Entered
9/5018

DUNLOP TIRE CORPORATION
TONAWANDA, NEW YORK

REPORT OF FIELD INVESTIGATION AND DATA ANALYSIS INACTIVE DISPOSAL SITES NO's 915018 A, B, C

Submitted to:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
270 MICHIGAN AVENUE
BUFFALO, NEW YORK 14203

APRIL 1992

Prepared By:
URS Consultants, Inc.
282 Delaware Avenue
Buffalo, New York 14202

G1339

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

EXECUTIVE SUMMARY

This report, prepared for the Dunlop Tire Corporation, presents the results from investigation of three inactive disposal sites located on the Dunlop plant property in the Town of Tonawanda, New York. The investigation was conducted to provide data necessary for the development of remedial action and post-closure groundwater monitoring plans for the respective disposal sites.

The field investigation, conducted in May 1991, included the installation of six shallow monitoring wells and the excavation of perimeter test trenches at each of the three disposal sites. A total of twelve groundwater samples from both existing and new monitoring wells and five sediment samples from plant drainage ditches were collected and analyzed for TCL organics and TAL metals.

Previous investigation of soil, fill, and groundwater samples indicated the presence of several volatile compounds of concern (trichloroethene, tetrachloroethene, carbon tetrachloride, chloroform and phenols). None of these compounds, however, were identified in groundwater samples collected during this investigation and were inconsistently detected at low ppb concentrations in the sediment samples.

Investigation of soils at the plant site has indicated that the disposal areas are underlain by a thick, relatively impervious sequence of clayey sediments up to 60 feet thick. These sediments are considered to effectively separate surficial groundwater from deeper groundwater confined within the underlying shale.

The apparent lack of downward contaminant migration between the shallow and deeper groundwater zones is supported by previous soil sample results which demonstrate a significant reduction in volatiles

concentrations with depth, and the general absence of contaminants in the bedrock monitoring wells. The presence of benzene (5 ppb) and 1,2-dichloroethene (6 ppb) in the bedrock wells is likely the result of some other upgradient source, since neither compound was detected in corresponding shallow wells pairs, nor have these compounds been associated with the local fill materials.

In addition, lateral migration of contaminants away from the disposal sites in shallow groundwater and surface runoff does not appear to be significant. None of the shallow monitoring wells, with the exception of downgradient well OMW-B2 (benzene at 1 ppb) and upgradient well OMW-A3 (1,1-dichloroethane at 17 ppb and 1,1,1-trichlorothane at 80 ppb), showed organic analytes in exceedance of groundwater ARAR values. Elevated heavy metal concentrations were limited to monitoring wells installed within fill areas and monitor groundwater directly beneath or within the waste materials. The only sediment sample to evidence elevated concentrations (PAHs at 22.9 ppm and lead at 1,750 ppm), was collected from the drainage channel above the plant settling pond, which also receives runoff from nearby parking areas. The PAH contamination in SS-103 may also be attributable to an oil spill which occurred at the Dunlop Plant on January 24, 1991. Approximately 40 to 50 gallons of naphthenic oil eventually migrated through the sewer network which issues into the drainage channel where SS-103 was collected.

Based on the results of this investigation, it is concluded that contaminants associated with the fill are effectively confined to the vicinity of the three former disposal sites, and the site do not, therefore, represent a risk to the surrounding population.

1.0 INTRODUCTION

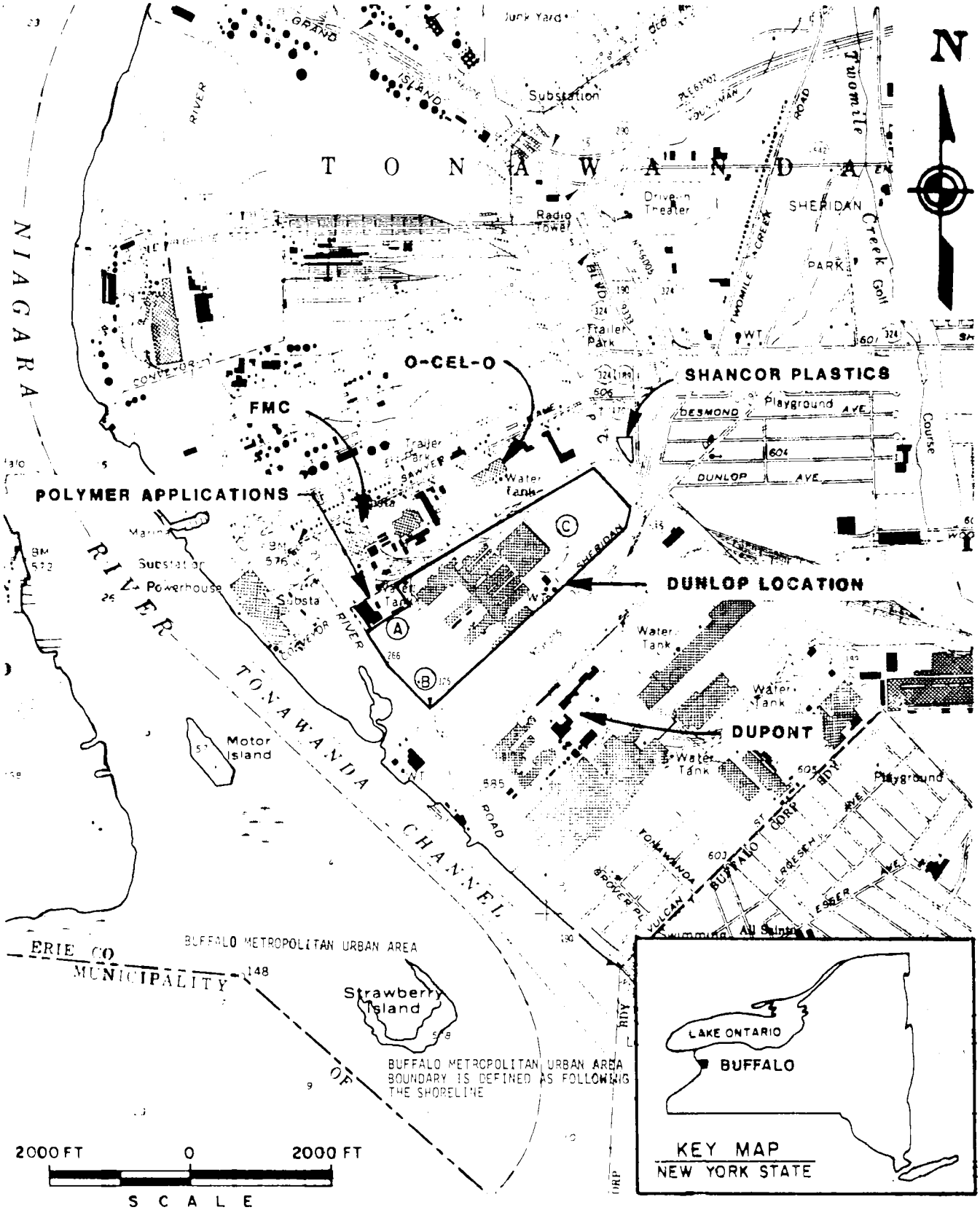
1.1 Report Purpose and Content

The purpose of this investigation and assessment is to compile adequate information for the design of a remedial action plan and the development of a long-term groundwater monitoring program for the inactive waste disposal areas. This report presents information gathered during this and previous investigations, and assesses the nature and extent of contamination at the three investigation sites. A focused risk assessment, alternatives and recommendations for site remediation, and a proposed, long-term groundwater monitoring plan are provided in separate, companion reports.

This report provides information that characterizes the physical, hydrogeological, geological, and environmental conditions of the Dunlop sites. Chapter 1.0 provides site background information, including a brief chronology of the historical development of the site(s), and current usage. Chapter 2.0 outlines the scope of work and summarizes the methods and procedures used. Chapter 3.0 describes the area and site-specific physical conditions. Chapter 4.0 presents analytical results and summarizes results of previous investigations. Chapter 5.0 summarizes the principal findings and conclusions.

1.2 Site Description

The Dunlop Tire Corporation plant is located in the Town of Tonawanda, Erie County, State of New York (Figure 1-1). The 130-acre plant site is bordered on the west by River Road, on the north by a rail spur, on the south by Sheridan Drive, and on the east by Niagara Mohawk property and Kenmore Avenue (Figure 1-2). The area is characterized by heavy industry, with an isolated area of residential development 1000 feet to the north.



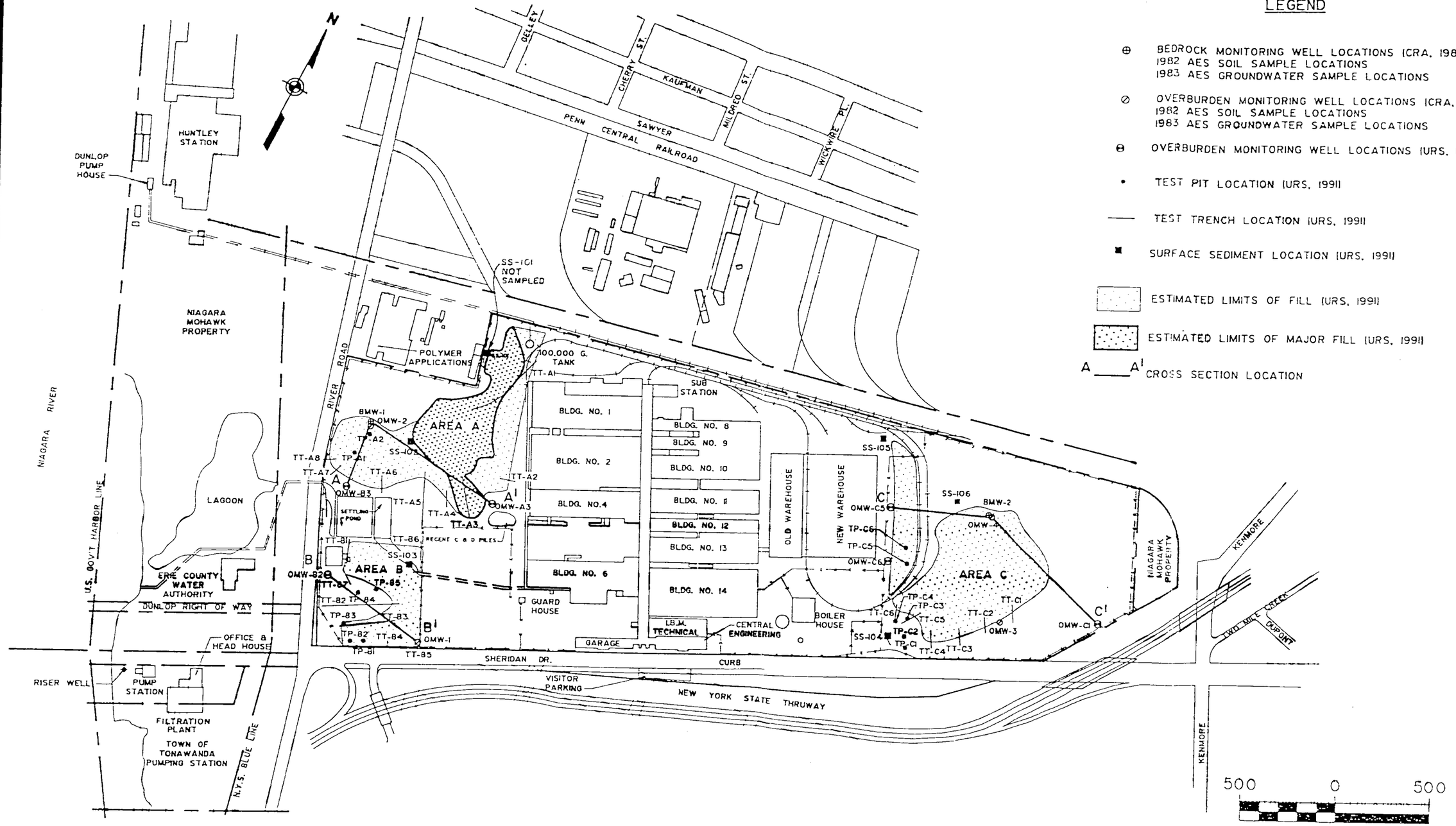
SOURCE : USGS, BUFFALO NW, N.Y. QUAD
7.5 MINUTE SERIES, 1975

(A) - WASTE DISPOSAL AREA

URS CONSULTANTS, INC.	DUNLOP TIRE & RUBBER CORPORATION SITE LOCATION MAP	FIGURE 1-1

A-3546

1-500 10/17/91



LEGEND

- ⊕ BEDROCK MONITORING WELL LOCATIONS (CRA, 1983)
  1982 AES SOIL SAMPLE LOCATIONS
  1983 AES GROUNDWATER SAMPLE LOCATIONS
- ⊘ OVERBURDEN MONITORING WELL LOCATIONS (CRA, 1983)
  1982 AES SOIL SAMPLE LOCATIONS
  1983 AES GROUNDWATER SAMPLE LOCATIONS
- ⊖ OVERBURDEN MONITORING WELL LOCATIONS (URS, 1991)
- • TEST PIT LOCATION (URS, 1991)
- —— TEST TRENCH LOCATION (URS, 1991)
- ■ SURFACE SEDIMENT LOCATION (URS, 1991)
- ESTIMATED LIMITS OF FILL (URS, 1991)
- ESTIMATED LIMITS OF MAJOR FILL (URS, 1991)
- A ___ A' CROSS SECTION LOCATION

SAMPLING LOCATION MAP

URS CONSULTANTS, INC.

FIGURE 1-2

CC-19968

Local relief is low, with elevations ranging from about 585 feet above mean sea level (amsl) at the eastern end of the property to 605 feet amsl on the western end. Much of the plant is served by storm drains that discharge to the Niagara River after passing through an oil trapping and solids settling pond. Some drainage does not pass through the pond, but directly to receivers along local streets. The Niagara River lies less than 1,500 feet west of the plant's western perimeter.

Several other industrial waste generators are found in the immediate area. Any of these may be contributing to local surface or groundwater contamination. Polymer Applications is located at the northwest corner of the Dunlop property. The former FMC Corporation is located to the northwest, O-Cel-O directly to the north, Shancor Plastics to the northeast, and DuPont to the southeast. The Niagara Mohawk Huntley Power Station is located between River Road and the Niagara River, directly west of Dunlop.

On the Dunlop property are three inactive waste disposal areas (Figure 1-2). The New York State Department of Environmental Conservation (NYSDEC) site numbers for these disposal areas are 915018 A, B, and C. The northwestern area (Site A) is probably the least well defined of the three in terms of limits of previous landfilling operations. Swampy ground is adjacent to the fill on the north and west, and the filled area is mostly covered with trees and brush. A portion of the southwestern disposal area (Site B) is covered with a parking lot. The eastern disposal area (Site C) is the site of what had been described as a coal ash landfill but is also reported to contain other material. This site lies at an elevation approximately 3 feet higher than the surrounding area, with swampy ground adjacent to the fill on the north.

All disposal areas are currently covered either by soil from onsite foundation excavation, or parking area sub-base and asphalt.

1.3 Site History

The Dunlop Tire and Rubber Corporation was founded, and Buffalo operations were begun, in 1920. The company has manufactured tires from 1923 to the present time. Other products made over the years include foam rubber, tennis balls, tennis rackets, golf balls, balata, blimps, urethane foam, duthane, and tire tubes. The property was used for disposal of manufacturing and process wastes beginning in 1921.

The eastern dump area, Site C, was reportedly used as a coal ash landfill. Drums were observed in November of 1982 on the northern perimeter bordering a swampy area, and interviews with several Dunlop retirees in 1982 reported that it was common practice to dump waste of all kinds in the eastern dump site, allegedly including drums of waste solvents and degreasers. Urethane and balata production were referred to as possible sources of chloroform. This site was used until 1973.

Disposal Site B is now partially covered by a paved parking lot completed in 1970 and a gravel parking lot expansion completed in October 1988. The site was used for the disposal of various solid wastes, including scrap rubber (natural and synthetic), golf balls, plastics, carbon black, fly ash, amines, antioxidants, and general refuse. Dunlop discontinued use of this site in 1970.

Site A was used until 1979 for the dumping of various construction and demolition debris. This site was periodically graded during its use.

In April 1979 the New York State Interagency Task Force on Hazardous Waste classified Dunlop's three waste disposal sites as Class 2a, suspected hazardous wastes sites. All three sites are currently listed as Class 3 in the NYSDEC Registry of Inactive Hazardous Waste Disposal sites. In 1987, NYSDEC changed the classification of Sites B and C to Class 3. In 1981, Erie County inspected the eastern site because it was incorrectly

listed as an active disposal site. Drums were observed in the swamp, and water samples in this area were analyzed for heavy metals. Sample results indicated high levels of iron.

In May 1982 NYSDEC began its investigation of the Dunlop sites and notified Dunlop that the United States Geological Survey (USGS) would collect samples. In July 1982, USGS took four soil samples on the property and split them with Dunlop. Advanced Environmental Services (AES), Dunlop's contracted lab, detected elevated levels of volatile halogenated organics. The contaminants in soil samples were tentatively identified as chloroform, carbon tetrachloride, trichloroethylene, tetrachloroethylene, and phenols. The results from the USGS-contracted lab were invalidated.

USGS also performed an electromagnetic conductivity survey on the Dunlop sites in 1982. The data obtained were used to approximately delineate Sites B and C. Site A did not produce any high conductivity.

During the winter of 1982-1983, Dunlop engaged AES to perform an investigation of the three former disposal areas that included sampling of surface/subsurface soil and surface water, and the installation and sampling of four shallow (8-12 feet) and two deep (60-65 feet) groundwater wells. AES subcontracted Conestoga-Rovers Associates (CRA) to complete the well installation and hydrogeological interpretation portions of the study.

To determine extent of fill, 26 test pits were dug with a backhoe in January 1983. The maximum fill thickness encountered during the site investigation was 10 feet. Common refuse encountered included ash, cinders, slag, gravel, rubber, wood, brick, and metal fragments in a clay, sand, or silt matrix.

Several organic compounds, including chloroform, trichloroethylene, tetrachloroethylene, and phenols, were detected in the shallow groundwater samples. Soil samples revealed elevated concentrations of phenols. The investigation concluded that the natural clayey soils are effectively preventing the vertical migration of contaminants to the groundwater and that any environmental impact would be limited to surface water drainage from the landfill areas.

The investigation report of November 1983 was reviewed by NYSDEC, and, after further discussions with the agency, additional surface water and groundwater samples were collected in the summer and fall of 1985. In the summer portion of the study, NYSDEC split-samples (analyzed by Recra Environmental Laboratories), indicated relatively low amounts of a few volatile organics in the groundwater samples. [Analysis did not, however, comply with appropriate QA/QC requirements.] In the fall portion of the study, relatively low levels of phenols were shown to be present in several surface water samples. Since concentrations of phenols decreased considerably under wet conditions, CRA concluded that no significant environmental impact would result from surface water contact with materials in the former waste disposal area.

In July 1986, NYSDEC required Dunlop to complete a plan for quarterly groundwater monitoring and to further address the issue of surface water contamination. Dunlop subsequently submitted a plan (completed by AES and CRA) to NYSDEC to address these issues, and the grading and capping of the landfill sites. No further action was taken by NYSDEC until 1990, when the previously collected data were deemed incomplete by the agency. A Consent Order between Dunlop and NYSDEC has been signed. The Consent Order requires Dunlop to complete further investigations of groundwater and surface sediments, including the installation of six additional monitoring wells. Dunlop was also required to draft a water quality monitoring plan and a remedial action plan (capping) for agency review and eventual implementation.

2.0 PROJECT DESCRIPTION

2.1 Scope of Work

The scope of work for this project included field investigations and an environmental sampling program. The field work consisted of the drilling and installation of 6 monitoring wells, and the excavation of 21 test trenches to define the areal extent of fill in Areas A, B, and C. Environmental samples were obtained for chemical analysis from 5 sediment sampling locations, and from 12 monitoring wells, including the 6 existing wells.

In general, all investigations followed closely and were conducted in accordance with the Project Work Plan, the Field Sampling Plan, the Quality Assurance Project Plan, and the Health and Safety Plan (URS, February 1991). Tasks performed during this investigation, and deviations from the project plans, are discussed in the following sections.

2.2 Field Investigation Overview

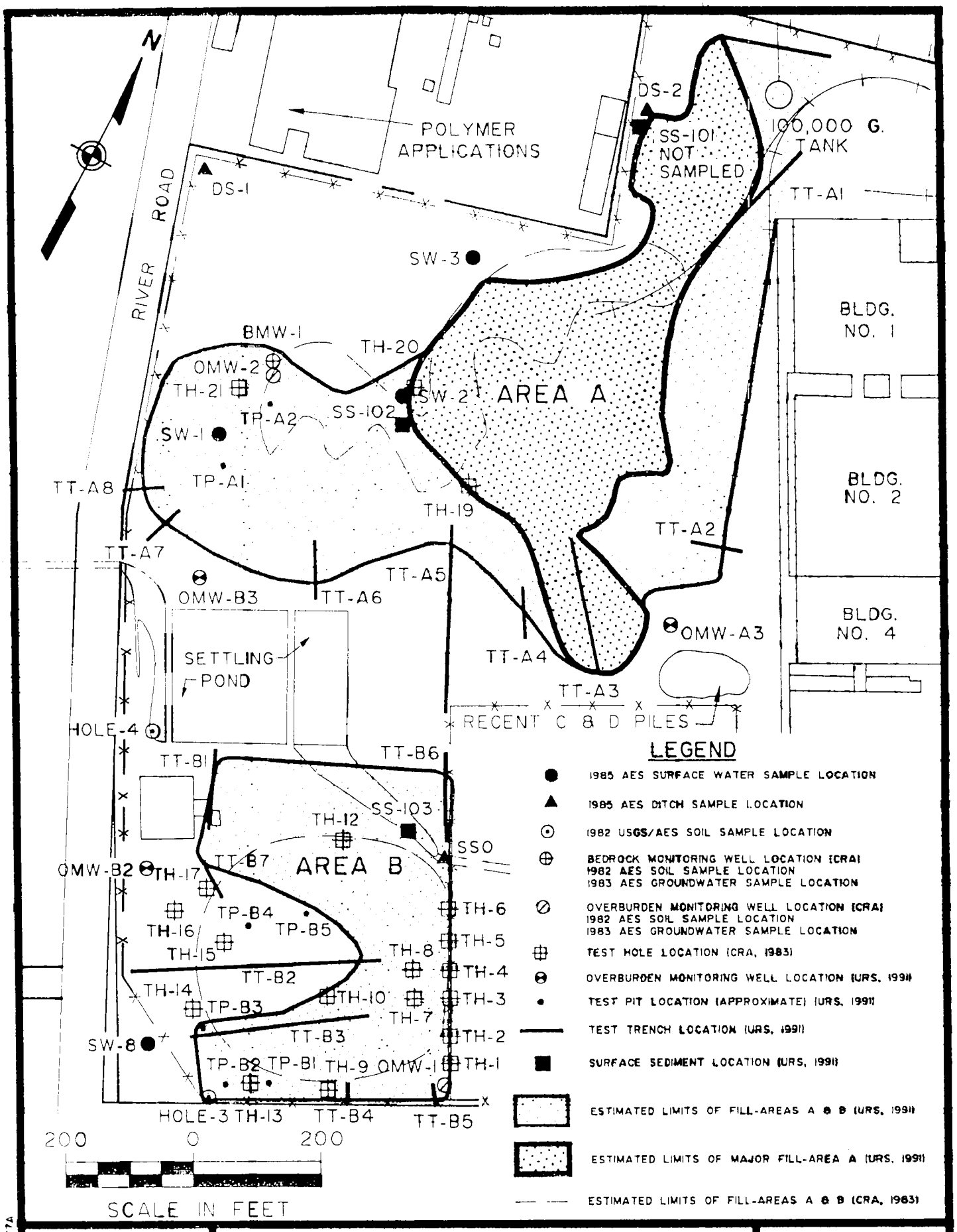
The field investigation included the installation of 6 monitoring wells, test trenching at each of the three Fill Areas (A, B, and C), collection of environmental samples for chemical analysis, and surveying. Each phase of the field work was conducted in Level D+ or Level D personal protection. Field operations began on April 25, 1991, and were completed June 10, 1991. Drilling and test trenching operations were conducted by Buffalo Drilling Company of Buffalo, New York. All work was supervised by a URS Geologist, who also served as onsite coordinator and Health and Safety designee. Environmental sampling of sediments was conducted in a manner consistent with the Field Sampling Plan (URS, February 1991). Deviations from methods of environmental sampling of groundwater are detailed in Section 2.4. After the drilling and test trenching programs were completed, a field survey was conducted to establish the vertical and

horizontal locations of sampling points, monitoring wells, and fill limits delineated during the test trenching operation.

2.2.1 Drilling and Monitoring Well Installation

Six (6) groundwater monitoring wells were installed at the Dunlop site. These wells were used to obtain groundwater quality samples and may be incorporated in the post-closure monitoring program for the three fill sites. All well locations and relative hydrogeologic positions were as specified by NYSDEC (letter of April 3, 1990 to Dunlop Tire). Three wells were installed around the perimeter of Area C (Site No. 915018C), one upgradient (OMW-C1) and two downgradient (OMW-C5 and OMW-C6). At Fill Area A (Site No. 915018A), one upgradient well (OMW-A3) was installed. OMW-B2 was installed downgradient of fill area B (Site No. 915018B). The remaining well (OMW-B3) was installed downgradient of the settling pond that is located between Fill Areas A and B. Monitoring well locations are shown in Figures 2-1 and 2-2. Table 2-1 summarizes the monitoring well specifications. Boring logs are shown in Appendix A.

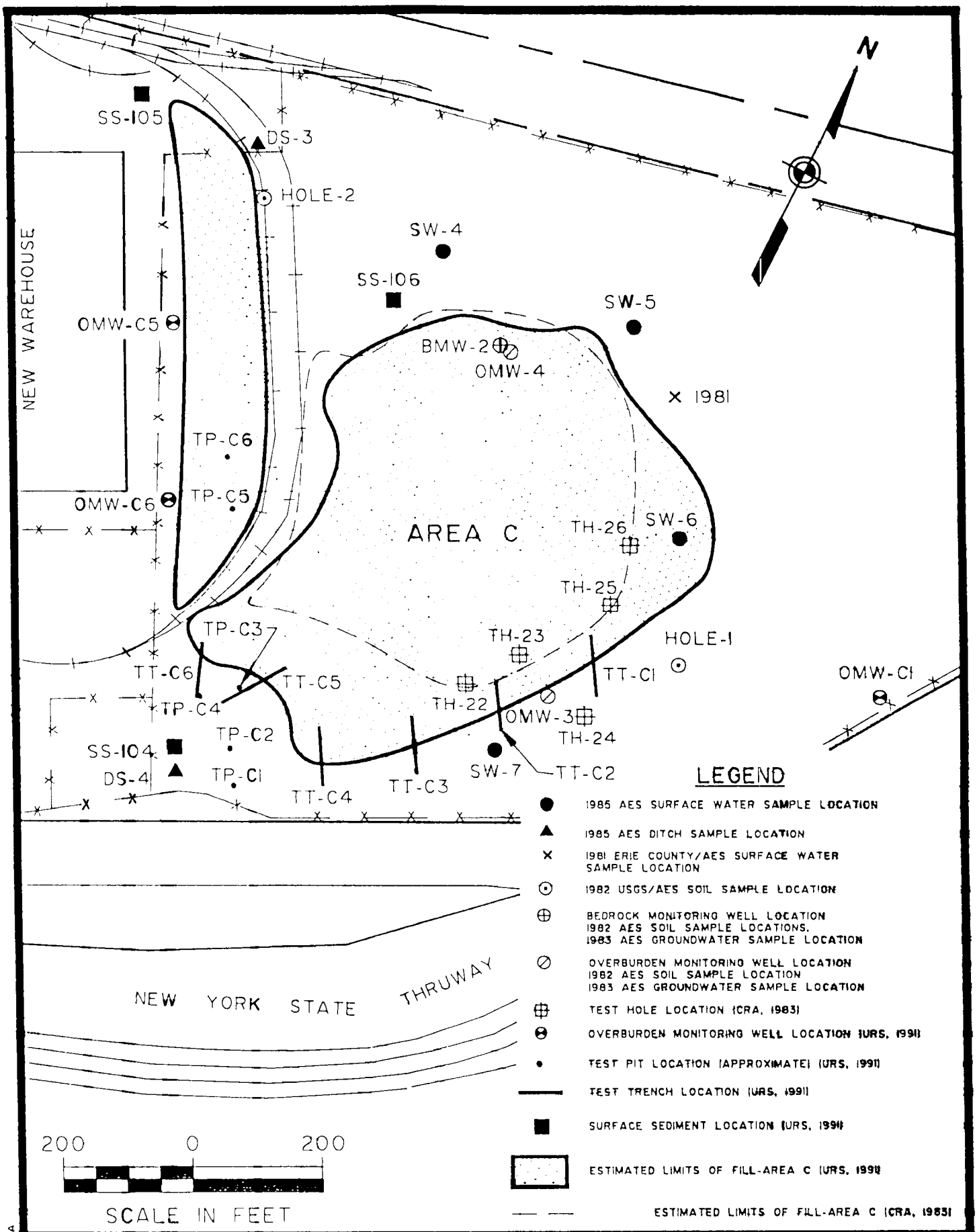
The boreholes in which monitoring wells were installed were advanced with either a track-drive mobile B-34S or truck-mounted Diedrich D-50 drill rig, using 4-1/4-inch hollow-stem augers to completion depth. Split-barrel samples were taken continuously in advance of the augers following American Society of Testing Materials (ASTM) 1586-84. The URS geologist provided field descriptions and material classifications as samples were obtained, in accordance with ASTM D2488-84. All retrieved samples were inspected for signs of contamination and screened with an HNu photoionization detector (PID) for the presence of organic vapors. No readings above background were recorded during the drilling program. Drilling and sampling equipment were decontaminated between each sampling interval and boring location in accordance with the approved decontamination plan.



URS CONSULTANTS, INC.

SITE MAP AREAS A & B

FIGURE 2-1



AC-3878A

URS CONSULTANTS, INC.

SITE MAP
AREA C

FIGURE 2-2

TABLE 2-1

MONITORING WELL SPECIFICATIONS

Well No.	Well Boring Depth (ft)*	Well Depth (ft)*	Unit(s) Screened	Screened Interval (ft)*
OMW-A3	22	21.7	Red/brown, stiff to hard desiccated silty clay	16.7-21.7
OMW-B2	16	15.5	Red/brown, stiff to hard dessicated silty clay	10.5-15.5
OMW-B3	15	14.5	Heterogeneous fill, peat, stiff to hard silty clay	9.5-14.5
OMW-C1	17.5	17	Red/brown, stiff to hard desiccated silty clay	7-17
OMW-C5	30	26.0	Red/brown, soft to stiff silty clay	16-26
OMW-C6	17	16.7	Red/brown, stiff to hard desiccated silty clay	6.7-16.7

* Depth below ground surface

Three (3) monitoring wells, OMW-B2, OMW-B3, and OMW-A3 were constructed of 2-inch ID stainless-steel riser pipe attached to a 5-foot length of machine-slotted (0.010 inch) stainless-steel well screen. The other three wells, OMW-C1, OMW-C5, and OMW-C6 were constructed of 2-inch ID stainless-steel riser pipe attached to a 10-foot length of machine-slotted (0.010 inch) stainless-steel well screen. After placing the stainless-steel well materials through the augers, #2 Q-ROK quartz sand was backfilled below and around the well screen to a height ranging from 2 to 12 feet above the top of the well screen. Appendix B provides a gradation curve of #2 Q-ROK quartz sand. The annular space above the top of the screened interval was sealed with approximately 2 feet of bentonite pellets. Following hydration of the pellets, a cement/bentonite grout was poured in above the bentonite seal, up to the ground surface. The well riser was fitted with a vented cap and secured with a 4-inch ID steel protective casing with lockable cap. Appendix C provides well construction details for each monitoring well.

2.2.2 Monitoring Well Development/Groundwater Monitoring

After completing the installation of monitoring wells, the wells were developed to remove residual sediments introduced during the drilling process. Equipment used was a 1-3/4-inch stainless-steel bailer and dedicated nylon rope. Because of the poor recharge characteristics of the formation in which the wells are screened, they could not be fully developed per NYSDEC protocol. However, each well was bailed to dryness and allowed to recover several times. This ensured that groundwater in each well was representative of formation water. Well development logs indicating volumes extracted, field parameter measurements, and recharge characteristics are provided in Appendix D. Development water was contained and then allowed to infiltrate the fill area monitored by the respective wells. [This method was approved in the field by NYSDEC personnel.] In general, groundwater levels were measured daily as wells were completed throughout the drilling program.

2.2.3 Hydrogeological Testing

The hydraulic conductivity of the shallow groundwater unit monitored at this site was evaluated by recovery test methods. Tests were performed on intervals monitored by wells OMW-C1, OMW-C5, and OMW-1 as agreed to with NYSDEC following the field investigation. The method consists of lowering the water level (by bailing the water within the well to dryness using a stainless-steel bailer) and monitoring the return of the water level to approximately 50 percent of the static level. Hydrogeological testing results are summarized in Section 3.2.3, and data are presented in Appendix E.

2.2.4 Test Trenching

Test trenching was performed in each area to more accurately determine the areal extent of fill in each of the three disposal areas. Trenching activities were conducted with a small tractor-mounted backhoe operated by Buffalo Drilling Co. This phase of the field work began May 3, 1991 and was completed May 8, 1991. A URS geologist directed trenching activities and described the materials encountered within each test trench. Individual test trench logs are provided in Appendix F. When the fill limit was delineated along a particular test trench, the location was staked, photographed, and surveyed. Section 3.3 summarizes the results of test trenching operations.

In general, the actual trenching activities followed closely the proposed trenching activities presented in the approved Work Plan (URS, February 1991). In response to site-specific field conditions, however, some deviations from the proposed trenching plan became necessary and procedures were accordingly modified in the field. Section 2.4.4 details deviations from the Work Plan.

2.2.5 Surveying and Mapping

After completing field activities, a field survey was conducted to establish the horizontal and vertical locations of all monitoring wells and horizontal locations of all other sampling points. The horizontal locations of the staked test trench locations, as well as arbitrary points along fill edges, were also established.

Vertical control was established using the National Geodetic Vertical Datum of 1929. Horizontal control was based on the New York State Plane coordinate system and is also relative to the existing structures at the Dunlop Plant. Closures for primary control were within 1 in 20,000. All surveying was performed by URS under the supervision of a New York State licensed land surveyor. The data were then plotted on a variety of maps which are included as part of this report.

2.3 Analytical Program Overview

The purpose of environmental sampling and the analytical program was to identify contaminant patterns, if any, at the Dunlop sites. These data are necessary for the proper identification of remedial actions and development of a post-closure monitoring program. Analytical samples taken include 5 sediments obtained from onsite ditches, and 12 groundwater samples (6 from the URS wells and 6 from the existing wells installed by CRA in 1983). All samples were analyzed for TCL volatile organics, TCL semivolatile organics, TCL pesticides/PCBs, TAL metals, and cyanide. All analyses were performed by Recra Environmental Laboratories of Amherst, New York. Laboratory analyses were conducted in accordance with Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition, November 1986. In addition to URS's compliance review, and those associated with SW-846, 3rd Edition, URS conducted an internal laboratory audit.

2.3.1 Subsurface Soil Sampling

As a contingency measure, subsurface soil samples were to be obtained from split-spoon samples if PID readings of 5 ppm above background levels, or obvious visible stains, were observed. The samples were to be analyzed for site-specific contaminants and/or TCL analytes. Since no readings of 5 ppm above background were observed, and no visible signs of contaminated soils became apparent, subsurface soil samples were not collected for analysis in agreement with the NYSDEC field representative.

2.3.2 Groundwater Sampling

Groundwater samples were obtained from the 6 URS wells installed as part of this investigation, and from the 6 wells installed by CRA in 1983 (Figures 2-1 and 2-2). In general, groundwater sampling was done in accordance with USEPA's RCRA Groundwater Monitoring Technical Enforcement Guidance Document (1986). In each instance, the monitoring wells were purged prior to sampling by evacuating the entire well volume. Due to the very slow response of the water-bearing zones monitored, deviations from the monitoring well development and groundwater sampling protocols were necessary. These deviations are detailed in Sections 2.4.2 and 2.4.3.

2.3.3 Surface Sediment Sampling

One surface sediment sample was obtained from each of 5 onsite ditches/drainageways (Figures 2-1 and 2-2). Location SS-101 was not sampled since a sample from this location was obtained during the 1990 NYSDEC Phase II Investigation of Polymer Applications. Samples were collected in a manner consistent with the Field Sampling Plan (URS, February 1991). Analytical results are presented in Section 4.2.3.

2.3.4 Surface Water Sampling

As a contingency measure, the sediment sample locations were to be sampled for surface water if contaminant concentrations within the sediment samples were found to be elevated. Since contaminant levels within the sediment samples were low, surface water samples were not obtained.

2.4 Work Plan Compliance

In general, methods of advancing soil borings, installing monitoring wells, soil/air screening, and the performance of most other field activities were conducted in a manner consistent with the Work Plan (URS, February 1991). However, some deviations were necessary in response to site-specific conditions. These are detailed below by activity.

2.4.1 Drilling and Monitoring Well Installation

Deviations from the proposed Work Plan occurred in the following activities:

- Monitoring well construction
- Containment and disposal of drill cuttings, drill water, and purge water

In response to the very slow recharge characteristics of the formation in which the monitoring wells were installed, the proposed well construction was modified to enhance groundwater recharge to the wells. This was accomplished by a combination of methods, including the installation of longer well screens (i.e., 10-foot vs. 5-foot) at three locations, and installation of a longer sand pack interval at most locations. In addition, several monitoring wells extended beyond the proposed 20-foot depth.

The methods of disposal of drill cuttings and containment of evacuation water from monitoring well development and purging were modified from the proposed methods. Instead of drumming all soil cuttings and evacuation water, it was agreed with NYSDEC (in accordance with the protocol specified in Technical and Administrative Guidance Memorandums [TAGM] - 'Disposal of Drill Cuttings' and 'Disposal of Contaminated Groundwater' generated during remedial investigations [11/89]), to drum soil and water only if HNu readings during drilling, well development, or purging, exceeded 5 ppm, or there was visual evidence of contamination. Since HNu readings above background were not encountered, and visual signs of contamination were not apparent, all drill cuttings were spread over the surface, and evacuated water was allowed to infiltrate the respective Fill Areas.

Decontamination procedures were accordingly modified from the proposed plan. Instead of containing all decontamination water, the drill rig and equipment were decontaminated on the Fill Areas and the decontamination water was allowed to infiltrate the respective Fill Area. Representatives from both NYSDEC and Dunlop were notified of this procedure prior to drilling.

2.4.2 Monitoring Well Development

In response to the very slow recharge characteristics of the formation in which the monitoring wells were installed, deviations from standard well development protocols were necessary. Well development began on May 9, 1991 and was completed by May 15, 1991. All wells were bailed to dryness on a daily basis. Due to the limited amount of water available for evacuation, it was not possible to achieve the commonly used guideline of < 50 NTU for turbidity. In general, turbidity readings exceeded 100 NTU for all wells. Other indicator parameters, however, (e.g., pH, specific conductivity, and temperature) had stabilized (Appendix D).

2.4.3 Groundwater Sampling

In general, methods of groundwater sampling were conducted in accordance with USEPA's RCRA Groundwater Monitoring Technical Enforcement Guidance Document (1986). Because of the very slow recharge of the wells, and, consequently, the limited amount of formation water available for sampling, partial samples were collected over a period of 5 to 12 days, as well recharge permitted. Table 2-2 shows the sampling dates of groundwater samples.

2.4.4 Test Trenching

In general, the actual trenching activities followed closely the proposed trenching activities presented in the Work Plan (URS, February 1991), with the following exceptions.

Fill Area A

Seven (7) test trenches were proposed in this Fill Area. Eight (8) trenches were actually excavated. Since Fill Area A was found to be more extensive than originally thought, test trench lines were generally longer than proposed. In addition, it was determined during trenching operations that the major area of disposal (thicker fill) was concentrated within the overall Fill Area. The major fill was visually identified by topographic features. This area was therefore delineated. The fill limit of test trench A1 (northernmost portion of the fill) could not be determined due to obstructing features (e.g. pavement). In addition, two test pits (TP-A1 and TP-A2) were excavated to characterize the subsurface material at specific locations.

For purposes of mapping, the northern fill extent was tied into the northwest corner of building No. 1 and the northern perimeter fence (east

TABLE 2-2

SUMMARY OF SAMPLING DATES - GROUNDWATER SAMPLES

Monitoring Well No	Sample Start Date	Sample Completion Date
OMW-A3	5-30-91	6-3-91
OMW-B2	5-29-91	6-10-91
OMW-B3	5-29-91	6-3-91
OMW-C1	5-29-91	6-4-91
OMW-C5	5-29-91	6-3-91
OMW-C6	5-29-91	6-3-91
OMW-1	5-30-91	6-10-91
OMW-2	5-30-91	6-10-91
OMW-3	5-30-91	6-4-91
OMW-4	5-29-91	6-4-91
BMW-1	5-30-91	6-3-91
BMW-2	5-30-91	6-4-91

of the 100,000 gallon water tank). Section 3-3 provides a detailed discussion of trenching operations and findings.

Fill Area B

Eight (8) test trenches were proposed in the Work Plan (URS, February 1991) but only 7 trenches were excavated. The locations of these 7 trenches varied somewhat from the originally proposed locations as well. The precise location of the fill limit along several test trenches could not be determined due to obstructing features which precluded further trenching (e.g., fence, paved parking lot, settling pond). Section 3.3 provides a detailed discussion of trenching operations and findings. In addition, 6 test pits (TP-B1 through TP-B6) were excavated to characterize the subsurface material at point-specific locations to aid in delineating the fill limits.

Fill Area C

One additional test trench line (TT-C6) was conducted along the southern perimeter of the fill. In addition, 2 separate test pits (TP-C5 and TP-C6) were dug along a berm-like topographic feature located between the fence and the rail tracks near the western fill margin. The test pits were dug to characterize the type of materials buried in the berm. Four (4) additional test pits (TP-C1 through TP-C4) were excavated at point-specific locations near the southwest corner of Fill Area C in an effort to locate the limit of fill.

3.0 GEOLOGY AND GROUNDWATER/SURFACE WATER CONDITIONS

3.1 Local Geology

The Dunlop site is located within the Erie-Ontario Lowlands physiographic province of New York State. The site is underlain by the Silurian age Camillus Shale Formation. The bedrock is reported to be interbedded limy shale and mudstone and contains gypsum and anhydrite crystals (Buehler and Tesmer, 1963). Depth to bedrock ranges from approximately 62 to 75 feet at the site (Canestoga Rovers and Associates, 1983). Groundwater flow direction is anticipated to be westerly, toward the Niagara River.

During the Wisconsinan Glacial Stage (~12,000 years before present) the Laurentide ice sheet occupied a major portion of Western New York State. Retreat of the ice sheet induced an abundance of glacial meltwater, which eventually grew into proglacial Lake Whittlesey, and later Lake Warren in the Erie Basin. The associated lake deposits typically consist of varved silts and clays. Sediment contributions were derived from meltwater and from the adjacent Allegheny Plateau. Other deposits associated with the retreat of the ice-sheet include drumlins and glacial till. The vertical and areal extent of the deposits varies across the region.

In the vicinity of the Dunlop site, 8 to 15 feet of dense glacial till mantles the bedrock surface. The till is overlain by approximately 50 feet of lacustrine silts and clays. The lake silts and clays were deposited during the Lake Whittlesey, Lake Warren, and other Proglacial lake stages in the Erie Basin.

The glacial till layer which rests on the Camillus Shale in the vicinity of the Dunlop site was deposited during the advance and subsequent retreat of the Laurentide ice-sheet during the Wisconsinan

Glacial Stage (~13,000 years before present). As the meltwater from the wasting Laurentide ice mass increased, Lake Whittlesey formed in the wake of the retreating ice sheet within the Erie Basin. Surges of glacial readvance coupled with retreat of the Huron ice lobe in Michigan, and subsequent withdrawal of smaller ice margins from the eastern edge of the basin (eastern Niagara County and Western Genesee County), induced eastward drainage for water in the Erie Basin. This resulted in a rapid decline in water level to Lake Warren Stage, and other subsequent proglacial Lake Stages (Mueller, 1977). Lacustrine sedimentation occurred in the form of varved silts and clays within the deeper water environments in the proglacial lakes. The thick clay deposits identified at the Dunlop site represent lacustrine deposition within these proglacial lakes.

3.2 Site-Specific Geologic Conditions

3.2.1 Site Geology

Five subsurface soil units were delineated based on results of this and previous studies. Each unit is described below from shallowest to deepest.

- Fill - Generally black, brown, or gray, loose to medium dense, heterogeneous mixture of construction and demolition debris, silt, ash, and slag. The unit was encountered at well locations OMW-A3, OMW-C5, and OMW-C6. At these locations, the fill unit was relatively thin (approximately 2 feet) and representative of a regraded surface layer as opposed to a former waste dumping area. At location OMW-B3, a thick cover of disturbed silty clay soil (approximately 8 feet thick) was encountered overlying the original surface. Fill in this area is probably related to the construction of the settling pond.

- Organic Silt - Where little or no disturbance of the soils was encountered (OMW-C1 and OMW-B2), a topsoil layer was encountered in the upper 6 inches of the soil profile. The organic silt unit was present at location BMW-2 beneath the fill layer, indicating that the fill was placed on top of the organic silt. This material is characterized as black to brown, soft to medium stiff, moist to wet organic silt with some roots.

- Desiccated Silty Clay - Reddish/brown, mottled yellow brown and gray, dry to slightly moist, medium stiff to hard, medium plastic silty clay. The unit is also characterized by some to many vertical fractures (desiccation cracks) which were observed to a maximum depth of 16 feet at location OMW-C5.

- Silty Clay - Reddish/brown, medium stiff to very stiff, slightly moist to moist, medium plastic silty clay. This soil unit was delineated from the desiccated silty clay layer by the absence of vertical fractures. In addition, the N value generally decreases while moisture content increases. This unit is transitional from the above desiccated silty clay unit into the underlying soft silty clay unit, and was encountered at depths ranging from 10 to 16 feet below grade.

- Soft Silty Clay - This unit is characterized as reddish/brown, soft, very moist, high plasticity silty clay. This unit was encountered only at the deeper borings (OMW-C5, BMW-1, and BMW-2) approximately 25-30 feet below grade. At BMW-1 and BMW-2, it was approximately 25 feet thick.

- Gravelly Silt, Some Sand and Clay - Reddish/brown to brown, medium dense to very dense, moist to wet, gravelly silt with some sand and clay. The unit was encountered only in borings

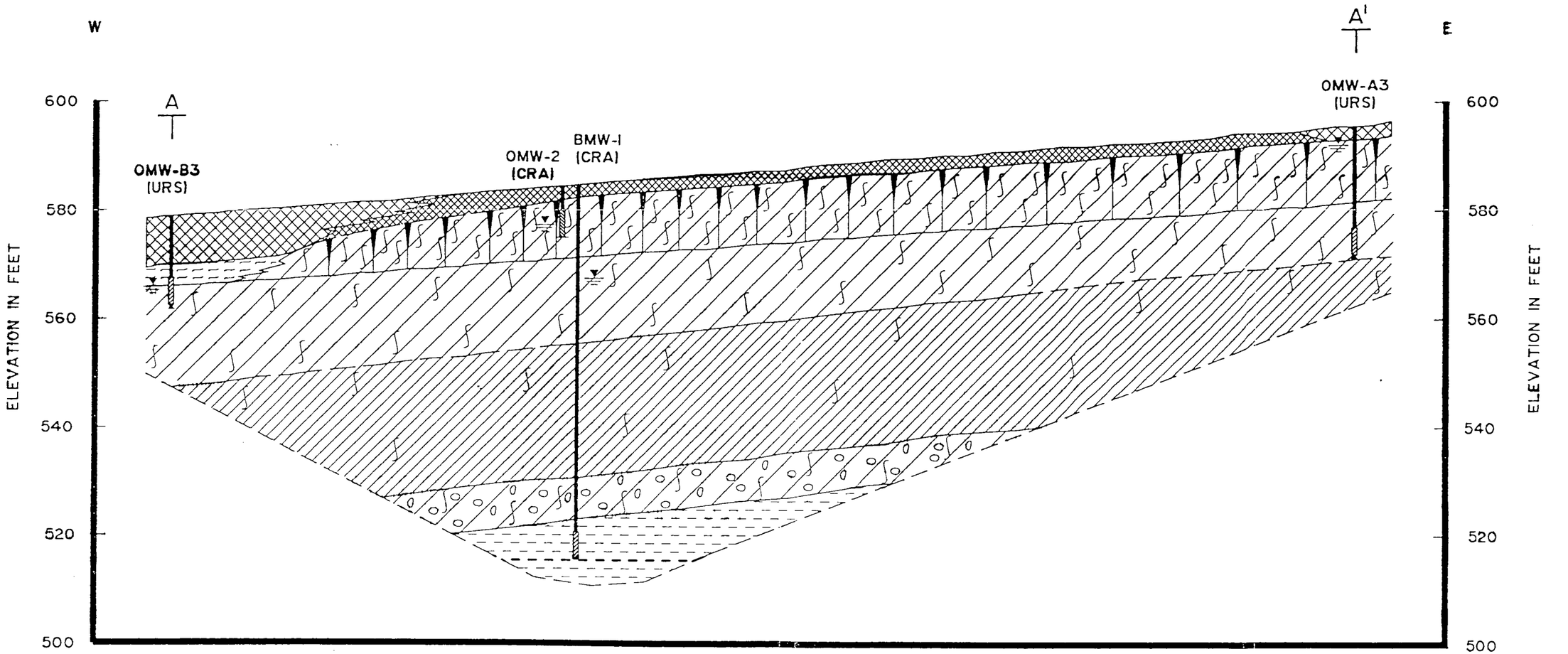
advanced to bedrock (BMW-1 and BMW-2) at a depth of approximately 60 feet below grade. The unit is approximately 10 feet thick and rests on bedrock.

- Camillus Shale Bedrock - The bedrock beneath the site is the Silurian Age Camillus Shale. The unit is characterized as gray, limy shale to mudstone and contains gypsum and anhydrite. The unit was encountered at borings BMW-1 and BMW-2 at 62 feet and 74 feet, respectively, below grade.

Figure 3-1 illustrates a generalized cross-section (A-A') from west to east across Area A of the Dunlop site (refer to Figure 2-1 for plan of section). Subsurface information prepared by CRA (BMW-1) was utilized in the cross-section. Bedrock was encountered at 62 feet below grade in BMW-1. Approximately eight feet of glacial till mantles the bedrock surface. Above the dense till layer, silty clay deposits of the former glacial lakes extend to the original ground surface. This unit is transitional from soft sediments at depth to stiff and hard soil near the surface, reflecting the lower moisture content and desiccation of the near-surface sediments. The desiccated silty clay layer is approximately 10 to 15 feet thick with vertical fractures becoming more numerous near the surface. Heterogeneous fill caps the sequence. At location OMW-B3, however, a 4-foot peat layer separates the overlying fill from the underlying stiff-hard clay.

Figure 3-2 shows a generalized geologic cross-section (B-B') from west to east across Area B of the Dunlop site. The section depicts only the shallow overburden zone in which most of the onsite monitoring wells are screened. Subsurface data interpreted by CRA have been incorporated into the section (OMW-1). The fill thickness between the two wells has been approximated based on test trench information. The fill overlies approximately 10 feet of hard, desiccated silty clay, which in turn

1"=100' 10/18/91



LEGEND

BMW-1 — BORING AND MONITORING WELL NUMBER

▼ — WATER TABLE (5/17/91)

SCREENED INTERVAL OF MONITORING WELL

BOTTOM OF BORING

NOTES:

1. VERTICAL DATUM BASED ON USGS (1979).
2. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARD ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.

LEGEND

DISTURBED FILL

WASTE MATERIAL

FILL

PEAT - ORGANIC SILT

STIFF - HARD DESICCATED SILTY CLAY

STIFF SILTY CLAY

SOFT SILTY CLAY

DENSE GRAVELLY CLAYEY SILT (TILL)

CAMILLUS SHALE BEDROCK

0 100 200

HORIZ. SCALE IN FEET

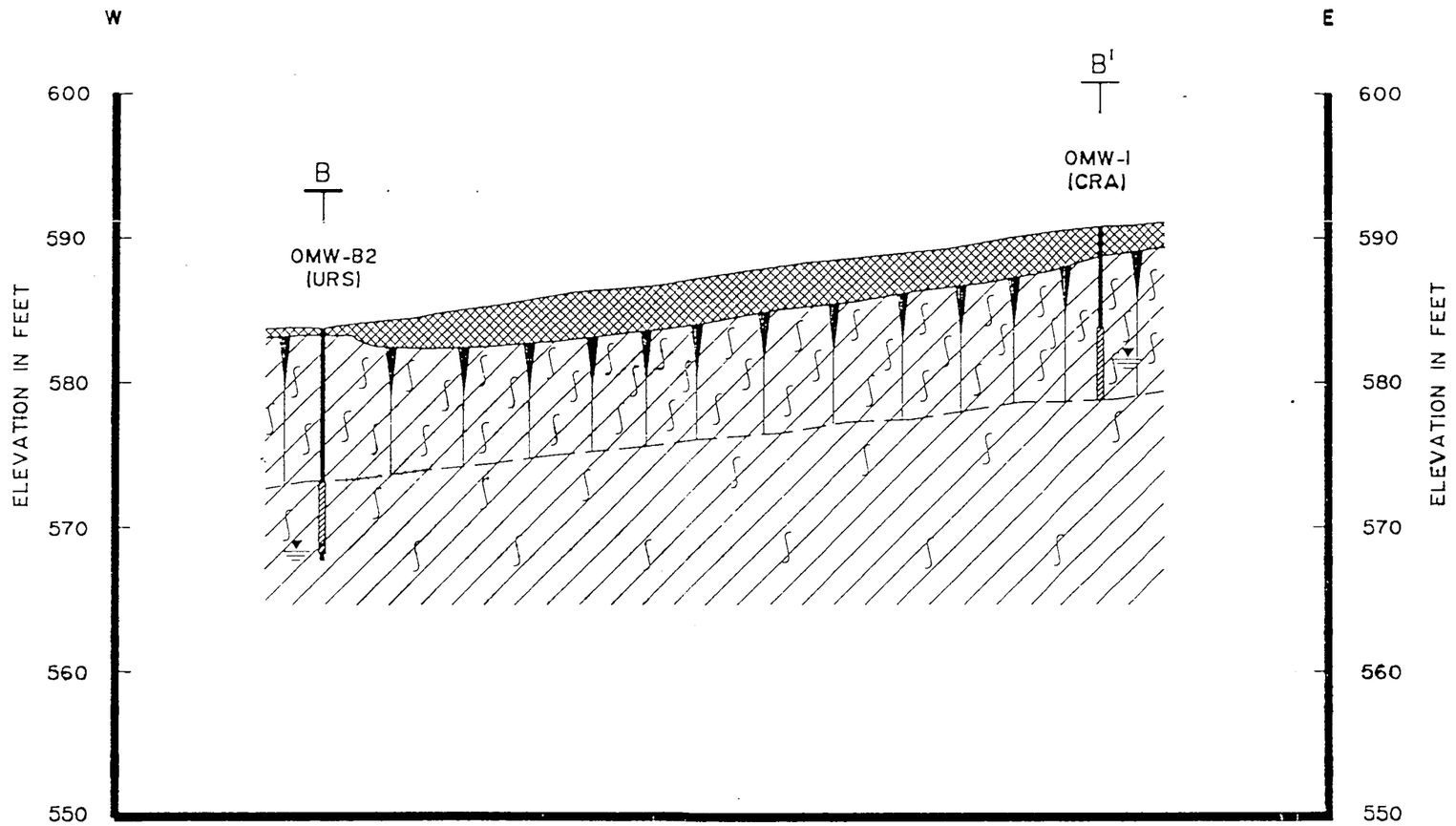
DUNLOP SITE STUDY
FILL AREA A / CROSS SECTION A-A'

URS CONSULTANTS, INC.

FIGURE 3-1

CC:2175

1"=100' 10/18/91



LEGEND

BMW-1 —— BORING AND MONITORING WELL NUMBER

—— WATER TABLE (5/17/91)

—— SCREENED INTERVAL OF MONITORING WELL

—— BOTTOM OF BORING

NOTES:

1. VERTICAL DATUM BASED ON USGS (1979).
2. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARD ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.

LEGEND

DISTURBED FILL

WASTE MATERIAL

FILL

STIFF - HARD DESICCATED SILTY CLAY

SOFT SILTY CLAY

0 100 200

HORIZ. SCALE IN FEET

DUNLOP SITE STUDY
FILL AREA B / CROSS SECTION B-B'

URS CONSULTANTS, INC.

FIGURE 3-2

CC-2176

overlies the stiff to hard silty clay. The stratigraphic profile shown in Figure 3-2 is similar to the near-surface profile shown in Figure 3-1.

Figure 3-3 illustrates a generalized geologic cross-section (C-C') from west to east across Fill Area C of the Dunlop site. Subsurface data interpreted by CRA (BMW-2) were utilized in this cross-section. The stratigraphic sequence is similar to that described previously. Bedrock, however, appears to be deeper (75 feet) in the vicinity of Fill Area C. In addition, an organic silt layer was identified over the desiccated silty clay at OMW-C1, and between the fill and the desiccated silty clay at BMW-2, indicating that filling activities advanced over previously low-lying areas.

3.2.2 Soils

Surficial soils in the vicinity of the site have been classified by the United States Department of Agriculture Soil Conservation Service. Soils adjacent to Fill Area C are characterized as silt loams of the Odessa-Lakemont Series. Land adjacent to Fill Areas A and B is characterized as urban.

The Lakemont soils are characterized as deep, poorly drained or very poorly drained soils in nearly level areas or in depressional areas. This hydrologic condition is currently evident around the northern and eastern perimeter of Fill Area C where swampy conditions exist. The Odessa soils are characterized as deep, nearly level, somewhat poorly drained soils which formed in red glacial lake sediments high in clay and silt. These soils, which are transitional into the Lakemont Series soils, lie further north of Fill Area C. Urban land dominates the Dunlop site. The land is characterized as a miscellaneous area in which 80% or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures.

1"=100' 10/18/91

W

C

C'

E

OMW-C5 (URS)

OMW-4 (CRA)

BMW-2 (CRA)

OMW-C1 (URS)

620

600

580

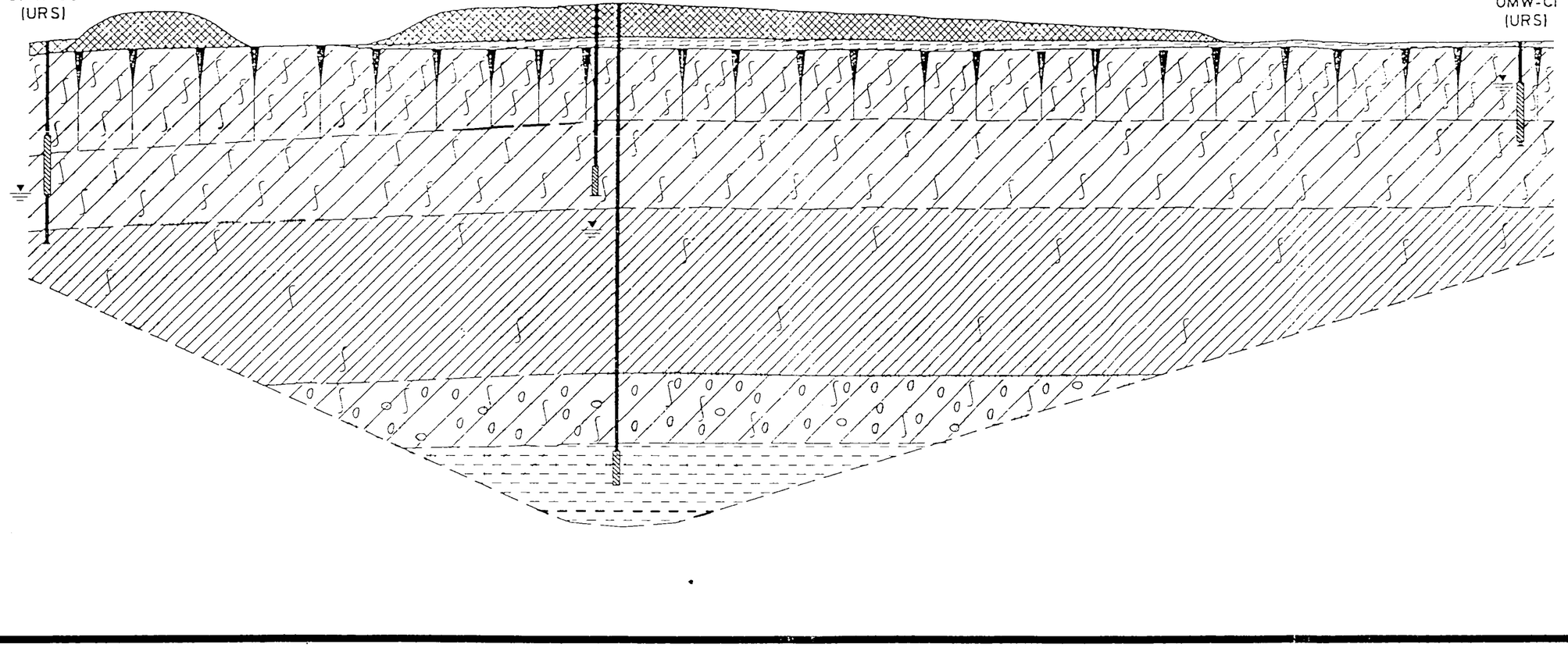
560

540

520

500

ELEVATION IN FEET



LEGEND

BMW-2 — BORING AND MONITORING WELL NUMBER

▼ — WATER TABLE (5/17/91)

SCREENED INTERVAL OF MONITORING WELL

BOTTOM OF BORING

NOTES:

1. VERTICAL DATUM BASED ON USGS (1979).
2. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARD ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.

LEGEND

DISTURBED FILL

WASTE MATERIAL

FILL

PEAT - ORGANIC SILT

STIFF - HARD DESICCATED SILTY CLAY

STIFF SILTY CLAY

SOFT SILTY CLAY

DENSE GRAVELLY CLAYEY SILT (TILL)

CAMILLUS SHALE BEDROCK

0 100 200

HORIZ. SCALE IN FEET

DUNLOP SITE STUDY
FILL AREA C / CROSS SECTION C-C'

URS CONSULTANTS, INC.

FIGURE 3-3

CC-2177

3.2.3 Groundwater Hydrology

To assess groundwater quality and to determine groundwater flow direction, 6 monitoring wells were installed by URS as part of this investigation. Six (6) additional monitoring wells, installed by CRA in 1983, were also utilized to achieve this objective. Table 3-1 provides water level data gathered during the field investigation. In general, water levels were obtained on a daily basis as the wells were installed. Water levels were also measured prior to sampling and at monthly intervals thereafter for the duration of the project.

At the time of URS well installation, groundwater was not visible in the open borehole. As groundwater was allowed to slowly recharge the wells, groundwater levels were found to intersect the well screen at all locations except OMW-A3. At OMW-A3, the groundwater level stabilized above the top of the screen (Table 2-1).

Groundwater at the site was encountered at depths ranging from approximately 3 to 25 feet below grade within overburden monitoring wells and from approximately 19 to 40 feet below grade in the bedrock wells (at BMW-1 and BMW-2, respectively).

Figure 3-4 shows groundwater contours in Fill Areas A and B on May 17, 1991. The direction of groundwater flow within this area is southwest, toward the Niagara River, from upgradient well OMW-A3 towards downgradient wells OMW-2, OMW-B3, and OMW-B2. The average horizontal flow gradient in the direction of flow is 0.039 ft/ft (between OMW-A3 and OMW-B3). The vertical hydraulic gradient between BMW-1 and OMW-2 is downward at 0.169 ft/ft.

Figure 3-5 shows groundwater contours for the overburden wells around Fill Area C. Groundwater flow is generally westward from OMW-C1 (upgradient) towards downgradient wells OMW-C5 and OMW-C6, in the

TABLE 3-1

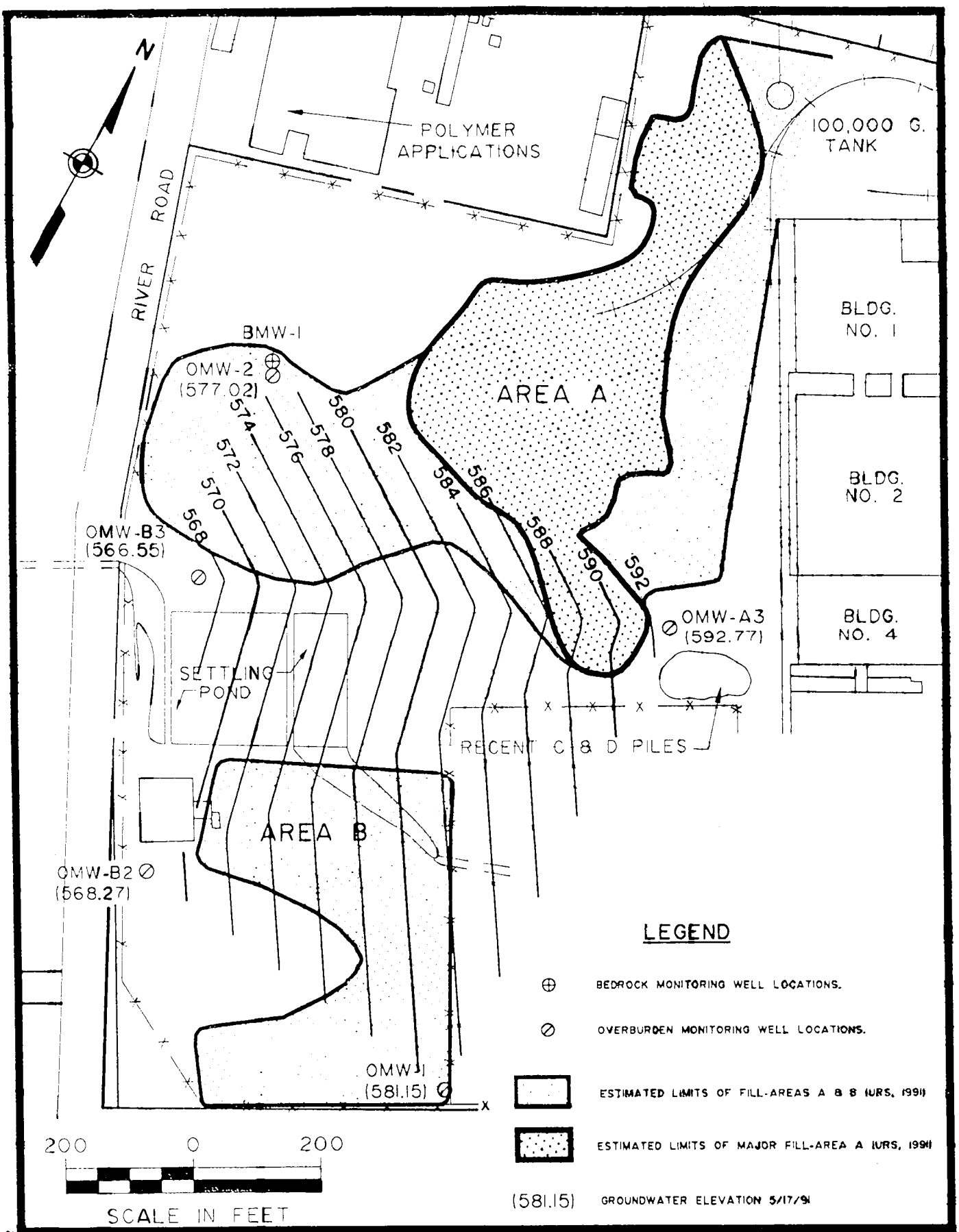
DUNLOP SITE
GROUNDWATER ELEVATIONS
CRA WELLS

Monitoring Well	OMW-1	OMW-2	OMW-3	OMW-4	BMW-1	BMW-2
Riser Elevation	592.87	588.45	603.44	609.50	587.74	609.79
Ground Elevation	590.81	585.64	600.76	607.49	585.19	607.16
*Riser Height	2.06	2.81	2.68	2.01	2.55	2.63
5-1-91	--	--	600.51	601.56	--	567.93
5-7-91	588.55	582.76	600.29	601.42	567.06	568.16
5-7-91	588.48	583.39	600.24	601.38	566.00	567.99
5-17-91	581.15	577.02	591.42	601.27	566.56	568.08
7-3-91	581.57	576.35	590.98	600.93	547.50	556.43
9-27-91	584.80	580.60	593.43	DRY	538.26	550.54

URS WELLS

Monitoring Well	OMW-A3	OMW-B2	OMW-B3	OMW-C1	OMW-C5	OMW-C6
Riser Elevation	598.22	586.73	580.58	603.84	604.37	603.00
Ground Elevation	595.43	583.78	577.85	601.04	601.39	600.45
*Riser Height	2.79	2.95	2.73	2.80	2.98	2.55
4-29-91	587.02	--	--	--	--	--
4-30-91	588.42	568.21	DRY	--	--	--
5-1-91	590.84	568.31	DRY	--	--	--
5-2-91	591.85	568.39	565.08	--	DRY	--
5-3-91	592.46	568.45	566.38	586.10	DRY	583.95
5-6-91	592.83	568.73	571.12	593.04	DRY	584.42
5-7-91	592.72	568.79	571.71	594.76	575.03	584.56
5-8-91	592.59	568.83	571.78	596.26	574.99	584.62
5-17-91	592.77	568.27	566.55	593.88	576.67	584.82
7-3-91	587.24	569.77	573.20	596.99	581.96	NR
9-27-91	581.47	578.18	571.13	594.09	583.22	NR

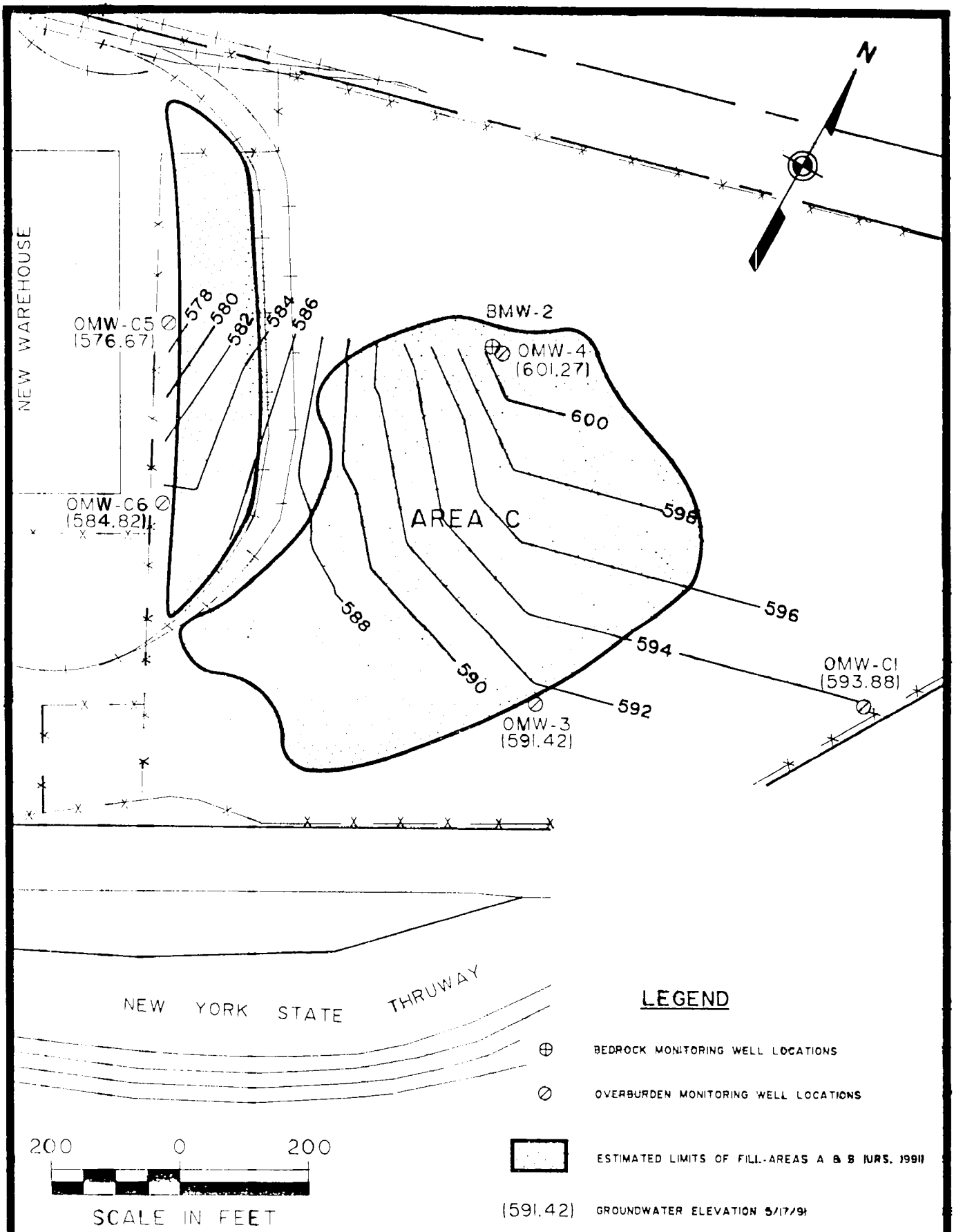
* - Height in feet above ground surface
Note: All elevations given in feet (AMSL).
NR - Not Recorded



URS CONSULTANTS, INC.

GROUNDWATER CONTOUR MAP AREAS A & B

FIGURE 3-4



SC-3883

URS CONSULTANTS, INC.

GROUNDWATER CONTOUR MAP AREA C

FIGURE 3-5

direction of the Niagara River. Effects of groundwater mounding in the fill are also apparent in the radial contours around the southern extent of the fill area. Using groundwater contour lines perpendicular to monitoring wells the horizontal groundwater flow gradients toward monitoring wells OMW-3 and OMW-5 are 0.019 ft/ft and 0.046 ft/ft, respectively. The vertical hydraulic gradient between BMW-2 and OMW-4, is downward at 0.45 ft/ft.

Groundwater flow within the bedrock aquifer is anticipated to be westerly, toward the Niagara River. Only 2 bedrock monitoring wells are located on the Dunlop property, BMW-2 is located in Fill Area C, while BMW-1 is located in fill area A. Although determining an accurate direction of groundwater flow in the bedrock aquifer may not be possible, the general direction may be inferred. Based on the water levels between the two wells, groundwater within the bedrock aquifer appears to be flowing from Fill Area C towards Fill Area A (i.e., westerly).

Hydraulic conductivities were calculated for three of the monitoring wells at the Dunlop sites (OMW-1, OMW-C1, and OMW-C5). The Bouwer and Rice method (Bouwer and Rice, 1976) was used to reduce test data obtained from these wells. At the time of testing, water levels were found to intersect the well screen in all three wells.

Calculated hydraulic conductivities for monitoring well OMW-1, OMW-C1, and OMW-C5 are presented in Table 3-2. Both early recovery data and later recovery data results are reported for each monitoring well. Early recovery testing results are indicative of groundwater recharge to the well via water-filled desiccation cracks which intersect the well boring. Since the frequency of the cracks decreases with depth, it is anticipated that recovery to the well through these cracks will diminish with depth. Permeability studies of similar sediments have documented a 2 to 3 order-of-magnitude reduction in hydraulic conductivity values proceeding from fractured to non-fractured sediments (Ruland, W.W., et al, 1991). The

TABLE 3-2

SUMMARY OF HYDRAULIC CONDUCTIVITY TESTING RESULTS

Monitoring Well No.	Unit Screened	Hydraulic Conductivity Early Recovery Data (cm/s)	Hydraulic Conductivity Later Recovery Data (cm/s)
OMW-1	Fill/desiccated silty clay	1.97×10^{-5}	5.75×10^{-8}
OMW-C1	Desiccated silty clay	2.4×10^{-6}	1.31×10^{-7}
OMW-C5	Non-desiccated silty clay	1.75×10^{-6}	7.48×10^{-8}

data support this observation. Later recovery testing data are probably more representative of the overall bulk permeability of the silty clay sediments. In general, results from later recovery testing are comparable to CRA's estimated permeability of the overburden. The somewhat higher conductivity apparent at OMW-C1 may be the result of a greater concentration of desiccation cracks within the borehole at that location. Since the frequency of fractures decreases with depth, and since cracks are non-existent within the soft silty clay sediments below (approximately 20 feet), vertical movement of groundwater to the underlying bedrock should be negligible.

3.2.4 Surface Water Hydrology

Surface water from the area immediately around the plant drains to a storm sewer system which discharges to the settling pond and finally to the Niagara River. The section east of the plant is served by drainage ditches that drain ultimately to Sheridan Drive. The western section is served by drainage tiles that exit the property past Polymer Application and onto River Road. Several low-lying and swampy areas occur near the Fill Areas. Since surface water drainage in the Fill Areas is minimal, and since subsurface soils are quite impermeable, evapotranspiration would appear to be a major avenue of surface water removal.

3.3 Fill Area Delineation

This section describes the results of the test trench program conducted in each of the Fill Areas. Individual test trench logs illustrating fill material characteristics and a plan sketch of the test trench extent and location are provided in Appendix F.

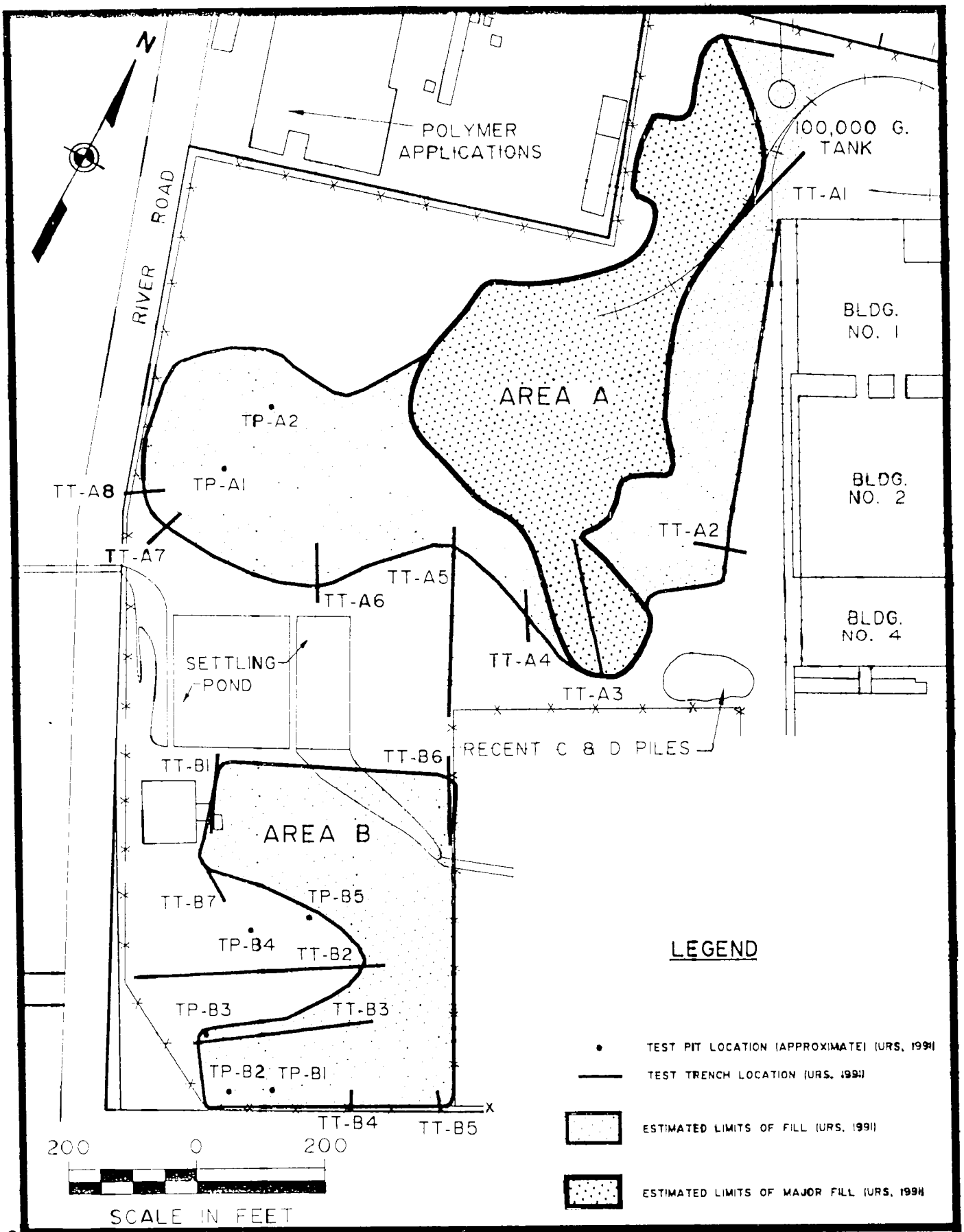
3.3.1 Fill Area A

Eight (8) test trenches (TT-A1 through TT-A8) were excavated along the fill margin of Area A (Figure 3-6). In an effort to characterize the materials to the west of the previously defined western fill limit, 2 test pits (TP-A1 and TP-A2) were also excavated. Fill Area A was found to be more extensive than had been previously documented (CRA, 1983), and with a core area of more concentrated waste deposition. This greater Fill Area was delineated as in Figure 3-6. The eastern and western margins of Fill Area A were defined on the basis of surface topography and configuration of waste piles. In addition, the extent of fill in the area of trench TT-A1 could not be determined due to obstructing features (e.g., pavement). For purposes of mapping, the Fill Area was tied to the northwest corner of building No. 1 and the northern perimeter fence (east of the 100,000 gallon water tank).

Test trenches were excavated to depths ranging from 2 to 5 feet. Test trench lines ranged in length from approximately 20 to 350 feet. The fill consisted of a heterogeneous mixture of black and brown silt, reworked reddish/brown silty clay, ash, slag, carbon black, construction and demolition debris, asphalt, foam, rubber tires, and coal.

3.3.2 Fill Area B

Seven (7) test trenches (TT-B1 through TT-B7) were excavated along the fill margin of Area B (Figure 3-6). Individual trenches were excavated to depths ranging between 2 and 5 feet. In general, trenching intervals ranged from approximately 10 to 150 feet. As a result of site-specific conditions, boundaries of the entire Fill Area could not be determined. For example, the eastern fill edge was not delineated because the asphalt parking lot covers a portion of the fill. [Aerial photographs (1959) confirm filling activity beneath the present-day parking lot.] At the time of trenching, it was determined by NYSDEC that delineation of the



AC 3880

URS CONSULTANTS, INC.

TEST TRENCHING LOCATIONS AREAS A & B

FIGURE 3-6

fill limits beneath the paved parking area would not be necessary. On the northern side of Area B, the fill was also found in close proximity to the southern boundary of the settling pond.

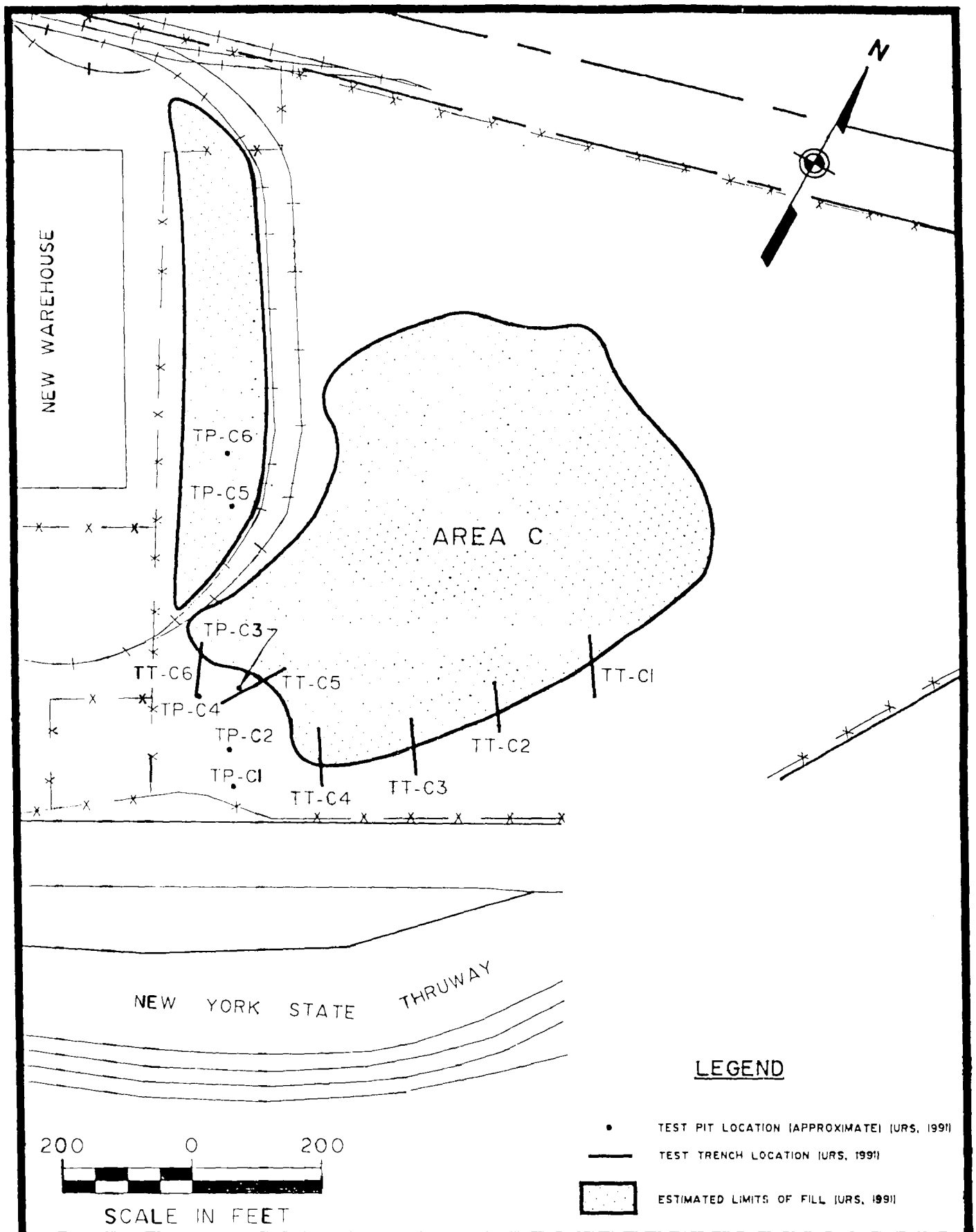
The outline of the Fill Area was also found to be more irregular than that identified previously by CRA. On the west, the Fill Area is noticeably indented. A large portion of the area was apparently occupied by a baseball diamond, which can be seen in the 1959 aerial photograph. This sub-area was not filled with waste materials.

The fill encountered in Area B consisted of a heterogeneous mixture of black and brown silt, reworked reddish-brown silty clay, ash, slag, carbon black, construction and demolition debris, asphalt, coal, and rubber.

3.3.3 Fill Area C

Six (6) test trenches (TT-C1 through TT-C6) were dug along the southern fill margin of Area C. In addition to the test trenches, two test pits (TP-C5 and TP-C6) were dug along the berm-like topographic feature located between the fence and rail tracks along the western margin of the fill. Five more test pits were dug near the southwest corner of the fill area to confirm the composition of the berm and to delineate the western fill margin (Figure 3-7). In general, test trench lines were oriented normal to the estimated margin of the fill. Individual trenches were excavated to depths ranging from 2 to 3 feet. Typically, test trenching began in the unfilled area outside of the estimated fill limits and extended towards the Fill Area either continuously, without interruption, or with interruption, or with 50 to 60-foot intervals between trenched segments along the trench line.

The extent of fill in Area C is shown in Figure 3-7. The northern limit of the fill is defined by a scarp which was surveyed along the outer



URS CONSULTANTS, INC.

TEST TRENCHING LOCATIONS AREA C

FIGURE 3-7

toe of the fill where it contacted the original surface. The berm-like feature between the fence and rail tracks was likewise surveyed based upon topographic expression. The fill materials consisted of a heterogeneous mixture of black and brown silt, ash, slag, sand and gravel, construction and demolition debris, and rubber.

4.0 DISCUSSION OF RESULTS

4.1 Review of Previous Investigation Results

Between 1982 and 1985, several rounds of environmental samples, including soil, groundwater and surface water samples, were taken from each of the three Dunlop waste sites. The results are summarized below by matrix. Analytical results of past investigations are presented in Appendix G.

4.1.1 Soil

Four soil samples were taken by USGS in July 1982 at depths of approximately 1.5 to 2 feet. These samples were analyzed by AES for total volatile halogenated organics (TVHO), total phenols, and total Kjeldahl nitrogen (TKN). The volatile halogenated organics were tentatively identified as carbon tetrachloride, chloroform, trichloroethylene and tetrachloroethylene.

Ten soil samples were taken at various depths at well locations in December 1982 and analyzed by AES for five contaminants of concern. These results showed the presence of total phenols in concentrations ranging from 0.03 ppm to 0.35 ppm. Chloroform, trichloroethylene, and tetrachloroethylene were also detected at low levels in all the samples. Carbon tetrachloride was not detected in any sample. The highest concentrations were found at shallow depths and the lowest concentrations found in the underlying clayey sediments. The concentration of volatiles was seen to decrease significantly with increasing depth, indicating little vertical migration of contamination.

One surface soil sample was taken in October 1988 in the area of Fill Area A, where vegetation had been affected by an airborne release from a reaction vessel at Polymer Applications. The sample was tested for

the reported reactants, phenols, and toluene. Results showed phenols at 7 ppm and toluene below quantitation limits

Analytical results of all soil analyses are given in Appendix G.

4.1.2 Surface Water/Sediment

A surface water sample was taken by Erie County in July 1981 from a swampy area near Fill Area C. The sample, which was split with Dunlop for analysis by AES, was analyzed for metals and several indicator parameters. Total phenols were detected (by AES only) at 9.9 ppb.

In June 1985, AES sampled six surface water locations and analyzed these samples for volatile organics and total phenols. The samples, which were taken following a dry period with little precipitation, revealed concentrations of phenols ranging from 0.15 to 0.58 ppm. This sampling was repeated, and seven additional surface water samples taken, after a heavy rain in November 1985. These samples contained significantly decreased concentrations of phenols, ranging to a high of only 0.08 ppm. Results of surface water analyses are given in Appendix G.

One surface water/sediment sample (SW-3/SED-3) was collected from a swampy area near Polymer Application's eatern property line. The sample was located on Dunlop's property and was sampled as part of Phase II investigation of the Polymer Applications site (NYSDEC Site No. 915044). The Phase II was completed in 1991 and was conducted by Engineering Science. SW-3 was analyzed for TCL organic compounds and SED-3 was analyzed for TCL organic compounds and EP Toxicity metals. These results were intended to replace the results of URS proposed sample location SS-101 since the locations were nearly identical. Analytical results are given in Appendix G.

Only one semivolatile (phenol - 35 ppb) was present in the surface water sample SW-3. Five volatiles were detected in SED-3 including methylene chloride (69 ppb), acetone (190 ppb), total xylenes (51 ppb), 2-butanone (98 ppb), and toluene (143 ppb). Aroclor-1260 was present at 5,500 ppb. EP Toxicity barium, cadmium, lead, and silver were also detected in SED-3 (Appendix G).

4.1.3 Groundwater

In January 1983, two bedrock wells were sampled by AES. The list of groundwater parameters for which analysis had been requested was based on the volatile contaminants found in the soil samples. The list included carbon tetrachloride, chloroform, trichloroethylene and tetrachloroethylene. None of these analytes was detected in the bedrock wells. In June and July 1983, groundwater from three overburden wells was sampled and analyzed. All samples revealed quantifiable concentrations of phenols, chloroform, trichloroethylene, and tetrachloroethylene, but an absence of carbon tetrachloride. A fourth overburden well (OMW-4) was dry at the time of sampling. Analysis for the six wells was repeated in August 1985. No phenols were detected in any of the wells (OMW-4 again being dry). Chloroform (3.43 ppb) and tetrachloroethylene (1.36 ppb) were detected only at Fill Area A (OMW-2).

Results of analysis of groundwater are given in Appendix G.

4.2 Results of Present Investigation

Complete analytical results of the 1991 investigation are presented in Appendix H.

4.2.1 Groundwater Assessment

Groundwater samples were collected from six monitoring wells installed by URS Consultants, Inc., as part of this investigation, and from six existing monitoring wells installed by CRA in 1983. All groundwater samples were analyzed for Target Compound List (TCL) analytes, Target Analyte List (TAL) metals, and cyanide by Recra Environmental Laboratories of Amherst, New York. Table 4-1 summarizes the analytical results for wells located in Areas A and B, and Table 4-2 summarizes the analytical results for wells located in Area C. The corresponding NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA groundwater, considered to be Applicable or Relevant and Appropriate Requirements (ARARs) for the site, are included as part of the tables.

4.2.1.1 Fill Areas A and B

Volatile Organic Compounds

Seven (7) volatile compounds were detected among four of the six monitoring wells located in and adjacent to Fill Areas A and B. In upgradient well OMW-A3, two chlorinated solvents [1,1-dichloroethane (17 ppb) and 1,1,1-trichloroethane (80 ppb)] were found at levels exceeding the respective ARAR values. In addition, 1,1-dichloroethene was detected at 5 ppb in OMW-A3, and chloroform at 0.6 ppb. Two other volatile compounds were detected above ARAR values downgradient of Areas A and B [1,2-dichloroethene (6 ppb) in bedrock well BMW-1 and benzene (1 ppb) in OMW-B2]. Acetone was measured in the sample from OMW-1. Its presence, however, cannot be attributable to the site since it was also detected in the method blank, which indicates probable laboratory contamination.

TABLE 4 - 1

DUNLOP TIRE CORP.

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

FILL AREAS A AND B

SAMPLE-ID		* ARAR	OMW-A3	OMW-2	OMW-B3	OMW-B2	OMW-1	BMW-1
SAMPLE TYPE		Value	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GOUNDWATER
LOCATION/SITE		(ppb)	UPGRADIENT/A	FILL/A	DOWNGRADIENT/A&B	DOWNGRADIENT/B	UPGRADIENT/B	FILL/A
PARAMETER	TYPE							
ACETONE	VOC	50					7 BJ	
1,1-DICHLOROETHENE	VOC	5	5					
1,1-DICHLOROETHANE	VOC	5	17					
1,2-DICHLOROETHENE (TOTAL)	VOC	5						6
CHLOROFORM	VOC	100	0.6 J					
1,1,1-TRICHLOROETHANE	VOC	5	80					
BENZENE	VOC	ND				1		
ACENAPHTHENE	SEMI	20 G			2 J			
BIS(2-ETHYLHEXYL)PHTHALATE	SEMI	50			2 J			
4,4'-DDE	PST	ND			0.12 J			
ALUMINUM	MCP		264	12600	1070	13200	11300	
ANTIMONY	MCP	3 G		6 B				
ARSENIC	MCP	25		69	7 B			
BARIUM	MCP	1,000	100 B	70 B			80 B	
CADMIUM	MCP	10		330		14	99	7
CALCIUM	MCP		97000	141000	260000	377000	224000	490000
CHROMIUM	MCP	50		365		89.0	34	17
COBALT	MCP			117		49 B	21 B	
COPPER	MCP	200	46	1400	42	50	53	14 B
IRON	MCP	300 (a)	585	760000	5200	24400	246000	15200
LEAD	MCP	25	25	46	16	26	46	27
MAGNESIUM	MCP	35,000 G	124000	126000	118000	741000	192000	95100
MANGANESE	MCP	300 (a)	315	4000	1310	1900	3340	249
MERCURY	MCP	2	0.8	0.9		0.7	0.7	0.9
NICKEL	MCP			540	30 B	84	122	
POTASSIUM	MCP		8180	5400	10200	32600	6100	8160
SILVER	MCP	50		8 B	6 B	18	7 B	15
SODIUM	MCP	20,000	24200	109000	41000	448000	159000	305000
VANADIUM	MCP			87			38 B	
ZINC	MCP	300	7530	13700	78	159	16000	12 B

All results reported in µg/L (ppb).

VOC - Volatile Organic Compounds

SEMI - Semivolatiles

PST - Pesticides

MCP - Metals, Cyanide, Phenols

G - Guidance value

* - NYSDEC Ambient Water Quality Standards and Guidance Values, September 1990

ND - Non Detectable

(a) - Standard for the sum of iron and manganese is 500 ppb.

B (VOC) - Analyte also found in the associated method blank.

B (MCP) - Value is less than quantitation limit but greater than or equal to the instrument detection limit.

J - Indicates the value is less than the sample quantitation limit but greater than zero

- Exceeds ARAR Value

Semivolatile Organic Compounds

Only two semivolatiles [acenaphthene (2 ppb) and bis(2-ethylhexyl)phthalate (2 ppb)] were detected in OMW-B3, which is downgradient of Fill Area A and the settling pond (Figure 2-1). No other semivolatile compounds were present in the samples.

Pesticides/PCBs

One pesticide (4,4'-DDE) was detected at 0.12 ppb in OMW-B3, which is downgradient of Area A. No other pesticides/PCBs were detected in any groundwater samples. It appears that neither pesticides nor PCBs are migrating via groundwater.

Metals

Eleven (11) metals were found at levels exceeding ARAR values among the six groundwater samples located adjacent to or within Fill Areas A and B. Table 4-1 summarizes these results. Overburden monitoring well OMW-2 (Fill Area A) showed the most metal ARAR exceedances followed by OMW-B2, OMW-1, OMW-A3, and BMW-1. Of the 11 metals that exceeded ARARs, the metals of particular concern include antimony, arsenic, cadmium, chromium, copper, lead, and zinc, all of which were present in downgradient well OMW-2. Only cadmium, chromium, and lead were detected in downgradient well OMW-B2, whereas, cadmium, lead, and zinc were detected in upgradient well OMW-1. The presence of these metals may be explained by the ash materials within the Fill Areas or leaching of zinc and cadmium from galvanized well screens in existing (CRA) monitoring wells.

4.2.1.2 Fill Area C

Results of groundwater analysis in or near Fill Area C appear on Table 4-2.

TABLE 4 - 2

DUNLOP TIRE CORP.

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

FILL AREA C

SAMPLE-ID		* ARAR	OMW-C1	OMW-3	OMW-4	OMW-C5	OMW-C6	BMW-2
SAMPLE TYPE		Value	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER	GROUNDWATER
LOCATION/SITE		(ppb)	UPGRADIENT	SIDEGRADIENT	FILL	DOWNGRADIENT	DOWNGRADIENT	FILL
PARAMETER	TYPE							
ACETONE	VOC	50						10 B
BENZENE	VOC	ND						5
BIS(2-ETHYLHEXYL)PHTHALATE	SEMI	50						5 J
ALUMINUM	MCP		281	3700	285	10200	1380	1630
ARSENIC	MCP	25			7 B			
BARIUM	MCP	1,000						80 B
CADMIUM	MCP	10		51	102	8		22
CALCIUM	MCP		177000	261000	411000	189000	208000	353000
CHROMIUM	MCP	50		16	28	33	10	33
COBALT	MCP				113	19 B		21 B
COPPER	MCP	200	9 B	19 B	28	42	9 B	286
IRON	MCP	300 (a)	371	130000	256000	20600	2660	40500
LEAD	MCP	25	14	14	12	25	6	17200
MAGNESIUM	MCP	35,000 G	492000	568000	205000	231000	638000	106000
MANGANESE	MCP	300 (a)	163000	1610	14600	1750	712	375 B
MERCURY	MCP	2	0.5	0.8	0.6	0.6	0.7	0.7
NICKEL	MCP			45	545	49		57
POTASSIUM	MCP		9810	6770	11200	14400	16500	24600
SILVER	MCP	50	9 B	15	12.0	6 B	12	23
SODIUM	MCP	20,000	198000	207000	111000	115000	252000	381000
ZINC	MCP	300	19 B	7310	7120	116	37	4250

All results reported in µg/L (ppb).

VOC - Volatile Organic Compounds

SEMI - Semivolatiles

MCP - Metals, Cyanide, Phenols

G - Guidance value

* - NYSDEC Ambient Water Quality Standards and Guidance Values, September 1990

ND - Non Detectable

(a) - Standard for the sum of iron and manganese is 500 ppb.

B (VOC) - Analyte detected in associated method blank.

B (MCP) - Value is less than quantitation limit but greater than or equal to the instrument detection limit

J - Indicates the value is less than the sample quantitation limit but greater than zero.

Exceeds ARAR Value.

Volatile Organic Compounds

Only one volatile organic compound [benzene (5 ppb)] was found at levels exceeding the ARAR value in BMW-2. Acetone was also detected in BMW-2. Its presence, however, cannot be attributed to the site since it was also detected in the method blank, indicating probable laboratory contamination. Since no volatiles contamination was observed in upgradient monitoring well OMW-C1, or in downgradient monitoring wells OMW-C5 and OMW-C6, it appears that volatiles contamination is confined to the site. Alternately, since groundwater flow was previously shown to flow west-southwest in the overburden aquifer, and westerly in the bedrock aquifer, it is possible that an upgradient offsite source(s) may be responsible for the benzene contamination within bedrock monitoring well BMW-2. This is particularly conceivable considering the absence of benzene in the shallow well pair.

Semivolatile Organic Compounds

Among the semivolatiles, only bis(2-ethylhexyl)phthalate was present in BMW-2, and at levels (5 ppb) below the ARAR value (50 ppb). No other semivolatile compounds were detected among the other five groundwater samples.

Pesticides/PCBs

No pesticides or PCBs were detected in any of the groundwater samples taken from or adjacent to Fill Area C.

Metals

Eight (8) metals were found at levels exceeding ARAR values among the six groundwater samples located adjacent to or within Fill Area C. Table 4-2 summarizes these results. Bedrock monitoring well BMW-2 showed

the most ARAR exceedances for metals followed by OMW-3, OMW-4, OMW-C1, OMW-C5, and OMW-C6. Of the nine metals which were found at levels exceeding ARARs, the metals of particular concern include cadmium, chromium, copper, lead, and zinc, all of which were present in BMW-2. None of these metals was present in upgradient well OMW-C1 or downgradient wells OMW-C5 and OMW-C6 at concentrations exceeding the respective ARAR values. It appears that the highest concentrations of metals are found in wells located near or within the Fill Area. Since Fill Area C contains a considerable amount of combustion ash, it is likely that the ash has been responsible for this contamination. It is possible, however, that the metals concentrations in bedrock well BMW-2 are attributable, at least in part, to offsite sources, considering the well's hydrologic position with respect to the Fill Area. [It has been shown previously that groundwater in the bedrock aquifer is generally westerly, toward the Niagara River.]

4.2.1.3 Comparison with Results of Previous Investigations

Previous investigations included analysis for five organic compounds, including chloroform, carbon tetrachloride, trichloroethene, tetrachloroethene, and phenols. The only compound found in the wells during this investigation that was found in previous investigations, is chloroform, at 0.6 ppb in OMW-A3. Since OMW-A3 was constructed for the latest investigation, it may be said that none of the compounds found in the previously existing wells were detected again at the same location.

4.2.2 Sediment Assessment

Sediment samples were collected from ditches and/or drainage ways at five locations (SS-102 through SS-106) across the Dunlop property (Figures 2-1 and 2-2). A sixth sampling points (SS-101) was eliminated from the program because this location had been sampled by Engineering Science in 1990 as part of a Phase II Investigation of Polymer Applications. Sediment samples were analyzed for the TCL analytes, TAL metals, and

cyanide by Recra Environmental Laboratories of Amherst, New York. Results are shown in Table 4-3.

4.2.2.1 Analytical Results

Volatiles

Seven (7) volatile compounds were detected among the sediment samples collected at the Dunlop sites. Of these, both methylene chloride and acetone were present in each sample. However, the presence of these compounds cannot be attributed to the site, since acetone was also detected in the method blank, and methylene chloride, detected below the sample quantitation limit, is a common laboratory contaminant. Three additional compounds [1,2-dichloroethene (22 ppb), trichloroethene (6 ppb), and benzene (2 ppb)] were present in SS-102, which is near Fill Area A. Both 2-butanone and 1,1,1-trichloroethane were present in SS-104 at a concentration of 7 ppb and 5 ppb, respectively. Additionally, 2-butanone was detected at 7 ppb in SS-103, and 1,1,1-trichloroethane was detected at 4 ppb in SS-105.

Semivolatiles

A number of polycyclic aromatic hydrocarbons (PAHs) were detected in sediment. Other semivolatiles (benzyl alcohol, 4-methylphenol, hexachlorobutadiene, di-n-butylphthalate, and bis(2-ethylhexyl)phthalate) were detected inconsistently at much lower concentrations, or were also present in the associated method blank. PAH concentrations ranged from 618 ppb in SS-104 to 22,876 ppb in SS-103. In general, with the exception of SS-103, PAH concentrations are low. Sample SS-103 was collected from the drainage above the settling pond. The higher levels of PAHs may, at this location, be due in part to drainage from the nearby parking lot. The PAH contamination in SS-103 may also be attributable to an oil spill which occurred at the Dunlop Plant on January 24, 1991. Approximately 40 to 50

TABLE 4 - 3
DUNLOP TIRE CORPORATION, TONAWANDA, N.Y.
Summary of Analytical Results - Sediment Samples

SAMPLE-ID		SS-102	SS-103	SS-104	SS-105	SS-106
SAMPLE TYPE		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
COLLECTION DATE		4/18/91	4/18/91	4/18/91	4/18/91	4/18/91
PARAMETER	TYPE					
METHYLENE CHLORIDE	VOC	4 J	1 J	4 J	0.9 J	1 J
ACETONE	VOC	25 B	46 B	66 B	5 BJ	13 BJ
1,2-DICHLOROETHENE (TOTAL)	VOC	22	U	U	U	U
2-BUTANONE	VOC	U	7 J	7 J	U	U
1,1,1-TRICHLOROETHANE	VOC	U	U	5 J	4 J	U
TRICHLOROETHENE	VOC	6 J	U	U	U	U
BENZENE	VOC	2 J	U	U	U	U
BENZYL ALCOHOL	SEMI	40 J	U	U	U	U
4-METHYLPHENOL	SEMI	U	260 J	U	U	U
NAPHTHALENE	SEMI	190 J	210 J	U	U	120 J
HEXACHLOROBUTADIENE	SEMI	U	120 J	U	U	U
2-METHYLNAPHTHALENE	SEMI	160 J	100 J	37 J	U	110 J
ACENAPHTHENE	SEMI	U	330 J	U	U	U
DIBENZOFURAN	SEMI	U	290 J	U	U	U
FLUORENE	SEMI	U	420 J	U	U	U
PHENANTHRENE	SEMI	150 J	3300	140 J	290 J	150 J
ANTHRACENE	SEMI	U	940	U	U	U
DI-N-BUTYLPHTHALATE	SEMI	2200 B	770 B	880 B	680 B	320 BJ
FLUORANTHENE	SEMI	110 J	3700	140 J	400 J	190 J
PYRENE	SEMI	82 J	4600	99 J	300 J	160 J
BENZO(A)ANTHRACENE	SEMI	49 J	1900	57 J	150 J	89 J
CHRYSENE	SEMI	52 J	1800	58 J	160 J	100 J
BIS(2-ETHYLHEXYL)PHTHALATE	SEMI	180 J	470	U	91 J	92 J
BENZO(b)FLUORANTHENE	SEMI	47 J	2200	49 J	160 J	110 J
BENZO(K)FLUORANTHENE	SEMI	U	970	U	69 J	43 J
BENZO(A)PYRENE	SEMI	U	1300	38 J	110 J	80 J
INDENO(1,2,3-CD)PYRENE	SEMI	U	400 J	U	43 J	U
DIBENZ(A,H)ANTHRACENE	SEMI	U	86 J	U	U	U
BENZO(G,H,I)PERYLENE	SEMI	U	330 J	U	33 J	35 J
ALPHA-BHC	PST	U	2.7 J*	U	U	U
GAMMA-BHC (LINDANE)	PST	U	3.4 J*	U	U	U
DELTA-BHC	PST	U	33 *	20	17	U
4,4'-DDD	PST	5.3 J	U*	U	U	U
4,4'-DDE	PST	11 J	U*	U	U	U
4,4'-DDT	PST	15	31 *	U	U	U
ENDOSULFAN II	PST	5.3 J	U*	U	U	U
ENDOSULFAN SULFATE	PST	U	290 *	U	U	U
ENDRIN	PST	U	18 *	U	U	U
HEPTACHLOR	PST	25	U*	U	U	U
HEPTACHLOR EPOXIDE	PST	U	U*	U	2.8 J	U
METHOXYCHLOR	PST	U	110 *	U	U	U

VOC - Volatile Organic Compounds
SEMI - Semivolatiles
PST - Pesticides
Results reported in ug/kg (ppb)

DATA QUALIFIERS: B - Compound detected in the associated method blank
J - Value is less than the sample quantitation limit but greater than zero
U - Undetected
* - Compound concentration and quantitation limit estimated due to surrogate outliers.

TABLE 4 - 3
DUNLOP TIRE CORPORATION, TONAWANDA, N.Y.
Summary of Analytical Results - Sediment Samples

SAMPLE-ID		SS-102	SS-103	SS-104	SS-105	SS-106
SAMPLE TYPE		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
COLLECTION DATE		4/18/91	4/18/91	4/18/91	4/18/91	4/18/91
PARAMETER	TYPE					
ALUMINUM	MCP	12,100	9,310	18,900	12,200	7,630
ANTIMONY	MCP	U	U	U	U	0.76 B
ARSENIC	MCP	18	7.5	13	4.7	10
BARIUM	MCP	190	183	139	130	92
BERYLLIUM	MCP	1.0	U	0.96	0.92	U
CADMIUM	MCP	14	9.4	14	12	7.3
CALCIUM	MCP	58,000	23,800	2,900	628	11,800
CHROMIUM	MCP	33	26	28	23	15
COBALT	MCP	10	9.2	13	10	8.2
COPPER	MCP	36	46	21	26	33
IRON	MCP	30,600	17,200	31,400	25,500	16,200
LEAD	MCP	110	1,750	38	46	52
MAGNESIUM	MCP	5,450	7,270	4,210	16,000	4,620
MANGANESE	MCP	2,020	218	295	844	148
MERCURY	MCP	0.55	0.17	U	0.58	2.0
NICKEL	MCP	59	24	28	31	46
POTASSIUM	MCP	1,280	1,600	2,260	2,090	1,360
SILVER	MCP	U	3.7	U	U	U
SODIUM	MCP	474	807	309 B	419 B	283 B
VANADIUM	MCP	42	24	47	29	28
ZINC	MCP	412	778	226	215	570
CYANIDE	MCP	U	2.4	U	U	U

MCP - Metals, Cyanide, Phenol
Results reported in mg/kg (ppm)

DATA QUALIFIERS: B - Value is less than quantitation limit but greater than or equal to the instrument detection limit
U - Undetected

gallons of naphthenic oil migrated into the sewer network. This oil eventually discharged into the outfall above the settling pond where SS-103 was collected. Dunlop personnel were able to contain and absorb much of the oil within the outfall area.

Pesticides/PCBs

Polychlorinated biphenyls (PCBs) were not detected in any sediment samples. Twelve pesticides were detected among four of the samples. Total concentrations ranged from 19.8 ppb in SS-105 to 488 ppb in SS-103. In general, detected levels of pesticides were low.

Metals/Cyanide

All metals except selenium and thallium were detected in the sediment samples. Cyanide was present in SS-103 at 2.4 ppm. In general, most metals concentrations were parallel from sampling point to sampling point. One noteworthy exception is lead, which was present in SS-103 at 1,750 ppm, one to two orders of magnitude higher than was found at the other sampling points.

4.2.2.2 Comparison with Results of Previous Investigations

Previous investigations of Polymer Applications included one sediment sample taken on Dunlop property in 1990 by ES. Phenols were not found above sample quantitation limits. Barium, cadmium, lead, and silver were all detected in the low ppb range. Aroclor-1260 (5,500 ppb), which was not found in sediment samples tested in the current investigation, was detected near the Polymer Applications site.

5.0 SUMMARY AND CONCLUSIONS

The purpose of this investigation was to collect data to characterize the site in sufficient detail as to allow an evaluation of potential remedial measures. These measures and a proposed post-closure groundwater monitoring plan are presented in a companion report. The principal findings of the field investigation are summarized below:

- Fill in the vicinity of Area A is considerable more extensive then previously indicated. The placement of fill in Area B was determined to follow an irregular pattern. The extent of fill in Area C was, in general, similar to estimates from previous investigations.

- The Fill Areas are situated on hard, desiccated silty clay sediments, which become progressively softer with depth and overlie dense silty till and shale bedrock. The thick clayey sediments at the Dunlop sites (50 to 60 feet thick) are relatively impermeable as confirmed by the hydraulic conductivity test data, and therefore not conducive to vertical migration of groundwater. These deposits appear even to promote local surface ponding and runoff.

- Analytical data for soil and fill samples from previous investigations indicated low levels of several volatile organic compounds and phenols. The concentrations of these compounds decreased significantly with depth, indicating little vertical migration of contamination.

- Analytical data for sediment samples obtained during this investigation showed low-level volatiles contamination, low to moderate level PAH and metals contamination, and low-level pesticides contamination. Only one volatile compound targeted

for analysis in previous soil/fill samples (trichloroethene), was detected (at low concentrations). The highest levels of PAH encountered were found in the sample (SS-103) obtained below the storm sewer outlet above the plant settling pond. The PAH contamination may be attributable to an oil spill which occurred at the Dunlop Plant on January 24, 1991. Approximately 40 to 50 gallons of naphthenic oil was spilled and eventually issued into the storm sewer outlet. Alternatively, drainage from the nearby parking areas could possibly account for the higher PAH and lead content of this sample.

- Analytical data for the groundwater samples indicated low levels of several volatile organic compounds in both overburden and bedrock monitoring wells. Several of these compounds, however, were found at levels exceeding ARARs. Most exceedances were detected in well OMW-A3, which is upgradient of Fill Area A, and the exceedances therefore cannot be attributed to the inactive waste area. The contaminants detected in OMW-A3 may be attributable to a former sludge disposal area located between buildings No. 1 and No. 4 before Building No. 2 was constructed. Reportedly, this area was used to store sludge containers where wastes including carbon black, oils, gear lubricants, sludge, rubber cement, and kerosene were disposed (CRA, 1983). Spillage in this area may account for the groudnwater contamination near OMW-A3. The presence of benzene in bedrock monitoring well BMW-2, and 1,2-dichloroethene in BMW-1, may also be attributed to an upgradient source, since these compounds were not detected in the corresponding shallow well pairs.

Eleven metals exceeded groundwater quality standards among the wells. The more toxic metals, however, are confined to areas

within or adjacent to the Fill Areas, and do not appear to be migrating off site.

- Finally, although varying types of analytes have been targeted for analysis, there appears to be no apparent correlation between organic compounds detected during this and previous site investigations.

REFERENCES

1. Buehler, E., and Tesmer, I., 1963. Geology of Erie County, Buffalo Society of Natural Sciences Bulletin, Vol. 21, No.3.

2. Bouwer, H. and Rice, R.C., 1976. A Slug Test for Determination of Hydraulic Conductivity of Unconfined/Confined Aquifers with Completely or Partially Penetrating Wells: Water Resources Research, Vol. 12, No. 3, Pg. 422-428.

3. Conestoga Rovers & Associates, October 1983. Investigation of Inactive Waste Disposal Sites.

4. Freeze, A., and Cherry, J.A., 1979. Groundwater, Englewood Cliffs, N.J.: Prentice-Hall, Pg. 604.

5. Mueller, E.H., 1977. New York State Museum and Science Service Map and Chart Series, Number 28.

6. NYSDEC, September 1990, New York State (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values.

7. NYSDEC, 1989, New York State (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values.

8. NYSDEC, November, 1989. Technical/Administrative Guidance Memorandum (TAGM) - Disposal of Drill Cuttings.

9. NYSDEC, Proposed Technical/Administrative Guidance Memorandum - Disposal of Contaminated Groundwater Generated During Remedial Investigations.

10. Recra, 1991, Analytical results from sampling at the Dunlop sites.

11. Ruland, W.W., Cherry, J.A., and Feenstra, Stan; May-June 1991. The Depth of Fractures and Active Ground-Water Flow in a Clayey Till Plain in Southwestern Ontario. Ground Water, Vol. 29.

12. USDA, Soil Conservation Service, 1986. Soil Survey of Erie County, New York.

13. URS Consultants, Inc., February 1991; Work Plan, Field Sampling Plan, and Quality Assurance Project Plan.

14. URS Consultants, Inc., February, 1991. Health and Safety Plan, Halfmoon Landfill Site.

15. USEPA, September 1986. RCRA Ground-Water Monitoring Technical Enforcement Guidance Document.

APPENDIX A

SOIL BORING LOGS

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. OMW-A3

PROJECT: DUNLOP
CLIENT: DUNLOP
BORING CONTRACTOR: BUFFALO DRILLING CO.
GROUND WATER: DATE | TIME | LEV | TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2 IN		
WT.		140 lb		
FALL		30 IN		

* POCKET PENETROMETER READING

SHEET NO. 1 OF 1
JOB NO.: 35246
BORING LOCATION: FILL AREA A
GROUND ELEVATION: 595.427 FT
DATE STARTED: 4/25/91
DATE FINISHED: 4/26/91
DRILLER: CHARLES NICOMETI
GEOLOGIST: MICHAEL GUTMANN
REVIEWED BY: DUANE LEINHARDT

DEPTH FT	STRATA	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	USCS	HNU	REMARKS
2		1	SS	2 2 / 5 6	70	ARN AND RED/BRN	LOOSE	FILL 6" TOPSOIL WITH GRAVEL & C & D COVER; SOME CLAY	SM	0	SOME ROOTS MOIST
5		2	SS	2 4 / 6 12	60	RED/BRN MOTTLED	MEDIUM STIFF	SILTY CLAY TRACE FINE GRAVEL SOME DESICCATION CRACKS		0	SLIGHTLY MOIST
		3	SS	14 14 / 22 24	80	YELW/BRN AND GRAY	VERY STIFF			0	MEDIUM PLASTICITY
		4	SS	12 22 / 32 40	90		HARD		CL	0	
10		5	SS	11 22 / 28 32	90					0	
		6	SS	9 22 / 30 38	80					0	
14		7	SS	13 14 / 19 21	75		VERY STIFF			0	
15		8	SS	7 11 / 16 18	95	RED/BRN	VERY STIFF	SILTY CLAY TRACE FINE GRAVEL		0	MOIST
		9	SS	5 11 / 15 14	90					0	MEDIUM PLASTICITY
20		10	SS	5 7 / 11 11	90		STIFF		CL	0	
		11	SS	2 4 / 7 8	95		MEDIUM STIFF			0	
24		12	SS	4 5 / 7 8	100					0	
25								BOREHOLE COMPLETE AT 24 FEET			
30											
35											

A-3205

COMMENTS

PROJECT NO. 35246.
BORING NO. OMW-A3

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. OMW-B2

PROJECT: DUNLOP
CLIENT: DUNLOP
BORING CONTRACTOR: BUFFALO DRILLING CO.
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2 IN		
WT.		140 lb		
FALL		30 IN		

* POCKET PENETROMETER READING

SHEET NO. 1 OF 1
JOB NO.: 35246
BORING LOCATION: FILL AREA B
GROUND ELEVATION: 583.777 FT
DATE STARTED: 4/25/91
DATE FINISHED: 4/29/91
DRILLER: CHARLES NICOMETI
GEOLOGIST: MICHAEL GUTMANN
REVIEWED BY: DUANE LENHARDT

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY / RQD %	DESCRIPTION: COLOR	CONSISTENCY / HARDNESS	MATERIAL DESCRIPTION	USCS CLASS	PID/FID (ppm)	REMARKS
0						BROWN	MED. STIFF	SILT, SOME CLAY, TR. SAND	ML	0	SOME ROOTS
0.5		1	SS	1 7 / 7 5	60	RED/ BROWN MOTTLED GRAY	MEDIUM STIFF VERY STIFF	SILTY CLAY TRACE FINE GRAVEL SOME DESICCATION CRACKS	CL	0	MOIST
		2	SS	5 8 / 22 27	70					0	MEDIUM PLASTICITY
5		3	SS	18 21 / 30 36	75					0	SLIGHTLY MOIST
		4	SS	11 19 / 30 30	90					0	
		5	SS	8 17 / 27 32	95					0	
10		6	SS	6 12 / 17 21	100	RED/ BRN	STIFF	SILTY CLAY TRACE FINE GRAVEL		0	
		7	SS	5 10 / 10 22	100					0	MOIST
15		8	SS	3 6 / 14 16	100				CL	0	MEDIUM PLASTICITY
		9	SS	5 8 / 8 10	100					0	
18								BOREHOLE COMPLETE AT 18 FEET			
20											
25											
30											
35											

A-3205

COMMENTS

PROJECT NO. 35246.
BORING NO. OMW-B2

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. OMW-B3

PROJECT: DUNLOP
CLIENT: DUNLOP
BORING CONTRACTOR: BUFFALO DRILLING CO.
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2 IN.		
WT.		140 lb.		
FALL		30 IN.		

* POCKET PENETROMETER READING

SHEET NO. 1 OF 1
JOB NO.: 35246
BORING LOCATION: FILL AREA A
GROUND ELEVATION: 577.847 FT
DATE STARTED: 4/30/91
DATE FINISHED: 4/30/91
DRILLER: KENNETH HUBER
GEOLOGIST: MICHAEL GUTMANN
REVIEWED BY: DUANE LENHARDT

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY / RQD %	DESCRIPTION: COLOR	CONSISTENCY / HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	HNU	REMARKS
		1	SS	1 2 / 3 5	75	DARK BROWN TO RED/BRN	LOOSE	FILL THIN (2 IN.) TOPSOIL COVER OVER DISTURBED SILTY CLAY, TRACE RED BRICK, SAND AND GRAVEL		0	ROOTS
		2	SS	4 4 / 5 4	80				ML	0	MEDIUM PLASTIC VERY MOIST
5		3	SS	5 7 / 12 8	60		MEDIUM DENSE		SM	0	
		4	SS	2 3 / 4 2	70					0	
		5	SS	3 4 / 7 4	80	BLACK, RED/BRN	MEDIUM STIFF	PEAT ORGANIC SILT WITH DECAYED PLANT MATTER MIXED WITH SILTY CLAY	OH / CL	0	MEDIUM PLASTIC IN CLAY SEAMS
10		6	SS	3 4 / 5 7	90					0	MOIST
12		7	SS	2 3 / 4 7	100	RED/BRN	MEDIUM STIFF	SILTY CLAY	CL	0	VERY MOIST
15		8	SS	2 3 / 4 8	100					0	MEDIUM PLASTICITY
16								BOREHOLE COMPLETE AT 16 FEET			
20											
25											
30											
35											

A-3205

COMMENTS

PROJECT NO. 35246.
BORING NO. OMW-B3

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. OMW-C1

PROJECT: DUNLOP
SHEET NO. 1 OF 1
CLIENT: DUNLOP
JOB NO.: 35246.
BORING CONTRACTOR: BUFFALO DRILL ENG CO.
BORING LOCATION: FILL AREA C
GROUND WATER:
GROUND ELEVATION: 601.039 FT

DATE	TIME	LEV	TYPE		CAS.	SAMP	CORE	TUBE
				TYPE		SS		
				DIA.		2 IN		
				WT.		140 lb		
				FALL		30 IN		
				* POCKET PENETROMETER READING				

DATE STARTED: 5/2/91
DATE FINISHED: 5/2/91
DRILLER: CHARLES NICOMETI
GEOLOGIST: MICHAEL GUTMANN
REVIEWED BY: DUANE LENHARDT

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY / RQD %	COLOR	CONSISTENCY / HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	HNU	REMARKS
0						BLACK	SOFT	ORGANIC SILT	OL		
5		1	SS	1 2 / 4 5	100	RED/BRN MOTTLED YLW-BRN GRAY	MEDIUM STIFF	SILTY CLAY TRACE FINE GRAVEL	CL	0	WET, WATER AT SURFACE
		2	SS	3 5 / 13 15	75					0	VERY MOIST HIGH PLASTICITY
5		3	SS	8 24 / 35 51	80	RED/BRN MOTTLED GRAY	HARD	SILTY CLAY TRACE FINE GRAVEL SOME DESICCATION CRACKS		0	MOIST
		4	SS	8 13 / 25 31	80		VERY STIFF			0	MEDIUM PLASTICITY
10		5	SS	9 25 / 37 55	100		HARD			0	
		6	SS	7 11 / 16 25	100		VERY STIFF		CL	0	SLIGHTLY MOIST
14		7	SS	3 9 / 15 22	100		STIFF			0	
15		8	SS	5 11 / 15 19	100	RED/BRN	VERY STIFF	SILTY CLAY TRACE FINE GRAVEL	CL	0	MOIST MEDIUM PLASTICITY
		9	SS	6 10 / 15 18	100					0	
18								BOREHOLE COMPLETE AT 18 FEET			
20											
25											
30											
35											

A-3205

COMMENTS

PROJECT NO. 35246
BORING NO. OMW-C1

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. OMW-C5

PROJECT: DUNLOP
CLIENT: DUNLOP
BORING CONTRACTOR: BUFFALO DRILLING CO.
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2 IN		
WT.		140 lb		
FALL		30 IN		

* POCKET PENETROMETER READING

SHEET NO. 1 OF 1
JOB NO.: 35246
BORING LOCATION: FILL AREA C
GROUND ELEVATION: 601.39 FT
DATE STARTED: 4/30/91
DATE FINISHED: 5/1/91
DRILLER: CHARLES NICOMETI
GEOLOGIST: MICHAEL GUTMANN
REVIEWED BY: DUANE LENHARST

DEPTH FT	STRATA	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	H N U	REMARKS
		1	SS	3 4 / 7 7	70	BLACK AND BROWN	MEDIUM DENSE	FILL SANDY SILT, SOME CLAY SOME GLASS	SM	0	MOIST
2		2	SS	4 7 / 12 13	75	RED-BROWN	STIFF	SILTY CLAY TRACE FINE GRAVEL FEW DESICCATION CRACKS		0	SLIGHTLY MOIST
5		3	SS	9 15 / 19 21	65	MOTTLED GRAY	VERY STIFF			0	LOW PLASTICITY FEW ROOT STAINS
		4	SS	9 19 / 21 30	70					0	
		5	SS	9 15 / 20 25	60				CL	0	
10		6	SS	9 13 / 20 21	70					0	MOIST
		7	SS	9 13 / 18 25	90					0	
15		8	SS	12 12 / 15 24	95					0	
16		9	SS	7 12 / 14 18	90	RED-BRN	VERY STIFF	SILTY CLAY TRACE FINE GRAVEL		0	SLIGHTLY MOIST
20		10	SS	9 13 / 17 25	90					0	
		11	SS	10 18 / 23 21	100					0	
		12	SS	10 10 / 10 13	100		STIFF		CL	0	
25		13	SS	4 7 / 11 11	100					0	MEDIUM PLASTICITY
		14	SS	7 6 / 9 13	100					0	
30		15	SS	7 7 / 10 11	100					0	
32		16	SS	WOR / 3 4	100	RED-BROWN	SOFT	SILTY CLAY	CL	0	VERY MOIST HIGH PLASTICITY
								BOREHOLE COMPLETE AT 32 FEET			
35											

A-3205

COMMENTS

PROJECT NO. 35246.
BORING NO. OMW-C5

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. OMW - C6

PROJECT: DUNLOP
CLIENT: DUNLOP
BORING CONTRACTOR: BUFFALO DRILLING CO.
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2 IN		
WT.		140 lb		
FALL		30 IN		

* POCKET PENETROMETER READING

SHEET NO. 1 OF 1
JOB NO.: 35246
BORING LOCATION: FILL AREA C
GROUND ELEVATION: 600.449 FT
DATE STARTED: 5/2/91
DATE FINISHED: 5/2/91
DRILLER: CHUCK NICOMETI
GEOLOGIST: MICHAEL GUTMANN
REVIEWED BY: DUANE LENHARDT

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	USCS	H N ✓	REMARKS
2		1	SS	10 20 / 4 6	70	BLACK BROWN	MEDIUM DENSE	FILL SANDY SILT, SOME CLAY BRICK FRAGMENTS & SLAG	SM	0	VERY MOIST
		2	SS	5 16 / 16 22	90	RED/ BRN MOTTLED GRAY	VERY STIFF	SILTY CLAY TRACE FINE GRAVEL SOME DESICCATION CRACKS		0	SLIGHTLY MOIST
5		3	SS	7 14 / 30 50	100					0	
		4	SS	12 27 / 29 4	100		HARD		CL	0	MEDIUM PLASTICITY
10		5	SS	15 24 / 29 36	90					0	SLIGHTLY MOIST
		6	SS	8 17 / 24 35	90		VERY STIFF			0	
12		7	SS	11 17 / 22 29	100	RED/ BRN	VERY STIFF	SILTY CLAY TRACE FINE GRAVEL		0	
15		8	SS	6 11 / 16 23	100				CL	0	MOIST
		9	SS	11 11 / 14 18	100					0	
20								BOREHOLE COMPLETE AT 18 FEET			
25											
30											
35											

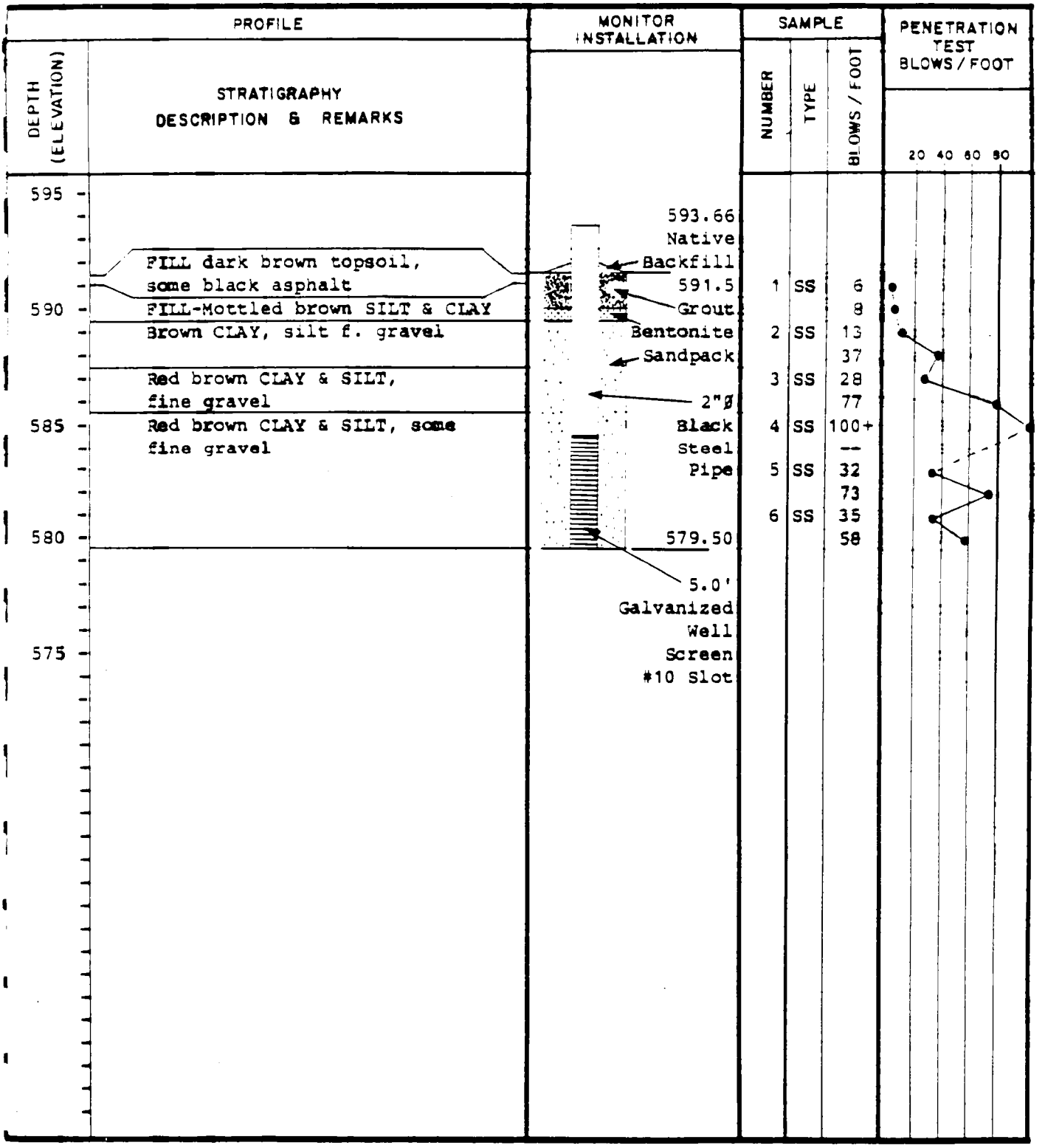
A-3205

COMMENTS

PROJECT NO. 35246.
BORING NO. OMW-C6

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME : DUNLOP - BUFFALO PLANT
HOLE Nº: OMW-1
JOB Nº : 9-1135
DATE COMPLETED: DECEMBER 17, 1982
CLIENT : DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE : 6"Ø HOLLOW STEM AUGER
GROUND ELEVATION: 591.5
LOCATION : DUNLOP PROPERTY - SOUTHWEST SECTOR
TOP OF PIPE ELEVATION: 593.66



○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

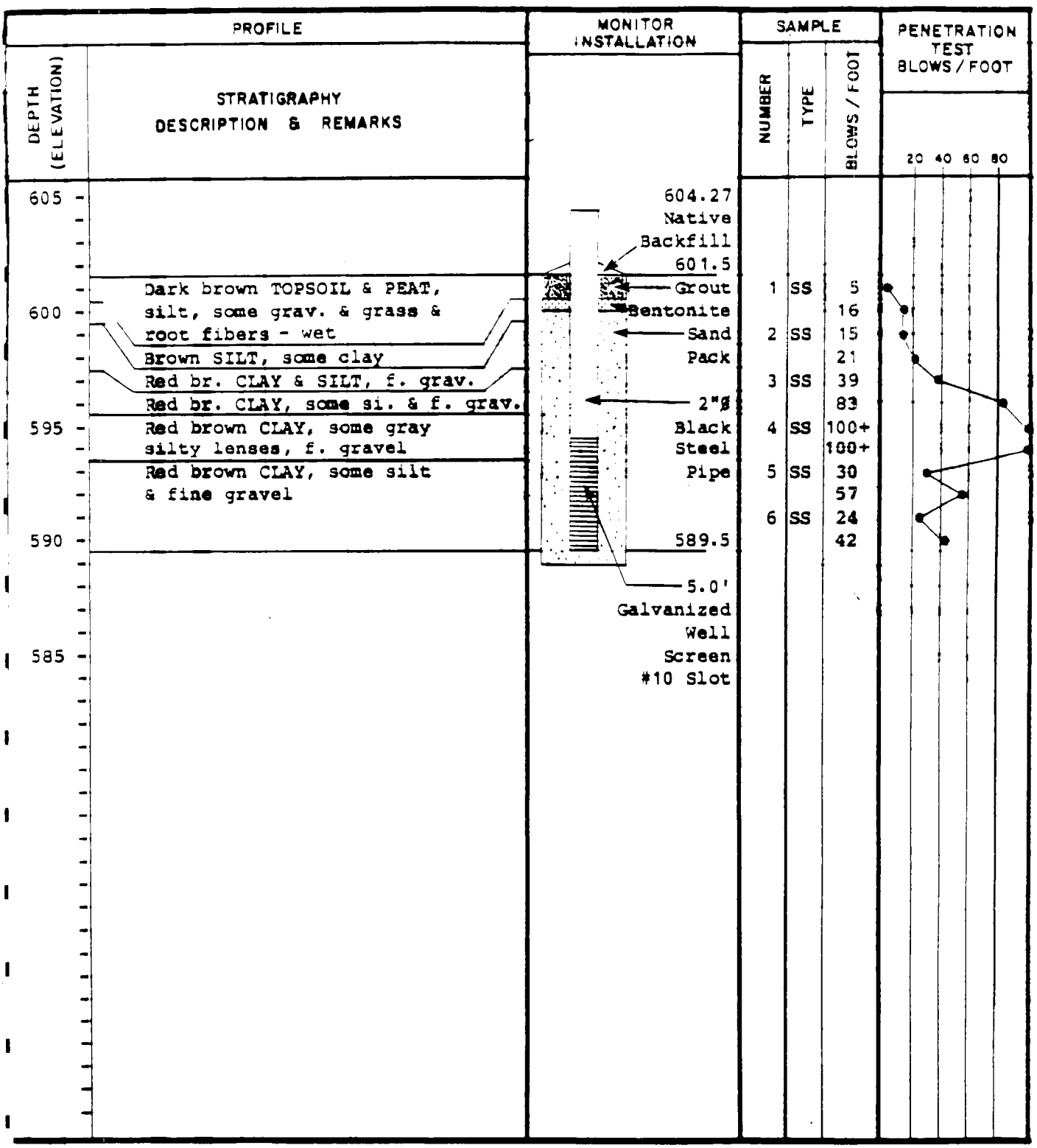
PROJECT NAME : DUNLOP - BUFFALO PLANT
HOLE Nº : BMW-2
JOB Nº : 9-1135
DATE COMPLETED : DECEMBER 10, 1982
CLIENT : DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER : D. MILLARD
HOLE TYPE : 6"Ø HOLLOW STEM AUGER
GROUND ELEVATION : 585.9
LOCATION : DUNLOP PROPERTY - NORTHWEST SECTOR
TOP OF PIPE ELEVATION : 589.22

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS / FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS / FOOT	20 40 60 80
590		589.22 Native Backfill				
		585.9 Grout Bentonite				
585	FILL - TOPSOIL RED brown CLAY, silt, f. grav. FILL-Red brown SILT, black clay, wood chips					
	Red brown CLAY, silt	2"Ø Black Steel Pipe				
580		Sand Pack				
	Red brown SILT, clay, fine gravel	575.6				
575		5.0' Galvanized Well Screen #10 Slot				
	NOTE: STRATIGRAPHIC DATA FROM BMW-1 LOG					
570						

○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME : DUNLOP - BUFFALO PLANT
HOLE Nº: OMW-3
JOB Nº : 9-1135
DATE COMPLETED: DECEMBER 17, 1982
CLIENT : DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE : 6"Ø HOLLOW STEM AUGER
GROUND ELEVATION: 601.5
LOCATION : DUNLOP PROPERTY - SOUTHEAST SECTOR
TOP OF PIPE ELEVATION: 604.27



○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: DUNLOP - BUFFALO PLANT
HOLE Nº: OMW-4
JOB Nº: 9-1135
DATE COMPLETED: DECEMBER 14, 1982
CLIENT: DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE: 6"Ø HOLLOW STEM AUGER
GROUND ELEVATION: 608.2
LOCATION: NE SECTOR OF PLANT-ON DISPOSAL AREA
TOP OF PIPE ELEVATION: 610.36

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS/FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS/FOOT	20 40 60 80
610		610.36 Native Backfill				
	FILL black FLY ASH, silt, some clay, rubber, sand & wood - moist-wet	608.2 Grout Bentonite				
605		2"Ø Black Steel Pipe				
	Mottled black & green brown SILT, root matter	Sand Pack				
	Red brown SILT, clay	599.2				
600	Red brown CLAY, SILT, some f. gravel	5.0" Johnson Galvanized Well Screen # 10 Slot				
595	NOTE: STRATIGRAPHIC DATA FROM BMW-2 LOG					
590						

○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

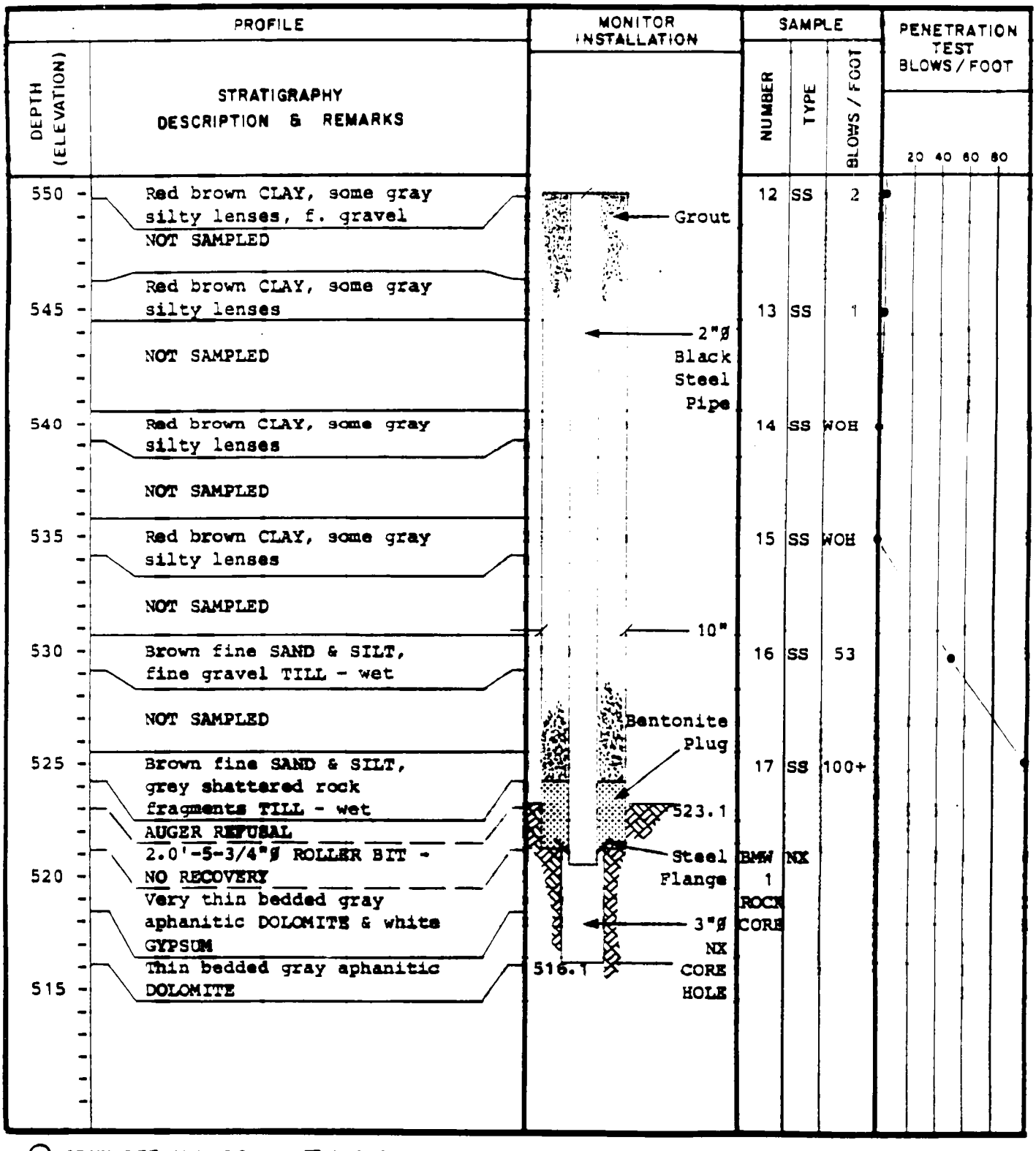
PROJECT NAME : DUNLOP - BUFFALO PLANT
HOLE Nº: BMW-1 Page 2 of 2

JOB Nº : 9-1135
DATE COMPLETED: DECEMBER 10, 1982

CLIENT : DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD

HOLE TYPE : 10"Ø HOLLLOW STEM AUGER
GROUND ELEVATION: 585.6

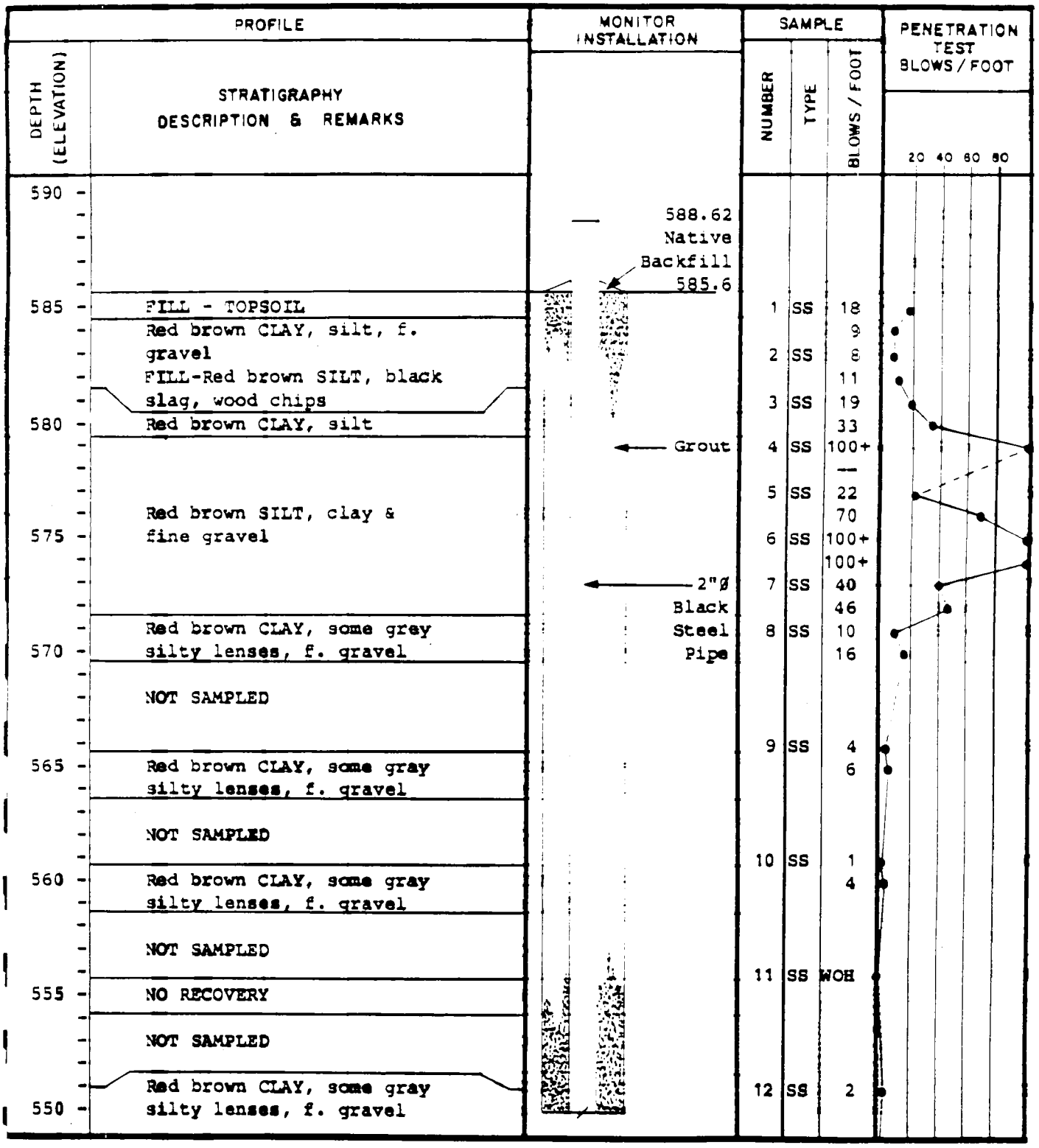
LOCATION : DUNLOP PROPERTY - NORTHWEST SECTOR
TOP OF PIPE ELEVATION: 588.62



○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

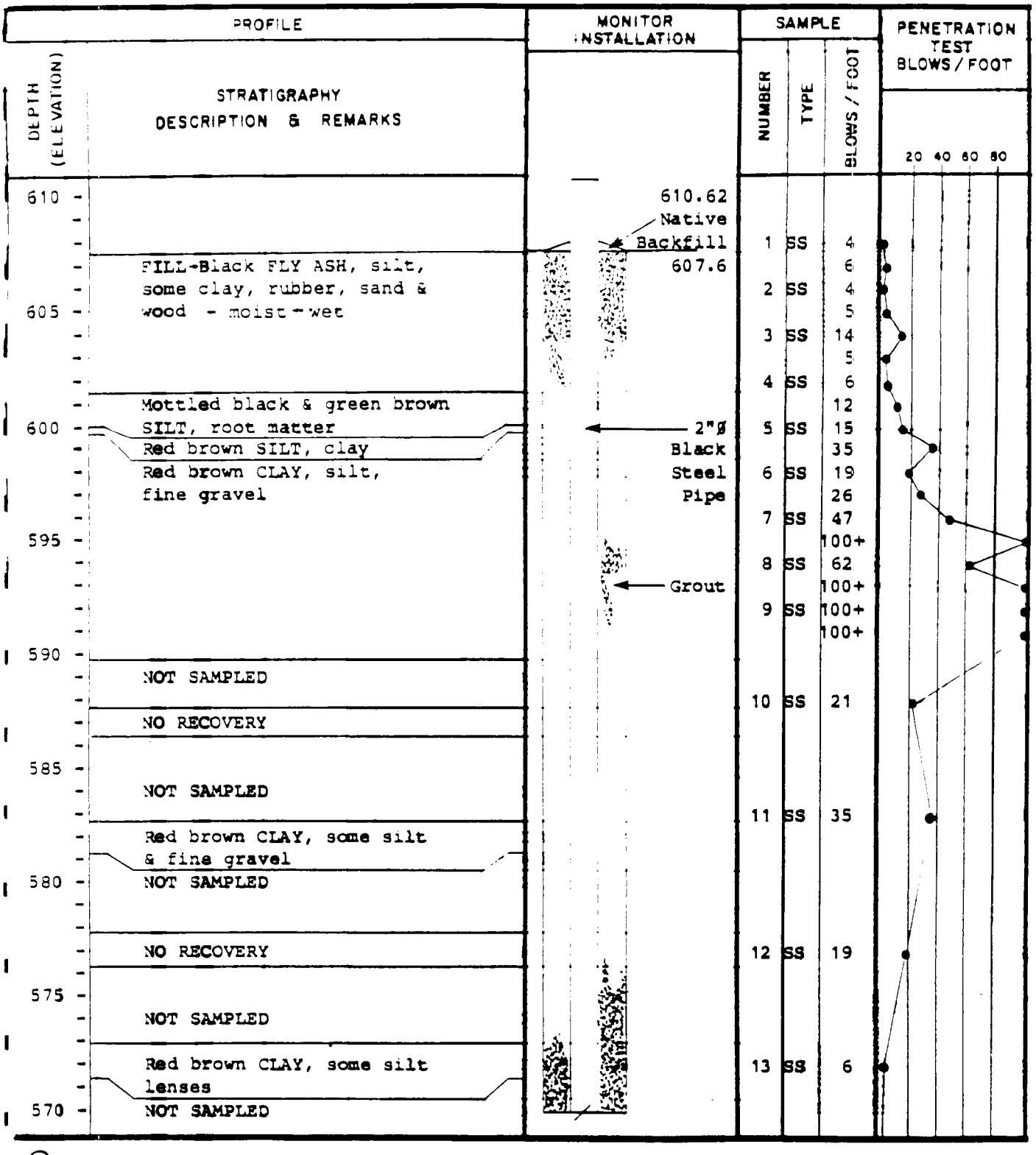
PROJECT NAME : DUNLOP - BUFFALO PLANT
HOLE Nº: BMW-1
JOB Nº : 9-1135
DATE COMPLETED: DECEMBER 10, 1982
CLIENT : DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE : 10"Ø HOLLLOW STEM AUGER
GROUND ELEVATION: 585.6
LOCATION : DUNLOP PROPERTY - NORTHWEST SECTOR
TOP OF PIPE ELEVATION: 588.62



○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: DUNLOP - BUFFALO PLANT
HOLE Nº: BMW-2 Page 1 of 1
JOB Nº: 9-1135
DATE COMPLETED: DECEMBER 17, 1982
CLIENT: DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE: 10"Ø HOLLLOW STEM AUGER
GROUND ELEVATION: 607.6
LOCATION: NE SECTOR OF PLANT-ON DISPOSAL AREA
TOP OF PIPE ELEVATION: 610.62



○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME : DUNLOP - BUFFALO PLANT
HOLE Nº: BMW-2 Page 2 of 3
JOB Nº : 9-1135
DATE COMPLETED: DECEMBER 17, 1982
CLIENT : DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE : 10"Ø HOLLLOW STEM AUGER
GROUND ELEVATION: 607.6
LOCATION : NE SECTOR OF PLANT-ON DISPOSAL AREA
TOP OF PIPE ELEVATION: 610.62

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS / FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS / FOOT	20 40 60 80
570	NOT SAMPLED					
	Red brown CLAY, silt, fine gravel lenses	Grout	14	SS	3	
565	NOT SAMPLED					
	Red brown CLAY, silt, fine gravel lenses	2"Ø Black Pipe	15	SS	4	
560	NOT SAMPLED					
	Red brown CLAY, silt, fine gravel lenses		16	SS	4	
555	NOT SAMPLED					
	Red brown CLAY, silt, fine gravel lenses		17	SS	3	
550	NOT SAMPLED					
	Red brown CLAY, silt lenses, fine gravel		18	SS	13	
545	Red brown SAND & SILT, rock fragments & gravel, some clay TILL					
	NOT SAMPLED		19	SS	77	
	Red brown SAND & SILT, rock fragments, some clay, TILL - wet					
540						
535						

○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

STRATIGRAPHIC AND INSTRUMENTATION LOG

PROJECT NAME: DUNLOP - BUFFALO PLANT
HOLE Nº: BMW-2 Page 3 of 3
JOB Nº: 9-1135
DATE COMPLETED: DECEMBER 17, 1982
CLIENT: DUNLOP TIRE CORPORATION
GEOLOGIST/ENGINEER: D. MILLARD
HOLE TYPE: 10"Ø HOLLLOW STEM AUGER
GROUND ELEVATION: 607.6
LOCATION: NE SECTOR OF PLANT-ON DISPOSAL AREA
TOP OF PIPE ELEVATION: 610.62

PROFILE		MONITOR INSTALLATION	SAMPLE			PENETRATION TEST BLOWS / FOOT
DEPTH (ELEVATION)	STRATIGRAPHY DESCRIPTION & REMARKS		NUMBER	TYPE	BLOWS / FOOT	20 40 60 80
540	NOT SAMPLED	2"Ø BLACK STEEL PIPE				
	AUGER REFUSAL	BENTONITE PELLETS				
	3'-5-3/4"Ø ROLLER BIT MINIMAL RESISTANCE CONTINUED TO AUGER REFUSAL	533.4				
535	2.5'-of 5-3/4"Ø ROLLER BIT	STEEL FLANGE	BMW 2	NX		
530	Very thin bedded gray aphanitic DOLOMITE, & white gypsum	3"Ø NX CORE HOLE	ROCK CORE			
		525.9				
525						
520						

○ GRAIN SIZE ANALYSIS ▼ WATER FOUND ▽ STATIC WATER LEVEL

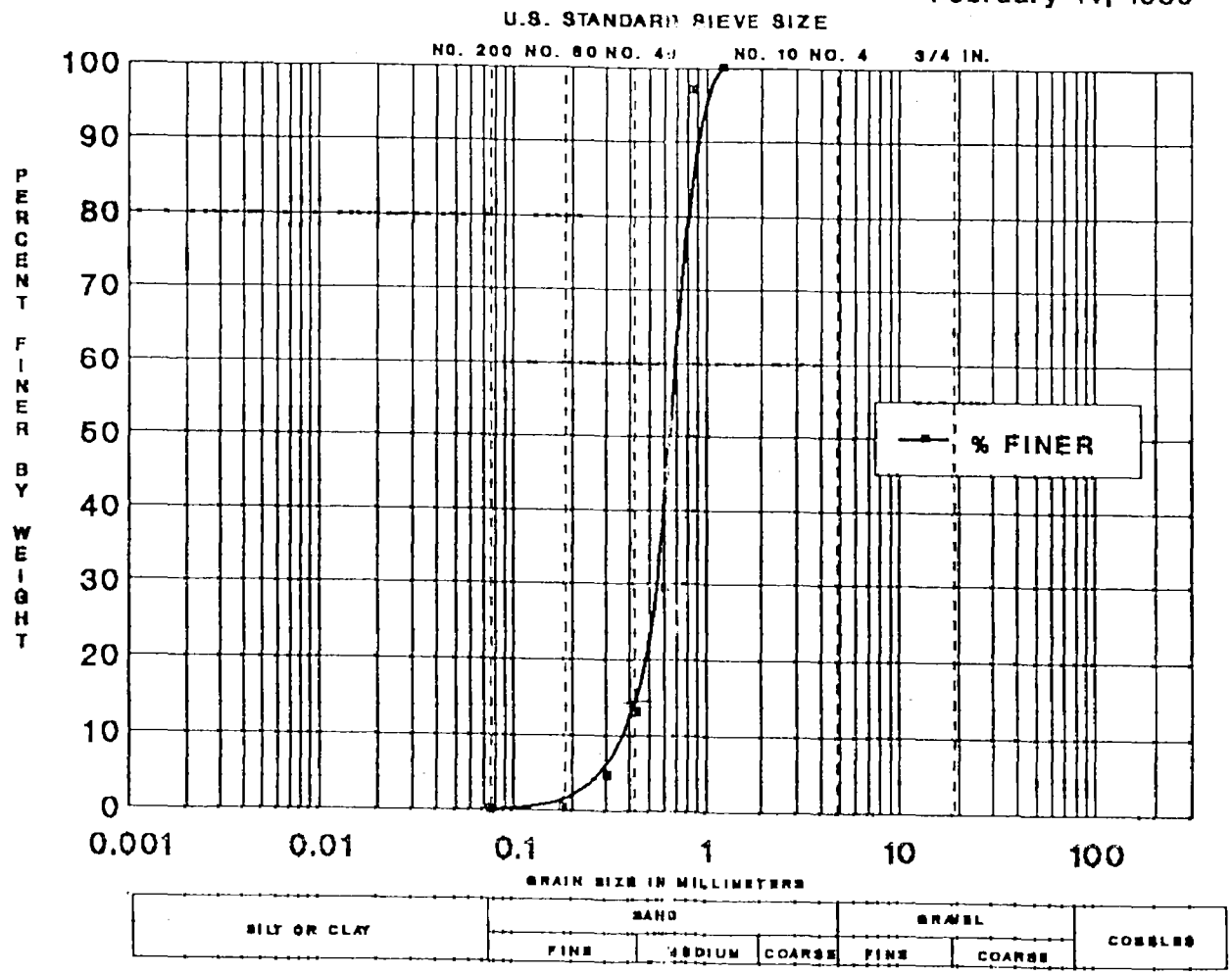
APPENDIX B

GRADATION CURVE OF #2 QROK SAND PACK

BUFFALO DRILLING COMPANY, INC.

GRAIN SIZE ANALYSIS

Q-Rok # 2
February 14, 1989



APPENDIX C

MONITORING WELL CONSTRUCTION DETAILS

DRILLING SUMMARY

Geologist: Michael Gutmann

Drilling Company: Buffalo Drilling Co.

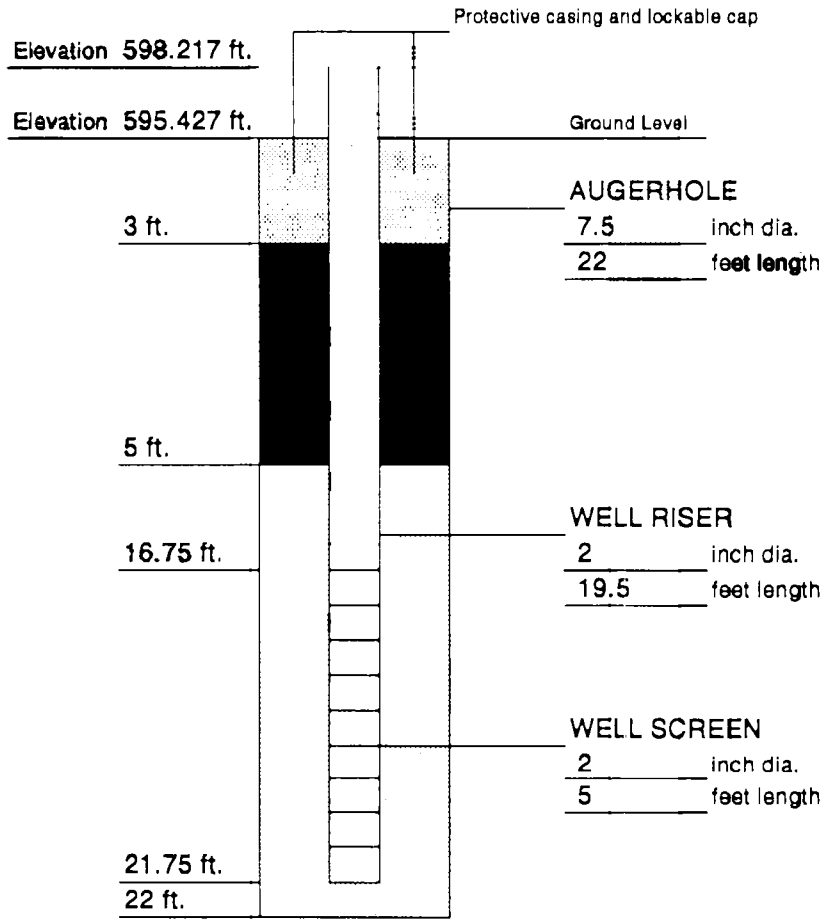
Driller: Charles Nicometi

Date: 4/26/91

GEOLOGIC LOG

depth(ft.)	lithology
0-2'	Fill
2-14'	Dessicated Silty Clay
14-24'	Silty Clay

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*SEAL MATERIAL*
Surface: Steel	Type: Stainless Steel Type 304	Seal #1 Type: Bentonite Pellets Setting: 3 – 5 ft.
Monitor: Stainless Steel	Slot Size: .010 in.	Seal #2 Type: None Setting:

FILTER MATERIAL	*ROCK CORING*	*LEGEND*
Type: #2 Q Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 5 – 22 ft.	Core Diameter: None	Bentonite Seal
	Reamed Diameter: None	Silica Sandpack

Client: Dunlop Tire Corp.	Project: Dunlop Tire Corp.	Project No.: 35246.
URS Consultants, Inc.	Monitoring Well Construction Details	Well Number: OMW-A3

DRILLING SUMMARY

Geologist: Michael Gutmann

Drilling Company: Buffalo Drilling Co.

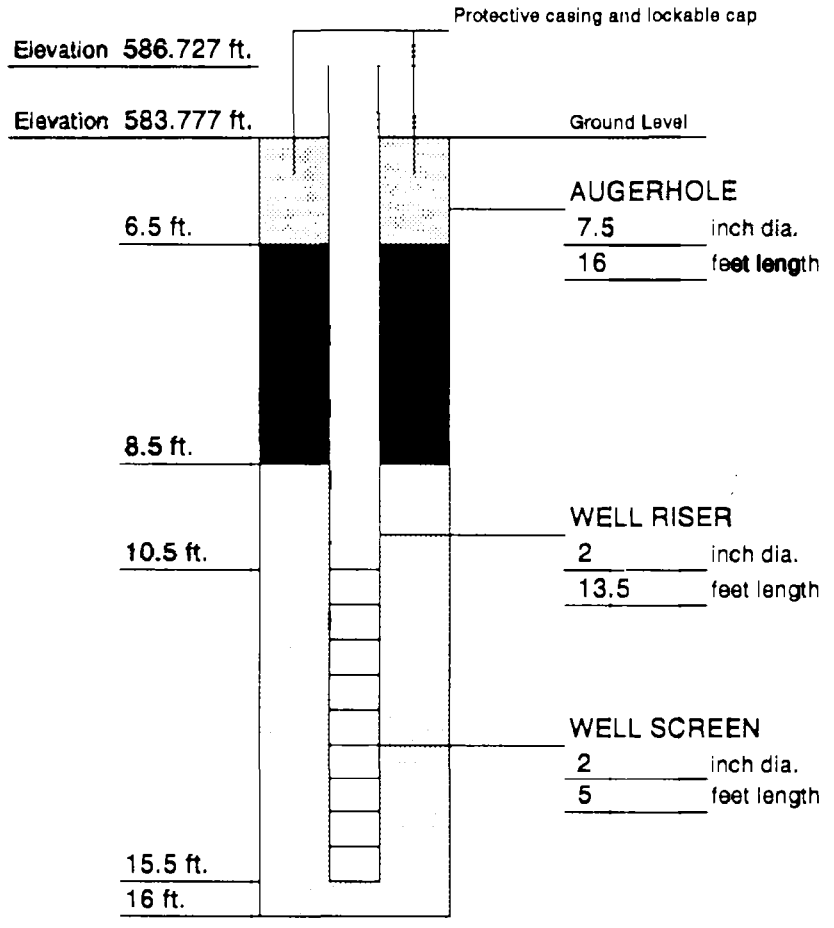
Driller: Charles Nicometi

Date: 4/29/91

GEOLOGIC LOG

depth(ft.)	lithology
0-.5'	Topsoil
.5-10'	Dessicated Silty Clay
10-18'	Silty Clay

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*SEAL MATERIAL*
Surface: Steel	Type: Stainless Steel Type 304	Seal #1 Type: Bentonite Pellets Setting: 8.5 - 10.5 ft.
Monitor: Stainless Steel	Slot Size: .010 in.	Seal #2 Type: None Setting:

FILTER MATERIAL	*ROCK CORING*	*LEGEND*
Type: #2 Q Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 8.5 – 16 ft.	Core Diameter: None	Bentonite Seal
	Reamed Diameter: None	Silica Sandpack

Client: Dunlop Tire Corp.	Project: Dunlop Tire Corp.	Project No.: 35246.
URS Consultants, Inc.	Monitoring Well Construction Details	Well Number: OMW-B2

DRILLING SUMMARY

Geologist: Michael Gutmann

Drilling Company: Buffalo Drilling Co.

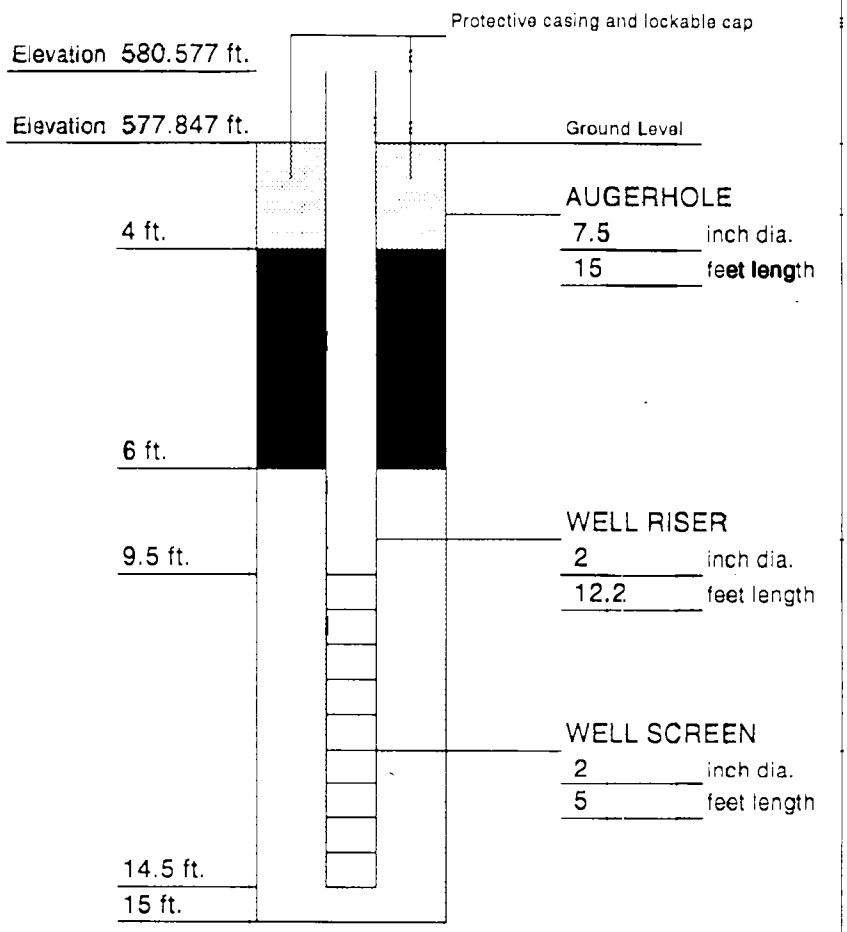
Driller: Charles Nicometi

Date: 4/30/91

GEOLOGIC LOG

depth(ft.)	lithology
0-8	Fill
8-12	Peat
12-16	Silty Clay

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*SEAL MATERIAL*
Surface: Steel	Type: Stainless Steel Type 304	Seal #1 Type: Bentonite Pellets Setting: 4 – 6 ft.
Monitor: Stainless Steel	Slot Size: .010 in.	Seal #2 Type: None Setting:

FILTER MATERIAL	*ROCK CORING*	*LEGEND*
Type: #2 Q Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 6 – 15 ft.	Core Diameter: None	Bentonite Seal
	Reamed Diameter: None	Silica Sandpack

Client: Dunlop Tire Corp.	Project: Dunlop Tire Corp.	Project No.: 35246.
URS Consultants, Inc.	Monitoring Well Construction Details	Well Number: OMW-B3

DRILLING SUMMARY

Geologist: Michael Gutmann

Drilling Company: Buffalo Drilling Co.

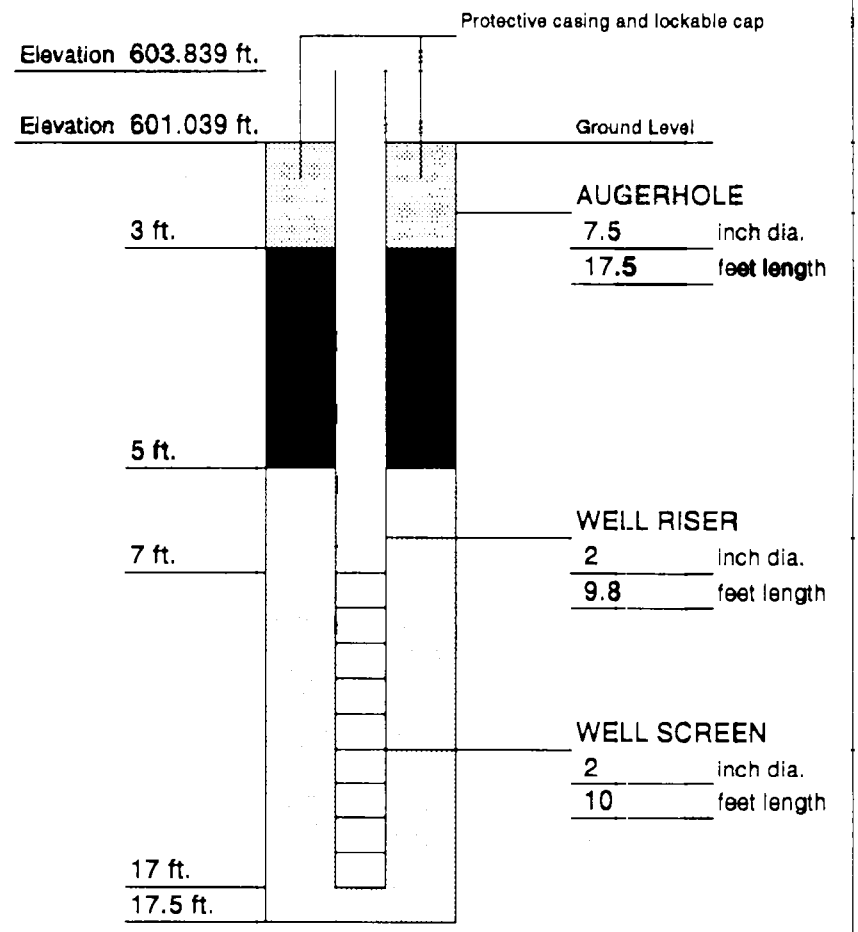
Driller: Charles Nicometi

Date: 5/2/91

GEOLOGIC LOG

depth(ft.)	lithology
0-.5'	Organic Silt
.5-4'	Silty Clay
4-14'	Dessicated Silty Clay
14-18'	Silty Clay

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*SEAL MATERIAL*
Surface: Steel	Type: Stainless Steel Type 304	Seal #1 Type: Bentonite Pellets Setting: 3 – 5 ft.
Monitor: Stainless Steel	Slot Size: .010 in.	Seal #2 Type: None Setting:

FILTER MATERIAL	*ROCK CORING*	*LEGEND*
Type: #2 Q Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 5 – 17.5 ft.	Core Diameter: None	Bentonite Seal
	Reamed Diameter: None	Silica Sandpack

Client: Dunlop Tire Corp.	Project: Dunlop Tire Corp.	Project No.: 35246.
URS Consultants, Inc.	Monitoring Well Construction Details	Well Number: OMW-C1

DRILLING SUMMARY

Geologist: Michael Gutmann

Drilling Company: Buffalo Drilling Co.

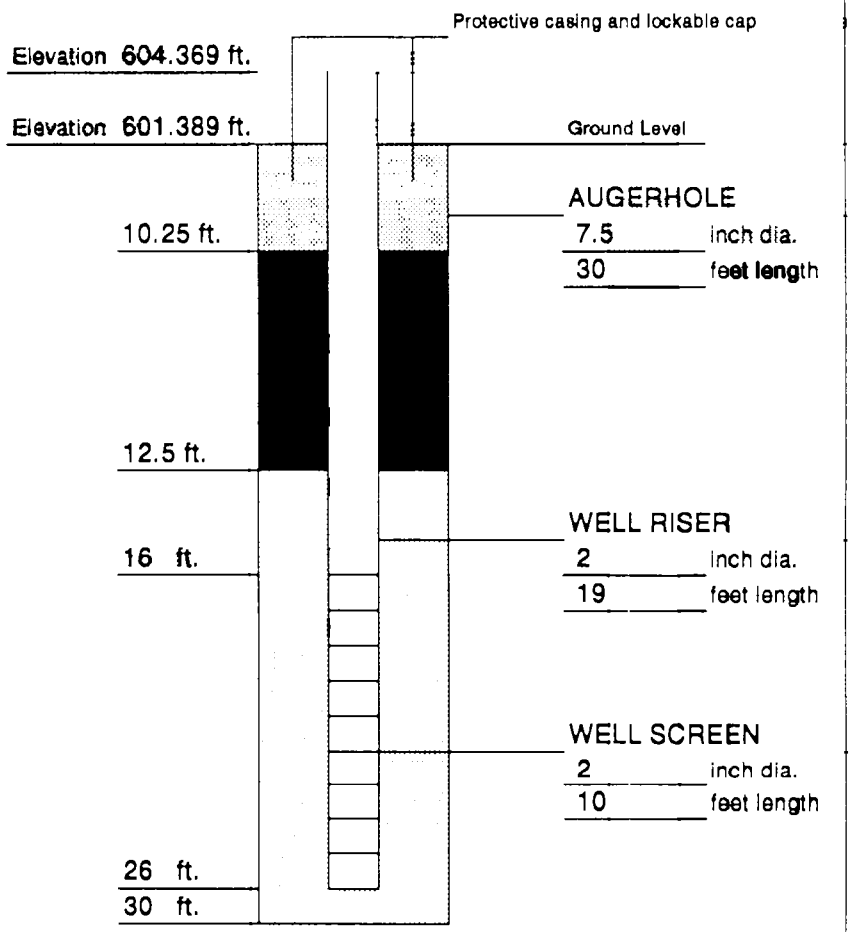
Driller: Charles Nicometi

Date: 5/1/91

GEOLOGIC LOG

depth(ft.)	lithology
0-2'	Fill
2-16'	Dessicated Silty Clay
16-30'	Very Stiff Silty Clay
30-32'	Soft Silty Clay

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*SEAL MATERIAL*
Surface: Steel	Type: Stainless Steel Type 304	Seal #1 Type: Bentonite Pellets Setting: 10.25 – 12.5 ft.
Monitor: Stainless Steel	Slot Size: .010 in.	Seal #2 Type: None Setting:

FILTER MATERIAL	*ROCK CORING*	*LEGEND*
Type: #2 Q Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 12.5 – 30 ft.	Core Diameter: None	Bentonite Seal
	Reamed Diameter: None	Silica Sandpack

Client: Dunlop Tire Corp.	Project: Dunlop Tire Corp.	Project No.: 35246.
URS Consultants, Inc.	Monitoring Well Construction Details	Well Number: OMW-C5

DRILLING SUMMARY

Geologist: Michael Gutmann

Drilling Company: Buffalo Drilling Co.

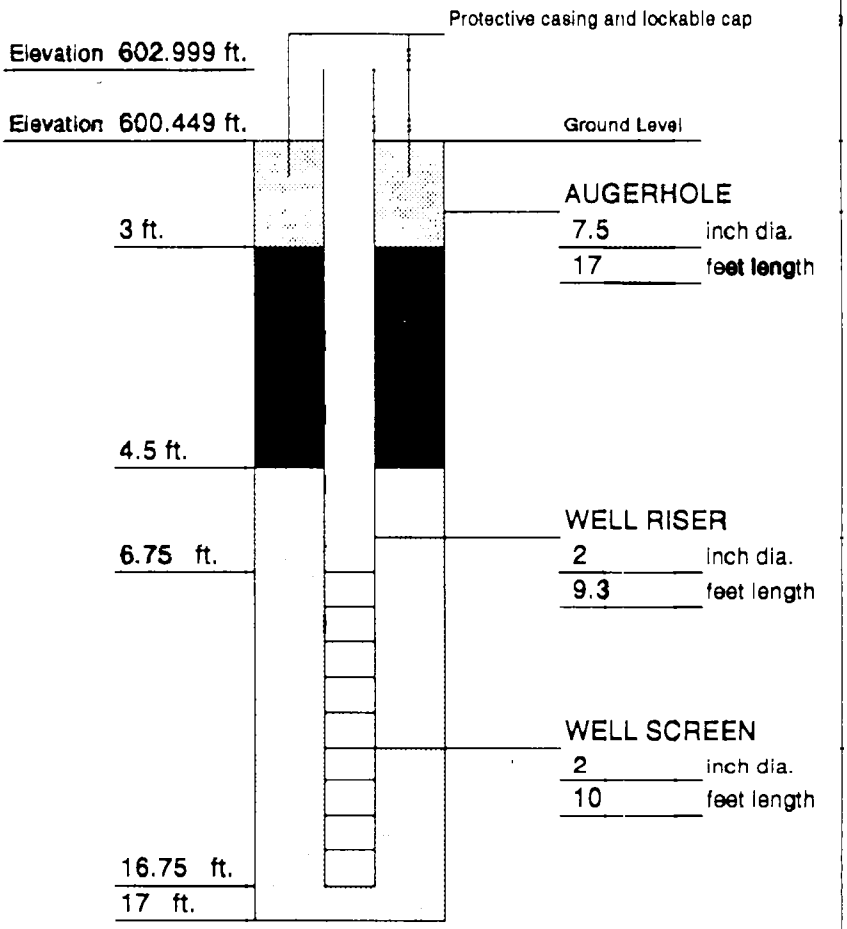
Driller: Charles Nicometi

Date: 5/2/91

GEOLOGIC LOG

depth(ft.)	lithology
0-2'	Fill
2-12'	Dessicated Silty Clay
12-18'	Silty Clay

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*SEAL MATERIAL*
Surface: Steel	Type: Stainless Steel Type 304	Seal #1 Type: Bentonite Pellets Setting: 3 – 4.5 ft.
Monitor: Stainless Steel	Slot Size: .010 in.	Seal #2 Type: None Setting:

FILTER MATERIAL	*ROCK CORING*	*LEGEND*
Type: #2 Q Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 4.5 – 17 ft.	Core Diameter: None	Bentonite Seal
	Reamed Diameter: None	Silica Sandpack

Client: Dunlop Tire Corp.	Project: Dunlop Tire Corp.	Project No.: 35246.
URS Consultants, Inc.	Monitoring Well Construction Details	Well Number: OMW-C6

APPENDIX D

WELL DEVELOPMENT/PURGE LOGS

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE / KEVIN KEARNEY

DATE: 5/9/91 → 5/15/91

WELL NO.: OMW-A3

① TOTAL CASING AND SCREEN LENGTH (FT.): 24.86'

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 5.22'

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	INT	5/9/91		5/10/91		5/13/91			5/14/91	5/15/91	
	0	5	7	12	20	25	27	29	33.5	38.5	40.5
pH	6.85	6.92	6.90	6.80	6.75	7.00	6.94	6.42	7.18	7.10	6.95
Spec. Cond. (µmho)	1800	1600	1600	1250	1300	1400	1400	1400	1425	1400	1400
Turbidity (NTU)	95	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	11.1	11.1	11.1	11.2	11.7	12.4	12.1	12.1	11.2	10.7	11.1

COMMENTS:

BAILED WELL TO DRYNESS SEVERAL TIMES

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE / KEVIN KEARNEY

DATE: 5/9/91 -> 5/14/91

WELL NO.: OMW-B2

① TOTAL CASING AND SCREEN LENGTH (FT.): 19.26'

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 17.72'

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③)$ = _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	INT 0	.1	.22	.32	.42						
pH	6.40	6.55	7.30	7.54	7.46						
Spec. Cond. (µmho)	5000	4000	4000	5000	5000						
Turbidity (NTU)	10	56	>100	>100	>100						
Temperature (°C)	12.8	11.3	10.7	12.1	13.0						
	5/9/91		5/10/91	5/13/91	5/14/91						

COMMENTS: BAILED WELL TO DRYNESS 5/9/91, 5/10/91, 5/13/91

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE

DATE: 5/10/91 → 5/14/91

WELL NO.: OMW-C5

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	29.32	1"	0.04
		2"	0.17
② CASING INTERNAL DIAMETER (in.):	2"	3"	0.38
		4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.)	28.52	5"	1.04
		6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	ENT 0	.13	—								
pH		6.67	7.22								
Spec. Cond. (µmho)		2000	1500								
Turbidity (NTU)		>100	>100								
Temperature (°C)		15.8	14.9								
	DRY										
	5/10/91	5/13/91	5/14/91								

COMMENTS:

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE / KEVIN KEARNEY

DATE: 5/10/91 → 5/14/91

WELL NO.: OMW-C6

		WELL I.D.	VOL. GAL./FT.
①	TOTAL CASING AND SCREEN LENGTH (FT.): 19.86'	1"	0.04
②	CASING INTERNAL DIAMETER (in.): 2"	2"	0.17
③	WATER LEVEL BELOW TOP OF CASING (FT.) 18.12'	3"	0.38
④	VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	INT 0	0.5	.75	~.9							
pH	6.84	6.80	6.71	6.98							
Spec. Cond. (µmho)	3500	3500	4000	5000							
Turbidity (NTU)	58	>100	>100	>100							
Temperature (°C)	12.1	11.7	12.3	12.8							
	5/10/91		5/13/91	5/14/91							

COMMENTS:

BAILED WELL TO DRYNESS 5/10/91, 5/13/91, 5/14/91

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE

DATE: 5/4/91

WELL NO.: OMW-1

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	19.04	1"	0.04
		2"	0.17
② CASING INTERNAL DIAMETER (in.):	2	3"	0.38
		4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.)	4.44	5"	1.04
		6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)	1.3	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	3.5 gal									
pH	5.83	6.90									
Spec. Cond. (µmho)	1500	1500									
Turbidity (NTU)	>100	>100									
Temperature (°C)	10.7	12.3									

COMMENTS:

DRY AFTER 3.5 gAL. SLOW RECHARGE. CONCRETE PAD BROKEN.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.

STAFF: WESLEY GAMBLE / KEVIN KEARNEY

DATE: 5/10/91 → 5/15/91

WELL NO.: OMW-C1

① TOTAL CASING AND SCREEN LENGTH (FT.):	19.62'
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	4.85'
④ VOLUME OF WATER IN CASING (GAL.)	

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	INT 0	5	6	10	12.5	15					
pH	6.66	6.33	6.42	6.06	7.12	6.72					
Spec. Cond. (µmho)	3500	4000	4000	3500	4000	4000					
Turbidity (NTU)	14	>100	>100	>100	>100	>100					
Temperature (°C)	12	12	12	14.0	14.2	12.1					
	5/10/91			5/13/91	5/14/91	5/15/91					

COMMENTS:

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.

STAFF: WESLEY GAMBLE

DATE: 5/9/91 → 5/15/91

WELL NO.: OMW-B3

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	17.06'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
		3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.)	8.00'	4"	0.66
		5"	1.04
④ VOLUME OF WATER IN CASING (GAL.)		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	INT 0	3	4	5	5.5	6	6.5				
pH	6.62	6.58	6.43	6.34	6.41	6.85	5.62				
Spec. Cond. (µmho)	2000	2000	2000	2000	1500	2500	1500				
Turbidity (NTU)	30	40	>100	>100	>100	>100	>100				
Temperature (°C)	10.0	10.3	11.6	12	12.0	11.3	11.9				
	5/9/91		5/10/91	5/13/91		5/14/91	5/15/91				

COMMENTS:

BAILED WELL TO DRYNESS 5/9/91,

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE

DATE: 5/14/91

WELL NO.: OMW-2

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	13.12'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	5.72	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	1.3	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	2.5									
pH	5.71	5.67									
Spec. Cond. (µmho)	1150	1275									
Turbidity (NTU)	>100	>100									
Temperature (°C)	12.2	10.3									

COMMENTS:

WELL PAD CRACKED. SULFUR ODOR TO WATER AND WATER IS BLACKISH.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE

DATE: 5/15/91

WELL NO.: OMW-3

① TOTAL CASING AND SCREEN LENGTH (FT.):	15.06
② CASING INTERNAL DIAMETER (in.):	2
③ WATER LEVEL BELOW TOP OF CASING (FT.)	4.13
④ VOLUME OF WATER IN CASING (GAL.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	3.0	1.0								
pH	5.82	6.47	6.40								
Spec. Cond. (µmho)	5000	5500	5500								
Turbidity (NTU)	35	> 100	> 100								
Temperature (°C)	11.7	10.4	11.1								

COMMENTS:

WELL DRY AFTER 4 GALLONS.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE

DATE: 5/15/91

WELL NO.: OMW-4

① TOTAL CASING AND SCREEN LENGTH (FT.): 11.20

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 8.17

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	.5									
pH	5.98	5.97									
Spec. Cond. (μmho)	3500	3500									
Turbidity (NTU)	>100	>100									
Temperature (°C)	12.4	12.0									

COMMENTS:

WATER HAS SULFUR ODOR AND BLACK COLOR. WELL DRY AFTER .5 GAL.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: WESLEY GAMBLE

DATE: 5/14/91

WELL NO.: BMW-1

① TOTAL CASING AND SCREEN LENGTH (FT.):	75.76
② CASING INTERNAL DIAMETER (in.):	2
③ WATER LEVEL BELOW TOP OF CASING (FT.)	21.04
④ VOLUME OF WATER IN CASING (GAL.)	9.30

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	5	5 (END)	8							
pH	7.21	5.94	6.65	6.70							
Spec. Cond. (µmho)	1500	2000	3500	3500							
Turbidity (NTU)	10	10	20	70							
Temperature (°C)	12.4	12.8	12.2	12.1							
	5/14/91		5/15/91								

COMMENTS:

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246

STAFF: Wesley GAMBLE

DATE: 5/15/91

WELL NO.: BMW-2

① TOTAL CASING AND SCREEN LENGTH (FT.):	88.00
② CASING INTERNAL DIAMETER (in.):	2
③ WATER LEVEL BELOW TOP OF CASING (FT.)	41.68
④ VOLUME OF WATER IN CASING (GAL.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	2									
pH	6.48										
Spec. Cond. (μmho)	3500	3500									
Turbidity (NTU)	30	25									
Temperature (°C)	13.1	11.8									

COMMENTS:

WATER HAS SULFUR ODOR WITH BLACKISH COLOR.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: Dunlop

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5.30.91 9:20 am - 10:07 am

WELL NO.: OMW-A3

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	24.86	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
		3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.)	6.02'	4"	0.66
		5"	1.04
④ VOLUME OF WATER IN CASING (GAL.)	3.2 gal	6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	(DRY) 6									
pH	8.09	—									
Spec. Cond. (µmho)	1164	—									
Turbidity (NTU)	3.0	—									
Temperature (°C)	16.0°C	—									

COMMENTS: water remained clear for 4.5 gallons
Bailed 6 gallons to dryness.

15.49' at 12:01 pm

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5.28.91 2:10 p.m

WELL NO.: OMW - B2

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	19.26'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	17.94	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	0.22 gal	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0										
pH											
Spec. Cond. (μmho)											
Turbidity (NTU)											
Temperature (°C)											

COMMENTS: bailed 0.25 gallons to dryness.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246-00

STAFF: Kevin Kearney

DATE: 5-28-91 2:00 pm

WELL NO.: OMW-B3

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	17.06'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	6.98'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	1.71 gal	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	3									
pH	7.29	–									
Spec. Cond. (μmho)	2180	–									
Turbidity (NTU)	56	–									
Temperature (°C)	16	–									

COMMENTS: Bailed 3 gallons to dryness.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5-28-91 12:35 pm

WELL NO.: OMW-C1

(1) TOTAL CASING AND SCREEN LENGTH (FT.):	19.62'
(2) CASING INTERNAL DIAMETER (in.):	2"
(3) WATER LEVEL BELOW TOP OF CASING (FT.)	3.55'
(4) VOLUME OF WATER IN CASING (GAL.)	2.73 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	5									
pH	7.50	–									
Spec. Cond. (µmho)	3740	–									
Turbidity (NTU)	4.5	–									
Temperature (°C)	16	–									

COMMENTS: Bailed 5 gallons to dryness.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5.28.91 1:20 pm

WELL NO.: OMW-C5

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	29.32'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
		3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.)	25.34'	4"	0.66
		5"	1.04
④ VOLUME OF WATER IN CASING (GAL.)	0.68 gal	6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	2									
pH	7.36	-									
Spec. Cond. (μmho)	2230	-									
Turbidity (NTU)	130	-									
Temperature (°C)	16.6	-									

COMMENTS: Bailed 2 gallons to dryness.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5-28-91 1:40 pm

WELL NO.: OMW-C6

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	19.86'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	15.45'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	0.75 gal	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	2									
pH	8.14	–									
Spec. Cond. (μmho)	4400	–									
Turbidity (NTU)	40	–									
Temperature (°C)	16.0	–									

COMMENTS: Bailed 2 gallons to dryness.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.

STAFF: KEVIN KEARNEY

DATE: 5/30/91 1:21 P.M. → 1:42 P.M.

WELL NO.: OMW-1

		WELL I.D.	VOL. GAL./FT.
(1) TOTAL CASING AND SCREEN LENGTH (FT.):	14.04'	1"	0.04
		2"	0.17
(2) CASING INTERNAL DIAMETER (in.):	2"	3"	0.38
		4"	0.66
(3) WATER LEVEL BELOW TOP OF CASING (FT.)	10.40'	5"	1.04
		6"	1.50
(4) VOLUME OF WATER IN CASING (GAL.)	0.61	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	INT 0	2									
pH	7.68	—									
Spec. Cond. (μmho)	2730	"									
Turbidity (NTU)	30	"									
Temperature (°C)	14.4	"									

COMMENTS:

2 GALLONS TO DRYNESS.

FIRST BAILOR HAD RED/ORANGE PARTICULATES

BECAME TURBID (TAN/BROWN)

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: Dunlop

PROJECT NO.: 35246.00

STAFF: K. Kearney

DATE: 5.30.91 2:13 p.m. - 2:25 p.m.

WELL NO.: OMW-2

① TOTAL CASING AND SCREEN LENGTH (FT.): 13.12

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 10.84

④ VOLUME OF WATER IN CASING (GAL.) 0.38 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③)$ = _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	0.5									
pH	7.00	—									
Spec. Cond. (µmho)	1490	—									
Turbidity (NTU)	18	—									
Temperature (°C)	14.8°C	—									

COMMENTS: 0.5 gallons to dryness.
first bailer was clear, became turbid black with a shine

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: Dunlop

PROJECT NO.: 35246.

STAFF: Kevin Kearney

DATE: 5/3:/91 11:40 Am → 11:51 Am

WELL NO.: OMW-3

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	15.06'	1"	0.04
		2"	0.17
② CASING INTERNAL DIAMETER (in.):	2"	3"	0.38
		4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.)	8.98'	5"	1.04
		6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)	1.03	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	3									
pH	7.80	—									
Spec. Cond. (µmho)	3800	—									
Turbidity (NTU)	30	—									
Temperature (°C)	12.6	—									

COMMENTS: BAILED 3 GALLONS TO DRYNESS (1ST BAILER CLEAR), REMAINING WERE TURBID, TAN-BROWN

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5-28-91 1:00 pm

WELL NO.: OMW-4

① TOTAL CASING AND SCREEN LENGTH (FT.):	11.20'
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	8.48'
④ VOLUME OF WATER IN CASING (GAL.)	0.46 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	0.5									
pH	7.41	–									
Spec. Cond. (µmho)	2640	–									
Turbidity (NTU)	120	–									
Temperature (°C)	16.5	–									

COMMENTS: Bailed 0.5 gallons to dryness.

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5-30-91

WELL NO.: BMW-1

① TOTAL CASING AND SCREEN LENGTH (FT.): 75.76

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 21.19

④ VOLUME OF WATER IN CASING (GAL.) 9.27 gal

WELL I.D	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0										
pH	9.72										
Spec. Cond. (μmho)	3070										
Turbidity (NTU)	8										
Temperature (°C)	11.8										

COMMENTS:

A-2347

URS CONSULTANTS, INC.

WELL DEVELOPMENT / PURGING LOG

PROJECT TITLE: DUNLOP

PROJECT NO.: 35246.00

STAFF: Kevin Kearney

DATE: 5.29.91 1:30 pm – 2:45 pm

WELL NO.: BMW-2

① TOTAL CASING AND SCREEN LENGTH (FT.):	88.00'
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	41.88'
④ VOLUME OF WATER IN CASING (GAL.)	7.8 gal.

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	(Init) 0	25									
pH	10.65	–									
Spec. Cond. (µmho)	2739	–									
Turbidity (NTU)	142	–									
Temperature (°C)	14	–									

COMMENTS: 3 volumes removed = 25 gallons

A-2347

APPENDIX E

HYDRAULIC CONDUCTIVITY TESTING RESULTS

BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH T WATER Ft	RAWDOW (Y)	TIME sec (X')	LN (Y)
1	0.00	4.32	0.000	0	ERR
2	0.01	12.78	8.460	1	2.1353
3	0.75	12.75	8.430	45	2.1318
4	1.25	12.65	8.330	75	2.1199
5	1.75	12.59	8.270	105	2.1126
6	2.25	12.52	8.200	135	2.1041
7	2.75	12.47	8.150	165	2.0980
8	3.25	12.41	8.090	195	2.0906
9	3.50	12.40	8.090	210	2.0906
10	3.75	12.38	8.060	225	2.0869
11	4.25	12.34	8.020	255	2.0819
12	4.75	12.31	7.990	285	2.0782
13	5.25	12.29	7.970	315	2.0757
14	5.75	12.27	7.950	345	2.0732
15	6.25	12.24	7.920	375	2.0694
16	6.75	12.21	7.890	405	2.0656
17	7.25	12.19	7.870	435	2.0631
18	7.75	12.17	7.850	465	2.0605
19	8.25	12.15	7.830	495	2.0580
20	8.75	12.13	7.810	525	2.0554
21	9.25	12.11	7.790	555	2.0528
22	9.75	12.10	7.780	585	2.0516
23	10.25	12.09	7.770	615	2.0503
24	10.75	12.08	7.760	645	2.0490
25	11.25	12.06	7.740	675	2.0464
26	11.75	12.04	7.720	705	2.0438
27	12.25	12.03	7.710	735	2.0425
28	12.75	12.02	7.700	765	2.0412
29	13.25	12.01	7.690	795	2.0399
30	13.75	12.00	7.680	825	2.0386
31	14.25	11.99	7.670	855	2.0373
32	15.25	11.97	7.650	915	2.0347
33	16.25	11.95	7.630	975	2.0321
34	17.25	11.94	7.620	1035	2.0308
35	18.25	11.92	7.600	1095	2.0281
36	19.25	11.90	7.580	1155	2.0255
37	20.25	11.88	7.560	1215	2.0229
38	21.25	11.87	7.550	1275	2.0215
39	22.25	11.86	7.540	1335	2.0202
40	24.25	11.84	7.520	1455	2.0176
41	26.25	11.82	7.500	1575	2.0149
42	28.25	11.80	7.480	1695	2.0122
43	30.25	11.78	7.460	1815	2.0096
44	32.25	11.76	7.440	1935	2.0069

* PROJECT NAME : DUNLOP TIRE CORPORATION – SITE ASSESSMENTS
* PROJECT NO : 35246
* WELL NO : WELL OMW-1 (EARLY RECOVERY DATA)
* ANALYST : OSTROWSKI
* **DATE COLLECTED : 7-11-91**

* RISER PIPE (ID): (2 r sub c) =	5.7	in. =	0.2375	(radius in ft.)
* **EFFECTIVE SCREEN DIAMETER: (2 r sub w) =**	**10.0**	in. =	**0.4167**	**(radius in ft.)**
* EFFECTIVE SCREEN LENGTH: (L) =	9.84	Ft.		
* MAX DRAWDOWN (IN SUBSET): (Ymax) =	8.46	Ft.		
* STATIC WATER LEVEL: (SWL) =	4.32	Ft.		
* DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =		9.84	Ft.	
* EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =			15.00	Ft.
* INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?			0	
* SANDPACK'S SPECIFIC YIELD (Sy) =	0.15			

BOUWER AND RICE CURVE COEFFICIENTS:

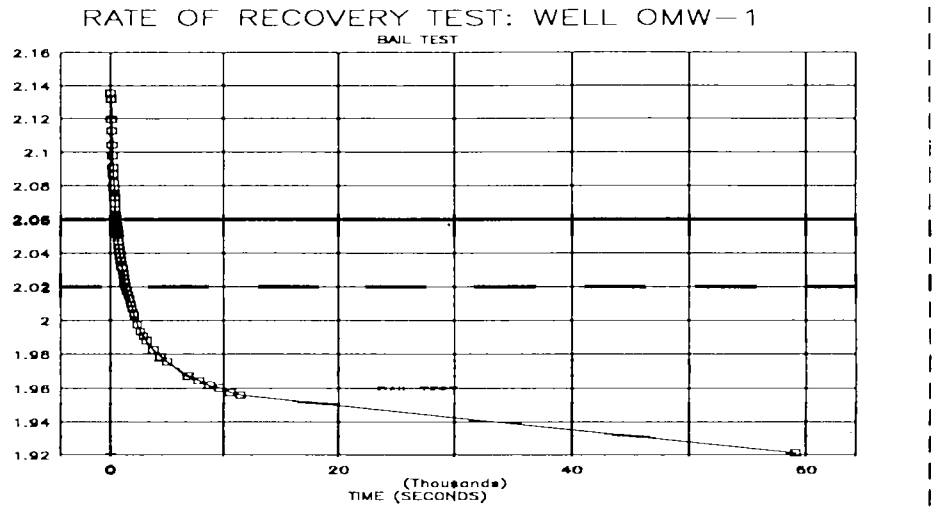
RATIO OF L/(r sub w) =		23.62		
LOG OF L/(r sub w) =		1.3732		
FOR PARTIALLY PENETRATING WELLS—				
A =	2.22			
B =	0.31			
FOR FULLY PENETRATING WELLS—				
C =	1.63			
EVALUATION OF LN(Re/(r sub w)):				
CONST.1 =	0.3479			
CONST.2 =	2.5164	=(MAX. OF 6.0)=	2.5164	
LN(Re/(r sub w)) =		2.11		
EFFECTIVE r sub c (for sandpack dewatering) =			0.2375	
(1/T)(LN(Yo/Yt)) (SLOPE) =		-1.07E-04	sec^(-1)	
HYDRAULIC CONDUCTIVITY (K) =		6.45E-07	ft/sec	<==========
		1.97E-05	cm/sec	<==========

Regression Output:

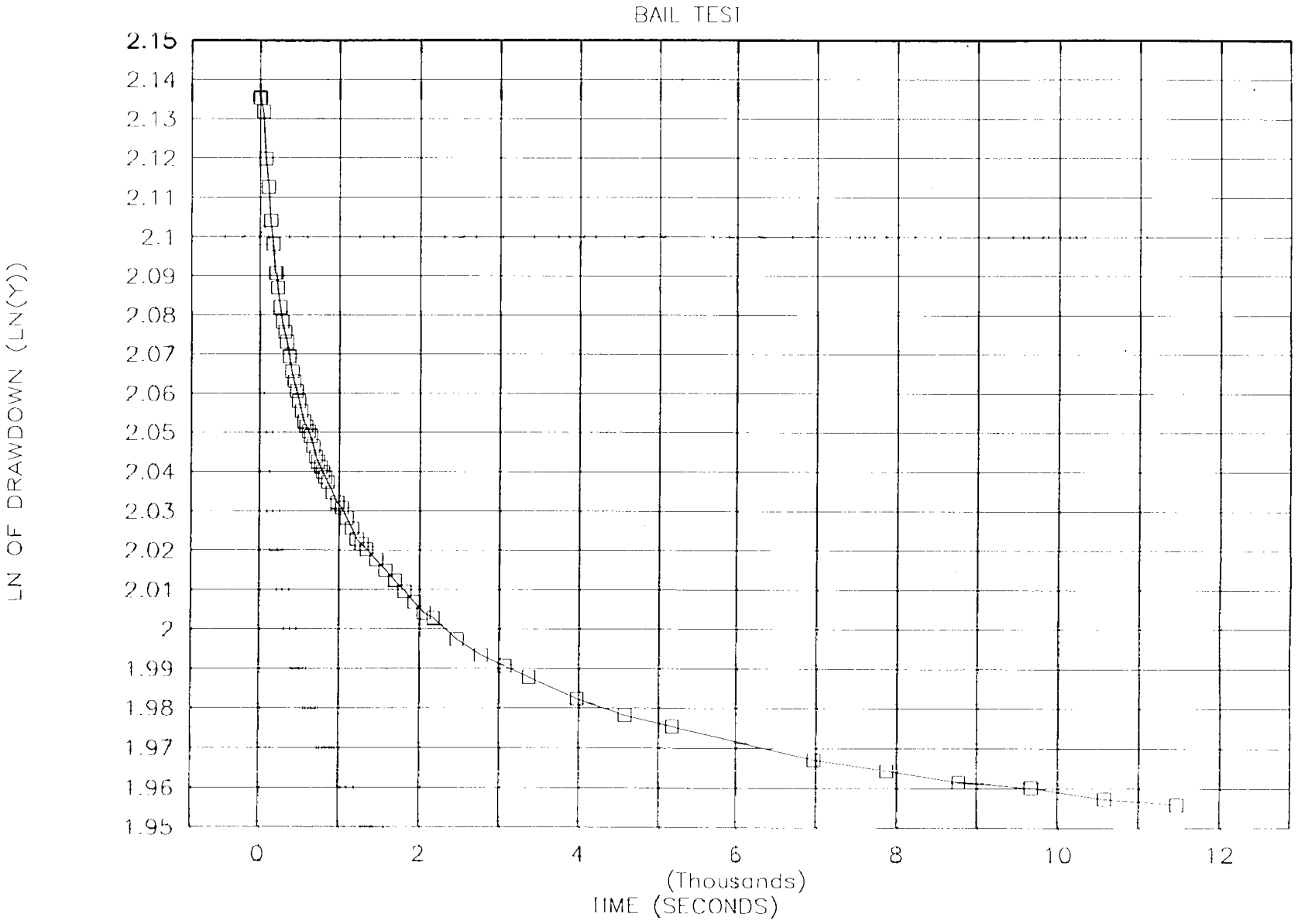
Constant		2.12E+00
Std Err of Y Est		0.0082
R Squared		0.9192
No. of Observations		30
Degrees of Freedom		28
X Coefficient(s)	-1.07E-04	
Std Err of Coef.	0.0000	

REGRESSION FROM 1 TO 855 SECONDS.

45	34.25	11.74	7.420	2055	2.0042
46	36.25	11.73	7.410	2175	2.0028
47	41.25	11.69	7.370	2475	1.9974
48	46.25	11.66	7.340	2775	1.9933
49	51.25	11.64	7.320	3075	1.9906
50	56.25	11.62	7.300	3375	1.9879
51	66.25	11.58	7.260	3975	1.9824
52	76.25	11.55	7.230	4575	1.9782
53	**86.25**	**11.53**	**7.210**	**5175**	**1.9755**
54	116.25	11.47	7.150	6975	1.9671
55	**131.25**	**11.45**	**7.130**	**7875**	**1.9643**
56	146.25	11.43	7.110	8775	1.9615
57	161.25	11.42	7.100	9675	1.9601
58	**176.25**	**11.40**	**7.080**	**10575**	**1.9573**
59	**191.25**	**11.39**	**7.070**	**11475**	**1.9559**
60	**984.25**	**11.15**	**6.830**	**59055**	**1.9213**
61	**1195.75**	**11.12**	**6.800**	**71745**	**1.9169**
62	**1490.25**	**11.08**	**6.760**	**89415**	**1.9110**
63	**5246.25**	**10.48**	**6.160**	**314775**	**1.8181**



RATE OF RECOVERY TEST: WELL OMW-1



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH T WATER Ft	RAWDOW (Y)	TIME sec (X')	LN (Y)
1	0.00	6.40	0.000	0	ERR
2	0.01	18.60	12.200	1	2.5014
3	0.67	18.10	11.700	40	2.4596
4	1.20	18.00	11.600	72	2.4510
5	2.20	17.80	11.400	132	2.4336
6	3.50	17.60	11.200	210	2.4159
7	4.20	17.50	11.100	252	2.4069
8	5.00	17.40	11.000	300	2.3979
9	5.67	17.30	11.000	340	2.3979
10	6.67	17.20	10.800	400	2.3795
11	7.67	17.10	10.700	460	2.3702
12	8.67	17.00	10.600	520	2.3609
13	9.75	16.90	10.500	585	2.3514
14	11.00	16.80	10.400	660	2.3418
15	12.25	16.70	10.300	735	2.3321
16	13.50	16.60	10.200	810	2.3224
17	15.20	16.50	10.100	912	2.3125
18	17.00	16.40	10.000	1020	2.3026
19	19.00	16.30	9.900	1140	2.2925
20	21.50	16.20	9.800	1290	2.2824
21	24.10	16.10	9.700	1446	2.2721
22	27.40	16.00	9.600	1644	2.2618
23	32.00	15.88	9.480	1920	2.2492
24	37.00	15.77	9.370	2220	2.2375
25	42.00	15.69	9.290	2520	2.2289
26	57.00	15.50	9.100	3420	2.2083
27	72.00	15.35	8.950	4320	2.1917
28	102.00	15.16	8.760	6120	2.1702
29	132.00	14.98	8.580	7920	2.1494
30	267.00	14.47	8.070	16020	2.0882
31	369.00	14.18	7.780	22140	2.0516
32	1167.00	12.60	6.200	70020	1.8245
33	1422.00	12.22	5.820	85320	1.7613
34	1697.50	11.89	5.490	101850	1.7029
35	5427.00	7.68	1.280	325620	0.2469

* PROJECT NAME :	DUNLOP TIRE CORPORATION - SITE ASSESSMENTS			
* PROJECT NO :	35246			
* WELL NO :	WELL OMW-C1 (EARLY RECOVERY DATA)			
* ANALYST :	OSTROWSKI			
* DATE COLLECTED :	7-11-91			
* RISER PIPE (ID): (2 r sub c) =	2.0	in. =	0.0833	(radius in ft.)
* EFFECTIVE SCREEN DIAMETER: (2 r sub w) =	7.5	in. =	0.3125	(radius in ft.)
* EFFECTIVE SCREEN LENGTH: (L) =	12.50	Ft.		
* MAX DRAWDOWN (IN SUBSET): (Ymax) =	12.20	Ft.		
* STATIC WATER LEVEL: (SWL) =	6.40	Ft.		
* DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	13.90	Ft.		
* EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	20.00	Ft.		
* INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0			
* SANDPACK'S SPECIFIC YIELD (Sy) =	0.15			

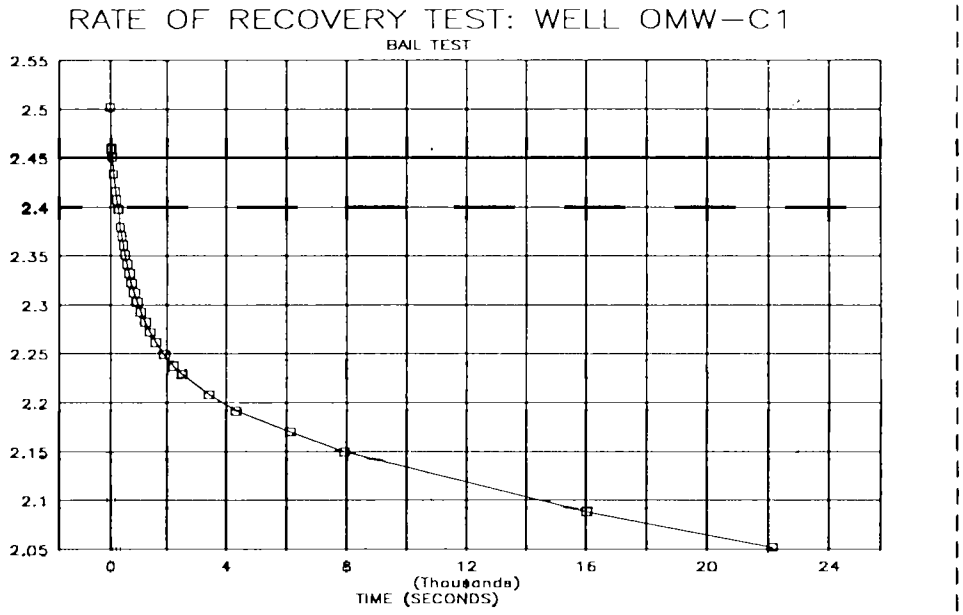
BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) =	40.00			
---LOG OF L/(r sub w) =	1.6021			
FOR PARTIALLY PENETRATING WELLS---				
A =	2.77			
B =	0.39			
FOR FULLY PENETRATING WELLS---				
C =	2.23			
---EVALUATION OF LN(Re/(r sub w)):				
CONST.1 =	0.2899			
CONST.2 =	2.9714	=(MAX. OF 6.0)=	2.9714	
LN(Re/(r sub w) =	2.58			
EFFECTIVE r sub c (for sandpack dewatering) =	0.0833			
(1/T)(LN(Yo/Yt)) (SLOPE) =	-1.10E-04	sec^(-1)		
HYDRAULIC CONDUCTIVITY (K) =	7.86E-08	ft/sec	<==========	
	2.40E-06	cm/sec	<==========	

Regression Output:

Constant	2.44E+00
Std Err of Y Est	0.0246
R Squared	0.8894
No. of Observations	23
Degrees of Freedom	21
X Coefficient(s)	-1.10E-04
Std Err of Coef.	0.0000

REGRESSION FROM 1 TO 2220 SECONDS.


RATE OF RECOVERY TEST: WELL OMW-C1
BAIL TEST
LN OF DRAWDOWN (LN(Y))
2.55
2.5
2.45
2.4
2.35
2.3
2.25
2.2
2.15
2.1
2.05
0
4
8
12
16
20
24
(Thousands)
TIME (SECONDS)

BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH T WATER Ft	RAWDOW (Y)	TIME sec (X')	LN (Y)
1	0.00	20.92	0.000	0	ERR
2	0.01	27.84	6.920	1	1.9344
3	0.50	27.70	6.780	30	1.9140
4	1.00	27.66	6.740	60	1.9081
5	1.50	27.62	6.700	90	1.9021
6	2.00	27.58	6.660	120	1.8961
7	2.50	27.56	6.640	150	1.8931
8	3.00	27.52	6.600	180	1.8871
9	3.50	27.50	6.600	210	1.8871
10	4.00	27.48	6.560	240	1.8810
11	4.50	27.45	6.530	270	1.8764
12	5.00	27.43	6.510	300	1.8733
13	5.50	27.41	6.490	330	1.8703
14	6.00	27.40	6.480	360	1.8687
15	6.50	27.38	6.460	390	1.8656
16	7.00	27.36	6.440	420	1.8625
17	7.50	27.35	6.430	450	1.8610
18	8.00	27.33	6.410	480	1.8579
19	8.50	27.31	6.390	510	1.8547
20	9.00	27.30	6.380	540	1.8532
21	9.50	27.28	6.360	570	1.8500
22	10.00	27.27	6.350	600	1.8485
23	10.50	27.25	6.330	630	1.8453
24	11.00	27.23	6.310	660	1.8421
25	11.50	27.22	6.300	690	1.8405
26	12.00	27.21	6.290	720	1.8390
27	12.50	27.20	6.280	750	1.8374
28	13.00	27.19	6.270	780	1.8358
29	13.50	27.18	6.260	810	1.8342
30	14.00	27.17	6.250	840	1.8326
31	14.50	27.16	6.240	870	1.8310
32	15.00	27.15	6.230	900	1.8294
33	15.50	27.14	6.220	930	1.8278
34	16.00	27.14	6.220	960	1.8278
35	16.50	27.13	6.210	990	1.8262
36	17.00	27.12	6.200	1020	1.8245
37	17.50	27.11	6.190	1050	1.8229
38	18.00	27.10	6.180	1080	1.8213
39	18.50	27.10	6.180	1110	1.8213
40	19.00	27.09	6.170	1140	1.8197
41	19.50	27.08	6.160	1170	1.8181
42	20.00	27.08	6.160	1200	1.8181
43	20.50	27.07	6.150	1230	1.8165
44	21.00	27.06	6.140	1260	1.8148
45	21.50	27.05	6.130	1290	1.8132
46	22.00	27.05	6.130	1320	1.8132
47	22.50	27.04	6.120	1350	1.8116

* PROJECT NAME :	DUNLOP TIRE CORPORATION – SITE ASSESSMENTS			
* PROJECT NO :	35246			
* WELL NO :	WELL OMW-C5 (EARLY RECOVERY DATA)			
* ANALYST :	OSTROWSKI			
* DATE COLLECTED :	7-12-91			
* RISER PIPE (ID): (2 r sub c) =	4.4	in. =	0.1833	(radius in ft.)
* EFFECTIVE SCREEN DIAMETER; (2 r sub w) =	7.5	in. =	0.3125	(radius in ft.)
* EFFECTIVE SCREEN LENGTH: (L) =	12.06	Ft.		
* MAX DRAWDOWN (IN SUBSET): (Ymax) =	6.92	Ft.		
* STATIC WATER LEVEL: (SWL) =	20.92	Ft.		
* DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	12.06	Ft.		
* EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	20.00	Ft.		
* INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0			
* SANDPACK'S SPECIFIC YIELD (Sy) =	0.15			

BOUWER AND RICE CURVE COEFFICIENTS:

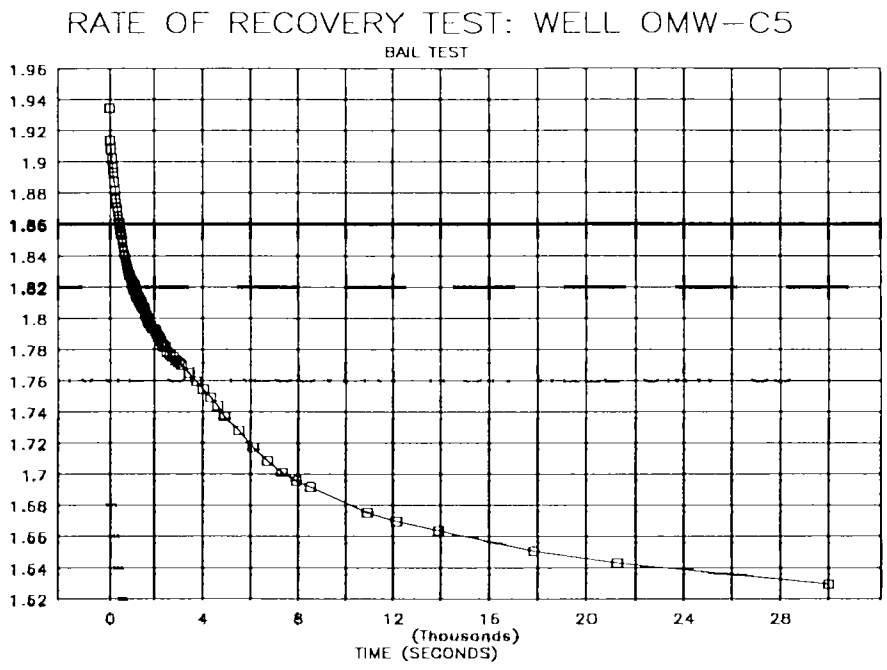
RATIO OF L/(r sub w) =	38.59			
---LOG OF L/(r sub w) =	1.5865			
FOR PARTIALLY PENETRATING WELLS---				
A =	2.73			
B =	0.38			
FOR FULLY PENETRATING WELLS---				
C =	2.18			
---EVALUATION OF LN(Re/(r sub w)):				
CONST.1 =	0.3011			
CONST.2 =	3.2351	=(MAX. OF 6.0)=	3.2351	
LN(Re/(r sub w)) =	2.48			
EFFECTIVE r sub c (for sandpack dewatering) =	0.1833			
(1/T)(LN(Yo/Yt)) (SLOPE) =	-1.66E-05	sec^(-1)		
HYDRAULIC CONDUCTIVITY (K) =	5.75E-08	ft/sec	<==========	
	1.75E-06	cm/sec	<==========	

Regression Output:

Constant		1.82E+00
Std Err of Y Est		0.0033
R Squared		0.9900
No. of Observations		32
Degrees of Freedom		30
X Coefficient(s)	-1.66E-05	
Std Err of Coef.	0.0000	

REGRESSION FROM 1710 TO 8520 SECONDS.

48	23.00	27.04	6.120	1380	1.8116
49	23.50	27.03	6.110	1410	1.8099
50	24.00	27.03	6.110	1440	1.8099
51	24.50	27.02	6.100	1470	1.8083
52	25.00	27.02	6.100	1500	1.8083
53	25.50	27.01	6.090	1530	1.8066
54	26.00	27.01	6.090	1560	1.8066
55	26.50	27.00	6.080	1590	1.8050
56	**27.00**	**26.99**	**6.070**	**1620**	**1.8034**
57	27.50	26.98	6.060	1650	1.8017
58	**28.00**	**26.98**	**6.060**	**1680**	**1.8017**
59	28.50	26.97	6.050	1710	1.8001
60	29.00	26.96	6.040	1740	1.7984
61	30.00	26.95	6.030	1800	1.7967
62	31.00	26.94	6.020	1860	1.7951
63	32.00	26.93	6.010	1920	1.7934
64	33.00	26.93	6.010	1980	1.7934
65	34.00	26.92	6.000	2040	1.7918
66	35.00	26.91	5.990	2100	1.7901
67	36.00	26.90	5.980	2160	1.7884
68	37.00	26.89	5.970	2220	1.7867
69	38.00	26.88	5.960	2280	1.7851
70	39.00	26.87	5.950	2340	1.7834
71	40.00	26.86	5.940	2400	1.7817
72	41.00	26.86	5.940	2460	1.7817
73	42.00	26.84	5.920	2520	1.7783
74	44.00	26.83	5.910	2640	1.7766
75	46.00	26.82	5.900	2760	1.7750
76	48.00	26.81	5.890	2880	1.7733
77	50.00	26.80	5.880	3000	1.7716
78	52.00	26.79	5.870	3120	1.7699
79	57.00	26.76	5.840	3420	1.7647
80	62.00	26.73	5.810	3720	1.7596
81	67.00	26.70	5.780	4020	1.7544
82	72.00	26.67	5.750	4320	1.7492
83	77.00	26.64	5.720	4620	1.7440
84	82.00	26.60	5.680	4920	1.7370
85	92.00	26.55	5.630	5520	1.7281
86	102.00	26.49	5.570	6120	1.7174
87	112.00	26.44	5.520	6720	1.7084
88	122.00	26.40	5.480	7320	1.7011
89	132.00	26.37	5.450	7920	1.6956
90	142.00	26.35	5.430	8520	1.6919
91	182.00	26.26	5.340	10920	1.6752
92	202.00	26.23	5.310	12120	1.6698
93	232.00	26.20	5.280	13920	1.6639
94	297.00	26.13	5.210	17820	1.6506
95	354.00	26.09	5.170	21240	1.6429
96	499.50	26.02	5.100	29970	1.6292
97	4258.00	25.45	4.530	255480	1.5107



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS
TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH T WATER Ft	RAWDOW (Y)	TIME sec (X')	LN (Y)
1	0.00	4.32	0.000	0	ERR
2	0.01	12.78	8.460	1	2.1353
3	0.75	12.75	8.430	45	2.1318
4	1.25	12.65	8.330	75	2.1199
5	1.75	12.59	8.270	105	2.1126
6	2.25	12.52	8.200	135	2.1041
7	2.75	12.47	8.150	165	2.0980
8	3.25	12.41	8.090	195	2.0906
9	3.50	12.40	8.090	210	2.0906
10	3.75	12.38	8.060	225	2.0869
11	4.25	12.34	8.020	255	2.0819
12	4.75	12.31	7.990	285	2.0782
13	5.25	12.29	7.970	315	2.0757
14	5.75	12.27	7.950	345	2.0732
15	6.25	12.24	7.920	375	2.0694
16	6.75	12.21	7.890	405	2.0656
17	7.25	12.19	7.870	435	2.0631
18	7.75	12.17	7.850	465	2.0605
19	8.25	12.15	7.830	495	2.0580
20	8.75	12.13	7.810	525	2.0554
21	9.25	12.11	7.790	555	2.0528
22	9.75	12.10	7.780	585	2.0516
23	10.25	12.09	7.770	615	2.0503
24	10.75	12.08	7.760	645	2.0490
25	11.25	12.06	7.740	675	2.0464
26	11.75	12.04	7.720	705	2.0438
27	12.25	12.03	7.710	735	2.0425
28	12.75	12.02	7.700	765	2.0412
29	13.25	12.01	7.690	795	2.0399
30	13.75	12.00	7.680	825	2.0386
31	14.25	11.99	7.670	855	2.0373
32	15.25	11.97	7.650	915	2.0347
33	16.25	11.95	7.630	975	2.0321
34	17.25	11.94	7.620	1035	2.0308
35	18.25	11.92	7.600	1095	2.0281
36	19.25	11.90	7.580	1155	2.0255
37	20.25	11.88	7.560	1215	2.0229
38	21.25	11.87	7.550	1275	2.0215
39	22.25	11.86	7.540	1335	2.0202
40	24.25	11.84	7.520	1455	2.0176
41	26.25	11.82	7.500	1575	2.0149
42	28.25	11.80	7.480	1695	2.0122
43	30.25	11.78	7.460	1815	2.0096
44	32.25	11.76	7.440	1935	2.0069

* PROJECT NAME :	DUNLOP TIRE CORPORATION – SITE ASSESSMENTS			
* PROJECT NO :	35246			
* WELL NO :	WELL OMW-1 (LATER RECOVERY DATA)			
* ANALYST :	OSTROWSKI			
* DATE COLLECTED :	7-11-91 (corrected r_c)			
* RISER PIPE (ID): (2 r sub c) =	5.7	in. =	0.2375	(radius in ft.)
* EFFECTIVE SCREEN DIAMETER: (2 r sub w) =	10.0	in. =	0.4167	(radius in ft.)
* EFFECTIVE SCREEN LENGTH: (L) =	9.84	Ft.		
* MAX DRAWDOWN (IN SUBSET): (Ymax) =	8.46	Ft.		
* STATIC WATER LEVEL: (SWL) =	4.32	Ft.		
* DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	9.84	Ft.		
* EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	15.00	Ft.		
* INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0			
* SANDPACK'S SPECIFIC YIELD (Sy) =	0.15			

BOUWER AND RICE CURVE COEFFICIENTS:

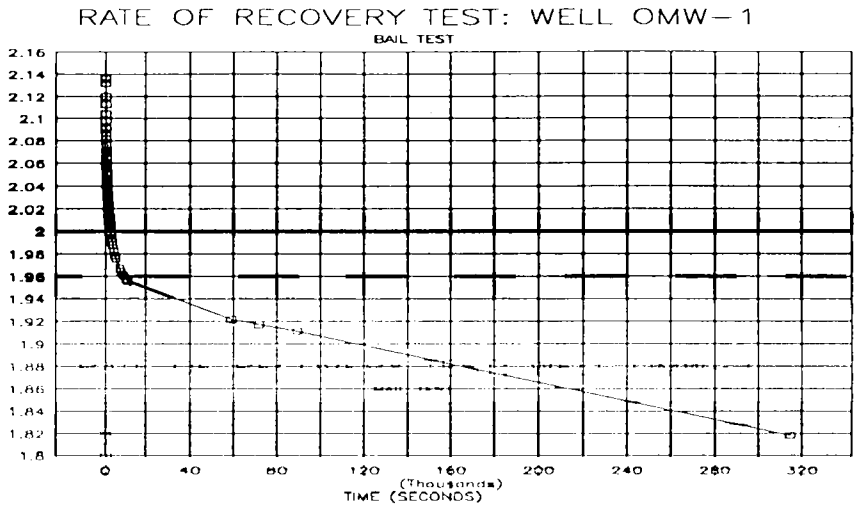
RATIO OF L/(r sub w) =		23.62			
---LOG OF L/(r sub w) =		1.3732			
FOR PARTIALLY PENETRATING WELLS—					
A =	2.22				
B =	0.31				
FOR FULLY PENETRATING WELLS---					
C =	1.63				
---EVALUATION OF LN(Re/(r sub w)):					
CONST.1 =	0.3479				
CONST.2 =	2.5164	=(MAX. OF 6.0)=		2.5164	
LN(Re/(r sub w) =		2.11			
EFFECTIVE r sub c (for sandpack dewatering) =			0.2375		
(1/T)(LN(Yo/Yt)) (SLOPE) =		-4.07E-07	sec^(-1)		
HYDRAULIC CONDUCTIVITY (K) =		2.46E-09	ft/sec	<==========	
		7.48E-08	cm/sec	<==========	

Regression Output:

Constant		1.95E+00
Std Err of Y Est		0.0010
R Squared		0.9997
No. of Observations		4
Degrees of Freedom		2
X Coefficient(s)	-4.07E-07	
Std Err of Coef.	0.0000	

REGRESSION FROM 59055 TO 314775 SECONDS.

45	34.25	11.74	7.420	2055	2.0042
46	36.25	11.73	7.410	2175	2.0028
47	41.25	11.69	7.370	2475	1.9974
48	46.25	11.66	7.340	2775	1.9933
49	51.25	11.64	7.320	3075	1.9906
50	56.25	11.62	7.300	3375	1.9879
51	66.25	11.58	7.260	3975	1.9824
52	76.25	11.55	7.230	4575	1.9782
53	**86.25**	**11.53**	**7.210**	**5175**	**1.9755**
54	116.25	11.47	7.150	6975	1.9671
55	**131.25**	**11.45**	**7.130**	**7875**	**1.9643**
56	146.25	11.43	7.110	8775	1.9615
57	161.25	11.42	7.100	9675	1.9601
58	176.25	11.40	7.080	10575	1.9573
59	191.25	11.39	7.070	11475	1.9559
60	984.25	11.15	6.830	59055	1.9213
61	1195.75	11.12	6.800	71745	1.9169
62	1490.25	11.08	6.760	89415	1.9110
63	5248.25	10.48	6.160	314775	1.8181



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH T WATER Ft	RAWDOW (Y)	TIME sec (X')	LN (Y)
1	0.00	6.40	0.000	0	ERR
2	0.01	18.60	12.200	1	2.5014
3	0.67	18.10	11.700	40	2.4596
4	1.20	18.00	11.600	72	2.4510
5	2.20	17.80	11.400	132	2.4336
6	3.50	17.60	11.200	210	2.4159
7	4.20	17.50	11.100	252	2.4069
8	5.00	17.40	11.000	300	2.3979
9	5.67	17.30	11.000	340	2.3979
10	6.67	17.20	10.800	400	2.3795
11	7.67	17.10	10.700	460	2.3702
12	8.67	17.00	10.600	520	2.3609
13	9.75	16.90	10.500	585	2.3514
14	11.00	16.80	10.400	660	2.3418
15	12.25	16.70	10.300	735	2.3321
16	13.50	16.60	10.200	810	2.3224
17	15.20	16.50	10.100	912	2.3125
18	17.00	16.40	10.000	1020	2.3026
19	19.00	16.30	9.900	1140	2.2925
20	21.50	16.20	9.800	1290	2.2824
21	24.10	16.10	9.700	1446	2.2721
22	27.40	16.00	9.600	1644	2.2618
23	32.00	15.88	9.480	1920	2.2492
24	37.00	15.77	9.370	2220	2.2375
25	42.00	15.69	9.290	2520	2.2289
26	57.00	15.50	9.100	3420	2.2083
27	72.00	15.35	8.950	4320	2.1917
28	102.00	15.16	8.760	6120	2.1702
29	132.00	14.98	8.580	7920	2.1494
30	267.00	14.47	8.070	16020	2.0882
31	369.00	14.18	7.780	22140	2.0516
32	1167.00	12.60	6.200	70020	1.8245
33	1422.00	12.22	5.820	85320	1.7613
34	1697.50	11.89	5.490	101850	1.7029
35	5427.00	7.68	1.280	325620	0.2469

* PROJECT NAME :	DUNLOP TIRE CORPORATION – SITE ASSESSMENTS			
* PROJECT NO :	35248			
* WELL NO :	WELL OMW-C1 (LATER RECOVERY DATA)			
* ANALYST :	OSTROWSKI			
* DATE COLLECTED :	7-11-91			
* RISER PIPE (ID). (2 r sub c) =	2.0	in. =	0.0833	(radius in ft.)
* EFFECTIVE SCREEN DIAMETER: (2 r sub w) =	7.5	in. =	0.3125	(radius in ft.)
* EFFECTIVE SCREEN LENGTH: (L) =	12.50	Ft.		
* MAX DRAWDOWN (IN SUBSET): (Ymax) =	12.20	Ft.		
* STATIC WATER LEVEL: (SWL) =	6.40	Ft.		
* DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	13.90	Ft.		
* EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	20.00	Ft.		
* INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0			
* SANDPACK'S SPECIFIC YIELD (Sy) =	0.15			

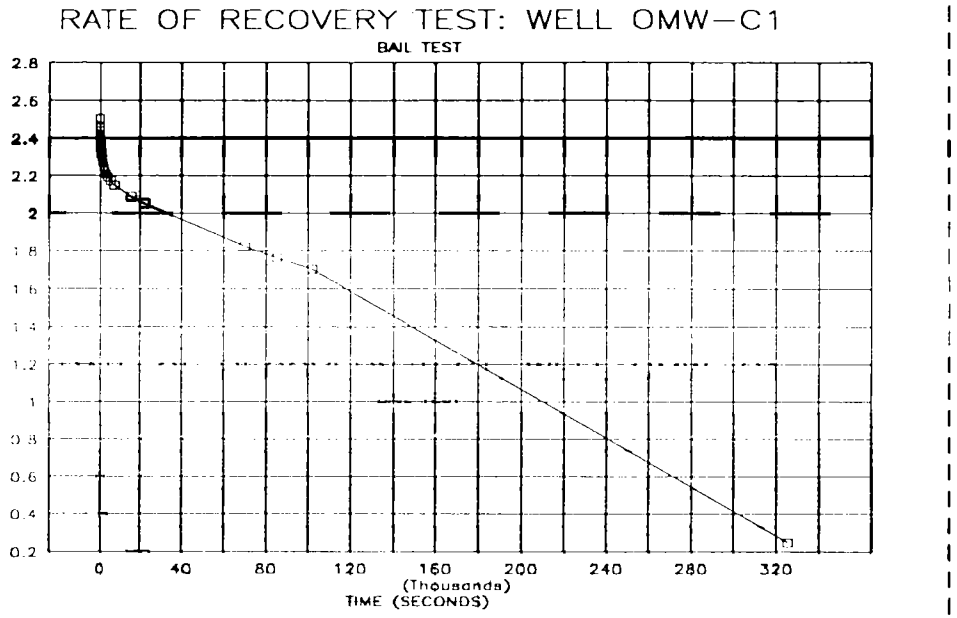
BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) =	40.00			
←LOG OF L/(r sub w) =	1.6021			
FOR PARTIALLY PENETRATING WELLS—				
A =	2.77			
B =	0.39			
FOR FULLY PENETRATING WELLS—				
C =	2.23			
—EVALUATION OF LN(Re/(r sub w)):				
CONST.1 =	0.2899			
CONST.2 =	2.9714	=(MAX. OF 6.0)=	2.9714	
LN(Re/(r sub w) =		2.58		
EFFECTIVE r sub c (for sandpack dewatering) =			0.0833	
(1/T)(LN(Yo/Yt)) (SLOPE) =		-6.00E-06	sec^(-1)	
HYDRAULIC CONDUCTIVITY (K) =		4.30E-09	ft/sec	<==========
		1.31E-07	cm/sec	<==========

Regression Output:

Constant	2.23E+00
Std Err of Y Est	0.0594
R Squared	0.9940
No. of Observations	6
Degrees of Freedom	4
X Coefficient(s)	-6.00E-06
Std Err of Coef.	0.0000

REGRESSION FROM 16020 TO 325620 SECONDS.


RATE OF RECOVERY TEST: WELL OMW-C1
BAIL TEST
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
40
80
120
160
200
240
280
320
(Thousands)
TIME (SECONDS)

BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS. FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH T WATER Ft	RAWDOW (Y)	TIME sec (X')	LN (Y)
1	0.00	20.92	0.000	0	ERR
2	0.01	27.84	6.920	1	1.9344
3	0.50	27.70	6.780	30	1.9140
4	1.00	27.66	6.740	60	1.9081
5	1.50	27.62	6.700	90	1.9021
6	2.00	27.58	6.660	120	1.8961
7	2.50	27.56	6.640	150	1.8931
8	3.00	27.52	6.600	180	1.8871
9	3.50	27.50	6.580	210	1.8841
10	4.00	27.48	6.560	240	1.8810
11	4.50	27.45	6.530	270	1.8764
12	5.00	27.43	6.510	300	1.8733
13	5.50	27.41	6.490	330	1.8703
14	6.00	27.40	6.480	360	1.8687
15	6.50	27.38	6.460	390	1.8656
16	7.00	27.36	6.440	420	1.8625
17	7.50	27.35	6.430	450	1.8610
18	8.00	27.33	6.410	480	1.8579
19	8.50	27.31	6.390	510	1.8547
20	9.00	27.30	6.380	540	1.8532
21	9.50	27.28	6.360	570	1.8500
22	10.00	27.27	6.350	600	1.8485
23	10.50	27.25	6.330	630	1.8453
24	11.00	27.23	6.310	660	1.8421
25	11.50	27.22	6.300	690	1.8405
26	12.00	27.21	6.290	720	1.8390
27	12.50	27.20	6.280	750	1.8374
28	13.00	27.19	6.270	780	1.8358
29	13.50	27.18	6.260	810	1.8342
30	14.00	27.17	6.250	840	1.8326
31	14.50	27.16	6.240	870	1.8310
32	15.00	27.15	6.230	900	1.8294
33	15.50	27.14	6.220	930	1.8278
34	16.00	27.14	6.220	960	1.8278
35	16.50	27.13	6.210	990	1.8262
36	17.00	27.12	6.200	1020	1.8245
37	17.50	27.11	6.190	1050	1.8229
38	18.00	27.10	6.180	1080	1.8213
39	18.50	27.10	6.180	1110	1.8213
40	19.00	27.09	6.170	1140	1.8197
41	19.50	27.08	6.160	1170	1.8181
42	20.00	27.08	6.160	1200	1.8181
43	20.50	27.07	6.150	1230	1.8165
44	21.00	27.06	6.140	1260	1.8148
45	21.50	27.05	6.130	1290	1.8132
46	22.00	27.05	6.130	1320	1.8132
47	22.50	27.04	6.120	1350	1.8116

* PROJECT NAME :	DUNLOP TIRE CORPORATION – SITE ASSESSMENTS			
* PROJECT NO :	35248			
* WELL NO :	WELL OMW-C5 (WATER RECOVERY DATA)			
* ANALYST :	OSTROWSKI			
* DATE COLLECTED :	7-12-91 (corrected r_c)			
* RISER PIPE (ID): (2 r sub c) =	4.4	in. =	0.1833	(radius in ft.)
* EFFECTIVE SCREEN DIAMETER: (2 r sub w) =	7.5	in. =	0.3125	(radius in ft.)
* EFFECTIVE SCREEN LENGTH: (L) =	12.06	Ft.		
* MAX DRAWDOWN (IN SUBSET): (Ymax) =	6.92	Ft.		
* STATIC WATER LEVEL: (SWL) =	20.92	Ft.		
* DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	12.06	Ft		
* EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	20.80	Ft		
* INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0			
* SANDPACK'S SPECIFIC YIELD (Sy) =	0.15			

BOUWER AND RICE CURVE COEFFICIENTS:

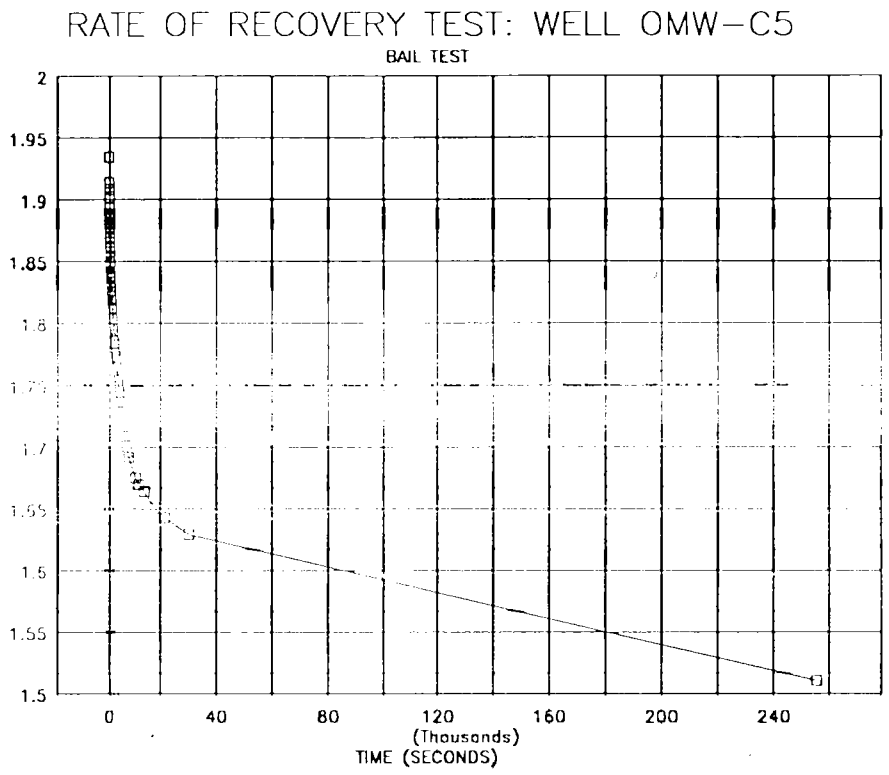
RATIO OF L/(r sub w) =	38.59			
+++LOG OF L/(r sub w) =	1.5865			
FOR PARTIALLY PENETRATING WELLS--				
A =	2.73			
B =	0.38			
FOR FULLY PENETRATING WELLS---				
C =	2.18			
---EVALUATION OF LN(Re/(r sub w)):				
CONST.1 =	0.3011			
CONST.2 =	3.2351	=(MAX. OF 6.0)=	3.2351	
LN(Re/(r sub w)) =	2.48			
EFFECTIVE r sub c (for sandpack dewatering) =		0.1833		
(1/T)(LN(Yo/Yt)) (SLOPE) =	-5.46E-07	sec^(-1)		
HYDRAULIC CONDUCTIVITY (K) =	1.89E-09	ft/sec	<==========	
	5.75E-08	cm/sec	<==========	

Regression Output:

Constant		1.65E+00
Std Err of Y Est		0.0063
R Squared		0.9963
No. of Observations		3
Degrees of Freedom		1
X Coefficient(s)	-5.46E-07	
Std Err of Coef.	0.0000	

REGRESSION FROM 21240 TO 255480 SECONDS.

48	23.00	27.04	6.120	1380	1.8116
49	23.50	27.03	6.110	1410	1.8099
50	24.00	27.03	6.110	1440	1.8099
51	24.50	27.02	6.100	1470	1.8083
52	25.00	27.02	6.100	1500	1.8083
53	25.50	27.01	6.090	1530	1.8066
54	26.00	27.01	6.090	1560	1.8066
55	26.50	27.00	6.080	1590	1.8050
56	27.00	26.99	6.070	1620	1.8034
57	27.50	26.98	6.060	1650	1.8017
58	28.00	26.98	6.060	1680	1.8017
59	28.50	26.97	6.050	1710	1.8001
60	29.00	26.96	6.040	1740	1.7984
61	29.50	26.95	6.030	1770	1.7967
62	30.00	26.94	6.020	1800	1.7951
63	30.50	26.93	6.010	1830	1.7934
64	31.00	26.93	6.010	1860	1.7934
65	34.00	26.92	6.000	2040	1.7918
66	35.00	26.91	5.990	2100	1.7901
67	36.00	26.90	5.980	2160	1.7884
68	37.00	26.89	5.970	2220	1.7867
69	38.00	26.88	5.960	2280	1.7851
70	39.00	26.87	5.950	2340	1.7834
71	40.00	26.86	5.940	2400	1.7817
72	41.00	26.86	5.940	2460	1.7817
73	42.00	26.84	5.920	2520	1.7783
74	44.00	26.83	5.910	2640	1.7766
75	46.00	26.82	5.900	2760	1.7750
76	48.00	26.81	5.890	2880	1.7733
77	50.00	26.80	5.880	3000	1.7716
78	52.00	26.79	5.870	3120	1.7699
79	57.00	26.76	5.840	3420	1.7647
80	62.00	26.73	5.810	3720	1.7596
81	67.00	26.70	5.780	4020	1.7544
82	72.00	26.67	5.750	4320	1.7492
83	77.00	26.64	5.720	4620	1.7440
84	82.00	26.60	5.680	4920	1.7370
85	92.00	26.55	5.630	5520	1.7281
86	102.00	26.49	5.570	6120	1.7174
87	112.00	26.44	5.520	6720	1.7084
88	122.00	26.40	5.480	7320	1.7011
89	132.00	26.37	5.450	7920	1.6958
90	142.00	26.35	5.430	8520	1.6919
91	182.00	26.26	5.340	10920	1.6752
92	202.00	26.23	5.310	12120	1.6696
93	232.00	26.20	5.280	13920	1.6639
94	297.00	26.13	5.210	17820	1.6506
95	354.00	26.09	5.170	21240	1.6429
96	499.50	26.02	5.100	29970	1.6292
97	4268.00	25.45	4.530	255480	1.5107



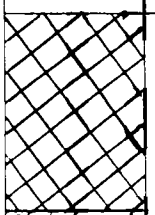
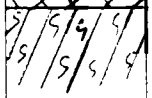
APPENDIX F

TEST TRENCH/TEST PIT LOGS

URS CONSULTANTS, INC.

TEST PIT LOG

Project: Dunlop	Project Number: 35246.
Client: Dunlop	Contractor: Buffalo Drilling Co.
Date **S**tarted: 5/6/91	Elevation:
Date **C**ompleted: 5/6/91	Sheet 1 of 1
Pit Number: TP-A1	Pit Max. Depth: ~ 2 FT
	Approx. Water Table Depth: N/A

SECTION	DEPTH	DESCRIPTION
	-0-	FILL - MIXTURE OF ASH, CARBON BLACK, AND SLAG IN A SILT MATRIX
	-2-	SILTY CLAY RED/BROWN, STIFF
	-4-	
	-6-	

FILL INCLUDES:

General: SILT MATRIX WITH CARBON BLACK, ASH, AND SLAG

Metal Objects: SLAG

Drums: NONE

COMMENTS:

NO HNU READINGS ABOVE BACKGROUND LEVELS.

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number: 35246.	
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/7/91	Elevation:	
Date Completed:	5/7/91	Sheet	1 of 1
Pit Number:	TP - A2	Pit Max. Depth:	5 FT
		Approx. Water Table Depth:	N/A

SECTION	DEPTH	DESCRIPTION
	-0-	TOPSOIL - SILT, SOME ROOTS
	-	REWORKED SILTY CLAY
	-	RED/BROWN, STIFF
	-2-	
	-	
	-	BLACK FILL - CARBON BLACK, SILT, TR. SLAG, WOODY REFUSE
	-	SILTY CLAY
	-4-	MOTTLED YLW/BRN AND GRAY
	-	RED/BRN, STIFF
	-	
	-	
	-6-	

FILL INCLUDES:

General: SILT, CARBON BLACK, TRACE SLAG

Metal Objects: SLAG

Drums: NONE

COMMENTS:

NO HNU READINGS ABOVE BACKGROUND LEVELS

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

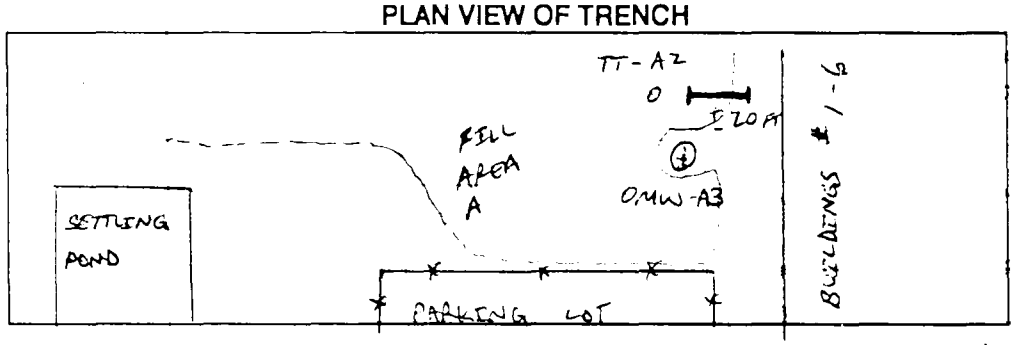
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N. Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/7/91
Sheet 1 of 1	Date Completed: 5/7/91
Trench Number: TT-A2	Trench Max. Depth: ~ 3.5 FT

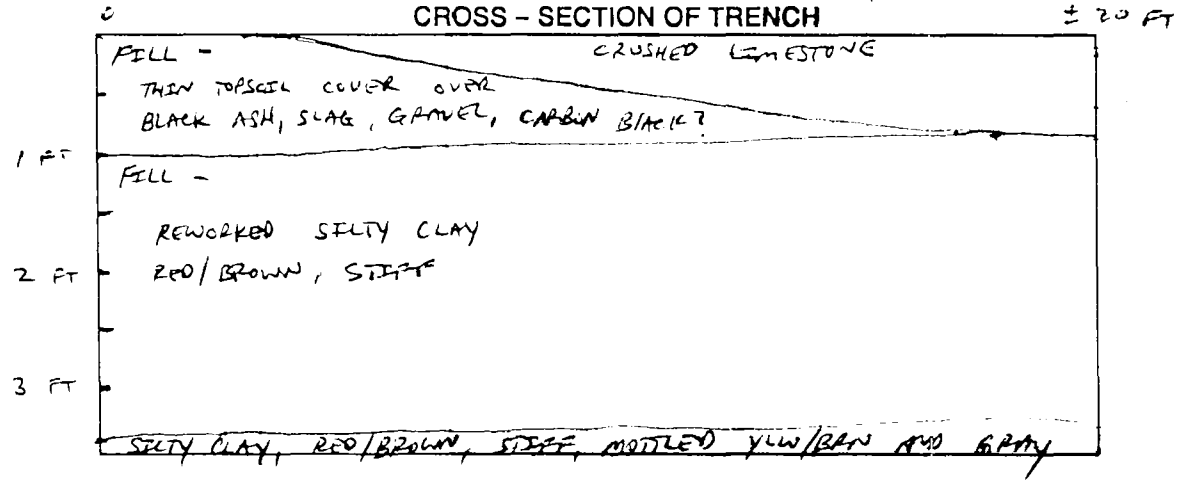
SECTION	DEPTH (FT)	DESCRIPTION
	0	FILL - THIN TOPSOIL COVER OVER BLACK ASH, SLAG, GRAVEL, CARBON BLACK?
	1	
	2	REWORKED SILTY CLAY RED/BROWN, STIFF
	3.5	
	4	SILTY CLAY, RED/BROWN, MOTTLED YLW/BRN & GRAY
	6	

Comments:

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

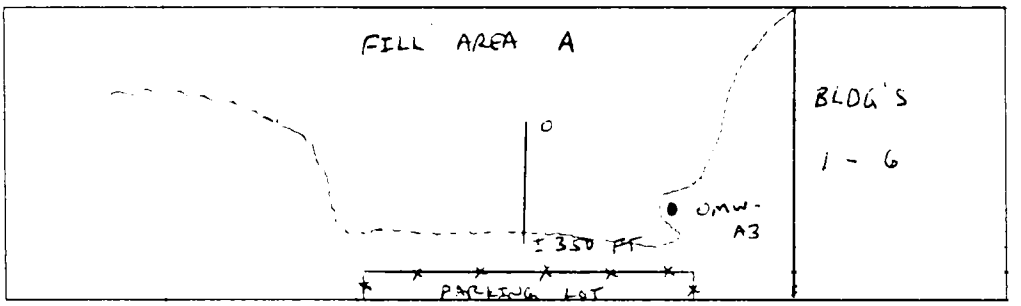
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/6/91
Sheet 1 of 1	Date Completed: 5/6/91
Trench Number: TT-A3	Trench Max. Depth: ~ 4 FT

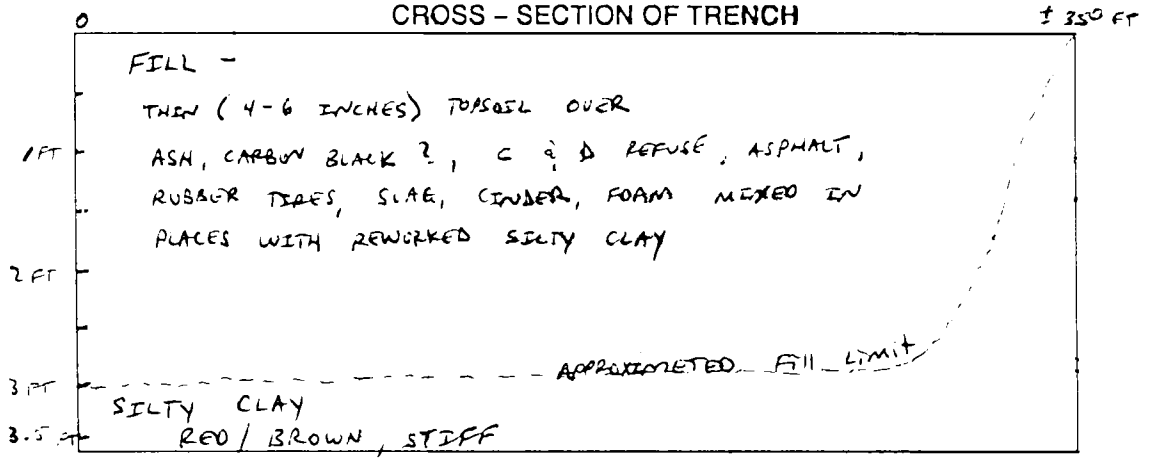
SECTION	DEPTH	DESCRIPTION
	-0- -2- 3 -4- -6-	FILL - THIN (4-6 INCHES) TOPSOIL OVER ASH, CARBON BLACK ?, C AND D REFUSE, ASPHALT, RUBBER TIRES, SLAG, CINDER, FOAM MIXED IN PLACES WITH REWORKED SILTY CLAY
		SILTY CLAY RED/BROWN, STIFF

Comments: WATER ENTERING TRENCH ALONG FILL / SILTY CLAY INTERFACE

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

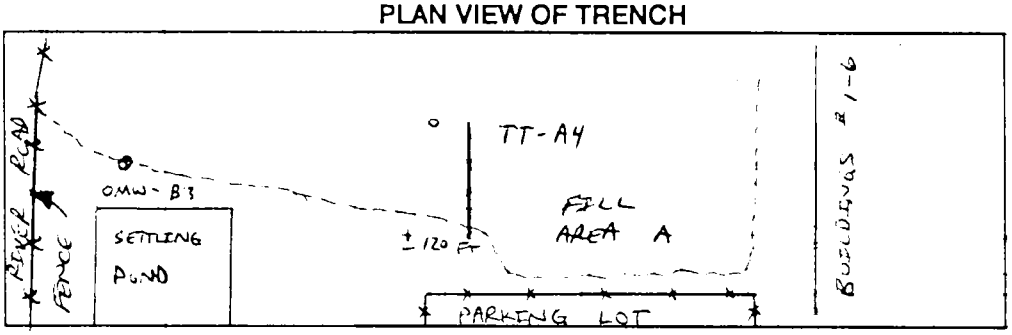
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/7/91
Sheet 1 of 1	Date Completed: 5/7/91
Trench Number: TT-A4	Trench Max. Depth: ~ 3.5 FT

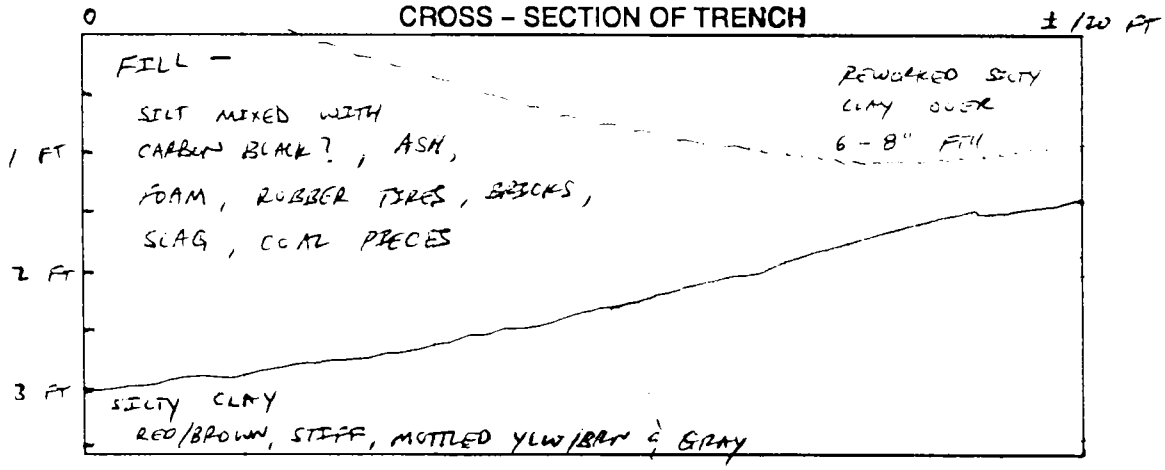
SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
		SILT MIXED WITH CARBON BLACK?,
	-1-	ASH, FOAM, RUBBER TIRES, BRICKS,
		SLAG, COAL PIECES
	-2-	
	-3-	SILTY CLAY, RED/BROWN, STIFF, MOTTLED YLW/BRN & GRAY

Comments: THICK OIL SHEEN ON SURFACE OF WATER ENTERING TRENCH ALONG FILL/CLAY INTERFACE

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

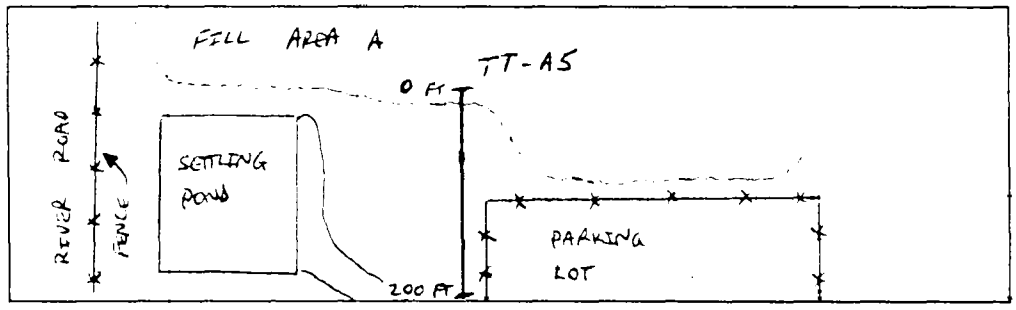
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/6/91
Sheet 1 of 1	Date Completed: 5/7/91
Trench Number: TT-A5	Trench Max. Depth: ~4 FT

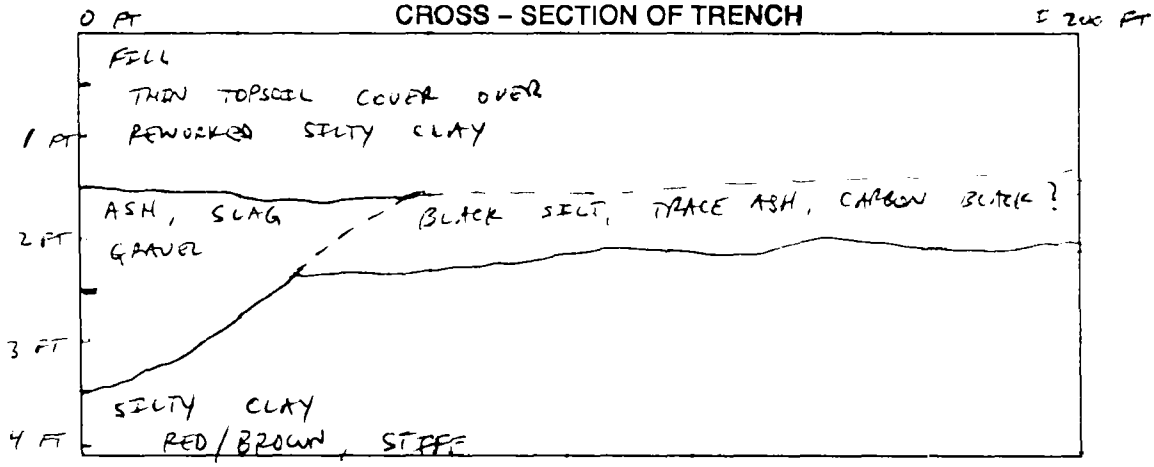
SECTION	DEPTH	DESCRIPTION
	-0- -2- 3.5	FILL, THIN TOPSOIL COVER OVER REWORKED SILTY CLAY TO ~ 1.5 FT DEPTH OVER ASH, SLAG, AND GRAVEL
	-4- -6-	SILTY CLAY RED/BROWN, MOTTLED GRAY, STIFF

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

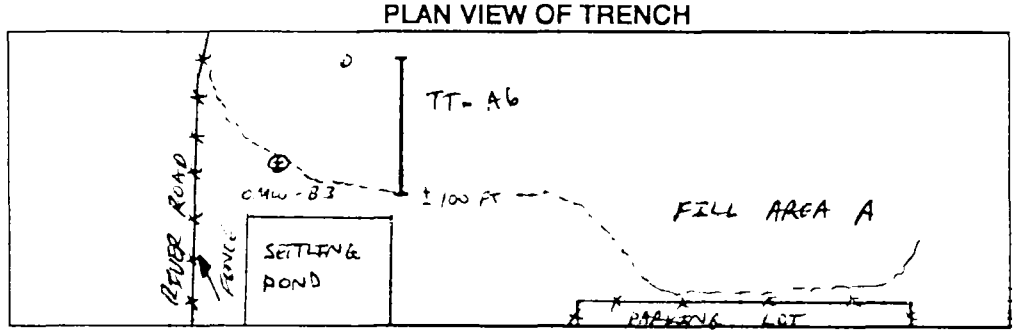
TEST TRENCH LOG

Site: DUNLOP TIRE CORP.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/7/91
Sheet 1 of 1	Date Completed: 5/7/91
Trench Number: TT-A6	Trench Max. Depth: ~ 4 FT

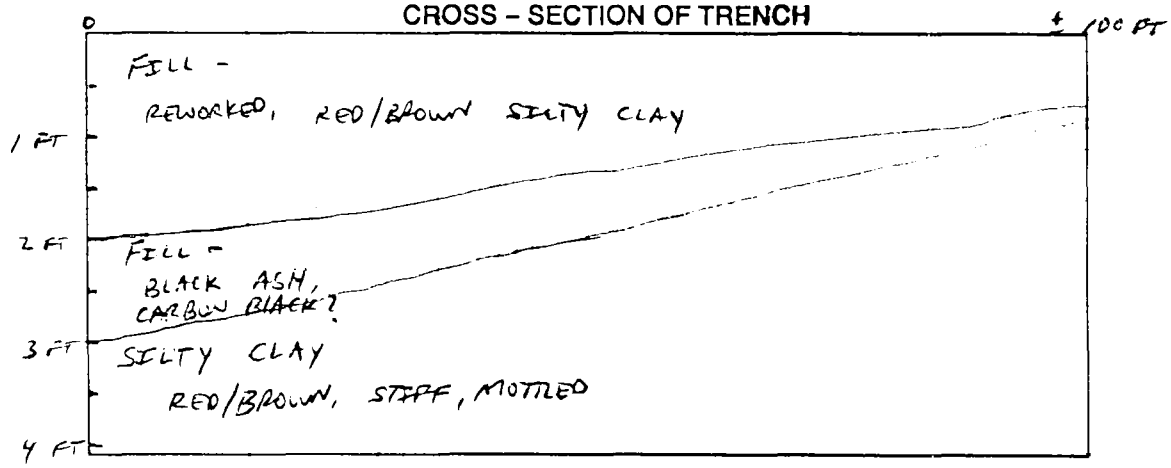
SECTION	DEPTH	DESCRIPTION
	-0-	FILL
		~ 2 FT REWORKED, RED/BROWN SILTY CLAY, OVER
	-2-	~ 1 FT ASH, CARBON BLACK?, COAL PIECES
	3 FT	
	-4-	SILTY CLAY
		RED/BROWN, STIFF
	-6-	

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

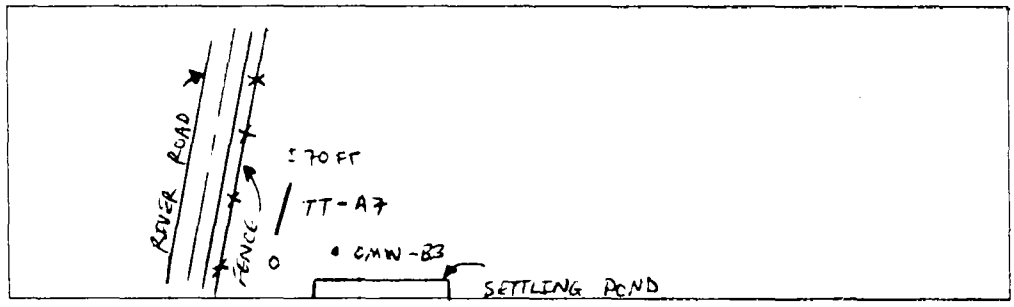
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/6/91
Sheet 1 of 1	Date Completed: 5/6/91
Trench Number: TT - A7	Trench Max. Depth: ~ 5 FT

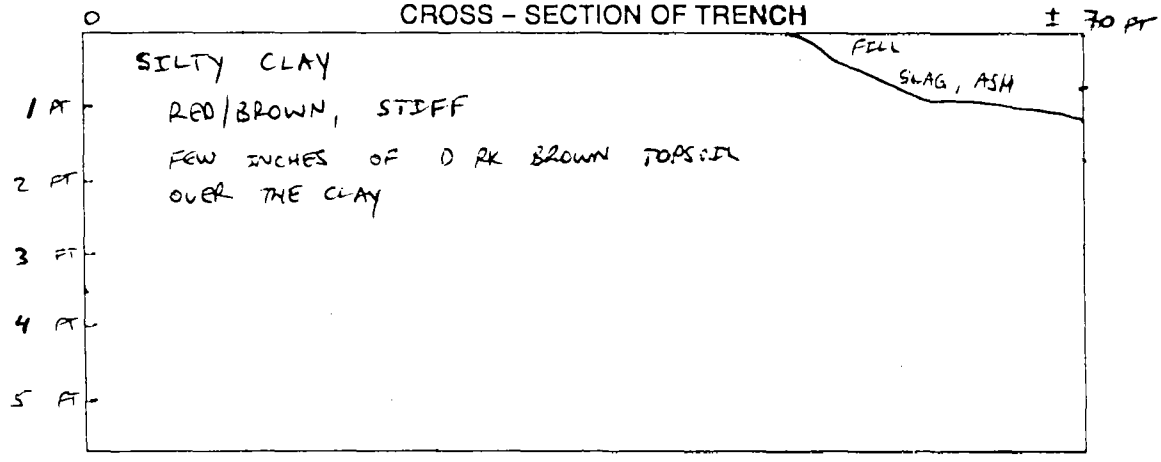
SECTION	DEPTH	DESCRIPTION
	0	FILL SILT MATRIX WITH SLAG AND ASH
	1 2 4 6	SILTY CLAY RED/BROWN, STIFF TRACE GRAVEL

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

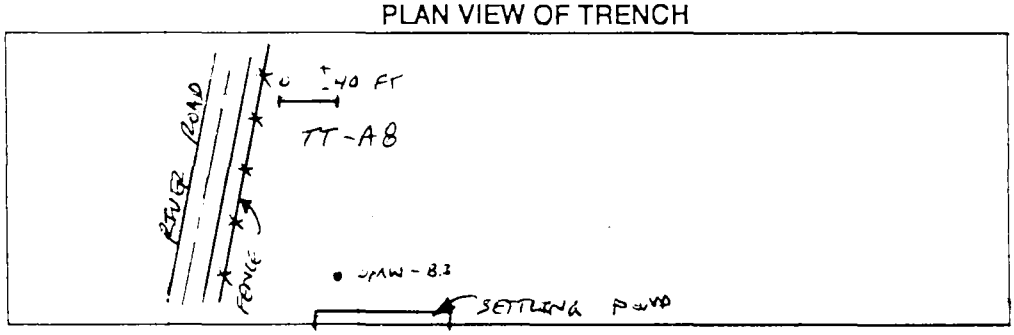
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/6/91
Sheet 1 of 1	Date Completed: 5/6/91
Trench Number: TT-A8	Trench Max. Depth: ~ 2.5 FT

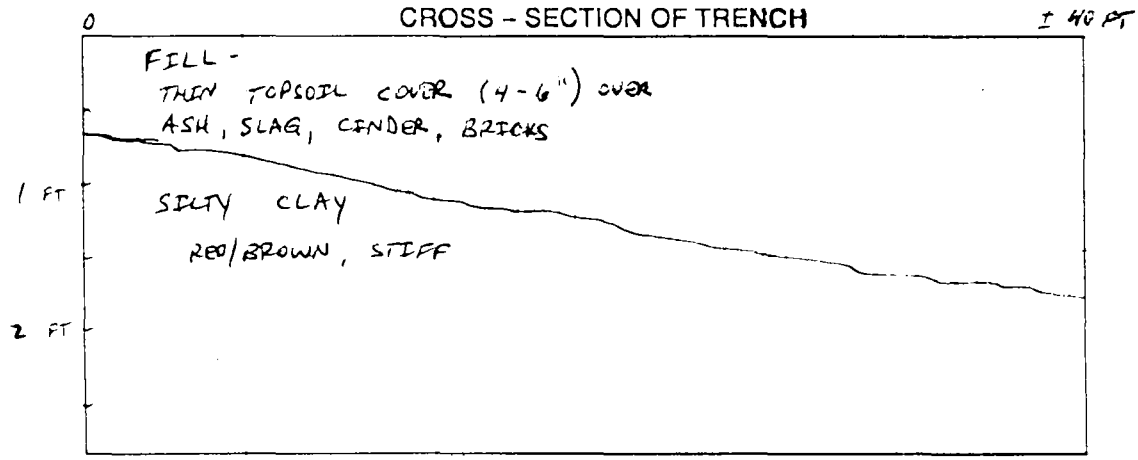
SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
		THIN TOPSOIL COVER (4-6") OVER
		ASH, SLAG, CINDER, BRICKS
	-1-	
	-2-	SILTY CLAY
		RED/BROWN, STIFF
	-3-	

Comments: WATER ENTERING TRENCH ALONG FILL / SILTY CLAY INTERFACE

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH

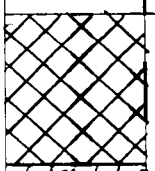
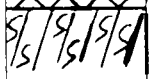


Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

TEST PIT LOG

Project: Dunlop	Project Number: 35246.
Client: Dunlop	Contractor: Buffalo Drilling Co.
Date Started: 5/8/91	Elevation:
Date Completed: 5/8/91	Sheet 1 of 1
Pit Number: TP - B1	Pit Max. Depth: ~ 2 FT
	Approx. Water Table Depth:

SECTION	DEPTH	DESCRIPTION
	-0-	FILL - BLACK ASH, CARBON BLACK, SLAG, BRICKS
	-2-	SILTY CLAY RED / BROWN
	-4-	
	-6-	

FILL INCLUDES:

General: ASH, CARBON BLACK, SLAG, BRICKS

Metal Objects: SLAG

Drums: NONE

COMMENTS:

NO HNU READINGS ABOVE BACKGROUND LEVELS.

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number:	35246.
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/8/91	Elevation:	
Date Completed:	5/8/91	Sheet	1 of 1
Pit Number:	TP-B2	Pit Max. Depth:	~2 Ft
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
	-	SLAG, SOME ASH, CARBON BLACK, FEW BRICKS
	-	
	1.5'	
	-	SILTY CLAY
	-2-	RED/BROWN
	-	
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: SLAG, ASH, CARBON BLACK, BRICKS

Metal Objects: SLAG

Drums: NONE

COMMENTS:

NO HNU READINGS ABOVE BACKGROUND LEVELS.

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number: 35246.	
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/8/91	Elevation:	
Date Completed:	5/8/91	Sheet	1 of 1
Pit Number:	TP-B3	Pit Max. Depth:	~ 2.25 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
	-	ASH, CARBON BLACK, FEW BRICKS < 10% SILT MATRIX
	-	SLAG
	-	
	1.5	
	-2-	SILTY CLAY
	-	RED/BROWN
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: ASH, CARBON BLACK, FEW BRICKS, SLAG

Metal Objects: SLAG

Drums: NONE

COMMENTS:

NO HNU READINGS ABOVE BACKGROUND LEVELS.

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number: 35246.	
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/8/91	Elevation:	
Date Completed:	5/8/91	Sheet	1 of 1
Pit Number:	TP-B4	Pit Max. Depth:	2 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
	-0-	THIN SILTY TOPSOIL COVER (6"), OVER,
	-	REWORKED RED/BROWN SILTY CLAY TO 1.5 FT
	-	
	1.5	
	-2-	SILTY CLAY
	-	RED/BROWN
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: NONE ENCOUNTERED

Metal Objects: NONE

Drums: NONE

COMMENTS:

CLAY TEST PIT - NO FILL

Geologist: Michael Gutmann	**Operator:** Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number: 35246.	
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/8/91	Elevation:	
Date Completed:	5/8/91	Sheet	1 of 1
Pit Number:	TP-B5	Pit Max. Depth:	3 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
	-0-	THIN SILTY TOPSOIL COVER (6")
		REWORKED SILTY CLAY
		RED/BROWN
	-2-	
	3	
	-4-	
	-6-	

FILL INCLUDES:

General: NONE ENCOUNTERED

Metal Objects: NONE

Drums: NONE

COMMENTS:

CLEAN TEST PIT - NO FILL

Geologist: Michael Gutmann	**Operator:** Walter Greiner

URS CONSULTANTS, INC.

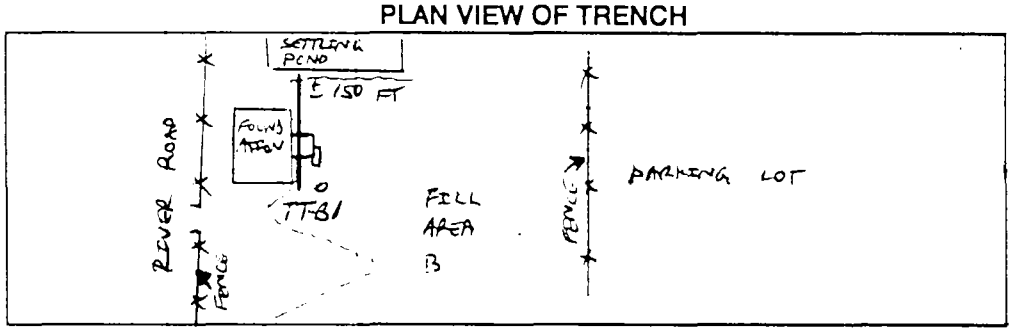
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: Dunlop	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B1	Trench Max. Depth: ~ 5 FT

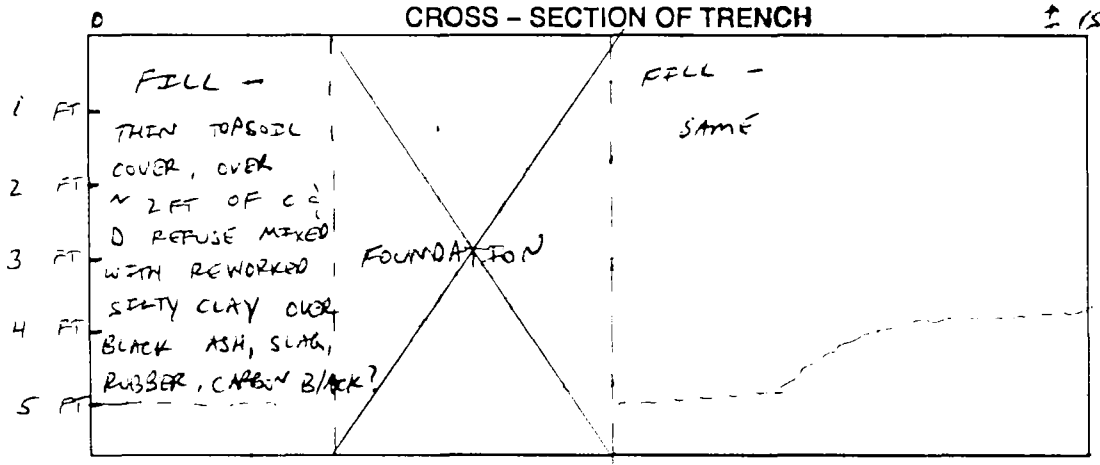
SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
		THIN TOPSOIL COVER OVER
		~ 2 FT OF C & D REFUSE MIXED WITH REWORKED SILTY CLAY OVER
	-2-	BLACK ASH, SLAG, CARBON BLACK, RUBBER TIRES
	-4-	
	5 FT	
	-6-	

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN

Operator: WALTER GREINER

URS CONSULTANTS, INC.

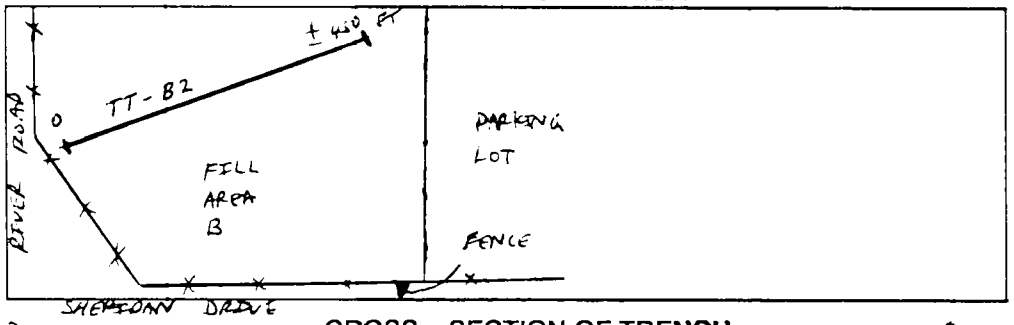
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B2	Trench Max. Depth: ~ 3.5 FT

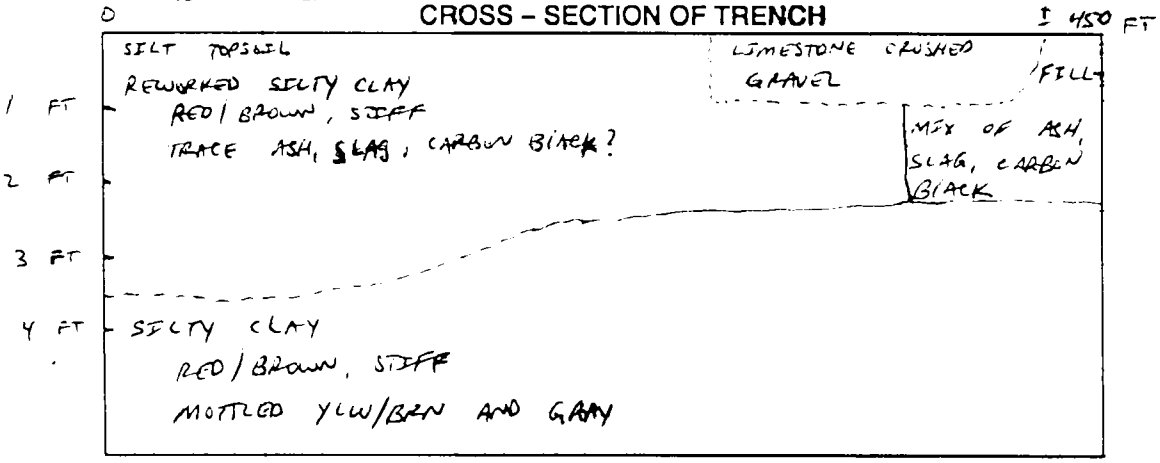
SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
	-	REWORKED SILTY CLAY, RED/BROWN, STIFF
	1	
	-	MIXTURE OF SLAG, ASH, CARBON BLACK?
	-2-	
	2.5	
	-	SILTY CLAY
	-	RED/BROWN, STIFF, MOTTLED YLW/BRN
	-4-	
	-	
	-	
	-	
	-6-	

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

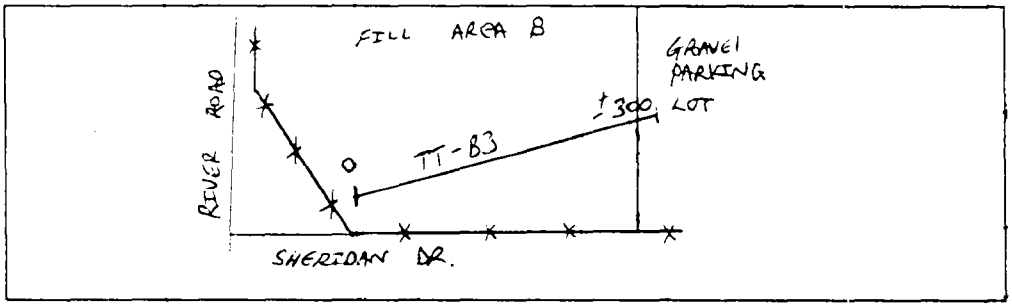
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B3	Trench Max. Depth: 5 FT.

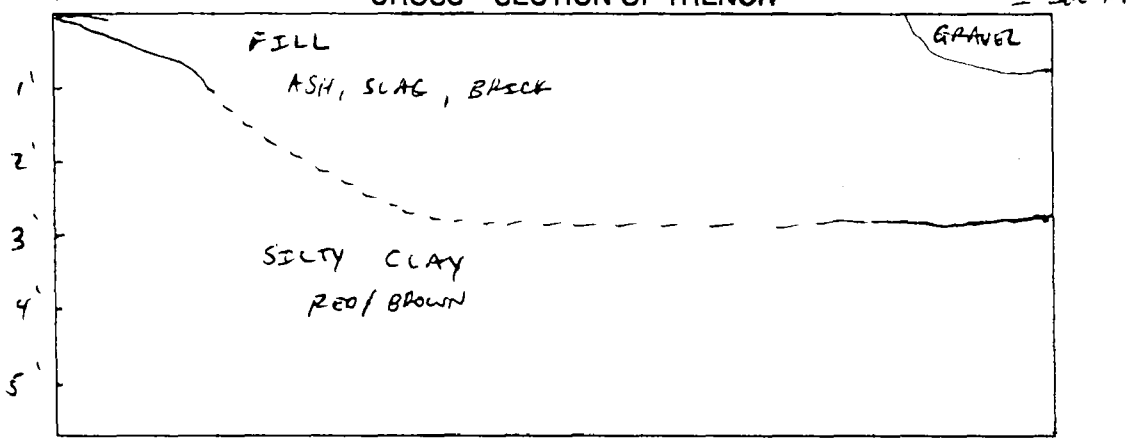
SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
	-	SILTY CLAY COVER OVER ASH, BRICK,
	-2-	AND SLAG
	-	
	-	SILTY CLAY
	-4-	RED/BROWN, STIFF
	-	
	-6-	

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

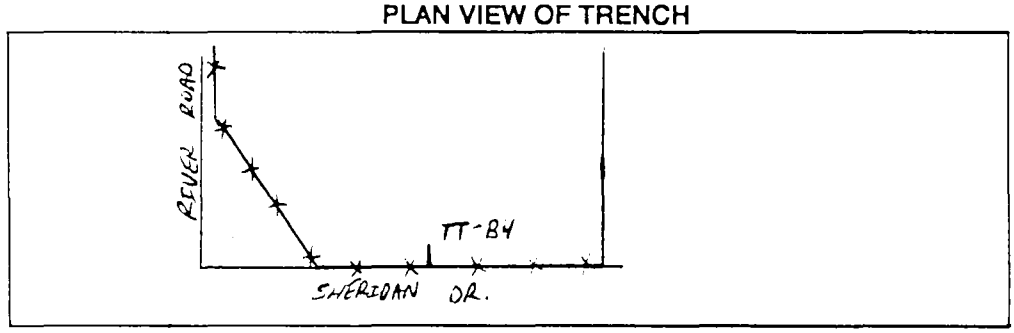
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B4	Trench Max. Depth: ~ 2 FT

SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
		THIN (FEW IN.) SILTY TOPSOIL COVER OVER
		BLACK ASH, CARBON BLACK ?
	-1-	
	1.5'	
		SILTY CLAY
	-2-	RED/BROWN, STIFF
	-3-	

Comments: TEST PIT LOCATED NEXT TO FENCE ALONG SHERIDAN DRIVE

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH

NA

Geologist: MICHAEL GUTMANN

Operator: WALTER GREINER

URS CONSULTANTS, INC.

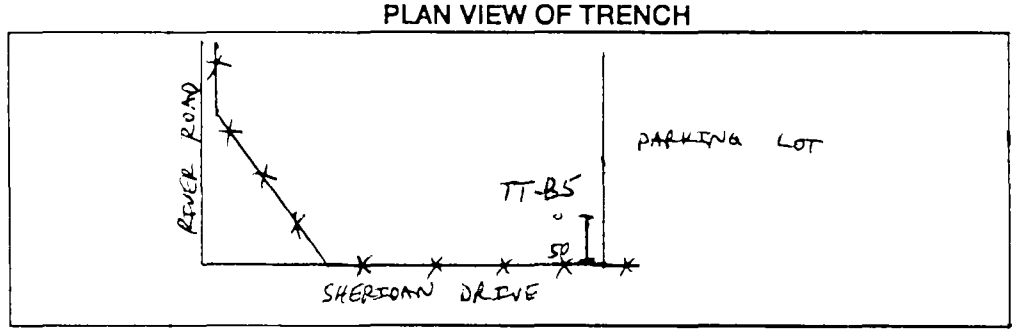
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B5	Trench Max. Depth: ~ 2.5 FT

SECTION	DEPTH	DESCRIPTION
	-0-	FILL -
	-	THIN TOPSOIL COVER OVER
	-	BLACK ASH, CARBON BLACK?, BRICKS
	-1-	
	-	
	-	
S S S	-2-	SILTY CLAY
	-	RED/BROWN, STIFF
	-	
	-	
	-3-	

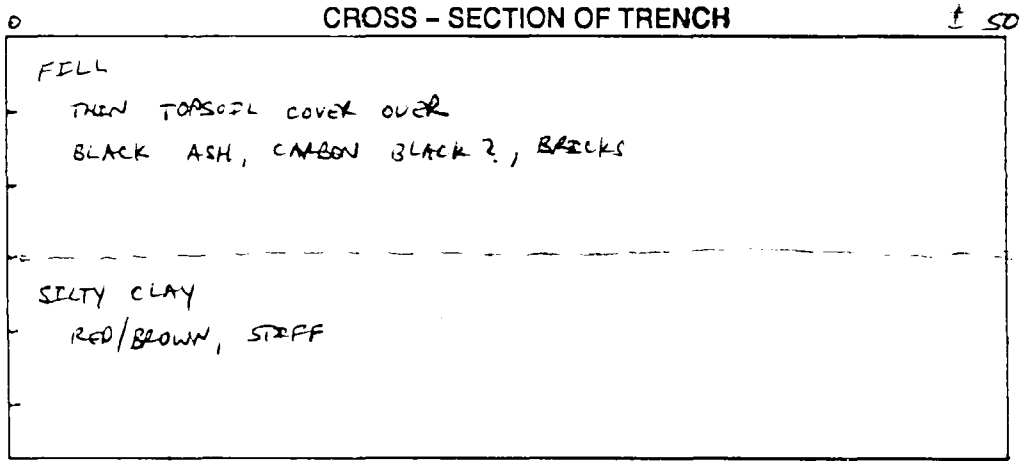
Comments:

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH

± 50 FT

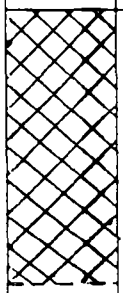


Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

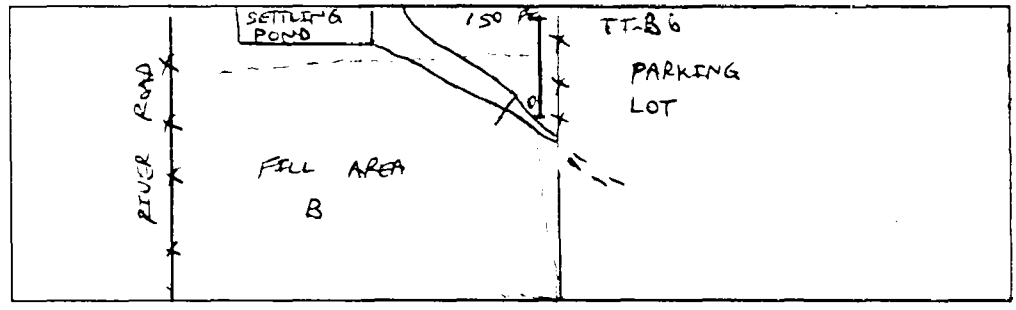
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B6	Trench Max. Depth: ~ 4 FT

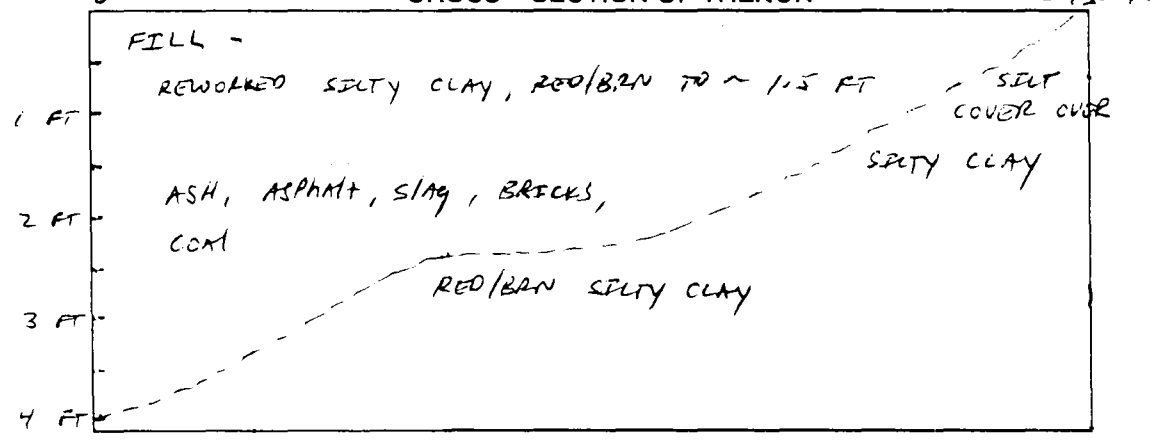
SECTION	DEPTH	DESCRIPTION
	-0- -2- -4-	FILL REWORKED SILTY CLAY, RED/BROWN TO ~ 1.5 FT ASH, ASPHALT, SLAG, BRICKS, COAL

Comments:

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

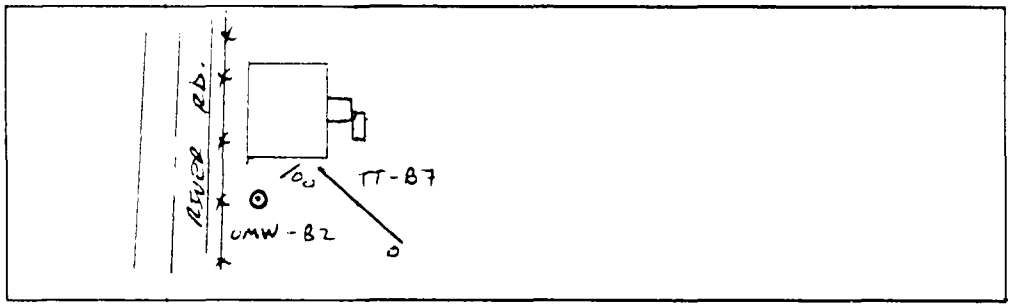
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/8/91
Sheet 1 of 1	Date Completed: 5/8/91
Trench Number: TT-B7	Trench Max. Depth: ~2.5 FT

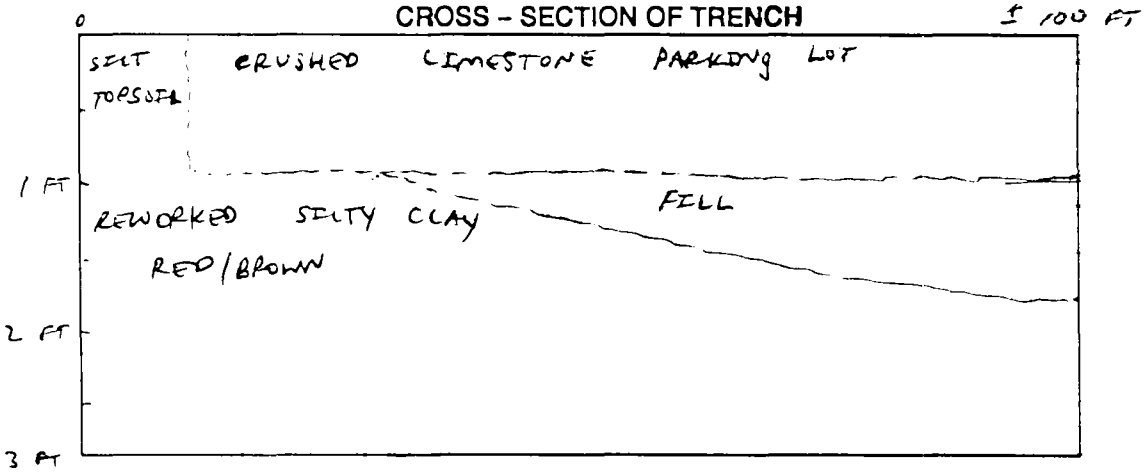
SECTION	DEPTH	DESCRIPTION
	-0-	CRUSED LIMESTONE GRAVEL PARKING LOT
	-1-	FILL - SOME SLAG, ASH, AND CARBON BLACK
	-2-	REWORKED SILTY CLAY RED/BROWN
	-3-	

Comments:

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number: 35246.	
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/3/91	Elevation:	
Date Completed:	5/3/91	Sheet	1 of 1
Pit Number:	TP-C1	Pit Max. Depth:	~ 2 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
	-0-	TOPSOIL, SILT, ROOTS
	.25	REWORKED SILTY CLAY
	-	RED/BROWN
	-	
	-2-	
	-	
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: CLEAN TEST PIT → JUST REGRADED SURFACE

Metal Objects: NONE

Drums: NONE

COMMENTS:

NO FILL ENCOUNTERED

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number:	35246.
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/3/91	Elevation:	
Date Completed:	5/3/91	Sheet	1 of 1
Pit Number:	TP - C2	Pit Max. Depth:	~ 2 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
S — S ~	-0-	TOPSOIL - SILT, ROOTS, TRACE SAND AND C & D REFUSE
	.5	
	-	SILTY CLAY
	-	RED/BRN
	-	
	-2-	
	-	
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: TRACE C & D (FEW IN.)

Metal Objects: NONE

Drums: NONE

COMMENTS:

NO HNu READINGS ABOVE BACKGROUND LEVELS

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number:	35246.
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/3/91	Elevation:	
Date Completed:	5/3/91	Sheet	1 of 1
Pit Number:	TP - C3	Pit Max. Depth:	~ 2 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
S ~ S	-0-	TOPSOIL - SILT, TRACE ROOTS
	-	SILTY CLAY
	-	RED/BROWN
	-	
	-2-	
	-	
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: NONE

Metal Objects: NONE

Drums: NONE

COMMENTS:

NO HNu READINGS ABOVE BACKGROUND LEVELS

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number:	35246.
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/3/91	Elevation:	
Date Completed:	5/3/91	Sheet	1 of 1
Pit Number:	TP-C4	Pit Max. Depth:	~ 2 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
S~S~S	-0-	TOPSOIL, SILT (DARK BROWN)
	-	SILTY CLAY
	-	RED/BRN
	-	
	-2-	
	-	
	-	
	-	
	-	
	-4-	
	-	
	-	
	-	
	-	
	-6-	

FILL INCLUDES:

General: NONE

Metal Objects: NONE

Drums: NONE

COMMENTS:

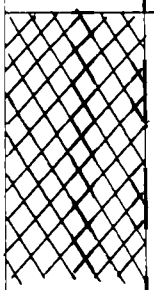
NO HNU READINGS ABOVE BACKGROUND LEVELS.

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project:	Dunlop	Project Number: 35246.	
Client:	Dunlop	Contractor:	Buffalo Drilling Co.
Date Started:	5/31/91	Elevation:	
Date Completed:	5/31/91	Sheet	1 of 1
Pit Number:	TP-C5	Pit Max. Depth:	~ 3 FT
		Approx. Water Table Depth:	

SECTION	DEPTH	DESCRIPTION
	-0- -2- -4- -6-	FILL - BLACK, MOIST, SILT MATRIX WITH SAND, RUBBER TIRE PIECES, BRICK FRAGMENTS AND C & D MATERIAL

FILL INCLUDES:

General:	RUBBER TIRE PIECES, BRICKS, C & D MATERIAL
Metal Objects:	NONE
Drums:	NONE

COMMENTS:

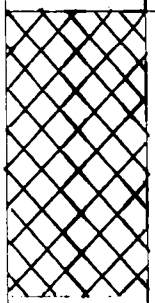
NO HNU READINGS ABOVE BACKGROUND LEVELS

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

TEST PIT LOG

Project: Dunlop	Project Number: 35246.
Client: Dunlop	Contractor: Buffalo Drilling Co.
Date Started: 5/3/91	Elevation:
Date Completed: 5/3/91	Sheet 1 of 1
Pit Number: TP-C6	Pit Max. Depth: ~ 3 FT
	Approx. Water Table Depth:

SECTION	DEPTH	DESCRIPTION
	-0- -2- -4- -6-	FILL - BLACK TO BROWN SANDY SILT MATRIX, WITH BRICKS AND C & D MATERIAL

FILL INCLUDES:

General: BRICKS, SLAG, C & D MATERIAL

Metal Objects: SLAG

Drums: NONE

COMMENTS:

NO HNu READINGS ABOVE BACKGROUND LEVELS

Geologist: Michael Gutmann	Operator: Walter Greiner

URS CONSULTANTS, INC.

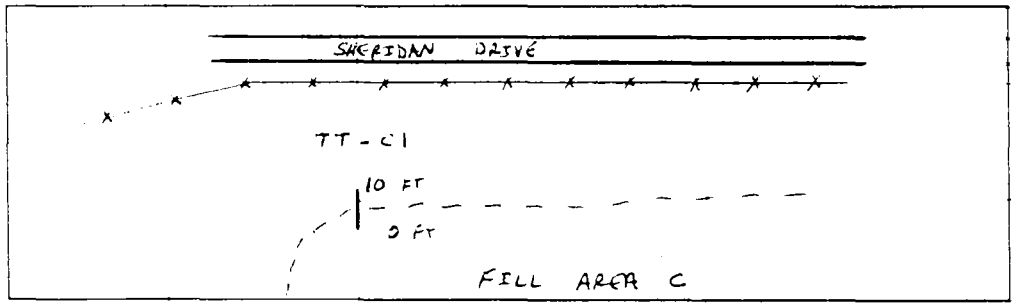
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/3/91
Sheet 1 of 1	Date Completed: 5/3/91
Trench Number: TT-C1	Trench Max. Depth: ~ 3 FT

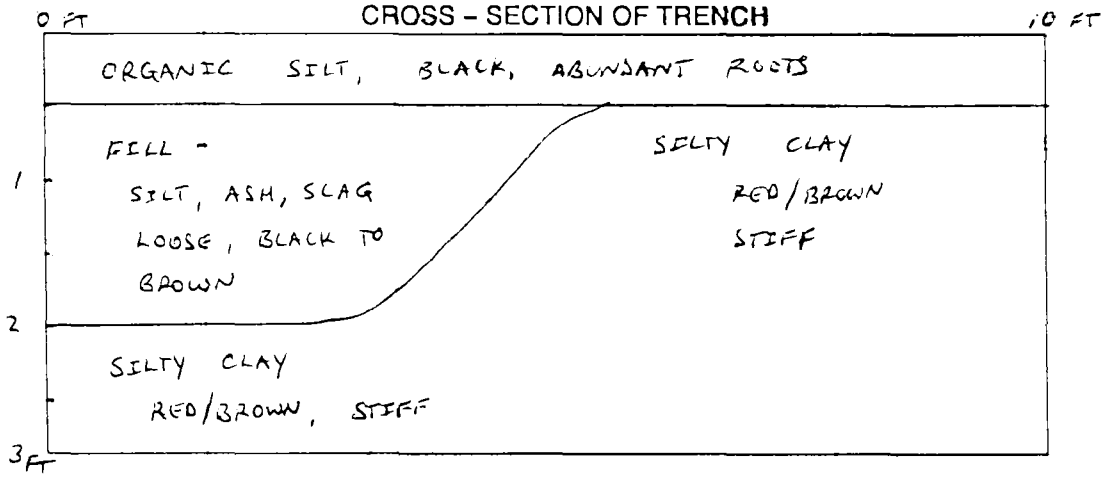
SECTION	DEPTH	DESCRIPTION
	-0-	ORGANIC SILT, BLACK, ABUNDANT ROOTS
	.3	FILL -
	-1-	SILT, ASH, SLAG
		LOOSE, BLACK TO BROWN
	-2-	SILTY CLAY
		RED/BRN, STIFF
	-3-	

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

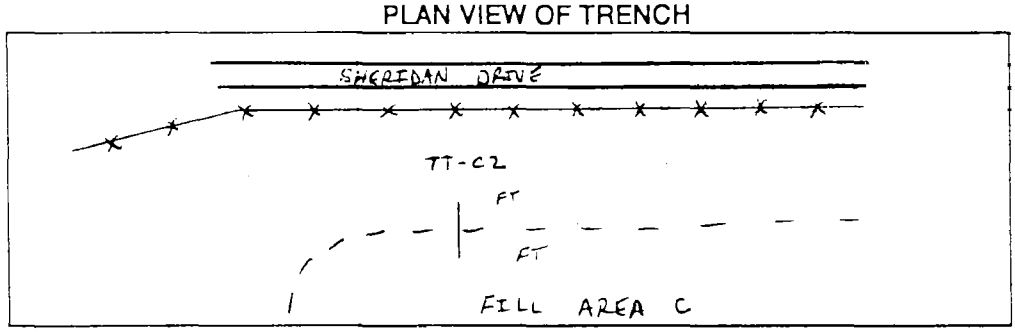
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/3/91
Sheet 1 of 1	Date Completed: 5/3/91
Trench Number: TT-C2	Trench Max. Depth: ~ 3 FT

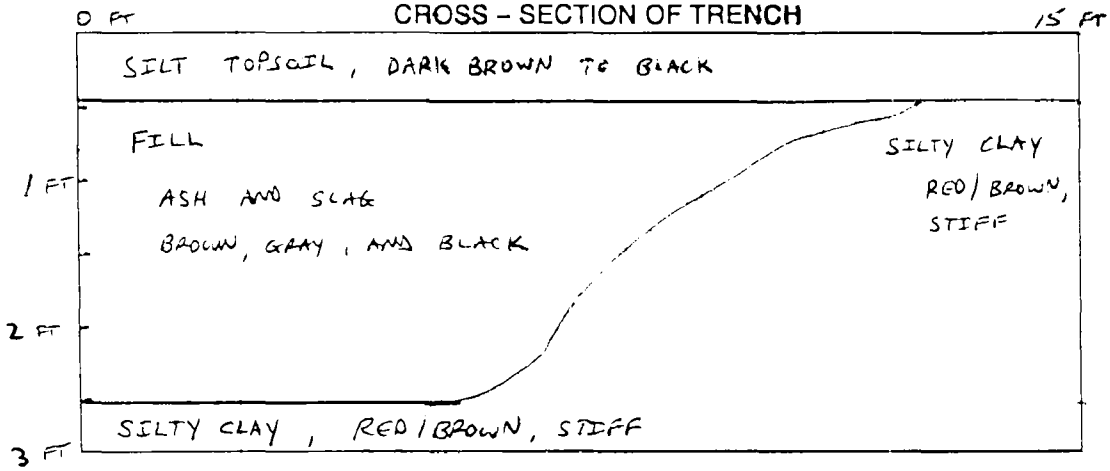
SECTION	DEPTH	DESCRIPTION
	-0-	SILT TOPSOIL, DARK BROWN TO BLACK
	1.5	FILL MIXTURE OF ASH, SILT, SLAG
	-1-	
	-2-	
	2.5	SILTY CLAY, RED/BROWN, STIFF
	-3-	

Comments: ABUNDANT WATER FLOWING INTO TRENCH ALONG FILL/CLAY INTERFACE

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

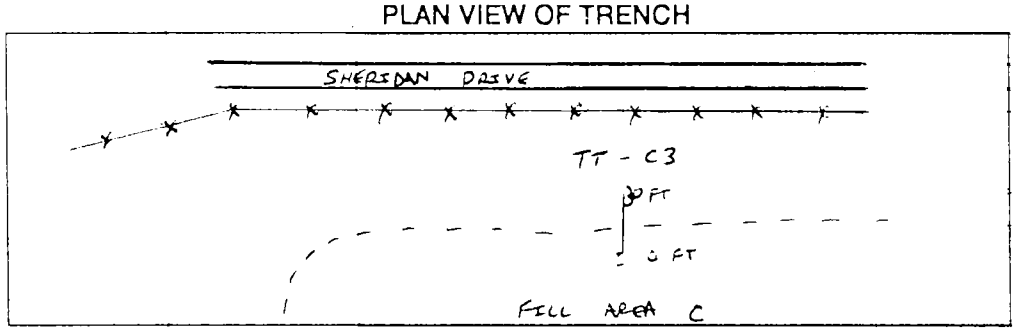
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/3/91
Sheet 1 of 1	Date Completed: 5/3/91
Trench Number: TT - C3	Trench Max. Depth: ~ 2 FT

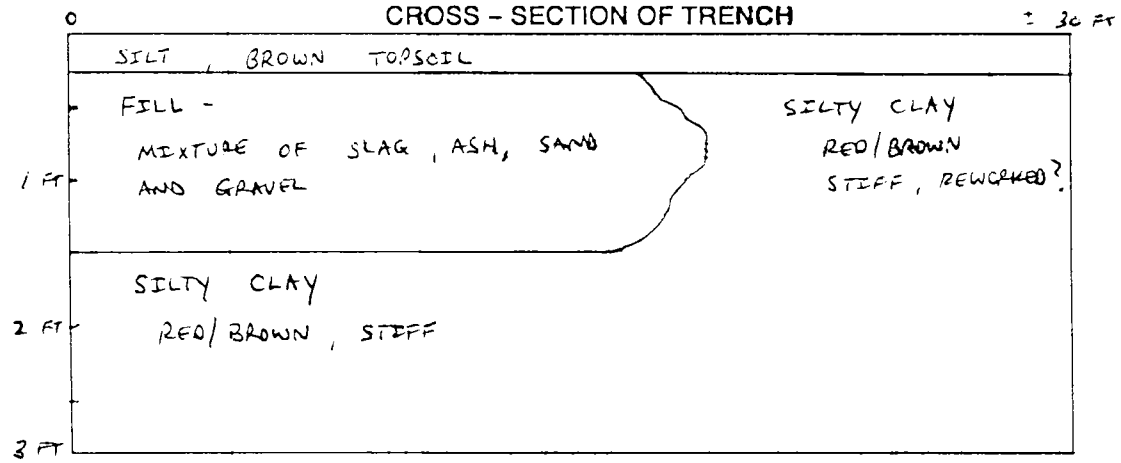
SECTION	DEPTH	DESCRIPTION
	-0-	SILT, BROWN TOPSOIL
	~.3	FILL -
	-1-	MIXTURE OF SLAG, ASH, SAND AND GRAVEL
	~1.5	
	-2-	SILTY CLAY
		RED/BROWN, STIFF
	-3-	

Comments:

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

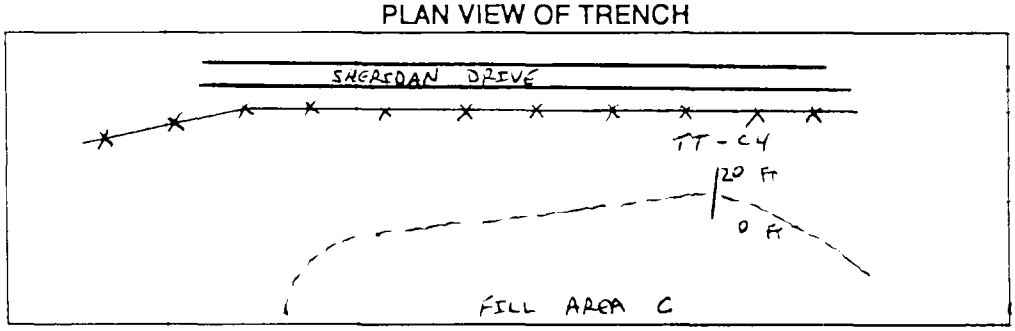
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP
Project Number: 35246	Contractor: BUFFALO DRILLING CO
Project: DUNLOP	Date Started: 5/3/91
Sheet 1 of 1	Date Completed: 5/3/91
Trench Number: TT - C4	Trench Max. Depth: ~ 2.5 FEET

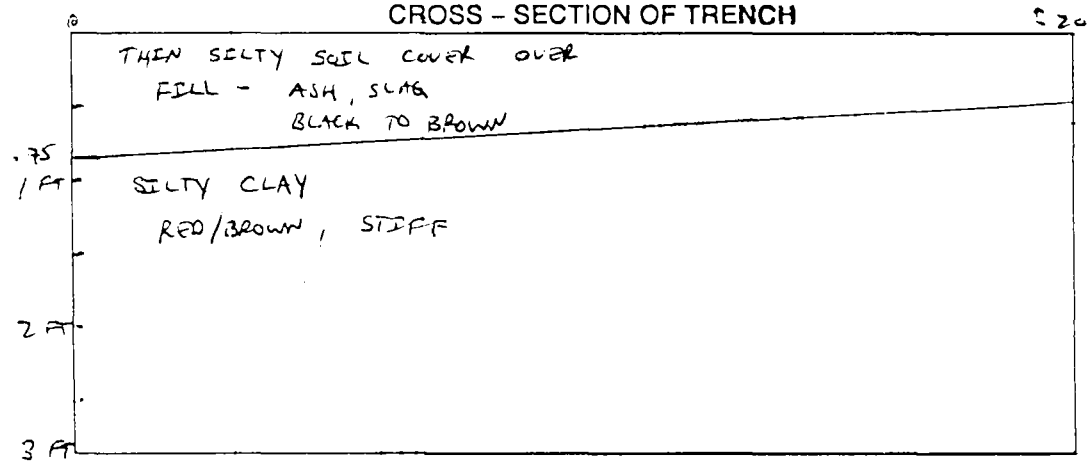
SECTION	DEPTH	DESCRIPTION
	-0-	THIN SILTY COVER (ROOTS) OVER
	-	FILL - SILT, ASH, SLAG
	-	LOOSE, BLACK TO BROWN
	.75	
	-1-	SILTY CLAY
	-	RED/BROWN, STIFF
	-	
	-	
	-2-	
	-	
	-	
	-	
	-	
	-3-	

Comments: WATER ENTERING TRENCH AT FILL / SILTY CLAY INTERFACE; OIL SHEEN ON SURFACE

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH ~ 20 FT



Geologist: MICHAEL GUTMANN	Operator: WALTER GREFNER

URS CONSULTANTS, INC.

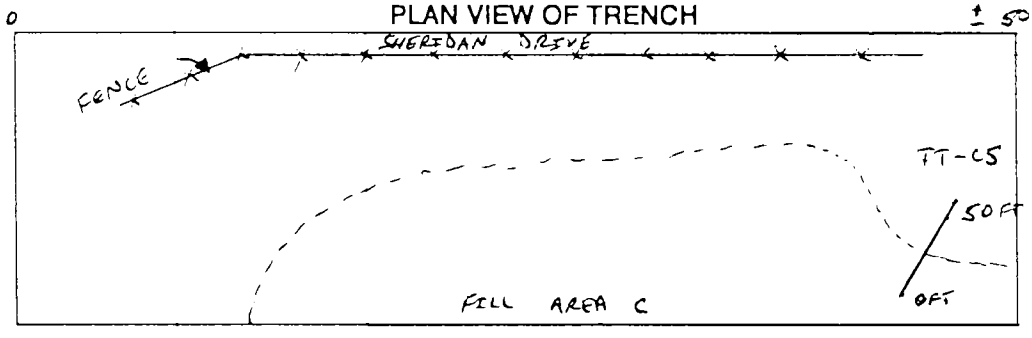
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/3/91
Sheet 1 of 1	Date Completed: 5/3/91
Trench Number: TT-C5	Trench Max. Depth: ~ 2.5 FT

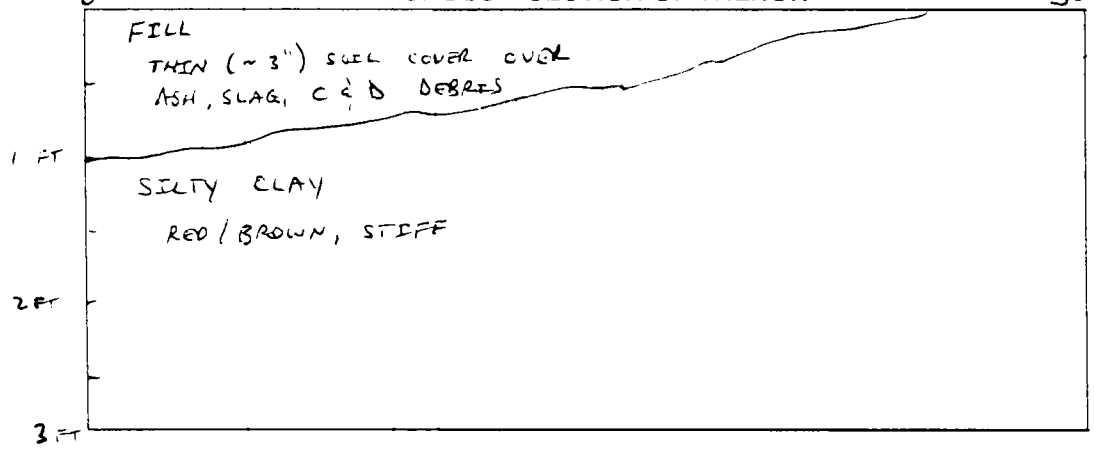
SECTION	DEPTH	DESCRIPTION
	-0-	FILL - THIN ~3" SILT SOIL COVER OVER ASH, SLAG, C AND D DEBRIS
	-1-	SILTY CLAY RED/BROWN, STIFF
	-2-	
	-3-	

Comments:

PLAN VIEW OF TRENCH



CROSS – SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

URS CONSULTANTS, INC.

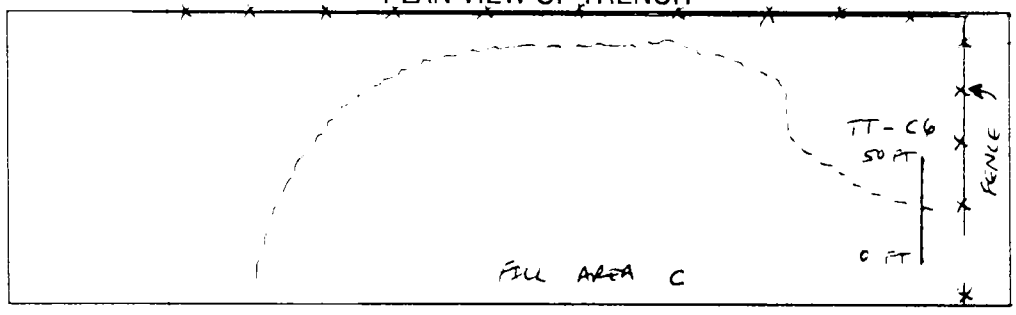
TEST TRENCH LOG

Site: DUNLOP TIRE CORP., TONAWANDA, N.Y.	Client: DUNLOP TIRE CORP.
Project Number: 35246	Contractor: BUFFALO DRILLING CO.
Project: DUNLOP	Date Started: 5/3/91
Sheet 1 of 1	Date Completed: 5/3/91
Trench Number: TT-C6	Trench Max. Depth: ~ 2.5 FT

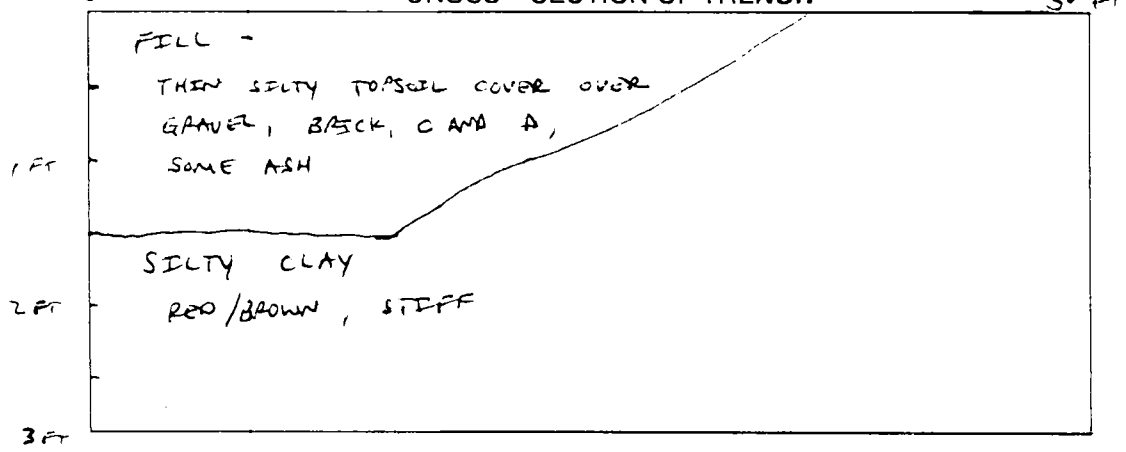
SECTION	DEPTH (FT)	DESCRIPTION
	0	FILL - THIN SILTY TOPSOIL COVER OVER GRAVEL, BRICK, C AND D, SOME ASH
	1.5	SILTY CLAY RED / BROWN, STIFF
	2	
	3	

Comments:

PLAN VIEW OF TRENCH



CROSS - SECTION OF TRENCH



Geologist: MICHAEL GUTMANN	Operator: WALTER GREINER

APPENDIX G

ANALYTICAL RESULTS - PREVIOUS INVESTIGATION

TABLE 1
SOIL RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SOIL (AES from USGS sample locations)				
TVHO	B	Hole 3	0.448 ppm	7/13/82
	B	Hole 4	0.082 ppm	
	C	Hole 1	1.071 ppm	
	C	Hole 2	0.351 ppm	
Phenols	B	Hole 3	0.194 ppm	
	B	Hole 4	0.196 ppm	
	C	Hole 1	0.188 ppm	
	C	Hole 2	0.219 ppm	
TKN	B	Hole 3	747 ppm	
	B	Hole 4	673 ppm	
	C	Hole 1	1,680 ppm	
	C	Hole 2	780 ppm	
SOIL (AES)				
Phenols	A	BMW-1 0-2'	0.11 ppm	12/8-17/82
	A	BMW-1 14-16'	0.03 ppm	
	A	BMW-1 60-62'	0.08 ppm	
	B	OMW-1 0-2'	0.32 ppm	
	B	OMW-1 8-10'	0.15 ppm	
	C	BMW-2 0-2'	0.35 ppm	
	C	BMW-2 16-18'	0.09 ppm	
	C	BMW-2 65-66'	0.32 ppm	
	C	OMW-3 0-2'	0.30 ppm	
	C	OMW-3 6-8'	0.14 ppm	

TABLE 1 (continued)
SOIL RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SOIL (AES) cont'd				
Carbon Tetrachloride	A	BMW-1 0-2'	BDL	12/8-17/82
	A	MW-1 14-16	BDL	
	A	BMW-1 60-6	BDL	
	B	OMW-1 0-2'	BDL	
	B	OMW-1 8-10	BDL	
	C	BMW-2 0-2'	BDL	
	C	BMW-2 16-1	BDL	
	C	BMW-2 65-6	BDL	
	C	OMW-3 0-2'	BDL	
	C	OMW-3 6-8'	BDL	
Chloroform	A	BMW-1 0-2'	20.6 ppb	
	A	MW-1 14-16	18.2 ppb	
	A	BMW-1 60-6	6.9 ppb	
	B	OMW-1 0-2'	14.5 ppb	
	B	OMW-1 8-10	1.5 ppb	
	C	BMW-2 0-2'	18.6 ppb	
	C	BMW-2 16-1	13.5 ppb	
	C	BMW-2 65-6	4.4 ppb	
	C	OMW-3 0-2'	38.9 ppb	
	C	OMW-3 6-8'	9.5 ppb	
Trichloroethylene	A	BMW-1 0-2'	5.5 ppb	
	A	MW-1 14-16	3.4 ppb	
	A	BMW-1 60-6	1.5 ppb	
	B	OMW-1 0-2'	6.3 ppb	
	B	OMW-1 8-10	0.5 ppb	
	C	BMW-2 0-2'	12.6 ppb	
	C	BMW-2 16-1	3.5 ppb	
	C	BMW-2 65-6	0.9 ppb	
	C	OMW-3 0-2'	7.3 ppb	
	C	OMW-3 6-8'	1.7 ppb	

TABLE 1 (continued)
SOIL RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SOIL (AES) cont'd				
Tetrachloroethylene	A	BMW-1 0-2'	7.4 ppb	12/8-17/82
	A	MW-1 14-16	2.6 ppb	
	A	BMW-1 60-6	2.6 ppb	
	B	OMW-1 0-2'	18.4 ppb	
	B	OMW-1 8-10	1.4 ppb	
	C	BMW-2 0-2'	30.9 ppb	
	C	BMW-2 16-1	2.9 ppb	
	C	BMW-2 65-6	1.1 ppb	
	C	OMW-3 0-2'	9.2 ppb	
	C	OMW-3 6-8'	3.0 ppb	
SOIL (AES)				
Toluene	A	Surface soil	BQL	10/25/88
Phenols	A	Surface soil	7 ppm	

TABLE 2
SEDIMENTS/SURFACE WATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SEDIMENT (Engineering-Science for Polymer)				
Phenols	Near A Border of Polymer	SED-3	--	6/26/90
	Near A Across River Rd.	SED-4	--	
Endosulfan II	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	32 ppb X	
Aroclor-1260	Near A Border of Polymer	SED-3	5,500 ppb	
	Near A Across River Rd.	SED-4	970 ppb	
Barium	Near A Border of Polymer	SED-3	310 ppb	
	Near A Across River Rd.	SED-4	457 ppb	
Cadmium	Near A Border of Polymer	SED-3	5.3 ppb	
	Near A Across River Rd.	SED-4	5.3 ppb	
Lead	Near A Border of Polymer	SED-3	56.3 ppb	
	Near A Across River Rd.	SED-4	27.8 ppb	
Silver	Near A Border of Polymer	SED-3	6.4 ppb	
	Near A Across River Rd.	SED-4	8.4 ppb	

TABLE 2 (continued)
SEDIMENTS/SURFACE WATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SURFACE WATER (AES)				
Antimony	C	swampy area	--	7/16/81
Arsenic			0.022 ppm	
Beryllium			--	
Cadmium			--	
Chromium			--	
Copper			--	
Iron			13.5 ppm	
Lead			--	
Mercury			--	
Nickel			--	
Selenium			0.016 ppm	
Silver			--	
Thallium			--	
Zinc			0.135 ppm	
pH			6.84	
COD			134.8 ppm	
Specific Conduct.			450	
TKN			0.61 ppm	
TVHO			--	
THO (non-volatile)			--	
Total Phenol			9.9 ppb	
SURFACE WATER (Erie County)				
Cadmium	C	swampy area	--	7/16/81
Chromium			--	
Copper			0.14 ppm	
Iron			31.0 ppm	
Mercury			--	
Zinc			0.26 ppm	
Lead			--	
pH			7.3	
COD			24.0 ppm	
Specific Conduct.			426	
Pesticides			--	
PCBs			--	
Organic N			4.3 ppm	
Phenols			--	

TABLE 2 (continued)
SEDIMENTS/SURFACE WATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SURFACE WATER (AES)				
Phenols	Storm Sewer Out	SSO	0.26 ppm	6/25/90
	Ditch Sample	DS2	0.58 ppm	(dry weather)
	Ditch Sample	DS3	0.49 ppm	
	Ditch Sample	DS4	0.30 ppm	
	C	SW4	0.48 ppm	
	C	SW6	0.15 ppm	
SURFACE WATER (AES)				
Phenols	Downstream A	DS1	0.06 ppm	11/4/85
	Upstream A	DS2	BDL	(after storm
	A	SW1	0.07 ppm	event)
	A	SW2	BDL	
	A	SW3	BDL	
	Near B	SSO	BDL	
	B	SW8	Dry	
	Downstream C	DS4	0.08 ppm	
	Upstream C	DS3	0.05 ppm	
	C	SW4	BDL	
	C	SW1	BDL	
	C	SW1	BDL	
	C	SW7	0.06 ppm	

TABLE 2 (continued)
SEDIMENTS/SURFACE WATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SURFACE WATER (Engineering-Science for Polymer)				
Phenols	Near A Border of Polymer	SED-3	35 ppb	6/26/90
	Near A Across River Rd.	SED-4	2,000 ppb	
Methylene Chloride	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	--	
Acetone	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	32 ppb	
2-Methyl-2-Pentanone	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	--	
Xylenes	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	73 ppb	
Ethylbenzene	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	7 ppb	

TABLE 2 (continued)
SEDIMENTS/SURFACE WATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
SURFACE WATER (Engineering-Science for Polymer) cont'd				
Aroclor	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	--	
Beta-BHC	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	0.42 X	
Endosulfan I	Near A Border of Polymer	SED-3	--	
	Near A Across River Rd.	SED-4	--	

TABLE 3
GROUNDWATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
GROUNDWATER (AES)				
Phenols	A	BMW-1	0	1/13/83
	C	BMW-2	0	
Carbon Tetrachloride	A	BMW-1	--	
	C	BMW-2	--	
Chloroform	A	BMW-1	--	
	C	BMW-2	--	
Trichloroethylene	A	BMW-1	--	
	C	BMW-2	--	
Tetrachloroethylene	A	BMW-1	--	
	C	BMW-2	--	
GROUNDWATER (AES)				
Phenols	A	BMW-1	--	6/27/83
	C	BMW-2	__	and
				7/5/83
	A	OMW-2	4.76 ppb	
	B	OMW-1	7.28 ppb	
	C	OMW-3	7.18 ppb	
Carbon Tetrachloride	A	OMW-2	--	
	B	OMW-1	--	
	C	OMW-3	--	
Chloroform	A	OMW-2	0.07 ppb	
	B	OMW-1	0.09 ppb	
	C	OMW-3	0.08 ppb	
Trichloroethylene	A	OMW-2	0.06 ppb	
	B	OMW-1	0.09 ppb	
	C	OMW-3	0.06 ppb	
Tetrachloroethylene	A	OMW-2	0.16 ppb	
	B	OMW-1	0.38 ppb	
	C	OMW-3	0.08 ppb	

TABLE 3 (continued)
GROUNDWATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
GROUNDWATER (AES)				
Phenols	A	BMW-1	BDL	8/2/85
	A	OMW-2	BDL	
	B	OMW-1	BDL	
	C	BMW-2	BDL	
	C	OMW-3	BDL	
	C	OMW-4	Dry	
Carborn Tetrachloride	A	BMW-1	BDL	
	A	OMW-2	BDL	
	B	OMW-1	BDL	
	C	BMW-2	BDL	
	C	OMW-3	BDL	
	C	OMW-4	Dry	
Chloroform	A	BMW-1	BDL	
	A	OMW-2	3.43 ppb	
	B	OMW-1	BDL	
	C	BMW-2	BDL	
	C	OMW-3	BDL	
	C	OMW-4	Dry	
Trichloroethylene	A	BMW-1	BDL	
	A	OMW-2	BDL	
	B	OMW-1	BDL	
	C	BMW-2	BDL	
	C	OMW-3	BDL	
	C	OMW-4	Dry	
Tetrachloroethylene	A	BMW-1	BDL	
	A	OMW-2	1.36 ppb	
	B	OMW-1	BDL	
	C	BMW-2	BDL	
	C	OMW-3	BDL	
	C	OMW-4	Dry	

TABLE 3 (continued)
GROUNDWATER RESULTS
PREVIOUS ANALYTICAL DATA FROM DUNLOP SITES

CONTAMINANTS	SITE	POINT	VALUE	DATE OF SAMPLE
GROUNDWATER (Recra for NYSDEC)				
Phenols	A	BMW-1	.014 ppb	8/2/85
	C	BMW-2	BDL	
Acetone	A	BMW-1	320 ppb	(Volatiles extracted past holding time.)
	C	BMW-2	760 ppb	
	A	OMW-2	150 ppb	
Benzene	A	BMW-1	14 ppb	
	C	BMW-2	BDL	
	A	OMW-2	12 ppb	
Bromodichloro-methane	A	BMW-1	8.7 ppb	
	C	BMW-2	BDL	
	A	OMW-2	BDL	
2-butanone (MEK)	A	BMW-1	13 ppb	
	C	BMW-2	8.8 ppb	
Trichloroethylene	A	BMW-1	BDL	
	C	BMW-2	BDL	
Trichlorofluoro-methane	A	BMW-1	BDL	
	C	BMW-2	BDL	
	A	OMW-2	BDL	
Carbon disulfide	A	OMW-2	BDL	

APPENDIX H

ANALYTICAL RESULTS - 1991 INVESTIGATION

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWA3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWA3

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2129

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. _____ Date Analyzed: 06/03/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	
75-34-3	1,1-Dichloroethane	17	
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	0.6	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	80	
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWA3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWA3

Sample wt/vol: 650 (g/mL) ML Lab File ID: 7462Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	15	U
111-44-4	bis(2-Chloroethyl)Ether	15	U
95-57-8	2-Chlorophenol	15	U
541-73-1	1,3-Dichlorobenzene	15	U
106-46-7	1,4-Dichlorobenzene	15	U
100-51-6	Benzyl Alcohol	15	U
95-50-1	1,2-Dichlorobenzene	15	U
95-48-7	2-Methylphenol	15	U
108-60-1	bis(2-Chloroisopropyl)Ether	15	U
106-44-5	4-Methylphenol	15	U
621-64-7	N-Nitroso-Di-n-Propylamine	15	U
67-72-1	Hexachloroethane	15	U
98-95-3	Nitrobenzene	15	U
78-59-1	Isophorone	15	U
88-75-5	2-Nitrophenol	15	U
105-67-9	2,4-Dimethylphenol	15	U
65-85-0	Benzoic Acid	77	U
111-91-1	bis(2-Chloroethoxy)Methane	15	U
120-83-2	2,4-Dichlorophenol	15	U
120-82-1	1,2,4-Trichlorobenzene	15	U
91-20-3	Naphthalene	15	U
106-47-8	4-Chloroaniline	15	U
87-68-3	Hexachlorobutadiene	15	U
59-50-7	4-Chloro-3-Methylphenol	15	U
91-57-6	2-Methylnaphthalene	15	U
77-47-4	Hexachlorocyclopentadiene	15	U
88-06-2	2,4,6-Trichlorophenol	15	U
95-95-4	2,4,5-Trichlorophenol	77	U
91-58-7	2-Chloronaphthalene	15	U
88-74-4	2-Nitroaniline	77	U
131-11-3	Dimethyl Phthalate	15	U
208-96-8	Acenaphthylene	15	U
606-20-2	2,6-Dinitrotoluene	15	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWA3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWA3

Sample wt/vol: 650 (g/mL) ML Lab File ID: 7462Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	77	U
83-32-9	Acenaphthene	15	U
51-28-5	2,4-Dinitrophenol	77	U
100-02-7	4-Nitrophenol	77	U
132-64-9	Dibenzofuran	15	U
121-14-2	2,4-Dinitrotoluene	15	U
84-66-2	Diethylphthalate	15	U
7005-72-3	4-Chlorophenyl-phenylether	15	U
86-73-7	Fluorene	15	U
100-01-6	4-Nitroaniline	77	U
534-52-1	4,6-Dinitro-2-Methylphenol	77	U
86-30-6	N-Nitrosodiphenylamine (1)	15	U
101-55-3	4-Bromophenyl-phenylether	15	U
118-74-1	Hexachlorobenzene	15	U
87-86-5	Pentachlorophenol	77	U
85-01-8	Phenanthrene	15	U
120-12-7	Anthracene	15	U
84-74-2	Di-n-Butylphthalate	15	U
206-44-0	Fluoranthene	15	U
129-00-0	Pyrene	15	U
85-68-7	Butylbenzylphthalate	15	U
91-94-1	3,3'-Dichlorobenzidine	31	U
56-55-3	Benzo(a)Anthracene	15	U
218-01-9	Chrysene	15	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	15	U
117-84-0	Di-n-Octyl Phthalate	15	U
205-99-2	Benzo(b)Fluoranthene	15	U
207-08-9	Benzo(k)Fluoranthene	15	U
50-32-8	Benzo(a)Pyrene	15	U
193-39-5	Indeno(1,2,3-cd)Pyrene	15	U
53-70-3	Dibenz(a,h)Anthracene	15	U
191-24-2	Benzo(g,h,i)Perylene	15	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

OMW-A3

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: PP32306

Sample wt/vol: 650 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/3/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/4/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/11/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.6	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.6	U
11096-82-5	Aroclor-1260	1.6	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OMW-A3

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6920

Level (low/med): LOW Date Received: 5/30/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	264			P
7440-36-0	Antimony	5.0	U		F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	100	B		P
7440-41-7	Beryllium	5.0	U	*	P
7440-43-9	Cadmium	5.0	U	*	P
7440-70-2	Calcium	97000			A
7440-47-3	Chromium	10.0	U	*	P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	46.0			P
7439-89-6	Iron	585			P
7439-92-1	Lead	25.0		W	F
7439-95-4	Magnesium	124000			P
7439-96-5	Manganese	315			P
7439-97-6	Mercury	0.8		N*	CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	8180			P
7782-49-2	Selenium	5.0	U	W	F
7440-22-4	Silver	6.0	U		A
7440-23-5	Sodium	24200			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	7530		N	P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW2

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2120

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ Date Analyzed: 06/01/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW2

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7458Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW2

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7458Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	14	U
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	14	U
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-2

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: FP32349

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/10/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/13/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

PRELIMINARY

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW-2

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1491 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER< Lab Sample ID: 6761

Level (low/med): LOW Date Received: 5/31/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12600			P
7440-36-0	Antimony	6.0	B		F
7440-38-2	Arsenic	69.0			F
7440-39-3	Barium	70.0	B		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	330			P
7440-70-2	Calcium	141000			A
7440-47-3	Chromium	365			P
7440-48-4	Cobalt	117			P
7440-50-8	Copper	1400			P
7439-89-6	Iron	760000			A
7439-92-1	Lead	46.0			F
7439-95-4	Magnesium	126000			P
7439-96-5	Manganese	4000			P
7439-97-6	Mercury	0.9			CV
7440-02-0	Nickel	540			P
7440-09-7	Potassium	5400			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	8.0	B		A
7440-23-5	Sodium	109000			P
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium	87			P
7440-66-6	Zinc	13700			P
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWB3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWB3

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2115

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ Date Analyzed: 05/31/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWB3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWB3

Sample wt/vol: 700 (g/mL) ML Lab File ID: 74672

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWB3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWB3

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7467Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	2	J
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	2	J
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-B3

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: PP32303

Sample wt/vol: 800 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/3/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/4/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/11/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.07	U
319-85-7	beta-BHC	0.07	U
319-86-8	delta-BHC	0.07	U
58-89-9	gamma-BHC (Lindane)	0.07	U
76-44-8	Heptachlor	0.07	U
309-00-2	Aldrin	0.07	U
1024-57-3	Heptachlor epoxide	0.07	U
959-98-8	Endosulfan I	0.07	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.12	J
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.7	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.7	U
5103-74-2	gamma-Chlordane	0.7	U
8001-35-2	Toxaphene	1.3	U
12674-11-2	Aroclor-1016	0.7	U
11104-28-2	Aroclor-1221	0.7	U
11141-16-5	Aroclor-1232	0.7	U
53469-21-9	Aroclor-1242	0.7	U
12672-29-6	Aroclor-1248	0.7	U
11097-69-1	Aroclor-1254	1.3	U
11096-82-5	Aroclor-1260	1.3	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW-B3

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6909

Level (low/med): LOW Date Received: 5/29/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1070		N	P
7440-36-0	Antimony	5.0	U	N	F
7440-38-2	Arsenic	7.0	B		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	260000		N	A
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	42.0			P
7439-89-6	Iron	5200		N	P
7439-92-1	Lead	16.0		N	F
7439-95-4	Magnesium	118000		N	P
7439-96-5	Manganese	1310		N	P
7439-97-6	Mercury	0.4	U		CV
7440-02-0	Nickel	30.0	B		P
7440-09-7	Potassium	10200			P
7782-49-2	Selenium	5.0	U	N	F
7440-22-4	Silver	6.0	B	N	A
7440-23-5	Sodium	41000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	78.0		N	P
	Cyanide	10.0	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: YELLOW Clarity After: CLEAR Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWB2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWB2

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2114

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ Date Analyzed: 05/31/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	1	J
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWB2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWB2

Sample wt/vol: 800 (g/mL) ML Lab File ID: 7466Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	J u
111-44-4	bis(2-Chloroethyl)Ether	12	U
95-57-8	2-Chlorophenol	12	J u
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl Alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	J u
108-60-1	bis(2-Chloroisopropyl)Ether	12	U
106-44-5	4-Methylphenol	12	J u
621-64-7	N-Nitroso-Di-n-Propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	J u
105-67-9	2,4-Dimethylphenol	12	J u
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)Methane	12	U
120-83-2	2,4-Dichlorophenol	12	J u
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-Methylphenol	12	J u
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	J u
95-95-4	2,4,5-Trichlorophenol	62	J u
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethyl Phthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

8/13/91 PF

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWB2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWB2

Sample wt/vol: 800 (g/mL) ML Lab File ID: 7466Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	J U
100-02-7	4-Nitrophenol	62	J U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-Methylphenol	62	J U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	J U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-Butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)Anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	12	U
117-84-0	Di-n-Octyl Phthalate	12	U
205-99-2	Benzo(b)Fluoranthene	12	U
207-08-9	Benzo(k)Fluoranthene	12	U
50-32-8	Benzo(a)Pyrene	12	U
193-39-5	Indeno(1,2,3-cd)Pyrene	12	U
53-70-3	Dibenz(a,h)Anthracene	12	U
191-24-2	Benzo(g,h,i)Perylene	12	U

8/13/91 pf

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-B2

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: PP32351

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/10/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/13/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW-B2

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6914

Level (low/med): LOW Date Received: 5/29/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13200		N	P
7440-36-0	Antimony	5.0	U	NW	F
7440-38-2	Arsenic	5.0	U	W	F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	14.0			P
7440-70-2	Calcium	377000		N*	A
7440-47-3	Chromium	89.0		*	P
7440-48-4	Cobalt	49.0	B		P
7440-50-8	Copper	50.0			P
7439-89-6	Iron	24400		N	P
7439-92-1	Lead	26.0		NW	F
7439-95-4	Magnesium	741000		N	P
7439-96-5	Manganese	1990		N	P
7439-97-6	Mercury	0.7			CV
7440-02-0	Nickel	84.0			P
7440-09-7	Potassium	32600			P
7782-49-2	Selenium	5.0	U	NW	F
7440-22-4	Silver	18.0		N	A
7440-23-5	Sodium	448000			P
7440-28-0	Thallium	5.0	U	NW	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	159		N	P
	Cyanide	10.0	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW1

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2123

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ Date Analyzed: 06/01/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1512 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW1

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7495Z

Level: (low/med) LOW Date Received: 06/03/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/11/91

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

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1512 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW1

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7495Z

Level: (low/med) LOW Date Received: 06/03/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/11/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	14	U
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	14	U
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-1

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PP32350

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/10/91

% Moisture: not dec. _____ dec. - Date Extracted: 6/13/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OMW-1

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6924

Level (low/med): LOW Date Received: 5/30/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11300			P
7440-36-0	Antimony	5.0	U		F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	80.0	B		P
7440-41-7	Beryllium	5.0	U	*	P
7440-43-9	Cadmium	99.0		*	P
7440-70-2	Calcium	224000			A
7440-47-3	Chromium	34.0		*	P
7440-48-4	Cobalt	21.0	B		P
7440-50-8	Copper	53.0			P
7439-89-6	Iron	246000			P
7439-92-1	Lead	46.0			F
7439-95-4	Magnesium	192000			P
7439-96-5	Manganese	3340			P
7439-97-6	Mercury	0.7		N*	CV
7440-02-0	Nickel	122			P
7440-09-7	Potassium	6100			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	7.0	B		A
7440-23-5	Sodium	159000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	38.0	B		P
7440-66-6	Zinc	16000		N	P
	Cyanide	10.0	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OMW-1

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1529 SAS No.: _____ SDG No.: _____

Matrix (soil/water): Water Lab Sample ID: _____

Level (low/med): Low Date Received: 6/4/91

% Solids: 0

PRELIMINARY

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				P
7440-36-0	Antimony				F
7440-38-2	Arsenic				F
7440-39-3	Barium				P
7440-41-7	Beryllium				P
7440-43-9	Cadmium				P
7440-70-2	Calcium				P
7440-47-3	Chromium				P
7440-48-4	Cobalt				P
7440-50-8	Copper				P
7439-89-6	Iron				P
7439-92-1	Lead				P
7439-95-4	Magnesium				P
7439-96-5	Manganese				P
7439-97-6	Mercury				CV
7440-02-0	Nickel				P
7440-09-7	Potassium				P
7782-49-2	Selenium				F
7440-22-4	Silver				P
7440-23-5	Sodium				P
7440-28-0	Thallium				F
7440-62-2	Vanadium				P
7440-66-6	Zinc				P
	Cyanide	10.0	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: BMW1

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2121

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ Date Analyzed: 06/01/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	6	
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: BMW1

Sample wt/vol: 800 (g/mL) ML Lab File ID: 7461Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)Ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl Alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)Ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-Di-n-Propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)Methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-Methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethyl Phthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: BMW1

Sample wt/vol: 800 (g/mL) ML Lab File ID: 7461Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-Methylphenol	62	U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-Butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)Anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	12	U
117-84-0	Di-n-Octyl Phthalate	12	U
205-99-2	Benzo(b)Fluoranthene	12	U
207-08-9	Benzo(k)Fluoranthene	12	U
50-32-8	Benzo(a)Pyrene	12	U
193-39-5	Indeno(1,2,3-cd)Pyrene	12	U
53-70-3	Dibenz(a,h)Anthracene	12	U
191-24-2	Benzo(g,h,i)Perylene	12	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

BMW-1

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: PP32304

Sample wt/vol: 800 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/3/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/4/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/11/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.07	U
319-85-7	beta-BHC	0.07	U
319-86-8	delta-BHC	0.07	U
58-89-9	gamma-BHC (Lindane)	0.07	U
76-44-8	Heptachlor	0.07	U
309-00-2	Aldrin	0.07	U
1024-57-3	Heptachlor epoxide	0.07	U
959-98-8	Endosulfan I	0.07	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.7	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.7	U
5103-74-2	gamma-Chlordane	0.7	U
8001-35-2	Toxaphene	1.3	U
12674-11-2	Aroclor-1016	0.7	U
11104-28-2	Aroclor-1221	0.7	U
11141-16-5	Aroclor-1232	0.7	U
53469-21-9	Aroclor-1242	0.7	U
12672-29-6	Aroclor-1248	0.7	U
11097-69-1	Aroclor-1254	1.3	U
11096-82-5	Aroclor-1260	1.3	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW-1

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6919

Level (low/med): LOW Date Received: 5/30/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	50.0	U		P
7440-36-0	Antimony	5.0	U		F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U	*	P
7440-43-9	Cadmium	7.0		*	P
7440-70-2	Calcium	490000			A
7440-47-3	Chromium	17.0		*	P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	14.0	B		P
7439-89-6	Iron	15200			P
7439-92-1	Lead	27.0			F
7439-95-4	Magnesium	95100			P
7439-96-5	Manganese	249			P
7439-97-6	Mercury	0.9		N*	CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	8160			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	15.0			A
7440-23-5	Sodium	305000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	12.0	B	N	P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

FORM I - IN

B-164

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC1

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2110

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ Date Analyzed: 05/31/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC1

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7468Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC1

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC1

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7468Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	14	U
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	14	U
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

OMW-C1

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PP32314

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/4/91

% Moisture: not dec. _____ dec. - Date Extracted: 6/5/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	~~0.1~~ 0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	~~0.08~~ 0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	~~0.08~~ 0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OMW-C1

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6910

Level (low/med): LOW Date Received: 5/29/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	281		N	P
7440-36-0	Antimony	5.0	U	N	F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	177000		N	A
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	9.0	B		P
7439-89-6	Iron	371		N	P
7439-92-1	Lead	14.0		N	F
7439-95-4	Magnesium	492000		N	P
7439-96-5	Manganese	163000		N	P
7439-97-6	Mercury	0.5			CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	9810			P
7782-49-2	Selenium	5.0	U	N	F
7440-22-4	Silver	9.0	B	N	A
7440-23-5	Sodium	198000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	19.0	B	N	P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

OMW3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW3

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2122

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ Date Analyzed: 06/01/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW3

Sample wt/vol: 800 (g/mL) ML Lab File ID: 7465Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	12	U
111-44-4	bis(2-Chloroethyl)Ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl Alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)Ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-Di-n-Propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic Acid	62	U
111-91-1	bis(2-Chloroethoxy)Methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-Methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	62	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	62	U
131-11-3	Dimethyl Phthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW3

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW3

Sample wt/vol: 800 (g/mL) ML Lab File ID: 7465Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	62	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	62	U
100-02-7	4-Nitrophenol	62	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	62	U
534-52-1	4,6-Dinitro-2-Methylphenol	62	U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	62	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-Butylphthalate	12	U
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)Anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	12	U
117-84-0	Di-n-Octyl Phthalate	12	U
205-99-2	Benzo(b)Fluoranthene	12	U
207-08-9	Benzo(k)Fluoranthene	12	U
50-32-8	Benzo(a)Pyrene	12	U
193-39-5	Indeno(1,2,3-cd)Pyrene	12	U
53-70-3	Dibenz(a,h)Anthracene	12	U
191-24-2	Benzo(g,h,i)Perylene	12	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-3

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PP32315

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/4/91

% Moisture: not dec. _____ dec. - Date Extracted: 6/5/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	~~0.2~~ 0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	~~0.2~~ 0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	~~0.08~~ 0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW-3

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6923

Level (low/med): LOW Date Received: 5/30/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3700			P
7440-36-0	Antimony	5.0	U		F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U	*	P
7440-43-9	Cadmium	51.0		*	P
7440-70-2	Calcium	261000			A
7440-47-3	Chromium	16.0		*	P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	19.0	B		P
7439-89-6	Iron	130000			P
7439-92-1	Lead	14.0			F
7439-95-4	Magnesium	568000			P
7439-96-5	Manganese	1610			P
7439-97-6	Mercury	0.8		N*	CV
7440-02-0	Nickel	45.0			P
7440-09-7	Potassium	6770			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	15.0			A
7440-23-5	Sodium	207000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	7310		N	P
	Cyanide	10.0	U		C

Color Before: COLORLESS Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW4

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW4

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2111

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ Date Analyzed: 05/31/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW4

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW4

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7469Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	J
111-44-4	bis(2-Chloroethyl)Ether	14	J
95-57-8	2-Chlorophenol	14	J
541-73-1	1,3-Dichlorobenzene	14	J
106-46-7	1,4-Dichlorobenzene	14	J
100-51-6	Benzyl Alcohol	14	J
95-50-1	1,2-Dichlorobenzene	14	J
95-48-7	2-Methylphenol	14	J
108-60-1	bis(2-Chloroisopropyl)Ether	14	J
106-44-5	4-Methylphenol	14	J
621-64-7	N-Nitroso-Di-n-Propylamine	14	J
67-72-1	Hexachloroethane	14	J
98-95-3	Nitrobenzene	14	J
78-59-1	Isophorone	14	J
88-75-5	2-Nitrophenol	14	J
105-67-9	2,4-Dimethylphenol	14	J
65-85-0	Benzoic Acid	72	J
111-91-1	bis(2-Chloroethoxy)Methane	14	J
120-83-2	2,4-Dichlorophenol	14	J
120-82-1	1,2,4-Trichlorobenzene	14	J
91-20-3	Naphthalene	14	J
106-47-8	4-Chloroaniline	14	J
87-68-3	Hexachlorobutadiene	14	J
59-50-7	4-Chloro-3-Methylphenol	14	J
91-57-6	2-Methylnaphthalene	14	J
77-47-4	Hexachlorocyclopentadiene	14	J
88-06-2	2,4,6-Trichlorophenol	14	J
95-95-4	2,4,5-Trichlorophenol	72	J
91-58-7	2-Chloronaphthalene	14	J
88-74-4	2-Nitroaniline	72	J
131-11-3	Dimethyl Phthalate	14	J
208-96-8	Acenaphthylene	14	J
606-20-2	2,6-Dinitrotoluene	14	J

u 6/13/91 PF

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW4

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMW4

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7469Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	J u
83-32-9	Acenaphthene	14	J
51-28-5	2,4-Dinitrophenol	72	J
100-02-7	4-Nitrophenol	72	J
132-64-9	Dibenzofuran	14	J
121-14-2	2,4-Dinitrotoluene	14	J
84-66-2	Diethylphthalate	14	J
7005-72-3	4-Chlorophenyl-phenylether	14	J
86-73-7	Fluorene	14	J
100-01-6	4-Nitroaniline	72	J
534-52-1	4,6-Dinitro-2-Methylphenol	72	J
86-30-6	N-Nitrosodiphenylamine (1)	14	J
101-55-3	4-Bromophenyl-phenylether	14	J
118-74-1	Hexachlorobenzene	14	J
87-86-5	Pentachlorophenol	72	J
85-01-8	Phenanthrene	14	J
120-12-7	Anthracene	14	J
84-74-2	Di-n-Butylphthalate	14	J
206-44-0	Fluoranthene	14	J
129-00-0	Pyrene	14	J
85-68-7	Butylbenzylphthalate	14	J
91-94-1	3,3'-Dichlorobenzidine	29	J
56-55-3	Benzo(a)Anthracene	14	J
218-01-9	Chrysene	14	J
117-81-7	Bis(2-Ethylhexyl)Phthalate	14	J
117-84-0	Di-n-Octyl Phthalate	14	J
205-99-2	Benzo(b)Fluoranthene	14	J
207-08-9	Benzo(k)Fluoranthene	14	J
50-32-8	Benzo(a)Pyrene	14	J
193-39-5	Indeno(1,2,3-cd)Pyrene	14	J
53-70-3	Dibenz(a,h)Anthracene	14	J
191-24-2	Benzo(g,h,i)Perylene	14	J

8/13/91 pc

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-4

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: PP32316

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/4/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/5/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	~~0.2~~ 0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	~~0.2~~ 0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	~~0.08~~ 0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OMW-4

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6911

Level (low/med): LOW Date Received: 5/29/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	285		N	P
7440-36-0	Antimony	5.0	U	N	F
7440-38-2	Arsenic	7.0	B		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	102			P
7440-70-2	Calcium	411000		N	A
7440-47-3	Chromium	28.0			P
7440-48-4	Cobalt	113			P
7440-50-8	Copper	28.0			P
7439-89-6	Iron	256000		N	P
7439-92-1	Lead	12.0		N	F
7439-95-4	Magnesium	205000		N	P
7439-96-5	Manganese	14600		N	P
7439-97-6	Mercury	0.6			CV
7440-02-0	Nickel	545			P
7440-09-7	Potassium	11200			P
7782-49-2	Selenium	5.0	U	N	F
7440-22-4	Silver	12.0		N	A
7440-23-5	Sodium	111000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	7120		N	P
	Cyanide	10.0	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC5

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC5

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2112

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ Date Analyzed: 05/31/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OMWC5

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC5

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7470Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OMWC5

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC5

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7470Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	14	U
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	14	U
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: OMW-C5

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PP32305

Sample wt/vol: 800 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/3/91

% Moisture: not dec. _____ dec. - Date Extracted: 6/4/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/11/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.07	U
319-85-7	beta-BHC	0.07	U
319-86-8	delta-BHC	0.07	U
58-89-9	gamma-BHC (Lindane)	0.07	U
76-44-8	Heptachlor	0.07	U
309-00-2	Aldrin	0.07	U
1024-57-3	Heptachlor epoxide	0.07	U
959-98-8	Endosulfan I	0.07	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.7	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.7	U
5103-74-2	gamma-Chlordane	0.7	U
8001-35-2	Toxaphene	1.3	U
12674-11-2	Aroclor-1016	0.7	U
11104-28-2	Aroclor-1221	0.7	U
11141-16-5	Aroclor-1232	0.7	U
53469-21-9	Aroclor-1242	0.7	U
12672-29-6	Aroclor-1248	0.7	U
11097-69-1	Aroclor-1254	1.3	U
11096-82-5	Aroclor-1260	1.3	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMW-C5

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6912

Level (low/med): LOW Date Received: 5/29/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10200		N	P
7440-36-0	Antimony	5.0	U	N	F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	8.0			P
7440-70-2	Calcium	189000		N	A
7440-47-3	Chromium	33.0			P
7440-48-4	Cobalt	19.0	B		P
7440-50-8	Copper	42.0			P
7439-89-6	Iron	20600		N	P
7439-92-1	Lead	25.0		N	F
7439-95-4	Magnesium	231000		N	P
7439-96-5	Manganese	1750		N	P
7439-97-6	Mercury	0.6			CV
7440-02-0	Nickel	49.0			P
7440-09-7	Potassium	14400			P
7782-49-2	Selenium	5.0	U	N	F
7440-22-4	Silver	6.0	B	N	A
7440-23-5	Sodium	115000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	116		N	P
	Cyanide	10.0	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC6

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC6

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2113

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ Date Analyzed: 05/31/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC6

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC6

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7471Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OMWC6

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: OMWC6

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7471Z

Level: (low/med) LOW Date Received: 05/29/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/09/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	14	U
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	14	U
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

OMW-C6

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PP32309

Sample wt/vol: ~~800~~ 800 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/3/91

% Moisture: not dec. _____ dec. - Date Extracted: 6/4/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/11/91

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1

PRELIMINARY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.07	U
319-85-7	beta-BHC	0.07	U
319-86-8	delta-BHC	0.07	U
58-89-9	gamma-BHC (Lindane)	0.07	U
76-44-8	Heptachlor	0.07	U
309-00-2	Aldrin	0.07	U
1024-57-3	Heptachlor epoxide	0.07	U
959-98-8	Endosulfan I	0.07	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	0.7	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.7	U
5103-74-2	gamma-Chlordane	0.7	U
8001-35-2	Toxaphene	1.3	U
12674-11-2	Aroclor-1016	0.7	U
11104-28-2	Aroclor-1221	0.7	U
11141-16-5	Aroclor-1232	0.7	U
53469-21-9	Aroclor-1242	0.7	U
12672-29-6	Aroclor-1248	0.7	U
11097-69-1	Aroclor-1254	1.3	U
11096-82-5	Aroclor-1260	1.3	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: OMW-C6

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1467 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6913

Level (low/med): LOW Date Received: 5/29/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1380		N	P
7440-36-0	Antimony	5.0	U	N	F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	50.0	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	208000		N	A
7440-47-3	Chromium	10.0			P
7440-48-4	Cobalt	20.0	U		P
7440-50-8	Copper	9.0	B		P
7439-89-6	Iron	2660		N	P
7439-92-1	Lead	6.0		N	F
7439-95-4	Magnesium	638000		N	P
7439-96-5	Manganese	712		N	P
7439-97-6	Mercury	0.7			CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	16500			P
7782-49-2	Selenium	5.0	U	N	F
7440-22-4	Silver	12.0		N	A
7440-23-5	Sodium	252000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	37.0		N	P
	Cyanide	10.0	U		C

Color Before: BROWN Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: BMW2

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2118

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ Date Analyzed: 06/01/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	
10061-02-6	trans-1,3-dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: BMW2

Sample wt/vol: 700 (g/mL) ML Lab File ID: 7456Z

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	14	U
111-44-4	bis(2-Chloroethyl)Ether	14	U
95-57-8	2-Chlorophenol	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
100-51-6	Benzyl Alcohol	14	U
95-50-1	1,2-Dichlorobenzene	14	U
95-48-7	2-Methylphenol	14	U
108-60-1	bis(2-Chloroisopropyl)Ether	14	U
106-44-5	4-Methylphenol	14	U
621-64-7	N-Nitroso-Di-n-Propylamine	14	U
67-72-1	Hexachloroethane	14	U
98-95-3	Nitrobenzene	14	U
78-59-1	Isophorone	14	U
88-75-5	2-Nitrophenol	14	U
105-67-9	2,4-Dimethylphenol	14	U
65-85-0	Benzoic Acid	72	U
111-91-1	bis(2-Chloroethoxy)Methane	14	U
120-83-2	2,4-Dichlorophenol	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
91-20-3	Naphthalene	14	U
106-47-8	4-Chloroaniline	14	U
87-68-3	Hexachlorobutadiene	14	U
59-50-7	4-Chloro-3-Methylphenol	14	U
91-57-6	2-Methylnaphthalene	14	U
77-47-4	Hexachlorocyclopentadiene	14	U
88-06-2	2,4,6-Trichlorophenol	14	U
95-95-4	2,4,5-Trichlorophenol	72	U
91-58-7	2-Chloronaphthalene	14	U
88-74-4	2-Nitroaniline	72	U
131-11-3	Dimethyl Phthalate	14	U
208-96-8	Acenaphthylene	14	U
606-20-2	2,6-Dinitrotoluene	14	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BMW2

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: BMW2

Sample wt/vol: 700 (g/mL) ML Lab File ID: 74562

Level: (low/med) LOW Date Received: 05/30/91

% Moisture: not dec. ____ dec. ____ Date Extracted: 06/04/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/08/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	72	U
83-32-9	Acenaphthene	14	U
51-28-5	2,4-Dinitrophenol	72	U
100-02-7	4-Nitrophenol	72	U
132-64-9	Dibenzofuran	14	U
121-14-2	2,4-Dinitrotoluene	14	U
84-66-2	Diethylphthalate	14	U
7005-72-3	4-Chlorophenyl-phenylether	14	U
86-73-7	Fluorene	14	U
100-01-6	4-Nitroaniline	72	U
534-52-1	4,6-Dinitro-2-Methylphenol	72	U
86-30-6	N-Nitrosodiphenylamine (1)	14	U
101-55-3	4-Bromophenyl-phenylether	14	U
118-74-1	Hexachlorobenzene	14	U
87-86-5	Pentachlorophenol	72	U
85-01-8	Phenanthrene	14	U
120-12-7	Anthracene	14	U
84-74-2	Di-n-Butylphthalate	14	U
206-44-0	Fluoranthene	14	U
129-00-0	Pyrene	14	U
85-68-7	Butylbenzylphthalate	14	U
91-94-1	3,3'-Dichlorobenzidine	29	U
56-55-3	Benzo(a)Anthracene	14	U
218-01-9	Chrysene	14	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	5	J
117-84-0	Di-n-Octyl Phthalate	14	U
205-99-2	Benzo(b)Fluoranthene	14	U
207-08-9	Benzo(k)Fluoranthene	14	U
50-32-8	Benzo(a)Pyrene	14	U
193-39-5	Indeno(1,2,3-cd)Pyrene	14	U
53-70-3	Dibenz(a,h)Anthracene	14	U
191-24-2	Benzo(g,h,i)Perylene	14	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: BMW-2

Lab Name: RECRA ENVIRONMENTAL, INC. Contract: NY91-378

Lab Code: RECNY Case No.: 3338 SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: PP32317

Sample wt/vol: 700 (g/mL) ML Lab File ID: -

Level: (low/med) LOW Date Received: 6/4/91

% Moisture: not dec. ____ dec. - Date Extracted: 6/5/91

Extraction: (SepF/Cont/Sonc) SepF Date Analyzed: 6/16/91

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.08	U
319-85-7	beta-BHC	0.08	U
319-86-8	delta-BHC	0.08	U
58-89-9	gamma-BHC (Lindane)	0.08	U
76-44-8	Heptachlor	~~0.08~~ 0.08	U
309-00-2	Aldrin	0.08	U
1024-57-3	Heptachlor epoxide	~~0.08~~ 0.08	U
959-98-8	Endosulfan I	0.08	U
60-57-1	Dieldrin	0.2	U
72-55-9	4,4'-DDE	0.2	U
72-20-8	Endrin	0.2	U
33213-65-9	Endosulfan II	0.2	U
72-54-8	4,4'-DDD	0.2	U
1031-07-8	Endosulfan sulfate	0.2	U
50-29-3	4,4'-DDT	0.2	U
72-43-5	Methoxychlor	~~0.08~~ 0.8	U
53494-70-5	Endrin ketone	0.2	U
5103-71-9	alpha-Chlordane	0.8	U
5103-74-2	gamma-Chlordane	0.8	U
8001-35-2	Toxaphene	1.5	U
12674-11-2	Aroclor-1016	0.8	U
11104-28-2	Aroclor-1221	0.8	U
11141-16-5	Aroclor-1232	0.8	U
53469-21-9	Aroclor-1242	0.8	U
12672-29-6	Aroclor-1248	0.8	U
11097-69-1	Aroclor-1254	1.5	U
11096-82-5	Aroclor-1260	1.5	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: BMW-2

Lab Name: Recra Environmental, Inc. Contract: NY91-378

Lab Code: RECNY Case No.: 1471 SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: 6917

Level (low/med): LOW Date Received: 5/30/91

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1630			P
7440-36-0	Antimony	5.0	U		F
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	80.0	B		P
7440-41-7	Beryllium	5.0	U	*	P
7440-43-9	Cadmium	22.0		*	P
7440-70-2	Calcium	353000			A
7440-47-3	Chromium	33.0		*	P
7440-48-4	Cobalt	21.0	B		P
7440-50-8	Copper	286			P
7439-89-6	Iron	40500			P
7439-92-1	Lead	17200			F
7439-95-4	Magnesium	106000			P
7439-96-5	Manganese	375	B		P
7439-97-6	Mercury	0.7		N*	CV
7440-02-0	Nickel	57.0			P
7440-09-7	Potassium	24600			P
7782-49-2	Selenium	5.0	U		F
7440-22-4	Silver	23.0			A
7440-23-5	Sodium	381000			P
7440-28-0	Thallium	5.0	U	N	F
7440-62-2	Vanadium	30.0	U		P
7440-66-6	Zinc	4250		N	P
	Cyanide	10.0	U		C

Color Before: GRAY Clarity Before: CLOUDY Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS102

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS102

Sample wt/vol: 5.1 (g/mL) G Lab File ID: G8301

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 56 Date Analyzed: 04/19/91

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	25	B
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	22	
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	22	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
108-05-4	Vinyl Acetate	22	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-dichloropropene	11	U
79-01-6	Trichloroethene	6	J
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	2	J
10061-02-6	trans-1,3-dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Total Xylenes	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS102

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS102

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 6741X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 56 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	740	U
111-44-4	bis(2-Chloroethyl)Ether	740	U
95-57-8	2-Chlorophenol	740	U
541-73-1	1,3-Dichlorobenzene	740	U
106-46-7	1,4-Dichlorobenzene	740	U
100-51-6	Benzyl Alcohol	40	J
95-50-1	1,2-Dichlorobenzene	740	U
95-48-7	2-Methylphenol	740	U
108-60-1	bis(2-Chloroisopropyl)Ether	740	U
106-44-5	4-Methylphenol	740	U
621-64-7	N-Nitroso-Di-n-Propylamine	740	U
67-72-1	Hexachloroethane	740	U
98-95-3	Nitrobenzene	740	U
78-59-1	Isophorone	740	U
88-75-5	2-Nitrophenol	740	U
105-67-9	2,4-Dimethylphenol	740	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	740	U
120-83-2	2,4-Dichlorophenol	740	U
120-82-1	1,2,4-Trichlorobenzene	740	U
91-20-3	Naphthalene	190	J
106-47-8	4-Chloroaniline	740	U
87-68-3	Hexachlorobutadiene	740	U
59-50-7	4-Chloro-3-Methylphenol	740	U
91-57-6	2-Methylnaphthalene	160	J
77-47-4	Hexachlorocyclopentadiene	740	U
88-06-2	2,4,6-Trichlorophenol	740	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	740	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	740	U
208-96-8	Acenaphthylene	740	U
606-20-2	2,6-Dinitrotoluene	740	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS102

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS102

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 6741X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 56 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	740	U
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	740	U
121-14-2	2,4-Dinitrotoluene	740	U
84-66-2	Diethylphthalate	740	U
7005-72-3	4-Chlorophenyl-phenylether	740	U
86-73-7	Fluorene	740	U
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-Methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	740	U
101-55-3	4-Bromophenyl-phenylether	740	U
118-74-1	Hexachlorobenzene	740	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	150	J
120-12-7	Anthracene	740	U
84-74-2	Di-n-Butylphthalate	2200	B
206-44-0	Fluoranthene	110	J
129-00-0	Pyrene	82	J
85-68-7	Butylbenzylphthalate	740	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	49	J
218-01-9	Chrysene	52	J
117-81-7	Bis(2-Ethylhexyl)Phthalate	180	J
117-84-0	Di-n-Octyl Phthalate	740	U
205-99-2	Benzo(b)Fluoranthene	47	J
207-08-9	Benzo(k)Fluoranthene	740	U
50-32-8	Benzo(a)Pyrene	740	U
193-39-5	Indeno(1,2,3-cd)Pyrene	740	U
53-70-3	Dibenz(a,h)Anthracene	740	U
191-24-2	Benzo(g,h,i)Perylene	740	U

(1) - Cannot be separated from Diphenylamine

1D.A

ORGANOCHLORINE PESTICIDES/PCB'S ANALYSIS DATA SHEET

METHOD 8080

SAMPLE NO.

DT-SS-102

Lab Name: RECRA ENVIRONMENTAL, INC. Case No: 91-0990

Matrix: (soil/water) SOIL Date Received: 4/18/91

Sample wt/vol: 30.4 (g/mL) G Date Extracted: 4/22/91

Level: (low/med) LOW Date Analyzed: 5/8/91

% Moisture: not dec. 51 dec. - Dilution Factor: 1.0

Extraction: (SepF/Cont/Sonc) SOX

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.1	U
319-85-7	beta-BHC	8.1	U
319-86-8	delta-BHC	8.1	U
58-89-9	gamma-BHC (Lindane)	8.1	U
76-44-8	Heptachlor	25	
309-00-2	Aldrin	8.1	U
1024-57-3	Heptachlor epoxide	8.1	U
959-98-8	Endosulfan I	8.1	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	11	J
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	5.3	J
72-54-8	4,4'-DDD	5.3	J
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	15	
72-43-5	Methoxychlor	81	U
53494-70-5	Endrin ketone	17	U
57-49-9	Chlordane	81	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	81	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	81	U
53469-21-9	Aroclor-1242	81	U
12672-29-6	Aroclor-1248	81	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	170	U

743C

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DT-SS-102

Lab Name: Recra Environmental, Inc. Contract: NY91-370

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix (soil/water): SOIL Lab Sample ID: 5235, 5390

Level (low/med): LOW Date Received: 4/18/91

% Solids: 44.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700			A
7440-36-0	Antimony	1.1	U	N	F
7440-38-2	Arsenic	17.3		N	F
7440-39-3	Barium	219		E	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	13.8			P
7440-70-2	Calcium	58500			A
7440-47-3	Chromium	34.1			P
7440-48-4	Cobalt	10.2	B		P
7440-50-8	Copper	36.0			P
7439-89-6	Iron	30100			P
7439-92-1	Lead	115			A
7439-95-4	Magnesium	5920			P
7439-96-5	Manganese	2490		NE	P
7439-97-6	Mercury	0.81		E	CV
7440-02-0	Nickel	65.9		NE	P
7440-09-7	Potassium	1220			A
7782-49-2	Selenium	1.1	U		F
7440-22-4	Silver	1.3	U		P
7440-23-5	Sodium	482			P
7440-28-0	Thallium	1.1	U		F
7440-62-2	Vanadium	43.1			P
7440-66-6	Zinc	408		N	P
	Cyanide	2.3	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS103

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS103

Sample wt/vol: 5.1 (g/mL) G Lab File ID: G8304

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 28 Date Analyzed: 04/19/91

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	46	B
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	7	J
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	trans-1,3-dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Total Xylenes	7	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS103

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS103

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 6747X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 28 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	450	U
111-44-4	bis(2-Chloroethyl)Ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
100-51-6	Benzyl Alcohol	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	2-Methylphenol	450	U
108-60-1	bis(2-Chloroisopropyl)Ether	450	U
106-44-5	4-Methylphenol	260	J
621-64-7	N-Nitroso-Di-n-Propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
65-85-0	Benzoic Acid	2200	U
111-91-1	bis(2-Chloroethoxy)Methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	210	J
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	120	J
59-50-7	4-Chloro-3-Methylphenol	450	U
91-57-6	2-Methylnaphthalene	100	J
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethyl Phthalate	450	U
208-96-8	Acenaphthylene	450	U
606-20-2	2,6-Dinitrotoluene	450	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS103

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS103

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 6747X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 28 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	330	J
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	290	J
121-14-2	2,4-Dinitrotoluene	450	U
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenyl-phenylether	450	U
86-73-7	Fluorene	420	J
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	450	U
101-55-3	4-Bromophenyl-phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	3300	
120-12-7	Anthracene	940	
84-74-2	Di-n-Butylphthalate	770	B
206-44-0	Fluoranthene	3700	
129-00-0	Pyrene	4600	
85-68-7	Butylbenzylphthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	900	U
56-55-3	Benzo(a)Anthracene	1900	
218-01-9	Chrysene	1800	
117-81-7	Bis(2-Ethylhexyl)Phthalate	470	
117-84-0	Di-n-Octyl Phthalate	450	U
205-99-2	Benzo(b)Fluoranthene	2200	
207-08-9	Benzo(k)Fluoranthene	970	
50-32-8	Benzo(a)Pyrene	1300	
193-39-5	Indeno(1,2,3-cd)Pyrene	400	J
53-70-3	Dibenz(a,h)Anthracene	86	J
191-24-2	Benzo(g,h,i)Perylene	330	J

(1) - Cannot be separated from Diphenylamine

618

1D.A

ORGANOCHLORINE PESTICIDES/PCB'S ANALYSIS DATA SHEET

METHOD 8080

SAMPLE NO.
DT-SS-103

Lab Name: RECRA ENVIRONMENTAL, INC. Case No: 91-0990

Matrix: (soil/water) SOIL Date Received: 4/18/91

Sample wt/vol: 30.7 (g/mL) G Date Extracted: 4/22/91

Level: (low/med) LOW Date Analyzed: 5/8/91

% Moisture: not dec. 38 dec. - Dilution Factor: 1.0

Extraction: (SepF/Cont/Sonc) SOX

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	J
319-85-7	beta-BHC	6.5	U J
319-86-8	delta-BHC	33	
58-89-9	gamma-BHC (Lindane)	3.4	J
76-44-8	Heptachlor	6.5	U J
309-00-2	Aldrin	6.5	U
1024-57-3	Heptachlor epoxide	6.5	U
959-98-8	Endosulfan I	6.5	U
60-57-1	Dieldrin	13	U
72-55-9	4,4'-DDE	13	U
72-20-8	Endrin	18	
33213-65-9	Endosulfan II	133	U
72-54-8	4,4'-DDD	13	U
1031-07-8	Endosulfan sulfate	290	
50-29-3	4,4'-DDT	31	
72-43-5	Methoxychlor	110	
53494-70-5	Endrin ketone	65	U
57-49-9	Chlordane	130	U
8001-35-2	Toxaphene	65	U
12674-11-2	Aroclor-1016	65	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	65	U
53469-21-9	Aroclor-1242	65	U
12672-29-6	Aroclor-1248	65	U
11097-69-1	Aroclor-1254	130	U
11096-82-5	Aroclor-1260	130	U

8/14/91 pf

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DT-SS-103

Lab Name: Recra Environmental, Inc. Contract: NY91-370

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix (soil/water): SOIL Lab Sample ID: 5238, 5392

Level (low/med): LOW Date Received: 4/18/91

% Solids: 71.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9310			A
7440-36-0	Antimony	0.68	U	N	F
7440-38-2	Arsenic	7.5		N	F
7440-39-3	Barium	183		E	P
7440-41-7	Beryllium	0.68	U		P
7440-43-9	Cadmium	9.4			P
7440-70-2	Calcium	23800			A
7440-47-3	Chromium	26.3			P
7440-48-4	Cobalt	9.2			P
7440-50-8	Copper	46.2			P
7439-89-6	Iron	17200			P
7439-92-1	Lead	1750			A
7439-95-4	Magnesium	7270			P
7439-96-5	Manganese	218		NE	P
7439-97-6	Mercury	0.17		E	CV
7440-02-0	Nickel	24.3		NE	P
7440-09-7	Potassium	1600			A
7782-49-2	Selenium	0.68	U		F
7440-22-4	Silver	3.7			P
7440-23-5	Sodium	807			P
7440-28-0	Thallium	0.68	U		F
7440-62-2	Vanadium	23.5			P
7440-66-6	Zinc	778		N	P
	Cyanide	2.4			C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS104

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS104

Sample wt/vol: 5.1 (g/mL) G Lab File ID: G8305

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 43 Date Analyzed: 04/19/91

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	66	B
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	7	J
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	trans-1,3-dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Total Xylenes	9	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS104

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS104

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 6744X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 43 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	570	U
111-44-4	bis(2-Chloroethyl)Ether	570	U
95-57-8	2-Chlorophenol	570	U
541-73-1	1,3-Dichlorobenzene	570	U
106-46-7	1,4-Dichlorobenzene	570	U
100-51-6	Benzyl Alcohol	570	U
95-50-1	1,2-Dichlorobenzene	570	U
95-48-7	2-Methylphenol	570	U
108-60-1	bis(2-Chloroisopropyl)Ether	570	U
106-44-5	4-Methylphenol	570	U
621-64-7	N-Nitroso-Di-n-Propylamine	570	U
67-72-1	Hexachloroethane	570	U
98-95-3	Nitrobenzene	570	U
78-59-1	Isophorone	570	U
88-75-5	2-Nitrophenol	570	U
105-67-9	2,4-Dimethylphenol	570	U
65-85-0	Benzoic Acid	2700	U
111-91-1	bis(2-Chloroethoxy)Methane	570	U
120-83-2	2,4-Dichlorophenol	570	U
120-82-1	1,2,4-Trichlorobenzene	570	U
91-20-3	Naphthalene	570	U
106-47-8	4-Chloroaniline	570	U
87-68-3	Hexachlorobutadiene	570	U
59-50-7	4-Chloro-3-Methylphenol	570	U
91-57-6	2-Methylnaphthalene	37	J
77-47-4	Hexachlorocyclopentadiene	570	U
88-06-2	2,4,6-Trichlorophenol	570	U
95-95-4	2,4,5-Trichlorophenol	2700	U
91-58-7	2-Chloronaphthalene	570	U
88-74-4	2-Nitroaniline	2700	U
131-11-3	Dimethyl Phthalate	570	U
208-96-8	Acenaphthylene	570	U
606-20-2	2,6-Dinitrotoluene	570	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS104

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS104

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 6744X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 43 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2700	U
83-32-9	Acenaphthene	570	U
51-28-5	2,4-Dinitrophenol	2700	U
100-02-7	4-Nitrophenol	2700	U
132-64-9	Dibenzofuran	570	U
121-14-2	2,4-Dinitrotoluene	570	U
84-66-2	Diethylphthalate	570	U
7005-72-3	4-Chlorophenyl-phenylether	570	U
86-73-7	Fluorene	570	U
100-01-6	4-Nitroaniline	2700	U
534-52-1	4,6-Dinitro-2-Methylphenol	2700	U
86-30-6	N-Nitrosodiphenylamine (1)	570	U
101-55-3	4-Bromophenyl-phenylether	570	U
118-74-1	Hexachlorobenzene	570	U
87-86-5	Pentachlorophenol	2700	U
85-01-8	Phenanthrene	140	J
120-12-7	Anthracene	570	U
84-74-2	Di-n-Butylphthalate	880	B
206-44-0	Fluoranthene	140	J
129-00-0	Pyrene	99	J
85-68-7	Butylbenzylphthalate	570	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
56-55-3	Benzo(a)Anthracene	57	J
218-01-9	Chrysene	58	J
117-81-7	Bis(2-Ethylhexyl)Phthalate	570	U
117-84-0	Di-n-Octyl Phthalate	570	U
205-99-2	Benzo(b)Fluoranthene	49	J
207-08-9	Benzo(k)Fluoranthene	570	U
50-32-8	Benzo(a)Pyrene	38	J
193-39-5	Indeno(1,2,3-cd)Pyrene	570	U
53-70-3	Dibenz(a,h)Anthracene	570	U
191-24-2	Benzo(g,h,i)Perylene	570	U

(1) - Cannot be separated from Diphenylamine

1D.A

ORGANOCHLORINE PESTICIDES/PCB'S ANALYSIS DATA SHEET

METHOD 8080

SAMPLE NO.

DT-SS-104

Lab Name: RECRA ENVIRONMENTAL, INC. Case No: 91-0990

Matrix: (soil/water) SOIL Date Received: 4/18/91

Sample wt/vol: 30.2 (g/mL) G Date Extracted: 4/22/91

Level: (low/med) LOW Date Analyzed: 5/8/91

% Moisture: not dec. 40 dec. - Dilution Factor: 1.0

Extraction: (SepF/Cont/Sonc) SOX

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	6.7	U
319-85-7	beta-BHC	6.7	U
319-86-8	delta-BHC	20	
58-89-9	gamma-BHC (Lindane)	6.7	U
76-44-8	Heptachlor	6.7	U
309-00-2	Aldrin	6.7	U
1024-57-3	Heptachlor epoxide	6.7	U
959-98-8	Endosulfan I	6.7	U
60-57-1	Dieldrin	14	U
72-55-9	4,4'-DDE	14	U
72-20-8	Endrin	14	U
33213-65-9	Endosulfan II	14	U
72-54-8	4,4'-DDD	14	U
1031-07-8	Endosulfan sulfate	14	U
50-29-3	4,4'-DDT	14	U
72-43-5	Methoxychlor	67	U
53494-70-5	Endrin ketone	14	U
57-49-9	Chlordane	67	U
8001-35-2	Toxaphene	140	U
12674-11-2	Aroclor-1016	67	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	67	U
53469-21-9	Aroclor-1242	67	U
12672-29-6	Aroclor-1248	67	U
11097-69-1	Aroclor-1254	140	U
11096-82-5	Aroclor-1260	140	U

743E

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DT-SS-104

Lab Name: Recra Environmental, Inc. Contract: NY91-370

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix (soil/water): SOIL Lab Sample ID: 5239, 5393

Level (low/med): LOW Date Received: 4/18/91

% Solids: 56.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18900			A
7440-36-0	Antimony	0.85	U	N	F
7440-38-2	Arsenic	13.1		N	F
7440-39-3	Barium	139		E	P
7440-41-7	Beryllium	0.96			P
7440-43-9	Cadmium	14.3			P
7440-70-2	Calcium	2900			A
7440-47-3	Chromium	28.0			P
7440-48-4	Cobalt	12.7			P
7440-50-8	Copper	20.8			P
7439-89-6	Iron	31400			P
7439-92-1	Lead	37.5			A
7439-95-4	Magnesium	4210			P
7439-96-5	Manganese	295		NE	P
7439-97-6	Mercury	0.14	U	E	CV
7440-02-0	Nickel	28.4		NE	P
7440-09-7	Potassium	2260			A
7782-49-2	Selenium	0.85	U		F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	309	B		P
7440-28-0	Thallium	0.85	U		F
7440-62-2	Vanadium	47.0			P
7440-66-6	Zinc	226		N	P
	Cyanide	1.8	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DTSS105

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS105

Sample wt/vol: 5.1 (g/mL) G Lab File ID: G8306

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 27 Date Analyzed: 04/19/91

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	0.9	J
67-64-1	Acetone	5	BJ
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	4	J
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	trans-1,3-dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Total Xylenes	7	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS105

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS105

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 6746X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 27 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	450	U
111-44-4	bis(2-Chloroethyl)Ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
100-51-6	Benzyl Alcohol	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	2-Methylphenol	450	U
108-60-1	bis(2-Chloroisopropyl)Ether	450	U
106-44-5	4-Methylphenol	450	U
621-64-7	N-Nitroso-Di-n-Propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
65-85-0	Benzoic Acid	2200	U
111-91-1	bis(2-Chloroethoxy)Methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	450	U
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	450	U
59-50-7	4-Chloro-3-Methylphenol	450	U
91-57-6	2-Methylnaphthalene	450	U
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethyl Phthalate	450	U
208-96-8	Acenaphthylene	450	U
606-20-2	2,6-Dinitrotoluene	450	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS105

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS105

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 6746X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 27 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

GPC Cleanup: (Y/N) N Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	450	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenyl-phenylether	450	U
86-73-7	Fluorene	450	U
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	450	U
101-55-3	4-Bromophenyl-phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	290	J
120-12-7	Anthracene	450	U
84-74-2	Di-n-Butylphthalate	680	B
206-44-0	Fluoranthene	400	J
129-00-0	Pyrene	300	J
85-68-7	Butylbenzylphthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	900	U
56-55-3	Benzo(a)Anthracene	150	J
218-01-9	Chrysene	160	J
117-81-7	Bis(2-Ethylhexyl)Phthalate	91	J
117-84-0	Di-n-Octyl Phthalate	450	U
205-99-2	Benzo(b)Fluoranthene	160	J
207-08-9	Benzo(k)Fluoranthene	69	J
50-32-8	Benzo(a)Pyrene	110	J
193-39-5	Indeno(1,2,3-cd)Pyrene	43	J
53-70-3	Dibenz(a,h)Anthracene	450	U
191-24-2	Benzo(g,h,i)Perylene	33	J

(1) - Cannot be separated from Diphenylamine

1D.A

ORGANOCHLORINE PESTICIDES/PCB'S ANALYSIS DATA SHEET

METHOD 8080

SAMPLE NO.

DT-SS-105

Lab Name: RECRA ENVIRONMENTAL, INC. Case No: 91-0990

Matrix: (soil/water) SOIL Date Received: 4/18/91

Sample wt/vol: 30.4 (g/mL) G Date Extracted: 4/22/91

Level: (low/med) LOW Date Analyzed: 5/8/91

% Moisture: not dec. 24 dec. - Dilution Factor: 1.0

Extraction: (SepF/Cont/Sonc) SOX

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	5.3	U
319-85-7	beta-BHC	5.3	U
319-86-8	delta-BHC	17	
58-89-9	gamma-BHC (Lindane)	5.3	U
76-44-8	Heptachlor	5.3	U
309-00-2	Aldrin	5.3	U
1024-57-3	Heptachlor epoxide	2.8	J
959-98-8	Endosulfan I	5.3	U
60-57-1	Dieldrin	11	U
72-55-9	4,4'-DDE	11	U
72-20-8	Endrin	11	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	53	U
53494-70-5	Endrin ketone	11	U
57-49-9	Chlordane	53	U
8001-35-2	Toxaphene	110	U
12674-11-2	Aroclor-1016	53	U
11104-28-2	Aroclor-1221	53	U
11141-16-5	Aroclor-1232	53	U
53469-21-9	Aroclor-1242	53	U
12672-29-6	Aroclor-1248	53	U
11097-69-1	Aroclor-1254	110	U
11096-82-5	Aroclor-1260	110	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DT-SS-105

Lab Name: Recra Environmental, Inc. Contract: NY91-370

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix (soil/water): SOIL Lab Sample ID: 5240,5394

Level (low/med): LOW Date Received: 4/18/91

% Solids: 72.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12200			A
7440-36-0	Antimony	0.70	U	N	F
7440-38-2	Arsenic	4.7		N	F
7440-39-3	Barium	130		E	P
7440-41-7	Beryllium	0.92			P
7440-43-9	Cadmium	11.8			P
7440-70-2	Calcium	628	B		A
7440-47-3	Chromium	22.6			P
7440-48-4	Cobalt	10.4			P
7440-50-8	Copper	26.5			P
7439-89-6	Iron	25500			P
7439-92-1	Lead	45.9			A
7439-95-4	Magnesium	16000			P
7439-96-5	Manganese	844		NE	P
7439-97-6	Mercury	0.58		E	CV
7440-02-0	Nickel	30.8		NE	P
7440-09-7	Potassium	2090			A
7782-49-2	Selenium	0.70	U		F
7440-22-4	Silver	0.83	U		P
7440-23-5	Sodium	419	B		P
7440-28-0	Thallium	0.70	U		F
7440-62-2	Vanadium	29.2			P
7440-66-6	Zinc	215		N	P
	Cyanide	1.4	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS106

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS106

Sample wt/vol: 5.1 (g/mL) G Lab File ID: G8307

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 36 Date Analyzed: 04/19/91

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	13	BJ
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	15	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	trans-1,3-dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Total Xylenes	8	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

DTSS106

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS106

Sample wt/vol: 31.0 (g/mL) G Lab File ID: 6745X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 36 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	500	U
111-44-4	bis(2-Chloroethyl)Ether	500	U
95-57-8	2-Chlorophenol	500	U
541-73-1	1,3-Dichlorobenzene	500	U
106-46-7	1,4-Dichlorobenzene	500	U
100-51-6	Benzyl Alcohol	500	U
95-50-1	1,2-Dichlorobenzene	500	U
95-48-7	2-Methylphenol	500	U
108-60-1	bis(2-Chloroisopropyl)Ether	500	U
106-44-5	4-Methylphenol	500	U
621-64-7	N-Nitroso-Di-n-Propylamine	500	U
67-72-1	Hexachloroethane	500	U
98-95-3	Nitrobenzene	500	U
78-59-1	Isophorone	500	U
88-75-5	2-Nitrophenol	500	U
105-67-9	2,4-Dimethylphenol	500	U
65-85-0	Benzoic Acid	2400	U
111-91-1	bis(2-Chloroethoxy)Methane	500	U
120-83-2	2,4-Dichlorophenol	500	U
120-82-1	1,2,4-Trichlorobenzene	500	U
91-20-3	Naphthalene	120	J
106-47-8	4-Chloroaniline	500	U
87-68-3	Hexachlorobutadiene	500	U
59-50-7	4-Chloro-3-Methylphenol	500	U
91-57-6	2-Methylnaphthalene	110	J
77-47-4	Hexachlorocyclopentadiene	500	U
88-06-2	2,4,6-Trichlorophenol	500	U
95-95-4	2,4,5-Trichlorophenol	2400	U
91-58-7	2-Chloronaphthalene	500	U
88-74-4	2-Nitroaniline	2400	U
131-11-3	Dimethyl Phthalate	500	U
208-96-8	Acenaphthylene	500	U
606-20-2	2,6-Dinitrotoluene	500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DTSS106

Lab Name: RECRA ENVIRON Contract: NY91-378

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DTSS106

Sample wt/vol: 31.0 (g/mL) G Lab File ID: 6745X

Level: (low/med) LOW Date Received: 04/18/91

% Moisture: not dec. 36 dec. ____ Date Extracted: 04/22/91

Extraction: (SepF/Cont/Sonc) SOX Date Analyzed: 04/24/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2400	U
83-32-9	Acenaphthene	500	U
51-28-5	2,4-Dinitrophenol	2400	U
100-02-7	4-Nitrophenol	2400	U
132-64-9	Dibenzofuran	500	U
121-14-2	2,4-Dinitrotoluene	500	U
84-66-2	Diethylphthalate	500	U
7005-72-3	4-Chlorophenyl-phenylether	500	U
86-73-7	Fluorene	500	U
100-01-6	4-Nitroaniline	2400	U
534-52-1	4,6-Dinitro-2-Methylphenol	2400	U
86-30-6	N-Nitrosodiphenylamine (1)	500	U
101-55-3	4-Bromophenyl-phenylether	500	U
118-74-1	Hexachlorobenzene	500	U
87-86-5	Pentachlorophenol	2400	U
85-01-8	Phenanthrene	150	J
120-12-7	Anthracene	500	U
84-74-2	Di-n-Butylphthalate	320	BJ
206-44-0	Fluoranthene	190	J
129-00-0	Pyrene	160	J
85-68-7	Butylbenzylphthalate	500	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
56-55-3	Benzo(a)Anthracene	89	J
218-01-9	Chrysene	100	J
117-81-7	Bis(2-Ethylhexyl)Phthalate	92	J
117-84-0	Di-n-Octyl Phthalate	500	U
205-99-2	Benzo(b)Fluoranthene	110	J
207-08-9	Benzo(k)Fluoranthene	43	J
50-32-8	Benzo(a)Pyrene	80	J
193-39-5	Indeno(1,2,3-cd)Pyrene	500	U
53-70-3	Dibenz(a,h)Anthracene	500	U
191-24-2	Benzo(g,h,i)Perylene	35	J

(1) - Cannot be separated from Diphenylamine

1D.A

ORGANOCHLORINE PESTICIDES/PCB'S ANALYSIS DATA SHEET

METHOD 8080

SAMPLE NO.

DT-SS-106

Lab Name: RECRA ENVIRONMENTAL, INC. Case No: 91-0990

Matrix: (soil/water) SOIL Date Received: 4/18/91

Sample wt/vol: 31.0 (g/mL) G Date Extracted: 4/22/91

Level: (low/med) LOW Date Analyzed: 5/8/91

% Moisture: not dec. 45 dec. - Dilution Factor: 1.0

Extraction: (SepF/Cont/Sonc) SOX

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	7.6	U
319-85-7	beta-BHC	7.6	U
319-86-8	delta-BHC	7.6	U
58-89-9	gamma-BHC (Lindane)	7.6	U
76-44-8	Heptachlor	7.6	U
309-00-2	Aldrin	7.6	U
1024-57-3	Heptachlor epoxide	7.6	U
959-98-8	Endosulfan I	7.6	U
60-57-1	Dieldrin	16	U
72-55-9	4,4'-DDE	16	U
72-20-8	Endrin	16	U
33213-65-9	Endosulfan II	16	U
72-54-8	4,4'-DDD	16	U
1031-07-8	Endosulfan sulfate	16	U
50-29-3	4,4'-DDT	16	U
72-43-5	Methoxychlor	76	U
53494-70-5	Endrin ketone	16	U
57-49-9	Chlordane	76	U
8001-35-2	Toxaphene	160	U
12674-11-2	Aroclor-1016	76	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	76	U
53469-21-9	Aroclor-1242	76	U
12672-29-6	Aroclor-1248	76	U
11097-69-1	Aroclor-1254	160	U
11096-82-5	Aroclor-1260	160	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DT-SS-106

Lab Name: Recra Environmental, Inc. Contract: NY91-370

Lab Code: RECNY Case No.: 0990 SAS No.: _____ SDG No.: _____

Matrix (soil/water): SOIL Lab Sample ID: 5241, 5395

Level (low/med): LOW Date Received: 4/18/91

% Solids: 64.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7630			A
7440-36-0	Antimony	0.76	B	N	F
7440-38-2	Arsenic	10.1		N	F
7440-39-3	Barium	92.2		E	P
7440-41-7	Beryllium	0.76	U		P
7440-43-9	Cadmium	7.3			P
7440-70-2	Calcium	11800			A
7440-47-3	Chromium	15.3			P
7440-48-4	Cobalt	8.2			P
7440-50-8	Copper	32.6			P
7439-89-6	Iron	16200			P
7439-92-1	Lead	52.0			A
7439-95-4	Magnesium	4620			P
7439-96-5	Manganese	148		NE	P
7439-97-6	Mercury	2.0		E	CV
7440-02-0	Nickel	46.3		NE	P
7440-09-7	Potassium	1360			A
7782-49-2	Selenium	0.76	U		F
7440-22-4	Silver	0.92	U		P
7440-23-5	Sodium	283	B		P
7440-28-0	Thallium	0.76	U		F
7440-62-2	Vanadium	27.6			P
7440-66-6	Zinc	570		N	P
	Cyanide	1.6	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

APPENDIX I

ANALYTICAL DATA ASSESSMENT SUMMARY

ANALYTICAL DATA ASSESSMENT

FOR

CHEMICAL ANALYSES FOR DUNLOP TIRE

Performed by:

RECRA ENVIRONMENTAL INC., AMHERST, NEW YORK

Prepared for:

DUNLOP TIRE CORPORATION

By:

URS CONSULTANTS, INC.

SEPTEMBER 1991

INTRODUCTION: This assessment represents the best judgement of URS Consultants, Inc. (URS) concerning the useability and defensibility of chemical data produced by Recra Environmental Inc., a subcontractor to URS, as part of a Site Investigation at Dunlop Tire Corporation in the City of Buffalo, New York. This project is being funded by Dunlop Tire Corporation. The data being evaluated is from Spring 1991 sampling of surface sediments and groundwater samples. All analyses performed by Recra Environmental, Inc. were subject to Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, USEPA, Office of Solid Waste and Emergency Response, Third Edition, November 1986.

Data documentation and chain-of-custody procedures were performed in accordance with the NYSDEC ASP 1989 and the Subcontract Agreement. Data validation, reduction, and determination of useability, were performed in accordance with USEPA SOP No. HW-3 CLP Organic Data Review. The inorganic data validation processes were performed in accordance with USEPA SOP No. HW-2 Evaluation of Metals Data for the Contract Laboratory Program, Revision IV, August 1986.

CATEGORIES: The following table summarizes our assessment of data useability on a sample-by-sample and fraction-by-fraction basis. In evaluating this data, we have established four (4) categories which are, for the most part, gradational in nature. The categories are defined as follows:

Category 1a - Useable and Defensible - Fully useable, despite possible minor deviations from SW-846 criteria.

Category 1b - Useable Though Not Fully Defensible - Useable with caution; cumulative deviations from SW-846 criteria are greater than Category 1a, though not considered so significant as to jeopardize the chemical representativeness of the sample results.

Category 2a - Rejected Fractions/Compounds Due to Holding Time Violations - Did not comply with SW-846 holding times.

Category 2b - Rejected Fraction(s)/Compound(s) Due to Various SW-846 Deviations - In a sample fraction, some compounds may be useable and defensible, other compounds may be rejected, or the sample fraction may be rejected due to various deviations from SW-846. See Tables 2 and 4 for lists of rejected compounds.

In Tables 1 and 3 some fractions are assigned single categories, indicating that they are either considered useable in their entirety or for only conditional acceptances (Category 1b). Also on Tables 1 and 3 some fractions are assigned dual categories. This indicates that, while some compounds within the fraction are useable, others are rejected due to contamination in one or more of the QC blanks. Tables 2 and 4 identify the specific compounds within each sample which are rejected due to blank contamination.

SUMMARY ASSESSMENT: In summary, we feel that the analytical data is useable for Category 1a, useable with caution for Category 1b and rejected for Categories 2a and 2b. It should be noted that the use of Category 1b involves some risk in the event of a legalistic challenge based upon noncompliance with SW-846 criteria. Of the total analyses performed (by sample and fraction), the overall data package is categorized as follows:

Surface Sediments

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide
1a	3	1	1	8	8
1b	0	0	7	0	0
1a,2b	5	6	0	0	0
1b,2b	0	1	0	0	0
Total	8	8	8	8	8

Groundwaters

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide
1a	14	14	14	15	15
1a,2b	3	0	0	0	0
1b	0	1	0	0	0
Total	17	15	14	15	15

The Sample Matrices identified above are in compliance with the terms and conditions of the laboratory contract, other than the conditions detailed in the following tables. Release of the data for this phase of the investigation has been authorized by the Project Manager and QA/QC Officer by the following signatures.

Charles W. Hurley
Project Manager

Thomas Knickerbocker
QA/QC Officer

9-6-91.L/35246(11/90)

TABLE 1

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Surface Sediments
ASSESSMENT CATEGORIES: 1a, 1b, 2a, 2b

Sample ID	VOA	SVOA	Pest/PCB	Metals	CN	Notes
DT-SS-102	1a,2b	1a,2b	1b	1a	1a	1,3
DT-SS-102-DUP	-	-	-	1a	1a	
DT-SS-102-MS	1a,2b	1a,2b	1b	1a	1a	1,3,4
DT-SS-102-MSD	1a,2b	1a,2b	1b	-	-	1,3
DT-SS-103	1a	1b,2b	1b	1a	1a	1,2,3
DT-SS-104	1a	1a,2b	1b	1a	1a	1,3
DT-SS-105	1a,2b	1a,2b	1b	1a	1a	1,3
DT-SS-106	1a,2b	1a,2b	1b	1a	1a	1,3
DT-SS-RB-1	1a	1a	1a	1a	1a	

Abbreviation/Legend:

VOA - Target Compound List (TCL Volatiles)
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Analyte List (TAL) Metals
CN - Cyanide

DT - Dunlop Tire
RB - Rinse Blank
SS - Surface Sediment
MS - Matrix Spike
MSD - Matrix Spike Duplicate
DUP - Duplicate

NOTES FOR TABLE 1

1) See Table 2 for list of rejected compounds.

2) The semivolatile analysis resulted in the internal standard perylene-d_{12} exceeding QC limits. Sample reanalysis produced comparable results, thus substantiating matrix interference.

3) Several analytes detected in the pesticide/PCB fraction exceeded the daily established RT windows for both quantitation and confirmation columns, except sample DT-SS-106. The RT shift for dibutylchlorendate (DBC) exceeded QC limits for the quantitation column (DT-SS-102 was only compliant sample for DBC shift). Therefore, the results should be used with caution.

4) The pesticide/PCB analysis resulted in the surrogate DBC exceeding QC limits. Therefore, the data has been flagged as estimated, as per SW-846 methodologies.

TABLE 2*

ORGANIC COMPOUNDS REJECTED FROM THE DUNLOP TIRE SITE INVESTIGATION

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Rinse Blank	Conc. (ppb) of Compound in the Trip Blank	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
DT-SS-102	Acetone (VOA)	25	0	0	0	7
DT-SS-102-MS	Acetone (VOA)	32	0	0	0	7
DT-SS-102-MSD	Acetone (VOA)	28	0	0	0	7
DT-SS-105	Acetone (VOA)	5	0	0	0	4
DT-SS-106	Acetone (VOA)	13	0	0	0	5
DT-SS-102	Di-n-butylphthalate (SVOA)	2200	0	0	0	620
DT-SS-102-MS	Di-n-butylphthalate (SVOA)	230	0	0	0	610
DT-SS-102-MSD	Di-n-butylphthalate (SVOA)	3100	0	0	0	620
DT-SS-103	Di-n-butylphthalate (SVOA)	770	0	0	0	370
DT-SS-104	Di-n-butylphthalate (SVOA)	880	0	0	0	470
DT-SS-105	Di-n-butylphthalate (SVOA)	680	0	0	0	370
DT-SS-106	Di-n-butylphthalate (SVOA)	320	0	0	0	410

* For volatile and semivolatile samples no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks. Quality control blanks should be treated the same as samples, except that any rejected quality control blank can still be utilized to reject sample data.

TABLE 3

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Groundwaters
ASSESSMENT CATEGORIES: 1a, 1b, 2a, 2b

Sample ID	VOA	SVOA	Pest/PCB	Metals	CN	Notes
BMW-1	1a	1a	1a	1a	1a	
BMW-2	1a,2b	1a	1a	1a	1a	1
FRB-1	1a	1a	-	1a	1a	4
OMW-1	1a,2b	1b	1a	1a	1a	1,3
OMW-2	1a	1a	1a	1a	1a	
OMW-3	1a	1a	1a	1a	1a	
OMW-A3	1a	1a	1a	1a	1a	
OMW-A3-DUP	-	-	-	1a	1a	
OMW-A3-MS	1a	1a	1a	1a	1a	
OMW-A3-MSD	1a	1a	1a	-	-	
TB-2	1a,2b	-	-	-	-	1
OMW-4	1a	1a	1a	1a	1a	2
OMW-B2	1a	1a	1a	1a	1a	2
OMW-B3	1a	1a	1a	1a	1a	
OMW-C1	1a	1a	1a	1a	1a	
OMW-C5	1a	1a	1a	1a	1a	
OMW-C6	1a	1a	1a	1a	1a	
TB-1	1a	-	-	-	-	

Abbreviation/Legend:

VOA - Target Compound List (TCL Volatiles)
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Analyte List (TAL) Metals
CN - Cyanide
BMW - Bedrock Monitoring Well
OMW - Overburden Monitoring Well

TB - Trip Blank
FRB - Field Rinse Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
DUP - Duplicate

NOTES FOR TABLE 3

1) See Table 4 for list of rejected compounds.

2) The semivolatile analysis resulted in surrogate outliers. The Laboratory was instructed not to reextract but to flag the data as estimated. This is in accordance with SW-846 Method 8270 criteria.

3) The semivolatile 12-hour tuning standard is non-compliant with Method 8270 criteria, since no compounds were detected in the sample, and the continuing calibration standard is compliant, this deviation from Method 8270 is not considered so significant as to jeopardize the chemical representativeness of the sample results.

4) The pesticide/PCB analysis was omitted from the project due to the repeated difficulty in obtaining sufficient sample volume.

TABLE 4*

ORGANIC COMPOUNDS REJECTED FROM THE DUNLOP TIRE SITE INVESTIGATION

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Rinse Blank	Conc. (ppb) of Compound in the Trip Blank	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
BMW-2	Acetone (VOA)	10	0	4	0	8
OMW-1	Acetone (VOA)	7	0	4	0	8
TB-2	Acetone (VOA)	0	0	4	0	8

* For volatile and semivolatile samples no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks. Quality control blanks should be treated the same as samples, except that any rejected quality control blank can still be utilized to reject sample data.