-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
1,4-Dichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
3,3'-Dichlorobenzidine	ND(2.0)	ND(2.0)	ND(2.0)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(40)*

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-5	DD-5	DD-5	DD-6	DD-6	DD-6	DD-7	DD-7	DD-7	MW-11-21
Depth	0-2	6-8	8-10	0-2	2-4	2-4 DUP	0-2	4-6	4-6 DUP	4-6
Sample ID	TB-98	TB-97	TB-99	MAW-173	MAW-174	MAW-175	MAW-205	MAW-206	MAW-207	MAW-196
Date Sampled	5/26/93	5/26/93	5/26/93	8/16/94	8/16/94	8/16/94	8/25/94	8/25/94	8/25/94	8/23/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Diethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Dimethyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2,4-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2,6-Dinitrotoluene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Di-n-octyl phthalate	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
1,2-Diphenylhydrazine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Fluoranthene	3.5	ND(0.33)	ND(0.33)	1.7	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Fluorene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Hexachlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Hexachlorobutadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Hexachlorocyclopentadiene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Hexachloroethane	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Indeno(1,2,3-cd) pyrene	0.81	ND(0.33)	ND(0.33)	1.6	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Isophorone	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
4,4'-methyllene-bis-(2-chloro-aniline)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(2.0)*
Naphthalene	1.3	ND(0.33)	ND(0.33)	0.48	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	18 J
Nitrobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
N-Nitrosodimethylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
** N-Nitrosodiphenylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	18 J
N-Nitroso-di-n-propylamine	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
Phenanthrene	2.2	ND(0.33)	ND(0.33)	0.75	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	11 J
Pyrene	3.5	ND(0.33)	ND(0.33)	2.6	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
1,2,4-Trichlorobenzene	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishal m Diphenylamine

Note: "a" = Phase and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-5	DD-5	DD-5	DD-6	DD-6	DD-6	DD-7	DD-7	DD-7	MW-11-21
Depth	0-2	6-8	8-10	0-2	2-4	2-4 DUP	0-2	4-6	4-6 DUP	4-6
Sample ID	TB-98	TB-97	TB-99	MAW-173	MAW-174	MAW-175	MAW-205	MAW-206	MAW-207	MAW-196
Date Sampled	5/26/93	5/26/93	5/26/93	8/16/94	8/16/94	8/16/94	8/25/94	8/25/94	8/25/94	8/23/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Acid Compounds										
4-Chloro-3-methylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2-Chlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2,4-Dichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2,4-Dimethylphenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
4,6-Dinitro-2-methylphenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*
2,4-Dinitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*
2-Nitrophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
4-Nitrophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*
Pentachlorophenol	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*
Phenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*
2,4,6-Trichlorophenol	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(6.6)*

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interfe
** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-11-21*	*MW-11-35*	*MW-11-54*	*MW-13*	*MW-13*	*MW-13*
Depth	*18-20*	*24-26*	*32-34*	*4-6*	*4-6 DUP*	*18-20*
Sample ID	*MAW-197*	*MAW-211*	*MAW-210*	*MAW-036*	*MAW-031*	*MAW-032*
Date Sampled	*8/23/94*	*8/24/94*	*8/25/94*	*12/7/94*	*12/7/94*	*12/7/94*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter						
Base Neutral Compounds						
Acenaphthene	ND(16)*	0.44 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Acenaphthylene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Anthracene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzidine	ND(250)*	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzo(a)anthracene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(b)fluoranthene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(k)fluoranthene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(ghi)perylene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Benzo(a)pyrene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethoxy) methane	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroethyl) ether	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-chloroisopropyl) ether	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Bis (2-ethylhexyl) phthalate	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Bromophenyl phenyl ether	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Butyl benzyl phthalate	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chloronaphthalene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Chlorophenyl phenyl ether	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Chrysene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dibenzo (a,h) anthracene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-butyl phthalate	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Dichlorobenzene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,3-Dichlorobenzene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,4-Dichlorobenzene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
3,3'-Dichlorobenzidine	ND(100)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishal ɔm Diphenylamine

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-11-21*	*MW-11-35*	*MW-11-54*	*MW-13*	*MW-13*	*MW-13*
Depth	*18-20*	*24-26*	*32-34*	*4-6*	*4-6 DUP*	*18-20*
Sample ID	*MAW-197*	*MAW-211*	*MAW-210*	*MAW-036*	*MAW-031*	*MAW-032*
Date Sampled	*8/23/94*	*8/24/94*	*8/25/94*	*12/7/94*	*12/7/94*	*12/7/94*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter						
Diethyl phthalate	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Dimethyl phthalate	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dinitrotoluene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,6-Dinitrotoluene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Di-n-octyl phthalate	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2-Diphenylhydrazine	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluoranthene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Fluorene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobenzene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorobutadiene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachlorocyclopentadiene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Hexachloroethane	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Indeno(1,2,3-cd) pyrene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Isophorone	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,4'-methyllene-bis-(2-chloro-aniline)	ND(16)*	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)
Naphthalene	65 J	4.7 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Nitrobenzene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitrosodimethylamine	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
** N-Nitrosodiphenylamine	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
N-Nitroso-di-n-propylamine	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Phenanthrene	19 J	3.2 J	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
Pyrene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
1,2,4-Trichlorobenzene	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

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** Indistinguishable from Diphenylamine

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF SVOC's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-11-21	MW-11-35	MW-11-54	MW-13	MW-13	MW-13
Depth	18-20	24-26	32-34	4-6	4-6 DUP	18-20
Sample ID	MAW-197	MAW-211	MAW-210	MAW-036	MAW-031	MAW-032
Date Sampled	8/23/94	8/24/94	8/25/94	12/7/94	12/7/94	12/7/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter						
Acid Compounds						
4-Chloro-3-methylphenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2-Chlorophenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dichlorophenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4-Dimethylphenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4,6-Dinitro-2-methylphenol	ND(85)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2,4-Dinitrophenol	ND(85)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
2-Nitrophenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
4-Nitrophenol	ND(85)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Pentachlorophenol	ND(85)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Phenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)
2,4,6-Trichlorophenol	ND(16)*	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)

E = estimated value; reported by lab
ND = not detected; Target Detection Limit
J = value is an estimated quantity for detecte
* Detection limits raised due to matrix interf
** Indistinguishable from Diphenylamine

Note: "a" = Phase ** and
"b" = Phas OAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-1*	*DS-1*	*DS-1*	*DS-1*	*DS-2*	*DS-2*	*DS-2*	*DS-2*	*DS-2a*	*DS-2a*
Depth	0-2	4-6	6-8	6-8' Dup	0-2	4-6	6-8	8-10	10-12	10-12 DUP
Sample ID	*RP-47*	*RP-48*	*RP-49*	*RP-50*	*RP-51*	*RP-52*	*RP-53*	*RP-54*	*MAW-133*	*MAW-134*
Date Sampled	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*8/9/94*	*8/9/94*
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(13)	ND(1.7)	ND(1.7)	ND(1.7)	ND(600)	ND(8.5)	ND(2.6)*	ND(1.7)	ND(1.7)	ND(1.7)
alpha-BHC	ND(6.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(600)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
beta-BHC	ND(6.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(600)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
delta-BHC	ND(6.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(600)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-BHC (Lindane)	ND(6.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(600)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-Chlordane	36	ND(1.7)	ND(1.7)	ND(1.7)	9100	36	ND(1.7)	4.2	3.4 J	24 SJ
gamma-Chlordane	48	ND(1.7)	ND(1.7)	ND(1.7)	9800	41	ND(1.7)	5.1	4 J	28 SJ
4,4'-DDD	47	ND(3.3)	ND(3.3)	ND(3.3)	6300	26	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDE	ND(40)	ND(3.3)	ND(3.3)	ND(3.3)	2600	13.0	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDT	ND(79)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(4.1)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Dieldrin	ND(13)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(17)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
alpha-Endosulfan	ND(13)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(17)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
beta-Endosulfan	ND(13)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(17)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endosulfan sulfate	ND(13)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(17)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin	ND(13)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(17)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin aldehyde	ND(13)	ND(3.3)	ND(3.3)	ND(3.3)	ND(1200)	ND(17)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Heptachlor	ND(6.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(600)	ND(8.5)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Heptachlor epoxide	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1500)	ND(11)	ND(5.4)*	ND(1.7)	ND(1.7)	ND(1.7)
Toxaphene	ND(170)	ND(170)	ND(170)	ND(170)	ND(6000)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1221	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1232	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1242	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1248	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1254	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1260	ND(330)	ND(330)	ND(330)	ND(330)	ND(12000)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)

S = results due to secondary dilution
ND = not detected (Target Detection Limit)
J = value is an estimated quantity for detected analytes
UJ = analyte was not detected; value is an estimate
R = data was unusable for non-detected analytes
Note: * Detection limits raised due to matrix interference

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-2b	DS-2b	DS-3	DS-3	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4
Depth	14-16	14-16 DUP	2-4	6-8	6-8 Dup	10-12	0-2	2-4	4-6	6-8
Sample ID	MAW-009	MAW-010	RP-56	RP-57	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44
Date Sampled	11/29/94	11/29/94	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.8)*	ND(1.7)	ND(1.7)	ND(3.4)	ND(6.6)	ND(6.8)	ND(1.7)
alpha-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.4)	ND(2.5)	ND(6.8)	ND(1.7)
beta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.4)	ND(1.7)	ND(6.8)	ND(1.7)
delta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.4)	ND(1.7)	ND(15)	ND(1.7)
gamma-BHC (Lindane)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.4)	ND(1.7)	ND(6.8)	ND(1.7)
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	17	6.8	38	ND(1.7)
gamma-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	22	9.1	44	ND(1.7)
4,4'-DDD	ND(3.3)	ND(3.3)	ND(3.3) UJ	ND(3.3)	ND(3.3)	ND(3.3)	40	28	110	ND(3.3)
4,4'-DDE	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	11	17	25	ND(3.3)
4,4'-DDT	ND(3.3)	ND(3.3)	ND(3.3) UJ	ND(3.3)	ND(3.3)	ND(3.3)	24	ND(12)	24	ND(3.3)
Dieldrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(6.6)	ND(3.3)	ND(13)	ND(3.3)
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(6.6)	ND(3.3)	ND(13)	ND(3.3)
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(6.6)	ND(3.3)	ND(13)	ND(3.3)
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(6.6)	ND(3.3)	ND(13)	ND(3.3)
Endrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	7.0	ND(3.3)	ND(13)	ND(3.3)
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(6.6)	ND(3.9)	ND(13)	ND(3.3)
Heptachlor	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.8)*	ND(1.7)	ND(3.4)	ND(1.7)	ND(7.6)	ND(1.7)
Heptachlor epoxide	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.4)	ND(19)	ND(6.8)	ND(1.7)
Toxaphene	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1221	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1232	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1242	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1248	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1254	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1260	NA	NA	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)

S = results due to secondary dilution
ND = not detected (Target Detection Lim
J = value is an estimated quantity for dete
UJ = analyte was not detected; value is ar
R = data was unusable for non-detected a
Note: * Detection limits raised due to mat

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-5	DS-5	DS-5	DS-5	DS-6	DS-6	DS-6	DS-6	DS-7	DS-7
Depth	0-2	2-4	4-6	8-10	0-2	2-4	4-6	6-8	0-2	2-4
Sample ID	RP-38	RP-39	RP-40	RP-41	RP-33	RP-34	RP-35	RP-36	RP-29	RP-30
Date Sampled	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(34)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
alpha-BHC	ND(34)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
beta-BHC	ND(34)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
delta-BHC	ND(34)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
gamma-BHC (Lindane)	ND(34)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
alpha-Chlordane	350	ND(1.7)	25	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	390	ND(1.7)
gamma-Chlordane	440	5.6	30	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	450	ND(1.7)
4,4'-DDD	100	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(210)	ND(3.3)
4,4'-DDE	120	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
4,4'-DDT	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
Dieldrin	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	270	ND(3.3)
alpha-Endosulfan	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
beta-Endosulfan	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
Endosulfan sulfate	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
Endrin	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
Endrin aldehyde	ND(66)	ND(3.3)	ND(33)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(170)	ND(3.3)
Heptachlor	ND(34)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
Heptachlor epoxide	ND(140)	ND(1.7)	ND(17)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(85)	ND(1.7)
Toxaphene	ND(340)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(850)	ND(170)
PCB-1016	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)
PCB-1221	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)
PCB-1232	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)
PCB-1242	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)
PCB-1248	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)
PCB-1254	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)
PCB-1260	ND(660)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(1700)	ND(330)

S = results due to secondary dilution
ND = not detected (Target Detection Lim
J = value is an estimated quantity for dete
UJ = analyte was not detected; value is ar
R = data was unusable for non-detected a
Note: * Detection limits raised due to mat

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-7	DS-7	DS-8	DS-8	DS-8	DS-9	DS-9	DS-9	DS-9	DS-10
Depth	6-8	8-10	0-2	4-6	8-10	0-2	2-4	4-6	8-10	0-2
Sample ID	RP-31	RP-32	RP-23	RP-22	RP-24	RP-25	RP-26	RP-27	RP-28	RP-18
Date Sampled	5/14/93	5/14/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)	ND(1.7)	ND(21)*	ND(34)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(22)*
alpha-BHC	ND(1.7)	ND(1.7)	ND(17)*	ND(34)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)*
beta-BHC	ND(1.7)	ND(1.7)	ND(17)*	ND(34)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)*
delta-BHC	ND(1.7)	ND(1.7)	ND(17)*	ND(34)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)*
gamma-BHC (Lindane)	ND(1.7)	ND(1.7)	ND(17)*	ND(34)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)*
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(23)*	ND(40)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)*
gamma-Chlordane	ND(1.7)	ND(1.7)	ND(32)*	ND(62)	ND(1.7)	ND(68)	ND(2.1)	ND(2.7)	ND(1.7)	ND(17)*
4,4'-DDD	ND(3.3)	ND(3.3)	ND(33)*	ND(140)	ND(3.3)	ND(220)	ND(6.0)	7.0	ND(3.3)	ND(33)*
4,4'-DDE	ND(3.3)	ND(3.3)	ND(69)*	ND(300)	ND(3.3)	ND(310)	7.1	ND(9.4)	ND(3.3)	ND(25)*
4,4'-DDT	ND(3.3)	ND(3.3)	ND(72)*	ND(460)	ND(3.3)	ND(800)	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*
Dieldrin	ND(3.3)	ND(3.3)	ND(33)*	ND(66)	ND(3.3)	ND(130)	ND(3.3)	ND(3.3)	ND(3.3)	ND(33)*
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(33)*	ND(66)	ND(3.3)	ND(130)	ND(3.3)	ND(3.3)	ND(3.3)	ND(33)*
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(33)*	ND(66)	ND(3.3)	ND(130)	ND(3.3)	ND(3.3)	ND(3.3)	ND(33)*
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(33)*	ND(66)	ND(3.3)	ND(130)	ND(3.3)	ND(3.3)	ND(3.3)	ND(47)*
Endrin	ND(3.3)	ND(3.3)	ND(33)*	ND(66)	ND(3.3)	ND(130)	ND(3.3)	ND(3.3)	ND(3.3)	ND(33)*
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(33)*	ND(75)	ND(3.3)	ND(230)	ND(3.3)	ND(3.3)	ND(3.3)	ND(33)*
Heptachlor	ND(1.7)	ND(1.7)	ND(17)*	ND(34)	ND(1.7)	ND(68)	ND(1.7)	ND(1.7)	ND(1.7)	ND(17)*
Heptachlor epoxide	ND(1.7)	ND(1.7)	ND(68)*	ND(34)	ND(1.7)	ND(140)	ND(1.7)	ND(1.7)	ND(1.7)	ND(28)*
Toxaphene	ND(170)	ND(170)	ND(170)	ND(340)	ND(170)	ND(680)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(330)	ND(660)	ND(330)	ND(1300)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1221	ND(330)	ND(330)	ND(330)	ND(660)	ND(330)	ND(1300)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1232	ND(330)	ND(330)	ND(330)	ND(660)	ND(330)	ND(1300)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1242	ND(330)	ND(330)	ND(330)	ND(660)	ND(330)	ND(1300)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1248	ND(330)	ND(330)	ND(330)	ND(660)	ND(330)	ND(1300)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1254	ND(330)	ND(330)	ND(330)	10,000 E	ND(330)	13,000 E	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1260	ND(330)	ND(330)	ND(330)	ND(660)	ND(330)	ND(1300)	ND(330)	ND(330)	ND(330)	ND(330)

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SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-10	DS-10	DS-10	DS-11	DS-11	DS-11	DS-11	DS-12	DS-12	DS-12
Depth	2-4	4-6	4-6 DUP	0-2	2-4	6-8	8-10	0-2	4-6	4-6 DUP
Sample ID	RP-19	RP-20	RP-21	RP-05	RP-06	RP-07	RP-08	RP-10	RP-11	RP-12
Date Sampled	5/13/93	5/13/93	5/13/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)	ND(34)	ND(1.7)
alpha-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)	ND(34)	ND(1.7)
beta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)	ND(34)	ND(1.7)
delta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)	ND(34)	ND(1.7)
gamma-BHC (Lindane)	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)	ND(34)	ND(1.7)
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(38)	ND(34)	ND(3.9)
gamma-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(73)	ND(34)	ND(7.3)
4,4'-DDD	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	11.0	ND(3.3)	ND(3.3)	490 S	520 J	120 J
4,4'-DDE	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(7.7)	ND(3.3)	ND(3.3)	ND(230)	ND(66)	ND(33)
4,4'-DDT	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.5)	ND(3.3)	ND(3.3)	ND(110)	ND(130)	ND(47)
Dieldrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)	ND(66)	ND(33)
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)	ND(66)	ND(3.3)
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)	ND(66)	ND(3.3)
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.3)	ND(3,3)	ND(3.3)	ND(66)	ND(66)	ND(3.3)
Endrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)	ND(66)	ND(3.3)
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(3.3)	ND(66)*	ND(3.5)	ND(3.3)	ND(3.3)	ND(560)	ND(66)	ND(3.3)
Heptachlor	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)	ND(34)	ND(1.7)
Heptachlor epoxide	ND(1.7)	ND(1.7)	ND(1.7)	ND(34)*	ND(3.9)	ND(1.7)	ND(1.7)	ND(36)	ND(34)	ND(1.7)
Toxaphene	ND(170)	ND(170)	ND(170)	ND(340)*	ND(170)	ND(170)	ND(170)	ND(340)	ND(340)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)
PCB-1221	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)
PCB-1232	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)
PCB-1242	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)
PCB-1248	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)
PCB-1254	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)
PCB-1260	ND(330)	ND(330)	ND(330)	ND(660)*	ND(330)	ND(330)	ND(330)	ND(660)	ND(660)	ND(330)

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SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-12	DS-13	DS-13	DS-13	DS-14	DS-14	DS-14	DS-14	US-1	US-1
Depth	18-20	0-2	2-4	4-6	0-2	2-4	4-6	8-10	14-16	20-22
Sample ID	RP-13	RP-14	RP-15	RP-16	RP-01	RP-02	RP-03	RP-04	RP-60	RP-61
Date Sampled	5/12/93	5/13/93	5/13/93	5/13/93	5/11/93	5/11/93	5/11/93	5/11/93	5/18/93	5/18/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)	ND(40)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-BHC	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
beta-BHC	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
delta-BHC	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-BHC (Lindane)	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-Chlordane	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(1.9)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-Chlordane	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(4.8)*	ND(1.8)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
4,4'-DDD	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(4.5)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDE	ND(3.3)	ND(41)*	ND(3.3)	ND(3.3)	ND(33)*	14	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDT	ND(3.3)	ND(120)*	ND(3.3)	ND(3.3)	ND(48)*	ND(11.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Dieldrin	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(6.1)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
alpha-Endosulfan	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
beta-Endosulfan	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endosulfan sulfate	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin aldehyde	ND(3.3)	ND(33)*	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Heptachlor	ND(1.7)	ND(17)*	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Heptachlor epoxide	ND(1.7)	ND(42)*	ND(1.7)	ND(1.7)	ND(2.7)	ND(2.0)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Toxaphene	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1221	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1232	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1242	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1248	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1254	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1260	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)

S = results due to secondary dilution
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J = value is an estimated quantity for det
UJ = analyte was not detected; value is ar
R = data was unusable for non-detected a
Note: * Det ion limits raised due to mat

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-2	US-2	US-2	US-3	US-3	US-3	US-4	US-4	US-5	US-5
Depth	0-2	14-16	20-22	2-4	8-10	8-10 Dup	2-4	10-12	8-10	14-16
Sample ID	RP-63	RP-64	RP-65	RP-65A	RP-66	RP-67	RP-68	RP-69	RP-70	RP-71
Date Sampled	5/18/93	5/18/93	5/18/93	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-BHC	ND(1.7) UJ	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
beta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
delta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-BHC (Lindane)	ND(1.7) UJ	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
4,4'-DDD	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDE	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDT	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Dieldrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Heptachlor	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Heptachlor epoxide	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(3.2)	ND(1.7)	ND(1.7)	ND(1.7)
Toxaphene	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1221	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1232	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1242	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1248	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1254	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1260	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)

S = results due to secondary dilution
ND = not detected (Target Detection Lim
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Note: * Detection limits raised due to mat

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	US-6	US-6	CT-1	CT-1	CT-1	CT-2	CT-2	CT-2	CT-3	CT-3
Depth	4-6	14-16	0-2	2-4	8-10	0-2	2-4	8-10	0-2	4-6
Sample ID	RP-72	RP-73	TB-74	TB-75	TB-76	TB-84	TB-78	TB-79	TB-80	TB-81
Date Sampled	5/19/93	5/19/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93	5/20/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)	ND(1.7)	ND(680)UJ	ND(8.5) UJ	ND(1.7) UJ	ND(26) UJ	ND(3.4) UJ	ND(1.7)UJ	ND(160)UJ	ND(17)UJ
alpha-BHC	ND(1.7)	ND(1.7)	ND(680) R	ND(8.5) R	ND(1.7) R	ND(26) R	ND(3.4) R	ND(1.7)R	ND(130)R	ND(17)R
beta-BHC	ND(2.9)*	ND(1.7)	ND(680)	ND(8.5)	ND(1.7)	ND(26)	ND(3.4)	ND(1.7)	ND(130)	ND(17)
delta-BHC	ND(1.7)	ND(1.7)	ND(680)	ND(8.5)	ND(1.7)	ND(26)	ND(3.4) UJ	ND(1.7)	ND(130)	ND(17)
gamma-BHC (Lindane)	ND(1.7)	ND(1.7)	ND(680) R	ND(8.5) R	ND(1.7) R	ND(26) R	ND(3.4) R	ND(1.7)R	ND(130)R	ND(17)R
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(680)	ND(8.5)	ND(1.7)	ND(26.0)	46 J	ND(1.7)	4000	78
gamma-Chlordane	ND(1.7)	ND(1.7)	1900	ND(8.5)	ND(1.7)	ND(26.0)	67 J	ND(1.7)	5000	100
4,4'-DDD	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(110.0)	ND(6.6)UJ	ND(3.3)	ND(6,600)	160
4,4'-DDE	ND(3.3)	ND(3.3)	ND(32,000)	ND(180.0)	ND(3.3)	ND(670.0)	ND(45.0)UJ	ND(3.3)	ND(2,200)	49
4,4'-DDT	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(50.0)	ND(6.6)UJ	ND(3.3)	ND(250.0)	ND(33.0)
Dieldrin	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(50.0)	ND(6.6)UJ	ND(3.3)	ND(1,800)	ND(33.0)
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(50.0)	ND(6.6)UJ	ND(3.3)	ND(250)	ND(33.0)
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(50.0)	ND(6.6)	ND(3.3)	ND(250)	ND(33.0)
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(50.0)	ND(6.6)	ND(3.3)	ND(250)	ND(33.0)
Endrin	ND(3.3)	ND(3.3)	ND(1,100)	ND(17.0)	ND(3.3)	ND(50.0)	ND(6.6)	ND(3.3)	ND(250.0)	ND(33.0)
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(1,100)	ND(17)	ND(3.3)	ND(50)	ND(6.6)UJ	ND(3.3)	ND(250)	ND(33)
Heptachlor	ND(1.7)	ND(1.7)	ND(680)UJ	ND(8.5) UJ	ND(1.7) UJ	ND(26) UJ	ND(3.4)UJ	ND(1.7)UJ	ND(130)UJ	ND(17)UJ
Heptachlor epoxide	ND(1.7)	ND(1.7)	ND(680)	ND(8.5)	ND(1.7)	ND(26)	ND(3.4) UJ	ND(1.7)	ND(630)	ND(17)
Toxaphene	ND(170)	ND(170)	ND(6,800)	ND(425)	ND(170)	ND(260)	ND(170)	ND(170)	ND(1300)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(14,000)	ND(825)	ND(330)	ND(500)	ND(330)	ND(330)	ND(2500)	ND(330)
PCB-1221	ND(330)	ND(330)	ND(14,000)	ND(825)	ND(330)	ND(500)	ND(330)	ND(330)	ND(2500)	ND(330)
PCB-1232	ND(330)	ND(330)	ND(14,000)	ND(825)	ND(330)	ND(500)	ND(330)	ND(330)	ND(2500)	ND(330)
PCB-1242	ND(330)	ND(330)	ND(14,000)	ND(825)	ND(330)	ND(500)	ND(330)	ND(330)	ND(2500)	ND(330)
PCB-1248	ND(330)	ND(330)	ND(14,000)	ND(825)	ND(330)	ND(500)	ND(330)	ND(330)	ND(2500)	ND(330)
PCB-1254	ND(330)	ND(330)	48,000	1,700	ND(330)	2,700	370.0	ND(330)	43,000	ND(330)
PCB-1260	ND(330)	ND(330)	ND(14,000)	ND(825.0)	ND(330)	ND(500)	ND(330)	ND(330)	ND(2500)	ND(330)

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Note: * Detection limits raised due to mat

Note: "a" = Phase II and
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SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	CT-3	CT-3	DD-1	DD-1	DD-1	DD-2	DD-2	DD-2	DD-2a	DD-3
Depth	16-18	16-18 Dup	0-2	2-4	4-6	0-2	2-4	4-6	6-8	0-2
Sample ID	TB-82	TB-83	TB-88	TB-90	TB-89	TB-85	TB-86	TB-87	MAW-177	TB-91
Date Sampled	5/20/93	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93	5/24/93	5/24/93	8/16/94	5/25/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(1.7)UJ	ND(1.7)UJ	ND(26)UJ	ND(26)	ND(1.7)UJ	ND(290000)UJ	ND(43)UJ	ND(51)UJ	ND(1.7)	ND(1700)
alpha-BHC	ND(1.7)R	ND(1.7)R	ND(26) R	ND(26)	ND(1.7) R	ND(51,000)R	ND(43)R	ND(51) R	ND(1.7)	ND(1700)
beta-BHC	ND(1.7)	ND(1.7)	ND(26)	ND(26)	ND(1.7)	ND(51,000)	ND(43)	ND(51)	ND(1.7)	ND(1700)
delta-BHC	ND(1.7)	ND(1.7)	ND(26)	ND(26)	ND(1.7)	ND(51,000)	ND(43)	ND(51)	ND(1.7)	ND(1700)
gamma-BHC (Lindane)	ND(1.7)R	ND(1.7)R	ND(26)R	ND(26)	ND(1.7)R	ND(51,000)R	ND(43)R	ND(51)R	ND(1.7)	ND(1700)
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(26.0)	ND(26.0)	ND(1.7)	ND(51,000)	ND(43.0)	ND(51.0)	ND(1.7)	1700 J
gamma-Chlordane	ND(1.7)	ND(1.7)	ND(26.0)	ND(26.0)	ND(1.7)	ND(51,000)	ND(43.0)	ND(51.0)	ND(1.7)	ND(1,700)
4,4'-DDD	ND(3.3)	ND(3.3)	ND(50.0)	ND(50.0)	ND(3.3)	ND(34E+4)	ND(83.0)	ND(99.0)	ND(3.3)	ND(3,300)
4,4'-DDE	ND(3.3)	ND(3.3)	ND(72.0)	ND(50.0)	ND(3.3)	ND(99,000)	ND(180.0)	ND(99.0)	ND(5.3)*	ND(3,300)
4,4'-DDT	ND(3.3)	ND(3.3)	ND(50.0)	ND(140.0)	ND(4.5)*	ND(28E+4)	ND(87.0)	ND(99.0)	ND(3.3)	ND(3,300)
Dieldrin	ND(3.3)	ND(3.3)	ND(50.0)	ND(96.0)	ND(3.3)	ND(39E+5)	ND(83.0)	ND(330.0)	ND(3.3)	ND(3,300)
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(50)	ND(50)	ND(3.3)	ND(250000)	ND(83.0)	ND(99)	ND(3.3)	ND(3,300)
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(50)	ND(50)	ND(3.3)	ND(99,000)	ND(83.0)	ND(99)	ND(3.3)	ND(3,300)
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(50)	ND(50)	ND(3.3)	ND(99,000)	ND(83.0)	ND(99)	ND(3.3)	ND(3,300)
Endrin	ND(3.3)	ND(3.3)	ND(50.0)	ND(50.0)	ND(3.3)	ND(99,000)	ND(83.0)	ND(99.0)	ND(3.3)	ND(3,300)
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(50)	ND(50)	ND(3.3)	ND(350000)	ND(83)	ND(99)	ND(3.3)	ND(3,300)
Heptachlor	ND(1.7)UJ	ND(1.7)UJ	ND(26)UJ	ND(26)	ND(1.7)UJ	ND(51,000)UJ	ND(43)UJ	ND(51)UJ	ND(1.7)	ND(1,700)
Heptachlor epoxide	ND(1.7)	ND(1.7)	ND(26)	ND(26)	ND(1.7)	ND(110000)	ND(43)	ND(51)	ND(5.7)*	ND(1,700)
Toxaphene	ND(170)	ND(170)	ND(260)	ND(260)	ND(170)	ND(510000)	ND(430)	ND(510)	ND(170)	ND(8,500)
PCB-1016	ND(330)	ND(330)	ND(500)	ND(500)	ND(330)	ND(990000)	ND(830)	ND(990)	ND(330)	ND(1,600)
PCB-1221	ND(330)	ND(330)	ND(500)	ND(500)	ND(330)	ND(990000)	ND(830)	ND(990)	ND(330)	ND(1,600)
PCB-1232	ND(330)	ND(330)	ND(500)	ND(500)	ND(330)	ND(990000)	ND(830)	ND(990)	ND(330)	ND(1,600)
PCB-1242	ND(330)	ND(330)	ND(500)	ND(500)	ND(330)	ND(990000)	ND(830)	ND(990)	ND(330)	ND(1,600)
PCB-1248	ND(330)	ND(330)	ND(500)	ND(500)	ND(330)	ND(990000)	ND(830)	ND(990)	ND(330)	ND(1,600)
PCB-1254	ND(330)	ND(330)	6,100	2,200	ND(330)	53E+6 E	20,000 E	8,300	ND(330)	58,000 J
PCB-1260	ND(330)	ND(330)	ND(500)	ND(500)	ND(330)	ND(990000)	ND(830)	ND(990)	ND(330)	ND(1600)

S = results due to secondary dilution
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Note: * Detection limits raised due to mat

Note: "a" = Phase II and
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SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-3	DD-3	DD-3	DD-4	DD-4	DD-4	DD-4	DD-4a	DD-5	DD-5
Depth	0-2 Dup	4-6	6-8	0-2	4-6	6-8	6-8 Dup	12-14	0-2	6-8
Sample ID	TB-100	TB-92	TB-93	TB-96	TB-95	TB-94	TB-101	MAW-167	TB-98	TB-97
Date Sampled	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	5/25/93	8/15/94	5/26/93	5/26/93
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter										
Aldrin	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)
alpha-BHC	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)
beta-BHC	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)
delta-BHC	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)
gamma-BHC (Lindane)	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)
alpha-Chlordane	580 J	ND(1.7)	ND(1.7)	240	ND(6.0)*	11.0	11.0	ND(1.7)	ND(30.0)	ND(1.7)
gamma-Chlordane	760 J	ND(1.7)	ND(1.7)	ND(310.0)	ND(7.7)*	ND(13.0)	ND(16.0)	ND(1.7)	ND(41.0)	ND(1.7)
4,4'-DDD	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(44.0)	ND(3.3)
4,4'-DDE	ND(830)	ND(3.3)	ND(3.3)	ND(50)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	130	ND(3.3)
4,4'-DDT	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(200.0)	ND(3.3)
Dieldrin	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)	ND(3.3)
alpha-Endosulfan	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)	ND(3.3)
beta-Endosulfan	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)	ND(3.3)
Endosulfan sulfate	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)	ND(3.3)
Endrin	ND(830)	ND(3.3)	ND(3.3)	ND(50.0)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(16.0)	ND(3.3)
Endrin aldehyde	ND(830)	ND(3.3)	ND(3.3)	ND(50)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(16)	ND(3.3)
Heptachlor	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(8.5)	ND(1.7)
Heptachlor epoxide	ND(430)	ND(1.7)	ND(1.7)	ND(26)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(40)	ND(1.7)
Toxaphene	ND(4300)	ND(170)	ND(170)	ND(1300)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	ND(8300)	ND(330)	ND(330)	ND(2500)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1221	ND(8300)	ND(330)	ND(330)	ND(2500)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1232	ND(8300)	ND(330)	ND(330)	ND(2500)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1242	ND(8300)	ND(330)	ND(330)	ND(2500)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1248	ND(8300)	ND(330)	ND(330)	ND(2500)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1254	ND(8,300)	ND(330)	ND(330)	3,500	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)
PCB-1260	ND(8300)	ND(330)	ND(330)	ND(2500)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)	ND(330)

S = results due to secondary dilution
ND = not detected (Target Detection Lim
J = value is an estimated quantity for dete
UJ = analyte was not detected; value is ar
R = data was unusable for non-detected a
Note: * Detection limits raised due to mat

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF PESTICIDES/PCB's IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-5	DD-6	DD-6	MW-13	MW-13
Depth	8-10	0-2	2-4	4-6	18-20
Sample ID	TB-99	MAW-173	MAW-174	MAW-036	MAW-032
Date Sampled	5/26/93	8/16/94	8/16/94	12/7/94	12/7/94
Units	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)	(µg/kg)
Parameter					
Aldrin	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
beta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
delta-BHC	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-BHC (Lindane)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
alpha-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
gamma-Chlordane	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
4,4'-DDD	ND(3.3)	ND(5.3)*	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDE	ND(3.3)	5.8	ND(3.3)	ND(3.3)	ND(3.3)
4,4'-DDT	ND(3.3)	ND(20)*	ND(3.3)	ND(3.3)	ND(3.3)
Dieldrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
alpha-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
beta-Endosulfan	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endosulfan sulfate	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Endrin aldehyde	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)	ND(3.3)
Heptachlor	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.7)
Heptachlor epoxide	ND(1.7)	ND(8.3)	ND(1.7)	ND(1.7)	ND(1.7)
Toxaphene	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)
PCB-1016	ND(330)	ND(330)	ND(330)	NA	NA
PCB-1221	ND(330)	ND(330)	ND(330)	NA	NA
PCB-1232	ND(330)	ND(330)	ND(330)	NA	NA
PCB-1242	ND(330)	ND(330)	ND(330)	NA	NA
PCB-1248	ND(330)	ND(330)	ND(330)	NA	NA
PCB-1254	ND(330)	ND(330)	ND(330)	NA	NA
PCB-1260	ND(330)	ND(330)	ND(330)	NA	NA

S = results due to secondary dilution
ND = not detected (Target Detection Lim
J = value is an estimated quantity for dete
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R = data was unusable for non-detected a
Note: * Detection limits raised due to mat

Note: "a" = Phase II and
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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*DS-1*	*DS-1*	*DS-1*	*DS-1*	*DS-2*	*DS-2*	*DS-2*	*DS-2*	*DS-2a*	*DS-2a*
Depth	*0-2*	*4-6*	*6-8*	*6-8' Dup*	*0-2*	*4-6*	*6-8*	*8-10*	*8-10*	*10-12*
Sample ID	*RP-47*	*RP-48*	*RP-49*	*RP-50*	*RP-51*	*RP-52*	*RP-53*	*RP-54*	*MAW-132*	*MAW-133*
Date Sampled	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*5/17/93*	*8/9/94*	*8/9/94*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Antimony	ND(0.50) R	6.3 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	NA	NA
Arsenic	13	6.3	3.8	4.3	6.8	3.3	5.0	13	7.2	19
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	NA
Cadmium	0.11	1.3	0.05	0.06	0.65	0.10	0.30	0.10	NA	NA
Chromium	14	16	10	8.9	26	10	14	16	17	15
Copper	70	20	12	14	63	28	16	21	NA	NA
Lead	3,100	8.6	4.8	4.2	160	100	7.2	8.4	NA	NA
Mercury	0.29	ND(0.10)	ND(0.10)	ND(0.10)	0.25	ND(0.10)	ND(0.10)	ND(0.10)	NA	NA
Nickel	15	20	10	9.9	15	6.7	15	17	NA	NA
Selenium	1.8	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA
Thallium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA
Zinc	340	65	43	47	320	150	58	68	77	73
Cyanide	0.27 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	0.8 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	NA	NA

J=value is an estimated quantity for detected analytes
ND = not detected (Target Detection Limit)
R = data was unusable for non detetected analytes
UJ = analyte was not detecte, value is an estimate
* Detection limits raised due to matrix interface

Note: "a" = Phase II and
"b" = Phas OAW

SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-2a	DS-2b	DS-3	DS-3	DS-3	DS-3	DS-4	DS-4	DS-4	DS-4
Depth	10-12DUP	14-16	2-4	6-8	6-8 Dup	10-12	0-2	2-4	4-6	6-8
Sample ID	MAW-134	MAW-009	RP-56	RP-57	RP-58	RP-59	RP-42	RP-43	RP-45	RP-44
Date Sampled	8/9/94	11/29/94	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	NA	NA	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R
Arsenic	11	2.5	2.5	0.71	0.77	3.2	2.7	5.3	22	6.0
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	NA	NA	0.12	ND(0.05)	ND(0.05)	0.13	0.76	0.36	0.12	0.11
Chromium	18	NA	11	2.5	3.2	11	10	17	7.6	18
Copper	NA	NA	6.5	3.2	5.1	14	11	19	13	21
Lead	NA	NA	20	1.5	2.0	4.0	21	33	4.9	8.5
Mercury	NA	NA	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	4.5	2.5	0.13	ND(0.10)
Nickel	NA	NA	7.5	3.0	3.4	12	8.9	18	11	19
Selenium	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	74	NA	52	27	30	47	57	78	47	66
Cyanide	NA	NA	ND(0.10)UJ	ND(0.10)UJ	0.13 J	ND(0.10)UJ	0.13 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ

J=value is an estimated quantity for det
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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-4a	DS-4a	DS-5	DS-5	DS-5	DS-5	DS-6	DS-6	DS-6	DS-6
Depth	6-8	8-10	0-2	2-4	4-6	8-10	0-2	2-4	4-6	6-8
Sample ID	MAW-136	MAW-137	RP-38	RP-39	RP-40	RP-41	RP-33	RP-34	RP-35	RP-36
Date Sampled	8/10/94	8/10/94	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93	5/14/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	NA	NA	2.1	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50) R	ND(0.50) R	ND(0.50) R
Arsenic	7.8	1.3 J	11	3.6	4.3	3.8	3.8	2.5	1.7	2.5
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	NA	NA	0.63	0.08	0.10	0.08	0.17	0.06 J	0.19 J	0.12 J
Chromium	NA	NA	22	14	20	11	16	6.7	13	18
Copper	NA	NA	94	16	17	13	23	6.3	7.8	22
Lead	NA	NA	300	7.6	18	6.5	10	5.9	7.2	9.6
Mercury	NA	NA	0.27	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Nickel	NA	NA	13	14	17	14	20	5.9	11	22
Selenium	NA	NA	1.5	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	NA	NA	270	51	69	54	73	64	62	83
Cyanide	NA	NA	0.37	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	ND(0.10)	ND(0.10)UJ

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-7	DS-7	DS-7	DS-7	DS-8	DS-8	DS-8	DS-9	DS-9	DS-9
Depth	0-2	2-4	6-8	8-10	0-2	4-6	8-10	0-2	2-4	4-6
Sample ID	RP-29	RP-30	RP-31	RP-32	RP-22	RP-23	RP-24	RP-25	RP-26	RP-27
Date Sampled	5/14/93	5/14/93	5/14/93	5/14/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	2.1 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50)	ND(0.50)	ND(0.50)	14	ND(0.50)	ND(0.50)
Arsenic	9.9	4.8	2.0	1.4	8.4	8.7	2.0	18	6.8	4.9
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1.2	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	3.2 J	0.13 J	0.06 J	0.16 J	1.4	0.38	0.14	15	0.38	0.21
Chromium	130	12	14	13	27	17	15	100	20	13
Copper	450	16	7.5	18	84	25	19	1,200	30	17
Lead	420	7.1	7.4	7.8	200	58	7.3	6,400	23	7.5
Mercury	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.20	0.23	ND(0.10)	6.1	0.25	0.11
Nickel	51	15	12	17	26	15	18	130	18	18
Selenium	0.7	ND(0.50)	ND(0.50)	ND(0.50)	1.7	0.57	ND(0.50)	0.75	ND(0.50)	ND(0.50)
Silver	1.1	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	2.0	ND(0.50)	ND(0.50)
Thallium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	950	68	65	63	370	110	79	4,100	110	60
Cyanide	0.16	ND(0.10)	ND(0.10)	ND(0.10)	0.12	1.4	ND(0.10)	0.44	ND(0.10)	ND(0.10)

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-9	DS-10	DS-10	DS-10	DS-10	DS-11	DS-11	DS-11	DS-11	DS-12
Depth	8-10	0-2	2-4	4-6	4-6 DUP	0-2	2-4	6-8	8-10	0-2
Sample ID	RP-28	RP-18	RP-19	RP-20	RP-21	RP-05	RP-06	RP-07	RP-08	RP-10
Date Sampled	5/13/93	5/13/93	5/13/93	5/13/93	5/13/93	5/12/93	5/12/93	5/12/93	5/12/93	5/12/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R
Arsenic	2.6	4.4	3.8	5.4	4.3	10	4.3	2.9	4.9	9.8
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.13	0.26	0.05	0.15	0.14	1.5 J	0.23 J	0.11 J	0.13 J	0.34 J
Chromium	16	5.6	15	20	17	26	14	16	18	15
Copper	19	16	15	22	21	180	10	19	20	16
Lead	9.0	25	6.5	8.7	11	380	53	7.0	10	12
Mercury	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.22	ND(0.10)	ND(0.10)	ND(0.10)	0.14
Nickel	18	5.8	16	19	21	59	13	17	19	14
Selenium	ND(0.50)	0.7	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	82	110	49	71	68	1,200	110	64	67	60
Cyanide	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.83 J	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10) R

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-12	DS-12	DS-12	DS-13	DS-13	DS-13	DS-14	DS-14	DS-14	DS-14
Depth	4-6	4-6 DUP	18-20	0-2	2-4	4-6	0-2	2-4	4-6	8-10
Sample ID	RP-11	RP-12	RP-13	RP-14	RP-15	RP-16	RP-01	RP-02	RP-03	RP-04
Date Sampled	5/12/93	5/12/93	5/12/93	5/13/93	5/13/93	5/13/93	5/11/93	5/11/93	5/11/93	5/11/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50)	ND(0.50)	ND(0.50)	3.5 J	0.65 J	ND(0.50) R	ND(0.50) R
Arsenic	7.2	6.3	2.3	4.9	2.3	1.7	8.8	3.8	3.3	1.5
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.4 J	0.2 J	ND(0.05)UJ	0.34	0.06	0.1	8.8	1.2 J	0.13 J	0.16 J
Chromium	17	17	4.3	5.3	9.4	12	53	7.4	19	16
Copper	16 J	54 J	7.6	17	3.7	7.7	74,000	200	22	18
Lead	22	17	3.4	70	4.8	5.0	520	64	19	7.1
Mercury	ND(0.10)	0.12	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.11	0.23	ND(0.10)	ND(0.10)
Nickel	11	16	5.0	7.7	6.0	9.3	150	31	25	17
Selenium	ND(0.50)	ND(0.50)	ND(0.50)	1.0	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	1.2	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	78	73	27	100	38	39	7,400	310	120	63
Cyanide	ND(0.10) R	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.17	ND(0.10)	ND(0.10)UJ

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DS-15	DS-15	DS-15 *	DS-16	DS-16	DS-16	DS-16	DS-16	DS-17	DS-17
Depth	6-8	8-10	8-10 DUP	0-2	4-6	4-6 DUP	8-10	10-12	0-2	4-6
Sample ID	MAW-141	MAW-143	MAW-142	MAW-144	MAW-145	MAW-146	MAW-147	MAW-148	MAW-150	MAW-151
Date Sampled	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94	8/10/94	8/11/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	NA	NA	NA	20J	6.6 J	ND(0.50) R	NA	NA	1.7 J	0.54 J
Arsenic	NA	NA	NA	69	11	6.5	NA	NA	11	4.9
Barium	NA	NA	NA	2600	110	140	NA	NA	300	120
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	120 J	0.33 J	0.26 J	NA	NA	2.4 J	0.88 UJ
Chromium	NA	NA	NA	340	25J	21 J	15	16	32	10
Copper	NA	NA	NA	1500 J	22	21	NA	NA	420 J	67 J
Lead	NA	NA	NA	5300 J	27 J	12 J	NA	NA	480 J	300 J
Mercury	NA	NA	NA	9.2 J	ND(0.1) UJ	0.13 J	NA	NA	0.28	0.17 J
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	0.65	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)
Silver	NA	NA	NA	4	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	72	60 J	67 J	23000 J	75 J	79 J	65	67 J	1300 J	290 J
Cyanide	NA	NA	NA	0.96 J	ND(0.1) UJ	0.11 J	NA	NA	1.3 J	ND(0.1) UJ

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SUMMARY OF METALS IN SOIL
BARRELS INC.
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Location	DS-17	DS-17	DS-18	DS-18	DS-18	DS-18	DS-19	DS-19	DS-20	DS-20
Depth	8-10	10-12	0-2	4-6	8-10	10-12	0-2	2-4	0-2	0-2 DUP
Sample ID	MAW-152	MAW-153	MAW-156	MAW-157	MAW-158	MAW-159	MAW-154	MAW-155	MAW-014	MAW-015
Date Sampled	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	8/11/94	11/29/94	11/29/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	NA	NA	ND(0.50) R	ND(0.50) R	NA	NA	NA	NA	ND(0.50)	ND(0.50)
Arsenic	NA	NA	10	5.9	NA	NA	NA	NA	5.0	4.0
Barium	NA	NA	80	78	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	ND(1.00)	ND(1.00)
Cadmium	NA	NA	0.08 J	ND(0.05) UJ	NA	NA	NA	NA	0.53	0.52
Chromium	NA	NA	5.3	9.7	NA	NA	NA	NA	8.4	8.3
Copper	NA	NA	7.5 J	7 J	NA	NA	NA	NA	12	9.0
Lead	NA	NA	3.6 J	2.4 J	NA	NA	5.8 J	6.7 J	30	15
Mercury	NA	NA	ND(0.1) UJ	ND(0.1) UJ	NA	NA	NA	NA	ND(0.10)	ND(0.10)
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	6.6	7.1
Selenium	NA	NA	ND(0.50)	ND(0.50)	NA	NA	NA	NA	0.83	0.56
Silver	NA	NA	ND(0.50)	ND(0.50)	NA	NA	NA	NA	ND(0.50)	ND(0.50)
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	76	55 J	43 J	41 J	54	36 J	32 J	47 J	120	68
Cyanide	NA	NA	ND(0.11)* UJ	ND(0.1) UJ	NA	NA	NA	NA	NA	NA

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SUMMARY OF METALS IN SOIL
BARRELS INC.
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Location	*DS-20*	*DS-20*	*US-1*	*US-1*	*US-2*	*US-2*	*US-2*	*US-3*	*US-3*	*US-3*
Depth	*2-4*	*4-6*	*14-16*	*20-22*	*0-2*	*14-16*	*20-22*	*2-4*	*8-10*	*8-10 Dup*
Sample ID	*MAW-016*	*MAW-017*	*RP-60*	*RP-61*	*RP-63*	*RP-64*	*RP-65*	*RP-65A*	*RP-66*	*RP-67*
Date Sampled	*11/29/94*	*11/29/94*	*5/18/93*	*5/18/93*	*5/18/93*	*5/18/93*	*5/18/93*	*5/19/93*	*5/19/93*	*5/19/93*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Antimony	ND(0.50)	ND(0.50)	ND(0.50) R	ND(0.50) R	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Arsenic	.5.3	1.4	1.6	0.82	6.8	0.94	0.60	5.0	6.4	7.4
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ND(1.00)	ND(1.00)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.21	0.52	0.05 J	0.10 J	0.08 J	ND(0.05)UJ	ND(0.05)UJ	0.23	0.11	0.11
Chromium	6.5	9.6	ND(2.50)	3.1	6.1	3.0	ND(2.5)	17	20	19
Copper	1.2	8.5	4.3	5.3	11	3.4	4.0	16.0	19	20
Lead	3.2	6.0	8.9	2.7	5.4	7.8	2.0	24.0	7.6	8.7
Mercury	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.12	ND(0.10)	ND(0.10)
Nickel	3.5	8.6	2.4	2.8	7.1	2.8	2.4	13	19	20
Selenium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	9.9	19	31	26	46	31	26	97	65	69
Cyanide	NA	NA	0.11	ND(0.10)	ND(0.10) R	ND(0.10)	ND(0.10)	0.17	ND(0.10)	ND(0.10)

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
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Location	US-3a	US-3a	US-3a	US-4	US-4	US-5	US-5	US-6	US-6	US-8
Depth	8-10	12-14	24-26	2-4	10-12	8-10	14-16	4-6	14-16	2-4
Sample ID	MAW-139	MAW-140	MAW-199	RP-68	RP-69	RP-70	RP-71	RP-72	RP-73	MAW-178
Date Sampled	8/10/94	8/10/94	8/24/94	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93	5/19/93	8/16/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA
Arsenic	NA	NA	NA	9.3	5.8	1.2	0.96	3.4	0.91	2.1 J
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA
Cadmium	NA	NA	NA	0.37	0.13	ND(0.05)	ND(0.05)	0.14	ND(0.05)	NA
Chromium	NA	NA	NA	11	20	3.5	3.6	13	3.2	NA
Copper	NA	NA	NA	28	22	4.1	6.5	16	5.9	NA
Lead	NA	NA	NA	160	7.9	4.5	2.2	6.8	2.5	30
Mercury	NA	NA	NA	0.44	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Nickel	NA	NA	NA	8.8	21	3.4	4.0	14	4.0	NA
Selenium	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA
Silver	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA
Thallium	NA	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA
Zinc	67	45	32	260	68	31	37	54	30	41 J
Cyanide	NA	NA	NA	0.30	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)UJ	NA

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*US-8*	*CT-1*	*CT-1*	*CT-1*	*CT-2*	*CT-2*	*CT-2*	*CT-3*	*CT-3*	*CT-3*
Depth	*8-10*	*0-2*	*2-4*	*8-10*	*0-2*	*2-4*	*8-10*	*0-2*	*4-6*	*16-18*
Sample ID	*MAW-179*	*TB-74*	*TB-75*	*TB-76*	*TB-84*	*TB-78*	*TB-79*	*TB-80*	*TB-81*	*TB-82*
Date Sampled	*8/16/94*	*5/20/93*	*5/20/93*	*5/20/93*	*5/20/93*	*5/20/93*	*5/20/93*	*5/20/93*	*5/20/93*	*5/20/93*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Antimony	NA	1.1 J	ND(0.50) R	ND(0.50) R	1.8 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R
Arsenic	23	5.5	5.0	4.4	5.5	3.0	4.0	5.0	5.0	3.3
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	NA	0.69 J	0.39 J	0.11 J	0.43 J	0.14 J	0.1 J	0.43 J	0.12 J	0.08 J
Chromium	NA	26 J	15 J	11 J	17 J	13 J	11 J	56 J	14 J	11 J
Copper	NA	24	18	14	36	12	15	100	20	13
Lead	15	50 J	21 J	5.1 J	100 J	30 J	5.5 J	150 J	19 J	4.8 J
Mercury	ND(0.10)	0.55	0.14	ND(0.10)	0.19	0.22 J	ND(0.10)UJ	0.15 J	ND(0.10)UJ	ND(0.10)UJ
Nickel	NA	13 J	12 J	20 J	12 J	8.9 J	12 J	31 J	14 J	12 J
Selenium	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	NA	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	NA	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ
Zinc	62 J	87 J	63 J	60 J	130 J	68 J	57 J	170 J	70 J	50 J
Cyanide	NA	0.36 J	0.45 J	ND(0.10)UJ	3.4 J	0.19 J	0.14 J	1.8 J	0.23 J	ND(0.10)UJ

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SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
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Location	CT-3	DD-1	DD-1	DD-1	DD-2	DD-2	DD-2	DD-3	DD-3	DD-3
Depth	16-18 Dup	0-2	2-4	4-6	0-2	2-4	4-6	0-2	0-2 Dup	4-6
Sample ID	TB-83	TB-88	TB-90	TB-89	TB-85	TB-86	TB-87	TB-91	TB-100	TB-92
Date Sampled	5/20/93	5/24/93	5/24/93	5/24/93	5/24/93	5/24/93	5/24/93	5/25/93	5/25/93	5/25/93
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	ND(0.50) R	ND(0.50) R	ND(0.50) R	ND(0.50) R	3.3 J	ND(0.50) R	ND(0.50) R	3.7 J	1.4 J	ND(0.50) R
Arsenic	3.5	6.0	2.8	3.9	14	5.1	3.7	7.4	6.9	0.35
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	ND(0.05)	0.43 J	0.17 J	0.07 J	4.1 J	0.12 J	0.08 J	1.1	0.65	0.10
Chromium	15 J	9.2 J	8.5 J	13 J	220 J	14 J	9.3 J	43	35 J	8.3 J
Copper	16	29	13	12	280	22	13	77	100	14
Lead	5.6 J	82 J	5.8 J	8.1 J	1500 J	10 J	4.9 J	220	200 J	6.2 J
Mercury	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)UJ	1.0 J	ND(0.10)UJ	ND(0.10)UJ	0.49 J	0.16 J	ND(0.10)
Nickel	18 J	10 J	11 J	17 J	53 J	18 J	12 J	13	16 J	10 J
Selenium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	0.98	ND(0.50)	ND(0.50)	ND(0.50)	0.53	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	1.1	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)UJ	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	59 J	210 J	56 J	52 J	2,000 J	67 J	51 J	350	460	64
Cyanide	ND(0.10)UJ	0.22	ND(0.10)	ND(0.10)	4.9	ND(0.10)	ND(0.10)	7.7 J	2.3 J	ND(0.10) R

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BARRELS INC.
LANSING, MICHIGAN
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Location	*DD-3*	*DD-4*	*DD-4*	*DD-4*	*DD-4*	*DD-4a*	*DD-4a*	*DD-5*	*DD-5*	*DD-5*
Depth	*6-8*	*0-2*	*4-6*	*6-8*	*6-8 Dup*	*10-12*	*12-14*	*0-2*	*6-8*	*8-10*
Sample ID	*TB-93*	*TB-96*	*TB-95*	*TB-94*	*TB-101*	*MAW-166*	*MAW-167*	*TB-98*	*TB-97*	*TB-99*
Date Sampled	*5/25/93*	*5/25/93*	*5/25/93*	*5/25/93*	*5/25/93*	*8/15/94*	*8/15/94*	*5/26/93*	*5/26/93*	*5/26/93*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter										
Antimony	ND(0.50) R	0.64 J	ND(0.50) R	ND(0.50) R	ND(0.50) R	NA	NA	3.1	ND(0.50)	ND(0.50)
Arsenic	2.7	5.8	1.5	2.6	1.9	NA	NA	14	1.2	5.8
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	NA	NA	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	0.14	1.3	0.23	0.15	0.16	NA	NA	1.6	0.11	0.10
Chromium	12 J	24 J	13 J	11 J	9.3 J	NA	NA	13	13	15
Copper	19	92	20	25	17	NA	NA	170	16	20
Lead	7.9 J	230 J	11 J	33 J	13 J	3.7	4.7	370	7.4	7.0
Mercury	ND(0.10)	0.37	0.10	ND(0.10)	ND(0.10)	NA	NA	4.7	ND(0.10)	ND(0.10)
Nickel	16 J	21 J	16 J	14 J	12 J	NA	NA	15	13	21
Selenium	ND(0.50)	0.61	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	0.70	ND(0.50)	ND(0.50)
Silver	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)
Thallium	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	NA	NA	ND(0.50)	ND(0.50)	ND(0.50)
Zinc	81	550	79	130	82	34	26 J	3,500	61	67
Cyanide	0.11 J	0.57 J	ND(0.10) R	ND(0.10)	ND(0.10)	NA	NA	0.41	ND(0.10)	ND(0.10)

J=value is an estimated quantity for det
ND = not detected (Target Detection Li
R = data was unusable for non detetecte
UJ = analyte was not detecte, value is a
* Detection limits raised due to matrix i

Note: "a" = Phase II and
"b" = Phase OAW

SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	DD-6	DD-6	DD-7	DD-7	DD-7	DD-7	BG-1	BG-1	BG-1	BG-1
Depth	0-2	2-4	0-2	4-6	8-10	10-12	0-2	2-4	4-6	4-6 DUP
Sample ID	MAW-173	MAW-174	MAW-205	MAW-206	MAW-208	MAW-209	MAW-160	MAW-161	MAW-162	MAW-163
Date Sampled	8/16/94	8/16/94	8/25/94	8/25/94	8/25/94	8/25/94	8/15/94	8/15/94	8/15/94	8/15/94
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Parameter										
Antimony	NA	NA	ND(0.94)*	ND(0.91)*	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	4.5	4.7	NA	NA	6.6	15	12	11
Barium	NA	NA	110	110	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	ND(0.19)*	0.50	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	12	11	NA	NA	13 J	34 J	21 J	27 J
Copper	NA	NA	18	15	NA	NA	NA	NA	NA	NA
Lead	22	5.5	7.9	9.7	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	ND(0.10)	ND(0.10)	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	39 J	88 J	29 J	37 J
Selenium	NA	NA	ND(0.50)	ND(0.50)	NA	NA	NA	NA	NA	NA
Silver	NA	NA	ND(0.50)	ND(0.50)	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	53 J	24 J	77	64	52	61	69 J	90 J	67 J	75 J
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

J=value is an estimated quantity for det
ND = not detected (Target Detection Li
R = data was unusable for non detetect
UJ = analyte was not detecte, value is a
* Detection limits raised due to matrix i

Note: "a" = Phase II and
"b" = Phase II SOAW

SUMMARY OF METALS IN SOIL
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*BG-1*	*BG-1*	*BG-2*	*BG-2*	*BG-2*	*BG-2*	*BG-2*	*MW-13*	*MW-13*
Depth	*6-8*	*8-10*	*0-2*	*2-4*	*4-6*	*6-8*	*8-10*	*4-6*	*18-20*
Sample ID	*MAW-164*	*MAW-165*	*MAW-168*	*MAW-169*	*MAW-170*	*MAW-171*	*MAW-172*	*MAW-036*	*MAW-032*
Date Sampled	*8/15/94*	*8/15/94*	*8/16/94*	*8/16/94*	*8/16/94*	*8/16/94*	*8/16/94*	*12/7/94*	*12/7/94*
Units	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*
Parameter									
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3.9 J	1.4 J	22	8.8	5.4	1.2 J	1.3 J	14	2.6
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	12 J	4.1 J	67 J	17 J	15 J	4.6 J	3.2 J	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	15	2.1
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	13 J	3.7 J	32 J	16 J	16 J	4 J	2.8 J	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	42 J	19 J	910 J	39 J	42 J	18 J	18 J	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA

J=value is an estimated quantity for det
ND = not detected (Target Detection Li
R = data was unusable for non detetecte
UJ = analyte was not detecte, value is a
* Detection limits raised due to matrix i

Note: "a" = Phase II and
"b" = Phas OAW

APPENDIX M

SUMMARY OF GROUNDWATER ANALYTICAL DATA

Location	*MW-1-47*	*MW-1-47*	*MW-1-47*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*
Sample ID	*TB-119*	*KJJ-182*	*TH-051*	*TB-116*	*BTH-001*	*KJJ-189*	*KJJ-190 DUP*	*TH-026*
Date Sampled	*6/23/93*	*8/23/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/7/94*
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.200)*	ND(0.200)*	ND(0.200)*
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	0.005	0.001	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	0.15	0.10	0.190	0.210	0.180
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.10)*	ND(0.10)*	ND(0.10)*
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.10)*	ND(0.10)*	ND(0.10)*
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.020)*	ND(0.020)*	ND(0.020)*
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.004	0.005	ND(0.002)*
1,1-Dichloroethene	ND(0.001)	ND(0.001) UJ	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)* UJ	ND(0.002)* UJ	ND(0.002)* UJ
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.006	0.006	0.004
Methylene chloride	0.003 BU	ND(0.001)	ND(0.001)	0.005 BU	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.002)*	ND(0.002)*	ND(0.002)*
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	0.009	0.002	0.009	0.008	0.009
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	0.009	ND(0.003)	0.009	0.008	0.009

Location	MW-1-47	MW-1-47	MW-1-47	MW-2-36	MW-2-36	MW-2-36	MW-2-36	MW-2-36
Sample ID	TB-119	KJJ-182	TH-051	TB-116	BTH-001	KJJ-189	KJJ-190 DUP	TH-026
Date Sampled	6/23/93	8/23/94	12/12/94	6/22/93	1/26/94	8/24/94	8/24/94	12/7/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Acenaphthylene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzidine	ND(0.050)	ND(0.005)	NA	ND(0.050)	NA	ND(0.050)	ND(0.050)	NA
Benzo(a)anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(b)fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(k)fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(ghi)perylene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(a)pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-chloroethoxy) methane	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-chloroethyl) ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-chloroisopropyl) ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-ethylhexyl) phthalate	ND(0.005)	0.049	NA	ND(0.005)	NA	0.017	0.019	NA
4-Bromophenyl phenyl ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Butyl benzyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2-Chloronaphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4-Chlorophenyl phenyl ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Chysene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Dibenz (a,h) anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Di-n-butyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,2-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,3-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,4-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
3,3'-Dichlorobenzidine	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Diethyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Dimethyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dinitrotoluene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,6-Dinitrotoluene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Di-n-octyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,2-Diphenylhydrazine	ND(0.010)	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA
Fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Fluorene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA

Location	*MW-1-47*	*MW-1-47*	*MW-1-47*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*
Sample ID	*TB-119*	*KJJ-182*	*TH-051*	*TB-116*	*BTH-001*	*KJJ-189*	*KJJ-190 DUP*	*TH-026*
Date Sampled	*6/23/93*	*8/23/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/7/94*
Hexachlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Hexachlorobutadiene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Hexachlorocyclopentadiene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Hexachloroethane	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Indeno(1,2,3-cd) pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Isophorone	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4,4'-Methylene-bis-(2-chloro-aniline)	ND(0.010)	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA
Naphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Nitrobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
N-Notrosodimethylamine	ND(0.010)	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA
** N-Nitrosodiphenylamine	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
N-Nitroso-di-n-propylamine	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Phenanthrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,2,4-Trichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Acid Compounds								
4-Chloro-3-methylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2-Chlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dichlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4,6-Dinitro-2-methylphenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
2,4-Dinitrophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
2-Nitrophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4-Nitrophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Pentachlorophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Phenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4,6-Trichlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA

** Indistinguishable from diphenylamine

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-1-47*	*MW-1-47*	*MW-1-47*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*
Sample ID	*TB-119*	*KJJ-182*	*TH-051*	*TB-116*	*BTH-001*	*KJJ-189*	*KJJ-190 DUP*	*TH-026*
Date Sampled	*6/23/93*	*8/23/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/7/94*
Priority Pollutant Inorganics (mg/L)								
Antimony	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	NA
Arsenic	0.001	ND(0.001)	ND(0.001)	0.011	NA	0.019	0.019	0.018
Beryllium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	NA
Cadmium	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	NA	NA
Chromium	ND(0.050)	NA	NA	ND(0.050)	NA	NA	NA	NA
Copper	ND(0.025)	NA	NA	ND(0.025)	NA	NA	NA	NA
Lead	ND(0.003)	ND(0.003)	NA	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA
Mercury	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	NA	NA
Nickel	ND(0.050)	NA	NA	0.05	NA	NA	NA	NA
Selenium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	NA
Silver	ND(0.005)UJ	NA	NA	ND(0.005)UJ	NA	NA	NA	NA
Thallium	ND(0.002)	NA	NA	ND(0.002)	NA	NA	NA	NA
Zinc	0.05	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Cyanide	ND(0.005)	NA	NA	ND(0.005)UJ	NA	NA	NA	NA

Location	*MW-1-47*	*MW-1-47*	*MW-1-47*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*	*MW-2-36*
Sample ID	*TB-119*	*KJJ-182*	*TH-051*	*TB-116*	*BTH-001*	*KJJ-189*	*KJJ-190 DUP*	*TH-026*
Date Sampled	*6/23/93*	*8/23/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/7/94*
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
alpha-BHC	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
beta-BHC	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
delta-BHC	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
gamma-BHC (Lindane)	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
alpha-Chlordane	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
gamma-Chlordane	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
4,4'-DDD	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
4,4'-DDE	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
4,4'-DDT	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Dieldrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
alpha-Endosulfan	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
beta-Endosulfan	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endosulfan sulfate	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Endrin aldehyde	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01) UJ	ND(0.01) UJ	NA
Heptachlor	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Heptachlor epoxide	ND(0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA
Toxaphene	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1016	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1221	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1232	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1242	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1248	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1254	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA
PCB-1260	ND(0.10)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	ND(0.10)	NA

Location	*MW-2-36*	*MW-2-45*	*MW-2-45*	*MW-2-45*	*MW-3-33*	*MW-3-33*	*MW-3-33*	*MW-3-33*
Sample ID	*TH-033 DUP*	*TB-117*	*KJJ-191*	*TH-037*	*TB-120*	*TB-122 DUP*	*KJJ-200*	*TH-048*
Date Sampled	*12/7/94*	*6/22/93*	*8/24/94*	*12/8/94*	*6/23/93*	*6/23/93*	*8/25/94*	*12/12/94*
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	0.220	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	0.001	0.001	0.002
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001) UJ	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001) UJ	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	0.003
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	0.004 BU	ND(0.001)	.001 B	0.004 BU	0.004 BU	ND(0.001)	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	0.004	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	0.004	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.00[illegible]

Location	MW-2-36	MW-2-45	MW-2-45	MW-2-45	MW-3-33	MW-3-33	MW-3-33	MW-3-33
Sample ID	TH-033 DUP	TB-117	KJJ-191	TH-037	TB-120	TB-122 DUP	KJJ-200	TH-048
Date Sampled	12/7/94	6/22/93	8/24/94	12/8/94	6/23/93	6/23/93	8/25/94	12/12/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Acenaphthylene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Anthracene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Benzidine	NA	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	ND(0.050)	NA
Benzo(a)anthracene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Benzo(b)fluoranthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Benzo(k)fluoranthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Benzo(ghi)perylene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Benzo(a)pyrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Bis(2-chloroethoxy) methane	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Bis(2-chloroethyl) ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Bis(2-chloroisopropyl) ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Bis(2-ethylhexyl) phthalate	NA	ND(0.005)	0.071	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
4-Bromophenyl phenyl ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Butyl benzyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2-Chloronaphthalene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
4-Chlorophenyl phenyl ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Chysene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Dibenz (a,h) anthracene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Di-n-butyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
1,2-Dichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
1,3-Dichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
1,4-Dichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
3,3'-Dichlorobenzidine	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
Diethyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Dimethyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2,4-Dinitrotoluene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2,6-Dinitrotoluene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Di-n-octyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
1,2-Diphenylhydrazine	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	ND(0.010)	NA
Fluoranthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Fluorene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA

Location	*MW-2-36*	*MW-2-45*	*MW-2-45*	*MW-2-45*	*MW-3-33*	*MW-3-33*	*MW-3-33*	*MW-3-33*
Sample ID	*TH-033 DUP*	*TB-117*	*KJJ-191*	*TH-037*	*TB-120*	*TB-122 DUP*	*KJJ-200*	*TH-048*
Date Sampled	*12/7/94*	*6/22/93*	*8/24/94*	*12/8/94*	*6/23/93*	*6/23/93*	*8/25/94*	*12/12/94*
Hexachlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Hexachlorobutadiene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Hexachlorocyclopentadiene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Hexachloroethane	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Indeno(1,2,3-cd) pyrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Isophorone	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
4,4'-Methyllene-bis-(2-chloro-anilline)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	ND(0.010)	NA
Naphthalene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Nitrobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
N-Notrosodimethylamine	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	ND(0.010)	NA
** N-Nitrosodiphenylamine	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
N-Nitroso-di-n-propylamine	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Phenanthrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Pyrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
1,2,4-Trichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
Acid Compounds								
4-Chloro-3-methylphenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2-Chlorophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2,4-Dichlorophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2,4-Dimethylphenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
4,6-Dinitro-2-methylphenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
2,4-Dinitrophenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
2-Nitrophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
4-Nitrophenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
Pentachlorophenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
Phenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA
2,4,6-Trichlorophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	ND(0.005)	NA

** Indistinguishable from diphenylamine

SUMMARY GRO VATER DATA
BARRL NC.
LANSING, MICHIGAN
January 1995

Location	MW-2-36	MW-2-45	MW-2-45	MW-2-45	MW-3-33	MW-3-33	MW-3-33	MW-3-33
Sample ID	TH-033 DUP	TB-117	KJJ-191	TH-037	TB-120	TB-122 DUP	KJJ-200	TH-048
Date Sampled	12/7/94	6/22/93	8/24/94	12/8/94	6/23/93	6/23/93	8/25/94	12/12/94
Priority Pollutant Inorganics (mg/L)								
Antimony	NA	ND(0.005)	NA	NA	ND(0.005)	ND(0.005)	NA	NA
Arsenic	0.028	0.001	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Beryllium	NA	ND(0.005)	NA	NA	ND(0.005)	ND(0.005)	NA	NA
Cadmium	NA	ND(0.0002)	NA	NA	ND(0.0002)	ND(0.0002)	NA	NA
Chromium	NA	ND(0.050)	NA	NA	ND(0.050)	ND(0.050)	NA	NA
Copper	NA	ND(0.025)	NA	NA	ND(0.025)	ND(0.025)	NA	NA
Lead	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	ND(0.003)	NA
Mercury	NA	ND(0.0002)	NA	NA	ND(0.0002)	ND(0.0002)	NA	NA
Nickel	NA	ND(0.050)	NA	NA	ND(0.050)	ND(0.050)	NA	NA
Selenium	NA	ND(0.005)	NA	NA	ND(0.005)	ND(0.005)	NA	NA
Silver	NA	ND(0.005)UJ	NA	NA	ND(0.005)UJ	ND(0.005)UJ	NA	NA
Thallium	NA	ND(0.002)	NA	NA	ND(0.002)	ND(0.002)	NA	NA
Zinc	NA	0.04	ND(0.020)	NA	ND(0.020)	ND(0.020)	ND(0.020)	NA
Cyanide	NA	ND(0.005)UJ	NA	NA	ND(0.005)	0.018	NA	NA

Location	*MW-2-36*	*MW-2-45*	*MW-2-45*	*MW-2-45*	*MW-3-33*	*MW-3-33*	*MW-3-33*	*MW-3-33*
Sample ID	*TH-033 DUP*	*TB-117*	*KJJ-191*	*TH-037*	*TB-120*	*TB-122 DUP*	*KJJ-200*	*TH-048*
Date Sampled	*12/7/94*	*6/22/93*	*8/24/94*	*12/8/94*	*6/23/93*	*6/23/93*	*8/25/94*	*12/12/94*
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
alpha-BHC	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
beta-BHC	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
delta-BHC	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
gamma-BHC (Lindane)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
alpha-Chlordane	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
gamma-Chlordane	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
4,4'-DDD	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
4,4'-DDE	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
4,4'-DDT	NA	ND(0.01)	ND(0.01)	NA	ND(0.02)UJ	ND(0.02)*UJ	ND(0.01)	NA
Dieldrin	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
alpha-Endosulfan	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
beta-Endosulfan	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
Endosulfan sulfate	NA	ND(0.01)	ND(0.01)	NA	0.028J	ND(0.01)UJ	ND(0.01)	NA
Endrin	NA	ND(0.01)	ND(0.01)	NA	0.021J	ND(0.02)*UJ	ND(0.01)	NA
Endrin aldehyde	NA	ND(0.01)	ND(0.01) UJ	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01) UJ	NA
Heptachlor	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
Heptachlor epoxide	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)UJ	ND(0.01)	NA
Toxaphene	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1016	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1221	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1232	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1242	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1248	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1254	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA
PCB-1260	NA	ND(0.10)	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)UJ	ND(0.10)	NA

Location	*MW-3-46*	*MW-3-46*	*MW-3-46*	*MW-4-34*	*MW-4-34*	*MW-4-34*	*MW-4-50*	*MW-4-50*
Sample ID	*TB-121*	*KJJ-201*	*TH-049*	*TB-111*	*KJJ-185*	*TH-022*	*TB-112*	*KJJ-184*
Date Sampled	*6/23/93*	*8/25/94*	*12/12/94*	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	0.001	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	0.002
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	0.004 BU	ND(0.001)	0.001 B	0.004 BU	ND(0.001)	ND(0.001)	0.003 BU	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)

Location	MW-3-46	MW-3-46	MW-3-46	MW-4-34	MW-4-34	MW-4-34	MW-4-50	MW-4-50
Sample ID	TB-121	KJJ-201	TH-049	TB-111	KJJ-185	TH-022	TB-112	KJJ-184
Date Sampled	6/23/93	8/25/94	12/12/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Acenaphthylene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzidine	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)
Benzo(a)anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(b)fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(k)fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(ghi)perylene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(a)pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-chloroethoxy) methane	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-chloroethyl) ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-chloroisopropyl) ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-ethylhexyl) phthalate	ND(0.005)	0.058	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	0.057
4-Bromophenyl phenyl ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Butyl benzyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2-Chloronaphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4-Chlorophenyl phenyl ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Chysene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Dibenz (a,h) anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Di-n-butyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,2-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,3-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,4-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
3,3'-Dichlorobenzidine	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
Diethyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Dimethyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dinitrotoluene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,6-Dinitrotoluene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Di-n-octyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,2-Diphenylhydrazine	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
Fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Fluorene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)

SUMMARY GRO VATER DATA
BARRE NC.
LANSING, MICHIGAN
January 1995

Location	MW-3-46	MW-3-46	MW-3-46	MW-4-34	MW-4-34	MW-4-34	MW-4-50	MW-4-50
Sample ID	TB-121	KJJ-201	TH-049	TB-111	KJJ-185	TH-022	TB-112	KJJ-184
Date Sampled	6/23/93	8/25/94	12/12/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Hexachlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Hexachlorobutadiene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Hexachlorocyclopentadiene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Hexachloroethane	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Indeno(1,2,3-cd) pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Isophorone	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4,4'-Methyllene-bis-(2-chloro-aniline)	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
Naphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Nitrobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
N-Notrosodimethylamine	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
** N-Nitrosodiphenylamine	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
N-Nitroso-di-n-propylamine	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Phenanthrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,2,4-Trichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Acid Compounds								
4-Chloro-3-methylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2-Chlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dichlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4,6-Dinitro-2-methylphenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
2,4-Dinitrophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
2-Nitrophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4-Nitrophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
Pentachlorophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
Phenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4,6-Trichlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)

** Indistinguishable from diphenylamine

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-3-46*	*MW-3-46*	*MW-3-46*	*MW-4-34*	*MW-4-34*	*MW-4-34*	*MW-4-50*	*MW-4-50*
Sample ID	*TB-121*	*KJJ-201*	*TH-049*	*TB-111*	*KJJ-185*	*TH-022*	*TB-112*	*KJJ-184*
Date Sampled	*6/23/93*	*8/25/94*	*12/12/94*	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*
Priority Pollutant Inorganics (mg/L)								
Antimony	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Arsenic	ND(0.001)	0.001	0.002	0.011	0.01	0.009	0.004	0.005
Beryllium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Cadmium	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA
Chromium	ND(0.050)	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Copper	ND(0.025)	NA	NA	ND(0.025)	NA	NA	ND(0.025)	NA
Lead	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)
Mercury	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA
Nickel	ND(0.050)	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Selenium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Silver	ND(0.005)UJ	NA	NA	ND(0.005)UJ	NA	NA	ND(0.005)UJ	NA
Thallium	ND(0.002)	NA	NA	ND(0.002)	NA	NA	ND(0.002)	NA
Zinc	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	9.9	2.1
Cyanide	ND(0.005)	NA	NA	ND(0.005)	NA	NA	ND(0.005)UJ	NA

SUMMARY GRO VATER DATA
BARRL NC.
LANSING, MICHIGAN
January 1995

Location	MW-3-46	MW-3-46	MW-3-46	MW-4-34	MW-4-34	MW-4-34	MW-4-50	MW-4-50
Sample ID	TB-121	KJJ-201	TH-049	TB-111	KJJ-185	TH-022	TB-112	KJJ-184
Date Sampled	6/23/93	8/25/94	12/12/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	ND(0.01)UJ	ND(0.01)	NA	ND(0.02)*	ND(0.01)	NA	ND(0.01)	ND(0.01)
alpha-BHC	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
beta-BHC	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
delta-BHC	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
gamma-BHC (Lindane)	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
alpha-Chlordane	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
gamma-Chlordane	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
4,4'-DDD	ND(0.01)UJ	ND(0.01)	NA	ND(0.06)*UJ	0.02	NA	ND(0.01)	ND(0.01)
4,4'-DDE	ND(0.01)UJ	ND(0.01)	NA	ND(0.05)*UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
4,4'-DDT	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
Dieldrin	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
alpha-Endosulfan	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
beta-Endosulfan	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endosulfan sulfate	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endrin	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endrin aldehyde	ND(0.01)UJ	ND(0.01) UJ	NA	ND(0.01)	ND(0.01) UJ	NA	ND(0.01)	ND(0.01) UJ
Heptachlor	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Heptachlor epoxide	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Toxaphene	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1016	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1221	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1232	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1242	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1248	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1254	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)
PCB-1260	ND(0.10)UJ	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.10)	ND(0.10)

Location	MW-4-50	MW-4-50	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34
Sample ID	MAW-024	MAW-027 DUP	TB-108	TB-110 DUP	BTH-004	KJJ-192	KJJ-193 DUP	TH-021
Date Sampled	12/7/94	12/7/94	6/22/93	6/22/93	1/26/94	8/24/94	8/24/94	12/6/94
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	NA	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	0.003	0.002	0.002	NA	0.002	0.003	0.003
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	0.008	0.007	NA	0.023	0.022	0.030
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	ND(0.001)	0.005 BU	0.004 BU	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	0.003	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	0.003	0.002	0.002
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	ND(0.00

Location	MW-4-50	MW-4-50	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34
Sample ID	MAW-024	MAW-027 DUP	TB-108	TB-110 DUP	BTH-004	KJJ-192	KJJ-193 DUP	TH-021
Date Sampled	12/7/94	12/7/94	6/22/93	6/22/93	1/26/94	8/24/94	8/24/94	12/6/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Acenaphthylene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Anthracene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzidine	NA	NA	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	NA
Benzo(a)anthracene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(b)fluoranthene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(k)fluoranthene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(ghi)perylene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Benzo(a)pyrene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-chloroethoxy) methane	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-chloroethyl) ether	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-chloroisopropyl) ether	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Bis(2-ethylhexyl) phthalate	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4-Bromophenyl phenyl ether	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Butyl benzyl phthalate	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2-Chloronaphthalene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4-Chlorophenyl phenyl ether	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Chysene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Dibenz (a,h) anthracene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Di-n-butyl phthalate	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,2-Dichlorobenzene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,3-Dichlorobenzene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,4-Dichlorobenzene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
3,3'-Dichlorobenzidine	NA	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Diethyl phthalate	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Dimethyl phthalate	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dinitrotoluene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,6-Dinitrotoluene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Di-n-octyl phthalate	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,2-Diphenylhydrazine	NA	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA
Fluoranthene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Fluorene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-4-50	MW-4-50	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34	MW-5-34
Sample ID	MAW-024	MAW-027 DUP	TB-108	TB-110 DUP	BTH-004	KJJ-192	KJJ-193 DUP	TH-021
Date Sampled	12/7/94	12/7/94	6/22/93	6/22/93	1/26/94	8/24/94	8/24/94	12/6/94
Hexachlorobenzene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Hexachlorobutadiene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Hexachlorocyclopentadiene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Hexachloroethane	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Indeno(1,2,3-cd) pyrene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Isophorone	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4,4'-Methyllene-bis-(2-chloro-aniline)	NA	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA
Naphthalene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Nitrobenzene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
N-Notrosodimethylamine	NA	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA
** N-Nitrosodiphenylamine	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
N-Nitroso-di-n-propylamine	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Phenanthrene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Pyrene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
1,2,4-Trichlorobenzene	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
Acid Compounds								
4-Chloro-3-methylphenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2-Chlorophenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dichlorophenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4-Dimethylphenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4,6-Dinitro-2-methylphenol	NA	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
2,4-Dinitrophenol	NA	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
2-Nitrophenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
4-Nitrophenol	NA	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Pentachlorophenol	NA	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA
Phenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA
2,4,6-Trichlorophenol	NA	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA

** Indistinguishable from diphenylamine

SUMMARY GRO VATER DATA
BARRL .NC.
LANSING, MICHIGAN
January 1995

Location	*MW-4-50*	*MW-4-50*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*
Sample ID	*MAW-024*	*MAW-027 DUP*	*TB-108*	*TB-110 DUP*	*BTH-004*	*KJJ-192*	*KJJ-193 DUP*	*TH-021*
Date Sampled	*12/7/94*	*12/7/94*	*6/22/93*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/6/94*
Priority Pollutant Inorganics (mg/L)								
Antimony	NA	NA	ND(0.005)	ND(0.005)	NA	NA	NA	NA
Arsenic	ND(0.001)	ND(0.001)	0.004	0.004	NA	0.003	0.002	0.003
Beryllium	NA	NA	ND(0.005)	ND(0.005)	NA	NA	NA	NA
Cadmium	NA	NA	ND(0.0002)	ND(0.0002)	NA	NA	NA	NA
Chromium	NA	NA	ND(0.050)	ND(0.050)	NA	NA	NA	NA
Copper	NA	NA	ND(0.025)	ND(0.025)	NA	NA	NA	NA
Lead	NA	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA
Mercury	NA	NA	ND(0.0002)	ND(0.0002)	NA	NA	NA	NA
Nickel	NA	NA	ND(0.050)	ND(0.050)	NA	NA	NA	NA
Selenium	NA	NA	ND(0.005)	ND(0.005)	NA	NA	NA	NA
Silver	NA	NA	ND(0.005)UJ	ND(0.005)UJ	NA	NA	NA	NA
Thallium	NA	NA	ND(0.002)	ND(0.002)	NA	NA	NA	NA
Zinc	NA	NA	0.05	0.04	NA	ND(0.020)	ND(0.020)	NA
Cyanide	NA	NA	ND(0.005)	ND(0.005)	NA	NA	NA	NA

Location	*MW-4-50*	*MW-4-50*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*	*MW-5-34*
Sample ID	*MAW-024*	*MAW-027 DUP*	*TB-108*	*TB-110 DUP*	*BTH-004*	*KJJ-192*	*KJJ-193 DUP*	*TH-021*
Date Sampled	*12/7/94*	*12/7/94*	*6/22/93*	*6/22/93*	*1/26/94*	*8/24/94*	*8/24/94*	*12/6/94*
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	NA	NA	ND(0.01)	ND(0.02)*	ND(0.01)	ND(0.01)	ND(0.01)	NA
alpha-BHC	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
beta-BHC	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
delta-BHC	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
gamma-BHC (Lindane)	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
alpha-Chlordane	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
gamma-Chlordane	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
4,4'-DDD	NA	NA	ND(0.03)	ND(0.02)*	ND(0.01)	ND(0.01)	ND(0.01)	NA
4,4'-DDE	NA	NA	ND(0.04)	ND(0.02)*	ND(0.01)	ND(0.01)	ND(0.01)	NA
4,4'-DDT	NA	NA	ND(0.01)	ND(0.5)*	ND(0.01)	ND(0.01)	ND(0.01)	NA
Dieldrin	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
alpha-Endosulfan	NA	NA	ND(0.02)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
beta-Endosulfan	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
Endosulfan sulfate	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
Endrin	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
Endrin aldehyde	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01) UJ	ND(0.01) UJ	NA
Heptachlor	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
Heptachlor epoxide	NA	NA	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	NA
Toxaphene	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1016	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1221	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1232	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1242	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1248	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1254	NA	NA	0.73 S	0.35 S	ND(0.10)	ND(0.10)	ND(0.10)	NA
PCB-1260	NA	NA	ND(0.10)	ND(0.010)	ND(0.10)	ND(0.10)	ND(0.10)	NA

Location	MW-5-50	MW-5-50	MW-5-50	MW-6-32	MW-6-32	MW-6-32	MW-6-32	MW-7-33
Sample ID	TB-125	KJJ-194	TH-050	TB-105	BTH-002	KJJ-195	TH-041	TB-106
Date Sampled	6/23/93	8/25/94	12/12/94	6/22/93	1/26/94	8/24/94	12/8/94	6/22/93
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	NA	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	0.012	0.009	0.010	0.003	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	0.002	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	0.004 BU	ND(0.001)	ND(0.001)	0.006 BU	NA	ND(0.001)	0.001	0.004 BU
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	0.007	NA	0.008	0.009	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	NA	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	ND(0.003)

Location	MW-5-50	MW-5-50	MW-5-50	MW-6-32	MW-6-32	MW-6-32	MW-6-32	MW-7-33
Sample ID	TB-125	KJJ-194	TH-050	TB-105	BTH-002	KJJ-195	TH-041	TB-106
Date Sampled	6/23/93	8/25/94	12/12/94	6/22/93	1/26/94	8/24/94	12/8/94	6/22/93
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Acenaphthylene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Benzidine	ND(0.050)	ND(0.050)	NA	ND(0.050)	NA	ND(0.050)	NA	ND(0.050)
Benzo(a)anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Benzo(b)fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Benzo(k)fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Benzo(ghi)perylene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Benzo(a)pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Bis(2-chloroethoxy) methane	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Bis(2-chloroethyl) ether	ND(0.005)	0.061	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Bis(2-chloroisopropyl) ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Bis(2-ethylhexyl) phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
4-Bromophenyl phenyl ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Butyl benzyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2-Chloronaphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
4-Chlorophenyl phenyl ether	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Chysene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Dibenz (a,h) anthracene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Di-n-butyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
1,2-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
1,3-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
1,4-Dichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
3,3'-Dichlorobenzidine	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)
Diethyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Dimethyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2,4-Dinitrotoluene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2,6-Dinitrotoluene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Di-n-octyl phthalate	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
1,2-Diphenylhydrazine	ND(0.010)	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)
Fluoranthene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Fluorene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)

Location	*MW-5-50*	*MW-5-50*	*MW-5-50*	*MW-6-32*	*MW-6-32*	*MW-6-32*	*MW-6-32*	*MW-7-33*
Sample ID	*TB-125*	*KJJ-194*	*TH-050*	*TB-105*	*BTH-002*	*KJJ-195*	*TH-041*	*TB-106*
Date Sampled	*6/23/93*	*8/25/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*12/8/94*	*6/22/93*
Hexachlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Hexachlorobutadiene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Hexachlorocyclopentadiene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Hexachloroethane	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Indeno(1,2,3-cd) pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Isophorone	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
4,4'-Methyllene-bis-(2-chloro-aniline)	ND(0.010)	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)
Naphthalene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Nitrobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
N-Notrosodimethylamine	ND(0.010)	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)
** N-Nitrosodiphenylamine	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
N-Nitroso-di-n-propylamine	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Phenanthrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Pyrene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
1,2,4-Trichlorobenzene	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
Acid Compounds								
4-Chloro-3-methylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2-Chlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2,4-Dichlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2,4-Dimethylphenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
4,6-Dinitro-2-methylphenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)
2,4-Dinitrophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)
2-Nitrophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
4-Nitrophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)
Pentachlorophenol	ND(0.020)	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)
Phenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)
2,4,6-Trichlorophenol	ND(0.005)	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)

** Indistinguishable from diphenylamine

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-5-50*	*MW-5-50*	*MW-5-50*	*MW-6-32*	*MW-6-32*	*MW-6-32*	*MW-6-32*	*MW-7-33*
Sample ID	*TB-125*	*KJJ-194*	*TH-050*	*TB-105*	*BTH-002*	*KJJ-195*	*TH-041*	*TB-106*
Date Sampled	*6/23/93*	*8/25/94*	*12/12/94*	*6/22/93*	*1/26/94*	*8/24/94*	*12/8/94*	*6/22/93*
Priority Pollutant Inorganics (mg/L)								
Antimony	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	ND(0.005)
Arsenic	ND(0.001)	ND(0.001)	0.002	0.002	NA	0.003	0.003	0.002
Beryllium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	ND(0.005)
Cadmium	0.0006	NA	NA	0.0004	NA	NA	NA	ND(0.0002)
Chromium	ND(0.050)	NA	NA	ND(0.050)	NA	NA	NA	ND(0.050)
Copper	ND(0.025)	NA	NA	ND(0.025)	NA	NA	NA	ND(0.025)
Lead	0.008	0.005	NA	0.009	ND(0.003)	ND(0.003)	NA	ND(0.003)
Mercury	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	NA	ND(0.0002)
Nickel	ND(0.050)	NA	NA	0.13	NA	NA	NA	0.06
Selenium	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA	ND(0.005)
Silver	ND(0.005)UJ	NA	NA	ND(0.005)UJ	NA	NA	NA	ND(0.005)UJ
Thallium	ND(0.002)	NA	NA	ND(0.002)	NA	NA	NA	ND(0.002)
Zinc	21	5.7	NA	0.08	NA	ND(0.020)	NA	ND(0.020)
Cyanide	ND(0.005)	NA	NA	0.01	NA	NA	NA	ND(0.005)

Location	MW-5-50	MW-5-50	MW-5-50	MW-6-32	MW-6-32	MW-6-32	MW-6-32	MW-7-33
Sample ID	TB-125	KJJ-194	TH-050	TB-105	BTH-002	KJJ-195	TH-041	TB-106
Date Sampled	6/23/93	8/25/94	12/12/94	6/22/93	1/26/94	8/24/94	12/8/94	6/22/93
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.03)
alpha-BHC	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
beta-BHC	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
delta-BHC	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
gamma-BHC (Lindane)	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
alpha-Chlordane	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
gamma-Chlordane	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
4,4'-DDD	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
4,4'-DDE	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
4,4'-DDT	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
Dieldrin	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
alpha-Endosulfan	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
beta-Endosulfan	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
Endosulfan sulfate	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
Endrin	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
Endrin aldehyde	ND (0.01)	ND(0.01) UJ	NA	ND(0.01)	NA	ND(0.01) UJ	NA	ND(0.02)
Heptachlor	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
Heptachlor epoxide	ND (0.01)	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)
Toxaphene	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)
PCB-1016	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)
PCB-1221	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)
PCB-1232	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)
PCB-1242	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)
PCB-1248	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)
PCB-1254	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	0.67
PCB-1260	ND (0.01)	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)

Location	MW-7-33	MW-7-33	MW-7-33	MW-7-48	MW-7-48	MW-7-48	MW-8-34	MW-8-34
Sample ID	BTH-003	KJJ-187	TH-020	TB-107	KJJ-186	TH-023	TB-109	KJJ-183
Date Sampled	1/26/94	8/23/94	12/6/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Priority Pollutant VOCs (mg/L)								
Acrolein	NA	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	NA	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	NA	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	NA	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)	ND(0.001)
1,1-Dichloroethene	NA	ND(0.001) UJ	ND(0.001)	ND(0.001)	ND(0.001) UJ	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloropropane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	NA	ND(0.001)	ND(0.001)	0.005 BU	ND(0.001)	ND(0.001)	0.004 BU	ND(0.001)
1,1,2,2-Tetrachloroethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	NA	ND(0.001)	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	NA	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	NA	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	NA	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.00

Location	MW-7-33	MW-7-33	MW-7-33	MW-7-48	MW-7-48	MW-7-48	MW-8-34	MW-8-34
Sample ID	BTH-003	KJJ-187	TH-020	TB-107	KJJ-186	TH-023	TB-109	KJJ-183
Date Sampled	1/26/94	8/23/94	12/6/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Acenaphthylene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Anthracene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzidine	NA	ND(0.050)	NA	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)
Benzo(a)anthracene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(b)fluoranthene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(k)fluoranthene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(ghi)perylene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Benzo(a)pyrene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-chloroethoxy) methane	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-chloroethyl) ether	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-chloroisopropyl) ether	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Bis(2-ethylhexyl) phthalate	NA	ND(0.005)	NA	0.009	0.12	NA	ND(0.005)	ND(0.005)
4-Bromophenyl phenyl ether	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Butyl benzyl phthalate	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2-Chloronaphthalene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4-Chlorophenyl phenyl ether	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Chysene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Dibenz (a,h) anthracene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Di-n-butyl phthalate	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,2-Dichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,3-Dichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,4-Dichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
3,3'-Dichlorobenzidine	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
Diethyl phthalate	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Dimethyl phthalate	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dinitrotoluene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,6-Dinitrotoluene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Di-n-octyl phthalate	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,2-Diphenylhydrazine	NA	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
Fluoranthene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Fluorene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)

Location	*MW-7-33*	*MW-7-33*	*MW-7-33*	*MW-7-48*	*MW-7-48*	*MW-7-48*	*MW-8-34*	*MW-8-34*
Sample ID	*BTH-003*	*KJJ-187*	*TH-020*	*TB-107*	*KJJ-186*	*TH-023*	*TB-109*	*KJJ-183*
Date Sampled	*1/26/94*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*	*12/6/94*	*6/22/93*	*8/23/94*
Hexachlorobenzene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Hexachlorobutadiene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Hexachlorocyclopentadiene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Hexachloroethane	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Indeno(1,2,3-cd) pyrene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Isophorone	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4,4'-Methyllene-bis-(2-chloro-aniline)	NA	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
Naphthalene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Nitrobenzene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
N-Notrosodimethylamine	NA	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
** N-Nitrosodiphenylamine	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
N-Nitroso-di-n-propylamine	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Phenanthrene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Pyrene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
1,2,4-Trichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
Acid Compounds								
4-Chloro-3-methylphenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2-Chlorophenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dichlorophenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4-Dimethylphenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4,6-Dinitro-2-methylphenol	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
2,4-Dinitrophenol	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
2-Nitrophenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
4-Nitrophenol	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
Pentachlorophenol	NA	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)
Phenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)
2,4,6-Trichlorophenol	NA	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)

** Indistinguishable from diphenylamine

SUMMARY GRO VATER DATA
BARRL NC.
LANSING, MICHIGAN
January 1995

Location	MW-7-33	MW-7-33	MW-7-33	MW-7-48	MW-7-48	MW-7-48	MW-8-34	MW-8-34
Sample ID	BTH-003	KJJ-187	TH-020	TB-107	KJJ-186	TH-023	TB-109	KJJ-183
Date Sampled	1/26/94	8/23/94	12/6/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Priority Pollutant Inorganics (mg/L)								
Antimony	NA	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Arsenic	NA	ND(0.001)	ND(0.001)	0.001	ND(0.001)	0.002	0.005	0.007
Beryllium	NA	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Cadmium	NA	NA	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA
Chromium	NA	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Copper	NA	NA	NA	ND(0.025)	NA	NA	ND(0.025)	NA
Lead	NA	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)
Mercury	NA	NA	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA
Nickel	NA	NA	NA	ND(0.050)	NA	NA	ND(0.050)	NA
Selenium	NA	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA
Silver	NA	NA	NA	ND(0.005)UJ	NA	NA	ND(0.005)UJ	NA
Thallium	NA	NA	NA	ND(0.002)	NA	NA	ND(0.002)	NA
Zinc	NA	ND(0.020)	NA	0.23	ND(0.020)	NA	ND(0.020)	ND(0.020)
Cyanide	NA	NA	NA	ND(0.005)	NA	NA	ND(0.005)	NA

Location	MW-7-33	MW-7-33	MW-7-33	MW-7-48	MW-7-48	MW-7-48	MW-8-34	MW-8-34
Sample ID	BTH-003	KJJ-187	TH-020	TB-107	KJJ-186	TH-023	TB-109	KJJ-183
Date Sampled	1/26/94	8/23/94	12/6/94	6/22/93	8/23/94	12/6/94	6/22/93	8/23/94
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
alpha-BHC	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
beta-BHC	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
delta-BHC	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
gamma-BHC (Lindane)	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
alpha-Chlordane	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
gamma-Chlordane	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
4,4'-DDD	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
4,4'-DDE	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
4,4'-DDT	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Dieldrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
alpha-Endosulfan	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
beta-Endosulfan	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endosulfan sulfate	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endrin	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Endrin aldehyde	ND(0.01)	ND(0.01) UJ	NA	ND(0.01)	ND(0.01) UJ	NA	ND(0.01)	ND(0.01) UJ
Heptachlor	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Heptachlor epoxide	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)	NA	ND(0.01)	ND(0.01)
Toxaphene	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1016	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1221	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1232	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1242	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1248	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1254	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)
PCB-1260	ND(0.10)	ND(0.10)	NA	ND(0.010)	ND(0.10)	NA	ND(0.010)	ND(0.10)

Location	MW-8-34	MW-9-33	MW-9-33	MW-9-33	MW-9-45	MW-9-45	MW-9-45	MW-10-34
Sample ID	TH-025	TB-123	KJJ-202	TH-046	TB-124	KJJ-203	TH-047	KJJ-213
Date Sampled	12/7/94	6/23/93	8/25/94	12/12/94	6/23/93	8/25/94	12/12/94	9/1/94
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.001)	0.001	0.002	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.002	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	0.003 BU	ND(0.001)	0.001	0.004 BU	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)

Location	MW-8-34	MW-9-33	MW-9-33	MW-9-33	MW-9-45	MW-9-45	MW-9-45	MW-10-34
Sample ID	TH-025	TB-123	KJJ-202	TH-046	TB-124	KJJ-203	TH-047	KJJ-213
Date Sampled	12/7/94	6/23/93	8/25/94	12/12/94	6/23/93	8/25/94	12/12/94	9/1/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Acenaphthylene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Anthracene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Benzidine	NA	ND(0.050)	ND(0.050)	NA	ND(0.050)	ND(0.050)	NA	ND(0.050)
Benzo(a)anthracene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Benzo(b)fluoranthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Benzo(k)fluoranthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Benzo(ghi)perylene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Benzo(a)pyrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Bis(2-chloroethoxy) methane	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Bis(2-chloroethyl) ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Bis(2-chloroisopropyl) ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Bis(2-ethylhexyl) phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
4-Bromophenyl phenyl ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Butyl benzyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2-Chloronaphthalene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
4-Chlorophenyl phenyl ether	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Chysene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Dibenz (a,h) anthracene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Di-n-butyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
1,2-Dichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
1,3-Dichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
1,4-Dichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
3,3'-Dichlorobenzidine	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)
Diethyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Dimethyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2,4-Dinitrotoluene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2,6-Dinitrotoluene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Di-n-octyl phthalate	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
1,2-Diphenylhydrazine	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)
Fluoranthene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Fluorene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)

Location	MW-8-34	MW-9-33	MW-9-33	MW-9-33	MW-9-45	MW-9-45	MW-9-45	MW-10-34
Sample ID	TH-025	TB-123	KJJ-202	TH-046	TB-124	KJJ-203	TH-047	KJJ-213
Date Sampled	12/7/94	6/23/93	8/25/94	12/12/94	6/23/93	8/25/94	12/12/94	9/1/94
Hexachlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Hexachlorobutadiene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Hexachlorocyclopentadiene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Hexachloroethane	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Indeno(1,2,3-cd) pyrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Isophorone	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
4,4'-Methyllene-bis-(2-chloro-aniline)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)
Naphthalene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Nitrobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
N-Notrosodimethylamine	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)	NA	ND(0.010)
** N-Nitrosodiphenylamine	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
N-Nitroso-di-n-propylamine	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Phenanthrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Pyrene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
1,2,4-Trichlorobenzene	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
Acid Compounds								
4-Chloro-3-methylphenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2-Chlorophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2,4-Dichlorophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2,4-Dimethylphenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
4,6-Dinitro-2-methylphenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)
2,4-Dinitrophenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)
2-Nitrophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
4-Nitrophenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)
Pentachlorophenol	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)
Phenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)
2,4,6-Trichlorophenol	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)	ND(0.005)	NA	ND(0.005)

** Indistinguishable from diphenylamine

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-8-34*	*MW-9-33*	*MW-9-33*	*MW-9-33*	*MW-9-45*	*MW-9-45*	*MW-9-45*	*MW-10-34*
Sample ID	*TH-025*	*TB-123*	*KJJ-202*	*TH-046*	*TB-124*	*KJJ-203*	*TH-047*	*KJJ-213*
Date Sampled	*12/7/94*	*6/23/93*	*8/25/94*	*12/12/94*	*6/23/93*	*8/25/94*	*12/12/94*	*9/1/94*
Priority Pollutant Inorganics (mg/L)								
Antimony	NA	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA
Arsenic	0.004	0.004	0.006	0.007	0.006	0.006	0.006	ND(0.001)
Beryllium	NA	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA
Cadmium	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	NA
Chromium	NA	ND(0.050)	NA	NA	ND(0.050)	NA	NA	NA
Copper	NA	ND(0.025)	NA	NA	ND(0.025)	NA	NA	NA
Lead	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)	ND(0.003)	NA	ND(0.003)
Mercury	NA	ND(0.0002)	NA	NA	ND(0.0002)	NA	NA	NA
Nickel	NA	ND(0.050)	NA	NA	ND(0.050)	NA	NA	NA
Selenium	NA	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA
Silver	NA	ND(0.005)UJ	NA	NA	ND(0.005)UJ	NA	NA	NA
Thallium	NA	ND(0.002)	NA	NA	ND(0.002)	NA	NA	NA
Zinc	NA	0.03	ND(0.020)	NA	ND(0.020)	ND(0.020)	NA	ND(0.020)
Cyanide	NA	ND(0.005)	NA	NA	ND(0.005)	NA	NA	NA

Location	MW-8-34	MW-9-33	MW-9-33	MW-9-33	MW-9-45	MW-9-45	MW-9-45	MW-10-34
Sample ID	TH-025	TB-123	KJJ-202	TH-046	TB-124	KJJ-203	TH-047	KJJ-213
Date Sampled	12/7/94	6/23/93	8/25/94	12/12/94	6/23/93	8/25/94	12/12/94	9/1/94
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
alpha-BHC	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
beta-BHC	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
delta-BHC	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
gamma-BHC (Lindane)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
alpha-Chlordane	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
gamma-Chlordane	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
4,4'-DDD	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
4,4'-DDE	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
4,4'-DDT	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
Dieldrin	NA	ND(0.01)UJ	ND(0.01)	NA	.001 J	ND(0.01)	NA	ND(0.01)
alpha-Endosulfan	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
beta-Endosulfan	NA	ND(0.01)UJ	ND(0.01)	NA	0.02 J	ND(0.01)	NA	ND(0.01)
Endosulfan sulfate	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.02)UJ	ND(0.01)	NA	ND(0.01)
Endrin	NA	0.02 J	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
Endrin aldehyde	NA	ND(0.01)UJ	ND(0.01) UJ	NA	ND(0.01)UJ	ND(0.01) UJ	NA	ND(0.01) UJ
Heptachlor	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
Heptachlor epoxide	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)UJ	ND(0.01)	NA	ND(0.01)
Toxaphene	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1016	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1221	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1232	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1242	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1248	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1254	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)
PCB-1260	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)UJ	ND(0.10)	NA	ND(0.10)

Location	*MW-10-34*	*MW-10-34*	*MW-10-51*	*MW-10-51*	*MW-11-21*	*MW-11-21*	*MW-11-35*	*MW-11-35*
Sample ID	*TH-038*	*TH-039 DUP*	*KJJ-212*	*TH-040*	*KJJ-217*	*MAW-056*	*KJJ-216*	*TH-030*
Date Sampled	*12/8/94*	*12/8/94*	*9/1/94*	*12/8/94*	*9/1/94*	*12/14/94*	*9/1/94*	*12/7/94*
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.500)*	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	4.6 S	ND(0.001)	0.044.	0.210
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.25)*	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.25)*	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.05)*	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	0.001	ND(0.001)	0.057	ND(0.001)	0.003	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.780	ND(0.001)	ND(0.001)	0.003
Methylene chloride	ND(0.001)	0.001 B	ND(0.001)	0.007 B	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	0.001	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.110	ND(0.001)	ND(0.001)	0.002
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	0.003	ND(0.001)	0.007	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	0.002	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.005)*	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.440	ND(0.001)	0.002	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	3.5 S	ND(0.002)	0.005	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	3.940	ND(0.003)	0.007	ND(0.003)

Location	MW-10-34	MW-10-34	MW-10-51	MW-10-51	MW-11-21	MW-11-21	MW-11-35	MW-11-35
Sample ID	TH-038	TH-039 DUP	KJJ-212	TH-040	KJJ-217	MAW-056	KJJ-216	TH-030
Date Sampled	12/8/94	12/8/94	9/1/94	12/8/94	9/1/94	12/14/94	9/1/94	12/7/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Acenaphthylene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Anthracene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Benzidine	NA	NA	ND(0.050)	NA	ND(0.20)*	NA	ND(0.050)	NA
Benzo(a)anthracene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Benzo(b)fluoranthene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Benzo(k)fluoranthene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Benzo(ghi)perylene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Benzo(a)pyrene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Bis(2-chloroethoxy) methane	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Bis(2-chloroethyl) ether	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Bis(2-chloroisopropyl) ether	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Bis(2-ethylhexyl) phthalate	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
4-Bromophenyl phenyl ether	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Butyl benzyl phthalate	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
2-Chloronaphthalene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
4-Chlorophenyl phenyl ether	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Chysene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Dibenz (a,h) anthracene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Di-n-butyl phthalate	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
1,2-Dichlorobenzene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
1,3-Dichlorobenzene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
1,4-Dichlorobenzene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
3,3'-Dichlorobenzidine	NA	NA	ND(0.020)	NA	ND(0.080)*	NA	ND(0.020)	NA
Diethyl phthalate	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Dimethyl phthalate	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
2,4-Dinitrotoluene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
2,6-Dinitrotoluene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Di-n-octyl phthalate	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
1,2-Diphenylhydrazine	NA	NA	ND(0.010)	NA	ND(0.040)*	NA	ND(0.010)	NA
Fluoranthene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Fluorene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA

Location	MW-10-34	MW-10-34	MW-10-51	MW-10-51	MW-11-21	MW-11-21	MW-11-35	MW-11-35
Sample ID	TH-038	TH-039 DUP	KJJ-212	TH-040	KJJ-217	MAW-056	KJJ-216	TH-030
Date Sampled	12/8/94	12/8/94	9/1/94	12/8/94	9/1/94	12/14/94	9/1/94	12/7/94
					ND(0.020)*			
Hexachlorobenzene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Hexachlorobutadiene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Hexachlorocyclopentadiene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Hexachloroethane	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Indeno(1,2,3-cd) pyrene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Isophorone	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
4,4'-Methyllene-bis-(2-chloro-aniline)	NA	NA	ND(0.010)	NA	ND(0.020)*	NA	ND(0.010)	NA
Naphthalene	NA	NA	ND(0.005)	NA	0.64	NA	ND(0.005)	NA
Nitrobenzene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
N-Notrosodimethylamine	NA	NA	ND(0.010)	NA	ND(0.020)*	NA	ND(0.010)	NA
** N-Nitrosodiphenylamine	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
N-Nitroso-di-n-propylamine	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Phenanthrene	NA	NA	ND(0.005)	NA	0.035	NA	ND(0.005)	NA
Pyrene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
1,2,4-Trichlorobenzene	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
Acid Compounds					ND(0.020)* ND(0.020)* ND(0.020)*			
4-Chloro-3-methylphenol	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
2-Chlorophenol	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
2,4-Dichlorophenol	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
2,4-Dimethylphenol	NA	NA	ND(0.005)	NA	0.024	NA	ND(0.005)	NA
4,6-Dinitro-2-methylphenol	NA	NA	ND(0.020)	NA	ND(0.020)*	NA	ND(0.020)	NA
2,4-Dinitrophenol	NA	NA	ND(0.020)	NA	ND(0.020)*	NA	ND(0.020)	NA
2-Nitrophenol	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA
4-Nitrophenol	NA	NA	ND(0.020)	NA	ND(0.020)*	NA	ND(0.020)	NA
Pentachlorophenol	NA	NA	ND(0.020)	NA	ND(0.020)*	NA	ND(0.020)	NA
Phenol	NA	NA	ND(0.005)	NA	0.023	NA	ND(0.005)	NA
2,4,6-Trichlorophenol	NA	NA	ND(0.005)	NA	ND(0.020)*	NA	ND(0.005)	NA

** Indistinguishable from diphenylamine

SUMMARY GRO VATER DATA
BARR NC.
LANSING, MICHIGAN
January 1995

Location	MW-10-34	MW-10-34	MW-10-51	MW-10-51	MW-11-21	MW-11-21	MW-11-35	MW-11-35
Sample ID	TH-038	TH-039 DUP	KJJ-212	TH-040	KJJ-217	MAW-056	KJJ-216	TH-030
Date Sampled	12/8/94	12/8/94	9/1/94	12/8/94	9/1/94	12/14/94	9/1/94	12/7/94
Priority Pollutant Inorganics (mg/L)								
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.002	0.002	ND(0.001)	ND(0.001)	0.018	0.013	0.002	0.004
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	ND(0.003)	NA	0.007	NA	ND(0.003)	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-10-34	MW-10-34	MW-10-51	MW-10-51	MW-11-21	MW-11-21	MW-11-35	MW-11-35
Sample ID	TH-038	TH-039 DUP	KJJ-212	TH-040	KJJ-217	MAW-056	KJJ-216	TH-030
Date Sampled	12/8/94	12/8/94	9/1/94	12/8/94	9/1/94	12/14/94	9/1/94	12/7/94
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
alpha-BHC	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
beta-BHC	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
delta-BHC	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
gamma-BHC (Lindane)	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
alpha-Chlordane	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
gamma-Chlordane	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
4,4'-DDD	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
4,4'-DDE	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
4,4'-DDT	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
Dieldrin	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
alpha-Endosulfan	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
beta-Endosulfan	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
Endosulfan sulfate	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
Endrin	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
Endrin aldehyde	NA	NA	ND(0.01) UJ	NA	ND(0.02)*	NA	ND(0.01) UJ	NA
Heptachlor	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
Heptachlor epoxide	NA	NA	ND(0.01)	NA	ND(0.02)*	NA	ND(0.01)	NA
Toxaphene	NA	NA	ND(0.10)	NA	ND(0.02)*	NA	ND(0.10)	NA
PCB-1016	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA
PCB-1221	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA
PCB-1232	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA
PCB-1242	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA
PCB-1248	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA
PCB-1254	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA
PCB-1260	NA	NA	ND(0.10)	NA	ND(0.2)*	NA	ND(0.10)	NA

Location	MW-11-35	MW-11-54	MW-11-54	MW-12-31	MW-12-31	MW-12-45	MW-12-45	MW-13-20
Sample ID	TH-035 DUP	KJJ-218	TH-028	KJJ-215	TH-042	KJJ-214	TH-044	MAW-053
Date Sampled	12/7/94	9/1/94	12/7/94	9/1/94	12/8/94	9/1/94	12/9/94	12/14/94
Priority Pollutant VOCs (mg/L)								
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	0.220	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.005	0.009	ND(0.001)
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.006	ND(0.001)
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	0.003	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.001	ND(0.001)	0.001	ND(0.001)
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	0.003	0.002	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)

Location	MW-11-35	MW-11-54	MW-11-54	MW-12-31	MW-12-31	MW-12-45	MW-12-45	MW-13-20
Sample ID	TH-035 DUP	KJJ-218	TH-028	KJJ-215	TH-042	KJJ-214	TH-044	MAW-053
Date Sampled	12/7/94	9/1/94	12/7/94	9/1/94	12/8/94	9/1/94	12/9/94	12/14/94
Priority Pollutant SVOCs (mg/L)								
Base Neutral Compounds								
Acenaphthene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Acenaphthylene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Anthracene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Benzidine	NA	ND(0.050)	NA	ND(0.050)	NA	ND(0.050)	NA	NA
Benzo(a)anthracene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Benzo(b)fluoranthene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Benzo(k)fluoranthene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Benzo(ghi)perylene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Benzo(a)pyrene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Bis(2-chloroethoxy) methane	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Bis(2-chloroethyl) ether	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Bis(2-chloroisopropyl) ether	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Bis(2-ethylhexyl) phthalate	NA	ND(0.005)	NA	ND(0.005)	NA	0.007	NA	NA
4-Bromophenyl phenyl ether	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Butyl benzyl phthalate	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2-Chloronaphthalene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
4-Chlorophenyl phenyl ether	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Chysene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Dibenz (a,h) anthracene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Di-n-butyl phthalate	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
1,2-Dichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
1,3-Dichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
1,4-Dichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
3,3'-Dichlorobenzidine	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	NA
Diethyl phthalate	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Dimethyl phthalate	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2,4-Dinitrotoluene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2,6-Dinitrotoluene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Di-n-octyl phthalate	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
1,2-Diphenylhydrazine	NA	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	NA	NA
Fluoranthene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Fluorene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA

Location	MW-11-35	MW-11-54	MW-11-54	MW-12-31	MW-12-31	MW-12-45	MW-12-45	MW-13-20
Sample ID	TH-035 DUP	KJJ-218	TH-028	KJJ-215	TH-042	KJJ-214	TH-044	MAW-053
Date Sampled	12/7/94	9/1/94	12/7/94	9/1/94	12/8/94	9/1/94	12/9/94	12/14/94
Hexachlorobenzene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Hexachlorobutadiene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Hexachlorocyclopentadiene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Hexachloroethane	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Indeno(1,2,3-cd) pyrene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Isophorone	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
4,4'-Methyllene-bis-(2-chloro-aniline)	NA	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	NA	NA
Naphthalene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Nitrobenzene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
N-Notrosodimethylamine	NA	ND(0.010)	NA	ND(0.010)	NA	ND(0.010)	NA	NA
** N-Nitrosodiphenylamine	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
N-Nitroso-di-n-propylamine	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Phenanthrene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Pyrene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
1,2,4-Trichlorobenzene	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
Acid Compounds								
4-Chloro-3-methylphenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2-Chlorophenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2,4-Dichlorophenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2,4-Dimethylphenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
4,6-Dinitro-2-methylphenol	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	NA
2,4-Dinitrophenol	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	NA
2-Nitrophenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
4-Nitrophenol	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	NA
Pentachlorophenol	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	NA
Phenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA
2,4,6-Trichlorophenol	NA	ND(0.005)	NA	ND(0.005)	NA	ND(0.005)	NA	NA

** Indistinguishable from diphenylamine

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-11-35*	*MW-11-54*	*MW-11-54*	*MW-12-31*	*MW-12-31*	*MW-12-45*	*MW-12-45*	*MW-13-20*
Sample ID	*TH-035 DUP*	*KJJ-218*	*TH-028*	*KJJ-215*	*TH-042*	*KJJ-214*	*TH-044*	*MAW-053*
Date Sampled	*12/7/94*	*9/1/94*	*12/7/94*	*9/1/94*	*12/8/94*	*9/1/94*	*12/9/94*	*12/14/94*
Priority Pollutant Inorganics (mg/L)								
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.002	0.002	0.001	0.003	0.004	0.003	0.002	0.001
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	ND(0.003)	NA	ND(0.003)	NA	ND(0.003)	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	ND(0.020)	NA	ND(0.020)	NA	ND(0.020)	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA

Location	MW-11-35	MW-11-54	MW-11-54	MW-12-31	MW-12-31	MW-12-45	MW-12-45	MW-13-20
Sample ID	TH-035 DUP	KJJ-218	TH-028	KJJ-215	TH-042	KJJ-214	TH-044	MAW-053
Date Sampled	12/7/94	9/1/94	12/7/94	9/1/94	12/8/94	9/1/94	12/9/94	12/14/94
Priority Pollutant Pesticides/PCB's (µg/L)								
Aldrin	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
alpha-BHC	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
beta-BHC	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
delta-BHC	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
gamma-BHC (Lindane)	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
alpha-Chlordane	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
gamma-Chlordane	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
4,4'-DDD	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
4,4'-DDE	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
4,4'-DDT	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
Dieldrin	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
alpha-Endosulfan	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
beta-Endosulfan	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
Endosulfan sulfate	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
Endrin	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
Endrin aldehyde	NA	ND(0.01) UJ	NA	ND(0.01) UJ	NA	ND(0.01) UJ	NA	NA
Heptachlor	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
Heptachlor epoxide	NA	ND(0.01)	NA	ND(0.01)	NA	ND(0.01)	NA	NA
Toxaphene	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1016	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1221	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1232	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1242	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1248	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1254	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA
PCB-1260	NA	ND(0.10)	NA	ND(0.10)	NA	ND(0.10)	NA	NA

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-13-33	MW-13-49	MW-14-32	MW-14-47
Sample ID	MAW-057	MAW-055	TH-043	TH-045
Date Sampled	12/14/94	12/14/94	12/8/94	12/9/94
Priority Pollutant VOCs (mg/L)				
Acrolein	ND(0.100)	ND(0.100)	ND(0.100)	ND(0.100)
Acrylonitrile	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Benzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromodichloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromoform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Bromomethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Butanone	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon disulfide	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chlorobenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
2-Chloroethylvinyl ether	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Chloroform	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Chloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Dibromochloromethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,2-Dichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	0.006
1,1-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
total-1,2-Dichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	0.005
1,2-Dichloropropane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
cis-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
trans-1,3-Dichloropropene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Ethylbenzene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Methylene chloride	ND(0.001)	ND(0.001)	ND(0.001)	0.001
1,1,2,2-Tetrachloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Tetrachloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Toluene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,1-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
1,1,2-Trichloroethane	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Trichloroethene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
Vinyl chloride	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
o-Xylene	ND(0.001)	ND(0.001)	ND(0.001)	ND(0.001)
m-Xylene/p-Xylene	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
total Xylenes	ND(0.003)	ND(0.003)	ND(0.003)	ND(0.003)

SUMMARY GRC NATER DATA
BARR. NC.
LANSING, MICHIGAN
January 1995

Location	MW-13-33	MW-13-49	MW-14-32	MW-14-47
Sample ID	MAW-057	MAW-055	TH-043	TH-045
Date Sampled	12/14/94	12/14/94	12/8/94	12/9/94
Priority Pollutant SVOCs (mg/L)				
Base Neutral Compounds				
Acenaphthene	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA
Benzidine	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA
Benzo(ghi)perylene	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA
Bis(2-chloroethoxy) methane	NA	NA	NA	NA
Bis(2-chloroethyl) ether	NA	NA	NA	NA
Bis(2-chloroisopropyl) ether	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA
Butyl benzyl phthalate	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA
Chysene	NA	NA	NA	NA
Dibenz (a,h) anthracene	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA
Di-n-octyl phthalate	NA	NA	NA	NA
1,2-Diphenylhydrazine	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	*MW-13-33*	*MW-13-49*	*MW-14-32*	*MW-14-47*
Sample ID	*MAW-057*	*MAW-055*	*TH-043*	*TH-045*
Date Sampled	*12/14/94*	*12/14/94*	*12/8/94*	*12/9/94*
Hexachlorobenzene	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA
Indeno(1,2,3-cd) pyrene	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA
4,4'-Methyllene-bis-(2-chloro-aniline)	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA
N-Notrosodimethylamine	NA	NA	NA	NA
** N-Nitrosodiphenylamine	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA
Acid Compounds				
4-Chloro-3-methylphenol	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA
Phenol	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA

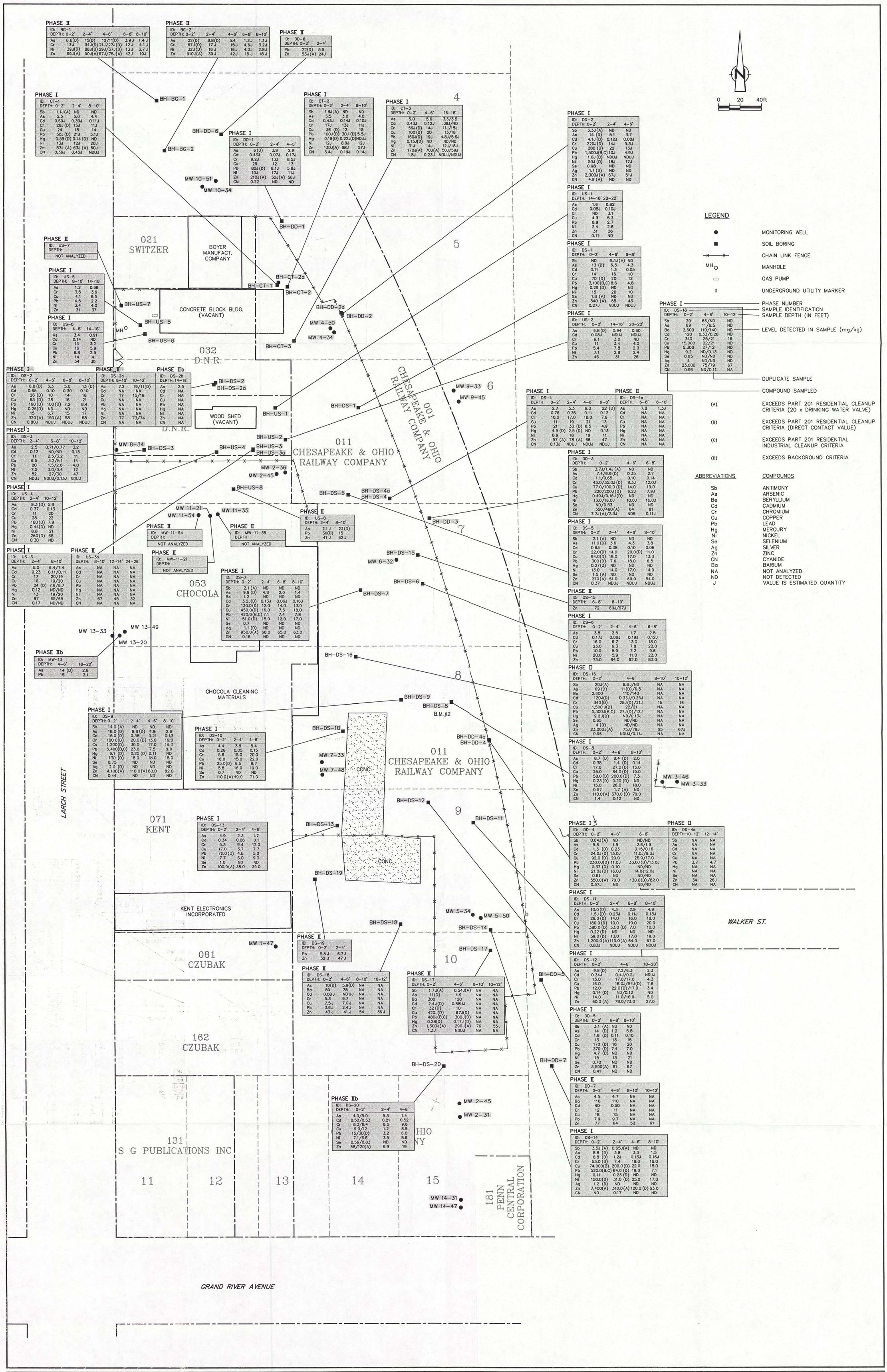
** Indistinguishable from diphenylamine

SUMMARY GRC WATER DATA
BARR NC.
LANSING, MICHIGAN
January 1995

Location	MW-13-33	MW-13-49	MW-14-32	MW-14-47
Sample ID	MAW-057	MAW-055	TH-043	TH-045
Date Sampled	12/14/94	12/14/94	12/8/94	12/9/94
Priority Pollutant Inorganics (mg/L)				
Antimony	NA	NA	NA	NA
Arsenic	0.002	0.001	0.01	0.001
Beryllium	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA
Chromium	NA	NA	NA	NA
Copper	NA	NA	NA	NA
Lead	NA	NA	NA	NA
Mercury	NA	NA	NA	NA
Nickel	NA	NA	NA	NA
Selenium	NA	NA	NA	NA
Silver	NA	NA	NA	NA
Thallium	NA	NA	NA	NA
Zinc	NA	NA	NA	NA
Cyanide	NA	NA	NA	NA

SUMMARY GROUNDWATER DATA
BARRELS INC.
LANSING, MICHIGAN
January 1995

Location	MW-13-33	MW-13-49	MW-14-32	MW-14-47
Sample ID	MAW-057	MAW-055	TH-043	TH-045
Date Sampled	12/14/94	12/14/94	12/8/94	12/9/94
Priority Pollutant Pesticides/PCB's (µg/L)				
Aldrin	NA	NA	NA	NA
alpha-BHC	NA	NA	NA	NA
beta-BHC	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA
alpha-Chlordane	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA
4,4'-DDD	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA
alpha-Endosulfan	NA	NA	NA	NA
beta-Endosulfan	NA	NA	NA	NA
Endosulfan sulfate	NA	NA	NA	NA
Endrin	NA	NA	NA	NA
Endrin aldehyde	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA
PCB-1016	NA	NA	NA	NA
PCB-1221	NA	NA	NA	NA
PCB-1232	NA	NA	NA	NA
PCB-1242	NA	NA	NA	NA
PCB-1248	NA	NA	NA	NA
PCB-1254	NA	NA	NA	NA
PCB-1260	NA	NA	NA	NA



№	Revision	Date	Initial

Approved

BARRELS, INC.
LANSING, MICHIGAN

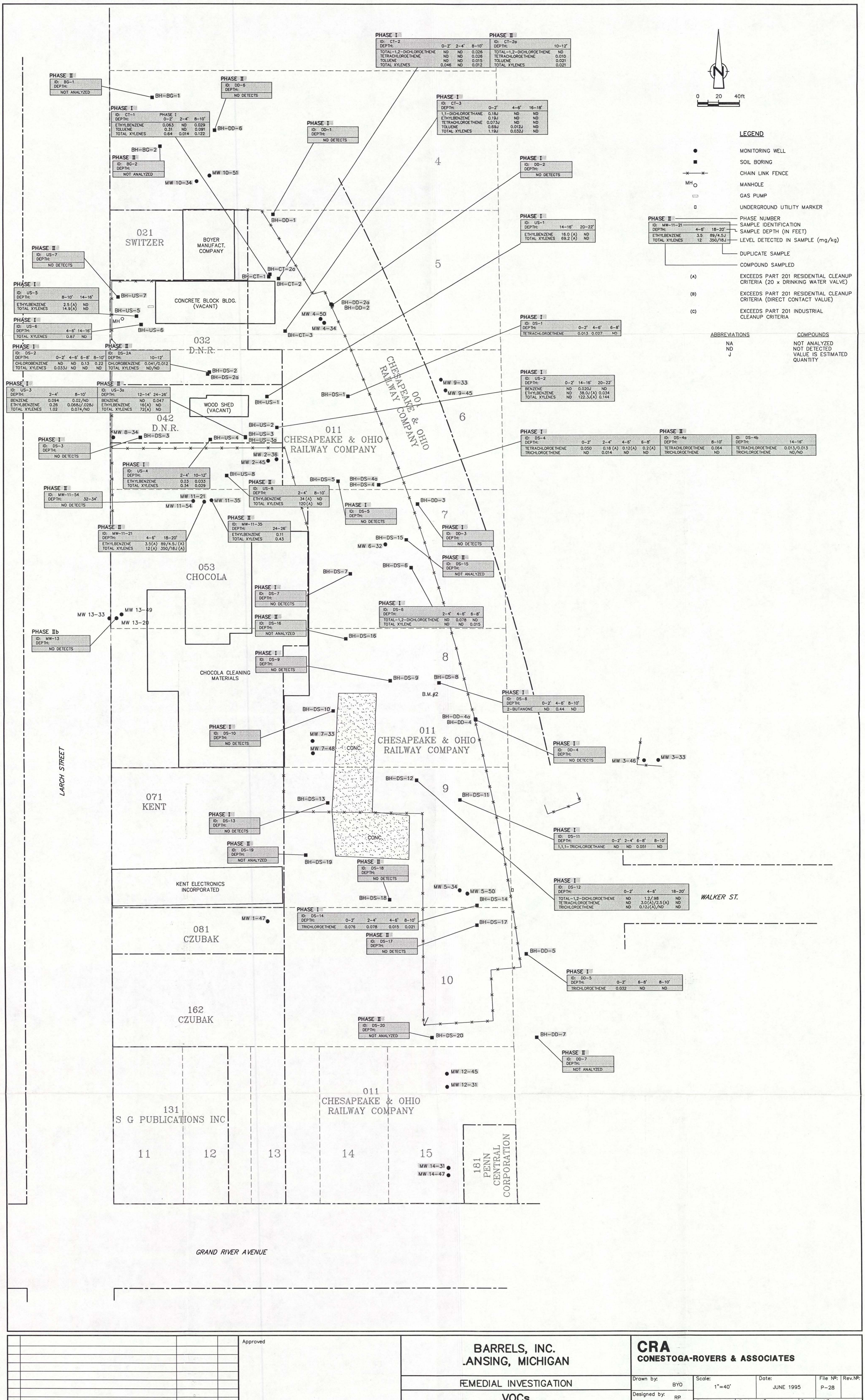
REMEDIAL INVESTIGATION

INORGANICS DETECTED IN SOILS

CRA
CONESTOGA-ROVERS & ASSOCIATES

Drawn by:	Scale:	Date:	File №:	Rev.№:
BYO	1"=40'	FEBRUARY 1995	P-26	
Designed by: RP	Field book:	Project №: 4869	Drawing №: 4	
Checked by: RP				

NOVEMBER 23/00(W)



№	Revision	Date	Initial

Approved

BARRELS, INC.
LANSING, MICHIGAN

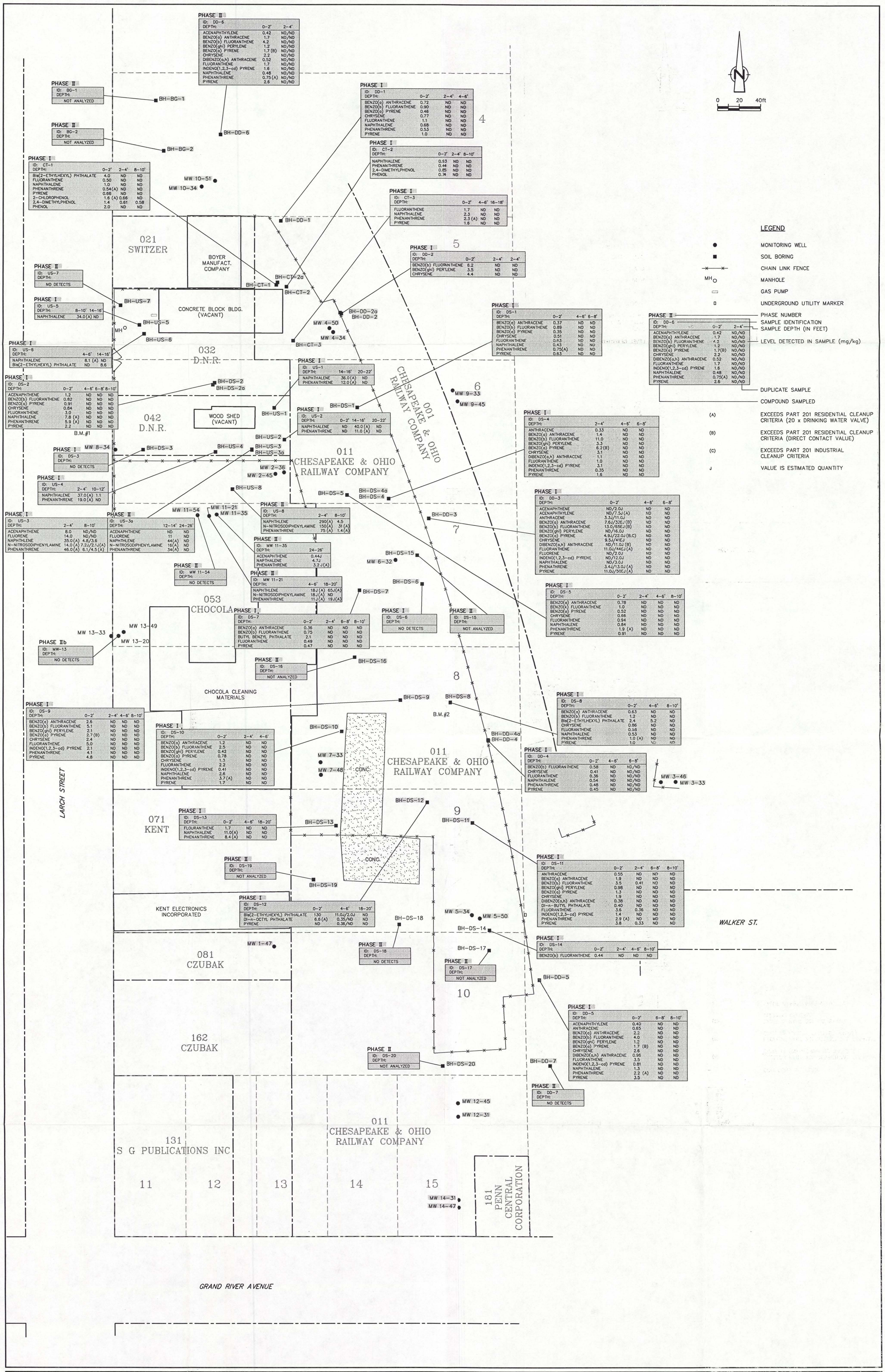
REMEDIAL INVESTIGATION

VOCs
DETECTED IN SOILS

CRA
CONESTOGA-ROVERS & ASSOCIATES

Drawn by:	Scale:	Date:	File №:	Rev.№:
BYO	1"=40'	JUNE 1995	P-28	
Designed by: RP	Field book:	Project №: 4869	Drawing №: 1	
Checked by: RP				

NOVEMBER 23/00(W)



№	Revision	Date	Initial

Approved

BARRELS, INC.
LANSING, MICHIGAN

REMEDIAL INVESTIGATION

S'OCs DETECTED IN SOILS

CRA
CONESTOGA-ROVERS & ASSOCIATES

Drawn by:	Scale:	Date:	File №:	Rev.№:
BYO	1"=40'	FEBRUARY 1995	P-27	0
Designed by: RP	Field book:	Project №: 4869	Drawing №: 2	
Checked by: RP				

NOVEMBER 23/00(W)