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LOCKHEED MARTIN

April 29, 1998

William L. Daigle, P.E.
Acting Director
Bureau of Central Remedial Action
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010

Re: Final Remedial Investigation Report
Former GE Court Street 5/5A Site
Town of Dewitt, Onondaga County, New York
NYSDEC Site No. 734070

Dear Mr. Daigle:

In accordance with Section III, Paragraph D of the Order on Consent (Index #D7-0001-96-05) relating to the Former GE Court Street 5/5A site, please find enclosed three copies of the final Remedial Investigation (RI) Report. Lockheed Martin Corporation (LMC) has prepared the final RI Report based on the New York State Department of Environmental Conservation's (NYSDEC) March 19, 1998 comments on the January 1998 draft RI Report and LMC's April 16, 1998 responses to NYSDEC's comments, and NYSDEC's April 20, 1998 letter accepting LMC's responses and providing contingent approval of the RI Report, subject only to receipt of the enclosed final RI Report.

Once NYSDEC provides final approval, LMC will submit a copy of the final RI Report to the document repository and commence preparation of the Feasibility Study. Please contact me at (315) 456-3199 if you have any questions.

Sincerely,

Patrick Salvador

Patrick D. Salvador, P.E.
Principal Engineer

Enclosures

cc: Robert K. Davies, Esq. - NYSDEC (without enclosure)
Sandra Lee Fenske, Esq. - Lockheed Martin (without enclosure)
Henriette Hamel - NYSDOH (with enclosures)
Kenneth P. Lynch, Esq. - NYSDEC Director, Region (with enclosure)
Virginia C. Robbins, Esq. - Bond, Schoeneck & King, LLP (with enclosure)

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REMEDIAL INVESTIGATION REPORT
FORMER GE COURT STREET BUILDING 5/5A SITE
NYSDEC SITE NO. 734070
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

Prepared for

Lockheed Martin Corporation
Syracuse, New York

April 1998

Prepared by

EMCON
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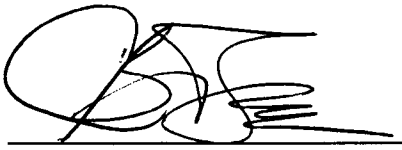
Project 86143-001.000

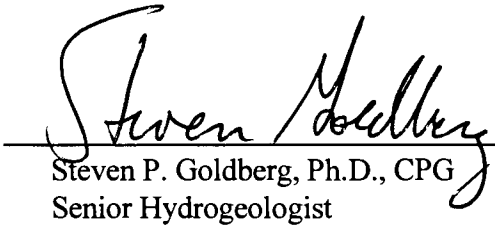
Remedial Investigation Report
Former GE Court Street Building 5/5A Site
NYSDEC Site No. 734070
Town of Dewitt, Onondaga County, New York

The material and data in this report were prepared under the supervision and direction of the undersigned. All activities described herein were performed in accordance with the New York State Department of Environmental Conservation-approved Remedial Investigation/Feasibility Study Work Plan (August 1997, revised January 1997).

EMCON



Curtis B. Taylor II, CHMM
Project Manager



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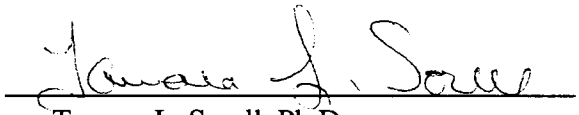

Tamara L. Sorell, Ph.D.
Senior Toxicologist

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1 INTRODUCTION

This document presents the methods, findings and conclusions of the Remedial Investigation (RI) performed at the Former General Electric (GE) Court Street Building 5/5A site located in the Town of Dewitt, Onondaga County, New York. The RI was performed in accordance with a New York State Department of Environmental Conservation (NYSDEC) approved Remedial Investigation/Feasibility Study (RI/FS) Work Plan prepared for the site by Blasland, Bouck & Lee, Inc. (August 1997, revised January 1997), on behalf of Lockheed Martin Corporation (LMC). The RI was completed in accordance with Section III of the June 11, 1996 Order on Consent (Index No. D7-0001-96-05) between NYSDEC and LMC. The site is currently classified as a Class 3 site on the New York State Registry of Inactive Hazardous Waste Disposal Sites (No. 734070). The Class 3 designation is assigned to sites that do not present a significant threat to the public health or environment.

The RI was implemented to supplement site data obtained during previous investigations. Site data from the RI and previous investigations will be used to support the Interim Remedial Measures (IRM) program, and the subsequent Feasibility Study (FS). Both RI and IRM activities are described herein.

1.1 Site Location and Description

The Former GE Court Street Building 5/5A site ("site") is located at the intersection of Deere Road and Route 298 in the Town of Dewitt, Onondaga County, New York. The site location and site features are shown on Figure 1 and Drawing 1.

The Former GE Court Street Building 5/5A site consists of approximately 14.1 acres. Building 5 occupies approximately 256,000 square feet, and Building 5A occupies approximately 83,200 square feet. The remainder of the site is paved with only small landscaped areas present adjacent to the buildings. The site is bordered on the north by property owned by Ronald G. Gustafson, Sanders Creek and Route 298, on the east by Deere Road, on the south by property owned by Dennis and Pauline Fehr, and on the west by property owned by Onondaga County, and the South Branch of Ley Creek.

1.2 Site Background

This Section provides information regarding parties that have an interest in current site activities, a summary of historical operations and previous environmental investigations at the site, and an overview of recent activities which have been conducted at the Building 5 property by the current owner.

1.2.1 Introduction of Parties

The following is a list of parties that have an interest in current site activities related to this RI:

- DE & JD Associates, Inc. — Current owner of Building 5 property;
- G & A Properties — Current owner of Building 5A property;
- Lockheed Martin Corporation — Responsible for remedial activities at the Former GE Court Street Building 5/5A Site; and
- Onondaga County — Owner of property west of the site (i.e., between the site and the South Branch of Ley Creek).

The following is a list of parties that participated in conducting the RI:

- EMCON — completed RI field activities and developed RI report.
- Parratt-Wolff, Inc. — performed RI drilling services under supervision of EMCON.
- Columbia Analytical Services, Inc. — performed analytical laboratory services related to RI samples.
- Environmental Quality Associates, Inc. — provided third party data validation of RI sample results.
- Modi Engineering and Land Surveying, Inc. — completed survey of RI sample locations.

1.2.2 Operational History

Building 5 was constructed in 1956, and was leased to GE by several owners until 1993. Building 5A was leased to the Continental Can Company until 1958, after which it was leased to GE. The last owner to lease the Building 5 and Building 5A properties to GE

was DE & JD Associates, Inc. (DE & JD) after it acquired title to these properties in 1988. GE used Building 5 primarily for the manufacture of sonar and radar equipment, printed circuit boards, and power packs. The building also housed laboratories and offices. GE used Building 5A to warehouse production equipment and raw materials, and as an auxiliary radar and sonar testing and repair shop.

Although GE operations in both Buildings 5 and 5A had ceased by December 31, 1991, GE continued to lease these properties until April 2, 1993, when GE assigned the leases to Martin Marietta Corporation (MMC) in connection with the transfer of GE's Aerospace business. MMC leased the buildings from April 2, 1993 to December 30, 1993, but, during this period, MMC did not conduct any operations at the site other than remedial activities. On December 30, 1993, MMC terminated the leases on the Building 5 and Building 5A properties. At that time, DE & JD granted to MMC a permanent access easement to ensure MMC's continued access to the site to perform remedial activities. On January 28, 1995, MMC merged with its parent corporation, LMC. LMC is the successor by merger to MMC. Presently, LMC continues to conduct remedial activities at the site.

After GE ceased its operations in December 1991, Building 5 remained vacant until recently when DE & JD undertook renovations and leased the building to Climax Manufacturing Corporation (a trucking and warehouse company). Building 5A, and the property between Building 5 and Building 5A, is currently owned by G&A Properties. G&A Properties leases space to W.J.W. Associates, Raymond Corporation and C&S Technical Services (metal garage, at the southwest corner of Building 5).

Nine, 250-gallon underground storage tanks (USTs) formerly located on the west side of Building 5 provided storage of virgin solvents and thinners used in GE's manufacturing operations. All nine tanks were taken out of service in 1960, although they were not removed from the ground until 1986. Liquids stored in the tanks were dispensed above ground and transported inside the building for use. Following the closure and removal of the USTs, the solvent storage pad (formerly located on the west side of Building 5) was used for dispensing of virgin solvents and thinners used in GE's manufacturing operations. Dispensing of solvents from the solvent storage pad was performed above ground and solvents were piped through the wall and dispensed inside the building for use.

As a component of the power distribution system at the site, electrical transformers were installed inside and outside Buildings 5 and 5A. These transformers were manufactured with polychlorinated biphenyl (PCB)-containing oils. GE removed and/or replaced all but two of the transformers in 1989 and 1990. The two transformers not replaced were located north of Building 5. Transformers were replaced with dry, non-PCB-containing units. Analysis of the transformers not replaced indicated that oil within the transformers contained PCBs at concentrations less than 500 parts per million (ppm).

1.2.3 Previous Investigations

In 1991, GE initiated an assessment of the site in anticipation of the termination of the lease agreement for the facility buildings. The purpose of this assessment was to identify potential environmental impacts related to historic GE operations. Among the findings of this assessment were the identification of the former location of nine USTs, the solvent storage pad, and the former and present location of transformers at Buildings 5 and 5A. Based on these findings, a subsurface investigation was completed.

Subsurface investigations performed in 1992 indicated that volatile organic compound (VOC)-impacted soil and groundwater were present at the site. This investigation indicated the primary source area was located along the western property boundary adjacent to Building 5. Specifically, three locations were cited as contributing to the VOC impacts. These areas included the location of the former USTs, the former solvent storage pad, and an area adjacent to a former metal shed located on the south side of Building 5. The investigation concluded that groundwater impacts were primarily limited to the shallow groundwater. In addition, the investigation showed that VOC-impacted groundwater had migrated off-site in a westerly direction to property owned by Onondaga County where the County maintains a 48-inch diameter sanitary sewer line.

In an effort to control the source of VOCs, subsequent IRMs were undertaken in 1992. The IRM for the VOC-impacted soils included the removal of soils in the vicinity of the former USTs, solvent storage pad, and former metal shed locations. In addition, groundwater that accumulated in the excavations was also removed from the site. This IRM work consisted of soil removal to depths below the shallow groundwater table followed by confirmatory sampling for VOCs. The confirmatory sampling indicated that the majority of the VOC-impacted soil was removed in the former UST area and solvent storage pad area, while complete VOC removal was accomplished adjacent to the former metal shed. Only trace level residual VOCs remained in the solvent storage pad area and the unsaturated zone of the UST area. Higher residual levels of VOCs remained below the water table in the former UST area.

In an effort to control potential off-site transport of VOC-impacted groundwater, IRM activities were also performed in 1992 on the storm sewer systems which discharged to both the South Branch of Ley Creek and Sanders Creek. The purpose of this IRM activity was to modify the storm sewer system to prevent the infiltration of VOC-impacted groundwater into the catch basins and clay tile piping. Modifications performed included the abandonment, relocation, and reconstruction of two catch basins, grouting of select clay pipe sections, replacement of select sections of clay tile pipe, and grouting of pipe joints.

A Remedial Action Plan was developed in 1993 (Wehran-New York, Inc., March 1993), based on the results of the previous investigations. The Remedial Action Plan alternative

selected for the site was to collect and treat VOC-impacted groundwater in an effort to mitigate the off-site migration of VOCs in groundwater. This Remedial Action Plan , in combination with the previous source area soil removals, was proposed to reduce the volume of constituents in the site soil and groundwater, and control the areal migration of impacted groundwater.

As described in the Remedial Action Plan Addendum (Wehran-New York, Inc., October 1993), additional storm sewer IRM activities were performed in 1993. The purpose of this work was to eliminate groundwater infiltration in a section of storm sewer which had not been rehabilitated during the previous storm sewer IRM work. Similar to the previous work, catch basins and clay tile pipe were removed and replaced.

The final remedial action (RA) alternative for site groundwater was selected and presented in the 1993 Remedial Action Plan Addendum, and included the installation of a collection trench to be constructed parallel to the northern and western boundaries of the site. Groundwater collected in the trench would be treated on-site and discharged to the South Branch of Ley Creek. The length of the collection trench was defined by the location of upgradient source areas (i.e., the former UST area and solvent storage pad), and the direction of groundwater flow. The vertical alignment of the trench was defined by the vertical distribution of VOC-impacted media and the location of discontinuous sand lenses located in the shallow subsurface.

In March 1995, in response to a request by DE & JD (the property owner), MMC removed soil in the area of the former transformer pad located adjacent to Building 5A. The soil was removed based on analytical data from a composite soil sample, collected by a consultant retained by a prospective buyer of the property, near a drain outlet from the transformer pad that reportedly contained 27.4 ppm PCBs. As part of the soil removal project, MMC collected three confirmatory soil samples from the excavation and one sample from soil removed and stockpiled in a roll-off container. The confirmatory soil sample analytical laboratory report was provided to NYSDEC in the attachment to an October 27, 1995 letter. No PCBs were detected (less than 1 ppm per Aroclor and total PCBs) in the three confirmatory soil samples. These data were not reviewed by a third party data validator. The soil was removed and disposed of off-site as non-regulated waste.

1.2.4 Site Owner Activities

DE & JD has recently undertaken renovation activities at Building 5. These activities included both interior and exterior renovation, as briefly discussed below.

Based on observation of renovation activities and review of DE & JD drawings, identifying proposed site modifications, the interior renovation of Building 5 included select demolition, build out and painting. Exterior renovations at Building 5 included

demolition of the 400,000-gallon steel water tank and pump house, the cooling tower and the transformer pad formerly located north of Building 5. Waste material handling practices have been the subject of numerous correspondence among LMC, NYSDEC, and DE & JD during this renovation period.

As discussed below (Section 1.3), the transformer pad formerly located north of Building 5, demolished by DE & JD, is the subject of a specific objective of the RI. LMC has requested information regarding the demolition of this transformer pad (including analytical data) from DE & JD, but it has not been received.

1.3 Remedial Investigation Objectives

The overall objective of the RI is to provide data to supplement site information obtained during previous investigations in support of the IRM program and the FS. All information will be used to fully assess current site conditions and evaluate the IRMs for the site. Based on this general objective, the following specific objectives were established as part of the NYSDEC-approved RI/FS Work Plan for the RI:

1. Define the vertical extent of VOCs in the former UST and solvent storage pad areas;

2. Define the vertical and horizontal extent of groundwater impacted by VOCs;

3. Assess the potential presence of PCBs in the soil adjacent to the existing transformer pad on the north side of Building 5;

4. Evaluate the potential influence of the 48-inch diameter sanitary sewer line located on adjacent County property on the groundwater flow patterns west of Building 5 at the site;

5. Assess the results of storm sewer rehabilitation IRMs by determining the presence or absence of infiltration of VOCs in stormwater discharges at the outfalls in Sanders Creek and in the South Branch of Ley Creek;

6. Define whether the migration of VOC-containing groundwater at the site has impacted surface water quality in the South Branch of Ley Creek;

7. Assess the potential presence of VOCs in the sediment near two storm sewer outfalls;

8. Provide data necessary to evaluate the proposed IRM for groundwater remediation; and

9. Provide data necessary for the preparation of a FS to evaluate potential final remedial alternatives for the site. In this regard, the IRM (i.e., the groundwater

collection and treatment system described in Section 4.3) is intended to be the final remedy for site groundwater.

2 METHODOLOGIES

This section includes a description of the field activities and methods used in the physical and chemical characterization of the site performed as part of this RI. Field activities included the drilling of soil borings, the installation of piezometers and groundwater monitoring wells, and the sampling and analysis of soil, groundwater, surface water and sediment. The field activities were completed between February 1997 and June 1997. Drawing 1 shows the test locations associated with the investigation together with pre-existing installations that provide the basis for characterizing the site. A discussion of the field activities is provided below.

2.1 Soil Investigation

The soil investigation activities described below were completed to achieve the following objectives of the NYSDEC-approved RI/FS Work Plan:

1. Define the vertical extent of VOCs in the former UST and solvent storage pad areas; and

2. Assess the potential presence of PCBs in the soil adjacent to the transformer pad on the north side of Building 5.

2.1.1 Deep Soil Borings

Deep soil borings were performed on February 10 and 11, 1997 in the area of the former solvent storage pad (SB-50) and the area of the former USTs (SB-49). Drilling was performed by Parratt-Wolff of Syracuse, New York, under the observation of an EMCON geologist. The borings were advanced utilizing 4¼ -inch inside diameter hollow-stem augers, mounted on a CME-75 truck rig. Since shallow residual VOCs in these areas had been adequately characterized during previous investigations, the RI investigative activities were limited to an evaluation of the vertical extent of VOCs.

Continuous soil samples were taken from the unconsolidated deposits utilizing a 2-foot split-spoon sampler, in accordance with ASTM D1586. Upon removal from the borehole, the split-spoon was opened and screened with a photoionization detector (PID) equipped with an 11.7 electron volt lamp, for detecting the presence of VOCs. The soil

was also visually classified according to a system modified after Burmister. A representative portion of the soil was placed in a laboratory sample container if analysis was anticipated, while the remaining fraction was placed in a driller's glass soil jar, then covered with a sheet of aluminum foil for subsequent head space analysis. Headspace analysis was performed using a PID, approximately 1 hour after sample collection.

The initial field screening (immediately upon opening of spoon) and the jar head space values were recorded, and are referenced in the remarks column of the geologic boring logs included in Appendix A.

In accordance with the NYSDEC-approved RI/FS Work Plan, the sample interval with the highest headspace reading from SB-49 (18- to 20-foot depth beneath the ground surface at the former UST area), and the sample interval immediately beneath the backfill at SB-50 (4- to 6-foot depth beneath the ground surface at the former solvent storage pad) were analyzed for target compound list (TCL) VOCs, and semi-volatile organic compounds (SVOCs) by Analytical Services Protocol (ASP) Methods 95-1 and 95-2, respectively. In addition, the sample interval from SB-49 which appeared to represent the vertical extent of VOCs (the 22- to 24-foot depth interval) was analyzed for TCL VOCs by ASP Method 95-1. Quality Control (QC) samples were collected by EMCON, in accordance with the NYSDEC-approved RI/FS Work Plan, for QC by a third party validator (Environmental Quality Associates, Inc.).

Upon completion of each test boring, the borehole was sealed from its bottom to the surface with a cement bentonite grout mixture, utilizing the tremie rod method.

Throughout the drilling program, all downhole tools were steam cleaned between boring locations. All decontamination water was pumped from the decontamination area to a 55-gallon drum, which was labeled, sealed, and placed in the drum storage building on site. All excess soil cuttings were collected and placed in 55-gallon drums, labeled, sealed, and placed in the drum storage building on site. In accordance with Section 4.4 of the Sampling and Analysis Plan (RI/FS Work Plan, BB&L, January 1997), all investigation-derived wastes were characterized and disposed of off-site by Laidlaw Environmental Services, Inc.

2.1.2 Transformer Pad

To assess the potential presence of PCBs in the soil adjacent to the existing transformer pad on the north side of Building 5, 3 shallow hand auger borings (SB-51, SB-52, and SB-53) were performed on February 10, 1997 by EMCON field personnel. SB-51 was installed to the west of the concrete pad and SB-53 was installed to the east of the concrete pad, using a hand-operated, stainless steel bucket auger. SB-52 was installed through the concrete pad to the north of the transformers and was advanced through

4 inches of concrete utilizing an electric rotary corer prior to sample retrieval with the bucket auger.

Samples for laboratory analysis were collected from the first 6 inches of soil encountered beneath a surficial gravel layer at these locations. Soil was removed from the bucket auger with a stainless steel spoon, and placed into a stainless steel tray, to composite the soils for a representative sample. Depths were measured and soil descriptions recorded, and the soil placed in laboratory glass jars for shipment to the laboratory for analysis.

Upon completion of the shallow test borings, the unused soil cuttings were placed back in the borehole and the borehole was grouted to the surface with concrete. Sample locations are identified on Drawing 1.

All three samples were analyzed for PCBs by NYSDEC ASP Method 95-3, in accordance with the NYSDEC-approved RI/FS Work Plan. QC samples were collected by EMCON, in accordance with the NYSDEC-approved RI/FS Work Plan, for QC by a third party data validator (Environmental Quality Associates, Inc.).

2.2 Groundwater Investigation

The groundwater investigation activities described below were completed to achieve the following objectives of the NYSDEC-approved RI/FS Work Plan:

1. Define the vertical and horizontal extent of groundwater impacted by VOCs;

2. Evaluate the potential influence of the 48-inch diameter sanitary sewer line located on adjacent Onondaga County property on the groundwater flow patterns west of the site; and

3. Provide data necessary to evaluate the groundwater collection and treatment system IRM.

2.2.1 Deep Monitoring Well MW-6D

A deep monitoring well (MW-6D) was installed downgradient of the former UST area adjacent to the existing shallow monitoring well MW-6S using a track-mounted Ingersol Rand A-300 drill rig. MW-6D was installed to monitor the deep sand unit downgradient of previously identified areas of VOC-impacted groundwater. The borehole for MW-6D was advanced using 8.75-inch inside diameter hollow-stem augers, and was continuously sampled in accordance with ASTM D1586. This created a minimum outside diameter borehole of 12 inches. Soil samples were screened with the PID as described in Section 2.1.1. At a depth of 20 feet, the auger plug was removed and the inside of the

auger flights were filled with cement bentonite grout via the tremie rod method of placement. This was followed by the removal of the augers from the borehole.

After removal of the augers, a 10-inch diameter steel casing was advanced through the grout to a depth of 20 feet, then pressed 1 foot further (into undisturbed soils) to a depth of 21 feet, which was approximately 7 feet into the clay and silt unit. After setting the steel casing, the tremie rods were again placed back down the casing to a depth of 20 feet, and the excess grout within the casing was flushed out with potable water. The grout was then allowed to set for approximately 64 hours. Subsequently, the boring was advanced with 4¼-inch hollow-stem augers inside the 10-inch steel casing (taking continuous split-spoon samples) to the required depth. Upon completion of the boring, a 3-foot long, 2-inch diameter, schedule 40, flush-joint PVC screen and solid PVC riser pipe was installed. The annular space around the screen was filled with silica sand to a depth of 2 feet above the top of the screen, followed by a 3-foot bentonite seal and then a cement bentonite grout via the tremie method to the ground surface. This double-cased method of drilling minimized the potential for inducing the migration of VOC-impacted groundwater from the shallow soils to the deep sand unit.

The installation was completed with a locking protective steel casing and surface concrete pad. The geologic boring log for MW-6D is included in Appendix A. After 24 hours, MW-6D was developed by bailing and submersible pumping in accordance with the NYSDEC-approved RI/FS Work Plan and the procedures described in Section 2.2.6.

2.2.2 Monitoring Well Couplets

Three monitoring well couplets (MW-16A and MW-16B; MW-17A and MW-17B; MW-18A and MW-18B) were installed near existing monitoring wells MW-4S, MW-10, and MW-11, respectively. As shown in Table 1, the monitoring well couplets consisted of a shallow monitoring well (A series) screened at a depth interval from approximately 2 feet below the ground surface to approximately 10 feet below the ground surface, and a deeper well (B series) screened at a depth interval from approximately 12 to 21 feet below the ground surface. These wells were installed to evaluate the depth and alignment of the groundwater collection and treatment system IRM (described in Section 4.3). The shallow wells were designed to screen the interval to be intercepted by the collection trench, while the deeper wells were designed to screen the interval immediately beneath the collection trench.

Each of these wells were advanced using 4¼ -inch hollow-stem augers attached to the track-mounted drill rig. Continuous soil samples were obtained from each boring by driving the 2-foot long split-spoon sampler. Each soil sample was characterized for soil type, color, texture, grain size and moisture content, and was screened for the presence or absence of VOCs utilizing the PID. Upon reaching the target depths, a 2-inch diameter

well screen and appropriate length riser, was installed. The annular space of the wells was filled with silica sand to a depth of 2 feet above the top of screen, followed by a 2-foot thick bentonite seal and cement bentonite grout.

The wells were completed at ground surface with a protective steel casing or flush-mount enclosure and concrete pad. The geologic boring logs for these wells are included in Appendix A. After 24 hours, each well was developed by bailing or submersible pumping in accordance with the NYSDEC-approved RI/FS Work Plan and the procedures described in Section 2.2.6.

2.2.3 Shallow Monitoring Well MW-19S

In order to help define the horizontal extent of groundwater impacted by VOCs in the northern portion of the site, shallow well MW-19S was installed on June 9, 1997. Drilling of this well was performed by Parratt-Wolff, utilizing 4¼-inch hollow-stem augers on a CME-75 truck rig. Continuous soil samples were obtained from each boring using a split-spoon sampler in accordance with ASTM D1586. Each soil sample was characterized for soil type, color, texture, grain size and moisture content, and was screened for the presence or absence of VOCs utilizing the PID.

The location of this well was designed to provide lithology of subsurface conditions at this portion of the site, as well as to provide a groundwater monitoring point for VOCs. Therefore, the boring was advanced to a depth of 16 feet below ground surface to determine the presence/absence of sand lenses. Subsequently, based on the absence of sand lenses, the lower interval of the boring was sealed with bentonite to isolate the well screen interval to the approximate intended interval of the groundwater collection and treatment system IRM collection trench (described in Section 4.3).

Upon completion of the boring, the bottom 5 feet was sealed with bentonite, and then a 2-inch PVC screen was installed within the silt and clay unit to intercept the water table. The annular space around the screen to a depth of 2 feet above the screen was filled with silica sand followed by a bentonite seal. The installation was completed with a concrete surface seal with a flush-mounted protective locking casing. The geologic boring log for MW-19S is included in Appendix A.

2.2.4 Replacement of Monitoring Well MW-11

During clearing activities for the construction of the groundwater collection and treatment system IRM, it was observed that MW-11 was damaged beyond repair. LMC proposed to abandon MW-11 and install a new replacement well (MW-11R) in a December 5, 1997 letter to NYSDEC. In accordance with NYSDEC's December 11, 1997 approval,

MW-11 was abandoned and replaced with a new monitoring well designated as MW-11R.

Monitoring well MW-11 was abandoned in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures" (Malcolm Pirnie, Inc., Revised October 1996). Specifically, MW-11 was abandoned by puncturing the bottom of the PVC casing and grouting the boring using the casing as a tremie while removing the casing.

The replacement well, MW-11R, was installed approximately 5 feet upgradient (northeast) of the abandoned well. The borehole for MW-11R was advanced to the same approximate depth as MW-11 using 4¼-inch ID hollow-stem augers. Continuous split-spoon samples were obtained through the screen interval using a split-spoon sampler in accordance with ASTM D1586. Each soil sample was characterized for soil type, color, texture, grain size and moisture content, and was screened for the presence or absence of VOCs utilizing the PID. Following completion of the borehole, the well was constructed similar to MW-11 with a 5-foot section of 2-inch diameter 0.10 slot PVC screen and riser. The geologic boring log for MW-11R is included in Appendix A.

MW-11R was developed on January 20, 1998, in accordance with the requirements of the NYSDEC-approved RI/FS Work Plan and the procedures described in Section 2.2.6, and will be sampled in the future in place of MW-11.

2.2.5 Piezometers

To assess groundwater flow patterns along the Onondaga County operated 48-inch diameter sanitary sewer line, three sets of piezometers (PZ-T1, PZ-T2, and PZ-T3) were installed in a line perpendicular to the sanitary sewer line. The purpose of these piezometers was to obtain water level elevation data to compare to site-wide groundwater elevation data to evaluate the possible influence of the sanitary sewer line on groundwater flow.

At each transect location, 4 piezometers were installed (12 piezometers total), as follows:

- East - approximately 8 feet east of the sewer line;
- West - approximately 8 feet west of the sewer line;
- Edge - along the eastern edge of the sewer line; and
- Center - installed above the sewer line.

The boreholes for the piezometers were advanced using 4¼ -inch hollow-stem augers attached to a track-mounted drill rig. The boreholes were drilled to a depth of approximately 5 feet into the zone of saturation, with the exception of the "Center"

piezometers whose depths were limited to the top of the sanitary sewer line. Borehole cuttings were observed and classified in the field with regard to texture and the presence of saturation. Following advancement of each borehole to the required depth, a 1¼ -inch piezometer was installed consisting of a 5-foot section of PVC screen and appropriate length riser. A sand pack was placed around the screen interval to prevent clogging of the installation, and a bentonite seal was installed at the surface to prevent surface infiltration. Boring logs for the piezometers are included in Appendix A.

Following the acquisition of water level measurements, all of the piezometers were abandoned with the exception of the three "East" installations. The abandonment procedures were the same as those described for MW-11 (Section 2.2.4). The three remaining piezometers have been retained for hydraulic monitoring of the groundwater collection and treatment system IRM.

2.2.6 Monitoring Well and Piezometer Development

Development of the monitoring wells and piezometers was completed in accordance with the NYSDEC-approved RI/FS Work Plan to ensure the hydraulic connection with their formation materials which may have been disturbed or affected during drilling and well construction activities. Development for each of the wells was considered complete after evacuating a minimum of 3 well volumes and achieving turbidity values of less than 50 NTU and a stabilization of temperature, pH, and conductivity each to within a range of 10 percent, or evacuating the well up to a maximum of 10 well volumes.

Prior to development, the bottom of the well was measured to confirm the as-built construction, and a static water level measurement was obtained to calculate the total well volume. A clean Teflon bailer, equipped with a new piece of polypropylene retrieval rope, was used to remove any heavier sediments, if present, and to evacuate slower recovering wells. A low-flow rate submersible pump was used to develop the faster recovering wells.

2.2.7 Reinstallation of Staff Gauges

A total of 6 staff gauges were installed along Sanders Creek (SG-1, SG-2, and SG-3) and the South Branch of Ley Creek (SG-4, SG-5, and SG-6) during previous investigations. These gauges had subsequently been either damaged or removed during high flow events. Five of these staff gauges (SG-1 through SG-5) were reinstalled into the stream bed to provide surface water elevation data for the site. It was determined that SG-6 was not needed due to its proximity to SG-4, and therefore SG-6 was not reinstalled. Where possible, a spike was placed in a tree stump above the newly-installed gauge (at SG-1, SG-4, and SG-5) to act as a duplicate measurement point.

2.2.8 Sampling and Analysis

In accordance with the NYSDEC-approved RI/FS Work Plan, monitoring wells MW-1D, MW-2D, MW-3D, MW-5D, MW-6D, MW-3S, MW-7S, MW-8S, MW-12, MW-13, MW-14, MW-15, MW-16A, MW-16B, MW-17A, MW-17B, MW-18A, and MW-18B were sampled and analyzed for TCL VOCs by ASP Method 95-4 in March 1997. In addition, MW-17B and MW-19S were sampled and analyzed for TCL VOCs by ASP Method 95-4 in June 1997. Monitoring wells MW-7 and MW-12 were sampled and analyzed for TCL SVOCs by ASP Method 95-2 in March 1997. Monitoring wells MW-7, MW-10, MW-11, and MW-12 were sampled and analyzed for TAL Metals by ASP Inorganic Methods to evaluate the inorganic quality of the groundwater. QC samples were collected by EMCON and analyzed in accordance with the NYSDEC-approved RI/FS Work Plan for QC by a third party validator (Environmental Quality Associates, Inc.). Sample logs for the above referenced RI samples are included as Appendix B.

2.3 Surface Water/Storm Sewer Outfall Investigation

The surface water and storm sewer outfall investigation activities described below were completed to achieve the following objectives of the NYSDEC-approved RI/FS Work Plan:

1. Assess the results of storm sewer rehabilitation IRMs by determining the presence or absence of infiltration of VOCs in stormwater discharges at the outfalls in Sanders Creek and in the South Branch of Ley Creek;

2. Define whether the migration of VOC-containing groundwater at the site has impacted surface water quality in the South Branch of Ley Creek; and

3. Assess the potential presence of VOCs in the sediment near two storm sewer outfalls.

2.3.1 Surface Water Sampling

On March 13, 1997, two surface water samples were collected for VOC analysis in the South Branch of Ley Creek at locations SW-4 and SW-6. The surface water samples were collected by direct immersion of the sample containers into the stream.

2.3.2 Sediment Sampling

On March 13, 1997, one upstream and one downstream sample of fine-grained sediments from the top 6 inches of the stream bed were collected near OF-01 (Sanders Creek; currently OF-01A since being replaced as part of an IRM completed in August of 1997), and OF-02 (South Branch of Ley Creek). These samples were collected using a stainless steel Wildco hand corer with a Lexan insert. Samples were extruded into a stainless steel pan. Samples to be analyzed for VOCs were collected directly from the extruded core. Subsequently, remaining sediment from the downstream location at each outfall was homogenized for total organic carbon analysis.

Upstream sediment samples were collected approximately 10 to 15 feet upstream of each outfall. Downstream samples were collected approximately 10 to 15 feet downstream of each outfall.

2.3.3 Storm Sewer Outfall Sampling

On March 13, 1997, storm sewer outfall dry-weather discharge water samples were collected for VOC analysis from OF-01 (Sanders Creek; currently OF-01A since being replaced as part of an IRM completed in August of 1997), and OF-02 (South Branch of Ley Creek). These samples were collected by direct collection using sample containers placed into the outfall's discharge flow.

2.4 Survey

Following the completion of RI field activities, the new monitoring wells, transect piezometers, and staff gauges were surveyed for both horizontal and vertical control by Modi Engineering and Land Surveying of Syracuse, New York. These data were used to develop the base map for the site (Drawing 1). Vertical data was used to determine groundwater and surface water elevations.

2.5 NYSDEC Split Samples

During RI field activities at the site, NYSDEC collected split samples of subsurface soils, groundwater, sediment, storm sewer discharge water, and surface water at select sample locations. NYSDEC provided analytical data for these samples to LMC on April 25, 1997 and on July 3, 1997. Comparison of the results from NYSDEC split samples indicated that the data was consistent with data obtained by LMC. NYSDEC split sample analytical data did not undergo third party validation. Since the data sets were generally consistent, and NYSDEC data was not subjected to validation, Section 3 of this RI Report presents the sample results obtained by LMC.

3 RESULTS

Site geology and hydrogeology have been previously characterized at the site and are described in the 1993 Remedial Action Plan and 1993 Remedial Action Plan Addendum. These investigations identified the stratigraphic units and groundwater flow relationships across the site. The areal distribution of the VOCs in the groundwater regime was also described. The following sections summarize and update as applicable, site characteristics relative to site geology, site hydrogeology and the nature and extent of VOCs in soil, groundwater, surface water, and sediment.

3.1 Site Geology

The site geology has been characterized based on data obtained from a total of 89 test borings. These locations are shown on Drawing 1. Drawing 2 and Drawing 3 present geologic cross-sections depicting the subsurface stratigraphy relationships across the site. Geologic logs for each soil boring, monitoring well, and piezometer location are presented in Appendix A.

In descending order, subsurface stratigraphic units have been classified as follows: fill; clay and silt (which includes discontinuous interbedded sand/silt/peat layers); clayey silt; glacial sand; and a basal glacial till unit. The following discussion provides an overview of the units encountered.

3.1.1 Fill Deposits

Fill materials found at the site consisted of predominantly asphalt macadam and a coarse-grained sand and gravel subbase which had a typical combined thickness of 2 feet. Borings completed on the Onondaga County property encountered approximately 6 feet of reworked clay and silt soils. Fill materials (asphalt) and/or soils were encountered in 58 of the 89 test borings. During construction of the groundwater collection and treatment system IRM, a surficial layer of discarded china, approximately 1-2 feet thick was encountered in an area along the collection trench alignment in the vicinity of monitoring wells MW-10, MW-11, and MW-12.

3.1.2 Clay and Silt Deposits

This stratigraphic unit consists mainly of glaciolacustrine deposits of clay and silt with occasional partings of fine sand. The clay and silt deposits range in thickness across the site from approximately 15 to 20 feet and are characterized as quite plastic. Below a depth of 10 feet, these deposits are almost viscous and lack cohesive strength. Mottling, which is indicative of seasonal water level fluctuations (alternating oxidized and reduced conditions), was observed in the upper few feet of this unit. The clay and silt unit in certain areas of the site contains discontinuous lenses and thinly-bedded silts and fine sands, fine to medium sands, and isolated beds of peat soils.

3.1.3 Clayey Silt Deposits

The clayey silt unit consists mainly of silt with varying smaller percentages of clay. Fine sands can be typically found as partings, while the basal portion of the unit develops a higher percentage of fine sand at several locations. Geologically, the stratigraphic distinction was based on visual observations and field textural classification according to a system modified after Burmister.

3.1.4 Glacial Sand Unit

Underlying the clayey silts is a continuous deposit of fine to coarse glacial sands with smaller percentages of fine gravels and silts. Some stratification was evident as fine sands and silts at the upper portions of the unit graded to coarser sands with fine gravels towards the bottom. The sand unit encountered ranged in thickness from 4 to 10 feet.

3.1.5 Basal Glacial Till Unit

A dense layer of red-brown till was encountered beneath the sand layer. The till consists of an unsorted, unstratified mixture of silt and clays, sands and gravels, and appears to be continuous across the site. The thickness of the till is unknown since all of the deep borings were terminated within the upper portion of the unit.

3.2 Site Hydrogeology

Groundwater occurs within each of the stratigraphic units discussed above. However, this investigation focuses on the flow regimes where there is the potential for migration of VOCs. For this site, the upper clay and silt unit is important since it is known to have received VOCs from the former UST area and the former solvent storage pad area. In addition, the sand unit underlying the clayey silt deposit is of interest since it is

potentially extensive and, relative to the silt and clay deposits, is more permeable and transmissive.

In order to define the direction of groundwater flow within these two units, water-level data were obtained from monitoring wells which were screened within each of the respective units. Table 1 summarizes monitoring well construction details. Table 2 summarizes the groundwater elevation data obtained during the RI field activities completed in March 1997, April 1997, and June 1997. These data were used to construct cross-sectional and plan view groundwater contour maps. Drawing 2 and Drawing 3 present cross-sections and a piezometric profile which depict the hydrologic relationships between the strata. Plan view maps are presented in Drawing 4, Drawing 4A, Drawing 5, and Drawing 5A for the shallow (clay and silt) and deep (sand) units, respectively.

3.2.1 Shallow Groundwater Flow System

The shallow groundwater flow system was characterized by the use of monitoring wells and piezometers screened at or just below the groundwater surface (MW-1S through MW-19S, and the sanitary sewer line transects PZ-T1, PZ-T2, and PZ-T3), in addition to staff gauges in Sanders Creek and the South Branch of Ley Creek which provided surface water elevation data. Depth to water varies with regional precipitation patterns and typically ranges from 1 to 3 feet below the ground surface. The groundwater elevation contour map constructed from elevation data obtained on June 16, 1997 (Drawing 4), depicts a northwesterly and semi-radial flow pattern with discharge toward the South Branch of Ley Creek (located to the west) and Sanders Creek (located to the north). These two surface water bodies serve as discharge boundaries for the shallow groundwater flow system. Horizontal hydraulic gradients ranged from about 0.01 ft/ft to 0.04 ft/ft across the site. Horizontal permeabilities encountered in the shallow system at the site range from 10^{-4} cm/sec down to 10^{-6} cm/sec.

Drawing 4A depicts the configuration of the shallow groundwater based on water level measurements obtained on April 23, 1997, which would be representative of spring conditions. Generally, the water table contours reflect a semi-radial flow pattern as described above. It is worthwhile to note that relative to the June 1997 groundwater contour configuration, the April 1997 conditions reflect a more pronounced northerly component of flow toward Sanders Creek. This could be attributable to the influence of seasonal water table fluctuations with the effect of higher groundwater elevations during the spring months inducing a more northerly flow component toward Sanders Creek. Alternatively, or in addition to seasonal effects, the differences between the April 1997 and June 1997 events could be a function of specific groundwater elevation control points north of Building 5 that were used to construct the groundwater contours. Groundwater elevation data from monitoring well MW-19S, installed on June 9, 1997, was used to

construct the June 1997 groundwater contour map. This additional control point was not used in the construction of the April 1997 groundwater contour map.

As part of the RI, an evaluation was conducted to determine if the 48-inch diameter sanitary sewer line that traverses the Onondaga County property (parallel to the South Branch of Ley Creek), was acting as a preferential pathway for shallow groundwater flow. In order to characterize localized groundwater flow in relation to the sanitary sewer line, piezometers were installed as described in Section 2.2.5.

Drawing 1 and Figure 2 provide the location of the piezometer transects. Table 2 summarizes the groundwater elevation data from the transects. A cross-section through PZ-T3, representing the hydraulic relationship between the shallow groundwater and the sanitary sewer line (based on April 1997 groundwater elevation measurements) is provided in Figure 3. Boring logs for the piezometers are presented in Appendix A.

The results of this investigation indicate that the sanitary sewer line is not acting as a preferential pathway for groundwater flow. The boring logs indicate that the subsurface soils used for backfill for the sanitary sewer line installation are all silts and clays typical of the native deposits at the site. This conclusion is based on those piezometers that were installed above and immediately adjacent to the sanitary sewer line. Specifically, piezometers designated as "Edge" were drilled within inches of the sanitary sewer line. The subsurface materials were all characterized as silts and clays. There were no indications of higher permeability bedding materials, such as sands or gravels, that would suggest a preferential pathway.

Figure 3 depicts a cross-section along PZ-T3 showing groundwater elevations obtained on April 23, 1997. Included along this transect is the groundwater elevation data from MW-10. This cross-section was chosen since it represents the greatest head drop between the upgradient and downgradient locations. The downgradient piezometer at this transect (T3 West) is also the piezometer nearest to the topographic decline to the South Branch of Ley Creek. There is an approximate 6-foot drop in elevation over less than 10 feet horizontally between the western-most piezometer and the Creek. Based on this observation, it is evident that the head drop across this transect is not due to any hydraulic influence of the sanitary sewer line, but rather to topographical changes across the site, and the hydraulic control of the South Branch of Ley Creek.

The groundwater elevation data do not suggest preferential flow along the sanitary sewer line. The elevation data are consistent with the overall configuration of the surficial groundwater flow regime at the site (Drawing 4). The surficial groundwater regime is topographically controlled and there is no evidence of any convergence of flow in the vicinity of the sanitary sewer line that would indicate a preferential pathway.

3.2.2 Deep Groundwater Flow System

Drawing 5 shows the direction of groundwater movement for the deeper sand unit based on water level elevation data obtained on June 16, 1997 from the installations completed within this unit (MW-1D, MW-2D, MW-3D, MW-5D, MW-6D, and PZ-1). As previously characterized in the 1993 Remedial Action Plan and 1993 Remedial Action Plan Addendum, the sand unit is confined by the overlying low permeability clay and silt unit.

Examination of the deep groundwater elevation contours shown on Drawing 5, indicates that groundwater in the deep sand unit flows in a north-northwesterly direction. The hydraulic gradient, as determined using June 16, 1997 data, is approximately 0.001 ft/ft. The horizontal permeability encountered in the sand system at the site is in the 10^{-2} cm/sec to 10^{-3} cm/sec range.

Previous groundwater elevation data were evaluated for the deep groundwater system. Drawing 5A depicts groundwater contours based on groundwater levels obtained on April 23, 1997. The directional component of flow is similar to that depicted for the June 16, 1997 event (Drawing 5).

3.2.3 Vertical Head Differences

The potential for contamination to move from the shallow flow system to the deeper flow system can be characterized by examination of the vertical water level elevation difference between the two flow systems, or vertical head differences. Vertical head differences were evaluated by installing monitoring wells as couplets or triplets screened in the shallow, intermediate, and deep hydrostratigraphic systems, respectively. Table 3 summarizes vertical gradients based on water elevations recorded in March 1992 (high precipitation period) and August 1992 (low precipitation period), and also presents values for June of 1997 for these same locations and the new monitoring well couplets (MW-6S/D, MW-16A/B, MW-17A/B, and MW-18A/B). Drawing 3 depicts the vertical gradient and presents a piezometric profile (based on June 16, 1997 water level data) in a northerly to southerly direction.

The June 1997 results are consistent with the findings presented in the 1993 Remedial Action Plan and 1993 Remedial Action Plan Addendum. With minor exceptions, the prevailing vertical gradient between the deeper versus shallower groundwater is upward. In other words, there is a tendency for groundwater to flow from deeper to shallower strata. Some localized reversals (i.e., flow from shallow to deeper strata) have been observed, which are probably due to low recharge periods.

3.3 Nature and Extent of Contamination

The following sections present the analytical results obtained from the soil, groundwater, surface water, storm sewer discharge water, and sediment sampling performed in accordance with the NYSDEC-approved RI/FS Work Plan, and describe the nature and extent of the contamination found at the site. Drawing 1 shows the sampling locations for the different media. Appendix C contains the validated analytical laboratory reports from the RI samples (Columbia Analytical Services, Inc.), and Appendix D contains the results of third party data validation (Environmental Quality Associates, Inc.).

The RI included collecting samples from the following media:

- Soil;
- Groundwater;
- Surface Water;
- Sediment; and
- Storm Sewer Discharge Water.

A discussion of each of the media is presented below.

3.3.1 Soil

As indicated in Section 1.2.3, IRMs were implemented at the site to address soil contamination in 1992. These IRMs are also discussed in Section 4.1 These IRMs involved the excavation of VOC-impacted soils in the former UST area and the former solvent storage pad area on the west side of Building 5, and a former metal shed on the southwest side of Building 5. Solvents were initially dispensed from 9 USTs and later from 55-gallon drums staged on an exterior concrete pad (Drawing 1). The metal shed was used for storage of maintenance equipment.

The objective of the soil removal operations was to excavate the majority of contaminated soils from the unsaturated zone and continue to remove soils from the upper saturated zone until groundwater conditions made excavation impractical.

Details of these remedial measures are found in the 1993 Remedial Action Plan. In summary, the IRM completed in 1992 was successful in removing the majority of VOC-contaminated soils from the site. Confirmatory sampling conducted following the removal of the contaminated soils indicated that only trace level residual VOCs remained in the solvent storage pad area, and in the unsaturated zone of the UST area. Higher residual VOC concentrations remained below the water table in the former UST area. Complete VOC removal was accomplished adjacent to the metal shed.

The objectives of the NYSDEC-approved RI/FS Work Plan with respect to soils, were as follows:

1. Define the vertical extent of VOCs in the former UST and solvent storage pad areas; and

2. Assess the potential presence of PCBs in the soil adjacent to the existing transformer pad on the north side of Building 5.

As part of the RI, soil samples were obtained in the area of the former solvent storage pad and in the area of the former USTs. This sampling was initiated from the bottom of the previous IRM excavations. All sampling was performed in the saturated zone. Soil samples, collected from within the former UST and solvent storage pad areas, were analyzed for VOCs and SVOCs. In addition, surficial and shallow subsurface soil samples were obtained at the transformer pad for analysis of PCBs. Table 4 summarizes the soil sample analytical data.

Former Underground Storage Tank Area

Soil samples were obtained, within the former UST area, at intervals of 18 to 20 feet below ground surface (BGS) and 22 to 24 feet BGS. These intervals are well within the saturated zone. The 18- to 20-foot interval represented the interval of soil exhibiting the highest level of organic vapors during field screening. The 22- to 24-foot interval represented the interval where a significant decrease in organic vapors was observed based on field screening. At the 18 to 20-foot interval, concentrations of VOCs were detected ranging from 1.1 ppm of 1,2-dichloroethane (1-2, DCA) to 280 ppm of trichloroethene (TCE). SVOCs detected were limited to trace levels of 2-methylphenol and 4-methylphenol at concentrations of 0.11 ppm and 0.16 ppm, respectively. Consistent with the much lower detection of organic vapors during field screening, concentrations of VOCs were more than an order of magnitude less at the 22 to 24 foot BGS interval, ranging from non-detect to 17 ppm for TCE. The extent of VOCs has been defined in the UST area.

Former Solvent Storage Pad

Analysis of the soil sample taken from beneath the backfill installed during the 1992 IRM indicated only trace levels of both VOCs and SVOCs. Most of the VOCs detected were found at estimated concentrations of less than 0.010 ppm. TCE and 1,1,1-trichloroethane (1,1,1-TCA) were detected at 0.019 ppm and 0.018 ppm, respectively. SVOCs detected were limited to trace levels (less than 0.25 ppm) of phthalates. The extent of VOCs has been defined in the former solvent storage pad area.

Existing Transformer Pad

Shallow hand auger borings were performed at the transformer pad on the north side of Building 5. In accordance with the NYSDEC-approved RI/FS Work Plan, these shallow soil samples (designated as SB-51, SB-52 and SB-53) were taken at worst case locations (i.e., at the immediate edge of the concrete pad, or beneath an expansion joint in the concrete pad). The samples were analyzed for PCBs. PCB Arochlor 1260 was detected at a concentration of 0.23 ppm in SB-52 (below the expansion joint in the concrete pad). No other PCBs were detected in these samples. Based on these results, no release of PCBs has occurred from these transformers which would require further action.

3.3.2 Groundwater

Twenty-eight groundwater monitoring wells have been installed across the site to characterize groundwater quality conditions in the shallow and deep groundwater. Previous site investigations have established that contamination was primarily limited to shallow groundwater, with the highest concentrations detected in the shallow wells installed in the vicinity of the former UST area and the former solvent storage pad area. Based on historical data and as discussed in the 1993 Remedial Action Plan, no evidence of non-aqueous phase liquid (NAPL) contamination was identified.

Overall, there has been no significant vertical migration of VOCs, relative to the high levels present in certain areas of the shallow system. The only apparent vertical migration was observed at the MW-1 triplet location. Based on sampling summarized in the 1993 Remedial Action Plan, the intermediate well (MW-1I) and deep sand well (MW-1D) showed relatively low levels of several constituents (1,1-DCA, 1,1-DCE, and 1,1,1-TCA) as compared to the shallow well (MW-1S). At the MW-2 triplet, no chlorinated VOCs were detected in MW-2I or MW-2D. No chlorinated VOCs were detected in MW-3D above New York State's Part 703 groundwater quality standards.

Characteristic groundwater contamination has previously been identified as chlorinated and aromatic VOCs. The most prevalent VOC detected in the groundwater is 1,1-DCA. Other site contaminants that have been detected historically include vinyl chloride, 1,1 dichloroethene (1,1-DCE), 1,1,1-TCA and the aromatics toluene, ethylbenzene, and xylenes.

The objective of the NYSDEC-approved RI/FS Work Plan with respect to groundwater was as follows:

1. Define the vertical and horizontal extent of groundwater impacted by VOCs.

Table 5 summarizes the groundwater analytical data for organics obtained from monitoring wells sampled during the RI. Sampling and analysis were conducted on

selected shallow wells which monitor the surficial groundwater regime, and the deep wells which are screened in the deep sand unit.

VOCs were detected at trace concentrations in the deep sand well, MW-1D. The highest concentration detected was for 1,1-DCA at 22 ppb followed by 1,1,1-TCA at 6 ppb. The only VOC detected in any of the other deep wells sampled (MW-2D, MW-3D, MW-5D, and MW-6D) was 1,1-DCA in MW-6D (at an estimated concentration of 0.9 ppb, below the detection limit). Drawing 5 shows the configuration of the groundwater contours in the deep sand unit. Based on the groundwater contours, monitoring wells MW-2D and MW-6D, are hydraulically downgradient from MW-1D. As such, groundwater in the deep sand unit at MW-1D would be intercepted at MW-2D and MW-6D. These downgradient locations show no, or extremely trace (i.e., below contract-required quantitation limit) levels of VOCs. These levels comply with New York State's Part 703 groundwater standards. The upward gradients observed within the impacted areas (Drawing 3 and Table 3) are expected to minimize migration of VOCs into the deeper sand unit. The overlying clay and silt units exhibit very low vertical hydraulic conductivity (k_v) characteristics. As discussed in the 1993 Remedial Action Plan, k_v values of 10^{-8} cm/sec to 10^{-9} cm/sec are characteristic of the overlying clays and silts. As presented in the March 1993 Remedial Action Plan, these samples contained primarily silts and clays (between 95.5 percent and 99.8 percent). If sandier materials were present in the samples, higher k_v values would be expected. These k_v values translate into very low vertical seepage velocities which would impede the vertical migration of VOC-impacted groundwater from the overlying units to the sand layer below.

Drawing 6 depicts the distribution of total VOCs in the shallow groundwater regime as detected in the shallow wells in March 1997. These shallow wells are screened to provide groundwater within about 10 feet of the ground surface. It should be noted that not all of the shallow wells were recently sampled. For example, MW-1S and MW-2S were not included in the scope of the RI because these installations are in close proximity to the former UST and solvent storage pad areas and have historically exhibited relatively high concentrations of VOCs.

As shown on Drawing 6, the areal extent of groundwater impacted by VOCs has been defined. For all practical purposes, there has been no significant migration of VOC-impacted groundwater beyond the Onondaga County sanitary sewer line which runs parallel to the South Branch of Ley Creek. MW-13 which is located downgradient of the sanitary sewer line, exhibited only trace levels of two VOCs (1,1-DCA and cis-1,2-DCE) at estimated concentrations of 2 ppb, and 0.8 ppb, respectively. Analytical results from MW-14 indicate that VOC-impacted groundwater has not migrated along a pathway beyond the South Branch of Ley Creek. The absence of VOC contamination at MW-14, which is on the western side of the South Branch of Ley Creek, is consistent with the groundwater flow characteristics as discussed in Section 3.2.1, which indicates that historically, the shallow groundwater regime in the area discharges toward the Creek.

While shallow monitoring wells near the former UST and solvent storage pad areas (MW-1S and MW-2S) were not sampled as part of the RI, historical groundwater quality data in these areas indicated the highest levels of VOCs nearest to the sources. The VOC isoconcentration map (Drawing 6) shows a rapid attenuation of contamination in downgradient flow directions. Attenuation with distance from the source areas is attributable to dilution via dispersive mechanisms and/or natural biodegradation. In addition, sorption to soils is likely to contribute to this attenuation. A review of the analytical database including the data presented in the 1993 Remedial Action Plan and 1993 Remedial Action Plan Addendum, indicates that chemical or biological degradation of the organic contamination may be taking place. This is based on the presence of chlorinated constituents other than 1,1-DCA, TCE and 1,1,1-TCA (i.e., the compounds that were believed to be used at the site) in the groundwater. Specifically, vinyl chloride has been detected in a number of shallow wells such as in MW-7S, MW-11, and MW-16A, that are in the downgradient flow direction from the former source areas. Chloroethane has also been detected in MW-11. These constituents are specific degradation products of 1,1-DCA, TCE, and 1,1,1-TCA. In addition, it is worthwhile to note that, whereas the aromatic hydrocarbons such as xylene and ethylbenzene were detected in the former source areas, these constituents are virtually absent in downgradient wells. This is additional supportive evidence that biodegradation is occurring since these substances are expected to biodegrade to carbon dioxide and water.

Table 6 summarizes the groundwater sample analytical data for metals obtained from monitoring wells sampled during the RI. Metals analyses were performed at selected monitoring wells for the purpose of characterizing treatment requirements for the groundwater collection and treatment system IRM. Metals have not been identified as constituents of concern at the site and no source areas have been identified that would result in metals impact to groundwater. Many of the metal constituents whose significant presence would suggest anthropogenic origin, including lead, mercury, and arsenic, were either not-detected or detected at trace concentrations. The metals that have been detected (e.g., aluminum, calcium, iron, magnesium, potassium, sodium, zinc, etc.) reflect ambient groundwater conditions reflective of the natural presence of these constituents in earth materials. The results of the metal analysis do not suggest any impacts related to site activities.

3.3.3 Surface Water

As part of the 1993 Remedial Action Plan Addendum, surface water samples were obtained from the South Branch of Ley Creek in areas immediately downgradient of the VOC-impacted groundwater zone as well as upstream and downstream of the site. These sampling locations (SW-1 through SW-7) are shown on Drawing 1. The purpose of the 1993 sampling was to determine if VOCs were present in the South Branch of Ley Creek as a result of groundwater discharge. The results of the analysis indicated the presence of

trace levels (up to 5 ppb) of TCE both upstream and downstream of the site. However, because the distribution of TCE was fairly ubiquitous, it was concluded that there was no appreciable increase in TCE levels or concentration gradients in the TCE, and that detections may have been attributable to background levels or to artifact.

The objective of the NYSDEC-approved RI/FS Work Plan with respect to surface water was to:

1. Define whether the migration of VOC-containing groundwater at the site has impacted surface water quality in the South Branch of Ley Creek.

During the RI, surface water samples were obtained from the South Branch of Ley Creek, at two sampling stations established in 1993, to re-confirm that groundwater discharge to the Creek is not impacting surface water quality.

Table 7 summarizes the surface water analytical data obtained. The location of the surface water samples are shown on Drawing 1. As was previously identified, trace levels of VOCs were detected in the upstream (SW-6) and downstream (SW-4) surface water samples. Both the upstream and downstream samples exhibited comparable concentrations. It is noted that the upstream sample contained slightly higher concentrations of all detected VOCs. Based on the analytical data, it is evident that the groundwater discharges to the South Branch of Ley Creek are not impacting surface water quality, re-confirming the conclusions presented in the 1993 Remedial Action Plan Addendum.

An important fate and transport mechanism relative to VOCs in surface water is volatilization, which is the tendency for a compound to partition into the air phase from the water phase. For estimating releases from water to air, the Henry's Law constant is a good indication of volatilization potential. This constant represents the partition coefficient that expresses the ratio of the chemical concentrations between air and water at equilibrium. Organic compounds with Henry's Law constants in the range of 10^{-3} atmospheres-meter^3 per mole (atm-m^3/mole) and larger can be expected to volatilize readily from water; those values ranging between 10^{-3} to 10^{-5} atm-m^3/mole are associated with significant, but lesser volatilization, while compounds with values less than 10^{-5} atm-m^3/mole volatilize from water only to a limited extent (Lyman, et al., 1990). All of the VOCs detected in the surface water have a Henry's Law constant greater than 10^{-4} atm-m^3/mole and are, therefore, expected to volatilize from surface water.

3.3.4 Sediment

The objective of the NYSDEC-approved RI/FS Work Plan with respect to sediment was to:

1. Assess the potential presence of VOCs in the sediment near two storm sewer outfalls.

Table 7 summarizes the results of the VOC analysis for sediment samples that were obtained upstream and downstream of the South Branch of Ley Creek and Sanders Creek outfalls. At the South Branch of Ley Creek outfall, all detected VOCs were at trace levels. For example, chloroethane was detected in the upstream sediment sample at a concentration of 11 ppb, while the downstream level was 21 ppb. Likewise, 1,1-DCA was detected at a concentration of 10 ppb and 22 ppb at the upstream and downstream locations, respectively. At the Sanders Creek outfall, trace levels (estimated concentrations, below detection limits) of VOCs were identified in both upstream and downstream samples.

There was no identifiable impact to sediment quality based on a comparison of upstream and downstream sediment samples at the Sanders Creek outfall. The sediment quality data at the South Branch of Ley Creek outfall do not suggest that the sediments in the South Branch of Ley Creek have been adversely impacted from the discharges from the outfall to the Creek. The reasons for this are as follows:

- The differences in the individual detected VOC concentrations between the sediment sample obtained upstream of the South Branch of Ley Creek outfall, and the sediment sample obtained downstream from the outfall were very minor (i.e., less than a factor of three). The individual VOC concentration differences between the upstream and downstream samples were only several parts per billion.

- There is no correlation between the quality of the dry weather discharges from the storm sewer outfalls and VOC concentrations in the sediments. VOC concentrations in the dry weather discharge from the storm sewer outfall were highest at Sanders Creek (i.e., higher than the VOC concentrations detected in the dry weather discharge in the storm sewer outfall into the South Branch of Ley Creek). Therefore, higher VOC concentrations would be anticipated in the sediment sample downstream of the Sanders Creek outfall if there were a correlation between the dry weather discharge and VOC concentrations in the sediments. However, no impact to sediment quality is indicated by the data at this location.

It is apparent from both the sediment and the surface water sampling results (Section 3.3.3) that there are upstream sources of VOCs in the South Branch of Ley Creek.

Downstream movement of the sediments would only take place via erosion and redeposition processes. Such processes would disperse the sediments resulting in even lower sediment VOC concentrations downstream. The VOCs detected in creek sediments in Sanders Creek and in the South Branch of Ley Creek represent negligible mass, with respect to any further downstream migration.

3.3.5 Storm Sewer Outfalls

The objective of the NYSDEC-approved RI/FS Work Plan with respect to storm sewer outfalls was to:

1. Assess the results of storm sewer rehabilitation IRMs by determining the presence or absence of infiltration of VOCs in stormwater discharges at the outfalls in Sanders Creek and in the South Branch of Ley Creek.

Samples of dry weather flow from storm sewer outfalls in Sanders Creek and the South Branch of Ley Creek were collected to assess results of storm sewer rehabilitation IRMs.

Table 7 summarizes the storm sewer outfall analytical data obtained. Analysis of the storm sewer outfall samples for the South Branch of Ley Creek (OF-02) and Sanders Creek (OF-01) indicate that there were minor contributions of VOCs from infiltration of groundwater to the storm sewer system. For the South Branch of Ley Creek outfall, several low-level VOCs were detected, with the highest concentration being 1,1-DCA at 29 ppb. This dry-weather flow is not expected to adversely impact the South Branch of Ley Creek. This is supported by the surface water results discussed in Section 3.3.3. Downstream surface water sample SW-4 (approximately 900 feet downstream of the outfall), did not exhibit VOC concentrations greater than those detected in the upstream sample location.

Somewhat higher VOC levels were detected in the Sanders Creek outfall (OF-01). Specifically, vinyl chloride, 1,1-DCA and cis-1,2-DCE were detected at estimated concentrations of 87 ppb, 140 ppb, and 42 ppb, respectively.

As discussed in Section 4 of this document, due to the results of the RI field activities, a storm sewer system IRM was completed in August 1997. This IRM has further minimized VOC-impacted groundwater infiltration to the South Branch of Ley Creek storm sewer system, and eliminated all groundwater infiltration to the Sanders Creek storm sewer system.

4 INTERIM REMEDIAL MEASURES (IRM)

This Section of the RI report provides a summary of IRMs conducted at the site prior to commencement of RI field activities, as well as IRM activities conducted based on the results of the RI sample analyses (i.e., additional storm sewer rehabilitation) and the groundwater collection and treatment system IRM.

4.1 Previous IRMs

Previous use of the site by GE included the storage of solvents in nine USTs, and a solvent storage pad for dispensing of virgin paint solvents and thinners. Subsurface investigations performed in 1992 indicated that VOC-impacted soil and groundwater were present at the site, primarily along the western site boundary, adjacent to Building 5. Three source areas were identified including the former USTs, the solvent storage pad, and an area adjacent to a former metal shed at the southwest corner of Building 5. In 1992, IRMs were completed to remove VOC-impacted soils from these areas. Groundwater which accumulated in the excavations was also removed from the site.

Confirmatory sampling indicated that the majority of VOC-impacted soils in the former UST area and the former solvent storage pad area were removed, and that complete VOC removal was performed adjacent to the former metal shed. A Remedial Action Plan was prepared in 1993, which recommended collection and treatment of groundwater to prevent migration of residual VOCs in groundwater towards the South Branch of Ley Creek. The 1993 Remedial Action Plan was proposed to control the areal migration of impacted groundwater.

During the process of evaluating the migration pathways for VOC-impacted groundwater, it was recognized and confirmed that certain site storm sewers were acting as a preferential pathway for migration of VOC-impacted groundwater. The original storm sewer system at the site consisted of bell and spigot clay tile piping with brick catch basins. This type of construction typically allows infiltration of groundwater into the piping and catch basins. In 1992 and 1993, IRM activities (detailed in the 1993 Remedial Action Plan and the 1993 Remedial Action Plan Addendum) related to the storm sewer system were completed to prevent the infiltration of groundwater from VOC-impacted areas into the storm sewers. These activities included abandonment and relocation of catch basins, grouting of existing sections of clay tile piping, and installation of new

storm sewer piping. Post-IRM sampling of the outfalls confirmed that the IRMs were successful in mitigating the infiltration of VOCs to the storm sewer system at that time.

4.2 Additional Storm Sewer Rehabilitation

Subsequent storm sewer outfall sampling (performed in March 1997 as part of this RI) indicated that low-level VOCs were present in the Sanders Creek and the South Branch of Ley Creek storm sewer outfalls. This information was utilized to develop the Storm Sewer IRM Work Plan (EMCON, June 1997), which was approved by the NYSDEC. The Engineering Certification Report for the IRM (EMCON, November 1997) details the construction work completed and the results of the first round of post-construction sampling.

4.2.1 Sanders Creek Outfall (OF-01)

Laboratory data from the March 1997 sampling indicated that a total of 269 ppb of VOCs were detected at the Sanders Creek outfall. The compounds detected in the OF-01 outfall sample (vinyl chloride, 1,1-DCA, and 1,2-DCE) were also detected in MW-16A. MW-16A is located adjacent to the storm sewer line between catch basins CB-3 and CB-4. This segment of storm sewer was not replaced during IRMs conducted at the site in 1992 and 1993. The construction of this segment of storm sewer was bell and spigot clay tile pipe which allowed infiltration of groundwater into the storm sewer system.

To address discharges to Sanders Creek, LMC completed the following IRM activities in August 1997:

1. Approximately 320 feet of the bell and spigot clay tile pipe from CB-3 to OF-01 was abandoned and sealed (pressurized grout);

2. Brick catch basin (CB-4) was replaced with a new catch basin CB-4A near the previous location of CB-4;

3. A new catch basin (CB-20) was installed;

4. Outfall (OF-01) was abandoned and a new outfall (OF-01A) was constructed; and

5. New watertight piping was installed to connect the system catch basins to the new outfall.

No post-construction sample was obtained from the outfall to Sanders Creek (OF-01A), due to the absence of dry weather flow in September 1997. The observation by EMCON

and NYSDEC personnel of the absence of dry weather flow at OF-01A confirms that the IRM was successful in preventing infiltration of groundwater to the northwestern site storm drainage system during the September 1997 sampling period. Post-construction sampling will be performed again in the Spring of 1998 to re-confirm the effectiveness of the IRM.

4.2.2 South Branch of Ley Creek Outfall (OF-02)

Laboratory data from the March 1997 sampling indicated that a total of 44 ppb of VOCs (1,1-DCA, 1,2-DCE, 1,1,1-TCA, and TCE) were detected at this outfall. A significant portion of the storm sewer system was replaced as part of an IRM conducted in 1992 and 1993, to eliminate the infiltration of impacted groundwater into the system. Observations of the catch basins in April 1997 indicated that groundwater appeared to enter the system through a seam in catch basin CB-5 and through the bell and spigot clay tile storm sewer lines east and south of CB-7. Although CB-5 was replaced as part of the previous IRM, settling had separated a seam in the manhole which resulted in groundwater seepage into the new system. The portion of the storm sewer system east and south of CB-7 was not replaced during the 1992 and 1993 IRMs.

To address discharges to the South Branch of Ley Creek, LMC replaced CB-5 with a one-piece (seamless) manhole which will not be subject to future separation due to settling. The old system, east and south of CB-7, is upgradient of the former metal shed, UST area, and solvent storage pad, and therefore, no further storm sewer replacement was attempted.

Post-construction dry weather flow samples (infiltrating groundwater only) were collected from the outfall to the South Branch of Ley Creek (OF-02) in September of 1997. As shown below, the sample results indicate lower concentrations of VOCs in discharges to the South Branch of Ley Creek outfall, as compared to RI samples collected in March 1997 (prior to IRM construction).

Compound	March 1997 (Pre-IRM) Concentration (ppb)	September 1997 (Post-IRM) Concentration (ppb)
1,1-Dichloroethene	2 UJ	0.8 J
1,1-Dichloroethane	29 J	12
c-1,2-Dichloroethene	2 J	0.5 J
1,1,1-Trichloroethane	5 J	2
Trichloroethene	8 J	0.5
Total Detected	**44**	**15.8**

Notes "J" denotes an estimated value, "U" denotes a compound which was not detected at the stated detection limit.

The post-IRM sample data have not been reviewed by a third party data validator and, therefore, have not been included in the data tables and appendices of this report. The analytical report, including this data, was provided in the Engineering Certification Report for the IRM (EMCON, November 1997).

The concentration of total VOCs detected in the post-construction sample from OF-02 was approximately 35 percent of the concentration of VOCs detected in the March 1997 sample. While VOCs persist in dry weather flow from this portion of the storm sewer system, their concentrations appear to have decreased as a result of the IRM (i.e., catch basin CB-5 replacement).

4.3 Groundwater Collection and Treatment System

The groundwater collection and treatment system for the site has been designed to intercept and collect groundwater containing residual VOCs from its natural flow path towards the South Branch of Ley Creek and Sanders Creek.

The system includes a collection trench and sump from which groundwater is pumped to the treatment system. The collection trench is approximately 830 feet in length, as shown in Figure 4. The collection trench discharges into a collection sump located north of Building 5. The collected groundwater is then treated prior to discharge to Sanders Creek. The design of the collection trench and treatment system is briefly described below. Details regarding the system are provided in the IRM Work Plan for the Groundwater Collection and Treatment System (EMCON, November 1997).

4.3.1 Groundwater Collection Trench

The conceptual design of the collection trench presented in the 1993 Remedial Action Plan Addendum was based on subsurface data from test borings and monitoring wells that paralleled the planned collection trench alignment. To prepare the final design, eight additional monitoring wells were installed during the RI to confirm the vertical and horizontal extent of VOCs in groundwater in the vicinity of the proposed collection trench alignment, and to add details regarding the depth and continuity of sand lenses that were to be intercepted. These monitoring wells were installed as part of the RI performed in accordance with the NYSDEC-approved RI/FS Work Plan. The collection trench layout specifically intercepts those areas where sand lenses have been confirmed as the pathways for VOC migration.

Based on evaluation of the test boring logs and groundwater sampling results obtained in support of this design, the depth, alignment and length of the collection trench were modified to intercept the affected subsurface media. Figure 4 shows the final alignment

of the collection trench. The trench has a total length of approximately 830 feet, with a collection pipe slope of 0.2 percent. Based on variations of the surface elevation, the final depth of the collection trench ranges from 8 to 14 feet bgs. The groundwater sample results from the RI (Table 5) confirm that there were no detectable VOCs present in groundwater at either end of the trench (MW-12 and MW-19S), or below the base elevation of the trench (MW-16B, MW-17B, and MW-18B) prior to the trench construction. Accordingly, the groundwater collection trench will intercept VOC-impacted groundwater moving toward Sanders Creek and the South Branch of Ley Creek.

4.3.2 Groundwater Treatment System

A brief description of the groundwater treatment system is presented below. Details regarding the system design are provided in the IRM Work Plan for the Groundwater Collection and Treatment System (EMCON, November 1997).

The pumps within the collection sump transfer groundwater to a common header pipe located within the treatment building. The header pipe discharges into a diffused aeration tank air stripper to remove VOCs. The effluent from the air stripper flows by gravity to a transfer tank. From the transfer tank, the groundwater is pumped through bag filters. The treated water flows by gravity to a catch basin (CB-20) and through storm sewer piping to Sanders Creek (Outfall OF-01A).

The collection trench is designed to intercept and remove groundwater containing residual VOCs. The nature and extent of VOCs in site groundwater is discussed in Section 3 of this report. As part of the RI, samples of groundwater were also collected for metals analysis from monitoring wells within the collection area to identify the inorganic characteristics of the groundwater which would be treated. These results are presented in Table 6. Anticipated concentrations of metals and suspended solids in the treatment system influent were estimated from these data. Based on a comparison of the estimated influent concentrations for these parameters to NYSDEC effluent requirements for the system, removal of solids was also required prior to discharge to reduce certain metals concentrations (i.e., iron).

5 PRELIMINARY RISK ASSESSMENT

The scope of the risk assessment (RA) for the site has been developed by LMC in conjunction with NYSDEC, the New York State Department of Health (NYSDOH), and the United States Environmental Protection Agency (USEPA) through a series of correspondence and meetings.

5.1 Introduction and Scope

The RI process includes a RA to evaluate the potential for hazards associated with contaminants of concern (COCs) at the site. The human health component of the RA assesses risks to public health, while the ecological RA (ERA) addresses the potential for site-related contamination to impact biota. Risks are evaluated in the context of site use by humans and wildlife, available habitat, and local/regional conditions.

The human health RA will follow the guidelines established by the EPA in performing assessments for RI/FS sites (USEPA, 1989, 1990, 1992). The ERA process, developed in cooperation with and approved by the NYSDEC, the NYSDOH and the USEPA, will use a combination of the NYSDEC's Fish and Wildlife Impact Analysis (FWIA) for Inactive Hazardous Waste Sites (1992) and USEPA's ERA guidance for Superfund sites (1997). The initial step will be based on the FWIA Step I, with additional input from USEPA's ERA guidance Step 1. As part of this step, standards, criteria and guidelines (SCGs) relevant to the site will be identified. The assessment will then proceed using USEPA ERA's Steps 2 through 7. The need for completing subsequent components of the ERA (FWIA Steps III through V and USEPA ERA Step 8) will be determined during later phases of the RI/FS process.

This preliminary RA, presented as part of the draft RI Report, includes the following:

1. A Site Description, including:
   - A general description of land use in the area; and
   - An inventory of ecological resources and vegetative cover mapping.
2. A Pathway Analysis, including:

- An evaluation of all potential exposure pathways and routes, and identification of those that are potentially complete;
- Identification of SCGs; and
- Selection of COCs for both the human health RA and ecological RA.

Following resolution of coordinated NYSDEC, NYSDOH and USEPA comments on the draft RI Report, the remaining steps of the RA will be completed and submitted with the final RI Report.

5.2 Site Description

The following site characterization survey incorporates the components of FWIA Step I. The purpose of the survey was to evaluate the site and nearby surrounding area, to document the occurrence of wildlife species and habitat present at the site, and to examine the potential pathways for contamination migration to affect fish and wildlife species found in the area.

A site visit was conducted on August 14, 1997 to observe the environmental setting of the site. On-site and nearby off-site areas were visually inspected for observation of human activity and wildlife. Human use of the area was evaluated based on the accessibility and appeal of the area, and recent use evidenced by footprints, fresh foot pathways or recently deposited trash. Avian species were identified by sight, song, or calls. Mammals were identified by sight, nest, burrow, track or scat. Fish were observed by sight. Plant species were also identified along with the location at which they were present.

Biological information regarding the site was also gathered by contacting various Federal and State agencies, including the NYSDEC, the United States Department of Agriculture (USDA) and the United States Fish and Wildlife Service (USFWS), as follows:

NYSDEC	Division of Environmental Permits
NYSDEC	Wildlife Resource Center/National Heritage Program
NYSDEC	Freshwater Wetlands Map
NYSDEC	Regional Bureau of Fisheries
USDA	Soil Conservation Service, Soil Survey
USFWS	National Wetland Inventory (NWI)
USFWS	Cortland Field Office

Information obtained from these offices regarding the environmental setting at the site is included as Appendix E.

The site consists of former manufacturing buildings and a paved parking lot. The site is bordered to the north by a small strip of herbaceous vegetation, Sanders Creek, and Route 298 (a 4-lane highway). Other boundaries are formed to the east by Deere Road, to the south by industrial/commercial buildings, and to the west by a wooded corridor and the South Branch of Ley Creek. This corridor varies in width along the South Branch of Ley Creek from approximately 200 feet across (near Route 298), to up to 800 feet across near the southern site boundary.

As described in Section 4, several IRMs have been completed at the site, including removal of VOC-impacted soils and installation of a groundwater collection and treatment system. The treatment building is located near the northwest corner of Building 5.

5.2.1 Stream Classification

Both the South Branch of Ley Creek (NYSDEC Waters Index No. P154-3-2) and Sanders Creek (NYSDEC Waters Index No. P154-3-3), which form the west and north site boundaries, are designated Class C waters by the NYSDEC in the sections adjacent to the site. Information from the NYSDEC Region 7, Division of Permits, has indicated that the South Branch of Ley Creek is a Protected Stream Area north of Route 298 near NYSDEC Wetland SYE-6. Sanders Creek flows into the South Branch of Ley Creek immediately north of the site. The South Branch of Ley Creek continues north approximately 1,500 feet to its confluence with the North Branch of Ley Creek, where Ley Creek begins. Ley Creek flows west to Onondaga Lake approximately 5 miles downstream of the site.

5.2.2 Human Site Use

Due to its small size, isolated nature, and presence between manufacturing buildings and highways, the vegetated areas along the South Branch of Ley Creek and Sanders Creek near the site offer no particular recreational value to humans. The nearest residential area is over ½ mile to the south.

During the site inspection, there was no evidence of recent use of the area by the public. Trash observed near the creek banks appeared to have been washed downstream from upstream sources.

5.2.3 Vegetation

The site, and areas along the South Branch of Ley Creek, represent highly disturbed areas that appear to have historically been filled and altered by industrial land development.

Further impacts have occurred due to powerlines, highways, railroads, and sanitary sewer line construction. The United States Geological Society (USGS) Soil Survey for Onondaga County indicates that most of the site is urban land (filled), with areas along Route 298 mapped as cut and fill lands. Both of these designations indicate severe filling and/or soil movement, which would significantly alter vegetative composition.

A land use/vegetative cover map is included as Figure 5. Plant species identified in the vicinity of the site are indicated on Table 8. Mature tree species along the South Branch of Ley Creek include black willow (Salix nigra) and eastern cottonwood (Populous deltoides) with lesser amounts of red maple (Acer rubrum), black ash (Fraxinus nigra), and slippery elm (Ulmnus rubra). Understory tree species included box elder (Acer negundo), wild raisin (Viburnum cassinoides), silky dogwood (Cornus amomum), and others.

There are no trees or shrubs along Sanders Creek west of Deere Road before the confluence with the South Branch of Ley Creek. Herbaceous vegetation consists of typical old field species in open, unforested areas. Along Sanders Creek, loosestrife (Lythrum salicaria) is dominant. No submerged or stream bed vegetation was noted in any area. All vegetation was restricted to the stream banks and areas topographically elevated above the Creek.

5.2.4 Aquatic Insects

Although not abundant, in several areas along the South Branch of Ley Creek some aquatic insects, such as water striders (Gerris conformis), whirligig beetles (Gyrinidae spp.) and others were noted. Tracks of crawling benthic species were noted on several mud banks. Dragonflies were present throughout.

5.2.5 Fish

Fish (minnows) were noted throughout the South Branch of Ley Creek. Their distribution was very spotty, and is likely attributable to physical disturbances such as channelization, sediment particle size characteristics, and other physical parameters of the stream. Two large groups of fish were noted just upstream of the site north of the Old Court Street Road crossing, and in the vicinity of the rail spur that enters the southern end of the site.

No fish were observed in Sanders Creek, although the water was extremely turbid and visibility was minimal.

Contacts with the NYSDEC (Appendix E) have indicated that no significant fishery resources are present in the subject streams.

5.2.6 Avian Species

Avian species noted in the study are present in Table 9 (Wildlife Species).

Several avian species were present due to the grassland/old field habitat along Sanders Creek. These species include sparrows (Spizella spp.), robins (Turdus migratorius), and starlings (Sturus vulgaris).

Other species noted along the South Branch of Ley Creek were more typical of wooded areas. Noteworthy were two species of piscivorous birds along the South Branch of Ley Creek: Green heron (Butorides virescens) and belted kingfisher (Megaceryle alcyon). Green heron utilize varied habitats including ponds, lakes, streams, marshes, sloughs, and wet meadows. Their habits and behavior can be colonial or solitary in their nesting or feeding activities. Their feeding habits include both stand and wait or slow walk techniques. Shallow water (flowing), shallow bottom or wetland vegetation, are common substrates from which heron feed. Major food groups include small fish, crustaceans, mollusks, terrestrial and aquatic insects, reptiles, amphibians, spiders, and leeches. Kingfishers breed near ponds, lakes, rivers, and streams that contain fish. Fish are a staple of this species, but they will also feed on crayfish, insects, mollusks, and tadpoles. Prey is taken by perching and diving into shallow water (less than 2 feet). The availability of small fish and suitable perches, specific habitat features that are favorable to both species, are likely to exist in the area of the site. However, the high turbidity of the water would discourage use by these birds.

5.2.7 Mammals

Mammalian species noted in the study area are presented in Table 9 (Wildlife Species). Four mammal species were noted during the field survey. Raccoon (Procyon lotor) tracks were observed in the mud banks of the South Branch of Ley Creek just north of the rail spur crossing. Woodchuck (Marmota monax) borrows were noted in the old field areas near the confluence of Sanders Creek and the South Branch of Ley Creek. One gray squirrel (Sciurus carolinensis) was observed on the mowed lawn area just north of the site, and one muskrat (Ondatra zibethicus) was observed in the South Branch of Ley Creek north of the site (downstream), and just north of the Route 298 traffic circle west of the site in NYSDEC Freshwater Wetland SYE-6. Muskrat are also likely to occur along other sections of the South Branch of Ley Creek closer to the site.

Although, not noted, other species likely to be found include mice, voles, shrews, and bats. Due to the limited extent of natural vegetation, the congested traffic patterns of the area roads and the degree of human presence, large mammals (e.g., deer, fox, etc.) are not expected to utilize the site or the surrounding area as habitat, although they could pass through the area using the vegetated area as a travel corridor.

5.2.8 Endangered, Threatened, or Special Concern Species

Contacts to both the USFWS and the NYSDEC have indicated that no Endangered, Threatened, or Special Concern Species are known to occur on or nearby the site (Appendix E).

5.2.9 Wetlands

Based on a review of available NYSDEC and NWI Maps, there are no Federal- or State-Regulated wetlands on-site. The NWI Map is included as Figure 6 and the NYSDEC Wetlands Map is included as Figure 7. The closest NYSDEC Wetland, SYE-6, is located 1,200 feet north (downstream) of the site. The next closest NYSDEC Wetland is SYE-29, approximately 2,400 feet southeast (upstream) of the site along the South Branch of Ley Creek.

Wetland SYE-6 has been divided into several smaller hydrologically linked areas. Major influences on SYE-6 have been industrial/urban development, road construction including the New York State Thruway, powerlines, and several smaller roads. Parts of the wetland included forested as well as emergent wetland components. The emergent areas are largely vegetated by phragmites.

The NWI map indicates that the South Branch of Ley Creek has been mapped as a ravine, lower-perennial, permanent open water wetland. This definition translates to a permanent flowing water system confined in channels. The gradient is low, and water velocity is slow. Much of the stream bottom is expected to be silt and clay. Organisms, typically able to survive in the substrate, must be able to tolerate low oxygen concentrations. Visual inspection of the stream confirms this classification.

5.2.10 Fish and Wildlife Resource Value

The site has been and is intended to be used as an industrial site. Therefore, the developed portion of the site does not offer any value to wildlife or potential residential use for humans.

Due to development impacts on Sanders Creek in the site vicinity, this creek offers limited value as potential wildlife habitat. Sanders Creek offers no value to humans except for stormwater conveyance and flood control.

Due to preservation of remnant mature trees along the South Branch of Ley Creek, this area does provide some value to wildlife, primarily avian species. The area serves as a corridor/greenway linking other areas. Due to configuration and size the area is not likely to be a critical breeding, nesting, or feeding area for any specific species, but does

provide suitable habitat to meet the criteria for all of these activities for certain individuals of a larger population. Primary impacts to this area have resulted from habitat alterations due to development pressure, such as filling, channelization, utility construction, rail line maintenance, and road construction.

5.3 Pathway Analysis

Field observations and regional information, along with information from current and previous environmental investigations, are used in the pathway analysis. The pathway analysis identifies the mechanisms by which human or ecological biological receptors may be exposed to site-related contaminants. USEPA guidance defines an exposure pathway as a mechanism by which a contaminant may travel to a receptor, and an exposure route as the point of entry or contact between the receptor and the contaminated medium. Although developed for ecological assessments, these definitions are useful for both the human health RA and the ERA.

The pathways and COC evaluations for the RA are based on the assessment of the nature and extent of contamination and fate and transport issues associated with the site as presented in Section 3. Contaminated media at the site include: shallow groundwater, subsurface soil, surface water and sediment. If a medium has no potential for contact with receptors, the exposure pathway is considered incomplete. An ecological receptor is defined as a plant or animal population, community, habitat, or sensitive environment. A public health receptor is a human individual or population. COCs for the RA are then selected based on the complete routes and pathways for site-related contaminants.

The general contaminant pathways are discussed in the Pathway Overview (Section 5.3.1). Actual exposure routes are then identified based on the presence of potential receptors that could contact affected media. Identification of complete exposure routes is based on the site-specific evaluations that appear for human health and ecological endpoints in Sections 5.3.2 and 5.3.3, respectively.

5.3.1 Pathway Overview

As presented in Section 3.3, media at the site that contain site-related COCs are soil, groundwater, surface water and creek sediment. General characteristics of the contamination in each of these media is discussed below.

Soil

It should be noted that, as described in Section 3.3.1, contaminated soils in the unsaturated (vadose) zone and shallow saturated zone have been removed as part of previous IRMs. Therefore, there are no existing contaminant migration pathways

associated specifically with soils. Residual subsurface soil contamination in the saturated zone is addressed by the groundwater pathway discussion that follows.

Groundwater

The nature and extent of groundwater contamination is described in Section 3.3.2. Characteristic of groundwater contamination at the site is the presence of chlorinated and aromatic VOCs, principally 1,1-DCA. The highest levels are near identified former source areas (i.e., the UST area and the solvent storage pad area), with rapid attenuation downgradient.

Contamination is almost entirely limited to the shallow (upper clay/silt) unit, which provides a pathway for horizontal migration through sand lenses. Migration to the deeper (sand) unit is minimized by the presence of upward gradients and low vertical permeability of the overlying clay and silt units.

At the site, the South Branch of Ley Creek and Sanders Creek serve as a discharge zone for shallow groundwater. However, based on the presence of the groundwater collection and treatment system IRM and the general absence of contamination beyond it, VOCs will not reach either creek via groundwater discharge.

Historically, the storm sewer system served as an artificial contaminant transport pathway to surface water through infiltration of VOC-impacted groundwater and subsequent discharge at the outfalls. The IRMs for the storm sewer system (described in Section 4) have eliminated the infiltration of groundwater to the storm sewer system that discharges to outfall OF-01A to Sanders Creek (as evidenced by absence of dry-weather flow). Dry-weather discharge to the South Branch of Ley Creek (OF-02) still occurs. This discharge shows lower concentrations of COCs than it did prior to the improvements, but the pathway remains complete.

Volatilization of VOCs from shallow groundwater to air is a complete pathway. Surficial soil gas measurements completed in 1992 and discussed in the 1993 Remedial Action Plan have confirmed that trace levels of VOCs are migrating from the subsurface to the surface within the area encompassed by the groundwater collection and treatment system. The presence of pavement eliminates this pathway within the on-site areas. However, volatilization could potentially occur in the area of the corridor between the paved areas and the South Branch of Ley Creek

Surface Water

The only existing point of entry of site-related contamination to surface water is via groundwater infiltration discharges at OF-02 to the South Branch of Ley Creek. The downstream surface water sample collected at SW-04 during the RI, did not show

concentrations higher than those upstream, indicating that the site is not having a net effect on surface water quality. Any exposure potential associated with the discharge to surface water is therefore localized. As discussed in Section 3.3.3, this observation is supported by the high tendency of site COCs to volatilize from surface water into air. Therefore, downstream surface water transport, while potentially complete, is not significant.

Surface water contaminants can theoretically be taken up by local biota. However, none of the site COCs has a high bioconcentration potential. A measure of the tendency for bioaccumulation is the bioconcentration factor (BCF), a limitless ratio between the tissue concentration and the exposure medium (e.g., water). BCFs for chemicals with a tendency for significant food chain accumulation are generally 1,000 (10^3) or higher. Of the site COCs, the highest water-to-tissue BCFs identified (Howard, 1990) were for TCE, reportedly ranging from 17-39 (well under 10^2). This shows a low tendency for bioaccumulation, described by the author as "not important."

Preliminary COCs for the site (see Section 5.3.4) were identified as having the following BCFs (Howard, 1990):

- Acetone (0.69);
- Carbon disulfide (7.9);
- 1,1-dichloroethane (0.67-0.86);
- 1,1-dichloroethene (No experimental data; no significant bioaccumulation expected);
- 1,2-dichlorethene (15- 22);
- Methylene chloride (5);
- Trichloroethene (17-39);
- cis-1,2-dichloroethene (15);
- 1,1,1-trichloroethane (8.9); and
- Vinyl chloride (7)

Creek Sediment

The presence of site COCs in OF-02 indicates a potential for release of contaminants to sediments. As discussed in Section 3.3.4, there is no evidence that sediments are specifically affected by site discharges.

As discussed for surface water, COC transport from sediments into biota would not be a significant fate mechanism for site COCs due to their low bioaccumulation potential.

Summary

In summary, contaminated media associated with the site are shallow groundwater, surface water and sediment. The major transport pathways are limited discharge of shallow groundwater to surface water at OF-02, and subsequent volatilization, with possibly some deposition in sediments.

5.3.2 Human Health

Potential public health exposure mechanisms are addressed below for groundwater, surface water and creek sediment.

Groundwater

Typical groundwater exposure routes are:

- Consumption of domestic water (drinking water, food, beverage);
- Inhalation of COCs volatilized into indoor air (general air and while showering);
- Incidental dermal contact (during subsurface activities);
- Dermal contact during water use (e.g., bathing);
- Consumption of produce that has taken up contaminants from groundwater that was used for irrigation; and
- Inhalation of COCs volatilized into ambient air (during subsurface activities).

The first four exposure routes (water consumption, indoor air inhalation, dermal contact and produce consumption) are all based on use of the associated groundwater unit as a domestic water supply. Shallow groundwater at or downgradient of the site cannot be used as a water supply because of limited yield potential (permeability ranging from 10^{-4} cm/sec to 10^{-6} cm/sec) and extent. In the areas where VOC-impacted groundwater is present, the shallow groundwater is intercepted by the groundwater collection and treatment system precluding discharge to the South Branch of Ley Creek and Sanders Creek. Therefore, shallow groundwater use at the site as a domestic water supply is not feasible now or in the future.

Deeper groundwater in the sand interval could yield adequate water for domestic use. However, all detectable contamination is within site boundaries at relatively low levels. The deep groundwater results for the sand unit confirm that COCs are not migrating off site in this unit (Section 3.3.2). Since the site is used for industrial purposes, there is no potential for development of a domestic water supply on site. Furthermore, the Town of Dewitt is entirely served by public water. In the site vicinity, the water is purchased by the Town from either the Metropolitan Water Board or the Onondaga County Water Authority. The Metropolitan Water Board obtains its water from the Skaneateles Lake.

The Onondaga County Water Authority obtains its water from Otisco Lake or Lake Ontario. Due to the limited area available on the Onondaga County property, and the lack of agricultural land use in the surrounding area, it is very unlikely that an irrigation supply would ever be developed. There is no use of groundwater in the area for either municipal or private supplies, nor will there be any in the foreseeable future. All exposure routes associated with groundwater use are therefore incomplete under both current and future hypothetical conditions.

The presence of the site in a highly industrial area as well as in a floodplain preclude any future residential use. However, the site may undergo future commercial development. As with subsurface soil, associated construction activities could result in transient worker exposure to subsurface groundwater. Possible exposure routes are incidental dermal contact and inhalation of volatilized COCs.

Surface Water

Surface water exposure routes in the South Branch of Ley Creek can occur as follows:

- Incidental ingestion (during primary or secondary recreational use);
- Dermal contact (during primary or secondary recreational use);
- Inhalation of COCs volatilizing from the water surface; and
- Consumption of fish that have bioaccumulated contaminants from surface water.

The first three exposure mechanisms assume some public use of the area, which has minimal likelihood of occurring. Access to this area is, at best, difficult, due to the isolated nature of the creek corridor and its presence amidst industrial and commercial development. Fishermen would not be attracted due to the absence of game fish. Access to this segment of the creek is extremely limited. Assuming continued future industrial/commercial use of the site, it is unlikely that the South Branch of Ley Creek would serve as a recreational resource.

Onondaga County personnel, engaged in clearing the South Branch of Ley Creek of debris, could contact surface water. Such types of contact, if any, would be transient and infrequent.

Overall, the human exposure routes to the South Branch of Ley Creek within the area of concern are potentially complete. However, given the very low likelihood of public use, and the transient nature of any contact with impacted media, these exposure mechanisms are de minimis and do not warrant further characterization.

Fish consumption exposures are incomplete. The NYSDEC has confirmed that there are no fishery resources in the area (Appendix E). Fish in the site area are limited to minnows. Given the trace concentrations and volatile nature of the COCs detected in

surface water, there is no potential for measurable downstream transport to areas where game fish may exist. Based on the low potential of site COCs for bioaccumulation and the small size of the fish observed, it is not anticipated that the fish in the site area could serve as a contaminated food source to larger fish in downstream areas that might be consumed by humans.

All human health exposure routes associated with surface water are either de minimis or incomplete.

Sediment

Typical sediment exposure mechanisms are:

- Incidental ingestion (during primary or secondary recreational use);
- Dermal contact (during primary or secondary recreational use); and
- Consumption of fish that have bioaccumulated contaminants from sediments.

As with surface water, direct contact routes are incomplete because of the general absence of current or future use of the area. It is highly unlikely that game fish would have contact to the sediments in this area, due to the absence of suitable habitat. As such, there is no anticipated pathway to humans through fish consumption.

All human health exposure routes associated with creek sediment are incomplete.

Summary

Table 10 summarizes the significance of the human health exposure routes described above. There are no potential human health pathways to site COCs under current or anticipated future conditions. Future site development may present a potential for transient contact by workers with subsurface contamination (soil, groundwater) through incidental ingestion, dermal contact or inhalation. However, it is unlikely that any excavation would be allowed within the area of the site hydraulically influenced by the groundwater collection and treatment system because such excavation would have the potential of interfering with the IRM program at the site and would be a change of site use controlled by the NYSDEC under its Part 375 regulations.

5.3.3 Ecological

As described in Section 5.2, the site is located in an urbanized/industrial area surrounded by various industrial activities. Due to the existence of buildings and pavement, there is no on-site habitat for wildlife. The nearby watercourses (South Branch of Ley Creek and Sanders Creek) and adjacent vegetated areas offer limited habitat for wildlife.

As a general note, USEPA ERA guidance indicates that physical stresses unrelated to contaminants should not be the focus of the ERA. However, it is important to consider site contamination in the context of the physical setting. Industrialization and development of the site area and nearby stream locations severely limits the available habitat.

Potential ecological exposure routes to be considered are:

Terrestrial Animals

- Inhalation of volatilized contaminants from surface water;
- Incidental surface water ingestion;
- Surface water ingestion for drinking;
- Soil ingestion;
- Inhalation of volatilized contaminants from subsurface soil;
- Sediment ingestion;
- Dermal absorption of COCs from surface water;
- Dermal absorption of COCs from sediment; and
- Consumption of aquatic life that has bioaccumulated contaminants.

Terrestrial Plants

- Root absorption; and
- Leaf absorption (gaseous).

Aquatic Animals

- Direct contact with surface water;
- Direct contact with sediment; and
- Consumption of aquatic life that has bioaccumulated contaminants.

Aquatic Plants

- Root absorption; and
- Leaf absorption.

Due to the presence of pavement, there is no potential for contact between wildlife and contaminants at the site. On the forested Onondaga County property, between the paved area and the collection trench, subsurface contamination is present within the saturated zone. However, it is too deep to present a risk of contact, since the saturated zone is several feet deep in those areas. Direct contact routes associated with subsurface contamination are therefore incomplete.

As discussed in Section 5.3.1, there may be some low-level minimal volatilization from the subsurface to ambient air. This exposure mechanism is considered de minimis because of the minimal air impacts anticipated.

Volatilization from surface water to ambient air is an important removal mechanism for surface water COCs, but is of de minimis air quality concern due to the low VOC concentrations observed. Actual ambient air impacts to any ecological receptors along the South Branch of Ley Creek are not likely to result.

All of the other pathways indicated above are potentially complete. Surface water ingestion, use of surface water and sediment as an aquatic habitat, and associated bioaccumulation up the food chain (dietary exposure to piscivorous wildlife) are potentially complete exposure routes in the vicinity of the site. Habitats downstream of the site would not be impacted, as transport in either surface water or sediment beyond the immediate site is not likely based on the transport characteristics of the COCs.

In summary, pathways and exposure routes related to surface water and sediment represent the only potential ecological exposure mechanisms associated with site COCs. Table 11 summarizes the complete ecological exposure pathways and routes for the site.

5.3.4 Preliminary Chemicals of Concern (COCs)

Based on data generated during the RI, COCs present within the ecological pathways at the site are mostly chlorinated VOCs. These contaminants are generally highly volatile in character and were detected at trace levels in surface water and stream sediment. Specific constituents detected in surface water and sediment include:

- Acetone;
- Carbon disulfide;
- 1,1-dichloroethane;
- 1,1-dichloroethene;
- 1,2-dichlorethene;
- Methylene chloride;
- Trichloroethene;
- cis-1,2-dichloroethene;
- 1,1,1-trichloroethane; and
- Vinyl chloride.

To be conservative, all detected chemicals in the creeks or in outfalls leading to the creeks that are potentially site related will be included as preliminary COCs. These criteria are met for all the chemicals above with the exception of carbon disulfide and acetone. Carbon disulfide was not detected in site groundwater or soils. It is a naturally

occurring compound found in marine sediments or freshwater marshes and is produced by the action of microbes (USEPA, 1998). Acetone was also not detected in other site media, and is frequently a result of laboratory artifact. Methylene chloride is also a suspected lab contaminant, but has been retained at this point because it was reported in one groundwater sample.

It should be noted that upstream contamination with chlorinated VOCs exists, and that the site shows no net contribution to environmental concentrations in the South Branch of Ley Creek.

It should also be noted that by including the outfall sample results as well as the stream data, the list of potential site contaminants has been expanded to include 1,1,1-TCA and vinyl chloride. However, none of these parameters were detected in actual surface water or sediment samples from the South Branch of Ley Creek. This is most likely attributable to the low concentration at which the compounds are present and the rapid volatilization of these compounds.

The VOCs identified as preliminary COCs and carried through subsequent evaluation will be those detected above relevant screening values or which showed substantial elevation (e.g., a several-fold increase in concentration) in samples at or downstream of the site compared with upstream. The screening evaluation is presented below.

5.3.5 Screening Evaluation

Screening ecotoxicity values are defined as concentrations that represent conservative thresholds for adverse ecological effects. Potentially applicable screening levels for surface water and sediment are identified below. The screening levels and associated surface water and sediment concentrations are summarized in Table 12 and Table 13, respectively. The discharge to Sanders Creek is included for historical perspective, even though this release has been eliminated through an IRM.

New York State Surface Water Standards

New York State has promulgated surface water standards for Class C streams. However, there are no Class C standards for site-related COCs.

USEPA Ambient Water Quality Criterion (AWQC)

AWQC (USEPA, 1986) are surface water concentrations designed to be protective of aquatic life on either an acute or chronic basis. No specific AWQC for the protection of aquatic life from chronic effects are available for site-related COCs. However, in evaluating the database for each chemical, the USEPA has estimated the lowest concentrations at which toxicity occurs. Such values are available for two of the COCs

(1,1,1-TCA and TCE) and for a compound (1,2-DCA) closely related to another site-related COC (1,1-DCA). These values appear in Table 12.

Preliminary Remediation Goals (PRGs)

The United States Department of Energy (USDOE, 1996) has developed PRGs for toxicity screening in ecological RAs. PRGs established by Oak Ridge National Laboratory (ORNL) for VOC COCs are based on protection of aquatic life on a chronic basis and, therefore, are appropriate for screening. PRGs for site-related COCs are shown in Table 12 and Table 13.

USEPA Ecotox Thresholds

Ecotox Thresholds (ETs) (USEPA, 1996) are defined as "media-specific contaminant concentrations above which there is sufficient concern regarding adverse ecological effects to warrant further site investigation." They are specifically designed for screening of surface water and sediment. The ET software calculates ETs for sediments using equilibrium partitioning. A typical total organic carbon concentration of 2.5 percent was used in the program. Site-specific total organic carbon in creek sediments presented in Table 7, were 2.2 percent and 2.7 percent.

The ETs generated appear in Table 12 and Table 13.

New York State Sediment Guidance Screening Value

The NYSDEC Division of Fish and Wildlife has developed sediment screening values for individual chemicals based on a variety of endpoints. There are no screening values available for site-related COCs based on protection of aquatic life. For one COC (TCE), there is a screening value based on human health. This is not an appropriate ecological risk screening value and has not been considered.

Summary

Table 12 and Table 13 show the maximum site concentrations, including outfalls, compared against the lowest screening values identified. The only result that exceeded the lowest screening value was 1,1-DCA in the outfall to Sanders Creek water sample. This finding exceeded a surface water screening value as shown in Table 12. Actual concentrations in the creek at the time are not known, and were undoubtedly far lower. Regardless, this discharge of COCs has been eliminated by the IRM. There are no exceedances of screening values associated with the potentially complete pathway, discharge to the South Branch of Ley Creek at OF-02.

5.3.6 Preliminary Risk Conclusions

There are no currently complete human health exposure pathways for site-related COCs. However, the potential risk associated with worker contact with subsurface materials will be further addressed in the RA.

Based on the pathway analysis and screening evaluation, there are no concentrations of site-related COCs in surface water or sediment that could present an ecological concern. No further ecological evaluation is required.

6 CONCLUSIONS

This document presents the results of the RI performed at the Former GE Court Street Building 5/5A site. The RI included the drilling of soil borings, the installation of monitoring wells and piezometers and the sampling of soil, groundwater, surface water and sediment. The information obtained was used to define the nature and extent of contamination at the site, and to assess current site conditions within the context of the completed and ongoing IRMs for the site. The IRMs for the site include the removal of VOC-impacted soils in the former UST area, the former solvent storage pad area and the former metal shed area; the rehabilitation of the storm sewer system to mitigate the migration of VOC-impacted water to Sanders Creek and the South Branch of Ley Creek; and, the construction of a groundwater collection and treatment system to prevent the migration of VOCs toward Sanders Creek and the South Branch of Ley Creek. Additional testing was also performed to assess the potential presence of PCBs in the soil adjacent to a transformer pad on the north site of Building 5.

A findings summary, presented in the context of the stated objectives in the NYSDEC-approved RI/FS Work Plan, is presented below. The findings summary is followed by a statement of the major conclusions of the RI.

6.1 Findings Summary

The vertical extent of VOCs in the former UST area and solvent storage pad area has been defined. In 1992, VOC-impacted soil removal activities were completed. Post-removal sampling completed at that time confirmed that the mass of VOC-impacted soils were removed from the unsaturated soils and the upper saturated zone, to the extent possible, by excavation. The NYSDEC-approved RI/FS Work Plan included deep soil borings in the former UST area and the former solvent storage pad area to evaluate vertical migration of VOCs. RI sampling of saturated zone soils beneath the former UST area and the former solvent storage pad area indicate that there is no evidence of a non-aqueous phase liquid (NAPL), and that the residual VOCs are limited to a depth interval beneath the former UST excavation that is present well below the water table, but confined above the underlying sand unit. The presence of residual VOCs at these intervals is related to VOC-impacted groundwater.

The vertical and horizontal extent of groundwater impacted by VOCs has been defined. Shallow VOC-impacted groundwater has been identified and the extent has been delineated. Drawing 6 shows the horizontal extent of the VOC impacts to the shallow groundwater system. A groundwater collection and treatment system has been installed to collect and remove VOC-impacted groundwater. It is expected that the operation of the system will eliminate migration of VOC-impacted groundwater towards Sanders Creek and the South Branch of Ley Creek. Isolated, low level VOCs in the deeper sand unit have been identified at one location (MW-1D) west of Building 5. Downgradient sample locations in this system do not detect any significant concentrations of VOCs. Vertical migration of VOCs from the shallow system to the deeper sand is not a significant mechanism due to upward gradients observed between these units and the low vertical permeability of the geologic units overlying the sands.

PCBs in the soil adjacent to the transformer pad on the north side of Building 5 were not present at levels which require further action. This transformer pad was removed by the Building 5 property owner (DE & JD) during renovation activities completed in October 1997.

The sanitary sewer line operated by Onondaga County west of Building 5 does not act as a preferential groundwater flow path. The groundwater elevation data confirm that there is no preferential flow along the sewer line. The elevation data are consistent with the overall configuration of the surficial groundwater flow regime at the site. The surficial groundwater regime is topographically controlled and there is no evidence of any convergence of flow in the vicinity of the sewer line that would indicate a preferential pathway.

RI activities identified infiltration of VOC-impacted groundwater into site storm sewer systems which discharge to Sanders Creek and to the South Branch of Ley Creek. These discharges did not result in a net impact to surface water quality in the South Branch of Ley Creek, where surface water samples were taken. IRM actions were taken in August 1997 (in addition to similar IRM activities completed in 1992 and 1993) to eliminate the discharge to Sanders Creek, and to minimize the discharge to the South Branch of Ley Creek.

The migration of VOC-impacted groundwater at the site has not impacted surface water quality in the South Branch of Ley Creek, based on comparison of upstream and downstream samples, and the identified lateral extent of VOC-impacted shallow groundwater.

VOC analysis of sediment samples collected upstream and downstream of Sanders Creek and the South Branch of Ley Creek outfalls was performed. There was no identifiable impact to sediment quality at the Sanders Creek outfall. A potential concentration gradient was observed between the upgradient and downgradient samples in the South

Branch of Ley Creek. However, because of the trace levels present in both South Branch of Ley Creek samples, no conclusive impact to the sediments from the outfall has been identified. Since these samples were obtained from worst-case locations to identify sediment impact and no adverse impact was found, and because no significant ecological or human health risk is associated with the sediment concentrations identified (based on screening analysis using sediment criteria), no further evaluation of the sediments is warranted.

All necessary data were obtained to evaluate the groundwater collection and treatment system design for control of groundwater migration toward the South Branch of Ley Creek and Sanders Creek. The groundwater collection and treatment system has been constructed. Its operation is expected to effectively prevent the migration of VOC-impacted groundwater towards Sanders Creek and the South Branch of Ley Creek.

An FS will be prepared to evaluate potential final remedial alternatives for the site. In this regard, the groundwater collection and treatment system (described in Section 4.3) is intended to be the final remedy for groundwater at the site.

6.2 Conclusions

An overview of the conclusions from the RI is provided below:

- The soil removal operations that were conducted in 1992 at the former UST area and former solvent storage pad area remediated the majority of the VOC-impacted soils. Additional soil sampling was conducted as part of this RI to define the vertical extent of the residual VOCs in both areas. Beneath the excavation for the UST area, VOCs are detectable in saturated soil samples well below the water table. VOCs were detected at only trace levels beneath the former solvent storage pad. VOC-impacted groundwater has migrated downgradient of the former UST area in the shallow groundwater system. Based on this finding, a groundwater collection and treatment system IRM has been initiated. No further remedial action relative to residual VOCs in soils is warranted.

- Soils adjacent to the transformer pad on the north side of Building 5 did not contain PCBs at levels which require further action. All samples were below the 1 ppm cleanup objective referenced in the NYSDEC TAGM HWR-94-4046 for surface soils.

- The vertical and horizontal extent of VOC-impacted groundwater has been defined. The data collected confirm that the alignment and depth of the groundwater collection trench are appropriate and will prevent the migration of

VOC-impacted groundwater towards Sanders Creek and the South Branch of Ley Creek.

- The sanitary sewer line that traverses the Onondaga County property is not acting as a preferential pathway for groundwater flow. The soils encountered and the configuration of the groundwater table (i.e., the piezometer elevation data in the context of site-wide groundwater elevations) do not indicate the presence of higher permeability materials along the sanitary sewer line. Accordingly, the sanitary sewer line is not a preferential pathway for the off-site migration of VOC-impacted groundwater.

- Groundwater discharges to the South Branch of Ley Creek are not impacting surface water quality. Surface water samples taken both upgradient and downgradient of the VOC-impacted groundwater area exhibited low levels and comparable concentrations of VOCs. These results confirm the conclusions of the 1993 Remedial Action Plan Addendum that the surface water quality of the South Branch of Ley Creek is not being impacted by groundwater migrating from the site.

- Analysis of the storm sewer outfalls for the South Branch of Ley Creek and Sanders Creek indicate that there were minor contributions of VOCs from the infiltration of VOCs in the storm sewer system. These contributions are not expected to adversely impact the South Branch of Ley Creek (supported by the results of RI surface water sampling discussed above) or Sanders Creek. Subsequent to the RI sampling of these outfalls, an IRM was completed to minimize infiltration of VOC-impacted groundwater to the storm sewers. Based on the first round of post-construction samples, this IRM resulted in the elimination of groundwater infiltration to the storm sewer system that discharges to Sanders Creek, and a significant reduction of VOC-impacted groundwater infiltrating into the storm sewer system discharging to the South Branch of Ley Creek. It is likely that VOCs entering the South Branch of Ley Creek are readily volatilized, thus limiting downstream migration. Post-construction sampling will be performed at these outfalls again in the Spring of 1998, and on a semi-annual basis thereafter until the FS is completed for the site. In the event that significantly higher VOC concentrations are detected, additional storm sewer IRMs will be considered.

- VOC analysis of sediment samples collected upstream and downstream of Sanders Creek and the South Branch of Ley Creek outfalls was performed. There was no identifiable impact to sediment quality at the Sanders Creek outfall. A potential concentration gradient was observed between the upgradient and downgradient samples in the South Branch of Ley Creek. However, because of the trace levels present in both South Branch of Ley Creek samples,

no conclusive impact to the sediments from the outfall has been identified. Since these samples were obtained from worst-case locations to identify sediment impact and no adverse impact was found, and because no significant ecological or human health risk is associated with the sediment concentrations identified (based on screening analysis using sediment criteria), no further evaluation of the sediments is warranted.

- As part of the RI, preliminary ecological and human health risk assessments were performed. A component of the risk assessment included a pathway analysis that identifies the mechanisms by which human or ecological receptors may be exposed to VOCs. The major ecological transport pathways at the site are discharge of VOCs to surface water at the South Branch of Ley Creek stormwater outfall and subsequent volatilization. However, there are no VOC concentrations in surface water or sediment that could present an ecological concern, based on screening analysis. There are no currently complete human health exposure pathways. Future exposure scenarios that would result from a substantial change in site use, as this term is defined at 6 NYCRR Part 375-1.3(v), are controlled at the site by the NYSDEC under the provisions of its Part 375 regulations that govern new uses of sites.

- Sufficient data have been obtained to characterize the site in support of an FS. The FS evaluation of potential remedial alternatives will focus on the groundwater collection and treatment system IRM as being the final remedy for site groundwater.

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TABLES

Table 1
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Monitoring Well Construction Details

Well	Ground Surface Elevation (ft. NGVD)	PVC Casing Elevation (ft. NGVD)	Total Depth Well (ft. BGS)	Screen Interval BGS (ft. BGS)
Deep Wells				
MW-1D	381.82	381.29	35.5	32.4-34.9
MW-2D	382.07	381.3	47.1	41.7-46.7
MW-3D	380.55	379.89	36.1	32.7-35.7
MW-5D	383.47	383.15	27.3	22.0-27.0
MW-6D	383.31	385.58	38.5	34.0-37.0
PZ-1	384.54	384.94	34.6	29.0-34.0
Intermediate Wells				
MW-1I	381.8	381.46	28.4	23.0-28.0
MW-2I	382.07	381.89	29.4	24.0-29.0
Shallow Wells				
MW-1S	381.82	381.62	14.8	4.4-14.4
MW-2S	382.08	381.83	14.9	4.5-14.5
MW-3S	380.74	380.4	16.5	6.1-16.1
MW-4S	379.75	379.55	14.8	4.4-14.4
MW-5S	383.41	383.19	13.9	3.5-13.5
MW-6S	383.41	385.81	14.5	4.0-14.0
MW-7S	382.01	384.45	14.8	4.0-14.0
MW-8S	379.34	378.96	14	3.0-13.0
MW-9	383.08	385.11	12	7.0-12.0
MW-10	384.17	386.11	12	7.0-12.0
MW-11	382.73	384.25	12	7.0-12.0
MW-11R	382.66	385.71	12	7.0-12.0
MW-12	383.4	384.99	12	7.0-12.0
MW-13	381.92	384.05	12	7.0-12.0
MW-14	379.33	381.22	10	5.0-10.0
MW-15	380.28	382.1	12	7.0-12.0
MW-16A	379.57	379.3	8.5	2.5-8.5
MW-16B	379.67	379.27	22	11.5-21.5
MW-17A	381.76	384.11	12	2.0-12.0
MW-17B	381.76	384.22	24	15.0-23.0
MW-18A	382.84	385.18	10	2.0-10.0
MW-18B	382.6	384.83	24	13.0-23.0
MW-19S	379.56	379.31	10.5	3.0-10.0

Notes: 1. NGVD - National Geodetic Vertical Datum of 1929.
2. BGS - Below ground surface.

Table 2
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Monitoring Well, Staff Gauge, and Piezometer Transect Groundwater Elevation Data

Well	Location		Reference Elevation	GW Elev 3/11/97	GW Elev 4/23/97	GW Elev 6/16/97
	Easting	Northing				
Deep Wells						
MW-1D	5181.99	4532.75	381.29	381.31	380.78	379.85
MW-2D	5047.62	4785.76	381.30	380.54	380.60	379.68
MW-3D	5079.13	4890.13	379.89	380.98	380.43	379.55
MW-5D	5440.89	4035.70	383.15	382.28	381.22	380.30
MW-6D	5040.11	4640.26	385.58	381.91	380.68	379.76
PZ-1	5824.76	4427.88	384.94	382.67	381.08	380.15
Intermediate Wells						
MW-1I	5177.21	4530.56	381.46	381.04	380.82	379.88
MW-2I	5047.42	4789.21	381.89	380.76	380.77	379.59
Shallow Wells						
MW-1S	5172.235	4530.19	381.62	381.61	380.57	379.47
MW-2S	5045.08	4792.10	381.83	380.52	378.80	377.33
MW-3S	5087.36	4890.01	380.40	378.09	377.43	377.23
MW-4S	5015.44	4937.24	379.55	377.03	377.45	376.74
MW-5S	5445.71	4039.51	383.19	381.32	380.69	380.11
MW-6S	5047.75	4625.57	385.81	382.47	380.17	377.11
MW-7S	4962.16	4801.27	384.45	380.86	378.59	376.26
MW-8S	4949.37	5064.80	378.96	377.41	376.79	376.01
MW-9	4921.46	4866.19	385.11	380.22	378.23	376.37
MW-10	4890.00	4816.34	386.11	380.52	378.24	376.18
MW-11	4980.68	4637.94	384.25	380.46	378.12	376.06
MW-11R	4986.56	4641.18	385.71	-	-	-
MW-12	5089.75	4476.38	384.99	380.63	377.73	375.82
MW-13	4863.08	4719.96	384.05	376.08	375.05	373.95
MW-14	4821.16	4730.32	381.22	374.77	374.72	374.21
MW-15	4766.15	4972.84	382.10	379.23	376.99	374.95
MW-16A	4999.16	4964.28	379.30	377.01	377.19	376.64
MW-16B	4994.34	4962.42	379.27	377.43	377.49	376.72
MW-17A	4851.66	4826.16	384.11	379.51	377.53	375.89
MW-17B	4847.80	4832.47	384.22	379.63	377.64	376.04
MW-18A	4964.94	4628.08	385.18	378.88	376.92	374.93
MW-18B	4968.13	4622.99	384.83	379.44	377.98	376.33
MW-19S	5168.42	5049.68	379.31	-	-	377.14
Staff Gauges						
SG-1 Nail	5577.03	5025.35	376.78	374.88	374.61	374.54
SG-2	5113.47	5166.29	374.52	372.93	372.66	372.62
SG-3	4919.33	5232.19	374.34	372.88	372.88	372.17
SG-4 Nail	4851.04	4673.35	376.73	374.78	374.54	374.38
SG-5 Nail	5084.51	4220.49	378.79	375.87	375.43	375.47
Sanitary Sewer Transects						
T1 West	5031.16	4503.18	383.99	377.75	376.24	374.97
T1 Center	5037.27	4508.48	385.06	377.41	377.42	376.16
T1 Edge	5039.86	4510.19	384.15	379.01	376.76	375.07
T1 East	5043.29	4513.76	384.04	379.63	377.06	375.14
T2 West	4935.54	4634.27	384.96	376.13	375.03	374.18
T2 Center	4942.77	4637.48	385.59	377.08	DRY	DRY
T2 Edge	4945.77	4638.64	384.56	376.44	375.04	374.31
T2 East	4950.35	4640.46	386.69	376.93	375.35	374.43
T3 West	4334.75	4781.23	383.31	375.18	374.82	374.15
T3 Center	4840.94	4784.30	384.54	377.97	376.35	DRY
T3 Edge	4842.93	4786.07	383.63	378.27	376.68	375.18
T3 East	4847.38	4788.35	385.15	378.72	376.94	375.48

Notes: 1. Elevations are in feet, based on National Geodetic Vertical Datum of 1929.
2. MW-19S was installed on June 9, 1997.
3. MW-11 was abandonned, and MW-11R was installed on December 18, 1997.

Table 3
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Vertical Hydraulic Gradients

Monitoring Well	Gradient		
	March 1992	August 1992	June 1997
MW-1S/1I	0.016	0.04	0.025
MW-1S/1D	0.04	0.03	0.016
MW-1I/1D	0.11	0.005	0.004*
MW-2S/2I	0.02	0.16	0.133
MW-2S/2D	0.05	0.08	0.068
MW-2I/2D	0.09	0.013	0.005
MW-3S/3D	0.13	0.11	0.0996
MW-5S/5D	0.04	0.02*	0.0119
MW-6S/6D	**	**	0.0996
MW-16S/16D	**	**	0.007
MW-17S/17D	**	**	0.0125
MW-18S/18D	**	**	0.1144

Notes: 1. Upward flow, unless otherwise noted.
2. * - Downward flow indicated.
3. ** - Monitoring well not installed at this date.

Table 4
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Soil Sample Analysis Summary
(all values are mg/kg)

Sample Location	SB-49	SB-49	SB-50	SB-51	SB-52	SB-53
Depth (ft)	18 - 20	22 - 24	4 - 6	0 - 0.5	0 - 0.5	0 - 0.5
PID Headspace (units)	182	17.8	4.5	--	--	--
VOCs						
Acetone	14 J	1.9 UJ	0.015	--	--	--
Methylene Chloride	6.8 UJ	1.9 UJ	0.002 J	--	--	--
1,1-Dichloroethane	28 J	1.2 J	0.005 J	--	--	--
2-Butanone	6.8 UJ	1.9 UJ	0.003 J	--	--	--
1,2-Dichloroethane	1.1 J	1.9 UJ	0.003 J	--	--	--
1,1,1-Trichloroethane	11 J	1.9 UJ	0.018	--	--	--
Trichloroethene	280 J	17 J	0.019	--	--	--
Toluene	27 J	1.1 J	0.005 J	--	--	--
Tetrachloroethene	6.8 UJ	1.9 UJ	0.011 J	--	--	--
Ethylbenzene	7.7 J	0.26 J	0.003 J	--	--	--
Xylenes	30 J	1.2 J	0.007 J	--	--	--
SVOCs						
2-Methylphenol	0.11 J	--	0.41 UJ	--	--	--
4-Methylphenol	0.16 J	--	0.41 UJ	--	--	--
Diethylphthalate	0.46 U	--	0.045 J	--	--	--
Di-n-Butylphthalate	0.46 U	--	0.25 J	--	--	--
Bis(2-ethylhexyl)Phthalate	0.46 U	--	0.41 UJ	--	--	--
PCBs						
Arochlor 1260	--	--	--	0.041 U	0.23	0.041 U

Notes: 1. Qualifiers are as follows:
U - Analyte not detected
J - Estimated value
-- Not analyzed
2. All detected target compounds are listed.
3. All samples were collected in February 1997.
4. mg/kg - parts per million (ppm).

Table 5
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Groundwater Sample Analysis Summary - Organics
(all values are ug/l)

	DEEP WELLS				
Parameter	**MW-01D**	**MW-02D**	**MW-03D**	**MW-05D**	**MW-06D**
VOCs	Mar-97	Mar-97	Mar-97	Mar-97	Mar-97
Vinyl Chloride	1 U J	1 U J	1 U J	1 U J	1 U J
Chloroethane	1 U J	1 U J	1 U J	1 U J	1 U J
1,1-Dichloroethene	5 J	1 U J	1 U J	1 U J	1 U J
Methylene Chloride	1 U J	1 U J	1 U J	1 U J	1 U J
1,1-Dichloroethane	22 J	1 U J	1 U J	1 U J	0.9 J
c-1,2-Dichloroethene	1 U J	1 U J	1 U J	1 U J	1 U J
1,2-Dichloroethane	1 U J	1 U J	1 U J	1 U J	1 U J
1,1,1-Trichloroethane	6 J	1 U J	1 U J	1 U J	1 U J
Trichloroethene	1 U J	1 U J	1 U J	1 U J	1 U J
4-Methyl-2-Pentanone	5 U J	5 U J	5 U J	5 U J	5 U J

Notes:
1. Qualifiers are as follows:
   U - Analyte not detected
   J - Estimated value
   -- - Not Analyzed
2. All detected target compounds are listed.
3. No SVOCs were detected.
4. ug/l - parts per billion (ppb).

Table 5
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Groundwater Sample Analysis Summary - Organics
(all values are ug/l)

	SHALLOW WELLS						
Parameter	**MW-03S**	**MW-07S**	**MW-08S**	**MW-10**	**MW-11**	**MW-12**	**MW-13**
VOCs	Mar-97	Mar-97	Mar-97	Mar-97	Mar-97	Mar-97	Mar-97
Vinyl Chloride	1 U J	360 J	1 U J	25 U	4	1 U	1 U J
Chloroethane	1 U J	50 U J	1 U J	25 U	88	1 U	1 U J
1,1-Dichloroethene	1 U J	50 U J	1 U J	25 U	4	1 U	1 U J
Methylene Chloride	1 U J	50 U J	1 U J	25 U	1 U	1 U	1 U J
1,1-Dichloroethane	8 J	730 J	1 U J	380	880	1 U	2 J
c-1,2-Dichloroethene	7 J	140 J	1 U J	150	47 J	1 U	0.8 J
1,2-Dichloroethane	1 U J	50 U J	1 U J	25 U	1	1 U	1 U J
1,1,1-Trichloroethane	1 U J	48 J	1 U J	25 U	1 U	1 U	1 U J
Trichloroethene	1 U J	50 U J	1 U J	25 U	10	1 U	1 U J
4-Methyl-2-Pentanone	5 U J	250 U J	5 U J	120 U	5 U	5 U	5 U J

Notes:
1. Qualifiers are as follows:
   U - Analyte not detected
   J - Estimated value
   -- - Not Analyzed
2. All detected target compounds are listed.
3. No SVOCs were detected.
4. ug/l - parts per billion (ppb).

Table 5
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Groundwater Sample Analysis Summary - Organics
(all values are ug/l)

	SHALLOW WELLS (cont'd.)						
Parameter	**MW-14**	**MW-15**	**MW-16A**	**MW-16B**	**MW-17A**	**MW-17B**	
VOCs	Mar-97	Mar-97	Mar-97	Mar-97	Mar-97	Mar-97	Jun-97
Vinyl Chloride	1 U J	1 U J	390 J	1 U J	1 U J	1 U J	1 U
Chloroethane	1 U J	1 U J	50 U J	1 U J	1 U J	1 U J	1 U
1,1-Dichloroethene	1 U J	1 U J	50 U J	1 U J	1 U J	1 U J	1 U
Methylene Chloride	1 U J	1 U J	92 J	1 U J	1 U J	1 U J	1 U
1,1-Dichloroethane	1 U J	1 U J	590 J	1 U J	3 J	1 U J	1 U
c-1,2-Dichloroethene	1 U J	1 U J	310 J	1 U J	1 U J	1 U J	1 U
1,2-Dichloroethane	1 U J	1 U J	50 U J	1 U J	1 U J	1 U J	1 U
1,1,1-Trichloroethane	1 U J	1 U J	50 U J	1 U J	1 U J	1 U J	1 U
Trichloroethene	1 U J	1 U J	50 U J	1 U J	1 U J	1 U J	1 U
4-Methyl-2-Pentanone	5 U J	5 U J	45 J	5 U J	5 U J	5 U J	5 U

Notes:
1. Qualifiers are as follows:
   U - Analyte not detected
   J - Estimated value
   -- - Not Analyzed
2. All detected target compounds are listed.
3. No SVOCs were detected.
4. ug/l - parts per billion (ppb).

Table 5
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Groundwater Sample Analysis Summary - Organics
(all values are ug/l)

	SHALLOW WELLS (cont'd.)		
Parameter	**MW-18A**	**MW-18B**	**MW-19S**
VOCs	Mar-97	Mar-97	Jun-97
Vinyl Chloride	10 U J	1 U J	1 U
Chloroethane	10 U J	1 U J	1 U
1,1-Dichloroethene	10 U J	1 U J	1 U
Methylene Chloride	10 U J	1 U J	1 U
1,1-Dichloroethane	130 J	1 J	1 U
c-1,2-Dichloroethene	10 U J	1 U J	1 U
1,2-Dichloroethane	10 U J	1 U J	1 U
1,1,1-Trichloroethane	10 U J	1 U J	1 U
Trichloroethene	10 U J	1 U J	1 U
4-Methyl-2-Pentanone	50 U J	5 U J	5 U

Notes:
1. Qualifiers are as follows:
   U - Analyte not detected
   J - Estimated value
   -- - Not Analyzed
2. All detected target compounds are listed.
3. No SVOCs were detected.
4. ug/l - parts per billion (ppb).

Table 6
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Groundwater Sample Analysis Summary - Metals
(all values are in ug/l)

Parameter	MW-07S (Total)	MW-07S (Diss.)	MW-10 (Total)	MW-10 (Diss.)	MW-11 (Total)	MW-11 (Diss.)	MW-12 (Total)	MW-12 (Diss.)
TAL Metals								
Aluminum	5560	71.5 B	3660	80.6 B	673	30.1 B	10400	70.9 B
Antimony	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Arsenic	4.7 BJ	2.7 UJ	4.7 BJ	4.2 BJ	16.3 J	3.4 BJ	4.7 BJ	3.3 BJ
Barium	122 B	121 B	134 B	279	44.7 B	231	111 B	142 B
Beryllium	0.25 B	0.1 U	0.14 B	0.1 U	0.1 U	0.1 U	0.46 B	0.14 B
Cadmium	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Calcium	155000	157000	444000	442000	165000	164000	218000	194000
Chromium	7.9 B	0.6 U	4.8 B	0.6 U	1.1 B	0.6 U	16	0.77 B
Cobalt	2.8 B	0.77 B	1.3 B	0.7 U	0.7 U	0.7 U	4.7 B	0.7 U
Copper	11.7 B	1.7 U	5.9 B	2.3 B	1.7 U	1.7 U	12.7 B	4.6 B
Iron	9090	767	4180	100	3550	218	12500	84 B
Lead	3	1.1 U	2.4 B	1.1 U	1.2 B	1.1 U	21.8	1.1 U
Magnesium	52500	52000	130000	132000	47300	46200	50400	42500
Manganese	332	292	60.5	39.3	67.9	50.3	214	2.9 B
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	5.6 B	2 U	3.5 B	2 U	2 U	2 U	12 B	2 U
Potassium	2660 B	1100 B	5650	4800 B	2670 B	2180 B	5330	2040 B
Selenium	1 U	1.3 BJ	1.1 BJ	1.6 BJ	1.1 BJ	1.5 BJ	1 BJ	1.6 B
Silver	0.7 U	0.75 B	1.6 B	1.8 B	0.7 U	0.71 B	0.7 U	0.96 B
Sodium	18300 J	21200 J	112000 J	115000 J	16700 J	17000 J	11100 J	13400 J
Thallium	2.9 BJ	3.7 BJ	2.1 UJ	2.3 BJ	3.3 BJ	3.3 BJ	2.1 UJ	3.9 BJ
Vanadium	10.9 B	0.4 U	6.3 B	0.68 B	1.4 B	0.4 U	18.4 B	0.4 U
Zinc	22.6	28.5	14.6 B	57.8	7.5 B	71.6	42.6	48.2

Notes: 1. Qualifiers are as follows:
U - Analyte not detected
B - Detected below CRDL
J - Estimated value
2. All samples were collected in March 1997.
3. ug/l - parts per billion (ppb).

Table 7
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Surface Water, Storm Sewer Outfall and Sediment Sample Analysis Summary

Creek and Storm Sewer Outfall Samples

Parameter	SW-6	OF-02	SW-4	OF-01
VOCs (ug/l)	South Branch of Ley Creek Upstream	South Branch of Ley Creek Outfall	South Branch of Ley Creek Downstream	Sanders Creek Outfall
Vinyl Chloride	1 U J	2 U J	1 U J	87 J
1,1-Dichloroethane	1 U J	29 J	1 U J	140 J
c-1,2-Dichloroethene	5 J	2 J	4 J	42 J
Chloroform	0.8 J	2 U J	1 U J	10 U J
1,1,1-Trichloroethane	1 U J	5 J	1 U J	10 U J
Trichloroethene	6 J	8 J	4 J	10 U J

Sediment Samples

Parameter	SS-2 (Up)	SS-2 (Down)	SS-1 (Up)	SS-1 (Down)
VOCs (ug/kg)	South Branch of Ley Creek Outfall Area		Sanders Creek Outfall Area	
Chloroethane	11 J	21 J	13 U J	14 U J
Acetone	13 U J	4 J	2 J	14 U J
1,1-Dichloroethene	13 U J	2 J	13 U J	14 U J
Methylene Chloride	2 J	4 J	2 J	3 J
Carbon Disulfide	13 U J	3 J	13 U J	14 U J
1,1-Dichloroethane	10 J	22 J	13 U J	14 U J
1,2-Dichloroethene	13 U J	19 J	2 J	14 U J
Trichloroethene	13 U J	22 J	6 J	2 J
Total Organic Carbon (%)	--	2.2	--	2.73

Notes: 1. Qualifiers are as follows:
U - Analyte not detected
J - Estimated value
-- - Not Analyzed
2. All detected target compounds are listed.
3. All samples were collected in March 1997.
4. ug/l - parts per billion (ppb) liquid.
5. ug/kg - parts per billion (ppb) dry weight.

Table 8
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Plant Species

Herbaceous Plants	
Spotted Knapweed	*Centaurea maculosa*
Teasel	*Dipsacus sylvestris*
Timothy	*Phleum pratense*
Queen Anne's Lace	*Daucus carota*
Horsetail	*Equisetum* spp.
Goldenrod	*Solidago* spp.
Wild Cucumber	*Echinocystis lobata*
Thistle, Canada	*Cirsium arvense*
Smartweed	*Polygonum pensylvanicum*
Purple Loosestrife	*Lythrum salicaria*
Dogbane	*Apocyhum androsaemifolium*
Milkweed	*Asclepias syriaca*
Honeysuckle	*Lonicera* spp.
Virginia Creeper	*Parthenocissus quinquefolia*
Wild Cucumber	*Enchinocystis lobata*
Bind Weed	*Convolvulus sepium*
Jewel Weed	*Impatiens capensis*
Cattail	*Typha latifolia*
Phragmites	*Phragmites communis*
Beggers Tick	*Bidens* spp.
Nightshade	*Solanum dulcamara*
Catalpa	*Catalpa speciosa*
Box Elder	*Acer negundo*
False Bamboo	*Polygonum cuspidatum*
Black Willow	*Salix nigra*
Eastern Cottonwood	*Populus tremuloides*
Sugar Maple	*Acer saccharum*
Grape	*Vitis* spp.
Northern False Foxglove	*Aureolaria flava*
Staghorn Sumac	*Rhus typhina*
Spanish Needles	*Bidens* spp.
Poison Ivy	*Toxicodendron radicens*
Silky Dogwood	*Cornus amomum*
Slippery Elm	*Ulmus rubra*

Table 9
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Wildlife Species

Mammals	
Woodchuck	*Marmota monox*
Raccoon	*Procyon lotor*
Muskrat	*Ondatra zibethicus*
Gray Squirrel	*Sciurus carolinensis*

Avian Species	
Mallard	*Anas platyphynchos*
Grackle	*Quiscalus quiscula*
Robin	*Turdus migratorius*
Crow	*Corvus brachyrhynchos*
Starling	*Sturus vulgaris*
Least Flycatcher	*Empidonax minimus*
Sparrow	*Spizella* spp.
Carolina Wren	*Thyrothorus ludovicianus*
Canada Warbler	*Wilsonia canadensis*
Green Heron	*Butorides virescens*
Cardinal	*Richmondena cardinalis*
Kingfisher	*Megaceryle alcyon*
Killdeer	*Charadrius vociferus*
American Goldfinch	*Spinus tristis*
Swallow, Rough Winged	*Stelgidopteryx ruficollis*

Reptiles	
Garter Snake	*Thamnophis sirtalis*

Table 10
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Summary of Human Health Exposure Pathways

Medium	Potential Exposure Routes	Complete at Site	
		Present	Potential Future
Groundwater	Consumption (water supply)	No	No
	Inhalation from indoor air (water supply)	No	No
	Dermal contact (incidental)	No	Yes[1]
	Dermal contact (water supply)	No	No
	Consumption of contaminated produce	No	No
	Inhalation of VOCs	No	Yes[1]
Surface Water	Incidental ingestion	No	Yes[2]
	Dermal contact	No	Yes[2]
	Inhalation of VOCs	No	Yes[2]
	Consumption of fish (bioaccumulation)	No	No
Sediment	Incidental ingestion	No	Yes[2]
	Dermal contact	No	Yes[2]
	Consumption of fish (bioaccumulation)	No	No

Notes:

[1] Occupational exposure only.

[2] De minimis.

Table 11
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Summary of Complete Ecological Exposure Pathways

Medium	Receptors	Potential Exposure Routes
Groundwater	Terrestrial Animals	Inhalation of VOCs (de minimis)
Surface Water	Terrestrial Animals	Inhalation of VOCs Consumption (drinking water) Incidental ingestion Dermal absorption Consumption of aquatic life (bioaccumulation)
	Aquatic Animals	Direct contact (use as habitat) Consumption of aquatic life (bioaccumulation)
Sediment	Terrestrial Animals	Incidental ingestion Consumption of aquatic life (bioaccumulation)
	Aquatic Animals	Direct contact (use as habitat) Consumption of aquatic life (bioaccumulation)

Table 12
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Summary of Surface Water Screening Values for Contaminants of Concern

	Maximum Observed at Site (ug/l)		NYS Surface Water Standard[1]	USEPA AWQC[3] (ug/l)	USDOE PRG[7] (ug/l)	USEPA Ecotox Threshold[10] (ug/l)	Lowest Screening Value (ug/l)
	Outfall	Creek					
Contaminant of Concern							
1,1-Dichloroethane	140	ND	NA	20,000[4,5]	47	47	47
1,2-cis-Dichloroethene	42	4	NA	NA[6]	590[8]	NA	590
1,1,1-Trichloroethane	5	ND	NA	18,000[4]	11	62	11
Trichloroethene	8	4	NA[2]	21,900[4]	470	350	350
Vinyl chloride	87	ND	NA	NA	782[9]	NA	782

Notes:

ND - Not detected.

NA - Not available.

ug/l - parts per billion (ppb).

[1] NYCRR Part 703; for Class C surface waters.

[2] There is a guidance value; but it is based on protection of human health, not of aquatic life, so it is not relevant for ecological screening.

[3] Ambient water quality criterion for protection of freshwater life from chronic effects.

[4] Lowest value at (value as low as) which toxicity occurs.

[5] Value is for 1,2- isomer; however, toxicity is a function of degree of chlorination, so value for 1,1- isomer is estimated to be on the same order of magnitude.

[6] No data on chronic toxicity; acute toxicity occurs at concentrations as low as 11,600 ug/l.

[7] US Department of Energy preliminary remediation goal; all values except vinyl chloride are secondary chronic values.

[8] Value for dichloroethenes.

[9] Based on protection of piscivorores using the river otter lowest observed adverse effects level (LOAEL).

[10] EPA 540/F-95/038.

Table 13
Former GE Court Street Building 5/5A Site
Remedial Investigation Report
Summary of Sediment Screening Values for Contaminants of Concern

Contaminant of Concern	Maximum Observed at Site (ug/kg)	NYS Sediment Guidance Screening Value[1] (ug/kg)	USDOE PRG[2] (ug/kg)	USEPA Ecotox Threshold[3] (ug/kg)	Lowest Screening Value (ug/kg)
1,1-Dichloroethane	22	NA	27	NA	27
1,1-Dichloroethene	2	NA	3500	NA	3500
1,2-Dichloroethene	19	NA	400	NA	400
Methylene chloride	4	NA	18,000	NA	18,000
Trichloroethene	22	NA	52,000	4100	4100

Notes:

ND - Not detected.

NA - Not available.

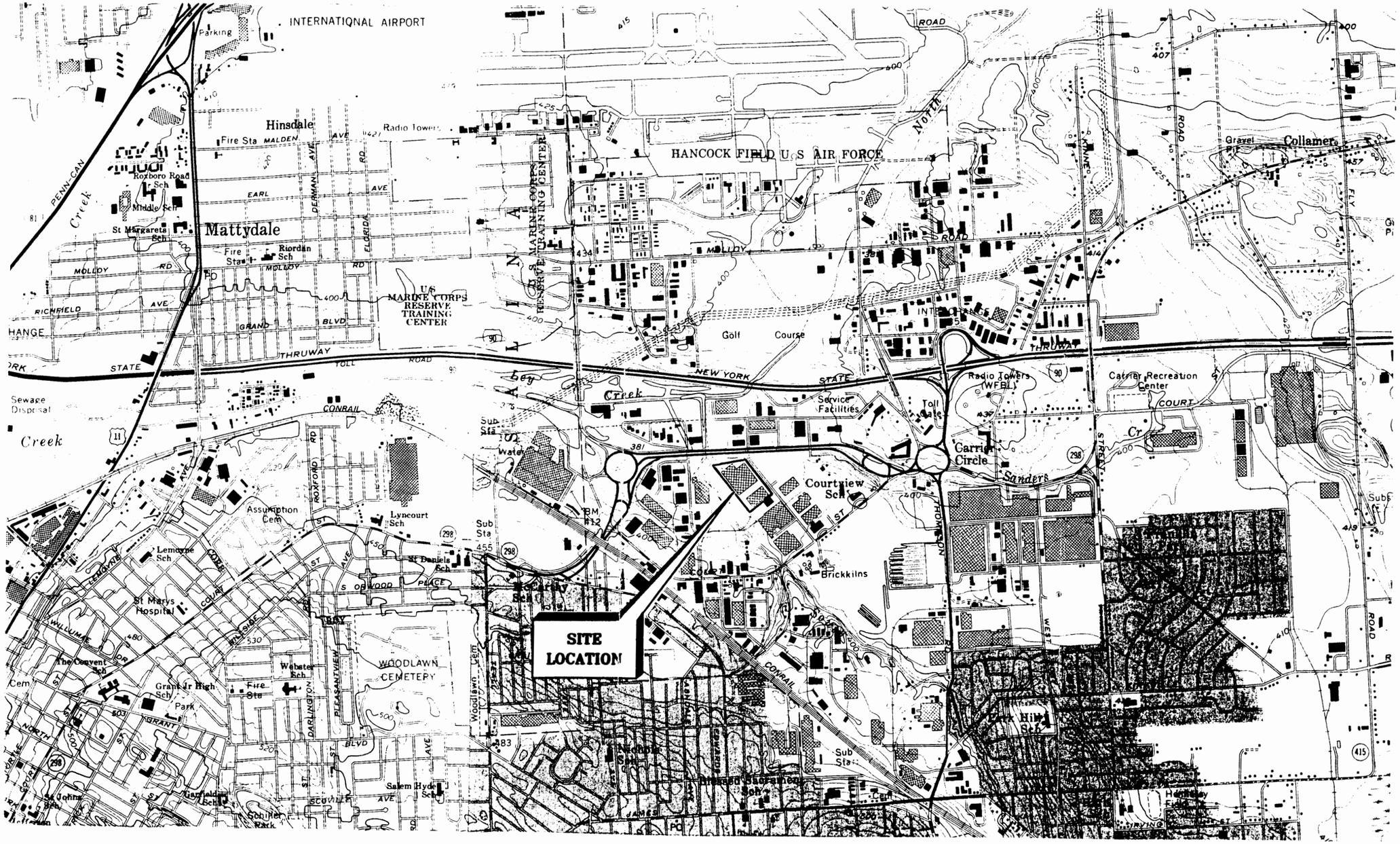
ug/kg - parts per billion (ppb).

[1] Based on protection of freshwater benthic aquatic life from chronic effects.

[2] US Department of Energy preliminary remediation goal; values are lowest or secondary chronic values.

[3] Based on equilibrium partitioning assuming an average organic carbon content of 2.5%.

FIGURES



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Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/14/98 Time: 11:10 AM Operator: AKINOSA

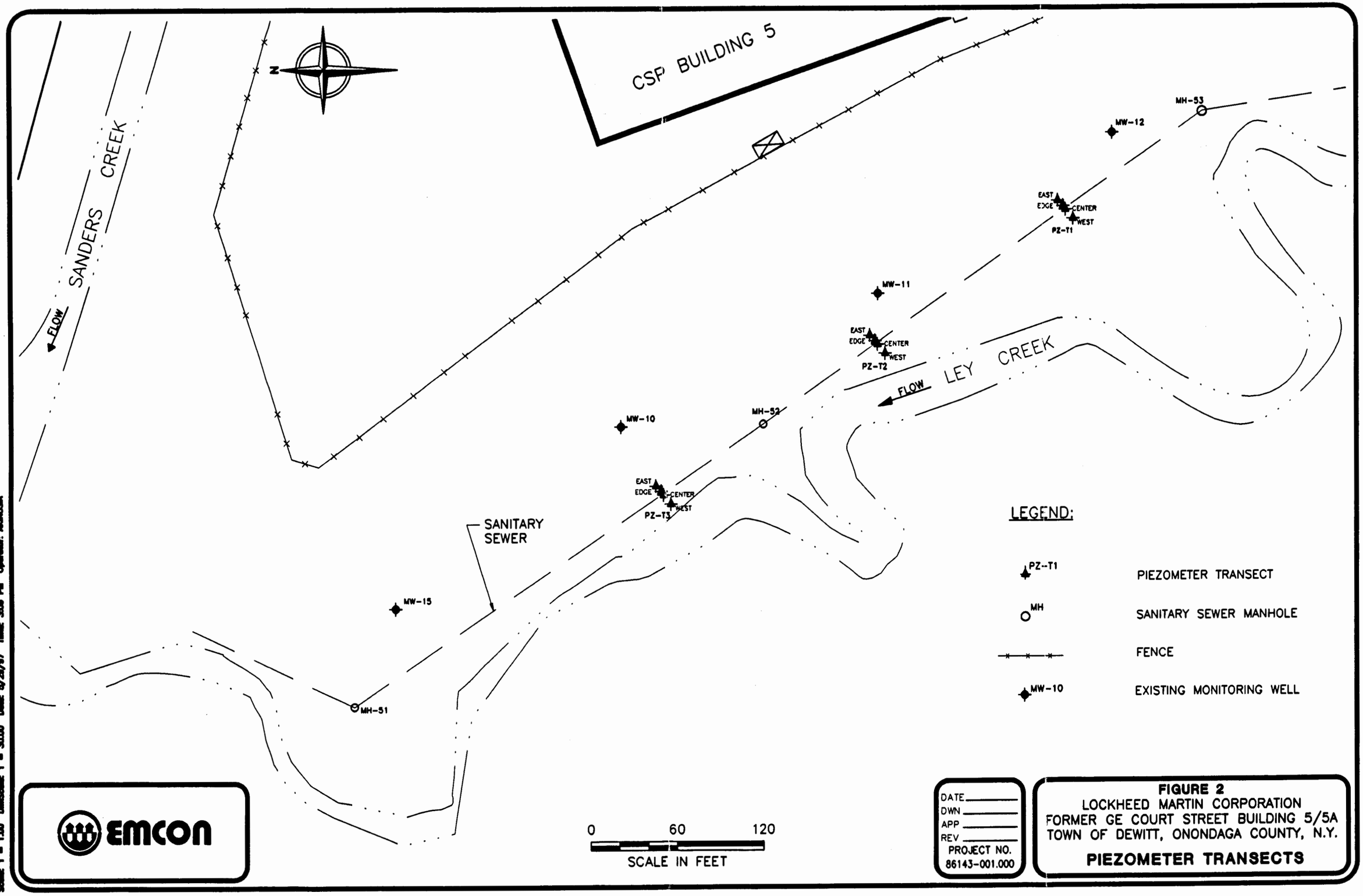
EMCON

0 2000 4000
SCALE IN FEET

BASE MAP TAKEN FROM U.S.G.S. 7.5 MIN. QUAD.
SYRACUSE EAST, N.Y. DATED 1957, PHOTOREVISED 1978
SYRACUSE WEST, N.Y. DATED 1973, PHOTOREVISED 1978

DATE	1/98
DWN	A.K.
APP	K.G.
REV	
PROJECT NO.	86143-001.000

FIGURE 1
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.
SITE LOCATION MAP



LEGEND:

PZ--T1	PIEZOMETER TRANSECT
MH	SANITARY SEWER MANHOLE
	FENCE
MW-10	EXISTING MONITORING WELL

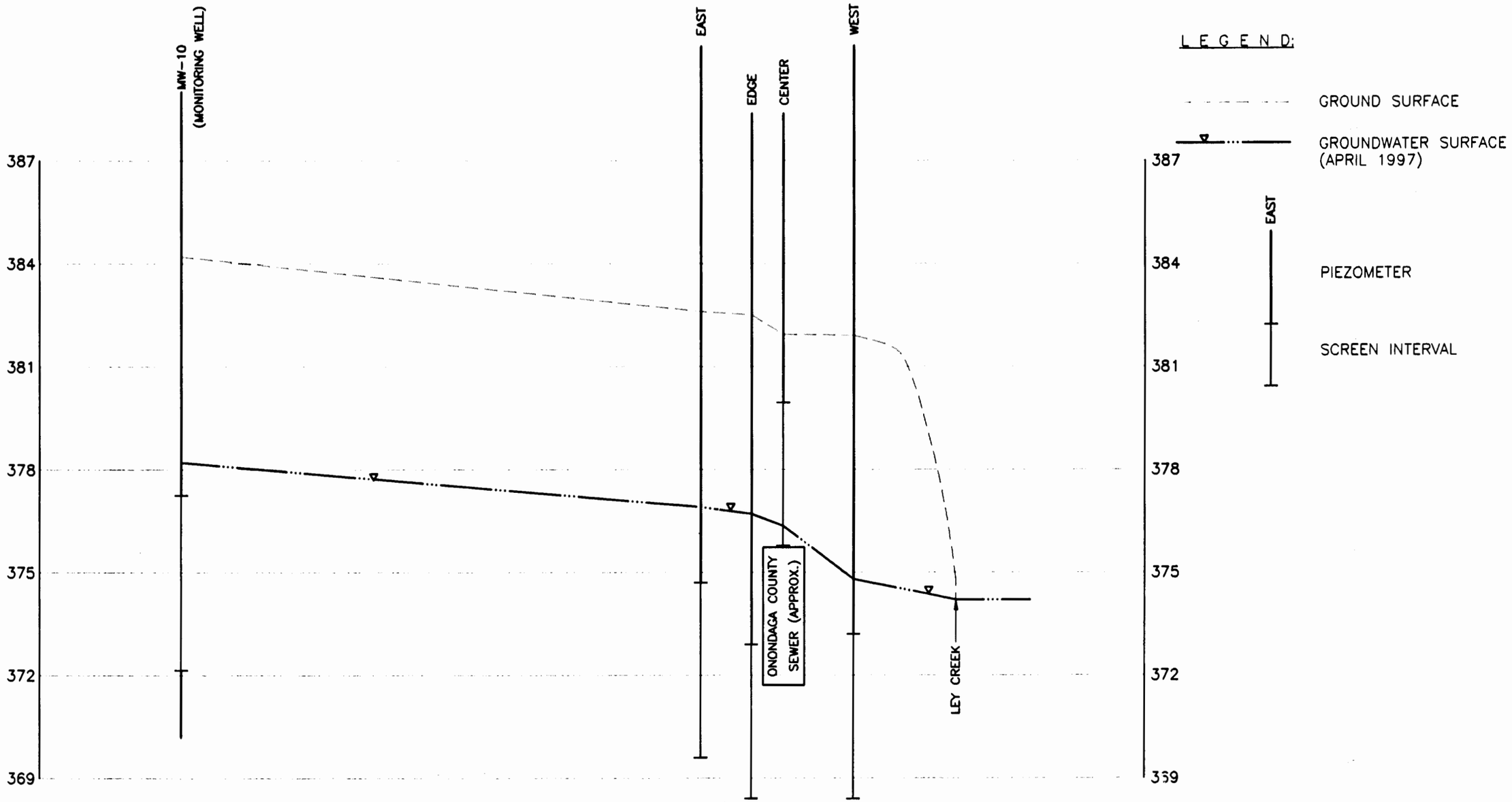
EMCON

DATE
DWN
APP
REV
PROJECT NO.
86143-001.000

FIGURE 2
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.

PIEZOMETER TRANSECTS

D:\E--MTOWN2/DATA: N:\DWG\86143001\MWLMF-01.dwg Xrefs: 11X17, MWLMSD02
Scale: 1 = 1.00 DimScale: 1 = 30.00 Date: 5/28/97 Time: 3:09 PM Operator: ANDNOSIA



CROSS-SECTION

SCALE: VERT. 1"=3'
HORZ. 1"=10'

EMCON

DATE	8/97
DWN	A.K.
APP	C.T.
REV	
PROJECT NO.	86143-001.000

FIGURE 3
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.

PIEZOMETER TRANSECT T3

ENE-WTOWN2/DATA: N:\DWG\86143001\MALMCS01.dwg Xrefs: MALMD-10
Scale: 1 = 10.00 DimScale: 1 = 10.00 Date: 1/16/98 Time: 9:58 AM Operator: AKINOSIA

ENE-ANDVR2/DATA: N:\DWG\86143003\000\ANDD-07.dwg Xrefs: <NONE>
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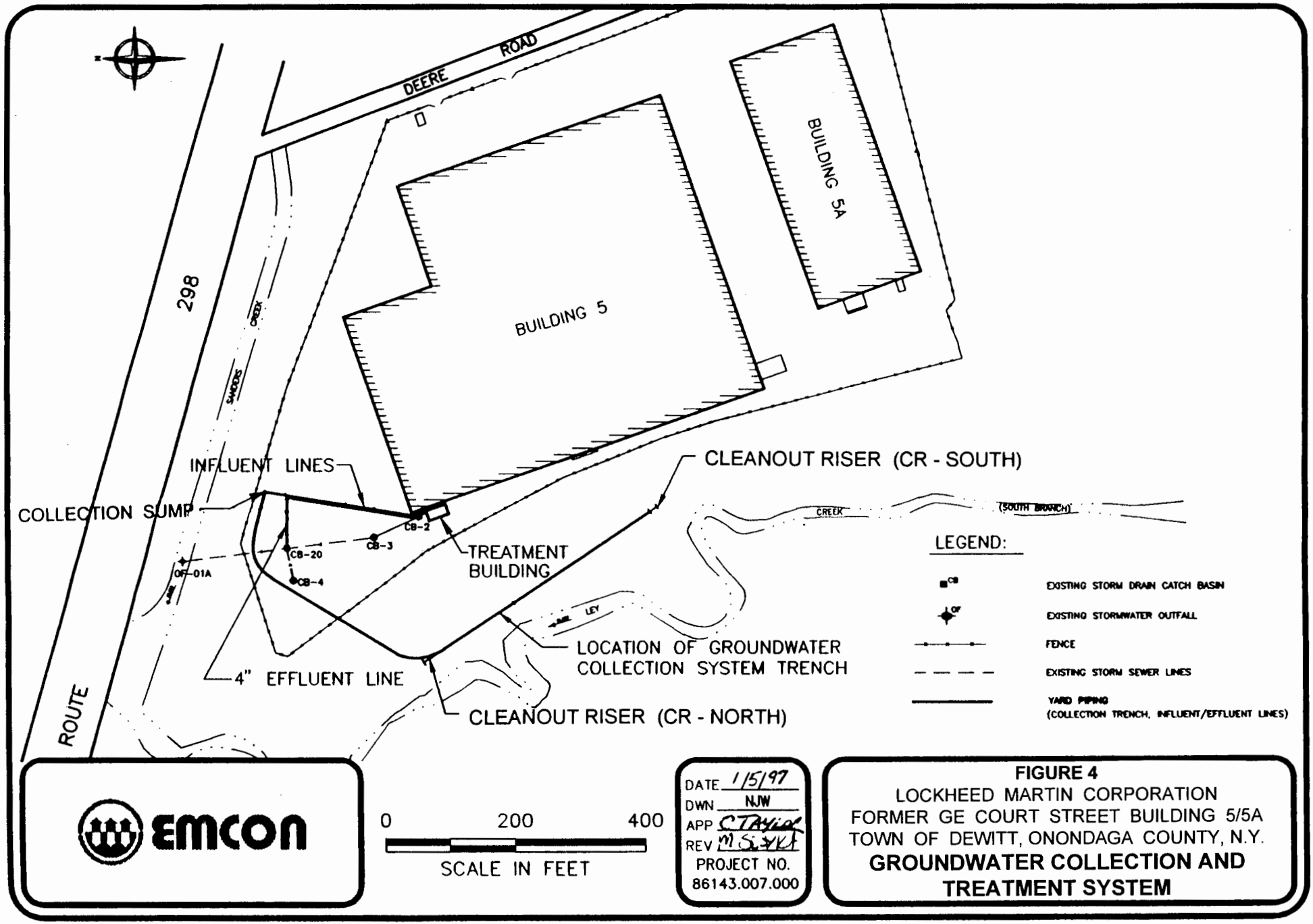
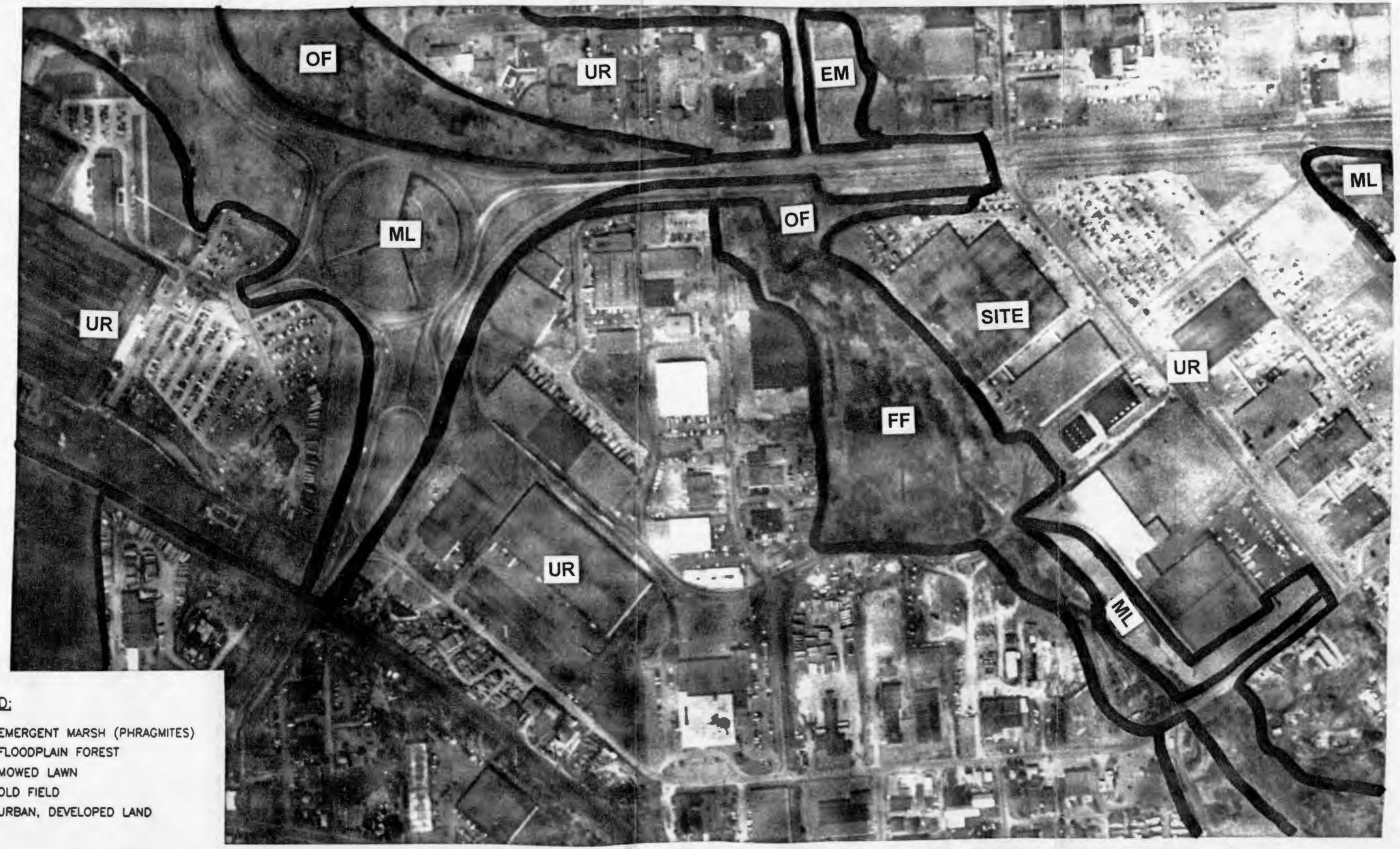


emcon

DATE 1/5/97
DWN NJW
APP CTA
REV MSYK
PROJECT NO.
86143.007.000

FIGURE 4
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.
GROUNDWATER COLLECTION AND TREATMENT SYSTEM



N

LEGEND:

EM	EMERGENT MARSH (PHRAGMITES)
FF	FLOODPLAIN FOREST
ML	MOWED LAWN
OF	OLD FIELD
UR	URBAN, DEVELOPED LAND

EMCON

0 405 810

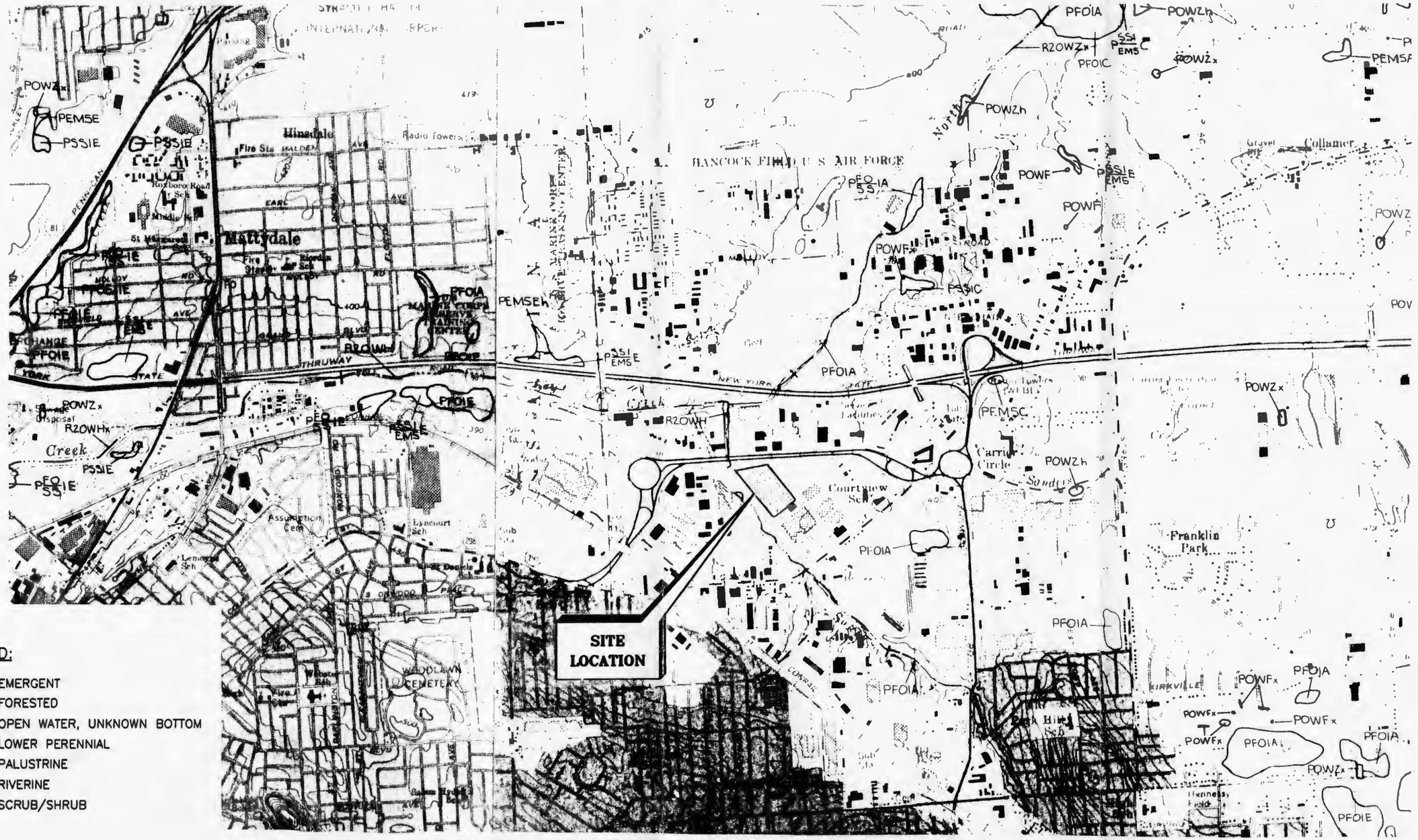
SCALE IN FEET

SOURCE: AERIAL PHOTO 1985

DATE 1/98
DWN A.K.
APP K.G.
REV
PROJECT NO.
86143-001.000

FIGURE 5
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.
LAND USE/VEGETATION COVER MAP

E:\E--MTGWK2/DATA: N:\DWG\86143001\MALUF-06.dwg Xrefs: 11X17, MALUMED02
Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/14/98 Time: 1:01 PM Operator: AKINOSIA



LEGEND:

EM	EMERGENT
FO	FORESTED
OW	OPEN WATER, UNKNOWN BOTTOM
02	LOWER PERENNIAL
P	PALUSTRINE
R	RIVERINE
SS	SCRUB/SHRUB

EMCON

0 2000 4000

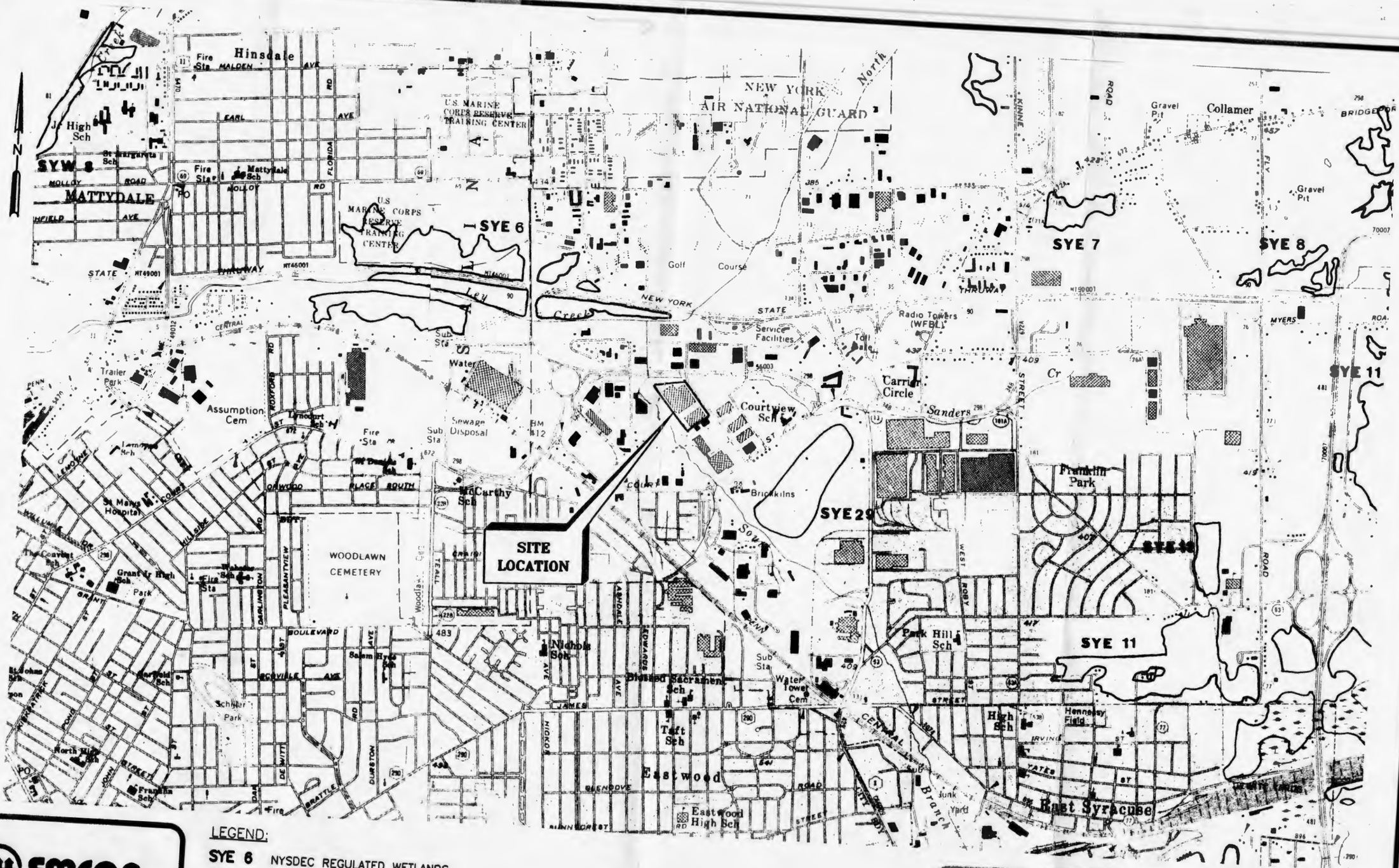
SCALE IN FEET

BASE MAP TAKEN FROM U.S. DEPARTMENT OF THE INTERIOR NATIONAL WETLANDS INVENTORY AERIAL PHOTOGRAPHY 10/78.

DATE	1/98
DWN	A.K.
APP	K.G.
REV	
PROJECT NO.	86143-001.000

FIGURE 6
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.
NATIONAL WETLANDS INVENTORY MAP

E:\E-M\TOWN2\DATA\ M:\DWG\86143001\MALWF-04.dwg Xrefs: 11X17, MALMBD02
Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/14/98 Time: 12:32 PM Operator: AKINOSIA



ENE-MTOWN2/DATA: N:\DWG\86143001\MALMF-05.dwg Xrefs: 11X17, MALMBD02
Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/14/98 Time: 11:30 AM Operator: AKINOSIA

EMCON

LEGEND:

SYE 6 NYSDEC REGULATED WETLANDS

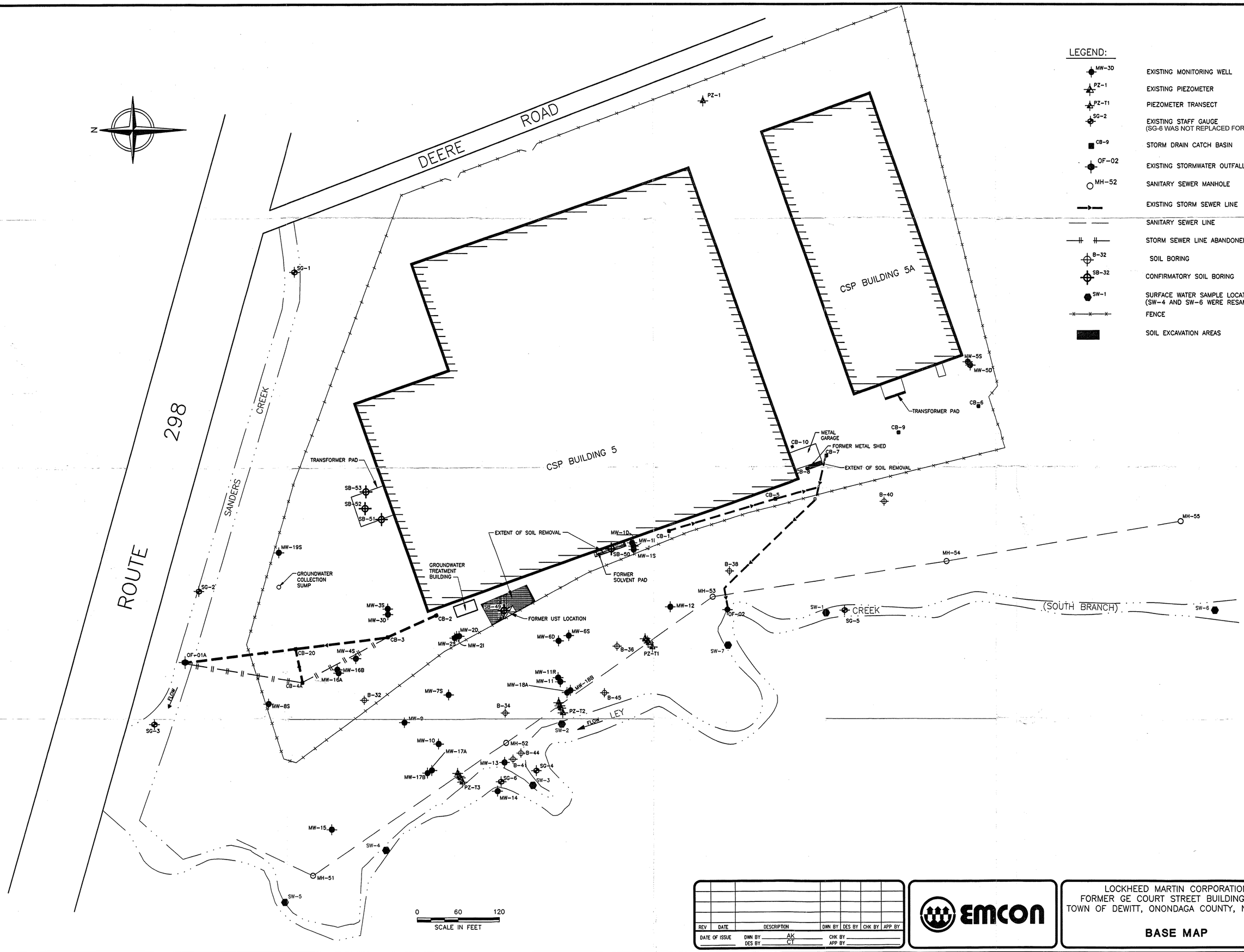
0 2000 4000

SCALE IN FEET

BASE MAP TAKEN FROM FRESHWATER WETLANDS MAP.
SYRACUSE EAST, ONONDAGA COUNTY, N.Y. DATED 1973, MAP 10 OF 21.
SYRACUSE WEST, ONONDAGA COUNTY, N.Y. DATED 1973, MAP 9 OF 21.

DATE 1/98
DWN A.K.
APP K.G.
REV
PROJECT NO.
86143-001.000

FIGURE 7
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, N.Y.
NYSDEC WETLANDS MAP



LEGEND:

- MW-3D — EXISTING MONITORING WELL
- PZ-1 — EXISTING PIEZOMETER
- PZ-T1 — PIEZOMETER TRANSECT
- SG-2 — EXISTING STAFF GAUGE (SG-6 WAS NOT REPLACED FOR RI)
- CB-9 — STORM DRAIN CATCH BASIN
- OF-02 — EXISTING STORMWATER OUTFALL
- MH-52 — SANITARY SEWER MANHOLE
- EXISTING STORM SEWER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE ABANDONED AUGUST 1997
- B-32 — SOIL BORING
- SB-32 — CONFIRMATORY SOIL BORING
- SW-1 — SURFACE WATER SAMPLE LOCATIONS (SW-4 AND SW-6 WERE RESAMPLED FOR RI)
- FENCE
- SOIL EXCAVATION AREAS

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE
DWN BY AK
DES BY CT
CHK BY
APP BY

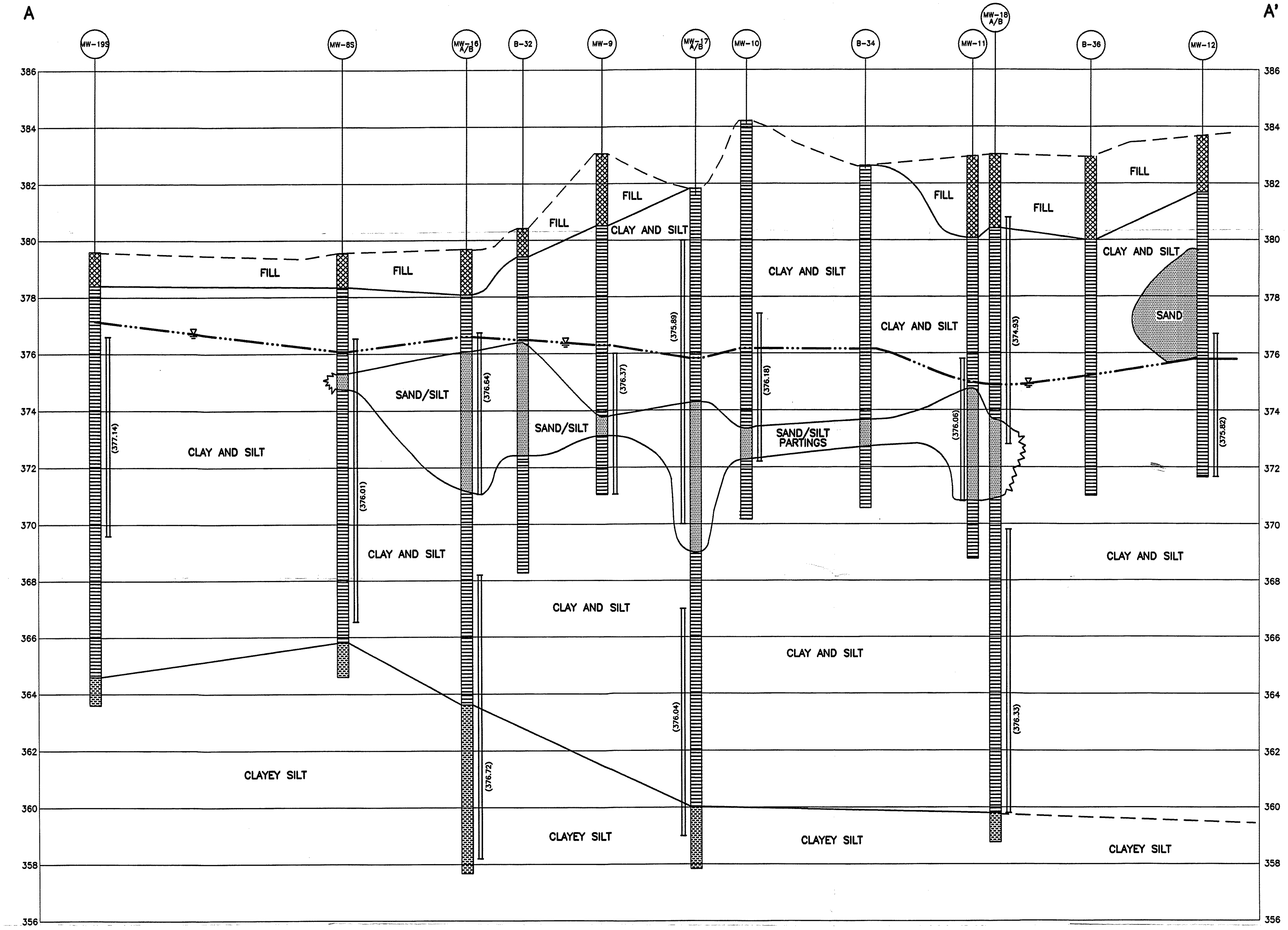
EMCON

LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

BASE MAP

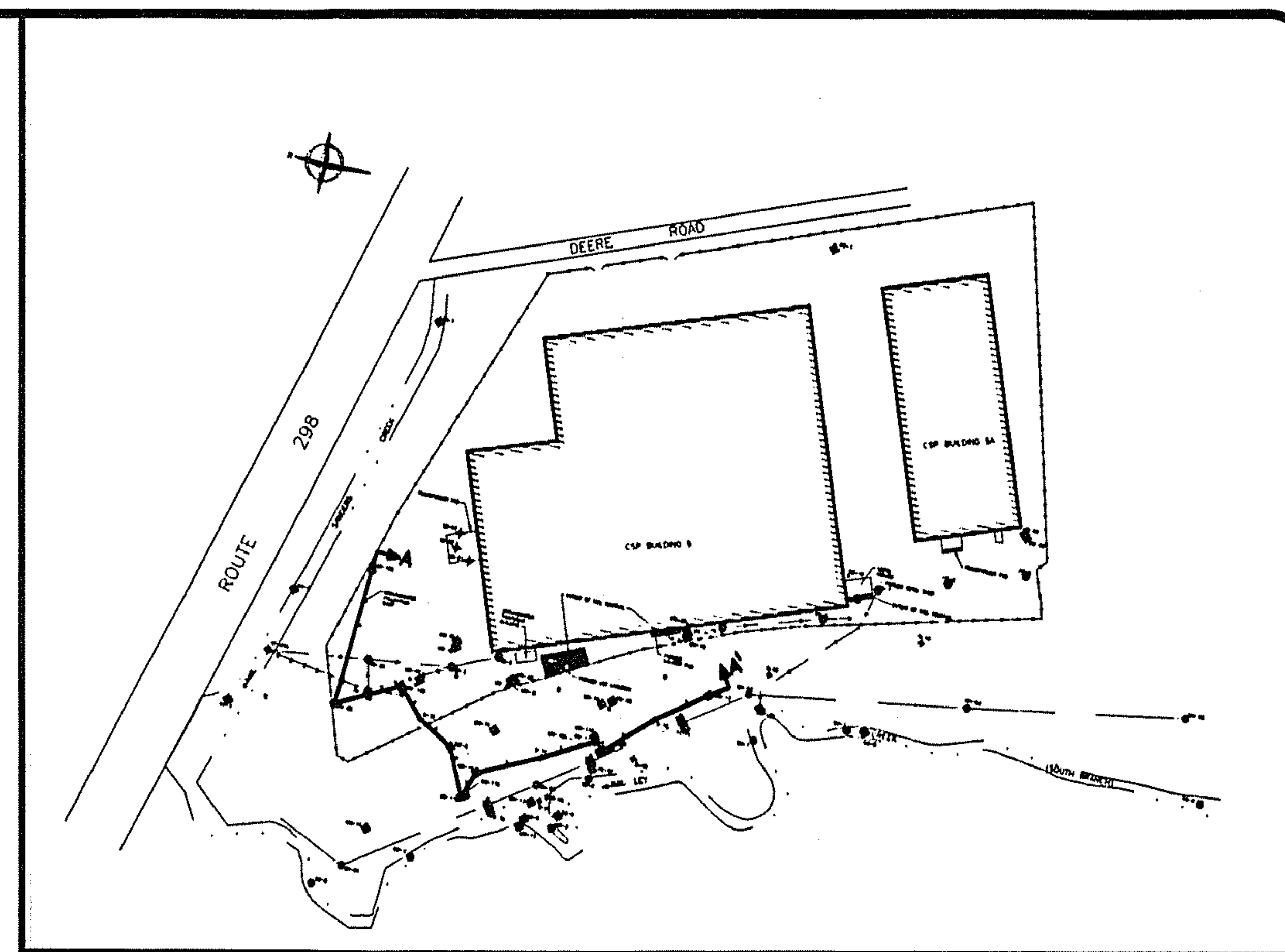
DRAWING NO. 1
PROJECT NO. 86143-001.000

EXE-MTOWN2/DATA: N:\DWG\01554-03\WAM45C12.dwg Xrefs: 24X36, MALMLG01, MALMB-00, MALMBD00 Scale: 1 = 60.00 DimScale: 1 = 60.00 Date: 1/19/98 Time: 10:40 AM Operator: FDEGEORG



CROSS-SECTION A-A'

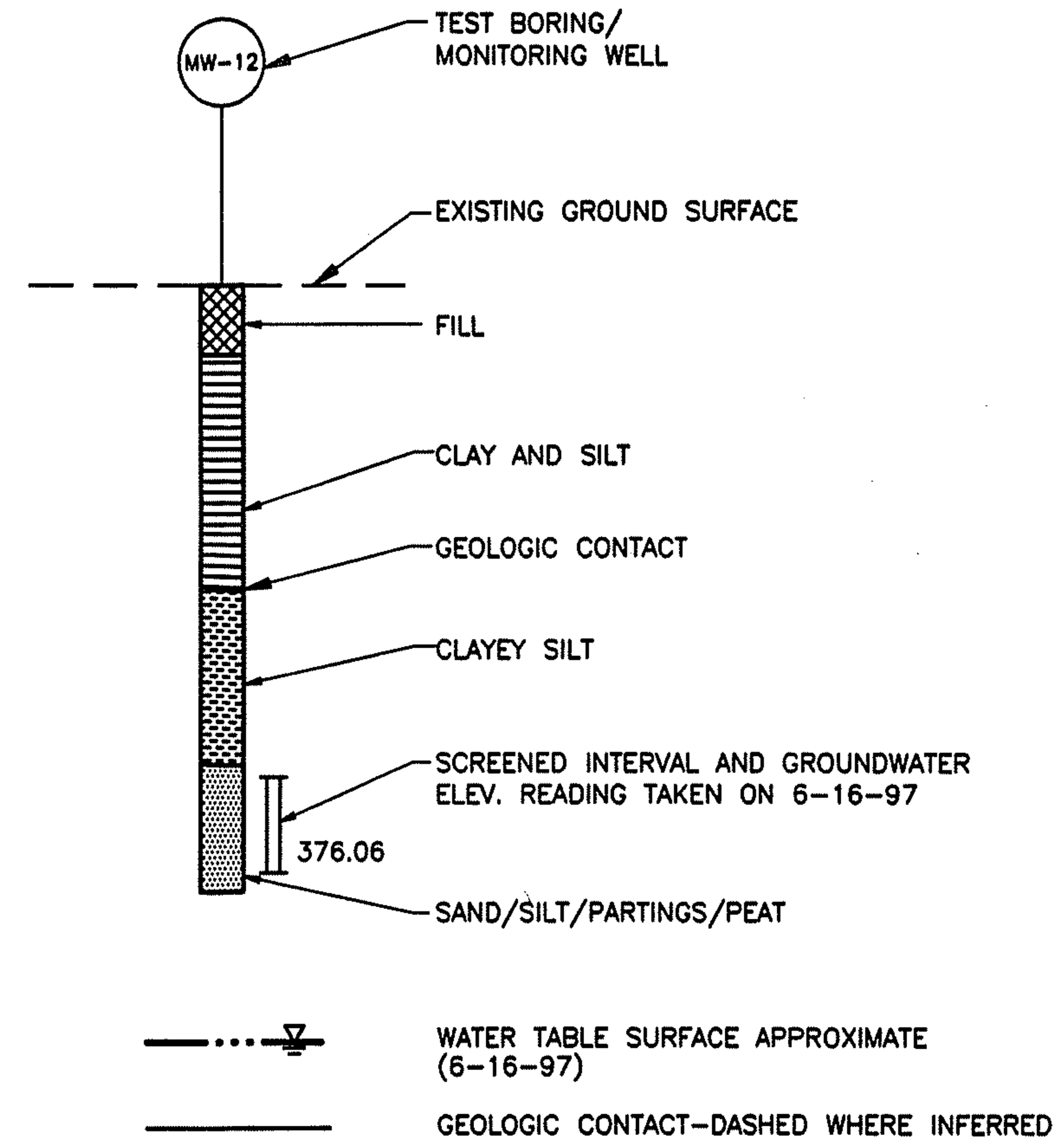
SCALE: HORIZ. 1'= 50'
VERT. 1'= 2'



KEY MAP

SCALE: N.T.S.

LEGEND:



REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE DWN BY AK DES BY TC CHK BY APP BY

EMCON

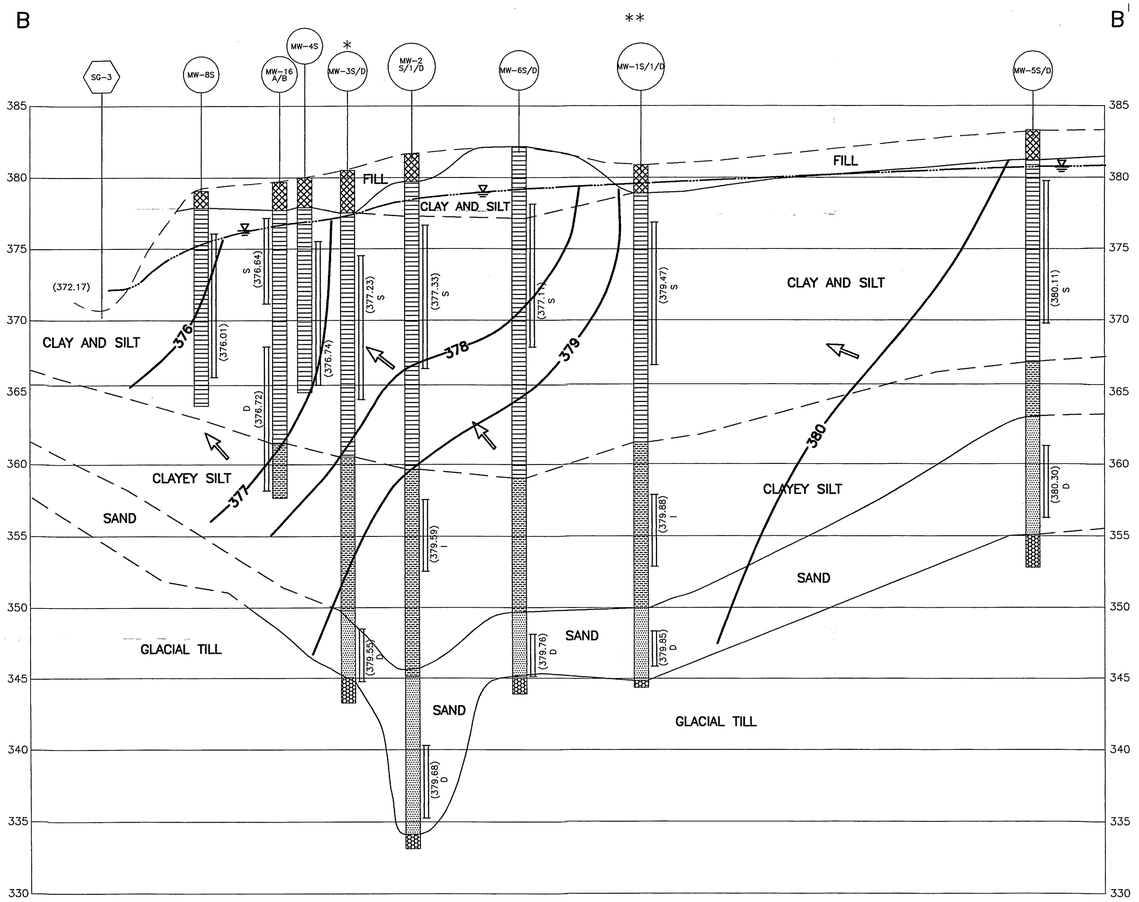
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

GEOLOGIC CROSS-SECTION A-A'

DRAWING NO. 2

PROJECT NO. 86143-001.000

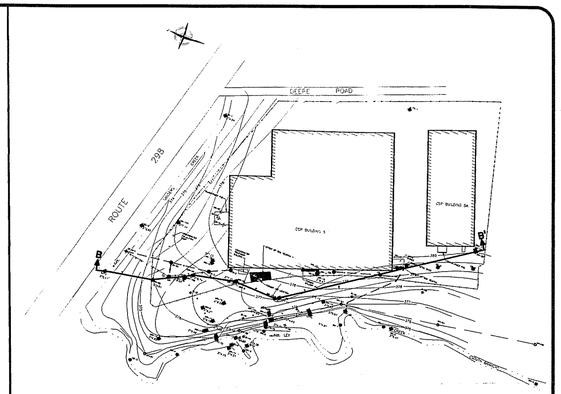
ENE-MTOWN2/DATA: N:\DWG\01554-03\MALMCSAA.dwg Xrefs: 24X36, MALMB-00, MALMBDDO Scale: 1 = 50.00 DimScale: 1 = 50.00 Date: 1/28/98 Time: 2:29 PM Operator: FDEGEORG



GEOLOGIC

CROSS-SECTION B-B'

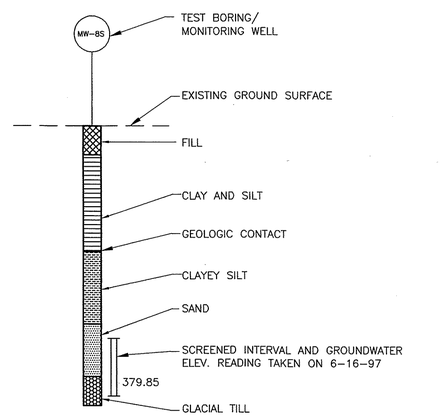
SCALE: HORIZ: 1"=100'
VERT: 1"=5'



KEY MAP

SCALE: N.T.S.

LEGEND:



WATER TABLE SURFACE APPROXIMATE (6-16-97)

GEOLOGIC CONTACT-DASHED WHERE INFERRED

380 EQUIPOTENTIAL

DIRECTION OF GROUNDWATER FLOW

NOTES:

1. EXISTING GRADE ELEVATION BASED ON ELEVATIONS RECORDED ON BORING LOGS
2. THE FOLLOWING WELLS WERE PROJECTED TO CROSS SECTION AS FOLLOWS:
   * MW-3S/D PROJECTED 50 FEET WEST TO THE CROSS-SECTION
   ** MW-1S/D PROJECTED 50 FEET WEST TO THE CROSS-SECTION

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE
DWN BY AK
DES BY CT
CHK BY
APP BY

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LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

GEOLOGIC CROSS-SECTION AND PIEZOMETRIC PROFILE B-B'

DRAWING NO. 3

PROJECT NO. 86143-001.000

1" 1/2" 0" 1"

N

DEERE ROAD

ROUTE 298

SANDERS CREEK

CSP BUILDING 5A

CSP BUILDING 5

TRANSFORMER PAD

TRANSFORMER PAD

METAL GARAGE

FORMER METAL SHED

EXTENT OF SOIL REMOVAL

EXTENT OF SOIL REMOVAL

GROUNDWATER TREATMENT BUILDING

GROUNDWATER COLLECTION SUMP

FORMER SOLVENT PAD

FORMER UST LOCATION

FLOW

FLOW

SANDERS CREEK (SOUTH BRANCH)

LEY

PZ-1

SG-1 374.54

SG-2 372.62

SG-3 372.17

SG-4

SG-5 375.47

SG-6

SB-53

SB-52

SB-51

SB-50

B-32

B-34

B-36

B-38

B-40

B-44

B-45

MW-19S 377.14

MW-3S 377.23

MW-3D

MW-2D 377.33

MW-2I

MW-1D

MW-1I

MW-1S 379.47

MW-6D

MW-6S 377.11

MW-4S 376.74

MW-16B

MW-16A 376.64

MW-8S 376.01

MW-7S 376.26

MW-9 376.37

MW-10 376.18

MW-17A 375.89

MW-17B 375.48

MW-15 374.95

MW-18B 376.06

MW-11

MW-18A 374.93

MW-13 373.85

MW-14 374.21

MW-12 375.82

380.11 MW-5S

MW-5D

PZ-11

T1-EAST 375.14

T1-CENTER 375.07

T1-EDGE

T1-WEST 374.97

PZ-12

T2-EAST 374.43

T2-EDGE 374.31

T2-CENTER

T2-WEST 374.18

PZ-T3

T3-EDGE 376.18

T3-EAST 375.48

T3-CENTER

T3-WEST 374.15

SW-1

SW-2

SW-3

SW-4

SW-6

SW-7

MH-52

MH-53

MH-54

MH-55

OF-01A

OF-02

CB-1

CB-2

CB-3

CB-4A

CB-5

CB-6

CB-7

CB-8

CB-9

CB-10

CB-20

375

376

377

378

379

380

0 60 120

SCALE IN FEET

LEGEND:

- MW-3D — EXISTING MONITORING WELL
- PZ-1 — EXISTING PIEZOMETER
- PZ-T1 — PIEZOMETER TRANSECT
- SG-2 — EXISTING STAFF GAUGE (SG-6 WAS NOT REPLACED FOR RI)
- CB-9 — STORM DRAIN CATCH BASIN
- OF-02 — EXISTING STORMWATER OUTFALL
- MH-52 — SANITARY SEWER MANHOLE
- EXISTING STORM SEWER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE ABANDONED AUGUST 1997
- B-32 — SOIL BORING
- SB-32 — CONFIRMATORY SOIL BORING
- SW-1 — SURFACE WATER SAMPLE LOCATIONS (SW-4 AND SW-6 WERE RESAMPLED FOR RI)
- FENCE
- SOIL EXCAVATION AREAS
- 379.47 — WATER LEVEL ELEVATION IN FEET, JUNE 16, 1997.
- 378 — WATER LEVEL ELEVATION CONTOUR, IN FEET (DASHED WHERE INFERRED)
- DIRECTION OF GROUNDWATER FLOW

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE

DWN BY AK

DES BY CT

CHK BY

APP BY

EMCON

LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

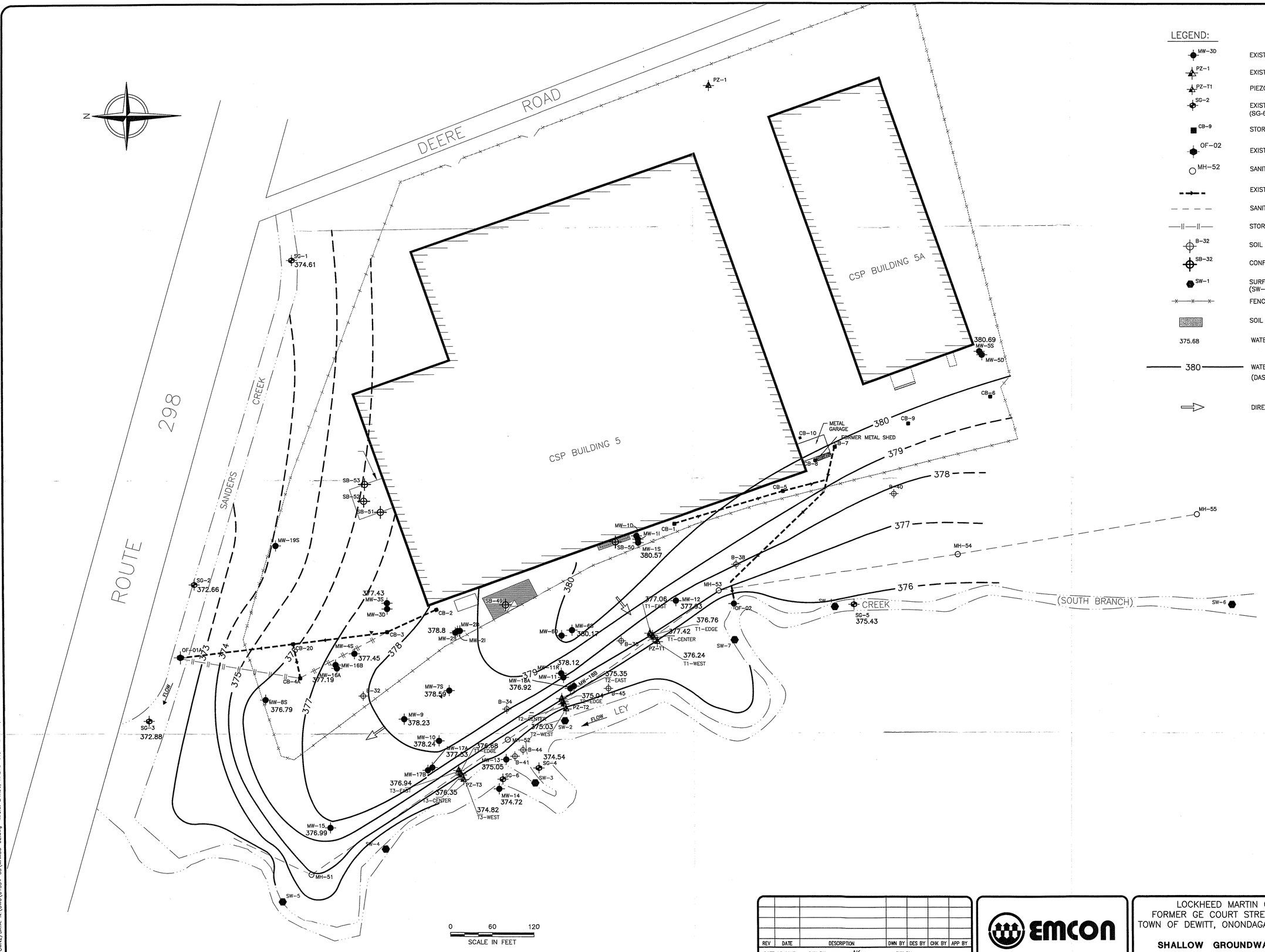
SHALLOW GROUNDWATER ELEVATION CONTOUR MAP - JUNE 1997

DRAWING NO. 4

PROJECT NO. 86143-001.000

1" 1/2" 0" 1"

ENE-MTOWN2/DATA: N:\DWG\01554-03\MWSC-10.dwg Xrefs: 24X36, MALMLG01, MALMB000, MALMB-00 Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/28/98 Time: 10:05 AM Operator: FDEGEORG



LEGEND:

- MW-3D — EXISTING MONITORING WELL
- PZ-1 — EXISTING PIEZOMETER
- PZ-T1 — PIEZOMETER TRANSECT
- SG-2 — EXISTING STAFF GAUGE (SG-6 WAS NOT REPLACED FOR RI)
- CB-9 — STORM DRAIN CATCH BASIN
- OF-02 — EXISTING STORMWATER OUTFALL
- MH-52 — SANITARY SEWER MANHOLE
- EXISTING STORM SEWER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE ABANDONED AUGUST 1997
- B-32 — SOIL BORING
- SB-32 — CONFIRMATORY SOIL BORING
- SW-1 — SURFACE WATER SAMPLE LOCATIONS (SW-4 AND SW-6 WERE RESAMPLED FOR RI)
- FENCE
- SOIL EXCAVATION AREAS
- 375.68 — WATER LEVEL ELEVATION IN FEET, APRIL 23,1997.
- 380 — WATER ELEVATION CONTOUR, IN FEET (DASHED WHERE INFERRED)
- DIRECTION OF GROUNDWATER FLOW

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
DATE OF ISSUE		DWN BY AK / DES BY CT	CHK BY / APP BY			

EMCON

LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

SHALLOW GROUNDWATER ELEVATION CONTOUR MAP - APRIL 1997

DRAWING NO. 4A

PROJECT NO. 8614J-001.000

1" 1/2" 0"

ENE-MTOWN2\DATA: N:\DWG\01554-03\MAMSC-02.dwg Xrefs: 24X36, MALMB-00, MALMLG01, MALMBD00 Scale: 1 = 1.00 DimScale: 1 = 30.00 Date: 1/28/98 Time: 2:35 PM Operator: PDM

N

DEERE ROAD

PZ-1
380.15

SG-1

298

SANDERS CREEK

ROUTE

CSP BUILDING 5

CSP BUILDING 5A

380.0

MW-5S
MW-5D
380.3

TRANSFORMER PAD

CB-6

CB-9

METAL GARAGE

CB-10

FORMER METAL SHED

CB-7

CB-8

EXTENT OF SOIL REMOVAL

CB-5

B-40

TRANSFORMER PAD

SB-53
SB-52
SB-51

379.5

379.85
MW-1D
MW-1I
MW-1S
SB-50

EXTENT OF SOIL REMOVAL

FORMER SOLVENT PAD

MW-19S

GROUNDWATER COLLECTION SUMP

SG-2

GROUNDWATER TREATMENT BUILDING

SB-49

FORMER UST LOCATION

MW-3S
MW-3D
379.55

CB-2
CB-3

379.68
MW-2D
MW-2S
MW-2I

MW-6D
MW-6S
379.76

B-36

PZ-T1

MW-12

MH-53

B-38

MH-54

MH-55

SW-1

CREEK (SOUTH BRANCH)

SG-5

SW-6

OF-02

SW-7

CB-20

MW-4S

OF-01A

MW-16B

MW-16A

CB-4A

FLOW

SG-3

MW-8S

B-32

MW-7S

MW-11R
MW-11I
MW-18A
MW-18B

B-45

PZ-T2

B-34

MW-9

SW-2

FLOW

LEY

MW-10

MW-17A

MH-52

B-44

MW-13

B-41

SG-4

MW-17B

PZ-T3

SG-6

SW-3

MW-14

MW-15

SW-4

MH-51

SW-5

0 60 120
SCALE IN FEET

LEGEND:

- MW-3D — EXISTING MONITORING WELL
- PZ-1 — EXISTING PIEZOMETER
- PZ-T1 — PIEZOMETER TRANSECT
- SG-2 — EXISTING STAFF GAUGE (SG-6 WAS NOT REPLACED FOR RI)
- CB-9 — STORM DRAIN CATCH BASIN
- OF-02 — EXISTING STORMWATER OUTFALL
- MH-52 — SANITARY SEWER MANHOLE
- EXISTING STORM SEWER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE ABANDONED AUGUST 1997
- B-32 — SOIL BORING
- SB-32 — CONFIRMATORY SOIL BORING
- SW-1 — SURFACE WATER SAMPLE LOCATIONS (SW-4 AND SW-6 WERE RESAMPLED FOR RI)
- FENCE
- SOIL EXCAVATION AREAS
- 379.85 — WATER LEVEL ELEVATION CONTOUR IN FEET, JUNE 16,1997.
- 380.0 — WATER LEVEL ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- DIRECTION OF GROUNDWATER FLOW

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE
DWN BY AK
DES BY CT
CHK BY
APP BY

EMCON

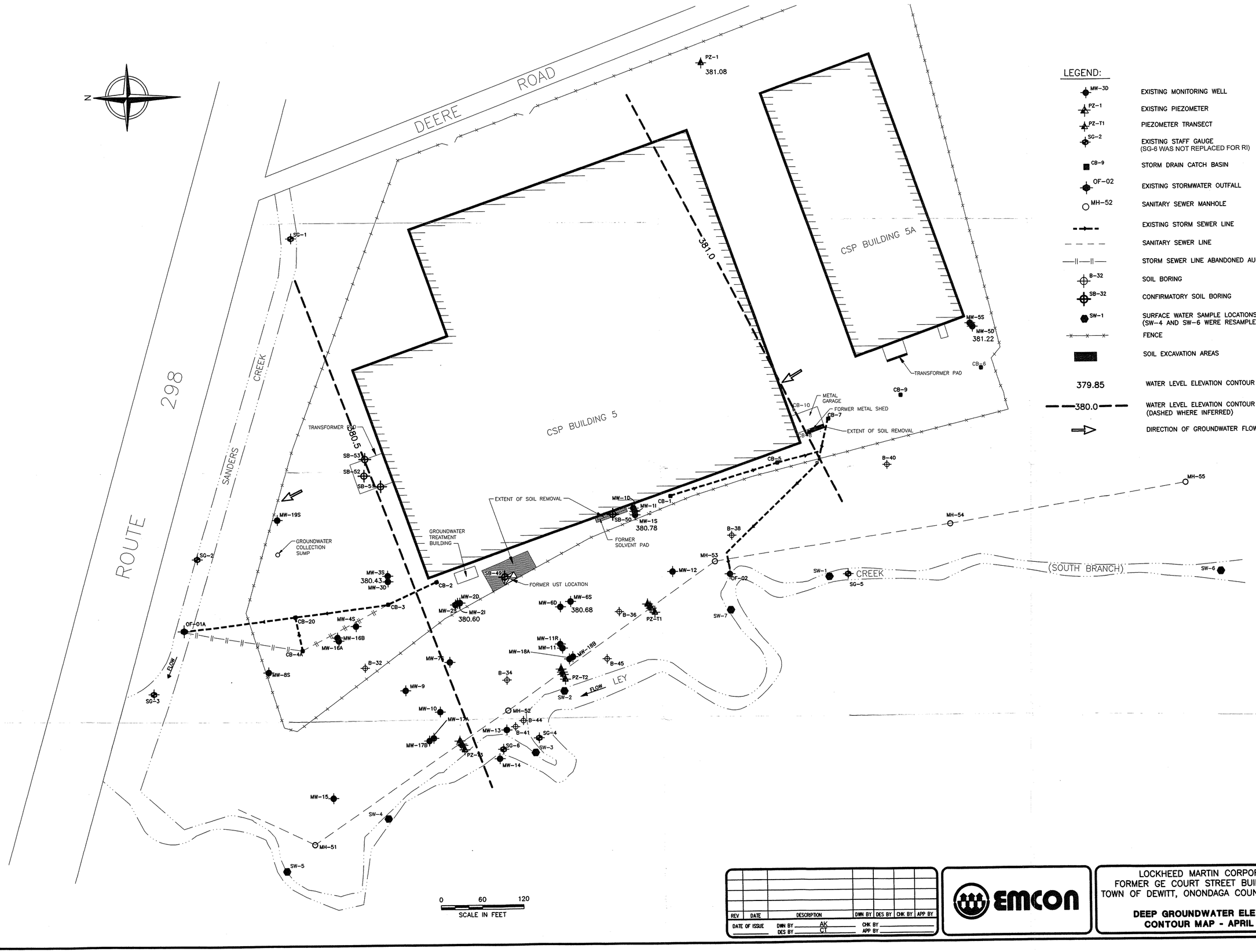
LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

DEEP GROUNDWATER ELEVATION CONTOUR MAP - JUNE 1997

DRAWING NO. 5
PROJECT NO. 86143-001.000

1" 1/2" 0" 1"

ENE-MTOWN2/DATA: N:\DWG\01554-03\MAMSC-09.dwg Xrefs: 24X36, MALNLG01, MALMBDOO, MALMB-00 Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 4/6/98 Time: 11:48 AM Operator: ACADTWO



REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
DATE OF ISSUE		DWN BY AK	CHK BY			
		DES BY CT	APP BY			

emcon

LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

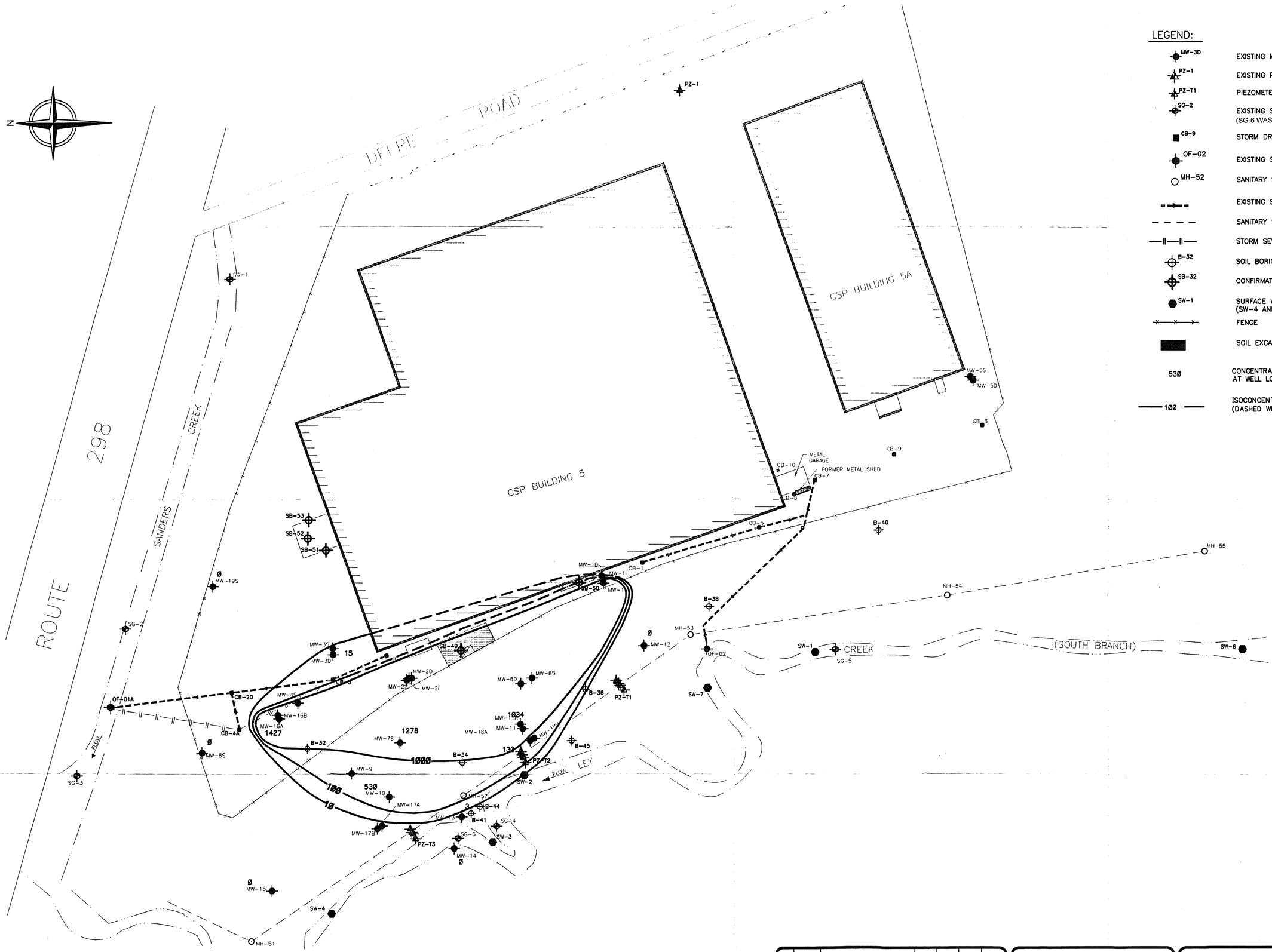
DEEP GROUNDWATER ELEVATION CONTOUR MAP - APRIL 1997

DRAWING NO. **5A**

PROJECT NO. 86143-001.000

1" 1/2" 0" 1"

ENE-MTOWN2/DATA: N:\DWG\01554-03\MAMWS213.dwg Xrefs: 24X36, MALMLG01, MALMBD00, MALMB-00 Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/29/98 Time: 6:02 PM Operator: FDEGEORG



LEGEND:

- MW-3D — EXISTING MONITORING WELL
- PZ-1 — EXISTING PIEZOMETER
- PZ-T1 — PIEZOMETER TRANSECT
- SG-2 — EXISTING STAFF GAUGE (SG-6 WAS NOT REPLACED FOR RI)
- CB-9 — STORM DRAIN CATCH BASIN
- OF-02 — EXISTING STORMWATER OUTFALL
- MH-52 — SANITARY SEWER MANHOLE
- EXISTING STORM SEWER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE ABANDONED AUGUST 1997
- B-32 — SOIL BORING
- SB-32 — CONFIRMATORY SOIL BORING
- SW-1 — SURFACE WATER SAMPLE LOCATIONS (SW-4 AND SW-6 WERE RESAMPLED FOR RI)
- FENCE
- SOIL EXCAVATION AREAS
- 530 — CONCENTRATION VALUE IN PARTS PER BILLION AT WELL LOCATION ON MARCH, 1997
- 100 — ISOCONCENTRATION LINE OF TOTAL VOLATILE ORGANICS (DASHED WHERE INFERRED)

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE
DWN BY AK
DES BY CT
CHK BY
APP BY

EMCON

LOCKHEED MARTIN CORPORATION
FORMER GE COURT STREET BUILDING 5/5A
TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK

ISOCONCENTRATION MAP OF VOC'S MARCH 1997

DRAWING NO. 6
PROJECT NO. 86143-001.000

ENE-MTOWN2/DATA: N:\DWG\91554-93\MAMSC-11.dwg Xrefs: 24X36; MALMLGB1; MALMBDDR; MALMB-08 Scale: 1 = 1.00 DimScale: 1 = 1.00 Date: 1/28/98 Time: 10:15 AM Operator: FDECEORG

APPENDIX A

BORING LOGS

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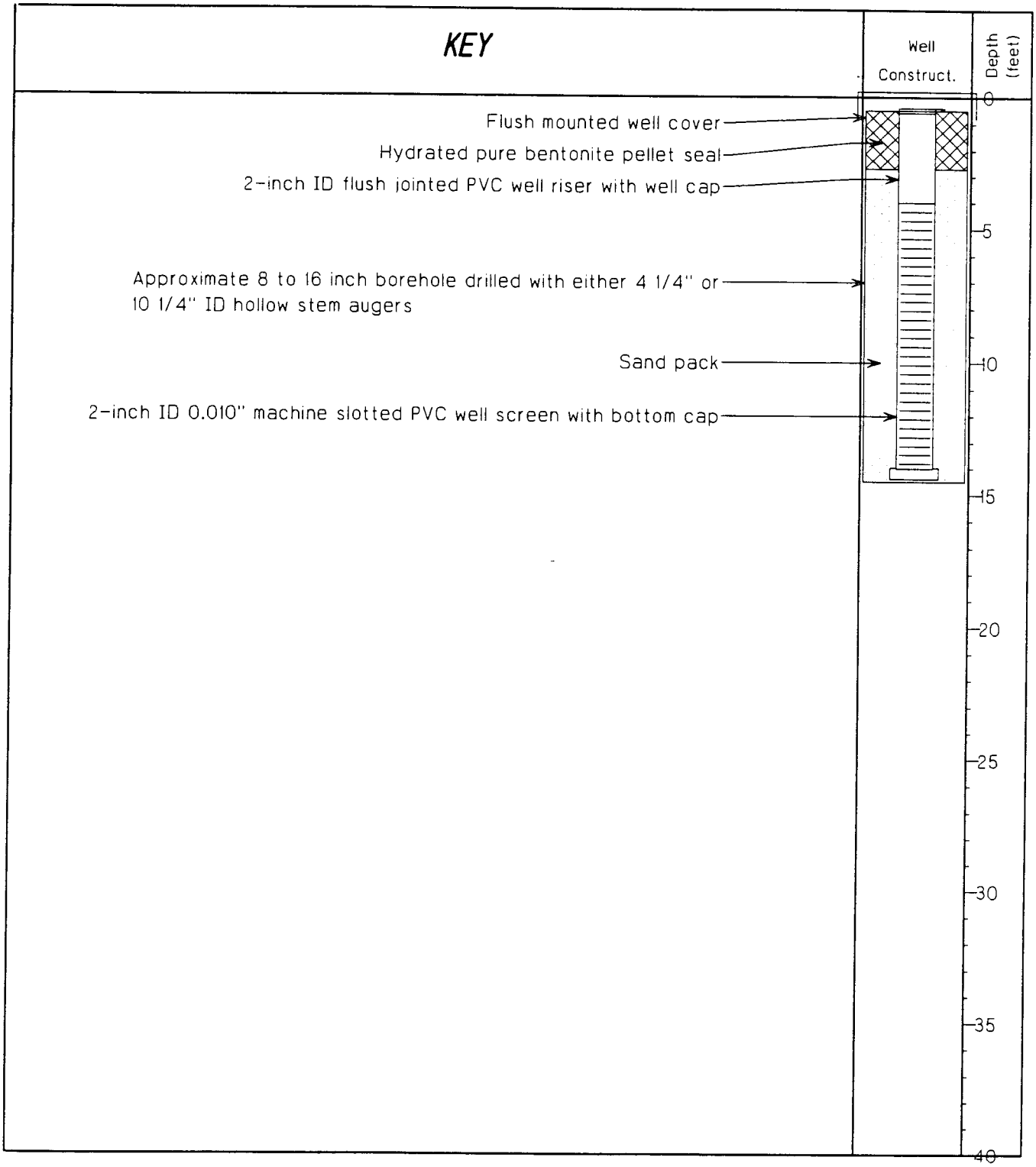
KEY TO WELL CONSTRUCTION DIAGRAMS

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION

PROJECT NO.: 01554.EB

WELLS: MW-1S,MW-2S,MW-3S,MW-4S,MW-5S,MW-6S,MW-7S,MW-8S

KEY



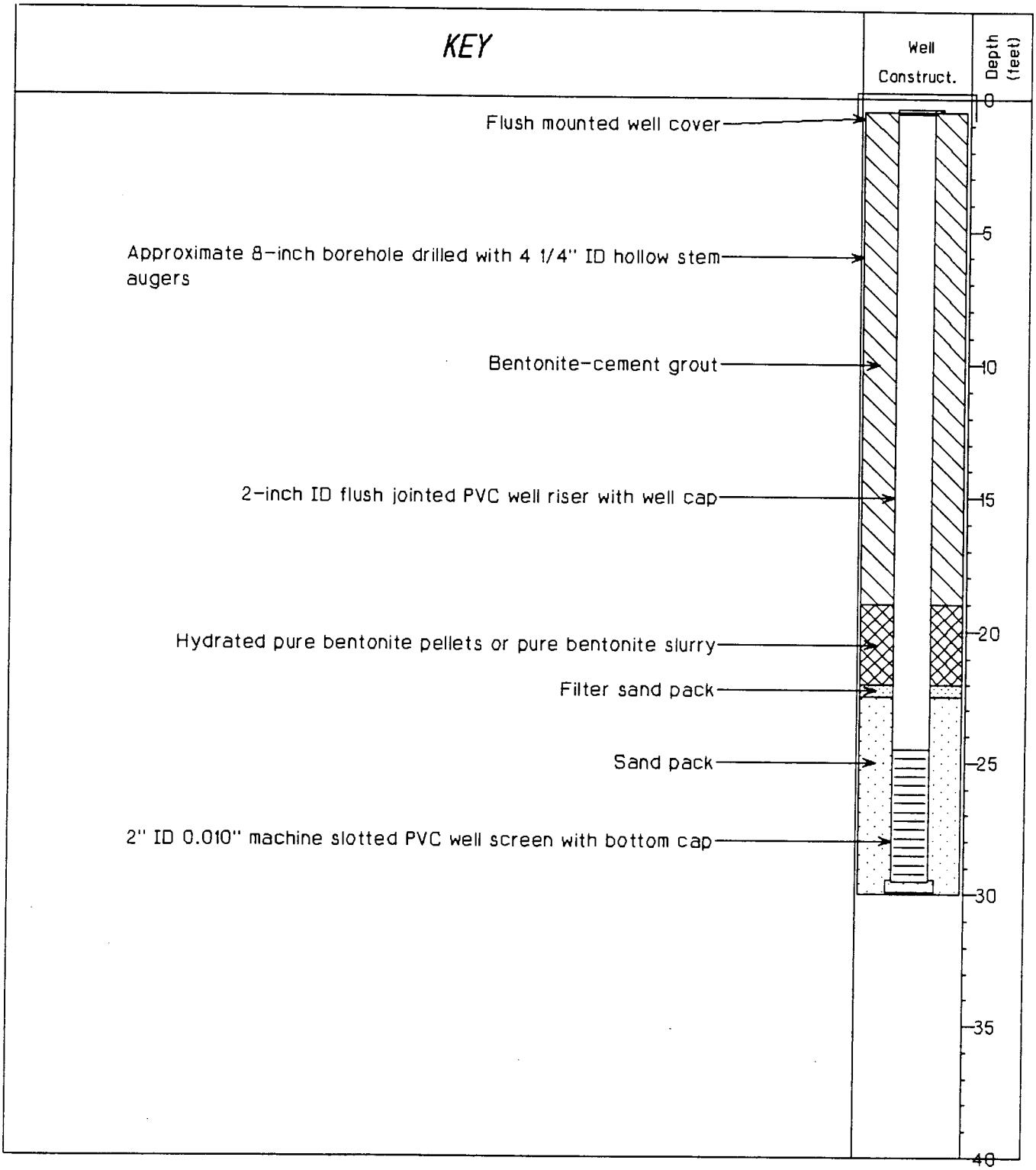
Wehran EnviroTech

KEY TO WELL CONSTRUCTION DIAGRAMS

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION

PROJECT NO.: 01554.EB

WELLS: MW-1I, MW-2I



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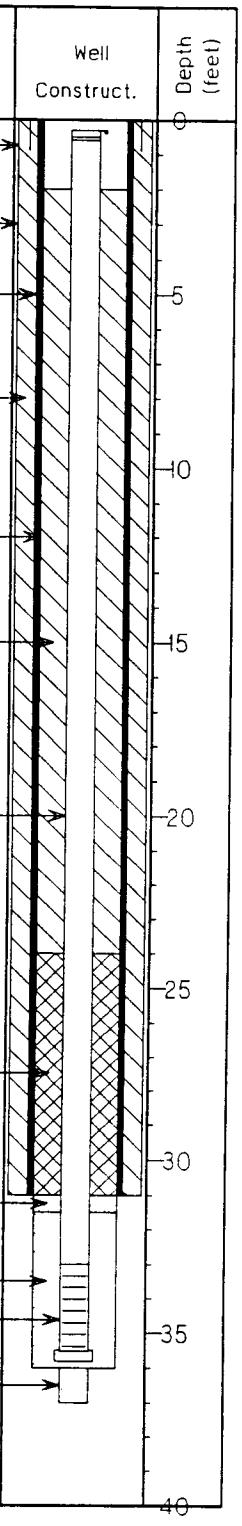
KEY TO WELL CONSTRUCTION DIAGRAMS

PROJECT: COURT STREET SUBSURFACE INVESTIGATION

PROJECT NO.: 01554.EB

WELLS: MW-1D, MW-2D, MW-3D, MW-5D, PZ-1

KEY



Flush mounted well cover

Approximately 16 inch borehole advanced with 10 1/4 inch ID hollow stem augers

6 inch welded steel casing

Cement bentonite grout

Nominal 5 inch diameter borehole advanced by rotary drilling using potable water as the drilling fluid

Cement bentonite grout

2 inch ID flush joint, threaded PVC riser

Pure Bentonite grout seal

Filter sand pack

Sand pack

2-inch ID 0.010 machine slotted PVC well screen

Borehole created by advancement of 2 inch split spoon sampler or Shelby tube (refer to sample type indicated on individual logs)

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LEGEND FOR BORING LOGS

PROJECT: COURT STREET #5 SUBSURFACE INVESTIGATION

PROJECT NO.: 01554.EB

BORING NO.: ALL

GRAPHIC SYMBOL	SOIL/ROCK CODE	DESCRIPTION OF SYMBOLS USED IN LITHLOGIC LOG COLUMN
	Fill	FILL MATERIAL
	CL	CLAY & SILT
	ML	CLAYEY SILT
	SM	SAND
	CL-ML	GLACIAL TILL
		I.S. = Initial screening in ppm using PID H.S. = Head space in ppm using PID

SYMBOL or PATTERN	DESCRIPTION OF SYMBOLS USED IN WELL CONSTRUCTION AND SAMPLE SYMBOLS
	Bentonite Cement Grout
	Pure Bentonite Integrity Seal
	Filter Pack
	Sandpack
	Well Screen
	Split-Spoon Sample
	Shelby Tube Sample

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BORING/WELL NO. MW-1S

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.91ft.
N-S COORD: 4530.24
E-W COORD: 5172.16
WL REF ELEV:
DATE STARTED: 12/19/91
DATE FINISHED: 12/19/91
OPERATOR: RODNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		16	10			CLAY AND SILT Grey brown mottled Clayey SILT, trace f Sand, some gravel in the top of the spoon	0	1.6
	5	2			6			Brown SILT & CLAY and Gravel, very stiff, mottled	0	0.5
		3		24	4			Dark grey to black organic SILT & CLAY (PEAT)	0	3.9
	10	4		16	7			Dark brownish grey CLAY & SILT, parting of fm Sand, shell fragments and other organic debris	0	3.9
		5		24	3			Brownish grey Clayey SILT, f Sand in partings	0	0.8
		6		NR					0	3.7
	15							end of boring @ 14.5'		
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

Wehran EnviroTech

BORING/WELL NO. MW-1I

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.EB*
RIG: *CME-45*

GS ELEV: *381.900ft.*
N-S COORD: *4530.534*
E-W COORD: *5177.006*
WL REF ELEV:
DATE STARTED: *3/2/92*
DATE FINISHED: *3/3/92*
OPERATOR:
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*	*SHELBY*	
DIAM.	*4 1/4"ID*	*2"*	*4"*	
WEIGHT		*140 #*		
FALL		*30"*	*PRESS*	

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS
	0							PAVEMENT AND FILL	
	5	1		18	11			CLAY AND SILT Grey and brown SILT & CLAY, partings of f Sand, organics	
		2		14	3			Grey CLAY & SILT to dark brown organic SILT & CLAY, wood fragments, shells	
	10	3		12	2			Grey SILT & CLAY, partings of f Sand, stiff, wet	
	15	4		24	NA			Grey CLAY & SILT, trace f Sand	
	20	5		24	WOH				
		6		20	4			CLAYEY SILT Grey Clayey SILT, partings of f Sand	
	25	7		NR	NA			Grey to lt grey to brownish Clayey SILT, little f Sand	
		8		20	5			Lt brown SILT, little f Sand, little Clay	
		9		14	4			Lt brown Silty f SAND, little (-) Clay	
	30							eob @ 30'	
	35								
	40								
	45								
	50								
	55								

Wehran EnviroTech

BORING/WELL NO. MW-1D

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

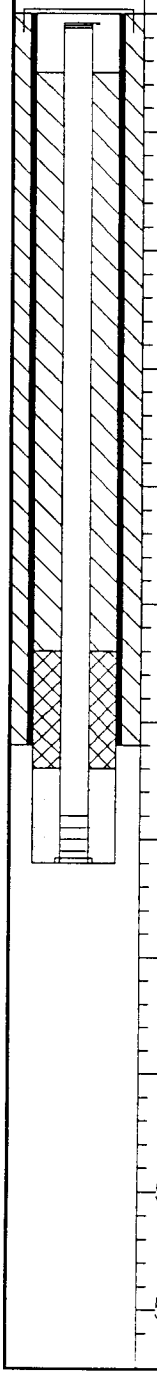
PROJECT NO: 01554.EB
RIG: FAILING F-10

GS ELEV: 381.93ft.
N-S COORD: 4532.69
E-W COORD: 5181.75
WL REF ELEV:
DATE STARTED: 12/30/91
DATE FINISHED: 1/3/92
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	10 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		



DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
							PAVEMENT AND FILL		
	1		12	13			CLAY AND SILT	0	1.4
5	2		8	4			Grey brown mottled Clayey SILT, occasional f Sand partings , wood pieces from railroad ties, organics	0	1.6
10	3		24	WOH			Dark brownish grey CLAY & SILT, trace (-) f Sand , very plastic, occasional f Sand partings	0	1.1
	4		24	WOH				0	1.9
15	5		24	WOH				0	0.1
	6		24	WOR				0	0.6
	7		24	7				0	0
20	8		24	6			CLAYEY SILT	0	0
	9		24	4			Light grey brown Clayey SILT, little to f Sand , occasional f Sand partings	0.6	0
25	10		24	5				0	0
	11		24	8				0	0
	12		22	10				0	0
30	13		12	WOH			SANDS		0
	14		NR	5			Dark grey to grey black fmc SAND, little Silt, trace f Gravel		0
35	15		18	46					0
							GLACIAL TILL		
							Red brown Silty f SAND, little fm Gravel, trace Clay , very dense		
40							eob @ 36'		
45									
50									
55									

Wehran EnviroTech

BORING/WELL NO. MW-2S

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS
RIG: CME-45

GS ELEV: 382.10ft.
N-S COORD: 4792.21
E-W COORD: 5045.00
WL REF ELEV:
DATE STARTED: 12/24/91
DATE FINISHED: 12/24/91
OPERATOR: RODNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
								CLAY AND SILT Brown mottled Clayey SILT, trace f Sand grading to		
	5	1		12	11			@ 6.0' Brown to red brown fmc SAND, little Silt, very moist		0
		2		24	4					75
	10	3		24	2			@ 9', grades to Grey to grey brown CLAY & SILT, trace f Sand mainly in partings		41
		4		24	2					3.5
	15	5		24	1					1.6
								eob @ 16'		
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

Wehran EnviroTech

BORING/WELL NO. MW-2I

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.EB*
RIG: *CME-45*

GS ELEV: *382.080ft.*
N-S COORD: *4789.216*
E-W COORD: *5047.180*
WL REF ELEV:
DATE STARTED: *2/28/92*
DATE FINISHED: *2/28/92*
OPERATOR:
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*	*SHELBY*	
DIAM.	*4 1/4"ID*	*2"*	*4"*	
WEIGHT		*140 #*		
FALL		*30"*	*PRESS*	

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS
	0							PAVEMENT AND FILL	
	5	1		12	11			CLAY AND SILT Grey to lt brown SILT & CLAY, occasional partings of f Sand, organic matter (roots), very stiff	
		2		22	12				
	10	3		18	NA			Grey to grey brown CLAY & SILT or SILT & CLAY, occasional partings of, f Sand	
	15	4		20	3				
	20	5		24	WOH				
		6		24	WOH				
	25	7		22	2			CLAYEY SILT Brown Clayey SILT, f Sand in partings	
		8		24	3				
	30	9		NR	NA			eob @ 30'	
	35								
	40								
	45								
	50								
	55								

Wehran EnviroTech

BORING/WELL NO. MW-2D

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

PROJECT NO: 01554.EB
RIG: FAILING F-10

GS ELEV: 382.13ft.
N-S COORD: 4785.68
E-W COORD: 5047.58
WL REF ELEV:
DATE STARTED: 12/23/91
DATE FINISHED: 12/31/91
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	10 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		8	6			CLAY AND SILT Grey brown mottled clayey SILT, f Sand in partings, trace organics		0
	5	2		12	12			Brown to yellow brown to grey Clayey SILT, partings of f Sand, little organics, very stiff	0.5	0
		3			13			Brownish grey fmc SAND, little Silt, very wet	>3	6
	10	4		3	1				>3	2.9
		5		24	WOR			Grey brown SILT & CLAY, parting of f Sand	>3	11
		6		24	WOH					0
	15	7		24						0
		8		24	3			Brown Clayey SILT, f Sand in partings grading to light grey to brown SILT & CLAY		0
	20	9		24	5					0
								CLAYEY SILT		
		10		24	4			Brown clayey SILT, trace f Sand		0
	25	11		24	8			Brown Clayey SILT, trace f Sand		0.9
		12		22						
	30	13		12	3					
		14		NR	3					
	35	15		18	5					
		16		12	12			SANDS		
		17		24	14			Dark grey to grey black fmc SAND, little Silt, trace f Gravel		
	40	18		24	18					
		19		NR	12					
	45	20		12	10					
		21		20	56			GLACIAL TILL Red brown Sandy SILT, little to some fm Gravel, trace (-) Clay , very dense		
	50							end boring @ 48.0'		
	55									

Wehran EnviroTech

BORING/WELL NO. MW-3S

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *EMPIRE SOILS* RIG: *CME-45*

GS ELEV: *380.75ft.*
N-S COORD: *4890.22*
E-W COORD: *5087.28*
WL REF ELEV:
DATE STARTED: *12/24/91*
DATE FINISHED: *12/24/91*
OPERATOR: *RODNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL Reddish brown to black fmc SAND and fm Gravel, little silt, bits of macadam		
		1		8	10				0	0
	5	2		20	8			CLAY AND SILT Brown and grey Clayey SILT ,trace f Sand, mottled, very stiff , organic debris	0	0
		3		24	6				0	0
		4		24	6				1	0.6
	10	5		24	2			Grey CLAY & SILT, little organic debris and occasional f Sand partings	0	0
		6		24	2			Brownish grey SILT & CLAY, little f Sand in partings		
	15	7		24	1					
								end of boring @ 16.0'		
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

Wehran EnviroTech

BORING/WELL NO. MW-3D

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

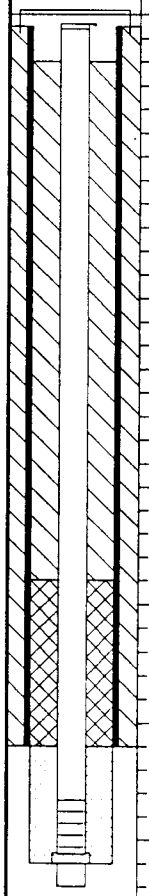
PROJECT NO: 01554.EB
RIG: FAILING F-10

GS ELEV: 380.54ft.
N-S COORD: 4890.01
E-W COORD: 5079.19
WL REF ELEV:
DATE STARTED: 12/27/91
DATE FINISHED: 1/2/92
OPERATOR: TOM
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	10 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		



DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
							PAVEMENT AND FILL		
5							CLAY AND SILT See MW-3S for detailed description of geology between 2 and 15 feet Soils generally consist of CLAY & SILT with vary amounts of fm Sand mainly in partings		
10									
15	1	X	24	WOR			Grey brown SILT & CLAY alternating with layers of Clayey SILT, trace to little f Sand	0	0
20	2	X	12				CLAYEY SILT Light brown clayey SILT,trace f Sand mainly in partings	0	0
25	3	X	24	4			Light brown Clayey SILT, trace f Sand in partings	0	0
	4	X	24	7				0	0
30	5	X	24	7					
	6	X	20	15			SANDS Dark grey to grey black fmc SAND, little Silt, trace f Gravel grading to red brown f SAND, little Silt, trace Gravel	0.6	0
35	7	X	24	8				0	0
	8	X	20	14			GLACIAL TILL Red brown SILT and fmc Sand, little Clay, little fm Gravel, dense, unstructured		
40							eoD @ 37'		
45									
50									
55									

Wehran EnviroTech

BORING/WELL NO. MW-4S

SHEET 1 of 1

PROJECT: *COURT STREET SUBSURFACE INVESTIGATION*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *EMPIRE SOILS*

PROJECT NO: *01554.EB*
RIG: *CME-45*

GS ELEV: *379.86ft.*
N-S COORD: *4937.20*
E-W COORD: *5015.36*
WL REF ELEV:
DATE STARTED: *12/23/91*
DATE FINISHED: *12/24/91*
OPERATOR: *RODNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	*HSA*	*SS*		
				DIAM.	*4 1/4"ID*	*2"*		
				WEIGHT		*140 #*		
				FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	10			CLAY AND SILT Brownish grey and black SILT and f Sand grading to f SAND, little Silt @ around 3.5'		0
	5	2		16	4			Light brown fmc SAND, some to little Silt		0
		3		24	2					0
		4		24	1			Brown and grey to brownish grey Clayey SILT to Silty CLAY, little to trace f Sand, very moist		0
	10	5		24	1					0
		6		24	4			@ 14', Brownish grey SILT & CLAY and f Sand, not cohesive, very moist		0
	15							end of boring @ 14.5'		
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

Wehran EnviroTech

BORING/WELL NO. MW-5S

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 383.410ft.
N-S COORD: 4039.507
E-W COORD: 5445.710
WL REF ELEV:
DATE STARTED: 3/3/92
DATE FINISHED: 3/4/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)			
DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS
								PAVEMENT AND FILL	
		1		12	11			CLAY AND SILT Brown and grey mottled SILT & CLAY, partings of f Sand	0
	5	2		24	5				0
		3		24	4			Between 6.5 and 7.0', Dark grey Gravelly Clayey SILT layer changing to grey brown SILT & CLAY, partings of f Sand	0
	10	4		16	4			Grey and brown CLAY & SILT, occasional partings of f Sand	0
		5		12	4			Lt brown Clayey SILT, little f Sand, mainly in partings, laminated	0
		6		20	8				0
	15							eob @ 14.0'	
	20								
	25								
	30								
	35								
	40								
	45								
	50								
	55								

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BORING/WELL NO. MW-5D

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.EB*
RIG: *CME-45*

GS ELEV: *383.470ft.*
N-S COORD: *4035.704*
E-W COORD: *5440.891*
WL REF ELEV:
DATE STARTED: *3/4/92*
DATE FINISHED: *3/5/92*
OPERATOR:
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*10 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS
								PAVEMENT AND FILL	
								CLAY AND SILT	
	5	1		14	7			Brown SILT & CLAY, occasional partings of f Sand ,root markings	0
	10	2		16	3			Grey to grey brown SILT & CLAY, parting of f Sand	0
	15	3		20	3				0
		4		24	3			CLAYEY SILT Grey SILT & CLAY to Clayey SILT, f Sand in partings	0
	20	5		12	8			Grey brown SILT, little f Sand	0
		6		24	10			SANDS	0
		7		24	5			Dark grey to black to brown fmc SAND, little Silt, very wet	0
	25	8		24	10				0
		9		22	28				0
	30	10		12	20			GLACIAL TILL Red brown SILT, some Clay, little fm Gravel, little fmc Sand, very dense	0
								eob @ 30'	
	35								
	40								
	45								
	50								
	55								

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BORING/WELL NO. MW-6S

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.03*
RIG: *CME-45*

GS ELEV: *383.4ft.*
N-S COORD: *4625.348*
E-W COORD: *5047.770*
WL REF ELEV:
DATE STARTED: *8/19/92*
DATE FINISHED: *8/19/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)			
DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS H.S.
		1		12	8			CLAY AND SILT Brown SILT & CLAY, partings of f Sand	0
		2		6	19			Lt brown and grey mottled SILT & CLAY, little (-) to trace f sand, stiff	0
	5	3		12	11				0
		4		24	15			Lt brown CLAY & SILT to Silty CLAY, trace partings of f sand, organics, wet	0
		5		24	4				0
	10	6		NR	4			No return, traces of fm SAND with organics	0
		7		24	5			Organic rich Sandy CLAY, some Silt changing to Brown CLAY & SILT, trace f sand @ 12.5'	0
	15							eob @ 14.5'	
	20								
	25								
	30								
	35								
	40								
	45								
	50								
	55								

TEST BORING LOG
Boring No. MW-6D

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation

Groundwater					Cas.		Samp.	Core	Tube	
Date	Water Depth	Water Elev.	Intake	Type	Steel	HSA	SS	—	—	W.L. Ref. Elev.
2/20/97	4.54' BPVC			Diam.	10"	4 1/4" TD	2"	—	—	Date Started 2-10-97
				Weight	—	—	140#	—	—	Date Finished
				Fall	—	—	30"	—	—	Driller Mark Eaves
										Inspector JHK

Well Construction	Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	HNU ** (ppm) Spoon	HNU ** (ppm) HSA
5" Protective Steel Casing; CEMENT BENTONITE GROUT; 10" ø Steel Casing; 2" ø40 PVC FLUSH JOINT RISER; 0 SAND PACK; 10 slot Screen; 0 SAND PACK	0	1	SS	18	2-2 / 5-5	SILT & CLAY W/ SAND Black SILT & CLAY, trace f-m sand, trace Roots @1.0' Br, gy mottled SILT & CLAY, tr(+) vf Sand @2.0' Org br mottled Clayey SILT, trace roots with occassional parting f Sand. @4.0' Org br gy SILT & CLAY medium @7.25' Gray Green Clayey SILT, little f Sand @7.75' Red br Clayey SILT, some f-c Sand, tr vf Gvl @8.0' Org brown SILT & CLAY @9.25' Org, Red br. Clayey SILT some f-m Sand sat @9.75' Yl br Clayey SILT, some f-m Gvl, little f Sand @9.95 Gray SILT & CLAY @10.0' Gray SILT & CLAY, with occassional parting of f Sand @ 11.5 & 11.75'		0	0
		2	SS	6	5-5 / 6-5			0	0
	5	3	SS	10	2-3 / 4-4			0	0
		4	SS	22	4-5 / 5-6			0	1.5
		5	SS	15	5-6 / 5-6			0	6
	10	6	SS	6	2-2 / 2-2			0	5
		7	SS	22	2-2 / 2-2			0.2	9
	15	8	SS	18	WH-WH / WH-WH	13.5 @12.0' Gray SILT & CLAY @12.75' Gray F-M SAND, little Silt @12.8 Orange br SILT and f-m Sand @12.9' Gray CLAY & SILT @13.0' Gray F SAND, and SILT. @13.2' Gray CLAY & SILT, occassional parting of SILT.		0.2	0.5
		9	SS	14	WH-WH / WH-WH			0	0
		10	SS	18	WH-WH / WH-1			0	0
	20	11	SS	9	WH-WH / WH-WH			0	0
		12	SS	18	WH-WH / WH-2	CLAY & SILT Gray CLAY & SILT, soft, sat. @14.0 Gray CLAY & SILT, very soft @21.0' Gray Clayey SILT with occ 3" to 4" thin beds SILT & CLAY		0	0
	25	13	SS	21	WH-WH / WH-WH			0	0
		14	SS	17	WH-WH / WH-WH	@23.75 Gray CLAY & SILT @24' Gray Clayey SILT @27.7' Gray SILT, trace (-) vf Sand. @28' Gray Clayey SILT, occ very thin bed ½" of SILT & CLAY @30' Gray Clayey SILT @31.5 Gray Clayey SILT, some f Sand. @32' Gray Clayey SILT, tr(+) f-m Sand		0	0
		15	SS	19	WH-WH / WH-2			0	0
	30	16	SS	16	WH-WH / 2-4			0	0
		17	SS	20	1-1 / 1-1	32.5 SAND Gray F-C SAND, tr(+) Silt @32.8' Gray SILT, tr f Sand @32.9' Gy C F SAND, tr Gvl vf Gvl, tr silt with thin bed Clayey SILT @33.2' @33.8 Gray SILT, trace f-m Sand. @33.9' Gy C F SAND, tr f Gvl, tr Silt @34 Gy MF SAND, tr+ Silt @35' Gray F GRAVEL, some f Sand, tr Silt @35.25 Gray MF SAND, tr+ Silt @36.0' Gy C F SAND, little f Gvl, tr Silt @36.5' Gy C F SAND, tr(+) f Gvl, tr Silt		0	0
		18	SS	16	4-5 / 5-8			0	0
	35	19	SS	16	7-9 / 50/4"	37.0 GLACIAL TILL Red brown gray F-C SAND, little (+) Clayey SILT, little f-m Gravel, very dense to dense @38' Red br gy F-M SAND, little Clayey SILT, tr f Gvl 38.5 END OF BORING 38.5'		0	0
		20	SS	4	17			0	0
	40								
	45								
	50								

** HNU equipped with an 11.7 eV lamp

10.10/89.4251020

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BORING/WELL NO. MW-7S

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.03*
RIG: *CME-45*

GS ELEV: *382.0ft.*
N-S COORD: *4801.428*
E-W COORD: *4962.253*
WL REF ELEV:
DATE STARTED: *8/19/92*
DATE FINISHED: *8/19/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	*HSA*	*SS*		
				DIAM.	*4 1/4"ID*	*2"*		
				WEIGHT		*140 #*		
				FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS H.S.
		1		12	10			CLAY AND SILT Brown SILT, some Clay, partings of f sand, roots	0
		2		16	19			Lt brown and grey mottled SILT some Clay, little (-) to trace f sand, stiff	0
	5	3		12	10				0
		4		24	14			Lt brown to black fm SAND and Silt, trace (-) clay, wet	0.5
	10	5		24	WOH			Grey CLAY & SILT, trace partings of f sand,	0
		6		24	WOH				0
		7		24	WOH				0
	15							eob @ 14.8'	
	20								
	25								
	30								
	35								
	40								
	45								
	50								
	55								

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BORING/WELL NO. MW-8S

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.03*
RIG: *CME-45*

GS ELEV: *379.328ft.*
N-S COORD: *5064.978*
E-W COORD: *4949.436*
WL REF ELEV:
DATE STARTED: *8/17/92*
DATE FINISHED: *8/17/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	*HSA*	*SS*		
				DIAM.	*4 1/4"ID*	*2"*		
				WEIGHT		*140 #*		
				FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS H.S.
		1		12	7			CLAY AND SILT Brown and grey mottled SILT & CLAY, partings of f sand, roots	0
		2		12	10				0
	5	3		12	3			Brown and black fmc SAND, little silt, wet	0.1
								Lt brown and grey mottled SILT & CLAY, trace f sand	
		4		24	2			Grey CLAY & SILT, trace f sand, roots, organics	0.1
	10	5		24	WOH			Grey CLAY & SILT, trace f sand	0
		6		24	WOH				0
		7		24	3			Grey CLAY & SILT, with 1" to 2" stringers of brown f sand throughout	0
	15							eob @ 14.8'	
	20								
	25								
	30								
	35								
	40								
	45								
	50								
	55								

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BORING/WELL NO. PZ-1

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF*

PROJECT NO: *01554.03*
RIG: *CME-45*

GS ELEV: *384.94ft.*
N-S COORD: *4427.855*
E-W COORD: *5824.395*
WL REF ELEV:
DATE STARTED: *8/17/92*
DATE FINISHED: *8/18/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
		1		12	11			**CLAY AND SILT** Red brown SILT, trace f sand, organics	0	1.4
		2		8	21				0	0
	5	3		24	9			Brown SILT, some Clay, trace to little f sand, moist	0	0
		4		24	14			Brown grey SILT & CLAY, trace f sand	0	0
		5		24	4				0	0
	10	6		24	2			Grey to grey brown CLAY & SILT, trace f sand in partings	0	0
		7		24	2				0	0
	15	8		8	4				0	0
		9		24	4				0	0
		10		16	WOH			**CLAYEY SILT** Light brown Clayey SILT, little to trace f sand	0	0
	20	11		24	2				0	0
		12		22	3				0	0
		13		10	3				0	0
	25	14		20	6			**SANDS** Dark grey to grey black fmc SAND, little to trace silt,	0	0
		15		24	15				0.1	0
	30	16		24	8				0.1	0
		17		24	7			Red brown fmc SAND, little Silt, trace f gravel, trace clay	0	0
	35	18		20	11				0	0
		19		16	75			**GLACIAL TILL** Red brown SILT, some fm Gravel, little sand, trace clay , very dense	0	0
	40							eob @ 36'		
	45									
	50									
	55									

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BORING/WELL NO. B-1

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

PROJECT NO: 01554.EB
RIG: FAILING F-10

GS ELEV: 382.11ft.
N-S COORD: 4713.89
E-W COORD: 5095.85
WL REF ELEV:
DATE STARTED: 12/11/91
DATE FINISHED: 12/12/91
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL Fill is stained red, oily smell		
		1		9	10			CLAY AND SILT Pale yellow to light grey Clayey SILT, trace f Sand in partings , some organics	2352	9660
	5	2		NR	10					
		3		12	13			Grey to brown mottled SILT & CLAY, f Sand in partings	517	8390
		4		20	4				135	291
	10	5		20	WOR			2" layer of brown mc GRAVEL and Sand and Silt @ 11'	53	360
		6		17	WOH			Brownish grey to dark grey CLAY & SILT, trace fmc Sand	91	331
	15	7		24	WOH			Light brownish yellow to med grey SILT & CLAY,trace f Sand in partings	51	313
		8		24	WOH			Dark grey CLAY & SILT, little f Sand in partings	138	311
		9		24	WOH				66	332
	20	10		24	WOH			CLAYEY SILT	34	118
	25	11		24	1			Brownish grey Clayey SILT, f Sand in partings	6	67
	30	12		22	WOR			SANDS Dark grey to grey black fmc SAND, little Silt	4	25
								end boring @ 32.0'		
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-2

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS
RIG: FAILING F-10

GS ELEV: 381.92ft.
N-S COORD: 4816.74
E-W COORD: 5047.52
WL REF ELEV:
DATE STARTED: 12/11/91
DATE FINISHED: 12/12/91
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL Red brown fmc SAND and Gravel		
		1		10	12			CLAY AND SILT Light brown and dark grey mottled Clayey SILT, trace f Sand, very dense	0.5	6
	5	2		20	9				2	19
		3		24	10				4	27
		4		4	1			Brown black f SAND, some Silt, trace Clay, very wet	0	2
	10	5		NR	WOH					
		6		24	WOH			Brown and grey Silt, some fm Sand	0	14
	15	7		22	2			Grey to brownish grey SILT & CLAY, little f Sand in partings	0	0.5
		8		24	WOH				0	0.5
	20	9		24	WOR			CLAYEY SILT Brownish grey Clayey SILT, little f Sand	0	0.5
	25	10		24	1				0	0.8
		11		24	2			Brown SILT and f Sand, little Clay	0	4
	30							end boring @ 30.0'		
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-3

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

PROJECT NO: 01554.EB
RIG: FAILING F-10

GS ELEV: 381.82ft.
N-S COORD: 4770.211
E-W COORD: 5074.161
WL REF ELEV:
DATE STARTED: 12/11/91
DATE FINISHED: 12/12/91
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL Red brown fmc SAND and Gravel		
		1		10	9			CLAY & SILT Light brown and dark grey mottled Clayey SILT, trace f Sand, very dense, organics	0.5	7
	5	2		10	14				1.4	8
		3		12	10			Brown black f SAND, some Silt, trace Clay, very wet	4.0	27
		4		24	7			Brown to dark grey to brownish grey SILT & CLAY, little f Sand	5.0	9
	10							eob @ 10'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

Wehran EnviroTech

BORING/WELL NO. B-4

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING #5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *EMPIRE SOILS* RIG: *CME-45*

GS ELEV: *381.99ft.*
N-S COORD: *4658.332*
E-W COORD: *5121.295*
WL REF ELEV:
DATE STARTED: *12/16/91*
DATE FINISHED: *12/16/91*
OPERATOR:
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		16	14			CLAY & SILT Light brown and dark grey mottled Clayey SILT, trace f Sand	0	1.4
	5	2		18	10			Light brown and grey Clayey SILT, little very light grey f Sand in partings, very stiff	0	3.6
		3		24	8			Light brown and grey SILT & CLAY, little f Sand, stiff, moist	0	4.8
		4		16	10			@ 8.5' Light greyish brown f SAND and Silt, reddish staining	0	3.8
	10							Dark grey to brownish grey SILT & CLAY, little f Sand		
								end boring @ 10.0'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

Wehran EnviroTech

BORING/WELL NO. B-5

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING #5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *EMPIRE SOILS* RIG: *CME-45*

GS ELEV: *382.03ft.*
N-S COORD: *4685.041*
E-W COORD: *5103.728*
WL REF ELEV:
DATE STARTED: *12/16/91*
DATE FINISHED: *12/16/91*
OPERATOR:
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		16	9			CLAY & SILT Light brown and dark grey mottled Clayey SILT, some f Sand in thin layers	2	20
	5	2		16	5			Greenish grey SILT & CLAY, little fm Sand and f Gravel in partings , some organic debris, mottled	9	7
		3		18	3			Light brown and grey Clayey SILT, little f Sand, moist, mottled		13
	10	4		24	7			Brown and dark grey to brownish grey Clayey SILT, little f Sand		110
								end boring @ 10.0'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-6

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.90ft.
N-S COORD: 4719.943
E-W COORD: 5119.305
WL REF ELEV:
DATE STARTED: 12/16/91
DATE FINISHED: 12/16/91
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		15	9			CLAY & SILT Brown and dark grey mottled SILT & CLAY to Clayey SILT, some f Sand in thin layers	0.7	3.2
	5	2		24	5				2.2	3
		3		24	3			Brown and grey to brownish grey SILT & CLAY, little f Sand	0.1	3
								end boring @ 8.0'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-7

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: EMPIRE SOILS
RIG: CME-45

GS ELEV: 391.95ft.
N-S COORD: 4585.905
E-W COORD: 5149.042
WL REF ELEV:
DATE STARTED: 12/19/91
DATE FINISHED: 12/19/91
OPERATOR:
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	11			CLAY & SILT brown and grey mottled Clayey SILT, trace f Sand, very dense, organics	0.1	1.9
	5	2		24	4			Brown Sandy Silt, trace Clay to clayey SILT, little to some f Sand with significant organic debris (wood, shells)	0.1	0.5
		3		24	4			Grey to black Clayey SILT, little f Sand, wood branches	0	0
		4		24	3					
	10							end boring @ 10.0'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-8

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *EMPIRE SOILS* RIG: *CME-45*

GS ELEV: *381.91ft.*
N-S COORD: *4530.24*
E-W COORD: *5172.16*
WL REF ELEV:
DATE STARTED: *12/19/91*
DATE FINISHED: *12/19/91*
OPERATOR: *RODNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		16	10			CLAY AND SILT Grey brown mottled Clayey SILT, trace f Sand, some gravel in the top of the spoon	0	1.6
	5	2			6			Brown SILT & CLAY and Gravel, very stiff, mottled	0	0.5
		3		24	4			Dark grey to black organic SILT & CLAY (PEAT)	0	3.9
	10	4		16	7			Dark brownish grey CLAY & SILT, parting of fm Sand, shell fragments and other organic debris	0	3.9
		5		24	3			Brownish grey Clayey SILT, f Sand in partings	0	0.8
		6		NR					0	3.7
	15							end of boring @ 14.5'		
	20							MW-1S was installed in this boring		
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-9

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING #5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *EMPIRE SOILS* RIG: *CME-45*

GS ELEV: *381.72ft.*
N-S COORD: *4561.953*
E-W COORD: *5171.411*
WL REF ELEV:
DATE STARTED: *12/19/91*
DATE FINISHED: *12/19/91*
OPERATOR:
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	*HSA*	*SS*		
				DIAM.	*4 1/4"ID*	*2"*		
				WEIGHT		*140 #*		
				FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		16	13			CLAY & SILT Brown and grey mottled Clayey SILT to SILT & CLAY with occasional f Sand in partings	2	29
	5	2		22	7			Brown to dark grey Clayey SILT, trace f Sand	0	7
								end boring @ 6.0'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-10

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV: 381.89ft.
N-S COORD: 4715.737
E-W COORD: 5100.663
WL REF ELEV:
DATE STARTED: 2/26/92
DATE FINISHED: 2/26/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL Red brown SAND, some angular Gravel		
	5	1		12	12			CLAY AND SILT Grey brown mottled SILT & CLAY, f Sand in partings, trace organics		110
		2		24	6			Brown to grey brown to grey SILT & CLAY, partings of red brown f Sand, very stiff, wet at 4.8'		25
		3		24	3					20
	10							eob @ 8.0'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-11

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 382.02ft.
N-S COORD: 4731.45
E-W COORD: 5083.130
WL REF ELEV:
DATE STARTED: 2/26/92
DATE FINISHED: 2/26/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	13			CLAY AND SILT Brown and lt grey mottled SILT & CLAY, f Sand in partings, roots, very stiff		48
	5	2		12	11			As above with slightly more reddish f Sand, wet		22
		3		12	12					18
								eob @ 8 feet		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-12

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF* RIG: *CME-45*

GS ELEV: *381.94ft.*
N-S COORD: *4697.45*
E-W COORD: *5099.473*
WL REF ELEV:
DATE STARTED: *2/26/92*
DATE FINISHED: *2/26/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	*HSA*	*SS*		
				DIAM.	*4 1/4"ID*	*2"*		
				WEIGHT		*140 #*		
				FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		10	16			CLAY AND SILT Brown to tan to grey mottled SILT & CLAY, f Sand in partings, very stiff		110
	5	2		16	9			As above with slightly more reddish f Sand, wet @ around 5.0'	48	48
		3		25	4				0	0
	10							eob @ 8 feet		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-13

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV: 381.89ft.
N-S COORD: 4693.758
E-W COORD: 5106.046
WL REF ELEV:
DATE STARTED: 2/26/92
DATE FINISHED: 2/26/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	HSA	SS		
				DIAM.	4 1/4"ID	2"		
				WEIGHT		140 #		
				FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
	0							PAVEMENT AND FILL		
		1		16	17			CLAY AND SILT Tan to lt brown SILT & CLAY, occasional f Sand partings		5
	5	2		16	6					2
								eob @ 6.0'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-14

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING #5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF* RIG: *CME-45*

GS ELEV: *381.99ft.*
N-S COORD: *4504.835*
E-W COORD: *5185.053*
WL REF ELEV:
DATE STARTED: *2/26/92*
DATE FINISHED: *2/26/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		10	8			CLAY AND SILT Tan to lt brown SILT & CLAY, occasional f Sand in partings	0	52
	5	2		24	6			dense	0	52
		3		24	6			@ 7.5', Dark brown to red brown organic SILT & CLAY, contains wood and shell fragments		48
	10	4		24	6			Dark brown to red brown CLAY & SILT, trace f Sand mainly in partings		38
		5		24	2			As above grading to Silty CLAY @ 11.5' bgs		36
								eob @ 12'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-15

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.800ft.
N-S COORD: 4340.653
E-W COORD: 5248.088
WL REF ELEV:
DATE STARTED: 2/27/92
DATE FINISHED: 2/27/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		14	10			CLAY AND SILT Tan to lt brown mottled SILT & CLAY, occasional f Sand in partings dense, stiff, roots		50
	5	2		12	9					40
		3		24	9			Dark brown to grey brown CLAY & SILT, trace f Sand mainly in partings		42
	10	4		24	1					38
		5		24	2					32
								eob @ 12'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-16

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV: 381.840ft.
N-S COORD: 4443.525
E-W COORD: 5216.619
WL REF ELEV:
DATE STARTED: 2/27/92
DATE FINISHED: 2/27/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	16			CLAY AND SILT Brown to grey mottled SILT & CLAY, f Sand in partings, in partings very stiff	0.1	16
	5	2		22	4				0.1	22
		3		24	9			Shell rich organic SILT & CLAY Brown to red brown SILT and f Sand to SILT, little f Sand	0.1	22
		4		24	8			Brown to grey SILT & CLAY, occasional partings of f Sand		21
	10	5		24	1			Brown SILT & CLAY to CLAY & SILT, f Sand in partings		
								eob @ 12'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-17

SHEET 1 of 1

PROJECT: COURT STREET BUILDING #5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.910ft.
N-S COORD: 4473.268
E-W COORD: 5203.249
WL REF ELEV:
DATE STARTED: 2/27/92
DATE FINISHED: 2/27/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		10	10			CLAY AND SILT Lt Brown SILT & CLAY, very stiff		50
	5	2		10	4			As above with partings of f Sand		37
		3		24	4			Dark grey organic SILT & CLAY, wood fragments, very moist		40
	10	4		24	4			Dark grey CLAY & SILT, occasional partings of reddish f Sand		40
		5		24	WOH					35
								eob @ 12'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-18

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV: 381.970ft.
N-S COORD: 4259.910
E-W COORD: 5292.802
WL REF ELEV:
DATE STARTED: 2/27/92
DATE FINISHED: 2/27/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL Lt grey GRAVEL, little Sand		
		1		8	3			CLAY AND SILT Brown mottled SILT & CLAY, very stiff	30	55
	5	2		20	5			From 3.8' to 4.0', dark grey to black gravelly SAND, little Silt		20
		3		24	4			Brown to grey brown SILT & CLAY, f Sand in partings		12
								Grey to grey brown to reddish brown CLAY & SILT, occasional f Sand partings		
	10							eob @ 8'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-19

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 382.860ft.
N-S COORD: 4108.510
E-W COORD: 5361.399
WL REF ELEV:
DATE STARTED: 2/27/92
DATE FINISHED: 2/27/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		10	10			CLAY AND SILT Lt brown SILT & CLAY, occasional f Sand in partings, very stiff		52
	5	2		20	6					22
		3		24	6			@ 7.8', Dark grey to reddish grey CLAY & SILT, occasional f Sand partings		6
								eob @ 8'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-20

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV: 383.820ft.
N-S COORD: 4037.480
E-W COORD: 5414.803
WL REF ELEV:
DATE STARTED: 2/27/92
DATE FINISHED: 2/27/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		10	13			CLAY AND SILT Lt brown SILT & CLAY, occasional f Sand in partings, stiff		3
	5	2		24	7					3
		3		24	11			@ 7.6', Dark grey to reddish grey CLAY & SILT, occasional f Sand partings		7
	10							eob @ 8'		
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-21

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV:
N-S COORD: 4165.505
E-W COORD: 5287.241
WL REF ELEV:
DATE STARTED: 2/28/92
DATE FINISHED: 2/28/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	12			CLAY AND SILT Tan to lt brown SILT & CLAY, occasional f Sand in partings		22
	5	2		24	6			Grey to reddish grey brown CLAY & SILT, occasional f Sand partings, some black organic muck layers		18
		3		24	5					16
								eob @ 8'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-22

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.760ft.
N-S COORD: 4394.385
E-W COORD: 5228.608
WL REF ELEV:
DATE STARTED: 2/28/92
DATE FINISHED: 2/28/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		14	12			CLAY AND SILT Brown to tan to grey SILT & CLAY, occasional f Sand in partings		66
	5	2		20	6			Dark grey SILT & CLAY, some Gravel, little Sand		0
		3		24	5			Dark grey and red brown organic CLAY & SILT, wood fragments, shells		15
								eob @ 8'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-22x

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.690ft.
N-S COORD: 4392.367
E-W COORD: 5222.462
WL REF ELEV:
DATE STARTED: 3/3/92
DATE FINISHED: 3/3/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)			
DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
		1		12	9			PAVEMENT AND FILL Brown SAND & GRAVEL, little to trace Silt, pipe, very wet		
	5							eob @ 4'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-23

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
PROJECT NO: 01554.EB
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF
RIG: CME-45

GS ELEV: 381.820ft.
N-S COORD: 4278.089
E-W COORD: 5282.686
WL REF ELEV:
DATE STARTED: 2/28/92
DATE FINISHED: 2/28/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		16	11			CLAY AND SILT Brown and grey mottled SILT & CLAY, trace f Sand		17
	5							eob @ 4'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-24

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.930ft.
N-S COORD: 4263.459
E-W COORD: 5280.071
WL REF ELEV:
DATE STARTED: 2/28/92
DATE FINISHED: 2/28/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		18	11			CLAY AND SILT Brown and grey mottled SILT, some CLAY grading to SILT & CLAY @ 3.5'		0
	5							eob @ 4'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-25

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 382.020ft.
N-S COORD: 4242.872
E-W COORD: 5290.292
WL REF ELEV:
DATE STARTED: 2/28/92
DATE FINISHED: 2/28/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	16			CLAY AND SILT Brown grey mottled SILT, some Clay to SILT & CLAY, litte f Sand mainly in partings eob @ 4'		0

5
10
15
20
25
30
35
40
45
50
55

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BORING/WELL NO. B-25x

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 381.890ft.
N-S COORD: 4242.097
E-W COORD: 5298.460
WL REF ELEV:
DATE STARTED: 3/3/92
DATE FINISHED: 3/3/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS HEAD SPACE
		1		NR				PAVEMENT AND FILL Brown SAND & GRAVEL, little to trace Silt, very wet	25
	5							eob @ 4'	
	10								
	15								
	20								
	25								
	30								
	35								
	40								
	45								
	50								
	55								

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BORING/WELL NO. B-26

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 382.220ft.
N-S COORD: 4205.554
E-W COORD: 5328.216
WL REF ELEV:
DATE STARTED: 3/3/92
DATE FINISHED: 3/3/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV.	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	2 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1		12	16			CLAY AND SILT Brown and grey mottled SILT & CLAY, partings of f Sand, stiff		0
	5	2		20	6					0
		3		22	4			Grey SILT & CLAY , occasional f Sand in partings		0
								eob @ 8'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-27

SHEET 1 of 1

PROJECT: COURT STREET BUILDING # 5 VOC INVESTIGATION
CLIENT: GENERAL ELECTRIC
CONTRACTOR: PARRATT-WOLFF

PROJECT NO: 01554.EB
RIG: CME-45

GS ELEV: 383.410ft.
N-S COORD: 4039.507
E-W COORD: 5445.710
WL REF ELEV:
DATE STARTED: 3/3/92
DATE FINISHED: 3/4/92
OPERATOR: BARNEY
GEOLOGIST: MCIVER

GROUNDWATER DATA (feet)			
DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	HSA	SS		
DIAM.	4 1/4"ID	2"		
WEIGHT		140 #		
FALL		30"		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS
								PAVEMENT AND FILL	
		1		12	11			CLAY AND SILT Brown and grey mottled SILT & CLAY, partings of f Sand	0
	5	2		24	5				0
		3		24	4			Between 6.5 and 7.0', Dark grey Gravelly Clayey SILT layer changing to grey brown SILT & CLAY, partings of f Sand	0
		4		16	4			Grey and brown CLAY & SILT, occasional partings of f Sand	0
	10	5		12	4			Lt brown Clayey SILT, little f Sand, mainly in partings, laminated	0
		6		20	8				0
	15							eob @ 14.0'	
								MW-5S was installed in this boring	
	20								
	25								
	30								
	35								
	40								
	45								
	50								
	55								

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BORING/WELL NO. B-28

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF* RIG: *CME-45*

GS ELEV: *381.830ft.*
N-S COORD: *4356.213*
E-W COORD: *5170.793*
WL REF ELEV:
DATE STARTED: *3/5/92*
DATE FINISHED: *3/5/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)				CASING	SAMPLE	TUBE	CORE
DATE	GW DEPTH	GW ELEV	INTAKE	TYPE	*HSA*	*SS*		
				DIAM.	*4 1/4"ID*	*2"*		
				WEIGHT		*140 #*		
				FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
	0							PAVEMENT AND FILL		
		1	X	12	12			CLAY AND SILT Grey brown mottled SILT & CLAY, occasional f Sand in partings		17
	5							eob @ 4'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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BORING/WELL NO. B-29

SHEET 1 of 1

PROJECT: *COURT STREET BUILDING # 5 VOC INVESTIGATION* PROJECT NO: *01554.EB*
CLIENT: *GENERAL ELECTRIC*
CONTRACTOR: *PARRATT-WOLFF* RIG: *CME-45*

GS ELEV: *381.920ft.*
N-S COORD: *4537.172*
E-W COORD: *5173.659*
WL REF ELEV:
DATE STARTED: *3/5/92*
DATE FINISHED: *3/5/92*
OPERATOR: *BARNEY*
GEOLOGIST: *MCIVER*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*HSA*	*SS*		
DIAM.	*4 1/4"ID*	*2"*		
WEIGHT		*140 #*		
FALL		*30"*		

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	N-VALUE	LOG	UNIFIED	FIELD DESCRIPTION (Modified Burmister)	REMARKS I.S.	REMARKS H.S.
								PAVEMENT AND FILL		
		1	X	16	11			CLAY AND SILT Grey brown mottled SILT & CLAY, occasional f Sand in partings		16
	5							eob @ 4'		
	10									
	15									
	20									
	25									
	30									
	35									
	40									
	45									
	50									
	55									

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TEST BORING LOG
Boring No. B-30

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.03
Boring Contractor PARRATT-WOLFF	G.S. Elevation 379.70

Groundwater					Cas.	Samp.	Core	Tube	
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	—	—	W.L. Ref. Elev. 379.70
4-29-93	2.33' BGS	377.37	0-12' open bore	Diam.	4 1/4" ID	2"	—	—	Date Started 4-26-93
4-30-93	2.33' BGS	377.37	0-12' open bore	Weight	—	140#	—	—	Date Finished 4-26-93
				Fall	—	30"	—	—	Driller Doug Richmond
									Inspector JHK

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM ** Spoon	OVM PPM ** HSA
← CEMENT/BENT GROUT →	0	1	SSA	6	50-9 / 5-6	BLACKTOP/FILL/REWORKED SOIL Blacktop Macadam @0.25' Black C-F SAND, little silt, little f Gravel 0.50 Red brown CF SAND, some silt little f Gravel @2.0' Red brown Clayey SILT, tr. f Sand		8.7	49.0
		2	SSB	5	7-9 / 10-10			0	0
	5	3	SSC	24	2-1 / 1-1		SAND	0	0
		4	SSD	12	WH-WH / WH-WH	Tan gray Clayey SILT, some + f m Sand becomes saturated @ 3'6" 4.5		0	0
		5	SSE	24	WH-WH / WH-WH	SAND Gray CF SAND, little silt, trace f-M Gravel 5	SAND	0	0
	10	6	SSF	24	WH-WH / WH-WH	CLAY & SILT Gray CLAY & SILT, V Soft saturated @7' thin bed Gray CF SAND, some(+) silt, trace f Gravel 8' @8' becomes gray CLAY & SILT @10' developes occassional very Fine parting of Fine SAND @ 11'10" thin bed of Gray F SAND and silt		0	2.6
	15					END OF BORING 12.0'			
	20								
	25								
	30								
	35								
	40								
	45								
	50								

NOTE:
SOILS SHOWED SATURATION AT 3.5' HOWEVER AFTER DRILLING TO COMPLETION WATER LEVEL STABILIZED AT 2.33' BELOW GROUND SURFACE

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

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TEST BORING LOG

Boring No. B-31 MW-9

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.03
Boring Contractor PARRATT WOLFF	G.S. Elevation 383.06

Groundwater					Cas.	Samp.	Core	Tube	
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	–	–	W.L. Ref. Elev. 385.07 PVC
4-30-93	3.0' BGS	380.06 app.	0-12' open bore	Diam.	4¼" ID	2"	–	–	Date Started 4-28-93
5-3-93	6.19 B PVC	378.88	Screen 7-12	Weight	–	140 #	–	–	Date Finished 4-29-93
				Fall	–	30"	–	–	Driller Doug Richmond
									Inspector JHK

Well Construction: 4" Protective Casing; Cement pad; Bentonite; 2" Ø F.J. PVC Riser; Bent.; #0 SAND; 2" Ø #10 slot PVC screen

Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM ppm** Spoon	OVM ppm** HSA
0	1	SSA	18	2 - 3 / 6 - 6	CLAY & SILT Black Topsoil SILT & CLAY, little PDV moist		0	0
	2	SSB	12	6 - 8 / 9 - 11	@0.5' Orange Brown CLAY & SILT, stiff @1.5 orange Brown SILT & CLAY, trace(-) f Sand		0	0
5	3	SSC	23	2 - 5 / 6 - 6	@3.0' Orange Br, Tan & Black mottled CLAY & SILT very stiff, moist		0	0
	4	SSD	12	8 - 9 / 9 - 9	@3.5' Dark gray CLAY & SILT with traces of Orange brown PEAT in matrix	SOIL SATURATED @8.0'	0	0
10	5	SSE	18	6 - 4 / 2 - 1	@4.0 Light gray & Orange Br. CLAY & SILT stiff, moist @7' Gray CLAY & SILT @8' Orange brown gray CLAY & SILT saturated	SAND *	0	0
	6	SSF	10	WH - 1 / 1 - 1	9.75 SAND Orange F-M SAND, little silt Loose, saturated 12 CLAY & SILT Orange brown & gray CLAY & SILT very soft, saturated. @10' Gray CLAY & SILT very soft, saturated		0	0
15								
20								
25					END OF BORING 12.0'			
30								
35								
40								
45								
50								

NOTE: SOILS SHOWED SATURATION AT 8' HOWEVER WATER LEVEL ROSE TO 4.3' BGS AT COMPLETION AND STABILIZED AT 3.0' BGS

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

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TEST BORING LOG
Boring No. B-32

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.03
Boring Contractor PARRATT - WOLFF	G.S. Elevation 380.28
	W.L. Ref. Elev. 380.28
	Date Started 4-26-93
	Date Finished 4-26-93
	Driller Doug Richmond
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	—	—
3-26-93	2.5' BGS	377.78 approx	0-12' open bore	Diam.	4 1/4 ID	2"	—	—
				Weight	—	140 #	—	—
				Fall	—	30"	—	—

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM ** Spoon	OVM PPM ** HSA
CEMENT / BENT GROUT	0	1	SS A	8	50 - 7	BLACKTOP / FILL / REWORKED SOIL		0	0
					7 - 4	Blacktop Macadam @0.25' Redbrown CF SAND, little Silt trace f-m Gravel			
		2	SS B	16	4 - 4	1.0		0	0
					6 - 7	CLAY & SILT			
	5	3	SS C	20	2 - 2	Gray CLAY & SILT, stiff moist	*	0	1.9
					1 - 4	@2' Gray Brown Orange Mottled CLAY & SILT stiff			
		4	SS D	22	4 - 2	4.0		0	1.9
					1 - 1	SILT / SAND			
	10	5	SS E	22	WH - WH	Yellow brown to red brown SILT and f-m Sand saturated at 5.5'		0	0
					WH - WH	@5.5' Red brown F SAND, little Silt			
		6	SS F	24	WH - WH	@6.0' Yellow brown F SAND, little Silt		0	0
					WH - WH	@7' Gray F-M SAND, little Silt			
	15					7.75'			
						CLAY & SILT			
	20					Gray CLAY & SILT, soft saturated			
						@11'6" encountered 1/8" parting of F Sand.			
	25					12			
						END OF BORING 12.0'			
	30								
	35								
	40								
	45								
	50								

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

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TEST BORING LOG

Boring No. B-33 MW-10

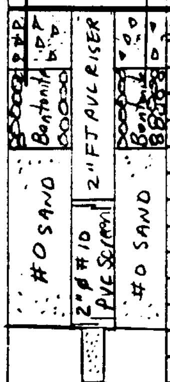
Project: COURT STREET BUILDING #5	Sheet No. 1 of 1
Client: GENERAL ELECTRIC	Job No. 01554.03
Boring Contractor: PARRATT-WOLFF	G.S. Elevation 384.29
	W.L. Ref. Elev. 386.13
	Date Started 4-27-93
	Date Finished 4-29-93
	Driller Doug Richmond
	Inspector JHK

Groundwater

Date	Water Depth	Water Elev.	Intake
4-27-93	4'6" BGS	379.79	0-14' open bore
5-3-93	6.83 BTPVC	379.30	screen 9-12

	Cas.	Samp.	Core	Tube
Type	HSA	SS	–	–
Diam.	4 1/4" ID	2"	–	–
Weight	–	140#	–	–
Fall	–	30"	–	–

4" Protective casing



Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM** Spoon	OVM PPM** HSA
0	1	SSA	12	2-4, 6-8	FILL / REWORKED SOIL: Black to dark gray Topsoil SILT & CLAY trace(+) vegetation medium, moist @ 0.5' Gray SILT & CLAY occ pocket of Red br Clay & SILT mottled (to 4)		0	0.6
	2	SSB	8	4-6, 7-8			0.6	0.6
5	3	SSC	15	4-6, 10-10	CLAY & SILT: Orange brown, Gray mottled CLAY & SILT, moist, stiff @ 8'6" Gray CLAY & SILT, saturated @ 9'6" Gray saturated CLAY & SILT trace(+) c f Sand @ 10' Gray CLAY & SILT, medium (to 11)		0	0
	4	SSD	16	15-17, 18-17			0	0
10	5	SSE	22	4-3, 6-5			0	0.6
	6	SSF	20	3-3, 2-3	SILT / SAND / PEAT: Gray Clayey SILT, some f Sand, occassional pocket or lens of Brown PEAT @ 11.25' & 11.75' medium, saturated (11 to 12)	* SILT / SAND / PEAT	0	5.9
	7	SSG	12	1-1, 1-1	CLAY & SILT: Gray CLAY & SILT soft, saturated (12 to 14)		0	0
14					END OF BORING 14.0'			

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Remarks:

NOTE: SOILS SHOWED SATURATION AT 8'6", HOWEVER AFTER DRILLING TO COMPLETION WATER LEVEL CAME UP TO 4'6" BGS

BORING WAS ADVANCED TO 12' DEPTH ON 4-27 THEN SPOON SAMPLE WAS TAKEN FROM 12-14' ON 4-29 TO CONFIRM BOTTOM OF SILT/SAND UNIT, BUT SCREEN BOTTOM WAS SET AT BASE OF SILT/SAND UNIT

* Denotes sample sent to lab for analysis

** OVM Equiped with an 11.8 eV Lamp

WehranEnviroTech

TEST BORING LOG
Boring No. B-34

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.03
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 382.54
Drilling Method 4¼" ID HSA	**W.L. Ref. Elev.** 382.54
Date Started 4-27-93	
Date Finished 4-27-93	
Driller Doug Richmond	
Inspector JHK	

Groundwater

Date	Water Depth	Water Elev.	Intake
4-27-93	3.25' BGS	379.29 AD	0-12' open bore

	Cas.	Samp.	Core	Tube
Type	HSA	SS	—	—
Diam.	4¼"ID	2"	—	—
Weight	—	140#	—	—
Fall	—	30"	—	—

Well Construction: CEMENT/BENT GOUT → (0 to 5')

Depth (Feet)	Sample No.	Type	Rec.	Blows per 6 inches	Classification	OVM PPM** Spoon	OVM PPM** HSA	Remarks
0	1	SSA	13	1-2 / 1-4	CLAY & SILT Black ~~top~~ soil CLAY & SILT, little POV	0.6	1.9	
	2	SSB	16	3-4 / 5-11	@0.25' Brown gray CLAY & SILT medium @1.0' very thin bed PEAT (3/4")	0	0	CLAY & SILT
5	3	SSC	18	3-5 / 6-8	@3' very thin bed PEAT (1")	0	0	OCC PEAT
	4	SSD	20	7-10 / 10-11	@4' Orange brown CLAY & SILT stiff, moist	0	0	OC LAM. SAND
	5	SSE	16	2-2 / 2-4	@6.9 becomes saturated with a very fine lamination of f Sand	1.9	7.2	SILT/GRAVEL/SAND
10	6	SSF	14	2-1 / 2-1	@7' Orange brown gray SILT & CLAY trace (-) F Sand, soft	3.2	12.2	CLAY & SILT *
					SILT & CLAY / GRAVEL / SAND Orange brown gray red SILT & CLAY, and F Gravel, trace of Sand soft, saturated			
					CLAY & SILT Gray CLAY & SILT, soft @11.0' very fine lamination of fine SAND.			
					END OF BORING 12.0'			

9'6"

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

NOTE H_2O at 3.25' BGS AT COMPLETION

15 20 25 30 35 40 45 50

10.10/89.4251020

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TEST BORING LOG
Boring No. B-35 MW-11

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.03
Boring Contractor PARRATT-WOLFF	**G.S. Elevation** 382.77
	W.L. Ref. Elev. 384.25 PVC
	Date Started 4-27-93
	Date Finished 4-28-93
	Driller Doug Richmond
	Inspector JHK

Groundwater

Date	Water Depth	Water Elev.	Intake
Am 4-28-93	1'9" BGS	381.02 MP	Open Bore
pm 4-28-93	4.55' BTOC ST	379.70	7-12'
5-3-93	6.44 BPVC	377.81	7-12

	Cas.	Samp.	Core	Tube
Type	HSA	SS	—	—
Diam.	4¼" ID	2"	—	—
Weight	—	140#	—	—
Fall	—	30"	—	—

4" Protective casing → Well Construction: Bentonite; #0 SAND; 2" ø #10 Slot Screen; 2" FT PVC Riser; #0 SAND

Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	OVM PPM ** Spoon	OVM PPM ** HSA	Remarks
0					cement pad			
	1	SSA	12	4-3 / 2-3	FILL OR REWORKED SOIL Brown F-C SAND, and Clayey SILT, little RDN Pieces of Asphalt, Pieces of porcelin @0.5' brown CLAY & SILT @2.5' black Clayey SILT, little f-c Sand	21.7	66.6	
	2	SSB	14	5-5 / 5-7		4.6	25.7	
5	3	SSC	8	4-3 / 4-6	CLAY & SILT Orange brown CLAY & SILT stiff, moist	0.6	5.9	
	4	SSD	18	8-3 / 5-6	Gray SILT & CLAY, stiff saturated @7.0' @7.75' grades to Clayey SILT, trace f Sand @8' Clayey SILT, little vf Sand @9' Clayey SILT, trace f Sand, trace Peat @9.25' very thin bed PEAT occ thin partings f SAND @8.5, 8.7 & 9.7'	3.6	36.2	*
10	5	SSE	20	2-2 / 2-2		0	0	
	6	SSF	12	3-2 / 2-2		0	0	
	7	SSG	24	WH-WH / WH-WH	@10' Gray Clayey SILT, trace + f Sand @11.5' thin bed hard woody matter PEAT @11.75' thin bed Clayey SILT, some rounded f-m Gravel, little f Sand. @11.9' Gray Clayey SILT, trace f Sand @12.0' becomes Gray CLAY & SILT Soft, saturated.	14		
15					END OF BORING 14.0'			
20								
25								
30								
35								
40								
45								
50								

NOTE:
SOILS SHOW SATURATION AT 7.0' HOWEVER AFTER DRILLING TO COMPLETION THE WATER LEVEL IN THE OPEN BOREHOLE CAME UP TO 1.75' BGS.

* Denotes sample sent to Lab for analysis

** OVM equiped with an 11.8 eV Lamp

TEST BORING LOG

Boring No. MW-11R

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 86143-002.000
Boring Contractor PARRATT - WOLFF	**G.S. Elevation** 382.66
	W.L. Ref. Elev. 385.71 PVC
	Date Started 12-18-97
	Date Finished 12-18-97
	Driller Mike Ellingsworth
	Inspector CBT

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	–	–
				Diam.	4¼"ID	2"	–	–
				Weight	–	140#	–	–
				Fall	–	30"	–	–

4" Protective casing

Well Construction: 0.5' Bentonite grout; #0 SAND; 2" FT PVC riser; 2nd #10 PVC Screen; #0 SAND

Depth (feet)	Sample No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM ppm Spoon	OVM ppm HSA
0		AC			REWORKED SOIL Orange brown CLAY & SILT			
					3.0 CLAY & SILT			
5	1	SS	20"	7-12 10-12	Orange br gray CLAY & SILT, stiff, moist		0	0
	2	SS	18"	15-13 13-10	8.0 Clayey SILT / SAND Parting Gray SILT & CLAY, trace f Sand saturated		0	0
10	3	SS	6"	3-1 1-4			0	0.3
	4	SS	22"	3-3 3-2	@8.5' Clayey SILT, trace f Sand trace Peat	12.2'/13.0	0	0.1
15					@8.75' very thin bed Black PEAT @9.0' Gray Clayey SILT, Sm mf Gravel little f Sand 12.2 CLAY & SILT Gray CLAY & SILT saturated medium END OF BORING 13.0'			
20								
25								
30								
35								
40								
45								
50								

10.10/89.4251020

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TEST BORING LOG
Boring No. B-36

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.03
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 382.94
	W.L. Ref. Elev. 382.94
	Date Started 4-26-93
	Date Finished 4-26-93
	Driller Doug Richmond
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	—	—
4-26-93	1.00' BGS	381.94	0-12' open bore	Diam.	4 1/4" ID	2"	—	—
4-29-93	1.50' BGS	381.44	0-12' open bore	Weight	—	140#	—	—
4-30-93	1.50 BGS	381.44	0-12' open bore	Fall	—	30"	—	—

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM* Spoon	OVM PPM* HSA
⁂ CEMENT/BENTONITE GROUT	0	1	SSA	11	1-2 / 2-2	FILL / REWORKED SOILS Black gray red br. Clayey SILT, trace of Sand, occ piece of Gravel, Brick, vegetation. 3 @1'6" Gray brown SILT & CLAY, tr of Gravel @2' Gray br SILT & CLAY, trace of Sand trace fine Gravel	FILL SOILS	0	0
		2	SSB	12	3-4 / 5-6			0	0
	5	3	SSC	18	4-7 / 7-10			0	0
		4	SSD	5	4-4 / 8-8	CLAY & SILT Orange brown red gray mottled CLAY & SILT trace roots, stiff moist @4' orange, br. gy mottled CLAY & SILT @8' Gray trace orange b CLAY & SILT 12' @10' Gray CLAY & SILT, stiff @11'6" Gray CLAY & SILT medium to soft.	CLAY ⁂	0	1.9
	10	5	SSE	18	6-5 / 6-6			0	0.6
		6	SSF	17	3-3 / 2-3			0	0.6
	15					END OF BORING 12.0'			
	20								
	25								
	30								
	35								
	40								
	45								
	50								

NOTE:
NO SAND OR SILT LAYERS WERE OBSERVED DURING DRILLING & SAMPLING. ALSO NO SAND OBSERVED ON AUGER FLIGHTS UPON REMOVAL.

WATER OBSERVED FLOWING INTO BOREHOLE FROM 1½ to 3' FILL ZONE.

H2O IN HOLE @ 1'6" AT COMPLETION MAY REPRESENT PONDED SURFACE WATER.

* Denotes sample sent to lab for analysis

⁂ OVM equiped with an 11.8 eV Lamp

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TEST BORING LOG
Boring No. B-37 MW-12

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.03
Boring Contractor PARRATT WOLFF	G.S. Elevation 383.44
	W.L. Ref. Elev. 384.98 PV
	Date Started 4-27-93
	Date Finished 4-27-93
	Driller Doug Richmond
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	—	—
4-27-93	3.5' BGS	379.94 APP	0-12' open bore	Diam.	4 1/4" ID	2"	—	—
5-3-93	6.5 BPVC	378.48	Screen 7-12	Weight	—	140#	—	—
				Fall	—	30"	—	—

4" Protective Casing

Well Construction: #0 SAND; 2" ø #10 SST PVC Screen; 2" ø F.J. PVC Riser; BENT. Chips; BENT. Pellets; #0 SAND

Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM ppm ** Spoon	OVM ppm ** HSA
0 (Comp. Pad)					FILL / REWORKED SOILS			
	1	SSA	9	3-4	Black Topsoil Clayey SILT, little c-f Sand, trace f Gravel trace roots	FILL	0	0
				3-3	@0.5' Gray to brown fill, SILT & CLAY, some white porcelain fragments			
2	2	SSB	12	3-4			0	0
4				3-5	CLAY & SILT			
	3	SSC	20	6-7	Orange brown, gray SILT & CLAY medium, moist	ZONE OF * SAND PARTINGS	0	0
5				8-6	@3'10" very thin bed of Gray brown SILT & CLAY, little f-m Sand.			
	4	SSD	24	5-5			0	0
8				4-4	@4' Red brown CLAY & SILT, stiff			
	5	SSE	18	3-2	frequent partings 1/64" of Gray FSAND, spaced 1 to 1 1/2" apart saturated		0	0
10				2-1	@6' Red brown CLAY & SILT, medium with less frequent partings of F SAND			
	6	SSF	20	1-1	@8' Red brown CLAY & SILT, Soft		0	0
12				1-1	@10' Gray CLAY & SILT, V. Soft saturated			
15					END OF BORING 12.0'			
20								
25								
30								
35								
40								
45								
50								

NOTE: H2O at 3.5' BGS AT COMPLETION OF BORING
WATER OBSERVED ENTERING BOREHOLE AT FILL/CLAY & SILT CONTACT AT 2.0'

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

Wehran EnviroTech

TEST BORING LOG
Boring No. B-38

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.03
Boring Contractor PARRATT WOLFF	G.S. Elevation 382.72
Groundwater: Date 4-30-93, Water Depth 3'2" BGS, Water Elev. 379.55 APP, Intake 0-12' Open Bore	W.L. Ref. Elev. 382.72
	Date Started 4-28-93
	Date Finished 4-28-93
	Driller Doug Richmond
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	HSA	SS	—	—
Diam.	4 1/4" ID	2"	—	—
Weight	—	140#	—	—
Fall	—	30"	—	—

Well Construction	Depth (Feet)	Sample No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM** Spoon	OVM PPM** HSA
CEMENT/BENT & GROUT →	0	1	SSA	8	2-2 / 2-4	TOPSOIL/FILL/REWORKED SOIL Black to brown Topsoil SILT & CLAY, trace vegetation		0	0
		2	SSB	10	3-3 / 2-3	@0.5' Tan, brown SILT & CLAY, trace + F Sand frequent pieces of white porcelain medium, moist 3'		0	0.6
	5	3	SSC	21	3-6 / 5-6	CLAY & SILT Gray orange brown mottled CLAY & SILT medium		0.6	6.2
		4	SSD	19	4-5 / 4-5	@4' Gray red brown CLAY & SILT moist, stiff.	*	0	0.6
		5	SSE	22	2-2 / 2-2	@4'6" encountered a very thin parting 1/64" of FINE SAND.		0	0
	10	6	SSF	20	1-1 / 1-1	12'		0	0
	15					@8.0' Gray CLAY & SILT soft, saturated			
	20								
	25								
	30								
	35								
	40								
	45								
	50								

NOTE:
H_2O observed at 8'4" BGS in spoon hole at 8:20
@ 7'8" @ 8:33
@ 7'4" @ 8:50
@ 4'1" @ 12:50
@ 3'2" @ Thursday Am.

very slow recovery
no visible inflow
from sidewalls

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

Wehran EnviroTech

TEST BORING LOG
Boring No. B-39

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.03
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 383.46

Groundwater					Cas.	Samp.	Core	Tube	
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	—	—	**W.L. Ref. Elev.** 383.46
4-29-93	1'6"	381.96	0-12' open hole	Diam.	4 1/4" ID	2"	—	—	**Date Started** 4-28-93
				Weight	—	140#	—	—	**Date Finished** 4-28-93
				Fall	—	30"	—	—	**Driller** Doug Richmond
									Inspector JHK

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM ** Span	HSA
CEMENT/BENT GROUT →	0	1	SS A	18	2-5 / 7-10	TOPSOIL / FILL / REWORKED SOIL Black, brown, orange Topsoil CLAY & SILT trace(G) vegetation		0	0
		2	SS B	10	7-10 / 10-11	@0.5' Gray orange Brown SILT & CLAY, with orange brown SILT moist, medium to stiff 3		0	0
	5	3	SS C	8	3-3 / 3-3	CLAY & SILT light gray and orange brown mottled CLAY & SILT stiff, moist, root at 3.5'		0	0
		4	SS D	18	3-3 / 3-3	@4.0' light gray SILT & CLAY trace peat 6	* SILT SAND PEAT	1.8	1.9
	10	5	SS E	14	3-3 / 3-3	SILT / SAND / PEAT Gray w/ orange brown specks Clayey SILT, little F Sand. saturated, medium.		0.6	0
		6	SS F	18	3-3 / 3-3	Frequent Fine sand partings 1/8" @ 7b 7'6" and 7'9"		0	0
	15					@8.0' Gray Clayey SILT, trace to little F Sand, inclusions of PEAT @ 9'3" to 9'6"			
	20					@10' Gray Clayey SILT, trace + Fine Sand, trace Peat 11			
	25					CLAY & SILT Gray, Reddish brown CLAY & SILT medium, saturated 12			
	30					END OF BORING 12.0' →			
	35								
	40								
	45								
	50								

NOTE:
SOILS SHOWED SATURATION AT 6' AFTER COMPLETION OF BORING AT 11:30 WATER LEVEL WAS AT 5'4" BY 12:50 WATER LEVEL WAS AT 1'6" BGS.

* Denotes sample sent to lab for analysis

** OVM equipped with an 11.8 eV Lamp

10.10/89.4251020

WehranEnviroTech

TEST BORING LOG
Boring No. B-40

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.03
Boring Contractor PARRATT WOLFF	**G.S. Elevation** APP 384.0
	W.L. Ref. Elev. APP 384.0
	Date Started 4-28-93
	Date Finished 4-28-93
	Driller Doug Richmond
	Inspector JHK

Groundwater

Date	Water Depth	Water Elev.	Intake
4-30-93	2.75' BGS	±381.25	0-12' open bore

	Cas.	Samp.	Core	Tube
Type	HSA	SS	—	—
Diam.	4 1/4" ID	2"	—	—
Weight	—	140#	—	—
Fall	—	30"	—	—

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM** Spoon	HSA
← CEMENT / BENTONITE GROUT →	0	1	SSA	17	2-4 / 6-8	Topsoil CLAY & SILT Gray black CLAY & SILT, trace vegetation, soft, wet (due to seasonal rain) @0.5' Orange brown CLAY & SILT, stiff, moist @2.0' Orange brown gray CLAY & SILT, very stiff		0	21.7
		2	SSB	17	7-9 / 11-8			0	0
	5	3	SSC	24	3-4 / 7-7	4.5'		0	0
		4	SSD	24	11-10 / 9-9	CLAY & SILT WITH ZONES SAND / SILT Orange brown gray CLAY & SILT stiff partings (1/64" of f SAND and SILT @ 4'6 & 5'6" @ 5'9" Lens 1/8" SILT and f Sand. Saturated @ 5'9"	*	0	4.6
		5	SSE	18	5-4 / 3-4			0	0
	10	6	SSF	20	4-3 / 2-3	@7' grades to orange brown Clayey SILT, occ parting f SAND and Si. 12		0	0
	15					@7'6" grades SILT & CLAY occ. lamination f SAND and Silt			
						@7'10" Orange brown gray CLAY & SILT			
	20					@9' Orang brown w/ gray Clayey SILT, with Laminations of SILT and f Sand.			
						@10' Orange brown & gray CLAY & SILT with occ parting 1/16 to 1/8" of Fine SAND and Silt, medium, saturated 12			
	25					END OF BORING 12.0'			
	30								
	35								
	40								
	45								
	50								

NOTE: SOILS SHOWED SATURATION AT 5'9" AND H2O observered entering the open bore hole at 5'7" BGS At completion thru SILT and SAND seam water rose to 2'9" BGS by next day

* Denotes sample sent to lab for analysis

** OVM equiped with an 11.8 eV Lamp

Wehran EnviroTech

TEST BORING LOG
Boring No. B-41

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.03
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 381.91
Groundwater	**W.L. Ref. Elev.** 381.91
Date Started 4-29-93	
Date Finished 4-29-93	
Driller Doug Richmond	
Inspector JHK	

Groundwater Date	Water Depth	Water Elev.	Intake		Cas.	Samp.	Core	Tube
4-29-93	8.5' BGS	~373.41 Not Static	0-14' Open Bore	Type	HSA	SS	—	—
				Diam.	4 1/4" ID	2"	—	—
				Weight	—	140#	—	—
				Fall	—	30"	—	—

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	OVM PPM** Spon	HSA
CEMENT/BENTONITE GROUT	0	1	SSA	16	3-3 / 3-6	CLAY & SILT Black Topsoil SILT & CLAY, little organics		0	0
		2	SSB	14	4-6 / 7-8	@0.5' Brown gray SILT & CLAY		0	0
	5	3	SSC	19	3-4 / 4-6	@1.5' Gray orange br. CLAY & SILT stiff, moist		0	0
		4	SSD	8	7-5 / 5-4	@5.0 grades to CLAY & SILT, trace f-m Sand stiff moist		0	0
		5	SSE	24	2-2 / 2-2	@5.5' CLAY & SILT, stiff moist @7.5' Org br gray CLAY & SILT, medium slightly more moisture (8.75')	*	42	0.6
	10	6	SSF	8	1-1 / 1-1	@8.5' Gray CLAY & SILT medium, saturated (12)	*	5.6	1.9
		7	SSG	20	1-1 / 1-1	SAND / GRAVEL / SILT / SILT & CLAY Gray MF SAND, little + Clayey silt Loose, saturated (14)		0	0
	15					@9.0' Gray SILT & CLAY with traces of brown PEAT soft, saturated			
						@9.5' Orange brown MF GRAVEL, some silt, trace of Sand			
	20					@9.83' Gray clayey SILT trace f Sand, soft saturated. (13)			
						CLAY & SILT Gray CLAY & SILT soft, saturated (14)			
	25					END OF BORING →			
	30								
	35								
	40								
	45								
	50								

NOTE: Water entering sidewalls of borehole at depth of 8'4" BGS

HOLE WAS GROUTED BEFORE STATIC H2O LEVEL TAKEN

* Denotes sample sent to lab for analysis

** OVM equipped with an 11.8 eV Lamp.

Wehran EnviroTech

TEST BORING LOG
Boring No. B-42 / MW-13

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.04
Boring Contractor PARRATT WOLFF	G.S. Elevation 382.00
	W.L. Ref. Elev. 384.15 PVC
	Date Started 6-17-93
	Date Finished 6-17-93
	Driller BUTCH STEVENS
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	–	–
				Diam.	4 1/4 ID	2"	–	–
				Weight	–	140#	–	–
				Fall	–	30"	–	–

4" Plastic Riser Casing

Well Construction: #0 SAND; 2" Ø #10 Slot PVC Screen; 2 FT #0 SAND; Bent.; Bent.

Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	SPOON (PPM) OVM	SPOON (PPM) HNU	Remarks	HSA (PPM) OVM	HSA (PPM) HNU
0	1	SS A	18	3-4 / 7-7	TOPSOIL 0.5' Black Topsoil SILT & CLAY, little roots	0	0		0	1.2
	2	SS B	14	5-6 / 6-12	CLAY & SILT Brown gray SILT & CLAY, stiff moist	0	0		0	1.5
5	3	SS C	20	4-5 / 5-8	@1.0' Gray orange br CLAY & SILT	0	0		0	2
	4	SS D	6	5-8 / 11-8	@2.5' piece of root & desication cracks	0	0	8.0	0	2
	5	SS E	22	2-2 / 3-5	@4.0' Gray o/g br mottled CLAY & SILT @5.5' as before but exhibits desication cracks with light gray SILT filling cracks	0	0		0	2
10	6	SS F	16	2-1 / 3-1	saturated at 7.0'	0	0	11.5	0	2
	7	SS G	18	1-1 / 1-1	SILT / PEAT / SAND	0	0		0	2
15	8	SS H	20	WH-WH / WH-WH	@8.0 Gray SILT & CLAY, little peat root matter 1/8" to 1/2" saturated	0	0	16	0	2
					@8.5' Gray SILT & CLAY, trace F Sand frequent Gastropods saturated					
					@9.0' & 9.5' occ Pocket of gray F-M SAND, and Silt, saturated					
					@9.75' Gray F-C SAND, trace f Gravel little f Silt, occ Gastropod					
					@10.5' Gray F-M GRAVEL, and C F Sand, trace Silt					
					CLAY & SILT Gray CLAY & SILT soft, saturated					
20					END OF BORING 16.0'					
25										
30										
35										
40										
45										
50										

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TEST BORING LOG
Boring No. B-43 MW-14

Project COURT STREET BUILDING #5	Sheet No. 1 of 1
Client GENERAL ELECTRIC	Job No. 01554.04
Boring Contractor PARRATT WOLFF	G.S. Elevation 379.33
Groundwater	W.L. Ref. Elev. 381.33 PVC
Date: — Water Depth: — Water Elev.: — Intake: —	Date Started 6-18-93
Type: HSA / SS / — / —	Date Finished 6-18-93
Diam.: 4¼"ID / 2" / — / —	Driller BUTCH STEVENS
Weight: — / 140# / — / —	Inspector JHK
Fall: — / 30" / — / —	

Well Construction: 4" Protective Casing; Bentonite Pellets; #0 SAND; 2" ø #10 Slot PVC Screen; 2" FT PVC Pipe; Backfill; #0 SAND

Depth (Feet)	No.	Type	Rec.	Blows per 6 inches	Classification	SPOON (PPM) OVM	SPOON (PPM) HNU	Remarks	HSA (ppm) OVM	HSA (ppm) HNU
0	1	SS A	8	2-3 / 3-3	TOPSOIL Black SILT & CLAY, little ROOTS dry (0.5)	0	0		0	1.5
	2	SS B	20	2-1 / 2-3	SILT / SAND Gray and Tan SILT, little f Sand,	0	0		0	3
5	3	SS C	8	2-1 / 1-1	@2.0' Gray black Clayey SILT, little f Sand, little roots dry (6.0)	0	1		0	5
	4	SS D	24	2-1 / 1-1	@3.0 Black & Tan Clayey SILT, trace f Sand with VUGS of light gray F SAND at 3.0, 3.5, & 3.9'	0	0		0	2
10	5	SS E	18	1-1 / 1-1	@5.0' Black Clayey SILT, trace f Sand, trace Roots	0	0		0	1
	6	SS F	24	1-1 / WH-WH	@5.75' Black F-M SAND, little Silt (14)	0	0		0	1
	7	SS G	24	1-1 / WH WH	CLAY & SILT Gray CLAY & SILT occ piece WOOD @6.0 to 6.5' soft saturated	0	0		0	1
15					@8.0' Gray CLAY & SILT occ. parting of U.F SAND and Silt @9.5 & 9.8'					
20					@10.0' Gray CLAY & SILT Very soft, Saturated					
25					END OF BORING 14.0'					
30										
35										
40										
45										
50										

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TEST BORING LOG
Boring No. B-44

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.04
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 382.20
Groundwater	**W.L. Ref. Elev.** —
Date Started 6-17-93	
Date Finished 6-17-93	
Driller BUTCH STEVENS	
Inspector JHK	

Groundwater Date	Water Depth	Water Elev.	Intake		Cas.	Samp.	Core	Tube
				Type	HSA	SS	-	-
				Diam.		2"	-	-
				Weight	-	140#	-	-
				Fall	-	30"	-	-

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	SPOON (PPM) OVM	SPOON (PPM) HNU	Remarks	HSA (PPM) OVM	HSA (PPM) HNU
← CEMENT / BENT. GROUT	0	1	SS A	16	3 - 3 / 8 - 8	TOPSOIL Black SILT & CLAY, little roots, PDV	0	0		0	1.0
		2	SS B	18	7 - 7 / 11 - 13	0.5 CLAY & SILT Brown gray SILT & CLAY, occ roots	0	0		0	1.2
	5	3	SS C	20	6 - 7 / 8 - 8	@ 1.5' Gray Org Br CLAY & SILT, mottled damp, desiccated at 2.0'	0	0		0	2
		4	SS D	16	4 - 8 / 8 - 5	@ 4.0' Frequent Roots	0	0		0	2
		5	SS E	24	2 - 2 / 3 - 3	8.5' @ 7.0' Gray w/ Org br CLAY & SILT occ piece wood matter, saturated	0	0		0	1
	10	6	SS F	24	1 - 1 / 1 - 1	10' SILT / SILT & CLAY / Clayey SILT @ 8.5 Org br. Mottled Clayey SILT little f Sand, saturated	0	0		0	2
		7	SS G	24	1 - 1 / WH - WH	14' @ 8.75' Gray SILT & CLAY	0	0		0	1
	15					@ 9.25 Gray SILT & CLAY, little m f Gravel trace c f Sand					
						@ 9.75' Gray Clayey SILT					
	20					@ 10.0' Gray Clayey SILT trace c f Sand					
						CLAY & SILT Gray CLAY & SILT					
	25					@ 12.5' gray partly Clayey SILT soft, saturated					
						END OF BORING 14.0'					
	30										
	35										
	40										
	45										
	50										

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TEST BORING LOG
Boring No. B-45

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.04
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 382.26
Groundwater	**W.L. Ref. Elev.** —
Date Started 6/16/93	
Date Finished 6/16/93	
Driller BUTCH STEVENS	
Inspector JHK	

Groundwater Date	Water Depth	Water Elev.	Intake		Cas.	Samp.	Core	Tube
6-16-93 10:20 AM	7.5' BGS		Open Corp S-16	Type	HSA	SS	-	-
				Diam.	23/4" ID	2"	-	-
				Weight	-	140#	-	-
				Fall	-	30"	-	-

Well Construction	Depth (Feet)	Sample No.	Type	Rec.	Blows per 6 inches	Classification	SPOON (PPM) OVM	SPOON (PPM) HNU	Remarks	HSA (PPM) OVM	HSA (PPM) HNU
CEMENT BENT GROUT	0	1	SS A	18	5-4 / 5-6	TOPSOIL Black, brown TOPSOIL SILT & CLAY, trace ROOTS 1.0	0	0.2		0	2
		2	SS B	18	6-8 / 10-11	CLAY & SILT	0	0		0	0
	5	3	SS C	22	4-6 / 7-9	Orange brown SILT & CLAY, moist, stiff to v stiff	0	0		0	2
		4	SS D	2	12-12 / 12-13	@ 3.5' Gray Clayey SILT, little F Sandday	0	0		0	3
		5	SS E	20	1-1 / 1-1	@ 3.8' Org Br Gy mottled CLAY & SILT moist, stiff	0	0		0	3
	10	6	SS F	22	1-1 / 1-1	@ 5.0' Gray CLAY & SILT 9.75 / 10.0 @ 5.8' Gray CLAY & SILT, occ. ROOT, occ. thin 1/8" lamination VF SAND	0	0		0	2
		7	SS G	20	1-1 / 1-1		0	0		0	2
	15	8	SS H	24	1-1 / 1-1	@ 8.0' Gray w/ org br. CLAY & SILT, occ piece fine root, soft, sat 16.0	0	0		0	1
						@ 9.25' Gray SILT & CLAY, occ piece org br Peat @ 9.75' Gray Clayey SILT, little F Sand, soft saturated @ 10.0' Gray Clayey SILT @ 10.5' Gray CLAY & SILT V. Soft, saturated @ 15.75 Very thin partina 1/32" Clayey SILT END OF BORING 16.0'					
	20										
	25										
	30										
	35										
	40										
	45										
	50										

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TEST BORING LOG

Boring No. B-48 MW-15

Project COURT STREET BUILDING #5	**Sheet No.** 1 of 1
Client GENERAL ELECTRIC	**Job No.** 01554.04
Boring Contractor PARRATT WOLFF	**G.S. Elevation** 380.39
Groundwater Date / Water Depth / Water Elev. / Intake	**W.L. Ref. Elev.** 382.24 PVC
Date Started 6-16-93	
Date Finished 6-16-93	
Driller BUTCH STEVENS	
Inspector JHK	

	Type	Cas.	Samp.	Core	Tube
	Type	HSA	SS	–	–
	Diam.	4¼" ID	2"	–	–
	Weight	–	140#	–	–
	Fall	–	30"	–	–

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	SPOON (PPM) OVM	SPOON (PPM) HNU	Remarks	HSA (PPM) OVM	HSA (PPM) HNU
4" Protective Casing; Bent Pellets; 2" ∅ #10 Slot PVC Screen; #0 Sand; Cement Grout; #0 Sand	0	1	SS A	12	4-5 / 9-9	TOPSOIL: Black/gray SILT & CLAY, little root FDU — 1.0'	0	0		0	1
		2	SS B	20	6-7 / 11-11	CLAY & SILT: Gray/brown SILT & CLAY, trace(-) roots, stiff, moist	0	0.1		0	1
	5	3	SS C	24	4-4 / 5-6	@2.5' Orange brown & gray mottled CLAY & SILT, stiff moist — 4.5	1	0		0	2
		4	SS D	24	2-2 / 2-1	SAND/SILT: Gray brown F-M SAND, and silt saturated, loose. — 7.0	0	0		0	1
		5	SS E	24	2-1 / 1-1	@5.5' Gray F-M SAND, some(-) Silt	0	0		0	1.5
	10	6	SS F	18	WH-WH / WH-WH	@6.0' Org br F-M SAND, some(+) Silt	0	0		0	0.5
		7	SS G	24	WH-WH / WH-WH	CLAY & SILT: Gray w/occ black SILT & CLAY, soft, saturated — 14.0	0	0		0	1
	15					@7.8' Red brown SILT & CLAY					
						@8.0' Gray CLAY & SILT, soft saturated					
	20					very fine partings of VF SAND encountered at 9.5, 10.7, 11.1, & 11.5					
						@12.0 Gray CLAY & SILT with occ piece green black fiber					
	25					END OF BORING 14.0					
	30										
	35										
	40										
	45										
	50										

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TEST BORING LOG
Boring No. SB-49

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 36143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation

Groundwater					Cas.	Samp.	Core	Tube	
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	–	–	W.L. Ref. Elev.
2-10-97	2.0'		0.24'	Diam.	4¼ ID	2"	–	–	Date Started 2-10-97
				Weight	–	140 #	–	–	Date Finished 2-10-97
				Fall	–	30"	–	–	Driller Mark Eaurs
									Inspector JHK

Well Construction	Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	HNU** (ppm) Spoon	HSA
CEMENT BENTONITE GROUT	0	1	SS	8	X - 5 9 - 9	ASPHALT / GRAVEL BACKFILL Asphalt to 0.3' @0.3' Gray F-M GRAVEL, some cf Sand, tr Silt @1.75' Gray CF SAND, little f Gravel, tr Silt @2' Gray MF GRAVEL, some cf Sand, trace silt @6' Gray F-M GRAVEL and cf Sand, tr-Silt @7.0 Gray F-M GRAVEL, little cf Sand, tr Silt saturated @ 1.75' medium to loose 9.0'	▽ saturated @ 1.75'	0.2	0.8
	5	2	SS	12	9 - 5 6 - 8			0.1	2.3
		3	SS	12	5 - 5 6 - 5			0.4	2.0
		4	SS	15	8 - 6 3 - 3			0	2.3
		5	SS	1	3 - 2 WH - WH			0	1.2
	10	6	SS	0	WH - 1 1 - 1	Clayey SILT Gray Clayey SILT very soft to soft, saturated @17' encountered thin bed 6" of Gray Clayey SILT, little (-) cf Sand little m-f Gravel @18' Gray Clayey SILT @21'6" Gray SILT, little f Sand @21.75 very thin bed Gray SILT & CLAY @21.9' Gray Clayey SILT soft sat @22' Gray SILT & CLAY, medium @23.25' Gray Clayey SILT @23.75' Gray SILT, some f Sand 24.0' END OF BORING 24.0'		0	21.1
		7	SS	8	WH - 3 2 - 1			14.1	146
	15	8	SS	16	WH - WH WH - 1			3.1	60
		9	SS	18	WH - WH WH - 1			2.3	67.4
		10	SS	22	2 - 2 2 - 2		*	1.0	182
	20	11	SS	24	WH - 2 2 - 4			1.6	43.0
		12	SS	24	2 - 5 3 - 3		*	1.5	17.8
	25								
	30								
	35								
	40								
	45								
	50								

upon completion of boring borehole was grouted to surface via tremie rod method using cement bentonite grout

water level in borehole was @ 2.0' upon completion

* Denotes Soil Sample Sent to lab for analysis

** HNU equipped with an 11.7 eV lamp.

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TEST BORING LOG
Boring No. SB-50

Project RIFS COURT STREET 5/5A SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date: —	Date Started 2-11-97
Water Depth: N/A	Date Finished 2-11-97
Water Elev.:	Driller Mark Eaves
Intake:	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	—	SS	—	—
Diam.	—	2"	—	—
Weight	—	140#	—	—
Fall	—	30"	—	—

Well Construction	Depth (Feet)	Sample No.	Sample Type	Sample Rec.	Blows per 6 inches	Classification	Remarks	HNU (PPM) ** Spoon	HNU (PPM) ** HSA
CEMENT BENT. GROUT	0					ASPHALT / GRAVEL FILL			
		1	SS	8	20-5	@0'3" Gray mF GRAVEL, little cf Sand, tr Silt		0.2	0.4
					8-4				
					5-4	@2.0' Gray mF GRAVEL, some cf Sand, trace Silt 3.5'			
		2	SS	12	4-3			0.2	25.0
	5				4-3	Gray brown CLAY & SILT, trace cf Sand 6.0'			
		3	SS	14	2-3		*	0.2	4.5
						END OF BORING 6.0'			
	10								
	15								
	20								
	25								
	30								
	35								
	40								
	45								
	50								

* Denotes sample sent to lab for analysis

upon completion of boring, borehole was grouted to 5

** HNU equipped with an 11.7 eV lamp

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TEST BORING LOG
Boring No. SB-51

Project RIFS COURT STREET 5/5A SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation
Groundwater N/A	W.L. Ref. Elev.
Date started 2-10-97	
Date finished 2-10-97	
Driller JK/CT	
Inspector JHK, CT	

	Cas.	Samp.	Core	Tube
Type	—	Bucket Auger	—	—
Diam.	—	3"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

Well Construction	Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
////	0	1	AC	FULL		FILL Black F-M GRAVEL, and C-F sand, some silt damp, med dense. 1.0' END OF BORING 1.0'	* Lab Sample
	5						Boring located on west side of transformer pad
	10						* Denotes soil sample sent to lab for analysis
	15						upon completion, borehole filled with unused soil cuttings
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG
Boring No. SB-52

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation
Groundwater N/A	W.L. Ref. Elev.
Date Water Depth Water Elev. Intake	Date Started 2-10-97
	Date Finished 2-10-97
	Driller Mark Eaves
	Inspector JHK, CT

	Cas.	Samp.	Core	Tube
Type	—	Bucket Auger	HX	—
Diam.	—	3"	4"	—
Weight	—	—	—	—
Fall	—	—	—	—

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
	0	1	AC	FULL		CONCRETE SLAB 0'4" VOID (AIRSPACE) 0'7" FILL Black and brown C-F GRAVEL, Some c-f Sand, little (-) Clayey SILT slight odor, damp med dens — 1'1" END OF BORING 1'1"	* Lab Sample Boring located on North side of transformer pad * Denotes soil sample sent to lab for analysis upon completion borehole was filled with unused soil cutting and topped off with Concrete mix.
	5						
	10						
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG
Boring No. SB 53

Project RIFS COURT STREET 5/5A SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation
Groundwater N/A	W.L. Ref. Elev.
Date: — Water Depth: — Water Elev.: — Intake: —	Date Started 2-10-97
Type: — Cas. — Samp. Bucketing Core — Tube —	Date Finished 2-10-97
Diam.: — Cas. — Samp. 3" Core — Tube —	Driller JK/CT
Weight: — Cas. — Samp. — Core — Tube —	Inspector JHK CT
Fall: — Cas. — Samp. — Core — Tube —	

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
	0	1	AC	FULL		FILL Black MF GRAVEL, some(+) of Sand, little(-) Silt, damp, medium dense 1.0' END OF BORING 1.0'	* Lab Sample Boring located on East Side of transformer pad * Denotes soil sample sent to Lab for analysis upon completion, borehole filled with unused soil cuttings
	5						
	10						
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG
Boring No. MW-16A

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation 379.57
	W.L. Ref. Elev. 379.2
	Date Started 2-12-97
	Date Finished 2-12-97
	Driller Mark Eaves
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA			
2/20/97	2.33' BPVC			Diam.	4¼" ID			
				Weight	–			
				Fall	–			

Well Construction	Depth (feet)	Samples: No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND PACK 2" 10 Slot Screen 0 SAND PACK	0	1	AC			ASPHALT / SAND GVL FILL Brown C F SAND, and Lt-m GVL, tr+ Silt 1.75	
		2	AC			SILT & CLAY Gry Yl brown SILT & CLAY, stiff 3.5	
	5	3	AC			SAND w/ SILT Org gy F-m SAND, some Lt Clayey SILT to yl br F-C SAND, some Lt Clayey SILT, little f Gvl 8.5	
	10					END OF BORING 8.5'	
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

TEST BORING LOG
Boring No. MW-16B

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation 379.67
Groundwater	W.L. Ref. Elev. 379.27
Date 2/20/97, Water Depth 1.91' BPVC, Water Elev., Intake	Date Started 2-11-97
Type: Cas. HSA, Samp. SS, Core -, Tube -	Date Finished 2-11-97
Diam.: Cas. 4 1/4" ID, Samp. 2", Core -, Tube -	Driller Mark Eaves
Weight: Cas. -, Samp. 140#, Core -, Tube -	Inspector JHK
Fall: Cas. -, Samp. 30", Core -, Tube -	

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	HNU ** (ppm) Spoon	HNU ** (ppm) HSA
Flushmount protective casing; Bentonite; CEM/BENT GROUT; 2" ø SCH 40 PVC Flush Joint Riser; CEM/BENT GROUT; SAND PACK; 2" ø SCH 40 PVC 10 Slot Screen; SAND PACK	0	1	SS	13	X - 9	ASPHALT / SAND GVL FILL Asphalt to 0.5' @0.5' Red brown CF SAND, and f-m Gvl, trace (+) SILT		0	0
					8 - 5				
		2	SS	16	4 - 5			0.2	0
					5 - 6				
	5	3	SS	2	1 - 1	1.75 SILT & CLAY Gray Yellow brown SILT & CLAY, stiff 3.5		0	0
					WH - WH				
		4	SS	4	3 - 3	SAND w/ SILT Soggy F-M SAND, some (+) Clayey SILT saturated @4' Red yl br CF SAND, little Silt, little f-m Gvl @6.0' Red Yellow brown F-C SAND, some (+) Clayey SILT, little (-) f Gravel 8.3		0.2	0
					2 - 2				
		5	SS	24	WH - WH			0	0
	10				WH - WH				
		6	SS	24	WH - 1	Clayey SILT occ sand partings Gray Clayey SILT, very soft, sat @13.5' Gray Clayey SILT with frequent partings of SILT & CLAY @14.0' Gray Clayey SILT, occassional partings SILT & CLAY @15.5' with one parting 1/64" F SAND, some silt @15.6' @16.0' Gray Clayey SILT, @17.0' Gray SILT & CLAY, occ parting F SAND (1/16") occ partings SILT @18.0' Gray Clayey SILT occassional partings SILT @18.5' Gray SILT & CLAY @20.0' Gray Clayey SILT, partings of SILT @ 20.5' & @ 20.75'		0.2	0
					1 - 1				
		7	SS	18	WH - WH			0	0.4
					WH - WH				
	15	8	SS	20	WH - WH			0.2	0
					WH - WH				
		9	SS	21	WH - WH			0	0
					WH - WH				
		10	SS	24	WH - WH			0.2	0
	20				WH - WH				
		11	SS	24	WH - WH			0.2	0
						22.0 END OF BORING 22.0' →			
	25								
	30								
	35								
	40								
	45								
	50								

** HNU equipped with an 11.7 eV lamp

EMCON

TEST BORING LOG
Boring No. MW-17A

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation 381.76
	W.L. Ref. Elev. 384.11
	Date Started 2-12-97
	Date Finished 2-12-97
	Driller Mark Eaves
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA			
2/10/97	5.12' BTOC			Diam.	4¼" ID			
				Weight	—			
				Fall	—			

5" Steel Protective Casing

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0.0 SAND PACK; 2" Ø40 #10/20 Slot Screen; 2" PVC Riser; 2.0 SAND PACK	0	1	AC			SILT & CLAY Black SILT & CLAY, little Root Matter to Orange brown SILT & CLAY	
	5					7.5'	
	10	2	AC			Clayey SILT, w/ Sand Gray clayey SILT, little of Sand to Gy Clayey SILT and mF Gvl, little of Sand, occ Root, 12.0'	
	15					END OF BORING 12.0'	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

emcon

TEST BORING LOG
Boring No. MW17B

Project RIFS COURT STREET S/SA SITE
Client Lockheed Martin Corporation
Boring Contractor Parratt-Wolff

Sheet No. 1 of 1
Job No. 86143-001.000
G.S. Elevation 381.76
W.L. Ref. Elev. 384.22
Date Started 2-12-97
Date Finished 2-12-97
Driller Mark Eaves
Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	–	–
2/10/97	5.15' BPVC			Diam.	4 1/4" ID	2"	–	–
				Weight	–	140#	–	–
				Fall	–	30"	–	–

5" Steel Protective Casing

Well Construction: Bentonite 0; CEM./BENT GROUT; 2" PVC F.J. RISER; CEM./BENT GROUT; 0 SAND PACK; 2" PVC #10 Screen; 0 SAND PACK

Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	HNV** (ppm) Spoon	HNV** (ppm) HSA	Remarks
0	1	SS	15	1-2 / 3-3	SILT & CLAY Black SILT & CLAY, little Root matter	0	0	
					@0.5' Black SILT, little f Sand, trace Roots			
	2	SS	10	3-3 / 4-4	@1.0 org br SILT & CLAY	0	0.2	
5	3	SS	15	3-3 / 4-5	@1.5' DK br SILT & CLAY, tr of Sand, occ piece of f GVL	0	0	
					@2.0' DK brn/org mottled SILT & CLAY stiff			
	4	SS	19	5-6 / 6-5	@4.0' Orange brown gy SILT & CLAY, stiff	0	0	
					7.5			
10	5	SS	18	WH-WH / WH-WH	Clayey SILT, w/ SAND / Roots Gray Clayey SILT, little f Sand soft saturated	0	0	
					@8.0' org br SILT & CLAY			
	6	SS	16	WH-WH / WH-2	@9.0' Gray SILT & CLAY, little f Sand	0	0	
	7	SS	20	2-2 / 2-2	@9.5 Gray Clayey SILT, some f Sand	0	0	
					@10.0' Gray Clayey SILT			
15	8	SS	18	WH-WH / WH-WH	@11.0' Gray black Clayey SILT, with frequent 1/64" fgtings; Ltgy F-SAND, occ piece part decomposed org Root	0	0	
	9	SS	18	WH-WH / WH-WH	@11.5' Gray Clayey SILT, and mf gravel, little f Sand, 3/4" piece of Root @11.75' occ shell fragment @ 11.8	0	0	
	10	SS	21	WH-WH / WH-WH	@12.0 DK gray Clayey SILT, little f Sand	0	0	
20	11	SS	22	WH-WH / WH-WH	@12.5' DK gy Clayey SILT, some f-f Sand, occ piece Root.	0	0	
	12	SS	20	WH-WH / WH-WH	12.75	0	0	
					Clayey SILT Gray SILT & CLAY occ lamination 1/4" Clayey SILT			
25					@14.0' Gray Clayey SILT, with thin bed 1" Gray MF GVL and CF Sand trace Silt @14.5'			
					@15' Gray SILT & CLAY with thin bed 3/4" of Clayey SILT @15.75			
					@16.0' Gray SILT & CLAY Soft			
30					@20.0' Gray w/ Red SILT & CLAY, occ thin bed Clayey SILT			
					@22.0' Gray SILT & CLAY, occ thin bed Clayey SILT			
35					24.0			
					END OF BORING 24.0'			
40								
45								
50								

** HNV equipped with an 11.7 eV lamp

emcon

TEST BORING LOG
Boring No. MW-18A

Project RIFS COURT STREET 5/5A SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation 382.84
	W.L. Ref. Elev. 385.18
	Date Started 2-12-97
	Date Finished 2-12-97
	Driller Mark Eaves
	Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	HSA			
2/20/97	7.57' BPVC			Diam.	4 1/4" ID			
				Weight	—			
				Fall	—			

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
5" stick-up protective casing; 2" PVC Riser; 10 SAND PACK; 2" PVC 10 slot Screen; 10 SAND PACK	0	1	AC			FILL Black brown clayey SILT, little F-M Sand, tr Roots, White chalk & ceramics	
	5	2	AC			Clayey SILT Gray with orange OR SILT & CLAY to Gray SILT to Gray Clayey SILT	
	10					10.0 END OF BORING 10.0'	
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG
Boring No. MW-18B

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt-Wolff	G.S. Elevation 382.6
Groundwater	W.L. Ref. Elev. 384.83
Date 2/20/97 Water Depth 6.49' BPV Water Elev. Intake	Date Started 2-12-97
Type HSA SS — —	Date Finished 2-12-97
Diam. 4¼"ID 2" — —	Driller Mark Eaves
Weight — 140# — —	Inspector JHK
Fall — 30" — —	

Well Construction: 5" steel/protective casing; Bentonite; CEMENT/BENT GROUT; 2" PVC FJ. RISER; CEMENT GROUT; 10 SAND PACK; 2" PVC #10 SLOT SCREEN; 10 SAND PACK

Depth (feet)	No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	HNU ** (PPM) Spoon	HNU ** (PPM) HSA
0	1	SS	16	2 - 2	FILL		0	0
				2 - 2	Bl. br Clayey SILT, little f-m Sand, tr (f) Roots			
	2	SS	20	2 - 2	@1.0 Gy org br Clayey SILT, tr (f) Roots		0.2	0.7
				3 - 2	@1.5' White chalk like material Ceramic 2.5			
5	3	SS	16	3 - 3	Clayey SILTS w/ Sand.		0	0
				3 - 3	Gray w/ Org br SILT & CLAY stff			
	4	SS	22	5 - 5	@4.0' Vlgy br SILT & CLAY		0	0
				6 - 5	@7.25' Light gray SILT			
	5	SS	10	2 - 2	@7.3 Gray/org SILT & CLAY		0.1	0.3
10				1 - 2	@7.5' Gray SILT & CLAY, occ. black Root			
	6	SS	18	WH - WH	@8.0' Gray SILT & CLAY		0.2	0.3
				WH - 1	@9.0 Gray Clayey SILT			
	7	SS	20	2 - 3	@10.0' Gray Clayey SILT, trace f-m Sand 13.0		0	0
				4 - 4	@11.0' DK & Lt gray Clayey SILT,			
15	8	SS	18	WH - WH	little f-m Sand occ parting f-m SAND		0	0
				WH - WH	@11.7' Gray Clayey SILT freq. pieces			
	9	SS	20	WH - WH	of PDV Reeds.		0	0
				WH - WH	@12.0' Gray Clayey SILT, and f-m Gvl,			
	10	SS	21	WH - WH	little c-f Sand, trace roots		0	0.1
20				WH - WH				
	11	SS	22	WH - WH	Clayey SILT		0	0
				WH - WH	Gray SILT & CLAY with occ. parting Clayey SILT 24.0		0	0.1
	12	SS	19	WH - WH	@14.0' Gray SILT & CLAY			
25					@16.0 Gray SILT & CLAY with occ very fine parting Clayey SILT			
					@18.0 Gray SILT & CLAY			
30					@20' Gray SILT & CLAY with occ thin bed Clayey SILT			
					@22.0' Gray SILT & CLAY with frequent thin beds 1" or 1½" of Clayey SILT @ 23.25, 23.7 & 23.8	** HNU equipped with an 11.7 ev lamp		
35					END OF BORING 24.0'			
40								
45								
50								

EMCON

TEST BORING LOG
Boring No. MW-19S

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client LOCKHEED MARTIN CORPORATION	Job No. 86143-001.000
Boring Contractor PARRATT-WOLFF	G.S. Elevation

Groundwater					Cas.	Samp.	Core	Tube	
Date	Water Depth	Water Elev.	Intake	Type	HSA	SS	—	—	W.L. Ref. Elev. 379.31
6-10-97	2.25'BGS		3-10'	Diam.	4 1/4" ID	2"	—	—	Date Started 6-9-97
				Weight	—	140#	—	—	Date Finished 6-9-97
				Fall	—	30"	—	—	Driller Doug Thoma
									Inspector JHK

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks	PID** ppm Spoon	PID** ppm HSA
6" Flushmount protective casing; Cement; 4" Riser; 2" 10 Slot PVC Screen; Bentonite Pellets	0	1	SS	16	X-5	ASPHALT / SAND GVL FILL Asphalt to 0.3'		0	0
					5-6	@0.3' Rd gy CF SAND, some Clayey SILT, little F-M Gvl			
		2	SS	12	6-8	@0.5' Rd br F-M GRAVEL and cf Sand, little Silt 1.3	Saturated @ 3'9"	0	0
					8-12	SILT & CLAY 5.3			
	5	3	SS	24	4-4	Orange br gy mottled SILT & CLAY stiff moist		0	0
					4-4				
		4	SS	24	4-3	@3.25' Or br Gy SILT & CLAY with occ partings 1/64" Clayey SILT		0	0
					3-2	@3.75' Org br red br clayey SILT Saturated			
		5	SS	24	1-1	@4.0' Org br SILT & CLAY		0	0
	10				1-1	@5.0' Gray Clayey SILT, little f Sand 5.3			
		6	SS	24	1-1	CLAY & SILT		0	0
					1-1	Gray CLAY & SILT, soft, sat			
		7	SS	14	1-1	@8.0' Gray SILT & CLAY, tr(+) F-M Gravel, tr f-c Sand		0	0
					1-2	@8.3' Gray SILT & CLAY			
	15	8	SS	16	2-2	@15.0' Gray SILT, trace-f Sand		0	0
					2-2	@15'6" Gray Clayey SILT 16.			
						END OF BORING 16.0'	** PID equipped with an 11.7 eV lamp		
	20								
	25								
	30								
	35								
	40								
	45								
	50								

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TEST BORING LOG

SEWER TRANSECT No. 1 East

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date / Water Depth / Water Elev. / Intake	Date Started 2-14-97
2/20/97 / 6.43' BPVC	Date Finished 2-14-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

S.U = 1.60'

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND / BENTONITE / 1" PVC RISER / 1" AUGER / 0 SAND / BENTONITE	0	1	Cuts			Black SILT & CLAY, some Root matter, damp — 3	
	5	2	Cuts			Orange brown SILT & CLAY medium moist — 8	
	10	3	Cuts			Orange brown SILT & CLAY, saturated — 11	
		4	Cuts			Gray Clayey SILT, soft saturated 13	
	15					END OF BORING 13.0'	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG

SEWER TRANSECT No. 1 EDGE

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date: 2/20/97 Water Depth: 7.10 BPVC Water Elev.: Intake:	Date Started 2-18-97
	Date Finished 2-18-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

S U = 20

Well Construction: 0 SAND; BENTONITE; 1" PVC RISER; 1" PVC SCREEN; 0 SAND; BENTONITE

Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0	1	Cuts			Brown Black SILT & CLAY	Boring & Piezometer placed 3' to East of the Center Piezometer and defined edge of trench
5					6.5	
10	2	Cuts			Brown SILT & CLAY Saturated	
					11	
	3	Cuts			Gray Clayey SILT Saturated	
					13	
15					END OF BORING 13.0'	
20						
25						
30						
35						
40						
45						
50						

EMCON

TEST BORING LOG

SEWER TRANSECT No. 1 Center

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date / Water Depth / Water Elev. / Intake	Date Started 2-14-97
2/20/97 / Dry @ 5.5' BPVC	Date Finished 2-14-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

SU = 3.15

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND; PVC Riser; 1" PVC Screen; 0 SAND	0	1	Cuts			SEWER LINE BACKFILL Dark brown SILT & CLAY, trace Roots moist.	Refusal of Auger on concrete encasement at 5.60' BGS
	5					END OF BORING 5.60'	
	10						
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

EMCON

TEST BORING LOG

SEWER TRANSECT No. 1 West

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date / Water Depth / Water Elev. / Intake	Date Started 2-14-97
2/20/97 / 6.56' BPVC	Date Finished 2-14-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

S.U = 1.80'

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
BENTONITE / 1" PVC RISER / BENTONITE / 1" PVC SCREEN / SAND / SAND	0	1	Cuts			Black SILT & CLAY, trace Roots damp	3
	5	2	Cuts			Orange brown SILT & CLAY damp	3
	10	3	Cuts			Orange brown SILT & CLAY, saturated	11
		4	Cuts			Gray Clayey SILT, saturated	13
	15					END OF BORING 13.0'	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

EMCON

TEST BORING LOG

SEWER TRANSECT No. 2 East

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
	W.L. Ref. Elev.
	Date Started 2-17-97
	Date Finished 2-17-97
	Driller Mark Eaves
	Inspector JHK

Groundwater				Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	SSA	CUTS	—	—
2/20/97	10.14' BPVC			Diam.	4"OD	4"	—	—
				Weight	—	—	—	—
				Fall	—	—	—	—

S.U = 3.5'

Well Construction	Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
BENTONITE / 1" PVC RISER / 1" PVC SCREEN / BENTONITE / SAND	0						
		1	Cuts			Black SILT & CLAY trace Roots damp	
	5						5
		2	Cuts			Orange brown SILT & CLAY damp	
	10						10
		3	Cuts			Orang brown SILT & CLAY saturated	12
		4	Cuts			Gray Clayey SILT, saturated	14
	15					END OF BORING 14.0' →	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG

SEWER TRANSECT No. 2 Edge

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date: 2/20/97 Water Depth: 8.22' BP/L Water Elev.: Intake:	Date Started 2-18-97
	Date Finished 2-18-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

Well Construction	Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND BENTONITE	0	1	Cuts			Black SILT & CLAY trace Roots damp	Boring and Piezometer placed 3'4" to east of center piezometer and defines edge of trench
	5	2	Cuts			Orange brown SILT & CLAY damp	
	10	3	Cuts			Orange brown SILT & CLAY Saturated	
		4	Cuts			Gray Clayey SILT. Saturated	
	15					END OF BORING 14.0'	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG

SEWER TRANSECT No. 2 Center

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date / Water Depth / Water Elev. / Intake	
2/20/97 / 9.22' BPVC	

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

Date Started 2-17-97

Date Finished 2-17-97

Driller Mark Eaves

Inspector JHK

S.U. = 3.3

Well Construction	Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND 1" PVC Section 0 SAND	0	1	Cuts			Black SILT & CLAY damp	Refusal of Auger on concrete encasement at 6.7' BGS
	5					6.7 END OF BORING 6.7' →	
	10						
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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TEST BORING LOG

SEWER TRANSECT No. 2 West

Project RIFS COURT STREET S/SA SITE
Client Lockheed Martin Corporation
Boring Contractor Parratt Wolff

Sheet No. 1 of 1
Job No. 86143-001.000
G.S. Elevation
W.L. Ref. Elev.
Date Started 2-17-97
Date Finished 2-17-97
Driller Mark Eaves
Inspector JHK

Groundwater					Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	SSA	CUTS	—	—
2/20/97	8.86' BPVC			Diam.	4"OD	4"	—	—
				Weight	—	—	—	—
				Fall	—	—	—	—

S.U. = 2.30

Well Construction: BENTONITE; 1" PVC RISER; 1" PVC SCREEN; SAND; SAND; BENTONITE

Depth (Feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0						
	1	Cut			Black SILT & CLAY trace roots	
5					5	
	2	Cuts			Orange brown SILT & CLAY damp	
					9	
10	3	Cuts			Orange brown SILT & CLAY saturated	
					11	
	4	Cuts			Gray Clayey SILT, saturated	
15					15.5	
					END OF BORING 15.5'	
20						
25						
30						
35						
40						
45						
50						

emcon

TEST BORING LOG

SEWER TRANSECT No. 3 East

Project RIFS COURT STREET 5/5A SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date / Water Depth / Water Elev. / Intake: 2/20/97 / 6.96' BPVC	Date Started 2-17-97
	Date Finished 2-17-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

S.U. = 2.3'

Well Construction	Depth (feet)	Samples: No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND BENTONITE 1" PVC RISER 1" PVC SCREEN 10 SAND BENTONITE	0						
	5	1	Cuts			Black SILT & CLAY trace Roots damp — 5'	
		2	Cuts			Orange brown SILT & CLAY damp — 9	
	10	3	Cuts			Orange brown SILT & CLAY saturated — 11	
		4	Cuts			Gray Clayey SILT, saturated — 13	
	15					END OF BORING 13.0'	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

EMCON

TEST BORING LOG

SEWER TRANSECT No. 3 Edge

Project RIFS COURT STREET 5/5A SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date / Water Depth / Water Elev. / Intake	Date Started 2-18-97
2/20/97 5.60' BPVC	Date Finished 2-18-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

SU = 1.00

Well Construction	Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND BENTONITE 1" PVC SCREEN 1" PVC RISER 0 SAND BENTONITE	0	1	Cuts			Black Br SILT & CLAY trace Roots damp	Boring & Piezometer placed 2'8" to East of center piezometer and defines edge of trench
	5						
		2	Cuts			Orange brown SILT & CLAY damp	
	10	3	Cuts			Orange brown SILT & CLAY saturated	
		4	Cuts			Gray Clayey SILT saturated.	
	15					END OF BORING 14.0' →	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

emcon

TEST BORING LOG

SEWER TRANSECT No. 3 Center

Project RIFS COURT STREET S/SA SITE	Sheet No. 1 of 1
Client Lockheed Martin Corporation	Job No. 86143-001.000
Boring Contractor Parratt Wolff	G.S. Elevation
Groundwater	W.L. Ref. Elev.
Date: 2/20/97 Water Depth: Dry @ 8.5' BMP Water Elev.: Intake:	Date Started 2-17-97
	Date Finished 2-17-97
	Driller Mark Eaves
	Inspector JHK

	Cas.	Samp.	Core	Tube
Type	SSA	CUTS	—	—
Diam.	4"OD	4"	—	—
Weight	—	—	—	—
Fall	—	—	—	—

S.U = 2.3'

Well Construction: 0 SAND; Bent; 1" PVC SCH 40 Riser; 0 SAND; Bent

Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0	1	Cuts			Black SILT & CLAY trace Roots damp — 3.0	
5	2	Cuts			Orange brown SILT & CLAY damp 6.2	Refusal of Auger on concrete encasement at 6.2' BGS.
					END OF BORING 6.2 →	
10						
15						
20						
25						
30						
35						
40						
45						
50						

emcon

TEST BORING LOG
SEWER TRANSECT No. 3 West

Project RIFS COURT STREET 5/5A SITE
Client Lockheed Martin Corporation
Boring Contractor Parratt Wolff

Sheet No. 1 of 1
Job No. 86143-001.000
G.S. Elevation
W.L. Ref. Elev.
Date Started 2-17-97
Date Finished 2-17-97
Driller Mark Eaves
Inspector JHK

Groundwater				Cas.	Samp.	Core	Tube
Date	Water Depth	Water Elev.	Intake	Type	SSA	CUTS	—	—
2/20/97	8.32' BPVC			Diam.	4"OD	4"	—	—
				Weight	—	—	—	—
				Fall	—	—	—	—

S.U = 1.1'

Well Construction	Depth (feet)	Samples No.	Type	Rec.	Blows per 6 inches	Classification	Remarks
0 SAND / BENTONITE / 1" PVC RISER / 1" PVC Screen / 9 SAND / BENTONITE	0	1	Cuts			Black SILT & CLAY trace ~~roots~~ damp. 5	
	5	2	Cuts			Orange Brown SILT & CLAY damp 9	
	10	3	Cuts			Orange brown SILT & CLAY Saturated 11	
		4	Cuts			Gray Clayey SILT Saturated 13.5	
	15					END OF BORING 13.5'	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

APPENDIX B

SAMPLING LOGS

GROUND-WATER SAMPLING LOG

Well No. MW-1D
Key No. 2537
PID Background 0 Well 0
Dräger Tubes - Background N/A
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/94
Sampling Personnel KHG RB
Date 3/17/97 Time In 9:27 Time Out 9:46
Weather Sun & Clouds @ 30° F

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	36.89'	
Water Table Depth	1.48'	
Length of Casing Above Grade	1.5'	

1.5' extension on PVC

Slug Test? (Y/N) N
Recovered? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	35.41'
Volume of Water in Well	5.67
Pumping Rate of Pump	
Volume of Bailer	0.25 gal.
Minutes of Pumping	
Number of Bails	—

Sand pack H_2O vol = 1.00 gal

EVACUATION INFORMATION

Volume of Water Removed from Well 24 g. Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	5.5	10.6	10.7	11.1
pH	4.52	5.21	5.74	6.14
Conductance	1200	900	900	900

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	4.4	°C
Conductivity	700	uS
pH	6.71	SU
Turbidity	32.5	NTU
Dissolved Oxygen	3.67	~~mg/L~~ mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10; ✓ 4; ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS ~~water~~ well & sand vol = 6.67
Sample ID = GW01DS Lab ID # 07
TCL VOAs only

SAMPLE DESTINATION Laboratory CAS Via Fed EX Sent By KHG/RB

K. Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW 2D
Key No. 2537
PID Background C Well 0
Dreager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse
Sampling Personnel KHG RB
Date 3/11/97 Time In _____ Time Out 18:19
Weather Misty drizzle 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	49.25	
Water Table Depth	2.76	
Length of Casing Above Grade	flush	

2.0' extension on PVC

Slug Test? (Y/N) N
Recovery? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	46.57
Volume of Water in Well	7.44
Pumping Rate of Pump	
Volume of Bailer	0.25 g.
Minutes of Pumping	
Number of Bails	____

Sand pack H_2O vol = 2.00

EVACUATION INFORMATION

Volume of Water Removed from Well 30 gal Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	11.4	13.4	9.7	8.8
pH	6.01	6.43	7.19	7.55
Conductance	1400	2500	2400	2300

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	6.9	°C
Conductivity	2000	uS
pH	7.11	SU
Turbidity	5.6	NTU
Dissolved Oxygen	2.99	~~ppm~~ mg/L

Routine? (Y) N
Calibration Standard Readings ____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS well + sand pack vol = 9.44 gal
Sample ID = GW02DS Lab ID # 016
TCL VOAs only

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By KHG / RB
R. Blechman
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW 3S
Key No. 2537
PID Background C Well C
Dräger Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Cours 5/5A
Sampling Personnel RB KHG
Date 3/11/97 Time In _____ Time Out 15:10
Weather cold drizzle overcast 30s

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	15.91	
Water Table Depth	2.31	2.65
Length of Casing Above Grade		

Slug Test? (Y/N) ____
Recovery? (Y/N) ____

WELL WATER INFORMATION

Length of Water Column	13.6
Volume of Water in Well	2.18
Pumping Rate of Pump	
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	~12

Sand pack vol (H_2O) = 8.00 gal.

EVACUATION INFORMATION

Volume of Water Removed from Well 31.0 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Lyster	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	4.7	8.2	8.0	8.2
pH	6.19	7.21	6.84	7.30
Conductance	460	520	520	520

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	8.2	°C
Conductivity	4400	µS
pH	6.56	SU
Turbidity	65.5	NTU
Dissolved Oxygen	4.69	~~ppm~~ mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10; ✓ 4; ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 10.15 g.
Sample ID - GW03SS Lab ID - C5
TCL VOAs Only

SAMPLE DESTINATION
Laboratory CAS Via Fed EX Sent By: KB KHG
K. Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-3D
Key No. 2537
PID Background 0 Well 0
Draeger Tubes - Background _____
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/54
Sampling Personnel RB/KHG
Date 3/11/97 Time In _____ Time Out 1550
Weather cloudy breezy mid 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	37.12	
Water Table Depth	0.41	
Length of Casing Above Grade	flush	

Slug Test? (Y/N) _____
Recovery? (Y/N) _____

WELL WATER INFORMATION

Length of Water Column	36.71
Volume of Water in Well	5.87
Pumping Rate of Pump	
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	—

Vol. of sand pack (11.0) = 1.20

EVACUATION INFORMATION

Volume of Water Removed from Well 22g · Evacuation Method: Bailer ( ) Pump (✓ grundfos
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	4.8	11.0	11.4	11.8
pH	10.04	6.69	7.31	7.59
Conductance	1750	1900	1900	1900

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	9.8	°C
Conductivity	1800	uS
pH	7.74	SU
Turbidity	24.8	NTU
Dissolved Oxygen	3.62	~~ppm~~ mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS Well + Sand Vol = 7.07
Sample ID - GW03DS Lab ID# 02
TCL VOAs Only

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By RB/KHG
R. Bienstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-5D
Key No. 2537
PID Background 0 Well 0
Dreager Tubes - Background NA
Well _____ Compound _____

Site Name LNC Syracuse Court St 5/SA
Sampling Personnel KHG RB
Date 3/2/97 Time In 10:20 Time Out 1035
Weather Sun / Clouds 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	27.01	
Water Table Depth	0.87	1.22
Length of Casing Above Grade		

Slug Test? (Y/N) _____
Recovery? (Y/N) _____

WELL WATER INFORMATION

Length of Water Column	26.14
Volume of Water in Well	4.18
Pumping Rate of Pump	
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	—

Sand pack H_2O vol = 1.0

EVACUATION INFORMATION

Volume of Water Removed from Well 16.0 Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	5.60	10.2	11.3	11.5
pH	5.32	6.33	6.12	6.79
Conductance	750	619	625	634

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	8.1	°C	
~~Conductivity~~	~~7.29~~	~~SU~~	505 uS
pH	7.29	SU	
Turbidity	15.47	NTU	
Dissolved Oxygen	2.95	ppm	mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 5.18 gal.
Sample ID - GWO5DS Lab ID # OK
TCL VOAs only

SAMPLE DESTINATION
Laboratory CAS Via Fed EX Sent By KHG / RB
R. Burstnie
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW 6D
Key No. 2537
PID Background 0 Well 12.2
Dräger Tubes - Background _____
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/54
Sampling Personnel KHG RB
Date 3/13/97 Time In _____ Time Out 17:15
Weather Sun 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	39.42	
Water Table Depth	3.67	4.10
Length of Casing Above Grade	1.97	

Slug Test? (Y/N) _____
Recovery? (Y/N) _____

WELL WATER INFORMATION

Length of Water Column	35.75
Volume of Water in Well	5.72 ~~3.05~~
Pumping Rate of Pump	
Volume of Bailer	
Minutes of Pumping	
Number of Bails	

sand pack H_2O vol = ~~3.05~~ 4.02

EVACUATION INFORMATION
Volume of Water Removed from Well 30 gal Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	10.6	9.0	9.3	9.6
pH	7.24	7.62	7.45	7.73
Conductance	813	2100	2350	~~2300~~

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	5.7	°C
Conductivity	1975	uS
pH	6.65	SU
Turbidity	149.6	NTU
Dissolved Oxygen	1.98	mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 9.74
~~Sample~~ ID - GW06DS Lab ID # 60
TCL VOAs only

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By RB KHG
R. Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-7S
Key No. 2537
PID Background 0 Well 47 ppm
Draeger Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/94
Sampling Personnel KMG KB
Date 3/12/97 Time In _____ Time Out 1700
Weather Sunny, Clouds @ 30°F

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	16.74	
Water Table Depth	3.54	3.87
Length of Casing Above Grade	2.69	

Slug Test? (Y)(N) ____
Redevelop? (Y)(N) ____

WELL WATER INFORMATION

Length of Water Column	13.15
Volume of Water in Well	2.10
Pumping Rate of Pump	—
Volume of Bailer	0.25
Minutes of Pumping	—
Number of Bails	—

sand pack H_2O vol = 8.04

EVACUATION INFORMATION

Volume of Water Removed from Well 31 gal Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	3.8	6.0	6.5	5.8
pH	5.85	6.93	7.23	6.84
Conductance	1761	716	716	712

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	4.4	°C
Conductivity	655	uS
pH	5.34	SU
Turbidity	161.4	NTU
Dissolved Oxygen	3.18	mg/L

Realtime? (Y) N
Calibration Standard Readings ____ 10: ✓ ____ 4: ✓ ____ 7

* Collect duplicate here — Sample ID - Dup51 Lab ID# 11

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand pack = 10.14 gal.
Sample ID = GW07SS Lab ID# 11
TCL VOAs, semi VOAs, metals - Tot. & Diss. / DEC split all but diss. metals.

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By KMG / RB
R. Kierstone
Field Sampling Coordinator

* Collect FB here, ~~Label~~ sample ID - GWFB1R / Lab ID# 52 @ 1640

GROUND-WATER SAMPLING LOG

Well No. MW-8S
Key No. 2537
PID Background 0 Well 0
Dreager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/5A
Sampling Personnel KHG/RB
Date 3/11/97 Time In _____ Time Out 1456
Weather Overcast, drizzle, breezy, @ 30° F

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	12.51	
Water Table Depth	1.55	1.95
Length of Casing Above Grade	flush	

Slug Test? (Y/N) N
Recovery? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	10.96'
Volume of Water in Well	1.75
Pumping Rate of Pump	
Volume of Bailer	0.25g.
Minutes of Pumping	
Number of Bails	~ 26

Sand pack volume of water = 7.37 g.

EVACUATION INFORMATION

Volume of Water Removed from Well 6.5 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Units	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	7.4			
pH	6.87			
Conductance	2050			

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	7.04	°C
Conductivity	440	µS
pH	4.3	SU
Turbidity	91.4	NTU
Dissolved Oxygen	10.31	~~ppm~~ mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + Sand pack vol = 9.12 g.
Sample ID - MW8S Lab ID# 04
TCL VOAs only

SAMPLE DESTINATION Laboratory CAS Via FedEx Sent By RB/KHG

R. Blevins
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-10
Key No. 2537
PID Background 0 Well 0
Dräger Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St. 5/94
Sampling Personnel KHG, RB
Date 3/12/97 Time In 1141 Time Out 1300
Weather Sun clouds @ 30°F

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	14.0	
Water Table Depth	5.59	5.85
Length of Casing Above Grade	2.02	

Slug Test? (Y)(N) ____
Recovery? (Y)(N) ____

WELL WATER INFORMATION

Length of Water Column	8.41
Volume of Water in Well	1.35
Pumping Rate of Pump	
Volume of Bailer	0.25 g.
Minutes of Pumping	
Number of Bails	~96

Sand pack H_2O vol = 4.70'

EVACUATION INFORMATION
Volume of Water Removed from Well 24.0 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed	4V:1
Temperature	4.5	5.2	4.8	6.0	5.5
pH	5.22	5.79	5.73	6.28	5.35
Conductance	236	863	1103	2071	1966

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	5.1	°C
Conductivity	1898	µS
pH	6.48	SU
Turbidity	>200	NTU
Dissolved Oxygen	5.37	~~PPM~~ mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS Total well + sand pack = 6.05 gals.
Sample ID - GW010S Lab ID # 50
TCL VOAs/Total, diss. metals only DEC split total metals

SAMPLE DESTINATION
Laboratory CAS Via Fed EX Sent By KHG RB
R. Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-11
Key No. 2537
PID Background 0 Well 12 ppm
Draeger Tubes - Background NA
Well — Compound —

Site Name LMC Syracuse Crouse St 5/SA
Sampling Personnel Kitz RB
Date 3/14/91 Time In _____ Time Out 10:00
Weather Snow, sleet 35°

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	13.30	
Water Table Depth	3.79	4.04
Length of Casing Above Grade	1.60	

Slug Test? (Y/N) ____
Redevelop? (Y/N) ____

WELL WATER INFORMATION

Length of Water Column	9.51
Volume of Water in Well	1.52
Pumping Rate of Pump	—
Volume of Bailer	0.25
Minutes of Pumping	—
Number of Bails	~36

sand pack H_2O vol = 4.70

EVACUATION INFORMATION

Volume of Water Removed from Well 9.0 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	6.5	7.0		
pH	7.16	7.42		
Conductance	684	629		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	6.4	°C
Conductivity	770	µS
pH	7.67	SU
Turbidity	135.5	NTU
Dissolved Oxygen	7.50	MG/L

Readings? (Y) N
Calibration Standard Readings ____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 6.22
sample ID = GWO11S Lab ID # 44
TCL VOAs, metals - tot. & dis / DEC split

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By Kitz RB
R. Brewster
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-12
Key No. 2537
PID Background 0 Well 0
Dreager Tubes - Background /
Well / Compound /

Site Name LMC Syracuse Court St. 5/SA
Sampling Personnel KHG RB
Date 3/13/97 Time In _____ Time Out 17:05
Weather Sun, cloud 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	14.39	
Water Table Depth	4.36	4.66
Length of Casing Above Grade	1.81	

Slug Test? (Y/N) ____
Recovery? (Y/N) ____

WELL WATER INFORMATION

Length of Water Column	10.03
Volume of Water in Well	1.60
Pumping Rate of Pump	—
Volume of Bailer	0.25
Minutes of Pumping	—
Number of Bails	~28

Sand pack H_2O vol - 5.40

EVACUATION INFORMATION

Volume of Water Removed from Well 7 gals Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	1st	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	6.4	6.2		
pH	7.40	7.82		
Conductance	710	750		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	5.4	°C
Conductivity	698	µS
pH	6.89	SU
Turbidity	>200	NTU
Dissolved Oxygen	16.9	mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS collect MS/MSD here ; total well + Sand = 7.0 gals.
sample ID - GW012S (MS/MSD) , Lab ID # 37
TCL VOAs, SVOAs, metals TOT & DISS / DEC split all but diss. metals

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By KHG RB
R. Bierstine
Field Sampling Coordinator

A Clover

GROUND-WATER SAMPLING LOG

Well No. MW-13
Key No. 2537
PID Background 0 Well 0
Dreager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St. 5/SA
Sampling Personnel KHG RB
Date 3/12/97 Time In _____ Time Out 18:15
Weather Sun, clouds @ 30 °F

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	13.60	
Water Table Depth	7.97	8.20
Length of Casing Above Grade	2.35	

Slug Test? (Y/N) _____
Recovery? (Y/N) _____

WELL WATER INFORMATION

Length of Water Column	5.63
Volume of Water in Well	0.90
Pumping Rate of Pump	
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	~24

sand pack H_2O vol = 5.36

EVACUATION INFORMATION
Volume of Water Removed from Well 6.0 Evacuation Method: Bailer (Y) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	5.0	5.2		
pH	5.4	6.34		
Conductance	903	1672		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	4.9	°C
Conductivity	1776	µS
pH	7.31	SU
Turbidity	>200	NTU
Dissolved Oxygen	7.15	mg/L

Readings? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 6.26
Sample ID = GW013S Lab ID # 16
TCL VOAs only

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By KHG RB
K Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-14
Key No. 2537
PID Background 0 Well 0
Drager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St. 5/5A
Sampling Personnel RB KHG
Date 3/12/97 Time In _____ Time Out 1210
Weather Sun clouds 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	12.19	
Water Table Depth	6.12	6.45
Length of Casing Above Grade	2.50	

Slug Test? (Y/N) _____
Redevelop? (Y/N) _____

WELL WATER INFORMATION

Length of Water Column	6.07
Volume of Water in Well	0.97
Pumping Rate of Pump	—
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	~12

Sand pack H_2O vol = 6.70 gal

EVACUATION INFORMATION

Volume of Water Removed from Well 3.0 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Units	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	8.3			
pH	6.43			
Conductance	8.91			

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	4.3	°C	
Conductivity	1607	uS	
pH	5.19	SU	
Turbidity	135.7	NTU	
Dissolved Oxygen	11.22	ppm	mg/L

Redline? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand pack vol = 7.67
Sample ID - GW014S Lab # ID-15
TCL VOAs only

SAMPLE DESTINATION
Laboratory CAS Via Fed EX Sent By KHG RB
R. Buerstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-15
Key No. 2537
PID Background 0 Well 0
Dreager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/STA
Sampling Personnel K-HG KB
Date 3/12/97 Time In _____ Time Out _____
Weather Sun Clouds 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	13.60	
Water Table Depth	2.87	3.10
Length of Casing Above Grade	1.95	

Slug Test? (Y/N) N
Redevelop? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	10.73
Volume of Water in Well	1.72
Pumping Rate of Pump	
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	~ 28

Sand pack H_2O vol = 6.70 g.

EVACUATION INFORMATION

Volume of Water Removed from Well 7.0 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	4.3	4.9		
pH	5.25	6.16		
Conductance	421	470		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	3.8	°C
Conductivity	805	µS
pH	4.96	SU
Turbidity	40.7	NTU
Dissolved Oxygen	7.27	ppm mg/L

Redline? (Y) N
Calibration Standard Readings _____ 10; ✓ 4; ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand pack vol = 8.42
Sample ID - GW015S Lab ID# - 09
TCL VOAS only

SAMPLE DESTINATION Laboratory CAS Via Fed EX Sent By RB / KHG
R. Burstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

1

Well No. MW-16A
Key No. 2537
PID Background 0 Well 0
Draeger Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Gurf St 5/5A
Sampling Personnel RB/KHG
Date 3/11/94 Time In _____ Time Out 1430
Weather overcast, drizzle, breezy, 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2 inch	
Well Depth	8.44'	
Water Table Depth	2.29'	2.54'
Length of Casing Above Grade	Flush	

Slug Test? (Y/N) N
Redevelop? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	6.19'
Volume of Water in Well	0.99 gal
Pumping Rate of Pump	
Volume of Bailer	0.25 gal
Minutes of Pumping	
Number of Bails	~ 24

Volume of water in sand pack
4.69 gal

EVACUATION INFORMATION

Volume of Water Removed from Well 6 gal Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

5.75 gal

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	5.2	5.6		
pH	6.70	5.62		
Conductance	600	610		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	5.0	°C
Conductivity	600	Mmhos
pH	5.67	SU
Turbidity	107.5	NTU
Dissolved Oxygen	7.86	ppm

Readline? (Y) N
Calibration Standard Readings _____ 10; ✓ 4; ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well/sand pack volume 5.68 gal
Sample ID - GW1655 / MS ID #61
TCL VOCs only / DEC split

SAMPLE DESTINATION Laboratory CAS Via FedEx Sent By RB/KHG

RB Weston
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW - 16B
Key No. 2537
PID Background 0 Well 0
Draeger Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/5A
Sampling Personnel RB / KHG
Date 3/11/97 Time In _____ Time Out 1410
Weather overcast, breezy, drizzle, 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing	✓	
Well Diameter	2.0"	
Well Depth	21.78	
Water Table Depth	1.84	2.22
Length of Casing Above Grade	flush	

Slug Test? (Y/N) N
Redevelop? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	19.94
Volume of Water in Well	3.19
Pumping Rate of Pump	
Volume of Bailer	0.25g.
Minutes of Pumping	
Number of Bails	~21

Vol. of water in sand pack = 8.04 gal

EVACUATION INFORMATION

Volume of Water Removed from Well 5.25 Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	6.7°C			
pH	5.25			
Conductance	1800			

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	10.1	°C
Conductivity	1800	us
pH	6.15	SU
Turbidity	~~10~~ 27.16	NTU
Dissolved Oxygen	6.19	~~ppm~~ mg/L

Redline? Y N
Calibration Standard Readings _____ 10; ✓ 4; ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand pack vol = 11.23 g
Sample ID - GW16DS / Lab ID # 03
TCL VOAs only / DEC Split

SAMPLE DESTINATION
Laboratory CAS Via Fed EX Sent By RB/KHG

Ron Bleiszner
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW 17S
Key No. 2537
PID Background 0 Well 1.8 ppm
Dreager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/SA
Sampling Personnel KHG RB
Date 3/12/97 Time In _____ Time Out 1440
Weather Sun, Cloudy @ 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	14.51	
Water Table Depth	4.60	4.94
Length of Casing Above Grade	2.23	

Slug Test? (Y/N) N
Redevelop? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	9.91
Volume of Water in Well	1.59
Pumping Rate of Pump	
Volume of Bailer	0.75
Minutes of Pumping	
Number of Bails	~10

Sand pack water vol. = 7.40

EVACUATION INFORMATION

Volume of Water Removed from Well 27 gal Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? Y (N) Evacuation Rate _____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	4.0	5.8	5.5	5.4
pH	5.71	6.70	7.14	7.15
Conductance	1737	3290	3130	2100

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	4.2	°C
Conductivity	2041	uS
pH	7.3	SU
Turbidity	105.3	NTU
Dissolved Oxygen	6.74	~~ppm~~ mg/L

Readings? Y N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS Total well + Sand pack = 8.99 gal.
Sample ID - GW 178S Lab ID # 12
TCL VOAs Only DEC Split

SAMPLE DESTINATION
Laboratory CAS Via Fed EX Sent By KHG RB
R Barrister
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-17B
Key No. 2537
PID Background 0 Well 0 1.4 ppm
Dreager Tubes - Background 0 NA
Well _____ Compound _____

Site Name LMC Syracuse Court St 5/SA
Sampling Personnel KHG RB
Date 3/12/97 Time In _____ Time Out 1420
Weather Sun clouds 30's

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2"	
Well Depth	25.28	
Water Table Depth	4.54	4.85
Length of Casing Above Grade	2.34	

Slug Test? (Y/N) ____
Redevelop? (Y/N) ____

WELL WATER INFORMATION

Length of Water Column	20.69
Volume of Water in Well	3.30
Pumping Rate of Pump	
Volume of Bailer	0.25
Minutes of Pumping	
Number of Bails	

Sand pack H_2O vol = 6.4 g.

EVACUATION INFORMATION

Volume of Water Removed from Well 6.5 gal Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? (Y) N Evacuation Rate _____

Parameter	Units	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	1.9			
pH	6.0			
Conductance	438			

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	6.3	°C
Conductivity	2900	µS
pH	6.9	SU
Turbidity	> 200	NTU
Dissolved Oxygen	3.0	mg/L

Readline? (Y) N
Calibration Standard Readings _____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol - 9.70
Sample ID = GW17DS Lab ID # IC
TCL VOAs only / DEC, 1 pair

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By Kitty RB
R. Bienstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-18A
Key No. 2537
PID Background 0 Well 0.4 ppm
Draeger Tubes - Background N/A
Well ____ Compound ____

Site Name LMC Syracuse Court St 5/SA
Sampling Personnel RB KitG
Date 3/13/97 Time In ____ Time Out 17:30
Weather Sunny @ 30° F

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	12.20	
Water Table Depth	6.30	6.58
Length of Casing Above Grade	2.82	

Slug Test? (Y/N) ____
Recovery? (Y/N) ____

WELL WATER INFORMATION

Length of Water Column	5.90
Volume of Water in Well	0.94
Pumping Rate of Pump	—
Volume of Bailer	0.2L
Minutes of Pumping	—
Number of Bails	~20

sand pack H_2O vol = 4.70

EVACUATION INFORMATION
Volume of Water Removed from Well 5 gal. Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation Rate ____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	5.4	6.0		
pH	8.15	8.00		
Conductance	945	959		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	16.2	°C
Conductivity	920	us
pH	7.43	SU
Turbidity	25.5	NTU
Dissolved Oxygen	4.54	mg/L

Readings? (Y) N
Calibration Standard Readings ____ 10; ✓ 4; ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 5.64
Sample ID - GW18SS Lab ID # 23
TCL VOAs only / DEC split

SAMPLE DESTINATION
Laboratory CAS Via Fed Ex Sent By KitG/RB
K. Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-18B
Key No. 2537
PID Background 0 Well 2.3 ppm
Draeger Tubes - Background NA
Well ____ Compound ____

Site Name LMC Syracuse Court St 5/SA
Sampling Personnel KHG RB
Date 3/13/97 Time In ____ Time Out 1840
Weather 30° dark

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing		
Well Diameter	2.0"	
Well Depth	24.65	
Water Table Depth	5.39	5.60
Length of Casing Above Grade	1.97	

Slug Test? (Y/N) N
Recovery? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	19.26
Volume of Water in Well	3.08
Pumping Rate of Pump	—
Volume of Bailer	—
Minutes of Pumping	—
Number of Bails	—

sand pack H_2O vol = 8.04

EVACUATION INFORMATION

Volume of Water Removed from Well 3.5gal Evacuation Method: Bailer ( ) Pump (✓)
Did well go dry? (Y) N Evacuation Rate ____

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	4.4			
pH	7.15			
Conductance	2070			

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED

Temperature	5.6	°C
Conductivity	720	uS
pH	8.48	SU
Turbidity	NOT COLLECTED	
Dissolved Oxygen	~~NR~~ 4.32	mg/L

Readline? (Y) N
Calibration Standard Readings ____ 10: ✓ 4: ✓ 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS total well + sand vol = 11.12
Sample ID = GW18DS Lab ID # 61
TCL VOAs only

SAMPLE DESTINATION Laboratory CAS Via Fed Ex Sent By KHG RB
R Bierstine
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-17B
Key No.
PID Background 0 Well 0
Drager Tubes - Background NA
Well _____ Compound _____

Site Name LMC Court St. Syracuse
Sampling Personnel RB/CBT
Date 6/17/97 Time In 0730 Time Out 1100
Weather overcast, drizzle, humid

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing	yes	
Well Diameter	2 inch	
Well Depth	25.28	
Water Table Depth	8.18	
Length of Casing Above Grade	~2 feet	

Slug Test? (Y/N) N
Redevelop? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	17.1
Volume of Water in Well	2.7 gals
Pumping Rate of Pump	—
Volume of Bailer	0.25 gals
Minutes of Pumping	—
Number of Bails	24

EVACUATION INFORMATION
Volume of Water Removed from Well 6 gal Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation ~~Date~~ at 0744

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	10.8	10.9		
pH	5.57	6.47		
Conductance	2200	2100		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED at 0855 set #01

Temperature	11.0 °C
Conductivity	2200
pH	6.03
Turbidity	155.2 NTU
Dissolved Oxygen	5.16 ppm

Readings? (Y) N
Calibration Standard Readings _____ 10; ok 4; ok 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS MS/MSD performed #02/03, sample split with NYSDEC, well volume calculations include sand pack volume

SAMPLE DESTINATION Laboratory CAS Via FedEx Sent By CBT
Ron Buerkin
Field Sampling Coordinator

GROUND-WATER SAMPLING LOG

Well No. MW-195
Key No.
PID Background 0 Well 0
Dräger Tubes – Background NR
Well Compound

Site Name LMC Court St. Syracuse
Sampling Personnel RB / CBT
Date 6/17/97 Time In 0730 Time Out 1100
Weather overcast, drizzle, humid

WELL INFORMATION

	TIC	TOC
Reference Point Marked on Casing	y25	
Well Diameter	2 inch	
Well Depth	10'	
Water Table Depth	2.17	
Length of Casing Above Grade	flush	

Slug Test? (Y/N) N
Redevelop? (Y/N) N

WELL WATER INFORMATION

Length of Water Column	7.83'
Volume of Water in Well	1.25 gal + 6.6 gal in sandpack
Pumping Rate of Pump	—
Volume of Bailer	0.25 gal
Minutes of Pumping	—
Number of Bails	24

EVACUATION INFORMATION
Volume of Water Removed from Well 6 gal Evacuation Method: Bailer (✓) Pump ( )
Did well go dry? (Y) N Evacuation ~~Date~~ at 0805

Parameter	Initial	After 1 Volume Removed	After 2 Volumes Removed	After 3 Volumes Removed
Temperature	11.6	14.7		
pH	6.53	7.16		
Conductance	1100	1600		

GROUND-WATER CHARACTERISTICS AFTER SAMPLE COLLECTED at 0910 set # 5

Temperature	14.2 °C
Conductivity	1000
pH	6.26
Turbidity	69.2 NTU
Dissolved Oxygen	7.47 ppm

Redline? (Y) N
Calibration Standard Readings ____ 10: OK 4: OK 7

MISCELLANEOUS OBSERVATIONS/PROBLEMS DUP per formal set # 06, sample split with NYSDEC, well volume calculations include sand pack volume, FB-01 # 04, TB-01 # 07

SAMPLE DESTINATION
Laboratory CAS Via FedEx Sent By CBT

Ron Breiter
Field Sampling Coordinator

SURFACE-WATER SAMPLING FIELD LOG-GRAB

Sample Depth	surface / outfall pipe
Approximate Flow Rate	1 gpm
Volume of Sampling Device	
Total Water Depth	
Distance From Bank	
Depth Below Surface of Water Removed	

Location	OFC01S Lab ID# 15 SANDER'S CREEK
Weather	Sunny, 30's
Air Temperature	See above
Samplers	R. Brierstine / K Guarnieri / C Taylor
Date	3/13/97
Time	12:30

Temperature	4.4 °C
Conductivity	460 us
pH	6.42 (SU)
Dissolved Oxygen	10.08 mg/L
Turbidity	—

Comments collect duplicate sample here: sample ID - OFC01D / Lab ID# 22, TCL VOAs only

0294840P

SURFACE-WATER SAMPLING FIELD LOG-GRAB

Sample Depth	surface
Approximate Flow Rate	—
Volume of Sampling Device	—
Total Water Depth	17"
Distance From Bank	mid-stream
Depth Below Surface of Water Removed	—

Location	SW004S (MS / MSD) SOUTH BRANCH OF LEY CK.
Weather	SUNNY
Air Temperature	30's
Samplers	RB / KG / CT
Date	3/13/97
Time	13:10

Temperature	3.9° C
Conductivity	1446 µS
pH	7.14 (SU)
Dissolved Oxygen	> 20 mg/L
Turbidity	

Comments Lab ID # 21 ; TCL VOAs only

SURFACE-WATER SAMPLING FIELD LOG-GRAB

Sample Depth	surface
Approximate Flow Rate	—
Volume of Samoling Device	—
Total Water Depth	6.5"
Distance From Bank	mid-stream (@30' South of Culvert)
Depth Below Surface of Water Removed	—

Location	SW0065 SOUTH BRANCH OF LEY CR.
Weather	sunny
Air Temperature	30's
Samplers	KG / RB / CT
Date	3/13/97
Time	14:20

Temperature	4.9 ° C
Conductivity	~~703~~ 1530 µS
pH	7.03 (SU)
Dissolved Oxygen	>20 mg/L
Turbidity	—

Comments TCL VOA only Lab ID # 19

SURFACE-WATER SAMPLING FIELD LOG-GRAB

Sample Depth	Outfall pipe
Approximate Flow Rate	5-10 gpm
Volume of Sampling Device	—
Total Water Depth	—
Distance From Bank	—
Depth Below Surface of Water Removed	—

Location	OFC02S (Lab ID # 17) SOUTH BR. OF LEY CK.
Weather	Sunny
Air Temperature	30's
Samplers	RB / KG / CT
Date	3/13/97
Time	14:05

Temperature	4.3° C
Conductivity	338 uS
pH	7.59 (SU)
Dissolved Oxygen	14.54 mg/L
Turbidity	—

Comments DEC Split TCL VOAs only

0294840P

SEDIMENT SAMPLING LOG

Location	Total Core Depth	Depth of Water	Sediment Penetrated	Sediment Recovered
SSOIDS	24"	14.5"	0-6"	2"

Sample ID	Increment	Visual Description
SSOIDS / Lab ID # 32		gray/brown clayey silt

Weather	Sunny
Air Temperature	30's
Samplers	KG / RB / CT
Date	3/13/97
Time	11:20

Comments: lab analysis for TCL VOAs and TOC only downstream of outfall OF-01A - SANDERS CK

* collect Field Blank, labelled ~~FB~~ SSFB2R / Lab ID # 20 at 10:20

6/27/95
DIVISION

SEDIMENT SAMPLING LOG

	Location	Total Core Depth	Depth of Water	Sediment Penetrated	Sediment Recovered
①	SS01US	24"	17.0"	0-6"	little → no recovery in
②	"	"	"	0-6"	11 core attempts

	Sample ID	Increment	Visual Description
①	SS01US / Lab ID# 24		gray/brown clayey silt w/ F-M - C sand
②	SS01UD / Lab ID # 35		"

Weather	Sunny
Air Temperature	30's
Samplers	RB / CT / KG
Date	3/13/97
Time	12:10 / 12:15 (dup)

Comments: analysis for TCL VOAs only
upstream of outfall OF-01A TO SANDERS CREEK
SS01UD → duplicate sample

SEDIMENT SAMPLING LOG

Location	Total Core Depth	Depth of Water	Sediment Penetrated	Sediment Recovered
SSO2DS	24"	17.5"	0-6"	100%

Sample ID	Increment	Visual Description
SSO2DS / Lab ID# 31		gray clayey silt

here: MS/MSD

Weather	sunny
Air Temperature	30's
Samplers	RB / KG / CT
Date	3/13/97
Time	12:40

Comments: Collect MS/MSD at this location downstream of OF-02-South Br. Ley Creek analysis for TCL VOAs, TCC → no MS/MSD for TOC analysis
DEC Split

SEDIMENT SAMPLING LOG

Location	Total Core Depth	Depth of Water	Sediment Penetrated	Sediment Recovered
SS02US	24"	25.0"	0-6"	25% of core barrel

Sample ID	Increment	Visual Description
SS02US / Lab ID # 36		gray clay w/ some silt

Weather	Sunny
Air Temperature	30's
Samplers	RB / KG / CT
Date	3/13/97
Time	13:55

Comments: TCL VOAs only
upstream of outfall OF-02 TO SOUTH BR. LEY CREEK

6/27/96
04053&1UN

APPENDIX C

VALIDATED ANALYTICAL LABORATORY REPORTS

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

July 1, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corp. Center
1 International Blvd, Ste. 700
Mahwah, NJ 07495

PROJECT:LMC COURT STREET
Submission #:9706000268

Dear Mr. Taylor:

Enclosed are the analytical results of the analyses requested. The analytical data was provided to you on 06/25/97 per a Facsimile transmittal. All data has been reviewed prior to report submission.

Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson
Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal.

1 Mustard St. • Suite 250 • Rochester, NY 14608 • Tele:(716)288-5380 • Fax:(716)288-8475
65 Rampo Vally Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362
12699 Roll Rd. • Akron, NY 14001 • Tele:(716)542-1264 • Fax:(716)542-3353

CASE NARRATIVE

COMPANY: EMCON
Lockheed Martin Corp - Syracuse
SUBMISSION #: 9706000268

EMCON water samples were collected on 06/17/97 and received at CAS on 06/18/97 in good condition at a temperature of 2.9 C. See the CAS Batching form to cross reference between Client ID and CAS sample numbers.

VOLATILE ORGANICS

Five water samples were analyzed for Target Compound List (TCL) of volatile organics by method 95-4 from the NYSASP 1995.

Sample MW17B was analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits. All Blank Spike recoveries were within QC limits.

All tuning criteria for BFB were met.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits.

All internal standard areas were within QC Limits.

All samples were analyzed within the holding time as specified in the method.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Michael K. Perry
Laboratory Director

7/1/97
Date

00001

CAS ASP/CLP TCHING FORM

BATCH COMPLETE: _____Y_____ SDG #: MW-17B CLIENT:EMCON
DISKETTE REQUESTED: Y___ N__X__ SUBMISSION #:97-6-268 PROJECT:LMC
CLIENT REP: Mark Wilson DATE: 06/19/97 PROTOCOL:ASPB
DATE DUE: 07/01/97 DATE REVISED:

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS
153411	QC MW17B	water	95-4	6/17/97	6/18/97		
153412	FB01	water	95-4	6/17/97	6/18/97		
153413	MW19S	water	95-4	6/17/97	6/18/97		
153414	DUP	water	95-4	6/17/97	6/18/97		
153415	TB01	water	95-4	6/17/97	6/18/97		

2000

ORGANIC QUALIFIERS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and ALL concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - As specified in Case Narrative.

10/95

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

ustomer ample ode	Laboratory Sample Code	Analytical Requirements* NYSDEC 1995 CLP PROTOCOL					
		*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
W17B	153411	X					
B01	153412	X					
W19S	153413	X					
UP	153414	X					
B01	153415	X					

Check Appropriate Boxes
C Non-CLP
SL, Priority Pollutant
CF1

00004

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOA
ANALYSES

LABORATORY SAMPLE ID (C4B)	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
153411	WATER	06/17/97	06/18/97	LOW	06/24/97
153412	WATER	06/17/97	06/18/97	LOW	06/24/97
153413	WATER	06/17/97	06/18/97	LOW	06/24/97
153414	WATER	06/17/97	06/18/97	LOW	06/24/97
153415	WATER	06/17/97	06/18/97	LOW	06/24/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY

ORGANIC ANALYSES

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
153411	WATER	95-4			1.0
153412	WATER	95-4			1.0
153413	WATER	95-4			1.0
153414	WATER	95-4			1.0
153415	WATER	95-4			1.0

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

DUP

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

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

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4925.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

CWF 7/1/97

NYSDEC Sample No.: DUP

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:MW17B
Lab Sample ID:DUP
Lab File ID: R4925
Date Received: 06/18/97
Date Analyzed: 06/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FB01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: FB01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4918.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

CMC 7/15/97

NYSDEC Sample No.: FB01

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:MW17B
Lab Sample ID:FB01
Lab File ID: R4918
Date Received: 06/18/97
Date Analyzed: 06/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
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30.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW17B

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: MW17B

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4920.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

7/15/97

NYSDEC Sample No.: MW17B

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:MW17B
Lab Sample ID:MW17B
Lab File ID: R4920
Date Received: 06/18/97
Date Analyzed: 06/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
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6.					
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27.					
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1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW19S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: MW19S

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4921.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

7/15/97

NYSDEC Sample No.: MW19S

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:MW17B
Lab Sample ID:MW19S
Lab File ID: R4921
Date Received: 06/18/97
Date Analyzed: 06/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
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6.					
7.					
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10.					
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29.					
30.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

TB01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: TB01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4919.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

CLK 7/15/97

NYSDEC Sample No.: TB01

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:MW17B
Lab Sample ID:TB01
Lab File ID: R4919
Date Received: 06/18/97
Date Analyzed: 06/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	000110-00-9	~~Unknown~~ Furan	5.70	1.1	J N
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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11.					
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FORM I VOA-TIC
B-103

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK01	100	0
02	LCS	109	0
03	FB01	103	0
04	TB01	106	0
05	MW17B	111	0
06	MW19S	110	0
07	MW17BMS	108	0
08	MW17BMSD	111	0
09	DUP	113	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Matrix Spike - EPA Sample No.: MW17B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	5.0	0.0	4.7	94	61 - 145
Benzene	5.0	0.0	4.7	94	76 - 127
Trichloroethene	5.0	0.0	4.6	92	71 - 120
Toluene	5.0	0.0	4.6	92	76 - 125
Chlorobenzene	5.0	0.0	4.6	92	75 - 130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	5.0	4.7	94	0	14	61 - 145
Benzene	5.0	4.7	94	0	11	76 - 127
Trichloroethene	5.0	4.7	94	2	14	71 - 120
Toluene	5.0	4.9	98	6	13	76 - 125
Chlorobenzene	5.0	4.8	96	4	13	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

_____

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW17BMS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: MW17BMS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4923.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	5	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW17BMSD

ab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: MW17BMSD

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4924.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	5	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Lab File ID: R4916.D Lab Sample ID: VBLK01

Date Analyzed: 06/24/97 Time Analyzed: 11:12

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS	LCS	R4917.D	11:52
02	FB01	FB01	R4918.D	12:56
03	TB01	TB01	R4919.D	13:37
04	MW17B	MW17B	R4920.D	14:26
05	MW19S	MW19S	R4921.D	15:06
06	MW17BMS	MW17BMS	R4923.D	16:53
07	MW17BMSD	MW17BMSD	R4924.D	17:33
08	DUP	DUP	R4925.D	18:13

COMMENTS

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: SDG No.: MW17B

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4916.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U

NYSDEC Sample No.: VBLK01

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:MW17B
Lab Sample ID:VBLK01
Lab File ID: R4916
Date Received: --
Date Analyzed: 06/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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10.					
11.					
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13.					
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20.					
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28.					
29.					
30.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

LCS

ab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: SDG No.: MW17B

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

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R4917.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 06/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	6	
75-01-4	Vinyl Chloride	6	
74-83-9	Bromomethane	6	
75-00-3	Chloroethane	6	
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	6	
75-09-2	Methylene Chloride	5	
75-15-0	Carbon Disulfide	1	U
156-60-5	trans-1,2-Dichloroethene	6	
75-35-3	1,1-Dichloroethane	5	
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	6	
67-66-3	Chloroform	5	
107-06-2	1,2-Dichloroethane	5	
71-55-6	1,1,1-Trichloroethane	5	
56-23-5	Carbontetrachloride	5	
71-43-2	Benzene	5	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	5	
75-27-4	Bromodichloromethane	5	
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	5	
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	5	
79-00-5	1,1,2-Trichloroethane	5	
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	5	
124-48-1	Dibromochloromethane	5	
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	5	
108-38-3	Xylenes (TOTAL)	6	
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	5	
75-25-2	Bromoform	5	

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Lab File ID (Standard): R4915.D Date Analyzed: 06/24/97

Instrument ID: GCMS#5 Time Analyzed: 09:08

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	92524	10.58	134291	12.76	75819	19.72
	UPPER LIMIT	185048	10.08	268582	12.26	151638	19.22
	LOWER LIMIT	46262	11.08	67146	13.26	37910	20.22
	EPA SAMPLE NO.						
01	VBLK01	89307	10.59	129277	12.79	72373	19.71
02	LCS	89300	10.61	124831	12.77	74326	19.72
03	FB01	90748	10.59	128805	12.78	75306	19.74
04	TB01	86304	10.61	125566	12.78	75777	19.73
05	MW17B	89930	10.61	125499	12.79	78003	19.72
06	MW19S	80485	10.59	117737	12.79	73215	19.72
07	MW17BMS	87050	10.63	127079	12.79	77432	19.72
08	MW17BMSD	88155	10.63	128973	12.79	77807	19.73
09	DUP	86161	10.62	128208	12.78	76812	19.73

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-6-268 SAS No.: _____ SDG No.: MW17B

Lab File ID (Standard): R4915.D Date Analyzed: 06/24/97

Instrument ID: GCMS#5 Time Analyzed: 09:08

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	26544	25.63				
	UPPER LIMIT	53088	25.13				
	LOWER LIMIT	13272	26.13				
	EPA SAMPLE NO.						
01	VBLK01	24455	25.61				
02	LCS	26606	25.61				
03	FB01	25397	25.63				
04	TB01	25671	25.62				
05	MW17B	26820	25.62				
06	MW19S	25501	25.63				
07	MW17BMS	26732	25.64				
08	MW17BMSD	27194	25.64				
09	DUP	27012	25.63				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

EMCON

LMC SYRACUSE

CAS Submission #:9703000158

SUMMARY PACKAGE

Columbia Analytical Services
700 Exchange Street
Rochester, NY 14608

Telephone 716/454-6810 - Fax 716/454-6825

Columbia Analytical Services Inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

April 17, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corp. Center
1 International Blvd, Ste. 700
Mahwah, NJ 07495

PROJECT:LMC SYRACUSE
Submission #:9703000158

Dear Mr. Taylor

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 454-6810.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice Mlagey for:

Mark Wilson
Client Service Manager

Enc.

cc: Mr. Chris Taylor
Environmental Quality Assoc.
R.D. #5, Box 800
Middletown, NY 10940

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal.

700 Exchange Street • Rochester, NY 14608 • Tele:(716)454-6810 • Fax:(716)454-6825
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362
12699 Roll Rd. • Akron, NY 14001 • Tele:(716)542-1264 • Fax:(716)542-3353

CASE NARRATIVE

COMPANY: EMCON
Lockheed Martin Corp - Syracuse
SUBMISSION #: 9703000158

EMCON water samples were collected on 03/11/97 through 03/14/97 and received at CAS on 03/12/97 through 03/15/97 in good condition. See the CAS Batching form to cross reference between Client ID and CAS sample numbers.

VOLATILE ORGANICS

Twenty water samples were analyzed for Target Compound List (TCL) of volatile organics by method 95-4 from the NYSASP 1995.

Target compounds were over the calibration range for sample GW011S and have been flagged "E". This sample was reanalyzed at a dilution as GW011SDL.

After screening, samples GW07SD, GW07SS and GW16SS were analyzed with smaller sample amounts to bring target analytes within the calibration range of the method.

Sample GW012S was analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits. All Blank Spike recoveries were within QC limits.

All tuning criteria for BFB were met.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits.

All internal standard areas were within QC Limits.

All samples were analyzed within the holding time as specified in the method.

No other analytical or QC problems were encountered.

SEMIVOLATILES

Four water samples were analyzed for the Target Compound List of Semivolatile Organics by Method 95-2 from the NYSASP 1995.

Sample GW012S was analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits except for the recovery of 4-Nitrophenol in the MS and MSD. All recoveries were within limits for the blank spike.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within QC limits.

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All samples were extracted and analyzed within the specified holding times.

No other analytical or QC problems were encountered.

METALS

Six water samples were analyzed for the Target Analyte List (TAL) of metals by NYSASP 1995 Inorganic methods.

All Initial and Continuing calibrations were compliant.

Sample GW012SA was analyzed for site specific QC. All spike recoveries and %D were within QC Limits except for the recovery of Aluminum which was spiked at less than 25% of the sample concentration. All RPD were within limits.

The Sodium results were flagged with an "E" indicating the ICP Serial Dilution was outside of control limits.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Michael K. Perry
Laboratory Director

4/17/97
Date

INORGANIC QUALIFIERS

C (Concentration) qualifier - Enter "B" if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for, but not detected, a "U" must be entered.

Q qualifier - Specified entries and their meanings are as follows:

E - The reported value is estimated because of the presence of interference.

M - Duplicate injection precision not met.

N - Spiked sample recovery not within control limits.

S - The reported value was determined by the Method of Standard Additions (MSA).

W - Post-digestion spike for Furnace AA Analysis is out of control limits (85-115), while sample absorbance is less than 50% of spike absorbance.

* - Duplicate analysis not within control limits.

+ - Correlation coefficient for the MSA is less than 0.995.

M (Method) qualifier - Enter:

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "PM" for ICP when Microwave Digestion is used
- "AM" for Flame AA when Microwave Digestion is used
- "FM" for Furnace M when Microwave Digestion is used
- "CV" for Manual Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "CA" for Midi-Distillation Spectrophotometric
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- " " where no data has been entered
- "NR" if the analyte is not required to be analyzed

ORGANIC QUALIFIERS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and ALL concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - As specified in Case Narrative.

10/95

CAS ASP/CLP BATCHING FORM

BATCH COMPLETE: _____Y_____ SDG #: MW2D CLIENT:EMCON
DISKETTE REQUESTED: Y___ N_X___ SUBMISSION #:03-158 PROJECT:LMC
CLIENT REP: Mark Wilson DATE: 03/12/97 PROTOCOL: ASPB
DATE DUE: 04/12/97 DATE REVISED: 03/17/97

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS
134564	GW16SS	water	95-4	3/11/97	3/12/97		
134565	GW16DS	water	95-4	3/11/97	3/12/97		
134567	GW03DS	water	95-4	3/11/97	3/12/97		
134568	GW03SS	water	95-4	3/11/97	3/12/97		
134569	GW02DS	water	95-4	3/11/97	3/12/97		
134570	GWTB1T	water	95-4	3/11/97	3/12/97		
134868	GW01DS	water	95-4	3/12/97	3/13/97		
134869	GW05DS	water	95-4	3/12/97	3/13/97		
134870	GW17S	water	95-4	3/12/97	3/13/97		
134871	GW015S	water	95-4	3/12/97	3/13/97		
134872	GW17DS	water	95-4	3/12/97	3/13/97		
134873	GW013S	water	95-4	3/12/97	3/13/97		
134874	GW08SS	water	95-4	3/12/97	3/13/97		
134875	GWTB2T	water	95-4	3/12/97	3/13/97		
134876-	GW010S	water	Metals,	3/12/97	3/13/97		
134877-	GW07SS	water	95-2,95-4,Metals	3/12/97	3/13/97		
134878-	GW07SD	water	95-2,95-4,Metals	3/12/97	3/13/97		
134879-	GWFB1R	water	95-2,95-4,Metals	3/12/97	3/13/97		
135108-	QC GW012S	water	95-2,95-4,Metals	3/13/97	3/14/97		
135425-	GW011S	water	95-4,Metals	3/14/97	3/15/97		
135256	CBLK1	water	95-4				

FINAL

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

SOW No.: NYS ASP 12/91

Sample No.	Lab Sample ID.
GW010S	134876
GW011S	135425
GW012S	135108
GW012SD	135108D
GW012SS	135108S
GW07SD	134878
GW07SS	134877
GWFB1R	134879

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes, were raw data generated before application of background corrections? Yes/No NO

Comments: See Case narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Michael K. Perry Name: Michael K. Perry

Date: 4/16/97 Title: Laboratory Director

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements* NYSDEC 1995 CLP PROTOCOL					
		*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
GW16SS	134564	X					
GW16DS	134565	X					
GW03DS	134567	X					
GW03SS	134568	X					
GW02DS	134569	X					
GWTB1T	134570	X					
GW01DS	134868	X					
GW05DS	134869	X					
GW17S	134870	X					
GW015S	134871	X					
GW17DS	134872	X					
GW013S	134873	X					
GW08SS	134874	X					
GWTB2T	134875	X					
GW010S	134876					X	
GW07SS	134877	X	X			X	
GW07SD	134878	X	X			X	
GWFB1R	134879	X	X			X	
GW012S	135108	X	X			X	
GW011S	135425	X				X	
CBLK1	135256	X					

Check Appropriate Boxes
*CLP, Non-CLP
*HSL, Priority Pollutant

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOA
ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
134564	WATER	03/11/97	03/12/97	LOW	03/20/97
134565	WATER	03/11/97	03/12/97	LOW	03/20/97
134567	WATER	03/11/97	03/12/97	LOW	03/20/97
134568	WATER	03/11/97	03/12/97	LOW	03/20/97
134569	WATER	03/11/97	03/12/97	LOW	03/20/97
134570	WATER	03/11/97	03/12/97	LOW	03/20/97
134868	WATER	03/12/97	03/13/97	LOW	03/21/97
134869	WATER	03/12/97	03/13/97	LOW	03/21/97
134870	WATER	03/12/97	03/13/97	LOW	03/21/97
134871	WATER	03/12/97	03/13/97	LOW	03/21/97
134872	WATER	03/12/97	03/13/97	LOW	03/21/97
134873	WATER	03/12/97	03/13/97	LOW	03/21/97
134874	WATER	03/12/97	03/13/97	LOW	03/21/97
134875	WATER	03/12/97	03/13/97	LOW	03/20/97
134877	WATER	03/12/97	03/13/97	LOW	03/21/97
134878	WATER	03/12/97	03/13/97	LOW	03/21/97
134879	WATER	03/12/97	03/13/97	LOW	03/20/97
135108	WATER	03/12/97	03/13/97	LOW	03/20/97
135425	WATER	03/13/97	03/14/97	LOW	03/21/97
135256	WATER	03/14/97	03/15/97	LOW	03/21/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY

ORGANIC ANALYSES

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
134564	WATER	95-4			50.0
134565	WATER	95-4			1.0
134567	WATER	95-4			1.0
134568	WATER	95-4			1.0
134569	WATER	95-4			1.0
134570	WATER	95-4			1.0
134868	WATER	95-4			1.0
134869	WATER	95-4			1.0
134870	WATER	95-4			1.0
134871	WATER	95-4			1.0
134872	WATER	95-4			1.0
134873	WATER	95-4			1.0
134874	WATER	95-4			1.0
134875	WATER	95-4			1.0
134877	WATER	95-4			50.0
134878	WATER	95-4			1.0
134879	WATER	95-4			1.0
135108	WATER	95-4			1.0
135425	WATER	95-4			1.0
135256	WATER	95-4			1.0

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
B/N-A
ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	DATE EXTRACTED	DATE ANALYZED
134877	WATER	03/12/97	03/13/97	03/17/97	03/24/97
134878	WATER	03/12/97	03/13/97	03/17/97	03/24/97
134879	WATER	03/12/97	03/13/97	03/17/97	03/24/97
135108	WATER	03/13/97	03/14/97	03/17/97	03/24/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY

ORGANIC ANALYSES

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
134877	WATER	95-2			1.0
134878	WATER	95-2			1.0
134879	WATER	95-2			1.0
135108	WATER	95-2			1.0

NCF2

9/89

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134876	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
134877	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
134878	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
134879	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
135108	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/14/97	3/26/97
135425	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/15/97	3/26/97

9/89

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134876	WATER	NA	3/13/97	3/31/97

9/89

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134876	WATER	SE	3/13/97	4/3/97
134877	WATER	SE	3/13/97	4/3/97
134878	WATER	SE	3/13/97	4/3/97
134879	WATER	SE	3/13/97	4/3/97
135108	WATER	SE	3/14/97	4/3/97
135425	WATER	SE	3/15/97	4/3/97

9/89

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134876	WATER	HG	3/13/97	3/19/97
134877	WATER	HG	3/13/97	3/19/97
134878	WATER	HG	3/13/97	3/19/97
134879	WATER	HG	3/13/97	3/19/97
135108	WATER	HG	3/14/97	3/19/97
135425	WATER	HG	3/15/97	3/19/97

9/89

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GWFB1R

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134879 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3480.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

CVT 5/2/97

RV 4/9

NYSDEC Sample No.: GWFB1R

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25.0 (g/mL) ML
Level (low/med): LOW

% Moisture:
Column (pack/cap):CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:MW2D
Lab Sample ID: 134879
Lab File ID: R3480
Date Received:03/13/97

Date Analyzed: 03/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		~~Unknown Aromatic~~ R	~~22.11~~	~~0.59~~	~~J~~
2.					
3.					
4.		Probable column-bleed			
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GWTB1T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134570 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3477.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

8/12/97

5/7/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GWTB1T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134570 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3477.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00019

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GWTB2T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134875 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3479.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

RT 4/9

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GWTB2T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134875 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3479.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00022

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW01DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134868 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3499.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U J
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	22	
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	6	
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J 5/15/97

5/21/97

NYSDEC Sample No.: GW01DS

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25.0 (g/mL) ML
Level (low/med): LOW

Contract: EMCON
SAS No.: -- SDG No.:MW2D
Lab Sample ID: 134868
Lab File ID: R3499
Date Received:03/12/97

% Moisture:
Column (pack/cap):CAP

Date Analyzed: 03/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

Number TIC's found: 1

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	9.63	0.85	JN
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW011S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135425 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3503.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U J
75-01-4	Vinyl Chloride	4	
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	88 ~~71~~	~~E~~
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	4	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	880 ~~650~~	~~E~~
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	47 ~~41~~	~~E~~ J
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	10	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

C~J 5/14/97

RA 4/9

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW011S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135425 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3503.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW011SDL

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135425 50

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3511.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
75-01-4	Vinyl Chloride	50	U
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	88	D
67-64-1	Acetone	250	U
75-35-4	1,1-Dichloroethene	50	U
75-09-2	Methylene Chloride	50	U
75-15-0	Carbon Disulfide	50	U
75-35-3	1,1-Dichloroethane	880	D
78-93-3	2-Butanone	250	U
156-59-4	cis-1,2-Dichloroethene	47	JD
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbontetrachloride	50	U
71-43-2	Benzene	50	U
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
108-10-1	4-Methyl-2-Pentanone	250	U
10061-02-6	trans-1,3-Dichloropropene	50	U
108-88-3	Toluene	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
591-78-6	2-Hexanone	250	U
127-18-4	Tetrachloroethene	50	U
124-48-1	Dibromochloromethane	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
108-38-3	Xylenes (TOTAL)	50	U
100-42-5	Styrene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
75-25-2	Bromoform	50	U
156-60-5	trans-1,2-Dichloroethene	50	U

Results from this run have been transcribed to unDiluted run form 1 for compounds which exceed cal. range.

3/24/97

FORM I VOA 95-4

00027

NYSDEC Sample No.: GW011SDL

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25.0 (g/mL) ML
Level (low/med): LOW

% Moisture:
Column (pack/cap):CAP

Number TIC's found: 2

Contract: EMCON
SAS No.: -- SDG No.:MW2D
Lab Sample ID: 135425
Lab File ID: R3511
Date Received:03/15/97

Date Analyzed: 03/21/97
Dilution Factor: 50.0
Concentration Units:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	Unknown	9.67	28	JD
2.	Unknown Hydrocarbon	26.49	26	JD
3.				
4.				
5.				
6.				
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30.				

These compounds did not appear in the undiluted run. Results are questionable.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW012S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3487.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

RD 4/9

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW012S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3487.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW013S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134873 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3508.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U J
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	2	
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	0.8	J
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J CT 5/18/97

8/4/97

5/21/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW013S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134873 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3508.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW015S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134871 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3502.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	1	U	J
75-01-4	Vinyl Chloride	1	U	
74-83-9	Bromomethane	1	U	
75-00-3	Chloroethane	1	U	
67-64-1	Acetone	5	U	J
75-35-4	1,1-Dichloroethene	1	U	
75-09-2	Methylene Chloride	1	U	
75-15-0	Carbon Disulfide	1	U	
75-35-3	1,1-Dichloroethane	1	U	
78-93-3	2-Butanone	5	U	J
156-59-4	cis-1,2-Dichloroethene	1	U	
67-66-3	Chloroform	1	U	
107-06-2	1,2-Dichloroethane	1	U	
71-55-6	1,1,1-Trichloroethane	1	U	
56-23-5	Carbontetrachloride	1	U	
71-43-2	Benzene	1	U	J
79-01-6	Trichloroethene	1	U	
78-87-5	1,2-Dichloropropane	1	U	
75-27-4	Bromodichloromethane	1	U	
108-10-1	4-Methyl-2-Pentanone	5	U	
10061-02-6	trans-1,3-Dichloropropene	1	U	
108-88-3	Toluene	1	U	J
10061-01-5	cis-1,3-Dichloropropene	1	U	
79-00-5	1,1,2-Trichloroethane	1	U	
591-78-6	2-Hexanone	5	U	
127-18-4	Tetrachloroethene	1	U	
124-48-1	Dibromochloromethane	1	U	
108-90-7	Chlorobenzene	1	U	J
100-41-4	Ethylbenzene	1	U	J
108-38-3	Xylenes (TOTAL)	1	U	J
100-42-5	Styrene	1	U	J
79-34-5	1,1,2,2-Tetrachloroethane	1	U	
75-25-2	Bromoform	1	U	
156-60-5	trans-1,2-Dichloroethene	1	U	

J 5/5/97

5/4/97

NYSDEC Sample No.: GW015S

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25.0 (g/mL) ML
Level (low/med): LOW

% Moisture:
Column (pack/cap):CAP

Number TIC's found: 4

Contract: EMCON
SAS No.: -- SDG No.:MW2D
Lab Sample ID: 134871
Lab File ID: R3502
Date Received:03/13/97

Date Analyzed: 03/21/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	75183	Dimethyl, Sulfide	7.16	0.58	JN
2.		Unknown Hydrocarbon	26.38	0.77	J
3.		Unknown Hydrocarbon	29.15	0.64	J
4.		Unknown Hydrocarbon	31.72	0.50	J
5.					
6.					
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CAS 3/21/97

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW2D ~~GW02D6~~

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134569 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3492.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
MW2D
~~GW02DS~~

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134569 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3492.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW3D ~~GW03D8~~

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134567 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3490.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

NYSDEC Sample No.: ~~GW03DS~~ MW3D

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25.0 (g/mL) ML
Level (low/med): LOW

% Moisture:
Column (pack/cap):CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:MW2D
Lab Sample ID: 134567
Lab File ID: R3490
Date Received:03/12/97

Date Analyzed: 03/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		~~Unknown~~ R	~~26.50~~	~~0.71~~	~~J~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Probable Column-bleed

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW35
~~GW035~~

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: ____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134568 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3491.D

Level: (low/med) LOW Date Received: ____

% Moisture: not dec. ____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume ____ (uL) Soil Aliquot Volume: ____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	8	
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	7	
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

NYSDEC Sample No.: ~~GW033S~~ MW3S

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 25.0 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap):CAP

Number TIC's found: 3

Contract: EMCON
SAS No.: -- SDG No.:MW2D
Lab Sample ID: 134568
Lab File ID: R3491
Date Received:03/12/97
Date Analyzed: 03/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		~~Unknown Hydrocarbon~~ prob. column bleed	~~26.47~~	~~0.85~~	~~J~~
2.		Unknown Hydrocarbon	29.23	0.74	J
3.	32357838	Ether, hexyl pentyl	31.80	0.76	J N
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW05DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134869 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3500.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U J
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

CLT 8/13/97

CLT 5/2/97

4/4/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW05DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134869 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3500.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW07SD

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134878 50

Sample wt/vol: 0.5 (g/ml) ML Lab File ID: R3510.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (x50)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
75-01-4	Vinyl Chloride	370	
74-83-9	Bromomethane	50	U J
75-00-3	Chloroethane	50	U
67-64-1	Acetone	250	U J
75-35-4	1,1-Dichloroethene	50	U
75-09-2	Methylene Chloride	50	U
75-15-0	Carbon Disulfide	50	U
75-35-3	1,1-Dichloroethane	770	
78-93-3	2-Butanone	250	U J
156-59-4	cis-1,2-Dichloroethene	140	
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
71-55-6	1,1,1-Trichloroethane	44	J
56-23-5	Carbontetrachloride	50	U
71-43-2	Benzene	50	U J
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
108-10-1	4-Methyl-2-Pentanone	250	U
10061-02-6	trans-1,3-Dichloropropene	50	U
108-88-3	Toluene	50	U J
10061-01-5	cis-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
591-78-6	2-Hexanone	250	U
127-18-4	Tetrachloroethene	50	U
124-48-1	Dibromochloromethane	50	U
108-90-7	Chlorobenzene	50	U J
100-41-4	Ethylbenzene	50	U J
108-38-3	Xylenes (TOTAL)	50	U J
100-42-5	Styrene	50	U J
79-34-5	1,1,2,2-Tetrachloroethane	50	U
75-25-2	Bromoform	50	U
156-60-5	trans-1,2-Dichloroethene	50	U

> J

5/1/97

4/9

5/2/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW07SD

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134878 50

Sample wt/vol: 0.5 (g/ml) ML Lab File ID: R3510.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW07SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134877 50

Sample wt/vol: 0.5 (g/ml) ML Lab File ID: R3498.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (X50)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U J
75-01-4	Vinyl Chloride	360	
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
67-64-1	Acetone	250	U J
75-35-4	1,1-Dichloroethene	50	U
75-09-2	Methylene Chloride	50	U
75-15-0	Carbon Disulfide	50	U
75-35-3	1,1-Dichloroethane	730	
78-93-3	2-Butanone	250	U J
156-59-4	cis-1,2-Dichloroethene	140	
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
71-55-6	1,1,1-Trichloroethane	48	J
56-23-5	Carbontetrachloride	50	U
71-43-2	Benzene	50	U J
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
108-10-1	4-Methyl-2-Pentanone	250	U
10061-02-6	trans-1,3-Dichloropropene	50	U
108-88-3	Toluene	50	U J
10061-01-5	cis-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
591-78-6	2-Hexanone	250	U
127-18-4	Tetrachloroethene	50	U
124-48-1	Dibromochloromethane	50	U
108-90-7	Chlorobenzene	50	U J
100-41-4	Ethylbenzene	50	U J
108-38-3	Xylenes (TOTAL)	50	U J
100-42-5	Styrene	50	U J
79-34-5	1,1,2,2-Tetrachloroethane	50	U
75-25-2	Bromoform	50	U
156-60-5	trans-1,2-Dichloroethene	50	U

> J 5/5/97

5/2/97 BC 4/9

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW07SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134877 50

Sample wt/vol: 0.5 (g/ml) ML Lab File ID: R3498.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW08SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134874 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3509.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U J
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

acc 5/15/97

acc 5/14/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW08SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134874 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3509.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW16D ~~GW16DS~~

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134565 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3493.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW16D
~~GW16DS~~

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134565 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3493.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

~~GW16SS~~ MW165

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134564 50

Sample wt/vol: 0.5 (g/ml) ML Lab File ID: R3481.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
75-01-4	Vinyl Chloride	390	
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
67-64-1	Acetone	250	U J
75-35-4	1,1-Dichloroethene	50	U
75-09-2	Methylene Chloride	92	
75-15-0	Carbon Disulfide	50	U
75-35-3	1,1-Dichloroethane	590	
78-93-3	2-Butanone	250	U J
156-59-4	cis-1,2-Dichloroethene	310	
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbontetrachloride	50	U
71-43-2	Benzene	50	U J
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
108-10-1	4-Methyl-2-Pentanone	45	J
10061-02-6	trans-1,3-Dichloropropene	50	U
108-88-3	Toluene	50	U J
10061-01-5	cis-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
591-78-6	2-Hexanone	250	U
127-18-4	Tetrachloroethene	50	U
124-48-1	Dibromochloromethane	50	U
108-90-7	Chlorobenzene	50	U J
100-41-4	Ethylbenzene	50	U J
108-38-3	Xylenes (TOTAL)	50	U J
100-42-5	Styrene	50	U J
79-34-5	1,1,2,2-Tetrachloroethane	50	U
75-25-2	Bromoform	50	U
156-60-5	trans-1,2-Dichloroethene	50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

~~GW16SS~~ 11W16S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134564 50

Sample wt/vol: 0.5 (g/ml) ML Lab File ID: R3481.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW17DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134872 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3507.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U J
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW17DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134872 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3507.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW17S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134870 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3501.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U J
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	3	
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW17SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134870 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3501.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GWFB1R

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134879

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL452.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	10	U
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
100-02-7	4-Nitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GWFB1R

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134879

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL452.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	1	JB
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

NYSDEC Sample No: GWFB1R

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:MW2D
Matrix: (soil/water) WATER Lab Sample ID: 134879
Sample wt/vol: 1000 (g/mL) ML Lab File ID: DL452
Level (low/med): LOW Date Received: 03/12/97
% Moisture: Date Extracted:03/17/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 03/24/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 1 Concentration Units:
(ug/L or ug/Kg)UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	931179	1,2-Cyclohexanediol	11.47	17	JN
2.					
3.					
4.					
5.					
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29.					
30.					

FORM I SV-TIC
NYSDEC B-78

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW07SD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134878

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL451.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	10	U
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
100-02-7	4-Nitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW07SD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134878

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL451.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	10 ~~5~~	U ~~JB~~
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

Cut

NYSDEC Sample No: GW07SD

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:MW2D
Matrix: (soil/water) WATER Lab Sample ID: 134878
Sample wt/vol: 1000 (g/mL) ML Lab File ID: DL451
Level (low/med): LOW Date Received: 03/12/97
% Moisture: Date Extracted:03/17/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 03/24/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 11 Concentration Units:
(ug/L or ug/Kg)UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	Unknown	7.25	3.3	J
2.	Unknown	10.71	4.5	J
3. ~~1792810~~	~~cis-1,2-Cyclohexanediol~~ R	~~11.47~~	~~15~~	~~JB~~N
4.	Unknown Acid	12.85	2.5	J
5.	Unknown Acid	14.16	2.3	J
6.	Unknown Acid	17.31	2.8	J
7. 1610180	Prometon	19.00	4.6	JN
8.	Unknown Hydrocarbon	21.41	2.3	J
9.	Unknown Hydrocarbon	21.49	2.2	J
10.	Unknown Hydrocarbon	26.36	2.4	J
11.	Unknown Hydrocarbon	27.27	2.7	J
12.				
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW07SS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134877

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL450.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	10	U
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
100-02-7	4-Nitrophenol	25	U

00003

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW07SS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 134877

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL450.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	10 ~~8~~	U ~~JB~~
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

Cal

NYSDEC Sample No: GW07SS

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:MW2D
Matrix: (soil/water) WATER Lab Sample ID: 134877
Sample wt/vol: 1000 (g/mL) ML Lab File ID: DL450
Level (low/med): LOW Date Received: 03/12/97
% Moisture: Date Extracted:03/17/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 03/24/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 24 Concentration Units:
(ug/L or ug/Kg)UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	Unknown	10.70	4.2	J
2. ~~1792810~~	~~cis-1,2-Cyclohexanediol~~ R	~~11.47~~	~~13~~	~~JDN~~
3.	Unknown Acid	12.85	3.2	J
4.	Unknown Acid	14.16	3.1	J
5.	Unknown Acid	17.31	2.2	J
6. 1610180	Prometon	19.00	4.9	J N
7.	Unknown	19.69	2.5	J
8.	Unknown	19.99	2.8	J
9.	Unknown Hydrocarbon	20.09	2.7	J
10.	Unknown	20.50	2.6	J
11.	Unknown	20.71	2.2	J
12.	Unknown Hydrocarbon	21.01	3.2	J
13.	Unknown Hydrocarbon	21.41	4.4	J
14.	Unknown Hydrocarbon	21.48	2.3	J
15.	Unknown Hydrocarbon	21.69	2.2	J
16.	Unknown Hydrocarbon	21.79	2.4	J
17.	Unknown Hydrocarbon	22.03	2.2	J
18.	Unknown Hydrocarbon	22.10	2.1	J
19.	Unknown Hydrocarbon	22.74	2.2	J
20.	Unknown Hydrocarbon	23.11	2.6	J
21.	Unknown Hydrocarbon	24.13	2.2	J
22.	Unknown	24.31	3.0	J
23.	Unknown Hydrocarbon	26.35	3.0	J
24.	Unknown Hydrocarbon	27.27	2.8	J
25.				
26.				
27.				
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30.				

FORM I SV-TIC
NYSDEC B-78

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW012S

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL453.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	10	U
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
100-02-7	4-Nitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW012S

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL453.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	10 1	U JB
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

NYSDEC Sample No: GW012S

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:MW2D
Matrix: (soil/water) WATER Lab Sample ID: 135108
Sample wt/vol: 1000 (g/mL) ML Lab File ID: DL453
Level (low/med): LOW Date Received: 03/12/97
% Moisture: Date Extracted:03/17/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 03/24/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 5 Concentration Units:
(ug/L or ug/Kg)UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	7.25	2.3	J
2.	~~1792810~~	~~cis-1,2-Cyclohexanediol~~	~~11.47~~	~~14~~	~~JBN~~
3.		Unknown	22.17	2.3	J
4.		Unknown	23.43	2.1	J
5.		Unknown	24.31	2.2	J
6.					
7.					
8.					
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FORM I SV-TIC
NYSDEC B-78

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW010S

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Lab Sample ID: 134876

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3660			P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	4.7	B	J	P
7440-39-3	Barium	134	B		P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	444000			P
7440-47-3	Chromium	4.8	B		P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	5.9	B		P
7439-89-6	Iron	4180			P
7439-92-1	Lead	2.4	B		P
7439-95-4	Magnesium	130000			P
7439-96-5	Manganese	60.5			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	3.5	B		P
7440-09-7	Potassium	5650			P
7782-49-2	Selenium	1.1	B	W J	F
7440-22-4	Silver	1.6	B		P
7440-23-5	Sodium	112000		E J	P
7440-28-0	Thallium	2.1	U	J	P
7440-62-2	Vanadium	6.3	B		P
7440-66-6	Zinc	14.6	B		P
	Cyanide				

C-T 5/8/97

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

ents:

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

GW011S

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Lab Sample ID: 135425

Level (low/med): LOW Date Received: 03/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	673			P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	16.3		J	P
7440-39-3	Barium	44.7	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	165000			P
7440-47-3	Chromium	1.1	B		P
7440-48-4	Cobalt	0.70	U		P
7440-50-8	Copper	1.7	U		P
7439-89-6	Iron	3550			P
7439-92-1	Lead	1.2	B		P
7439-95-4	Magnesium	47300			P
7439-96-5	Manganese	67.9			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	2670	B		P
7782-49-2	Selenium	1.1	B	W J	F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	16700		E J	P
7440-28-0	Thallium	3.3	B	J	P
7440-62-2	Vanadium	1.4	B		P
7440-66-6	Zinc	7.5	B		P
	Cyanide				

5/5/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW012S

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Lab Sample ID: 135108

Level (low/med): LOW Date Received: 03/14/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10400			P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	4.7	B	J	P
7440-39-3	Barium	111	B		P
7440-41-7	Beryllium	0.46	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	218000			P
7440-47-3	Chromium	16.0			P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	12.7	B		P
7439-89-6	Iron	12500			P
7439-92-1	Lead	21.8			P
7439-95-4	Magnesium	50400			P
7439-96-5	Manganese	214			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	12.0	B		P
7440-09-7	Potassium	5330			P
7782-49-2	Selenium	1.0	B	WJ	F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	11100		E J	P
7440-28-0	Thallium	2.1	U	J	P
7440-62-2	Vanadium	18.4	B		P
7440-66-6	Zinc	42.6			P
	Cyanide				

5/5/97

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW077S

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW20

Matrix (soil/water): Lab Sample ID: 0

Level (low/med): Date Received:

% Solids: 0.0

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

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

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

nts:

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No such sample in SDG

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ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW07SD

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Lab Sample ID: 134878

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4760			P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	7.2	B	J	P
7440-39-3	Barium	120	B		P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	157000			P
7440-47-3	Chromium	6.6	B		P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	10.8	B		P
7439-89-6	Iron	8700			P
7439-92-1	Lead	2.6	B		P
7439-95-4	Magnesium	52800			P
7439-96-5	Manganese	335			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.3	B		P
7440-09-7	Potassium	2410	B		P
7782-49-2	Selenium	1.2	B	W J	F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	18200		E J	P
7440-28-0	Thallium	2.1	U	J	P
7440-62-2	Vanadium	9.6	B		P
7440-66-6	Zinc	17.5	B		P
	Cyanide				

5/5/97

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

00073

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW07SS

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Lab Sample ID: 134877

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5560			P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	4.7	B	J	P
7440-39-3	Barium	122	B		P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	155000			P
7440-47-3	Chromium	7.9	B		P
7440-48-4	Cobalt	2.8	B		P
7440-50-8	Copper	11.7	B		P
7439-89-6	Iron	9090			P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	52500			P
7439-96-5	Manganese	332			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.6	B		P
7440-09-7	Potassium	2660	B		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	18300	E	J	P
7440-28-0	Thallium	2.9	B	J	P
7440-62-2	Vanadium	10.9	B		P
7440-66-6	Zinc	22.6			P
	Cyanide				

5/7/97

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

GWFB1R

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Lab Sample ID: 134879

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66.9	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	2.7	U	J	P
7440-39-3	Barium	86.7	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	229	B		P
7440-47-3	Chromium	0.63	B		P
7440-48-4	Cobalt	0.70	U		P
7440-50-8	Copper	4.7	B		P
7439-89-6	Iron	31.1	B		P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	44.0	U		P
7439-96-5	Manganese	0.90	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	361	U		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	1710	B	E J	P
7440-28-0	Thallium	2.1	U	J	P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	11.8	B		P
	Cyanide				

5/1/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

nts:

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK01	104	0
02	LCS	98	0
03	GWTB1T	91	0
04	GWTB2T	94	0
05	GWFB1R	99	0
06	GW16SS	106	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK02	100	0
02	VBLK02MS	104	0
03	GW012S	94	0
04	GW012SMS	107	0
05	GW012SMSD	107	0
06	GW03DS	109	0
07	GW03SS	107	0
08	GW02DS	109	0
09	GW16DS	109	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK03	103	0
02	GW07SS	93	0
03	GW01DS	98	0
04	GW05DS	104	0
05	GW17S	110	0
06	GW015S	108	0
07	GW011S	105	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK04	118	0
02	GW17DS	112	0
03	GW013S	114	0
04	GW08SS	117	0
05	GW07SD	117	0
06	GW011SDL	119	0
07	CBLK1	116	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

	EPA SAMPLE NO.	S1 (2FP) #	S2 [PHL] #	S3 #	S4 #	S5 (NBZ) #	S6 (FBP) #	S7 #	S8 (TPH) #	TOT OUT
01	SBLK1	65	69	71	65	76	75	82	80	0
02	SBLK1MS	70	74	74	69	80	79	88	81	0
03	GW07SS	67	75	73	63	78	75	91	74	0
04	GW07SD	67	76	75	67	80	78	93	78	0
05	GWFB1R	57	68	68	62	75	75	85	84	0
06	GW012S	58	69	68	65	76	76	87	72	0
07	GW012SMS	58	67	69	67	80	76	88	76	0
08	GW012SMSD	65	75	74	74	87	80	89	79	0

				QC LIMITS
S1	(2FP)	=	2-Fluorophenol	(21-110)
S2	[PHL]	=	Phenol-d6	(10-110)
S3		=	2-Chlorophenol-d4	(33-110)
S4		=	1,2-Dichlorobenzene-d4	(16-110)
S5	(NBZ)	=	Nitrobenzene-d5	(35-114)
S6	(FBP)	=	2-Fluorobiphenyl	(43-116)
S7		=	2,4,6-Tribromophenol	(10-123)
S8	(TPH)	=	Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix Spike - EPA Sample No.: GW012S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Diclethene	5.0	0.0	5.4	108	61 - 145
Benzene	5.0	0.0	4.7	94	76 - 127
Trichloroethene	5.0	0.0	5.0	100	71 - 120
Toluene	5.0	0.0	5.0	100	76 - 125
Chlorobenzene	5.0	0.0	5.0	100	75 - 130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Diclethene	5.0	5.2	104	4	14	61 - 145
Benzene	5.0	4.7	94	0	11	76 - 127
Trichloroethene	5.0	4.7	94	6	14	71 - 120
Toluene	5.0	5.1	102	2	13	76 - 125
Chlorobenzene	5.0	5.1	102	2	13	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

00081

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW012SMS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108 1.0MS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3488.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	5	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW012SMSD

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108 1.0MS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3489.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	5	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

R4/9

00083

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix Spike - EPA Sample No.: VBLK02

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Diclethene	5.0	0.0	5.3	106	61 - 145
Benzene	5.0	0.0	5.0	100	76 - 127
Trichloroethene	5.0	0.0	4.6	92	71 - 120
Toluene	5.0	0.0	5.2	104	76 - 125
Chlorobenzene	5.0	0.0	5.1	102	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 5 out of 5 outside limits

Spike Recovery: 5 out of 10 outside limits

COMMENTS: _____

_____

00084

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK02MS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK02MS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3486.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	5	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

4/4

00085

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix Spike - EPA Sample No.: GW012S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	75	0.0	49	65	12 - 110
2-Chlorophenol	75	0.0	48	64	27 - 123
1,4-Dichlorobenzene	50	0.0	32	64	36 - 97
N-Nitroso-Di-n-propylamine	50	0.0	46	92	41 - 116
1,2,4-Trichlorobenzene	50	0.0	36	72	39 - 98
4-Chloro-3-methylphenol	75	0.0	57	76	23 - 97
Acenaphthene	50	0.0	38	76	46 - 118
2,4-Dinitrotoluene	50	0.0	42	84	24 - 96
4-Nitrophenol	75	0.0	87	116 *	10 - 80
Pentachlorophenol	75	0.0	73	97	9 - 103
Pyrene	50	0.0	37	74	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	75	53	71	9	42	12 - 110
2-Chlorophenol	75	52	69	8	40	27 - 123
1,4-Dichlorobenzene	50	36	72	12	28	36 - 97
N-Nitroso-Di-n-propylamine	50	52	104	12	38	41 - 116
1,2,4-Trichlorobenzene	50	39	78	8	28	39 - 98
4-Chloro-3-methylphenol	75	59	79	4	42	23 - 97
Acenaphthene	50	39	78	3	31	46 - 118
2,4-Dinitrotoluene	50	43	86	2	38	24 - 96
4-Nitrophenol	75	85	113 *	3	50	10 - 80
Pentachlorophenol	75	71	95	2	50	9 - 103
Pyrene	50	38	76	3	31	26 - 127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 2 out of 22 outside limits

COMMENTS: _____

00086

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW012SMS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108MS

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL454.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	49	
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	48	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	32	
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	46	
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	36	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	57	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	38	
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	42	
100-02-7	4-Nitrophenol	87	E

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW012SMS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108MS

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL454.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	73	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	37	
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	1	JB
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

GW012SMSD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108MSD

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL455.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	53	
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	52	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	36	
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	52	
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	39	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	59	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	39	
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	43	
100-02-7	4-Nitrophenol	85	E

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW012SMSD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: 135108MSD

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL455.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	71	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	38	
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	1	JB
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

00090

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix Spike - EPA Sample No.: SBLK1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	75	0.0	52	69	12 - 110
2-Chlorophenol	75	0.0	52	69	27 - 123
1,4-Dichlorobenzene	50	0.0	34	68	36 - 97
N-Nitroso-Di-n-propylamine	50	0.0	47	94	41 - 116
1,2,4-Trichlorobenzene	50	0.0	39	78	39 - 98
4-Chloro-3-methylphenol	75	0.0	56	75	23 - 97
Acenaphthene	50	0.0	38	76	46 - 118
2,4-Dinitrotoluene	50	0.0	42	84	24 - 96
4-Nitrophenol	75	0.0	60	80	10 - 80
Pentachlorophenol	75	0.0	72	96	9 - 103
Pyrene	50	0.0	38	76	26 - 127

COMMENTS: _____

00091

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1MS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: SBLK1MS

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL449.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	52	
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	52	
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	34	
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	47	
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	39	
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	56	
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	38	
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	42	
100-02-7	4-Nitrophenol	60	

00092

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1MS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: SBLK1MS

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL449.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	72	
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	38	
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

ENVIROFORMS/INORGANIC CLP

6
DUPLICATES

SAMPLE NO.

GW012SD

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		10366.6300		9635.6220		7.3		P
Antimony		1.2000	U	1.2000	U			P
Arsenic		4.7390	B	2.7000	U	200.0		P
Barium		110.5960	B	110.5180	B	0.1		P
Beryllium		0.4580	B	0.4020	B	13.0		P
Cadmium		0.3000	U	0.3000	U			P
Calcium		217765.1000		220810.0000		1.4		P
Chromium	10.0	16.0330		13.9100		14.2		P
Cobalt		4.6970	B	4.6000	B	2.1		P
Copper		12.6760	B	12.7500	B	0.6		P
Iron		12539.8800		12013.9000		4.3		P
Lead		21.8460		20.8440		4.7		P
Magnesium		50448.5500		51388.1300		1.8		P
Manganese		214.1340		213.0590		0.5		P
Mercury		0.2000	U	0.2000	U			CV
Nickel		12.0300	B	11.1690	B	7.4		P
Potassium	5000.0	5326.8670		4927.8040	B	7.8		P
Selenium		1.0350	B	2.1800	B	71.2		F
Silver		0.7000	U	0.7300	B	200.0		P
Sodium	5000.0	11080.7400		11311.4000		2.1		P
Thallium		2.1000	U	2.1000	U			P
Vanadium		18.4480	B	16.8120	B	9.3		P
Zinc	20.0	42.6170		38.7640		9.5		P
Cyanide								

00094

ENVIROFORMS/INORGANIC CLP

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

GW012SS

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		10465.5100		10366.6300		2000.00	4.9		P
Antimony	75-125	472.5050		1.2000	U	500.00	94.5		P
Arsenic	75-125	40.0890		4.7390	B	40.00	88.4		P
Barium	75-125	2145.9070		110.5960	B	2000.00	101.8		P
Beryllium	75-125	51.0290		0.4580	B	50.00	101.1		P
Cadmium	75-125	43.6120		0.3000	U	50.00	87.2		P
Calcium									NR
Chromium	75-125	205.2780		16.0330		200.00	94.6		P
Cobalt	75-125	494.9240		4.6970	B	500.00	98.0		P
Copper	75-125	270.0950		12.6760	B	250.00	103.0		P
Iron									NR
Lead	75-125	509.3920		21.8460		500.00	97.5		P
Magnesium									NR
Manganese	75-125	705.9860		214.1340		500.00	98.4		P
Mercury	75-125	1.1560		0.2000	U	1.00	115.6		CV
Nickel	75-125	502.6770		12.0300	B	500.00	98.1		P
Potassium									NR
Selenium	75-125	10.4250		1.0350	B	10.00	93.9		F
Silver	75-125	52.1880		0.7000	U	50.00	104.4		P
Sodium									NR
Thallium	75-125	1875.3600		2.1000	U	2000.00	93.8		P
Vanadium	75-125	512.5610		18.4480	B	500.00	98.8		P
Zinc	75-125	534.2940		42.6170		500.00	98.3		P
Cyanide									NR

Comments:

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID: R3475.D Lab Sample ID: VBLK01

Date Analyzed: 03/20/97 Time Analyzed: 08:58

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS	LCS	R3476.D	09:45
02	GWTB1T	134570 1.0	R3477.D	10:48
03	GWTB2T	134875 1.0	R3479.D	12:17
04	GWFB1R	134879 1.0	R3480.D	12:59
05	GW16SS	134564 50	R3481.D	13:58

4/9

COMMENTS

00096

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3475.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

00097

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3475.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK02

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID: R3485.D Lab Sample ID: VBLK02

Date Analyzed: 03/20/97 Time Analyzed: 17:00

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK02MS	VBLK02MS	R3486.D	17:50
02	GW012S	135108 1.0	R3487.D	18:31
03	GW012SMS	135108 1.0MS	R3488.D	19:12
04	GW012SMSD	135108 1.0MSD	R3489.D	19:54
05	GW03DS	134567 1.0	R3490.D	20:35
06	GW03SS	134568 1.0	R3491.D	21:16
07	GW02DS	134569 1.0	R3492.D	21:56
08	GW16DS	134565 1.0	R3493.D	22:37

COMMENTS

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK02

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3485.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK02

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3485.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK03

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Lab File ID: R3497.D Lab Sample ID: VBLK03

Date Analyzed: 03/21/97 Time Analyzed: 09:26

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GW07SS	134877 50	R3498.D	10:50
02	GW01DS	134868 1.0	R3499.D	11:27
03	GW05DS	134869 1.0	R3500.D	12:08
04	GW17S	134870 1.0	R3501.D	12:49
05	GW015S	134871 1.0	R3502.D	13:30
06	GW011S	135425 1.0	R3503.D	14:28

4/9

COMMENTS

00102

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK03

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK03

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3497.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

00103

4/4

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK03

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK03

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3497.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00104

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK04

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID: R3506.D Lab Sample ID: VBLK04

Date Analyzed: 03/21/97 Time Analyzed: 16:31

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GW17DS	134872 1.0	R3507.D	17:22
02	GW013S	134873 1.0	R3508.D	18:04
03	GW08SS	134874 1.0	R3509.D	18:45
04	GW07SD	134878 50	R3510.D	19:27
05	GW011SDL	135425 50	R3511.D	20:08
06	CBLK1	135256 1.0	R3513.D	21:30

COMMENTS

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK04

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK04

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3506.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK04

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: VBLK04

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3506.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3473.D Date Analyzed: 03/20/97

Instrument ID: GCMS#5 Time Analyzed: 07:26

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	126339	11.17	201147	13.36	168253	20.30
	UPPER LIMIT	252678	10.67	402294	12.86	336506	19.80
	LOWER LIMIT	63170	11.67	100574	13.86	84127	20.80
	EPA SAMPLE NO.						
01	VBLK01	117843	11.14	179512	13.35	147017	20.30
02	LCS	123023	11.16	196337	13.35	157149	20.30
03	GWTB1T	128022	11.16	197307	13.34	157977	20.27
04	GWTB2T	122020	11.21	184974	13.40	145495	20.33
05	GWFB1R	117892	11.15	180735	13.35	148407	20.29
06	GW16SS	107992	11.17	179397	13.36	149849	20.29

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3473.D Date Analyzed: 03/20/97

Instrument ID: GCMS#5 Time Analyzed: 07:26

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	64492	26.12				
	UPPER LIMIT	128984	25.62				
	LOWER LIMIT	32246	26.62				
	EPA SAMPLE NO.						
01	VBLK01	58370	26.12				
02	LCS	66356	26.13				
03	GWTB1T	59631	26.15				
04	GWTB2T	59223	26.24				
05	GWFB1R	61717	26.15				
06	GW16SS	62709	26.15				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3484.D Date Analyzed: 03/20/97

Instrument ID: GCMS#5 Time Analyzed: 16:25

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	117027	11.16	191631	13.38	152573	20.32
	UPPER LIMIT	234054	10.66	383262	12.88	305146	19.82
	LOWER LIMIT	58514	11.66	95816	13.88	76287	20.82
	EPA SAMPLE NO.						
01	VBLK02	109615	11.21	185149	13.39	133851	20.36
02	VBLK02MS	108498	11.18	171186	13.36	136109	20.33
03	GW012S	109143	11.18	193588	13.39	139971	20.33
04	GW012SMS	115067	11.18	174234	13.36	145565	20.32
05	GW012SMSD	112681	11.23	179707	13.43	148331	20.34
06	GW03DS	109972	11.16	168247	13.38	137845	20.36
07	GW03SS	116508	11.14	177332	13.34	143697	20.38
08	GW02DS	118317	11.12	181508	13.35	148345	20.38
09	GW16DS	114917	11.14	180832	13.36	144006	20.38

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3484.D Date Analyzed: 03/20/97

Instrument ID: GCMS#5 Time Analyzed: 16:25

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	61443	26.18				
	UPPER LIMIT	122886	25.68				
	LOWER LIMIT	30722	26.68				
	EPA SAMPLE NO.						
01	VBLK02	55175	26.24				
02	VBLK02MS	55602	26.19				
03	GW012S	57352	26.18				
04	GW012SMS	59350	26.19				
05	GW012SMSD	61543	26.18				
06	GW03DS	57382	26.22				
07	GW03SS	61351	26.24				
08	GW02DS	62173	26.23				
09	GW16DS	61606	26.23				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3496.D Date Analyzed: 03/21/97

Instrument ID: GCMS#5 Time Analyzed: 08:47

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	126779	11.13	201684	13.32	165258	20.26
	UPPER LIMIT	253558	10.63	403368	12.82	330516	19.76
	LOWER LIMIT	63390	11.63	100842	13.82	82629	20.76
	EPA SAMPLE NO.						
01	VBLK03	117697	11.15	181182	13.33	144764	20.33
02	GW07SS	123487	11.18	192466	13.34	147491	20.33
03	GW01DS	123729	11.16	189638	13.34	149899	20.31
04	GW05DS	114486	11.23	180125	13.40	146972	20.37
05	GW17S	108925	11.12	169826	13.31	139178	20.26
06	GW015S	113708	11.19	174732	13.36	143637	20.31
07	GW011S	118860	11.19	179481	13.35	143794	20.28

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3496.D Date Analyzed: 03/21/97

Instrument ID: GCMS#5 Time Analyzed: 08:47

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	61338	26.09				
	UPPER LIMIT	122676	25.59				
	LOWER LIMIT	30669	26.59				
	EPA SAMPLE NO.						
01	VBLK03	58740	26.20				
02	GW07SS	55650	26.24				
03	GW01DS	60754	26.18				
04	GW05DS	60867	26.20				
05	GW17S	57782	26.15				
06	GW015S	60204	26.13				
07	GW011S	60999	26.12				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3505.D Date Analyzed: 03/21/97

Instrument ID: GCMS#5 Time Analyzed: 15:55

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	116376	11.20	203340	13.40	147911	20.31
	UPPER LIMIT	232752	10.70	406680	12.90	295822	19.81
	LOWER LIMIT	58188	11.70	101670	13.90	73956	20.81
	EPA SAMPLE NO.						
01	VBLK04	113391	11.21	175127	13.40	142865	20.36
02	GW17DS	118429	11.16	179486	13.34	142219	20.39
03	GW013S	114300	11.14	174262	13.32	143504	20.28
04	GW08SS	110388	11.18	169931	13.35	146403	20.33
05	GW07SD	106618	11.16	161814	13.36	133524	20.33
06	GW011SDL	107968	11.18	168302	13.36	137845	20.33
07	CBLK1	112644	11.18	170632	13.36	142475	20.31

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): R3505.D Date Analyzed: 03/21/97

Instrument ID: GCMS#5 Time Analyzed: 15:55

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	61037	26.17				
	UPPER LIMIT	122074	25.67				
	LOWER LIMIT	30519	26.67				
	EPA SAMPLE NO.						
01	VBLK04	59782	26.19				
02	GW17DS	57457	26.24				
03	GW013S	57266	26.21				
04	GW08SS	60494	26.21				
05	GW07SD	55552	26.22				
06	GW011SDL	55906	26.22				
07	CBLK1	59638	26.18				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Lab File ID: DL448.D Lab Sample ID: SBLK1

Instrument ID: MS #4 Date Extracted: 03/17/97

Matrix: (soil/water) WATER Date Analyzed: 03/24/97

Level: (low/med) LOW Time Analyzed: 13:55

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK1MS	SBLK1MS	DL449.D	03/24/97
02	GW07SS	134877	DL450.D	03/24/97
03	GW07SD	134878	DL451.D	03/24/97
04	GWFB1R	134879	DL452.D	03/24/97
05	GW012S	135108	DL453.D	03/24/97
06	GW012SMS	135108MS	DL454.D	03/24/97
07	GW012SMSD	135108MSD	DL455.D	03/24/97

COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: SBLK1

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL448.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	10	U
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
100-02-7	4-Nitrophenol	25	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Matrix: (soil/water) WATER Lab Sample ID: SBLK1

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL448.D

Level: (low/med) LOW Date Received: 03/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 03/17/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/24/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	2	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

NYSDEC Sample No: SBLK1

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:MW2D
Matrix: (soil/water) WATER Lab Sample ID: SBLK1
Sample wt/vol: 1000 (g/mL) ML Lab File ID: DL448
Level (low/med): LOW Date Received: --
% Moisture: Date Extracted:03/17/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 03/24/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 1 Concentration Units:
(ug/L or ug/Kg)UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	1792810	cis-1,2-Cyclohexanediol	11.46	12	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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28.					
29.					
30.					

FORM I SV-TIC
NYSDEC B-78

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): DL444.D Date Analyzed: 03/24/97

Instrument ID: MS #4 Time Analyzed: 10:45

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	29477	10.56	121732	13.47	85391	17.02
	UPPER LIMIT	58954	11.06	243464	13.97	170782	17.52
	LOWER LIMIT	14739	10.06	60866	12.97	42696	16.52
	EPA SAMPLE NO.						
01	SBLK1	32414	10.56	127015	13.47	87374	17.02
02	SBLK1MS	32365	10.57	128783	13.47	87708	17.01
03	GW07SS	32396	10.56	126995	13.47	87992	17.01
04	GW07SD	33068	10.56	131890	13.47	90993	17.01
05	GWFB1R	33897	10.56	133056	13.47	91914	17.01
06	GW012S	35281	10.56	140893	13.47	93718	17.02
07	GW012SMS	36528	10.57	147004	13.47	99756	17.02
08	GW012SMSD	35292	10.57	146755	13.47	98859	17.02

IS1 (DCB) = d4-1,4-Dichlorobenzene
IS2 (NPT) = d8-Naphthalene
IS3 (ANT) = d10-Acenaphthene
IS4 (PHN) = d10-Phenanthrene
IS5 (CRY) = d12-Chrysene
IS6 (PRY) = d12-Perylene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9703-158 SAS No.: _____ SDG No.: MW2D

Lab File ID (Standard): DL444.D Date Analyzed: 03/24/97

Instrument ID: MS #4 Time Analyzed: 10:45

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	178413	19.81	173029	24.76	178300	28.68
	UPPER LIMIT	356826	20.31	346058	25.26	356600	29.18
	LOWER LIMIT	89207	19.31	86515	24.26	89150	28.18
	EPA SAMPLE NO.						
01	SBLK1	185065	19.80	185897	24.74	172414	28.66
02	SBLK1MS	185152	19.81	180083	24.75	164525	28.67
03	GW07SS	183777	19.80	186747	24.75	170094	28.67
04	GW07SD	190922	19.81	190065	24.75	170756	28.67
05	GWFB1R	192047	19.80	192922	24.75	172232	28.66
06	GW012S	197766	19.81	196149	24.75	176232	28.66
07	GW012SMS	205784	19.81	204193	24.74	175046	28.67
08	GW012SMSD	207035	19.81	202735	24.74	179771	28.66

IS1 (DCB) = d4-1,4-Dichlorobenzene
IS2 (NPT) = d8-Naphthalene
IS3 (ANT) = d10-Acenaphthene
IS4 (PHN) = d10-Phenanthrene
IS5 (CRY) = d12-Chrysene
IS6 (PRY) = d12-Perylene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

3
BLANKS

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calib. Blank	Continuing Calibration Blank (ug/L)						Prepa-ration Blank		
Analyte	(ug/L) C	1	C	2	C	3	C		C	M
Aluminum	11.7 U	11.7	U	11.7	U	11.7	U	11.700	U	P
Antimony	1.2 U	1.2	U	1.2	U	-2.7	B	-1.715	B	P
Arsenic	2.7 U	2.7	U	2.7	U	2.7	U	2.700	U	P
Barium	3.0 U	3.0	U	3.0	U	3.0	U	3.000	U	P
Beryllium	0.1 U	0.1	U	0.1	B	0.1	B	0.100	B	P
Cadmium	0.3 U	0.3	U	0.3	U	0.3	U	0.300	U	P
Calcium	137.0 U	137.0	U	137.0	U	137.0	U	137.000	U	P
Chromium	0.6 U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	0.7 U	0.7	U	0.7	U	0.7	U	0.700	U	P
Copper	1.7 U	1.7	U	1.7	U	1.7	U	1.700	U	P
Iron	23.6 U	23.6	U	23.6	U	23.6	U	23.600	U	P
Lead	1.1 U	1.1	U	1.1	U	1.1	U	1.100	U	P
Magnesium	44.0 U	44.0	U	44.0	U	44.0	U	44.000	U	P
Manganese	0.4 U	0.4	U	0.4	U	0.4	U	0.400	U	P
Mercury	0.2 U	0.2	U	0.2	U	0.2	U	0.200	U	CV
Nickel	2.0 U	2.0	U	2.0	U	2.0	U	2.000	U	P
Potassium	361.0 U	361.0	U	361.0	U	-446.3	B	361.000	U	P
Selenium	1.0 U	1.0	U	1.0	U	1.0	U	1.000	U	F
Silver	0.7 U	0.7	U	0.7	U	0.7	U	0.700	U	P
Sodium	67.5 U	67.5	U	67.5	U	67.5	U	67.500	U	P
Thallium	2.1 U	2.1	U	2.1	U	2.1	U	2.100	U	P
Vanadium	0.4 U	0.4	U	0.4	U	0.4	U	0.400	U	P
Zinc	4.9 U	4.9	U	4.9	U	4.9	U	4.900	U	P
Cyanide										

3
BLANKS

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			11.7	U							P
Antimony			1.2	U							P
Arsenic			2.7	U							P
Barium			3.0	U							P
Beryllium			0.1	U							P
Cadmium			0.3	U							P
Calcium			137.0	U							P
Chromium			0.6	U							P
Cobalt			0.7	U							P
Copper			1.7	U							P
Iron			23.6	U							P
Lead			1.1	U							P
Magnesium			44.0	U							P
Manganese			0.4	U							P
Mercury			0.2	U	0.2	U	0.2	U			CV
Nickel			2.0	U							P
Potassium			361.0	U							P
Selenium			1.0	U	1.0	U	1.0	U			F
Silver			0.7	U							P
Sodium			67.5	U							P
Thallium			2.1	U							P
Vanadium			0.4	U							P
Zinc			4.9	U							P
Cyanide											

3
BLANKS

Lab Name: COLUMBIA ANALYTICAL Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: MW2D

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum									11.700	U	P
Antimony									-3.276	B	P
Arsenic									2.700	U	P
Barium									3.000	U	P
Beryllium									0.100	B	P
Cadmium									0.300	U	P
Calcium									137.000	U	P
Chromium									1.494	B	P
Cobalt									0.700	U	P
Copper									1.700	U	P
Iron									23.600	U	P
Lead									1.100	U	P
Magnesium									44.000	U	P
Manganese									0.400	U	P
Mercury											
Nickel									2.000	U	P
Potassium									361.000	U	P
Selenium									1.000	U	F
Silver									0.700	U	P
Sodium	145.1	B	160.4	B	147.8	B	196.9	B	67.500	U	P
Thallium									2.100	U	P
Vanadium									0.400	U	P
Zinc									4.900	U	P
Cyanide											

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

April 17, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corp. Center
1 International Blvd, Ste. 700
Mahwah, NJ 07495

PROJECT:LMC SYRACUSE
Submission #:9703000158

Dear Mr. Taylor

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 454-6810.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice M Saeger for

Mark Wilson
Client Service Manager

Enc.

cc: Mr. Chris Taylor
Environmental Quality Assoc.
R.D. #5, Box 800
Middletown, NY 10940

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal. Mark K Per

700 Exchange Street • Rochester, NY 14608 • Tele:(716)454-6810 • Fax:(716)454-6825
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362
12699 Roll Rd. • Akron, NY 14001 • Tele:(716)542-1264 • Fax:(716)542-3353

CASE NARRATIVE

COMPANY: EMCON
Lockheed Martin Corp - Syracuse
SUBMISSION #: 9703000158

EMCON water samples were collected on 03/12/97 through 03/14/97 and received at CAS on 03/13/97 through 03/15/97 in good condition. See the CAS Batching form to cross reference between Client ID and CAS sample numbers.

METALS

Six water samples were analyzed for the Target Analyte List (TAL) of metals by NYSASP 1995 Inorganic methods.

These samples were filtered prior to analysis and therefore are the soluble metals in the sample.

All Initial and Continuing calibrations were compliant.

The Sodium results were flagged with an "E" indicating the ICP Serial Dilution was outside of control limits.

No other Analytical or QC problems were encountered.

I certify this this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Michael K. Perry
Laboratory Director

4/17/97
Date

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INORGANIC QUALIFIERS

C (Concentration) qualifier - Enter "B" if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for, but not detected, a "U" must be entered.

Q qualifier - Specified entries and their meanings are as follows:

E - The reported value is estimated because of the presence of interference.

M - Duplicate injection precision not met.

N - Spiked sample recovery not within control limits.

S - The reported value was determined by the Method of Standard Additions (MSA).

W - Post-digestion spike for Furnace AA Analysis is out of control limits (85-115), while sample absorbance is less than 50% of spike absorbance.

* - Duplicate analysis not within control limits.

+ - Correlation coefficient for the MSA is less than 0.995.

M (Method) qualifier - Enter:

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "PM" for ICP when Microwave Digestion is used
- "AM" for Flame AA when Microwave Digestion is used
- "FM" for Furnace M when Microwave Digestion is used
- "CV" for Manual Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "CA" for Midi-Distillation Spectrophotometric
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- " " where no data has been entered
- "NR" if the analyte is not required to be analyzed

CAS ASP/CLP BATCHING FORM

BATCH COMPLETE: _____Y_____ SDG #: GW10S CLIENT:EMCON
DISKETTE REQUESTED: Y___ N_X___ SUBMISSION #:03-158 PROJECT:LMC
CLIENT REP: Mark Wilson DATE: 03/13/97 PROTOCOL: ASPB
DATE DUE: 04/12/97 DATE REVISED: 03/17/97

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS
134880 -	GW10SF	water	Metals soluble	3/12/97	3/13/97		
134881 -	GW7SSF	water	Metals soluble	3/12/97	3/13/97		
134882 -	GW7SDF	water	Metals soluble	3/12/97	3/13/97		
134883 -	GWFB1F	water	Metals soluble	3/12/97	3/13/97		
135110 -	GW12SF	water	Metals soluble	3/13/97	3/14/97		
135428 -	GW11SF	water	Metals soluble	3/14/97	3/15/97		

FINAL

00003

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

SOW No.: NYS ASP 12/91

Sample No.	Lab Sample ID.
GW10SF	134880
GW11SF	135428
GW12SF	135110
GW7SDF	134882
GW7SSF	134881
GWFB1F	134883

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes, were raw data generated before application of background corrections? Yes/No NO

Comments: See case narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Michael K Perry Name: Michael K Perry

Date: 4/15/97 Title: Laboratory Director

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134880	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
134881	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
134882	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
134883	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/13/97	3/26/97
135110	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/14/97	3/26/97
135428	WATER	AG,AL,AS,BA,BE,CA,CD,CO,CR,CU, FE,K,MG,MN,NA,NI,PB,SB,TL,V,ZN	3/15/97	3/26/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134880	WATER	NA	3/13/97	3/31/97

9/89

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134880	WATER	SE	3/13/97	4/3/97
134881	WATER	SE	3/13/97	4/3/97
134882	WATER	SE	3/13/97	4/3/97
134883	WATER	SE	3/13/97	4/3/97
135110	WATER	SE	3/14/97	4/3/97
135428	WATER	SE	3/15/97	4/3/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
INORGANIC ANALYSES

SAMPLE ID	MATRIX	METALS REQUESTED	DATE RECEIVED	DATE ANALYZED
134880	WATER	HG	3/13/97	3/19/97
134881	WATER	HG	3/13/97	3/19/97
134882	WATER	HG	3/13/97	3/19/97
134883	WATER	HG	3/13/97	3/19/97
135110	WATER	HG	3/14/97	3/19/97
135428	WATER	HG	3/15/97	3/19/97

9/89

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW10SF

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Matrix (soil/water): WATER Lab Sample ID: 134880

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.6	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	4.2	B	J	P
7440-39-3	Barium	279			P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	442000			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.70	U		P
7440-50-8	Copper	2.3	B		P
7439-89-6	Iron	100			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	132000			P
7439-96-5	Manganese	39.3			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	4800	B		P
7782-49-2	Selenium	1.6	B	W J	F
7440-22-4	Silver	1.8	B		P
7440-23-5	Sodium	115000		E J	P
7440-28-0	Thallium	2.3	B	J	P
7440-62-2	Vanadium	0.68	B		P
7440-66-6	Zinc	57.8			P
	Cyanide				

5/5/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

SAMPLE NO.

GW11SF

INORGANIC ANALYSIS DATA SHEET

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Matrix (soil/water): WATER Lab Sample ID: 135428

Level (low/med): LOW Date Received: 03/15/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30.1	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	3.4	B	J	P
7440-39-3	Barium	231			P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	164000			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.70	U		P
7440-50-8	Copper	1.7	U		P
7439-89-6	Iron	218			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	46200			P
7439-96-5	Manganese	50.3			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	2180	B		P
7782-49-2	Selenium	1.5	B	W J	F
7440-22-4	Silver	0.71	B		P
7440-23-5	Sodium	17000	E	J	P
7440-28-0	Thallium	3.3	B	J	P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	71.6			P
	Cyanide				

cnf 3/5/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW12SF

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Matrix (soil/water): WATER Lab Sample ID: 135110

Level (low/med): LOW Date Received: 03/14/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	70.9	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	3.3	B	J	P
7440-39-3	Barium	142	B		P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	194000			P
7440-47-3	Chromium	0.77	B		P
7440-48-4	Cobalt	0.70	U		P
7440-50-8	Copper	4.6	B		P
7439-89-6	Iron	84.0	B		P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	42500			P
7439-96-5	Manganese	2.9	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	2040	B		P
7782-49-2	Selenium	1.6	B		F
7440-22-4	Silver	0.96	B		P
7440-23-5	Sodium	13400	E	J	P
7440-28-0	Thallium	3.9	B	J	P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	48.2			P
	Cyanide				

5/1/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET | GW7SDF |

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Matrix (soil/water): WATER Lab Sample ID: 134882

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	73.0	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	3.4	B	J	P
7440-39-3	Barium	115	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	151000			P
7440-47-3	Chromium	0.83	B		P
7440-48-4	Cobalt	0.72	B		P
7440-50-8	Copper	1.7	U		P
7439-89-6	Iron	739			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	50500			P
7439-96-5	Manganese	283			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	1190	B		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	0.74	B		P
7440-23-5	Sodium	20300	E	J	P
7440-28-0	Thallium	3.9	B	J	P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	26.6			P
	Cyanide				

Q.C. 5/5/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW7SSF

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Matrix (soil/water): WATER Lab Sample ID: 134881

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	71.5	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	2.7	U	J	P
7440-39-3	Barium	121	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	157000			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.77	B		P
7440-50-8	Copper	1.7	U		P
7439-89-6	Iron	767			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	52000			P
7439-96-5	Manganese	292			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	1100	B		P
7782-49-2	Selenium	1.3	B	W J	F
7440-22-4	Silver	0.75	B		P
7440-23-5	Sodium	21200		E J	P
7440-28-0	Thallium	3.7	B	J	P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	28.5			P
	Cyanide				

5/5/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GWFB1F

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Matrix (soil/water): WATER Lab Sample ID: 134883

Level (low/med): LOW Date Received: 03/13/97

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	43.3	B		P
7440-36-0	Antimony	1.2	U		P
7440-38-2	Arsenic	2.7	U	J	P
7440-39-3	Barium	3.0	U		P
7440-41-7	Beryllium	0.12	B		P
7440-43-9	Cadmium	0.30	U		P
7440-70-2	Calcium	137	U		P
7440-47-3	Chromium	1.1	B		P
7440-48-4	Cobalt	0.70	U		P
7440-50-8	Copper	1.7	U		P
7439-89-6	Iron	66.5	B		P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	44.0	U		P
7439-96-5	Manganese	0.63	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.0	U		P
7440-09-7	Potassium	361	U		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	103	B	E J	P
7440-28-0	Thallium	2.1	U	J	P
7440-62-2	Vanadium	0.40	U		P
7440-66-6	Zinc	4.9	U		P
	Cyanide				

5/15/97

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3
BLANKS

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calib. Blank	Continuing Calibration Blank (ug/L)						Prepa-ration		
Analyte	(ug/L) C	1	C	2	C	3	C	Blank	C	M
Aluminum	11.7 U	11.7	U	11.7	U	11.7	U	11.700	U	P
Antimony	1.2 U	1.2	U	1.2	U	-2.7	B	-1.715	B	P
Arsenic	2.7 U	2.7	U	2.7	U	2.7	U	2.700	U	P
Barium	3.0 U	3.0	U	3.0	U	3.0	U	3.000	U	P
Beryllium	0.1 U	0.1	U	0.1	B	0.1	B	0.100	B	P
Cadmium	0.3 U	0.3	U	0.3	U	0.3	U	0.300	U	P
Calcium	137.0 U	137.0	U	137.0	U	137.0	U	137.000	U	P
Chromium	0.6 U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	0.7 U	0.7	U	0.7	U	0.7	U	0.700	U	P
Copper	1.7 U	1.7	U	1.7	U	1.7	U	1.700	U	P
Iron	23.6 U	23.6	U	23.6	U	23.6	U	23.600	U	P
Lead	1.1 U	1.1	U	1.1	U	1.1	U	1.100	U	P
Magnesium	44.0 U	44.0	U	44.0	U	44.0	U	44.000	U	P
Manganese	0.4 U	0.4	U	0.4	U	0.4	U	0.400	U	P
Mercury	0.2 U	0.2	U	0.2	U	0.2	U	0.200	U	CV
Nickel	2.0 U	2.0	U	2.0	U	2.0	U	2.000	U	P
Potassium	361.0 U	361.0	U	361.0	U	-446.3	B	361.000	U	P
Selenium	1.0 U	1.0	U	1.0	U	1.0	U	1.000	U	F
Silver	0.7 U	0.7	U	0.7	U	0.7	U	0.700	U	P
Sodium	67.5 U	67.5	U	67.5	U	67.5	U	67.500	U	P
Thallium	2.1 U	2.1	U	2.1	U	2.1	U	2.100	U	P
Vanadium	0.4 U	0.4	U	0.4	U	0.4	U	0.400	U	P
Zinc	4.9 U	4.9	U	4.9	U	4.9	U	4.900	U	P
Cyanide										

3

BLANKS

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			11.7	U							P
Antimony			1.2	U							P
Arsenic			2.7	U							P
Barium			3.0	U							P
Beryllium			0.1	U							P
dmium			0.3	U							P
Calcium			137.0	U							P
Chromium			0.6	U							P
Cobalt			0.7	U							P
Copper			1.7	U							P
Iron			23.6	U							P
Lead			1.1	U							P
Magnesium			44.0	U							P
Manganese			0.4	U							P
Mercury			0.2	U	0.2	U	0.2	U			CV
Nickel			2.0	U							P
Potassium			361.0	U							P
Selenium			1.0	U	1.0	U	1.0	U			F
Silver			0.7	U							P
Sodium			67.5	U							P
Thallium			2.1	U							P
Vanadium			0.4	U							P
Zinc			4.9	U							P
Cyanide											

3
BLANKS

Lab Name: GENERAL TESTING CORP. Contract: EMCON

Lab Code: 10145 Case No.: SAS No.: SDG No.: GW10S

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum									11.700	U	P
Antimony									-3.276	B	P
Arsenic									2.700	U	P
Barium									3.000	U	P
Beryllium									0.100	B	P
Cadmium									0.300	U	P
Calcium									137.000	U	P
Chromium									1.494	B	P
Cobalt									0.700	U	P
Copper									1.700	U	P
Iron									23.600	U	P
Lead									1.100	U	P
Magnesium									44.000	U	P
Manganese									0.400	U	P
Mercury											
Nickel									2.000	U	P
Potassium									361.000	U	P
Selenium									1.000	U	F
Silver									0.700	U	P
Sodium	145.1	B	160.4	B	147.8	B	196.9	B	67.500	U	P
Thallium									2.100	U	P
Vanadium									0.400	U	P
Zinc									4.900	U	P
Cyanide											

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

April 17, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corp. Center
1 International Blvd, Ste. 700
Mahwah, NJ 07495

PROJECT:LMC SYRACUSE
Submission #:9703000158

Dear Mr. Taylor

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 454-6810.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Joanne Mlagey for:

Mark Wilson
Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal. Michael K Pe

700 Exchange Street • Rochester, NY 14608 • Tele:(716)454-6810 • Fax:(716)454-6825
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362
12699 Roll Rd. • Akron, NY 14001 • Tele:(716)542-1264 • Fax:(716)542-3353

CASE NARRATIVE

COMPANY: EMCON
Lockheed Martin Corp - Syracuse
SUBMISSION #: 9703000158

EMCON water samples were collected on 03/13/97 through 03/14/97 and received at CAS on 03/14/97 through 03/15/97 in good condition. See the CAS Batching form to cross reference between Client ID and CAS sample numbers.

VOLATILE ORGANICS

Thirteen water samples were analyzed for Target Compound List (TCL) of volatile organics by method 95-4 from the NYSASP 1995 and five soils by 95-1.

Sample GW14S was analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits except for the RPD of Benzene. Sample SS02D was analyzed for site specific QC for 95-1 soil analysis. All matrix spike recoveries and %RPD were within QC limits. All Blank Spike recoveries were within QC limits.

All tuning criteria for BFB were met.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits.

All internal standard areas were within QC Limits.

All samples were analyzed within the holding time as specified in the method.

After screening, samples GW010S, OF001D, OF001S, OF002S and GW18SS were analyzed with smaller sample amounts to bring target analytes within the calibration range of the method.

No other analytical or QC problems were encountered.

Soil TOC

Two soil samples were analyzed for TOC by the Lloyd-Kahn method.

These samples were subcontracted to H2M Labs, ID #10478.

700 Exchange Street ▪ Rochester, NY 14608 ▪ Telephone 716/454-6810 ▪ Fax 716/454-6825

I certify this this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Michael K. Perry
Laboratory Director

4/17/97
Date

CAS ASP/CLP BATCHING FORM

BATCH COMPLETE: _____Y_____ SDG #: GW14S CLIENT:EMCON
DISKETTE REQUESTED: Y___ N_X___ SUBMISSION #:03-158 PROJECT:LMC
CLIENT REP: Mark Wilson DATE: 03/12/97 PROTOCOL: ASPB
DATE DUE: 04/12/97 DATE REVISED: 03/17/97

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS
135096	OF001S	water	95-4	3/13/97	3/14/97		
135097	OF001D	water	95-4	3/13/97	3/14/97		
135098	QC SW004S	water	95-4	3/13/97	3/14/97		
135099	OF002S	water	95-4	3/13/97	3/14/97		
135100	SW006S	water	95-4	3/13/97	3/14/97		
135101	GW014S	water	95-4	3/13/97	3/14/97		
135102	GW18SS	water	95-4	3/13/97	3/14/97		
135103	GW18DS	water	95-4	3/13/97	3/14/97		
135104	GW06DS	water	95-4	3/13/97	3/14/97		
135105	OFTB3T	water	95-4	3/13/97	3/14/97		
135116	SS01DS	soil	95-1, TOC	3/13/97	3/14/97		
135118	SS01US	soil	95-1	3/13/97	3/14/97		
135119	SS01UD	soil	95-1	3/13/97	3/14/97		
135121	QC SS02DS	soil	95-1, TOC	3/13/97	3/14/97		
135123	SS02US	soil	95-1	3/13/97	3/14/97		
135257	CBLK2	water	95-4				
135426	GW010S	water	95-4	3/14/97	3/15/97		
135427	GWTB4T	water	95-4	3/14/97	3/15/97		
TOC is subout Lloyd Kahn method							

00003

ORGANIC QUALIFIERS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and ALL concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - As specified in Case Narrative.

10/95

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GWTB4T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135427 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3535.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

J

CWN 5/2/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GWTB4T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135427 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3535.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW010S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135426 25

Sample wt/vol: 1.0 (g/ml) ML Lab File ID: R3521.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (x 25)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	25	U
75-01-4	Vinyl Chloride	25	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	25	U
67-64-1	Acetone	120	U J
75-35-4	1,1-Dichloroethene	25	U
75-09-2	Methylene Chloride	25	U
75-15-0	Carbon Disulfide	25	U
75-35-3	1,1-Dichloroethane	380	
78-93-3	2-Butanone	120	U J
156-59-4	cis-1,2-Dichloroethene	150	
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbontetrachloride	25	U
71-43-2	Benzene	25	U J
79-01-6	Trichloroethene	25	U
78-87-5	1,2-Dichloropropane	25	U
75-27-4	Bromodichloromethane	25	U
108-10-1	4-Methyl-2-Pentanone	120	U
10061-02-6	trans-1,3-Dichloropropene	25	U
108-88-3	Toluene	25	U J
10061-01-5	cis-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
591-78-6	2-Hexanone	120	U
127-18-4	Tetrachloroethene	25	U
124-48-1	Dibromochloromethane	25	U
108-90-7	Chlorobenzene	25	U J
100-41-4	Ethylbenzene	25	U J
108-38-3	Xylenes (TOTAL)	25	U J
100-42-5	Styrene	25	U J
79-34-5	1,1,2,2-Tetrachloroethane	25	U
75-25-2	Bromoform	25	U
156-60-5	trans-1,2-Dichloroethene	25	U

Cut 5/21/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW010S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135426 25

Sample wt/vol: 1.0 (g/ml) ML Lab File ID: R3521.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW014S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135101 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3523.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

5/2/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW014S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135101 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3523.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW06DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135104 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3533.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	0	J
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

5/7/97

00011

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW06DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135104 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3533.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00012

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW18DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135103 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3524.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

C 5/2/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW18DS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135103 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3524.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

GW18SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135102 10

Sample wt/vol: 2.5 (g/ml) ML Lab File ID: R3520.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (x10)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	50	U J
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
75-15-0	Carbon Disulfide	10	U
75-35-3	1,1-Dichloroethane	130	
78-93-3	2-Butanone	50	U J
156-59-4	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbontetrachloride	10	U
71-43-2	Benzene	10	U J
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
108-10-1	4-Methyl-2-Pentanone	50	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U J
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U J
100-41-4	Ethylbenzene	10	U J
108-38-3	Xylenes (TOTAL)	10	U J
100-42-5	Styrene	10	U J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
75-25-2	Bromoform	10	U
156-60-5	trans-1,2-Dichloroethene	10	U

> J

5/2/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW18SS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135102 10

Sample wt/vol: 2.5 (g/ml) ML Lab File ID: R3520.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

OFTB3T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135105 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3534.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

5/24/97

00017

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

OFTB3T

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135105 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3534.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

OF001D

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135097 10

Sample wt/vol: 2.5 (g/ml) ML Lab File ID: R3518.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (x 10)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	77	
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	50	U J
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
75-15-0	Carbon Disulfide	10	U
75-35-3	1,1-Dichloroethane	130	
78-93-3	2-Butanone	50	U J
156-59-4	cis-1,2-Dichloroethene	41	
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbontetrachloride	10	U
71-43-2	Benzene	10	U J
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
108-10-1	4-Methyl-2-Pentanone	50	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U J
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U J
100-41-4	Ethylbenzene	10	U J
108-38-3	Xylenes (TOTAL)	10	U J
100-42-5	Styrene	10	U J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
75-25-2	Bromoform	10	U
156-60-5	trans-1,2-Dichloroethene	10	U

J

CW 5/14/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

OF001D

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135097 10

Sample wt/vol: 2.5 (g/ml) ML Lab File ID: R3518.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OF001S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135096 10

Sample wt/vol: 2.5 (g/ml) ML Lab File ID: R3517.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (x10)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	87	
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
67-64-1	Acetone	50.	U J
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene Chloride	10	U
75-15-0	Carbon Disulfide	10	U
75-35-3	1,1-Dichloroethane	140	
78-93-3	2-Butanone	50	U J
156-59-4	cis-1,2-Dichloroethene	42	
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbontetrachloride	10	U
71-43-2	Benzene	10	U J
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
108-10-1	4-Methyl-2-Pentanone	50	U
10061-02-6	trans-1,3-Dichloropropene	10	U
108-88-3	Toluene	10	U J
10061-01-5	cis-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	10	U
124-48-1	Dibromochloromethane	10	U
108-90-7	Chlorobenzene	10	U J
100-41-4	Ethylbenzene	10	U J
108-38-3	Xylenes (TOTAL)	10	U J
100-42-5	Styrene	10	U J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
75-25-2	Bromoform	10	U
156-60-5	trans-1,2-Dichloroethene	10	U

J

5/2/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

OF001S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135096 10

Sample wt/vol: 2.5 (g/ml) ML Lab File ID: R3517.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

OF002S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135099 2.0

Sample wt/vol: 12.5 (g/ml) ML Lab File ID: R3519.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 (x2)

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	2	U
75-01-4	Vinyl Chloride	2	U
74-83-9	Bromomethane	2	U
75-00-3	Chloroethane	2	U
67-64-1	Acetone	10	U J
75-35-4	1,1-Dichloroethene	2	U
75-09-2	Methylene Chloride	2	U
75-15-0	Carbon Disulfide	2	U
75-35-3	1,1-Dichloroethane	29	
78-93-3	2-Butanone	10	U J
156-59-4	cis-1,2-Dichloroethene	2	J
67-66-3	Chloroform	2	U
107-06-2	1,2-Dichloroethane	2	U
71-55-6	1,1,1-Trichloroethane	5	
56-23-5	Carbontetrachloride	2	U
71-43-2	Benzene	2	U J
79-01-6	Trichloroethene	8	
78-87-5	1,2-Dichloropropane	2	U
75-27-4	Bromodichloromethane	2	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-02-6	trans-1,3-Dichloropropene	2	U
108-88-3	Toluene	2	U J
10061-01-5	cis-1,3-Dichloropropene	2	U
79-00-5	1,1,2-Trichloroethane	2	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	2	U
124-48-1	Dibromochloromethane	2	U
108-90-7	Chlorobenzene	2	U J
100-41-4	Ethylbenzene	2	U J
108-38-3	Xylenes (TOTAL)	2	U J
100-42-5	Styrene	2	U J
79-34-5	1,1,2,2-Tetrachloroethane	2	U
75-25-2	Bromoform	2	U
156-60-5	trans-1,2-Dichloroethene	2	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
OF002S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135099 2.0

Sample wt/vol: 12.5 (g/ml) ML Lab File ID: R3519.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SSFB2R

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135241 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3536.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SSFB2R

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135241 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3536.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SW004S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135098 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3530.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	4	
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	4	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SW004S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135098 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3530.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SW006S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135100 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3522.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U J
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U J
156-59-4	cis-1,2-Dichloroethene	5	
67-66-3	Chloroform	0	J
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U J
79-01-6	Trichloroethene	6	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U J
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U J
100-41-4	Ethylbenzene	1	U J
108-38-3	Xylenes (TOTAL)	1	U J
100-42-5	Styrene	1	U J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

00029

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SW006S

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135100 1.0

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3522.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00030

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS01DS

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135116 1.0

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA260.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 26.5 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
75-01-4	Vinyl chloride	14	U
75-00-3	Chloroethane	14	U
74-83-9	Bromomethane	14	U
67-64-1	Acetone	14	U
75-35-4	1,1-Dichloroethene	14	U
75-09-2	Methylene chloride	3	J
75-15-0	Carbon disulfide	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon tetrachloride	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	2	J
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
124-48-1	Dibromochloromethane	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
1330-20-7	Xylenes (total)	14	U
100-42-5	Styrene	14	U
108-88-3	1,1,2,2-Tetrachloroethane	14	U

J

5/12/97

4/14

NYSDEC Sample No.:SS01DS

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL)G
Level (low/med): LOW
% Moisture: 26.5
Column (pack/cap): CAP

Number TIC's found: 2

Contract: EMCON
SAS No.: -- SDG No.:GW14S
Lab Sample ID: 135116
Lab File ID: ZA260
Date Received:03/14/97
Date Analyzed: 03/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		~~Unknown~~ R	~~3.41~~	~~12~~	~~J~~ B
2.	71238	1-Propanol	6.56	10	J N
3.					
4.		possible laboratory artifact			
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

cwd 4/1/97

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SS01UD

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135119 1.0

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA261.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 21.8 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
75-00-3	Chloroethane	13	U
74-83-9	Bromomethane	13	U
67-64-1	Acetone	13	U
75-35-4	1,1-Dichloroethene	13	U
75-09-2	Methylene chloride	3	J
75-15-0	Carbon disulfide	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
540-59-0	1,2-Dichloroethene (total)	1	J
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon tetrachloride	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	5	J
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
124-48-1	Dibromochloromethane	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
1330-20-7	Xylenes (total)	13	U
100-42-5	Styrene	13	U
108-88-3	1,1,2,2-Tetrachloroethane	13	U

J

cwt 5/4/97

NYSDEC Sample No.:SS01UD

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL)G
Level (low/med): LOW
% Moisture: 21.8
Column (pack/cap): CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:GW14S
Lab Sample ID: 135119
Lab File ID: ZA261
Date Received:03/14/97
Date Analyzed: 03/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		~~Unknown~~ R	~~3.37~~	~~7.4~~	~~J~~ B
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS01US

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135118 1.0

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA263.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 22.8 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
75-00-3	Chloroethane	13	U
74-83-9	Bromomethane	13	U
67-64-1	Acetone	2	J
75-35-4	1,1-Dichloroethene	13	U
75-09-2	Methylene chloride	2	J
75-15-0	Carbon disulfide	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
540-59-0	1,2-Dichloroethene (total)	2	J
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon tetrachloride	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	6	J
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
124-48-1	Dibromochloromethane	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
1330-20-7	Xylenes (total)	13	U
100-42-5	Styrene	13	U
108-88-3	1,1,2,2-Tetrachloroethane	13	U

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CNC 4/14

NYSDEC Sample No.:SS01US

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL)G
Level (low/med): LOW
% Moisture: 22.8
Column (pack/cap): CAP

Number TIC's found: 2

Contract: EMCON
SAS No.: -- SDG No.:GW14S
Lab Sample ID: 135118
Lab File ID: ZA263
Date Received:03/14/97
Date Analyzed: 03/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		~~Unknown~~ R	~~3.49~~	~~16~~	~~J~~ J
2.		Unknown	6.59	8.0	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
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27.					
28.					
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30.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SS02DS

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135121 1.0

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA256.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. 23.7 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
75-00-3	Chloroethane	21	
74-83-9	Bromomethane	13	U
67-64-1	Acetone	4	J
75-35-4	1,1-Dichloroethene	2	J
75-09-2	Methylene chloride	4	J
75-15-0	Carbon disulfide	3	J
75-34-3	1,1-Dichloroethane	22	
78-93-3	2-Butanone	13	U
540-59-0	1,2-Dichloroethene (total)	19	
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon tetrachloride	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	22	
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
124-48-1	Dibromochloromethane	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
1330-20-7	Xylenes (total)	13	U
100-42-5	Styrene	13	U
108-88-3	1,1,2,2-Tetrachloroethane	13	U

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RT 4/14

NYSDEC Sample No.:SS02DS

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL)G
Level (low/med): LOW
% Moisture: 23.7
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:GW14S
Lab Sample ID: 135121
Lab File ID: ZA256
Date Received:03/14/97
Date Analyzed: 03/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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9.					
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11.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS02US

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135123 1.0

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA262.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 23.7 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
75-00-3	Chloroethane	11	J
74-83-9	Bromomethane	13	U
67-64-1	Acetone	13	U
75-35-4	1,1-Dichloroethene	13	U
75-09-2	Methylene chloride	2	J
75-15-0	Carbon disulfide	13	U
75-34-3	1,1-Dichloroethane	10	J
78-93-3	2-Butanone	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon tetrachloride	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
124-48-1	Dibromochloromethane	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
1330-20-7	Xylenes (total)	13	U
100-42-5	Styrene	13	U
108-88-3	1,1,2,2-Tetrachloroethane	13	U

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5/2/97

RH/14

NYSDEC Sample No.:SS02US

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL)G
Level (low/med): LOW
% Moisture: 23.7
Column (pack/cap): CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:GW14S
Lab Sample ID: 135123
Lab File ID: ZA262
Date Received:03/14/97
Date Analyzed: 03/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	6.56	8.1	J
2.					
3.					
4.					
5.					
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30.					

H2M LABS, INC.
575 Broad Hollow Road Melville, N.Y. 11747
(516)694-3040 FAX:(516)420-8436 NYSDOH ID# 10478

COLUMBIA ANALYTICAL SERVICES
700 EXCHANGE STREET
ROCHESTER, NY 14608

DATE RECEIVED.. 03/17/97
COLLECTED BY... CL99
PROJECT NO.....
TYPE ..... SOIL

LAB NO.	DATE COLLECTED	LOCATION	TOC mg/kg	TOTAL SOLIDS %
9707108 ROUTINE	03/13/97 11:20 GRAB	135116	27300	75.1
9707109 ROUTINE	03/13/97 13:40 GRAB	135121	22000	80.0

W.00041

REMARKS:

COPIES TO:

DATE ISSUED 03/24/97

J M Slavin
LABORATORY DIRECTOR

ORIGINAL

Report for client information purposes only

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK01	97	0
02	OF001S	101	0
03	OF001D	107	0
04	OF002S	108	0
05	GW18SS	107	0
06	GW010S	107	0
07	SW006S	111	0
08	GW014S	95	0
09	GW18DS	94	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

	EPA SAMPLE NO.	SMC1 #	TOT OUT
01	VBLK02	93	0
02	LCS	108	0
03	VBLK02MS	96	0
04	SW004S	100	0
05	SW004SMS	107	0
06	SW004SMSD	114	0
07	GW06DS	112	0
08	OFTB3T	118	0
09	GWTB4T	95	0
10	SSFB2R	90	0
11	CBLK2	116	0

			QC LIMITS
SMC1	=	SURR2,BFB	(80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	TOT OUT
01	VBLK03	95	103	109	0
02	VBLK03MS	94	103	105	0
03	SS02DS	89	98	92	0
04	SS02DSMS	100	110	109	0
05	SS02DSMSD	103	110	113	0
06	SS01DS	89	108	88	0
07	SS01UD	97	102	105	0
08	SS02US	95	103	105	0
09	SS01US	95	100	98	0

			QC LIMITS
SMC1	=	1,2-Dichloroethane-d4	(70-121)
SMC2	=	Toluene-d8	(59-138)
SMC3	=	Bromofluorobenzene	(59-113)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix Spike - EPA Sample No.: SW004S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	5.0	0.0	5.0	100	61 - 145
Benzene	5.0	0.0	5.1	102	76 - 127
Trichloroethene	5.0	4.5	9.8	106	71 - 120
Toluene	5.0	0.0	4.9	98	76 - 125
Chlorobenzene	5.0	0.0	5.1	102	75 - 130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	5.0	5.3	106	6	14	61 - 145
Benzene	5.0	5.8	116	13 *	11	76 - 127
Trichloroethene	5.0	9.8	106	0	14	71 - 120
Toluene	5.0	4.8	96	2	13	76 - 125
Chlorobenzene	5.0	5.1	102	0	13	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

_____

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SW004SMS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135098 1.0MS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3531.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	4	
67-66-3	Chloroform	0	J
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	5	
79-01-6	Trichloroethene	10	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW004SMSD

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: 135098 1.0MS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3532.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	4	
67-66-3	Chloroform	0	J
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	6	
79-01-6	Trichloroethene	10	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix Spike - EPA Sample No.: VBLK02

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	5.0	0.0	4.6	92	61 - 145
Benzene	5.0	0.0	5.9	118	76 - 127
Trichloroethene	5.0	0.0	4.8	96	71 - 120
Toluene	5.0	0.0	5.0	100	76 - 125
Chlorobenzene	5.0	0.0	5.3	106	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 5 out of 5 outside limits

Spike Recovery: 5 out of 10 outside limits

COMMENTS: _____

_____

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK02MS

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02MS

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3529.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	5	
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	6	
79-01-6	Trichloroethene	5	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	5	
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	5	
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix Spike - EPA Sample No.: SS02DS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	66	1.5	68	100	59 - 172
Benzene	66	0.0	72	109	62 - 137
Trichloroethene	66	22	76	82	66 - 142
Toluene	66	0.0	72	109	59 - 139
Chlorobenzene	66	0.0	70	106	60 - 133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	66	67	100	0	22	59 - 172
Benzene	66	73	111	2	24	62 - 137
Trichloroethene	66	77	83	1	21	66 - 142
Toluene	66	73	111	2	21	59 - 139
Chlorobenzene	66	72	109	3	21	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

_____

7/14

00050

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SS02DSMS

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135121 1.0MS

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA257.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 23.7 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
75-00-3	Chloroethane	17	
74-83-9	Bromomethane	13	U
67-64-1	Acetone	4	J
75-35-4	1,1-Dichloroethene	68	
75-09-2	Methylene chloride	3	J
75-15-0	Carbon disulfide	2	J
75-34-3	1,1-Dichloroethane	21	
78-93-3	2-Butanone	13	U
540-59-0	1,2-Dichloroethene (total)	20	
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon tetrachloride	13	U
71-43-2	Benzene	72	
79-01-6	Trichloroethene	76	
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
124-48-1	Dibromochloromethane	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	72	
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-90-7	Chlorobenzene	70	
100-41-4	Ethylbenzene	13	U
1330-20-7	Xylenes (total)	13	U
100-42-5	Styrene	13	U
108-88-3	1,1,2,2-Tetrachloroethane	13	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SS02DSMSD

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: 135121 1.0MS

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA259.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 23.7 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
75-01-4	Vinyl chloride	13	U
75-00-3	Chloroethane	22	
74-83-9	Bromomethane	13	U
67-64-1	Acetone	10	J
75-35-4	1,1-Dichloroethene	67	
75-09-2	Methylene chloride	8	J
75-15-0	Carbon disulfide	2	J
75-34-3	1,1-Dichloroethane	26	
78-93-3	2-Butanone	13	U
540-59-0	1,2-Dichloroethene (total)	22	
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon tetrachloride	13	U
71-43-2	Benzene	73	
79-01-6	Trichloroethene	77	
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
124-48-1	Dibromochloromethane	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	73	
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-90-7	Chlorobenzene	72	
100-41-4	Ethylbenzene	13	U
1330-20-7	Xylenes (total)	13	U
100-42-5	Styrene	13	U
108-88-3	1,1,2,2-Tetrachloroethane	13	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK03MS

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: VBLK03MS

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA255.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. 0 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
74-83-9	Bromomethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	44	
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	49	
79-01-6	Trichloroethene	40	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	50	
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylenes (total)	10	U
100-42-5	Styrene	10	U
108-88-3	1,1,2,2-Tetrachloroethane	10	U

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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID: R3516.D Lab Sample ID: VBLK01

Date Analyzed: 03/22/97 Time Analyzed: 15:02

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	OF001S	135096 10	R3517.D	15:39
02	OF001D	135097 10	R3518.D	16:20
03	OF002S	135099 2.0	R3519.D	17:00
04	GW18SS	135102 10	R3520.D	17:41
05	GW010S	135426 25	R3521.D	18:22
06	SW006S	135100 1.0	R3522.D	19:02
07	GW014S	135101 1.0	R3523.D	19:43
08	GW18DS	135103 1.0	R3524.D	20:23

COMMENTS

* 00054

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3516.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

BK

3/24/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3516.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/22/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00056

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK02

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID: R3527.D Lab Sample ID: VBLK02

Date Analyzed: 03/23/97 Time Analyzed: 12:04

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS	LCS	R3528.D	12:45
02	VBLK02MS	VBLK02MS	R3529.D	13:25
03	SW004S	135098 1.0	R3530.D	14:06
04	SW004SMS	135098 1.0MS	R3531.D	14:46
05	SW004SMSD	135098 1.0MSD	R3532.D	15:27
06	GW06DS	135104 1.0	R3533.D	16:08
07	OFTB3T	135105 1.0	R3534.D	16:48
08	GWTB4T	135427 1.0	R3535.D	19:07
09	SSFB2R	135241 1.0	R3536.D	19:47
10	CBLK2	135257 1.0	R3537.D	20:28

COMMENTS

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK02

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3527.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	5	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-35-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-4	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbontetrachloride	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Dibromochloromethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
108-38-3	Xylenes (TOTAL)	1	U
100-42-5	Styrene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
75-25-2	Bromoform	1	U
156-60-5	trans-1,2-Dichloroethene	1	U

00052

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK02

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: R3527.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/23/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

00059

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID (Standard): R3515.D Date Analyzed: 03/22/97

Instrument ID: GCMS#5 Time Analyzed: 11:13

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	135552	11.14	206440	13.33	167077	20.28
	UPPER LIMIT	271104	10.64	412880	12.83	334154	19.78
	LOWER LIMIT	67776	11.64	103220	13.83	83539	20.78
	EPA SAMPLE NO.						
01	VBLK01	132134	11.12	205352	13.32	158985	20.25
02	OF001S	118677	11.13	184225	13.32	145448	20.29
03	OF001D	116948	11.14	182628	13.32	149523	20.25
04	OF002S	116606	11.11	183503	13.32	150108	20.29
05	GW18SS	117376	11.13	179960	13.32	145332	20.27
06	GW010S	119648	11.14	187540	13.32	150392	20.27
07	SW006S	121584	11.14	188659	13.34	157956	20.29
08	GW014S	118132	11.16	196693	13.36	145845	20.27
09	GW18DS	115815	11.16	200097	13.36	146215	20.25

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

00060

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID (Standard): R3515.D Date Analyzed: 03/22/97

Instrument ID: GCMS#5 Time Analyzed: 11:13

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	62796	26.13				
	UPPER LIMIT	125592	25.63				
	LOWER LIMIT	31398	26.63				
	EPA SAMPLE NO.						
01	VBLK01	60899	26.14				
02	OF001S	56683	26.15				
03	OF001D	59585	26.17				
04	OF002S	59631	26.17				
05	GW18SS	57929	26.17				
06	GW010S	59415	26.16				
07	SW006S	62749	26.13				
08	GW014S	58445	26.14				
09	GW18DS	57683	26.11				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK03

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Matrix: (soil/water) SOIL Lab Sample ID: VBLK03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: ZA254.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 03/24/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

4/14

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID (Standard): R3526.D Date Analyzed: 03/23/97

Instrument ID: GCMS#5 Time Analyzed: 11:25

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR STD	126151	11.15	174658	13.33	153485	20.27
	UPPER LIMIT	252302	10.65	349316	12.83	306970	19.77
	LOWER LIMIT	63076	11.65	87329	13.83	76743	20.77
	EPA SAMPLE NO.						
01	VBLK02	123032	11.14	182931	13.33	153332	20.26
02	LCS	108861	11.10	150649	13.29	132896	20.25
03	VBLK02MS	115897	11.09	172117	13.30	139940	20.23
04	SW004S	121332	11.10	189547	13.30	155369	20.23
05	SW004SMS	118412	11.09	164984	13.29	151048	20.24
06	SW004SMSD	119589	11.09	156626	13.29	152085	20.24
07	GW06DS	123242	11.09	159225	13.30	153386	20.23
08	OFTB3T	121548	11.10	159057	13.30	151944	20.23
09	GWTB4T	135745	11.14	201108	13.32	163359	20.25
10	SSFB2R	124252	11.17	201536	13.37	151255	20.28
11	CBLK2	121975	11.14	158281	13.32	150950	20.27

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS\ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID (Standard): R3526.D Date Analyzed: 03/23/97

Instrument ID: GCMS#5 Time Analyzed: 11:25

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge (Y/N): N

		IS4 AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	57997	26.15				
	UPPER LIMIT	115994	25.65				
	LOWER LIMIT	28999	26.65				
	EPA SAMPLE NO.						
01	VBLK02	57146	26.10				
02	LCS	53707	26.12				
03	VBLK02MS	55891	26.13				
04	SW004S	62360	26.13				
05	SW004SMS	60848	26.13				
06	SW004SMSD	61787	26.13				
07	GW06DS	64149	26.12				
08	OFTB3T	62652	26.07				
09	GWTB4T	62138	26.16				
10	SSFB2R	61326	26.16				
11	CBLK2	60715	26.16				

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = d5-Chlorobenzene
IS4 = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK03

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID: ZA254.D Lab Sample ID: VBLK03

Date Analyzed: 03/24/97 Time Analyzed: 10:31

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: GCMS#1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK03MS	VBLK03MS	ZA255.D	11:24
02	SS02DS	135121 1.0	ZA256.D	12:25
03	SS02DSMS	135121 1.0MS	ZA257.D	13:09
04	SS02DSMSD	135121 1.0MSD	ZA259.D	14:34
05	SS01DS	135116 1.0	ZA260.D	15:44
06	SS01UD	135119 1.0	ZA261.D	16:53
07	SS02US	135123 1.0	ZA262.D	17:31
08	SS01US	135118 1.0	ZA263.D	18:14

8/4/14

COMMENTS

00064

NYSDEC Sample No.:VBLK03

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL)G
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:GW14S
Lab Sample ID: VBLK03
Lab File ID: ZA254
Date Received:
Date Analyzed: 03/24/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	3.45	13	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS/ROC Contract: EMCON

Lab Code: 10145 Case No.: 97-3-158 SAS No.: _____ SDG No.: GW14S

Lab File ID (Standard): ZA253.D Date Analyzed: 03/24/97

Instrument ID: GCMS#1 Time Analyzed: 09:32

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

		IS1 AREA	#	RT	#	IS2 AREA	#	RT	#	IS3 AREA	#	RT	#
	12 HOUR ST	990243		9.03		4544070		10.73		3282427		17.30	
	LOWER LIMIT	495122		8.53		2272035		10.23		1641214		16.80	
	UPPER LIMIT	1980486		9.53		9088140		11.23		6564854		17.80	
	EPA SAMPLE NO.												
01	VBLK03	977675		9.01		4389397		10.76		3224265		17.50	
02	VBLK03MS	996837		9.02		4635960		10.72		3290069		17.37	
03	SS02DS	914418		9.06		4300954		10.75		3002045		17.32	
04	SS02DSMS	827019		9.11		3963465		10.82		2809985		17.42	
05	SS02DSMSD	815246		8.96		3816491		10.68		2727514		17.27	
06	SS01DS	653982		9.01		2911396		10.73		1857543		17.40	
07	SS01UD	838049		9.07		4106645		10.77		2801000		17.54	
08	SS02US	853664		9.05		4094237		10.75		2798650		17.49	
09	SS01US	783502		9.07		3795247		10.84		2648545		17.54	

IS1 = Bromochloromethane

IS2 = 1,4-Difluorobenzene

IS3 = Chlorobenzene-d5

RG/14

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

00067

EMCON

LMC SOIL INVESTIGATION

CAS SUBMISSION #: 9702000163

SUMMARY PACKAGE

Columbia Analytical Services
700 Exchange Street
Rochester, NY 14608

Columbia Analytical Services Inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

March 11, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corp. Center
1 International Blvd, Ste. 700
Mahwah, NJ 07495

PROJECT:LMC SOIL INVESTIGATION
Submission #:9702000163

Dear Mr. Taylor

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 454-6810.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson
Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal. MW 3/11

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE IDENTIFICATION AND
ANALYTICAL REQUIREMENT SUMMARY

Customer Sample Code	Laboratory Sample Code	Analytical Requirements* NYSDEC 1995 CLP PROTOCOL					
		*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
SB49AS	130619	X	X				
SB49AD	130620	X	X				
SB50AS	130621	X	X				
SB49BS	130626	X					
SB51AS	130629				X		
SB52AS	130630				X		
SB52AD	130633				X		
SB53AS	130635				X		
SBFBAR	130637	X	X		X		
SBTBAT	130641	X					

ıeck Appropriate Boxes
*CLP, Non-CLP
*HSL, Priority Pollutant
NCF1

9/89

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
VOA
ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
130619	SOIL	02/11/97	02/12/97	MED	02/20/97
130620	SOIL	02/11/97	02/12/97	MED	02/20/97
130621	SOIL	02/11/97	02/12/97	LOW	02/18/97
130626	SOIL	02/11/97	02/12/97	MED	02/20/97
130637	WATER	02/10/97	02/12/97	LOW	02/20/97
130641	WATER	02/11/97	02/12/97	LOW	02/20/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
130619	SOIL	95-1			1.0
130620	SOIL	95-1			1.0
130621	SOIL	95-1			1.0
130626	SOIL	95-1			1.0
130637	WATER	95-1			1.0
130641	WATER	95-1			1.0

NCF5 5/91

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
B/N-A
ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	DATE EXTRACTED	DATE ANALYZED
130619	SOIL	02/11/97	02/12/97	02/14/97	02/28/97
130620	SOIL	02/11/97	02/12/97	02/14/97	02/28/97
130621	SOIL	02/11/97	02/12/97	03/04/97	03/05/97
130637	WATER	02/10/97	02/12/97	02/13/97	02/28/97

NCF5 5/91

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
130619	SOIL	95-2			1.0
130620	SOIL	95-2			1.0
130621	SOIL	95-2			1.0
130637	WATER	95-2			1.0

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
PESTICIDE/PCB
ANALYSES

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	DATE EXTRACTED	DATE ANALYZED
130629	SOIL	02/10/97	02/12/97	02/14/97	03/01/97
130630	SOIL	02/10/97	02/12/97	02/14/97	03/01/97
130633	SOIL	02/10/97	02/12/97	02/14/97	03/01/97
130635	SOIL	02/10/97	02/12/97	02/14/97	03/01/97
130637	WATER	02/10/97	02/12/97	02/14/97	03/01/97

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SAMPLE PREPARATION AND ANALYSIS SUMMARY
ORGANIC ANALYSIS

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
130629	SOIL	95-3			1.0, 10.0
130630	SOIL	95-3			1.0
130633	SOIL	95-3			1.0
130635	SOIL	95-3			1.0, 10.0
130637	WATER	95-3			1.0

CASE NARRATIVE

COMPANY: EMCON
Lockheed Martin Corp
SUBMISSION #: 9701000163

EMCON soil and water samples were collected on 02/10/97 and 02/11/97 and received at CAS on 02/12/97 in good condition. See the CAS Batching form to cross reference between Client ID and CAS sample numbers.

VOLATILE ORGANICS

Four soil samples, one field blank and one trip blank were analyzed for Target Compound List (TCL) of volatile organics by method 95-1 from the NYSASP 1995.

Samples SB49AS, SB49AD and SB49BS were analyzed as medium levels due to high levels of target compounds present.

Samples SB50AS and SB49BS (medium level) were analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits. All blank spike recoveries were within QC limits.

All tuning criteria for BFB were met.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits.

All internal standard areas were within QC Limits.

All samples were analyzed within the holding time as specified in the method.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Three soil samples and one field blank were analyzed for Target Compound List (TCL) of semivolatile organics by method 95-2 from the NYSASP 1995.

Samples SB50AS was analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits except for the recovery of 4-Nitrophenol in SB50ASMSD. All blank spike recoveries were within QC limits.

The method blank SBLK2 had some low levels (below the CRDL) of target compounds detected which may have been from carryover from glassware that had been contaminated from a previous sample. These compounds were not detected in any associated samples in this SDG.

700 Exchange Street ▪ Rochester, NY 14608 ▪ Telephone 716/454-6810 ▪ Fax 716/454-6825

All tuning criteria for DFTPP were met.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits except for S6 in samples SB49AS and SB49ASRE

All internal standard areas were within QC Limits except for IS6 in samples SB49AS, SB49ASRE, SB50AS and SB50ASRE.

All samples were analyzed within the holding time as specified in the method except for SB05AS which was lost during the GPC cleanup method due to the sample backflushing into the apparatus when it ran out of carrier gas. This sample was reextracted outside of the holding time required.

No other analytical or QC problems were encountered.

PESTICIDES/PCBs

Four soil samples and one field blank were analyzed for the Target Compound List of PCBs by Method 95-3 from the NYSASP 1995. Although only PCB's were requested by the client, pesticide results have been reported in order to satisfy all of the QC requirements of the method.

Sample SB51AS was analyzed for site specific QC. All matrix spike recoveries and %RPD were within QC Limits except for the recoveries of gamma-BHC, Endrin and 4-4'-DDT in sample SB51ASMS and 4-4'-DDT in sample SB51ASMSD. The DDT recoveries may have been low due to the high level of DDT in the initial sample compared to the spike level. All blank spike recoveries were within QC limits.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within QC limits.

All samples were extracted and analyzed within the specified holding times.

No other analytical or QC problems were encountered.

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SB49AD

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130620 1250

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2955.D

Level: (low/med) MED Date Received: _____

% Moisture: not dec. 25.8 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 10 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17000	U
75-01-4	Vinyl chloride	17000	U
75-00-3	Chloroethane	17000	U
74-83-9	Bromomethane	17000	U
67-64-1	Acetone	17000	U
75-35-4	1,1-Dichloroethene	17000	U
75-09-2	Methylene chloride	17000	U
75-15-0	Carbon disulfide	17000	U
75-34-3	1,1-Dichloroethane	21000	
78-93-3	2-Butanone	17000	U J
540-59-0	1,2-Dichloroethene (total)	17000	U
67-66-3	Chloroform	17000	U
107-06-2	1,2-Dichloroethane	17000	U
71-55-6	1,1,1-Trichloroethane	7800	J
56-23-5	Carbon tetrachloride	17000	U
71-43-2	Benzene	17000	U
79-01-6	Trichloroethene	230000	
78-87-5	1,2-Dichloropropane	17000	U
75-27-4	Bromodichloromethane	17000	U
10061-01-5	cis-1,3-Dichloropropene	17000	U
10061-02-6	trans-1,3-Dichloropropene	17000	U
79-00-5	1,1,2-Trichloroethane	17000	U
124-48-1	Dibromochloromethane	17000	U
75-25-2	Bromoform	17000	U
108-10-1	4-Methyl-2-pentanone	17000	U
108-88-3	Toluene	18000	
591-78-6	2-Hexanone	17000	U J
127-18-4	Tetrachloroethene	17000	U
108-90-7	Chlorobenzene	17000	U
100-41-4	Ethylbenzene	4700	J
1330-20-7	Xylenes (total)	18000	
100-42-5	Styrene	17000	U
108-88-3	1,1,2,2-Tetrachloroethane	17000	U

J

CWS 5/15/97

CWS 3/20/97

3/14

NYSDEC Sample No.: SB49AD

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 4.0 (g/mL) G
Level (low/med): MED
% Moisture: 25.8
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AD
Lab Sample ID: 130620
Lab File ID: R2955
Date Received: 02/12/97
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SB49AS

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130619 500

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2952.D

Level: (low/med) MED Date Received:

% Moisture: not dec. 27 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 25 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	6800	U
75-01-4	Vinyl chloride	6800	U
75-00-3	Chloroethane	6800	U
74-83-9	Bromomethane	6800	U
67-64-1	Acetone	14000	
75-35-4	1,1-Dichloroethene	6800	U
75-09-2	Methylene chloride	6800	U
75-15-0	Carbon disulfide	6800	U
75-34-3	1,1-Dichloroethane	28000	
78-93-3	2-Butanone	6800	U J
540-59-0	1,2-Dichloroethene (total)	1100	J
67-66-3	Chloroform	6800	U
107-06-2	1,2-Dichloroethane	6800	U
71-55-6	1,1,1-Trichloroethane	11000	
56-23-5	Carbon tetrachloride	6800	U
71-43-2	Benzene	6800	U
79-01-6	Trichloroethene 280000	~~920000~~	~~E~~
78-87-5	1,2-Dichloropropane	6800	U
75-27-4	Bromodichloromethane	6800	U
10061-01-5	cis-1,3-Dichloropropene	6800	U
10061-02-6	trans-1,3-Dichloropropene	6800	U
79-00-5	1,1,2-Trichloroethane	6800	U
124-48-1	Dibromochloromethane	6800	U
75-25-2	Bromoform	6800	U
108-10-1	4-Methyl-2-pentanone	6800	U
108-88-3	Toluene	27000	
591-78-6	2-Hexanone	6800	U J
127-18-4	Tetrachloroethene	6800	U
108-90-7	Chlorobenzene	6800	U
100-41-4	Ethylbenzene	7700	
1330-20-7	Xylenes (total)	30000	
100-42-5	Styrene	6800	U
108-88-3	1,1,2,2-Tetrachloroethane	6800	U

J

cwf 8/19/97

cwf 3/20/97

PT 3/16

NYSDEC Sample No.: SB49AS

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 4.0 (g/mL) G
Level (low/med): MED
% Moisture: 27.0
Column (pack/cap): CAP

Number TIC's found: 3

Contract: EMCON
SAS No.: -- SDG No.:SB49A
Lab Sample ID: 130619
Lab File ID: R2952
Date Received: 02/12/97
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	592278	Heptane, 2-methyl-	13.10	11000	J N
2.	111659	Octane	14.34	21000	J N
3.		Unknown	16.37	10000	J
4.					
5.					
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1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SB49ASDL

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130619 2500

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2954.D

Level: (low/med) MED Date Received:

% Moisture: not dec. 27 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 5 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	34000	U
75-01-4	Vinyl chloride	34000	U
75-00-3	Chloroethane	34000	U
74-83-9	Bromomethane	34000	U
67-64-1	Acetone	34000	U
75-35-4	1,1-Dichloroethene	34000	U
75-09-2	Methylene chloride	34000	U
75-15-0	Carbon disulfide	34000	U
75-34-3	1,1-Dichloroethane	24000	J
78-93-3	2-Butanone	34000	U
540-59-0	1,2-Dichloroethene (total)	34000	U
67-66-3	Chloroform	34000	U
107-06-2	1,2-Dichloroethane	34000	U
71-55-6	1,1,1-Trichloroethane	10000	J
56-23-5	Carbon tetrachloride	34000	U
71-43-2	Benzene	34000	U
79-01-6	Trichloroethene	280000	D
78-87-5	1,2-Dichloropropane	34000	U
75-27-4	Bromodichloromethane	34000	U
10061-01-5	cis-1,3-Dichloropropene	34000	U
10061-02-6	trans-1,3-Dichloropropene	34000	U
79-00-5	1,1,2-Trichloroethane	34000	U
124-48-1	Dibromochloromethane	34000	U
75-25-2	Bromoform	34000	U
108-10-1	4-Methyl-2-pentanone	34000	U
108-88-3	Toluene	25000	J
591-78-6	2-Hexanone	34000	U
127-18-4	Tetrachloroethene	34000	U
108-90-7	Chlorobenzene	34000	U
100-41-4	Ethylbenzene	7200	J
1330-20-7	Xylenes (total)	29000	J
100-42-5	Styrene	34000	U
108-88-3	1,1,2,2-Tetrachloroethane	34000	U

cwf 3/20/97

R 3/6

NYSDEC Sample No.: SB49ASDL

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 4.0 (g/mL) G
Level (low/med): MED
% Moisture: 27.0
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AD
Lab Sample ID: 130619
Lab File ID: R2954
Date Received: 02/12/97
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB49BS

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130626 125

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2956.D

Level: (low/med) MED Date Received: _____

% Moisture: not dec. 33.7 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1900	U
75-01-4	Vinyl chloride	1900	U
75-00-3	Chloroethane	1900	U
74-83-9	Bromomethane	1900	U
67-64-1	Acetone	1900	U
75-35-4	1,1-Dichloroethene	1900	U
75-09-2	Methylene chloride	1900	U
75-15-0	Carbon disulfide	1900	U
75-34-3	1,1-Dichloroethane	1200	J
78-93-3	2-Butanone	1900	U J
540-59-0	1,2-Dichloroethene (total)	1900	U
67-66-3	Chloroform	1900	U
107-06-2	1,2-Dichloroethane	1900	U
71-55-6	1,1,1-Trichloroethane	1900	U
56-23-5	Carbon tetrachloride	1900	U
71-43-2	Benzene	1900	U
79-01-6	Trichloroethene	17000	
78-87-5	1,2-Dichloropropane	1900	U
75-27-4	Bromodichloromethane	1900	U
10061-01-5	cis-1,3-Dichloropropene	1900	U
10061-02-6	trans-1,3-Dichloropropene	1900	U
79-00-5	1,1,2-Trichloroethane	1900	U
124-48-1	Dibromochloromethane	1900	U
75-25-2	Bromoform	1900	U
108-10-1	4-Methyl-2-pentanone	1900	U
108-88-3	Toluene	1100	J
591-78-6	2-Hexanone	1900	U J
127-18-4	Tetrachloroethene	1900	U
108-90-7	Chlorobenzene	1900	U
100-41-4	Ethylbenzene	260	J
1330-20-7	Xylenes (total)	1200	J
100-42-5	Styrene	1900	U
108-88-3	1,1,2,2-Tetrachloroethane	1900	U

J

cut 8/18/97

cut 3/20/97

3/6

NYSDEC Sample No.: SB49BS

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 4.0 (g/mL) G
Level (low/med): MED
% Moisture: 33.7
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AD
Lab Sample ID: 130626
Lab File ID: R2956
Date Received: 02/12/97
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
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3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB50AS

Lab Name: CAS-ROC Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621 1.0

Sample wt/vol: 5.0 (g/ml) G Lab File ID: AQ708.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 19.2 Date Analyzed: 02/18/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
75-01-4	Vinyl chloride	12	U
75-00-3	Chloroethane	12	U
74-83-9	Bromomethane	12	U
67-64-1	Acetone	15	
75-35-4	1,1-Dichloroethene	12	U
75-09-2	Methylene chloride	2	J
75-15-0	Carbon disulfide	12	U
75-34-3	1,1-Dichloroethane	5	J
78-93-3	2-Butanone	3	J
540-59-0	1,2-Dichloroethene (total)	3	J
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
71-55-6	1,1,1-Trichloroethane	18	
56-23-5	Carbon tetrachloride	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	19	
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
124-48-1	Dibromochloromethane	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	5	J
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	11	J
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	3	J
1330-20-7	Xylenes (total)	7	J
100-42-5	Styrene	12	U
108-88-3	1,1,2,2-Tetrachloroethane	12	U J

cwt 3/20/97

RJ 3/6

NYSDEC Sample No.: SB50AS

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level (low/med): LOW
% Moisture: 19.2
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AØ
Lab Sample ID: 130621
Lab File ID: AQ708
Date Received: 02/12/97
Date Analyzed: 02/18/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBFBAR

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: 130637 1.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2951.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

J cmf 3/18/97

cmf 3/20/97

R 3/6

NYSDEC Sample No.: SBFBAR

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 5.0 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AP
Lab Sample ID: 130637
Lab File ID: R2951
Date Received: 02/12/97
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBTBAT

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: 130641 1.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2950.D

Level: (low/med) LOW Date Received:

% Moisture: not dec. Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

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

J

cmf 3/12/97

cmf 3/20/97

CR 3/6

NYSDEC Sample No.: SBTBAT

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 5.0 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.:SB49A
Lab Sample ID: 130641
Lab File ID: R2950
Date Received: 02/12/97
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	6.81	5.6	J
2.					
3.					
4.					
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB49AD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130620

Sample wt/vol: 30 (g/ml) G Lab File ID: DL270.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 26 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

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
95-50-1	1,2-Dichlorobenzene	450	U
108-60-1	2,2'-oxybis(1-Chloropropane)	450	U
95-48-7	2-Methylphenol	110	J
621-64-7	N-Nitroso-Di-n-propylamine	54	J
67-72-1	Hexachloroethane	450	U
106-44-5	4-Methylphenol	160	J
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
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	1100	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	1100	U
208-96-8	Acenaphthylene	450	U
131-11-3	Dimethyl Phthalate	450	U
606-20-2	2,6-Dinitrotoluene	450	U
83-32-9	Acenaphthene	450	U
99-09-2	3-Nitroaniline	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U
100-02-7	4-Nitrophenol	1100	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB49AD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130620

Sample wt/vol: 30 (g/ml) G Lab File ID: DL270.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 26 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	450	U
7005-72-3	4-Chlorophenyl-phenylether	450	U
84-66-2	Diethylphthalate	450	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine	450	U
101-55-3	4-Bromophenyl-phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	450	U
120-12-7	Anthracene	450	U
86-74-8	Carbazole	450	U
84-74-2	Di-n-Butylphthalate	1900	U
206-44-0	Fluoranthene	450	U
129-00-0	Pyrene	450	U
85-68-7	Butyl benzyl phthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	450	U
56-55-3	Benzo(a)Anthracene	450	U
218-01-9	Chrysene	450	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	450 100	U
117-84-0	Di-n-octyl phthalate	450	U
205-99-2	Benzo(b)fluoranthene	450	U
207-08-9	Benzo(k)Fluoranthene	450	U
50-32-8	Benzo(a)Pyrene	450	U
193-39-5	Indeno(1,2,3-cd)Pyrene	450	U
53-70-3	Dibenz(a,h)anthracene	450	U
191-24-2	Benzo(g,h,i)Perylene	450	U

CWS 3/24/97

NYSDEC Sample No: SB49AD

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: 130620
Sample wt/vol: 30 (g/mL) G Lab File ID: DL270
Level (low/med): LOW Date Received: 02/12/97
% Moisture: 26 Date Extracted:02/14/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 02/28/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 23 Concentration Units:
(ug/L or ug/Kg)UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q	
1.		~~Unknown~~	~~6.90~~	~~9000~~	~~JB~~	R
2.		~~Unknown~~	~~7.28~~	~~570~~	~~JB~~	R
3.		Unknown	8.24	11000	J	
4.		~~Unknown~~	~~8.41~~	~~320~~	~~JB~~	R
5.		Unknown	8.61	510	J	
6.		~~Unknown~~	~~8.76~~	~~780~~	~~JB~~	R
7.		~~Unknown~~	~~9.00~~	~~1800~~	~~JB~~	R
8.		~~Unknown~~	~~9.24~~	~~340~~	~~JB~~	R
9.		Unknown	9.87	390	J	
10.		~~Unknown~~	~~10.30~~	~~780~~	~~JB~~	R
11.		Unknown	10.72	1700	J	
12.		Unknown	11.95	370	J	
13.	544763	Hexadecane	17.73	640	J N	
14.	629787	Heptadecane	18.60	440	J N	
15.		Unknown Hydrocarbon	19.41	310	J	
16.	629925	Nonadecane	20.18	410	J N	
17.		Unknown	20.28	340	J	
18.		Unknown Hydrocarbon	21.60	340	J	
19.		Unknown Hydrocarbon	22.26	340	J	
20.		Unknown Hydrocarbon	22.90	330	J	
21.		Unknown Hydrocarbon	24.14	330	J	
22.		Unknown Hydrocarbon	25.54	360	J	
23.		Unknown Hydrocarbon	27.28	300	J	
24.						
25.						
26.						
27.						
28.						
29.						
30.						

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NYSDEC B-78

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB49AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130619

Sample wt/vol: 30 (g/ml) G Lab File ID: DL269.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 27 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460	U
111-44-4	bis(-2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
95-50-1	1,2-Dichlorobenzene	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U
95-48-7	2-Methylphenol	110	J
621-64-7	N-Nitroso-Di-n-propylamine	460	U
67-72-1	Hexachloroethane	460	U
106-44-5	4-Methylphenol	160	J
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(-2-Chloroethoxy)Methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	1100	U
208-96-8	Acenaphthylene	460	U
131-11-3	Dimethyl Phthalate	460	U
606-20-2	2,6-Dinitrotoluene	460	U
83-32-9	Acenaphthene	460	U
99-09-2	3-Nitroaniline	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
100-02-7	4-Nitrophenol	1100	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB49AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130619

Sample wt/vol: 30 (g/ml) G Lab File ID: DL269.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 27 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
84-66-2	Diethylphthalate	460	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	460	U
120-12-7	Anthracene	460	U
86-74-8	Carbazole	460	U
84-74-2	Di-n-Butylphthalate	460 ~~170~~	U ~~J~~
206-44-0	Fluoranthene	460	U
129-00-0	Pyrene	460	U
85-68-7	Butyl benzyl phthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	460	U
56-55-3	Benzo(a)Anthracene	460	U
218-01-9	Chrysene	460	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	460 ~~110~~	U ~~J~~
117-84-0	Di-n-octyl phthalate	~~460~~	~~U~~
205-99-2	Benzo(b)fluoranthene	~~460~~	~~U~~
207-08-9	Benzo(k)Fluoranthene	~~460~~	~~U~~
50-32-8	Benzo(a)Pyrene	~~460~~	~~U~~
193-39-5	Indeno(1,2,3-cd)Pyrene	~~460~~	~~U~~
53-70-3	Dibenz(a,h)anthracene	~~460~~	~~U~~
191-24-2	Benzo(g,h,i)Perylene	~~460~~	~~U~~

Conf 3/26/97

R

NYSDEC Sample No: SB49AS

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: 130619
Sample wt/vol: 30 (g/mL) G Lab File ID: DL269
Level (low/med): LOW Date Received: 02/12/97
% Moisture: 27 Date Extracted:02/14/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 02/28/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 23 Concentration Units:
(ug/L or ug/Kg)UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	~~Unknown~~	~~6.83~~	~~2200~~	~~J B~~
2.	~~Unknown~~	~~7.25~~	~~330~~	~~J B~~
3.	Unknown	8.22	7700	J
4.	Unknown	8.72	430	J B
5.	~~Unknown~~	~~9.24~~	~~1300~~	~~J B~~
6. 556672	Cyclotetrasiloxane, octamethyl-	9.54	540	J
7.	Unknown	10.71	1100	J N
8.	Unknown	11.73	430	J
9. 629629	Pentadecane	16.80	360	J
10. 544763	Hexadecane	17.73	530	J
11. 629787	Heptadecane	18.60	470	J N
12.	Unknown Hydrocarbon	20.18	370	J
13.	Unknown Hydrocarbon	21.60	350	J
14.	Unknown Hydrocarbon	22.90	320	J
15.	Unknown Hydrocarbon	24.14	360	J
16.	Unknown Hydrocarbon	25.53	400	J
17.	Unknown Hydrocarbon	27.27	1200	J
18.	Unknown Hydrocarbon	28.33	660	J
19.	Unknown	28.68	910	J
20.	Unknown Hydrocarbon	29.59	800	J
21.	Unknown	29.98	420	J
22.	Unknown Hydrocarbon	31.08	500	J
23.	Unknown Hydrocarbon	32.84	330	J
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC
NYSDEC B-78

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB49ASRE

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130619RE

Sample wt/vol: 30 (g/ml) G Lab File ID: DL280.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 27 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460	U
111-44-4	bis(-2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
95-50-1	1,2-Dichlorobenzene	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U J
95-48-7	2-Methylphenol	110	J
621-64-7	N-Nitroso-Di-n-propylamine	460	U J
67-72-1	Hexachloroethane	460	U
106-44-5	4-Methylphenol	140	J
98-95-3	Nitrobenzene	460	U J
78-59-1	Isophorone	460	U J
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(-2-Chloroethoxy)Methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U J
59-50-7	4-Chloro-3-methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	1100	U J
208-96-8	Acenaphthylene	460	U
131-11-3	Dimethyl Phthalate	460	U
606-20-2	2,6-Dinitrotoluene	460	U
83-32-9	Acenaphthene	460	U
99-09-2	3-Nitroaniline	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
100-02-7	4-Nitrophenol	1100	U J

3/26/97

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB49ASRE

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130619RE

Sample wt/vol: 30 (g/ml) G Lab File ID: DL280.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 27 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
84-66-2	Diethylphthalate	460	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	460	U
120-12-7	Anthracene	460	U
86-74-8	Carbazole	460	U
84-74-2	Di-n-Butylphthalate	~~170~~ 460	~~JB~~ U
206-44-0	Fluoranthene	460	U
129-00-0	Pyrene	460	U
85-68-7	Butyl benzyl phthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	460	U
56-55-3	Benzo(a)Anthracene	460	U
218-01-9	Chrysene	460	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	~~130~~ 460	U
117-84-0	Di-n-octyl phthalate	~~460~~	~~U~~ R
205-99-2	Benzo(b)fluoranthene	~~460~~	~~U~~ R
207-08-9	Benzo(k)Fluoranthene	~~460~~	~~U~~ R
50-32-8	Benzo(a)Pyrene	~~460~~	~~U~~ R
193-39-5	Indeno(1,2,3-cd)Pyrene	~~460~~	~~U~~ R
53-70-3	Dibenz(a,h)anthracene	~~460~~	~~U~~ R
191-24-2	Benzo(g,h,i)Perylene	~~460~~	~~U~~ R

CWF 3/24/97

NYSDEC Sample No: SB49ASRE

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: 130619RE
Sample wt/vol: 30 (g/mL) G Lab File ID: DL280
Level (low/med): LOW Date Received: 02/12/97
% Moisture: 27 Date Extracted:02/14/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 03/05/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 23 Concentration Units:
(ug/L or ug/Kg)UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q	
1.		~~Unknown~~	~~6.81~~	~~1300~~	~~J B~~	R
2.		Unknown	7.23	500	J B	
3.		Unknown	8.20	8100	J	
4.		Unknown	8.69	430	J	
5.		~~Unknown~~	~~9.20~~	~~1300~~	~~J B~~	R
6.	556672	Cyclotetrasiloxane, octamethyl-	9.51	1100	J N	
7.		Unknown	10.68	1100	J	
8.		Unknown	11.71	490	J	
9.	629629	Pentadecane	16.77	370	J N	
10.	544763	Hexadecane	17.70	550	J B N	
11.	629787	Heptadecane	18.57	510	J N	
12.		Unknown Hydrocarbon	20.15	390	J	
13.		Unknown Hydrocarbon	22.24	360	J	
14.		Unknown Hydrocarbon	24.11	480	J	
15.		Unknown Hydrocarbon	25.50	410	J	
16.		Unknown	27.06	470	J	
17.		Unknown Hydrocarbon	27.22	1800	J	
18.		Unknown Hydrocarbon	28.28	990	J B	
19.		Unknown	28.63	910	J	
20.		Unknown Hydrocarbon	29.53	1200	J	
21.		Unknown	29.90	660	J	
22.		Unknown Hydrocarbon	31.00	680	J	
23.		Unknown Hydrocarbon	32.74	440	J	
24.						
25.						
26.						
27.						
28.						
29.						
30.						

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NYSDEC B-78

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB50AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621

Sample wt/vol: 30 (g/ml) G Lab File ID: DL283.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 03/04/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(-2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
95-48-7	2-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
106-44-5	4-Methylphenol	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(-2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
208-96-8	Acenaphthylene	410	U
131-11-3	Dimethyl Phthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
83-32-9	Acenaphthene	410	U
99-09-2	3-Nitroaniline	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
100-02-7	4-Nitrophenol	1000	U

J

3/26/97

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB50AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621

Sample wt/vol: 30 (g/ml) G Lab File ID: DL283.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 03/04/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
84-66-2	Diethylphthalate	45	J
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	250	J
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butyl benzyl phthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	~~410~~ 150	~~U~~ J
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

J

Conf 3/26/97

J

NYSDEC Sample No: SB50AS

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: 130621
Sample wt/vol: 30 (g/mL) G Lab File ID: DL283
Level (low/med): LOW Date Received: 02/12/97
% Moisture: 19 Date Extracted:03/04/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 03/05/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 25 Concentration Units:
(ug/L or ug/Kg)UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q	
1.	~~Unknown~~ probable fuel-condensate	~~6.95~~	~~21000~~	~~J~~	R
2. 3074713	Heptane, 2,3-dimethyl-	7.14	790	J N	
3. 922281	Heptane, 3,4-dimethyl-	7.20	630	J N	
4. 2216344	Octane, 4-methyl-	7.27	830	J N	
5. 1072055	Heptane, 2,6-dimethyl-	7.31	380	J N	
6.	Unknown	7.92	110	J	
7.	Unknown	7.96	130	J	
8.	Unknown	7.96	130	J	
9.	Unknown	8.28	130	J	
10.	Unknown	8.39	360	J	
11.	Unknown	9.11	180	JB	
12.	Unknown	9.22	1500	J	
13.	Unknown	10.26	120	J	
14.	Unknown Hydrocarbon	11.63	130	J	
15. ~~541026~~	~~Cyclopentasilozane~~	~~12.22~~	~~210~~	~~JB~~	R
16.	Unknown	12.83	170	J	
17.	~~Unknown~~	~~14.47~~	~~310~~	~~JB~~	R
18.	~~Unknown~~	~~16.27~~	~~130~~	~~JB~~	R
19.	Unknown	17.56	91	J	
20.	Unknown Hydrocarbon	25.50	110	J	
21.	Unknown Hydrocarbon	26.30	120	J	
22.	Unknown Hydrocarbon	27.23	320	J	
23.	Unknown Hydrocarbon	28.30	130	J	
24.	Unknown Hydrocarbon	29.54	250	J	
25.	Unknown Hydrocarbon	32.76	95	J	
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC
NYSDEC B-78

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB50ASRE

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621RE

Sample wt/vol: 30 (g/ml) G Lab File ID: DL284.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 03/04/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(-2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
95-48-7	2-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
106-44-5	4-Methylphenol	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(-2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
208-96-8	Acenaphthylene	410	U
131-11-3	Dimethyl Phthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
83-32-9	Acenaphthene	410	U
99-09-2	3-Nitroaniline	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
100-02-7	4-Nitrophenol	1000	U

J

3/26/97

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB50ASRE

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621RE

Sample wt/vol: 30 (g/ml) G Lab File ID: DL284.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 03/04/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
84-66-2	Diethylphthalate	47	J
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	250	J
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butyl benzyl phthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	~~140~~ 410	~~J~~ U
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

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Qual 3/26/97

J

NYSDEC Sample No: SB50ASRE

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: 130621RE
Sample wt/vol: 30 (g/mL) G Lab File ID: DL284
Level (low/med): LOW Date Received: 02/12/97
% Moisture: 19 Date Extracted:03/04/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 03/05/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 22 Concentration Units:
(ug/L or ug/Kg)UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q	
1.	~~Unknown~~ Probable Aldol Condensate	~~6.95~~	~~20000~~	~~J~~	R
2. 3074713	Heptane, 2,3-dimethyl-	7.14	780	J N	
3. 922281	Heptane, 3,4-dimethyl-	7.20	610	J N	
4. 2216344	Octane, 4-methyl-	7.27	830	J N	
5.	Unknown Hydrocarbon	7.31	410	J	
6.	Unknown	7.93	110	J	
7.	Unknown	7.97	120	J	
8.	Unknown	8.28	140	J	
9.	Unknown	8.39	370	J	
10.	Unknown	9.12	160	JB	
11.	Unknown	9.22	1500	J	
12.	Unknown	10.26	220	J	
13.	Unknown	10.84	98	J	
14.	Unknown	11.63	97	J	
15.	Unknown	12.83	170	J	
16.	~~Unknown~~	~~14.46~~	~~92~~	~~JB~~	R
17.	Unknown Hydrocarbon	25.50	120	J	
18.	Unknown Hydrocarbon	26.31	120	J	
19.	Unknown Hydrocarbon	27.23	330	J	
20.	Unknown Hydrocarbon	28.29	160	J	
21.	Unknown Hydrocarbon	29.54	260	J	
22.	Unknown Hydrocarbon	32.75	94	J	
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC
NYSDEC B-78

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBFBAR

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: 130637

Sample wt/vol: 950 (g/ml) ML Lab File ID: DL266.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 02/13/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	11	U
111-44-4	bis(-2-Chloroethyl)Ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
95-48-7	2-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
106-44-5	4-Methylphenol	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(-2-Chloroethoxy)Methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	26	U
208-96-8	Acenaphthylene	11	U
131-11-3	Dimethyl Phthalate	11	U
606-20-2	2,6-Dinitrotoluene	11	U
83-32-9	Acenaphthene	11	U
99-09-2	3-Nitroaniline	26	U
51-28-5	2,4-Dinitrophenol	26	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
100-02-7	4-Nitrophenol	26	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBFBAR

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: 130637

Sample wt/vol: 950 (g/ml) ML Lab File ID: DL266.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 02/13/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
84-66-2	Diethylphthalate	11	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butyl benzyl phthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)Anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	2	J
117-84-0	Di-n-octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)Fluoranthene	11	U
50-32-8	Benzo(a)Pyrene	11	U
193-39-5	Indeno(1,2,3-cd)Pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)Perylene	11	U

NYSDEC Sample No: SBFBAR

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: 130637
Sample wt/vol: 950 (g/mL) ML Lab File ID: DL266
Level (low/med): LOW Date Received: 02/12/97
% Moisture: Date Extracted:02/13/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 02/28/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 1 Concentration Units:
(ug/L or ug/Kg)UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	13.23	6.2	JB
2.					
3.					
4.					
5.					
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9.					
10.					
11.					
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NYSDEC B-78

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SB51AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130629

Sample wt/vol: 30 (g/ml) G Lab File ID: FH844.D

% Moisture: 18 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
1024-57-3	Heptachlor Epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
5103-71-9	alpha-Chlordane	2.0	U
72-55-9	4,4'-DDE	39	
60-57-1	Dieldrin	4.1	U
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	4.1	U
50-29-3	4,4'-DDT	140	E
7421-36-3	Endrin Aldehyde	4.1	U
1031-07-8	Endosulfan Sulfate	4.1	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin Ketone	4.1	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U
8001-35-2	Toxaphene	200	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SB51ASDL

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130629 1/10

Sample wt/vol: 30 (g/ml) G Lab File ID: FH838.D

% Moisture: 18 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
1024-57-3	Heptachlor Epoxide	20	U
959-98-8	Endosulfan I	20	U
5103-74-2	gamma-Chlordane	20	U
5103-71-9	alpha-Chlordane	20	U
72-55-9	4,4'-DDE	26	J DP
60-57-1	Dieldrin	41	U
72-20-8	Endrin	41	U
33213-65-9	Endosulfan II	41	U
72-54-8	4,4'-DDD	41	U
50-29-3	4,4'-DDT	120	DP
7421-36-3	Endrin Aldehyde	41	U
1031-07-8	Endosulfan Sulfate	41	U
72-43-5	Methoxychlor	200	U
53494-70-5	Endrin Ketone	41	U
12674-11-2	Aroclor-1016	410	U
11104-28-2	Aroclor-1221	810	U
11141-16-5	Aroclor-1232	410	U
53469-21-9	Aroclor-1242	410	U
12672-29-6	Aroclor-1248	410	U
11097-69-1	Aroclor-1254	410	U
11096-82-5	Aroclor-1260	410	U
8001-35-2	Toxaphene	2000	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SB52AD

Revised 4/22/97

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130633

Sample wt/vol: 30 (g/ml) G Lab File ID: FH842.D

% Moisture: 12 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
1024-57-3	Heptachlor Epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
5103-71-9	alpha-Chlordane	1.9	U
72-55-9	4,4'-DDE	3.8	U
60-57-1	Dieldrin	3.8	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
50-29-3	4,4'-DDT	3.8	U
7421-36-3	Endrin Aldehyde	3.8	U
1031-07-8	Endosulfan Sulfate	3.8	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin Ketone	3.8	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	[redacted]	290 [redacted]	
8001-35-2	Toxaphene	190	U

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB52AD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130633

Sample wt/vol: 30 (g/ml) G Lab File ID: FH842.D

% Moisture: 12 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
1024-57-3	Heptachlor Epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
5103-71-9	alpha-Chlordane	1.9	U
72-55-9	4,4'-DDE	3.8	U
60-57-1	Dieldrin	3.8	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	10	P
72-54-8	4,4'-DDD	3.8	U
50-29-3	4,4'-DDT	3.8 ~~13~~	U
7421-36-3	Endrin Aldehyde	7.8 ~~6.2~~	~~P~~ U
1031-07-8	Endosulfan Sulfate	3.8	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin Ketone	3.8	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	290 ~~98~~	~~U~~
8001-35-2	Toxaphene	190	U

4/22/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB52AS

Revised 4/22/97

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130630

Sample wt/vol: 30 (g/ml) G Lab File ID: FH841.D

% Moisture: 13 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
1024-57-3	Heptachlor Epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
5103-71-9	alpha-Chlordane	1.9	U
72-55-9	4,4'-DDE	3.8	U
60-57-1	Dieldrin	3.8	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
50-29-3	4,4'-DDT	3.8	U
7421-36-3	Endrin Aldehyde	3.8	U
1031-07-8	Endosulfan Sulfate	3.8	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin Ketone	3.8	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	[redacted]	230 [redacted]	
8001-35-2	Toxaphene	190	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB52AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130630

Sample wt/vol: 30 (g/ml) G Lab File ID: FH841.D

% Moisture: 13 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
1024-57-3	Heptachlor Epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
5103-71-9	alpha-Chlordane	1.9	U
72-55-9	4,4'-DDE	1.9 ~~1.0~~	~~J~~ U
60-57-1	Dieldrin	3.8	U
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
50-29-3	4,4'-DDT	3.8 ~~9.3~~	~~P~~ U
7421-36-3	Endrin Aldehyde	3.8 ~~5.1~~	~~P~~ U
1031-07-8	Endosulfan Sulfate	3.8	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin Ketone	3.8	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	230 ~~38~~	~~U~~
8001-35-2	Toxaphene	190	U

4/22/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB53AS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130635

Sample wt/vol: 30 (g/ml) G Lab File ID: FH847.D

% Moisture: 18 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
1024-57-3	Heptachlor Epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
5103-71-9	alpha-Chlordane	2.0	U
72-55-9	4,4'-DDE	27	
60-57-1	Dieldrin	4.1	U
72-20-8	Endrin	4.1	U
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	3.6	JP
50-29-3	4,4'-DDT	96	EP
7421-36-3	Endrin Aldehyde	4.1	U
1031-07-8	Endosulfan Sulfate	4.1	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin Ketone	4.1	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U
8001-35-2	Toxaphene	200	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SB53ASDL

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130635 1/10

Sample wt/vol: 30 (g/ml) G Lab File ID: FH843.D

% Moisture: 18 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
1024-57-3	Heptachlor Epoxide	20	U
959-98-8	Endosulfan I	20	U
5103-74-2	gamma-Chlordane	20	U
5103-71-9	alpha-Chlordane	20	U
72-55-9	4,4'-DDE	11	J DP
60-57-1	Dieldrin	41	U
72-20-8	Endrin	41	U
33213-65-9	Endosulfan II	41	U
72-54-8	4,4'-DDD	6.8	J DP
50-29-3	4,4'-DDT	110	DP
7421-36-3	Endrin Aldehyde	41	U
1031-07-8	Endosulfan Sulfate	41	U
72-43-5	Methoxychlor	200	U
53494-70-5	Endrin Ketone	41	U
12674-11-2	Aroclor-1016	410	U
11104-28-2	Aroclor-1221	810	U
11141-16-5	Aroclor-1232	410	U
53469-21-9	Aroclor-1242	410	U
12672-29-6	Aroclor-1248	410	U
11097-69-1	Aroclor-1254	410	U
11096-82-5	Aroclor-1260	410	U
8001-35-2	Toxaphene	2000	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBFBAR

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: 130637

Sample wt/vol: 1000 (g/ml) ML Lab File ID: FH835.D

% Moisture: _____ decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/14/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
1024-57-3	Heptachlor Epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
72-55-9	4,4'-DDE	0.10	U
60-57-1	Dieldrin	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
50-29-3	4,4'-DDT	0.10	U
7421-36-3	Endrin Aldehyde	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U
8001-35-2	Toxaphene	5.0	U

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: cas-roc Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

	EPA SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	TOT OUT
01	VBLK03	99	102	98	0
02	SBTBAT	94	96	92	0
03	SBFBAR	96	100	94	0

			QC LIMITS
SMC1	=	1,2-Dichloroethane-d4	(76-114)
SMC2	=	Toluene-d8	(88-110)
SMC3	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

AR 3/6

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS-ROC Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	TOT OUT
01	VBLK01	95	97	107	0
02	VBLK01MS	94	102	110	0
03	SB50AS	101	104	102	0
04	SB50ASMS	98	113	99	0
05	SB50ASMSD	102	108	98	0

			QC LIMITS
SMC1	=	1,2-Dichloroethane-d4	(70-121)
SMC2	=	Toluene-d8	(59-138)
SMC3	=	Bromofluorobenzene	(59-113)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: cas-roc Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Level: (low/med) MED

	EPA SAMPLE NO.	SMC1 #	SMC2 #	SMC3 #	TOT OUT
01	VBLK02	110	101	96	0
02	VBLK02MS	94	99	93	0
03	SB49AS	100	103	101	0
04	SB49ASDL	99	99	93	0
05	SB49AD	95	98	95	0
06	SB49BS	98	100	94	0
07	SB49BSMS	102	101	95	0
08	SB49BSMSD	99	97	97	0

			QC LIMITS
SMC1	=	1,2-Dichloroethane-d4	(70-121)
SMC2	=	Toluene-d8	(59-113)
SMC3	=	Bromofluorobenzene	(59-113)

3/16

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

	EPA SAMPLE NO.	S1 (2FP) #	S2 [PHL] #	S3 #	S4 #	S5 (NBZ) #	S6 (FBP) #	S7 #	S8 (TPH) #	TOT OUT
01	SBLK1	82	87	88	73	88	88	95	93	0
02	SBFBAR	87	91	94	82	94	94	94	90	0

				QC LIMITS
S1	(2FP)	=	2-Fluorophenol	(21-110)
S2	[PHL]	=	Phenol-d6	(10-110)
S3		=	2-Chlorophenol-d4	(33-110)
S4		=	1,2-Dichlorobenzene-d4	(16-110)
S5	(NBZ)	=	Nitrobenzene-d5	(35-114)
S6	(FBP)	=	2-Fluorobiphenyl	(43-116)
S7		=	2,4,6-Tribromophenol	(10-123)
S8	(TPH)	=	Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (2FP) #	S2 [PHL] #	S3 #	S4 #	S5 (NBZ) #	S6 (FBP) #	S7 #	S8 (TPH) #	TOT OUT
01	SBLK2	109	108	109	82	97	102	100	95	0
02	SBLK2MS	93	92	93	70	84	89	89	86	0
03	SB49AS	98	83	99	69	92	131 *	116	102	1
04	SB49AD	87	96	98	74	91	95	88	91	0
05	SB50ASMS	99	99	103	79	95	98	88	93	0
06	SB50ASMSD	105	104	107	80	98	101	102	101	0
07	SB49ASRE	104	82	99	67	86	131 *	108	104	1
08	SBLK3	50	47	54	49	48	61	57	72	0
09	SB50AS	75	63	73	57	58	81	78	75	0
10	SB50ASRE	74	62	72	56	58	81	78	75	0

				QC LIMITS
S1	(2FP)	=	2-Fluorophenol	(25-121)
S2	[PHL]	=	Phenol-d6	(24-113)
S3		=	2-Chlorophenol-d4	(20-130)
S4		=	1,2-Dichlorobenzene-d4	(20-130)
S5	(NBZ)	=	Nitrobenzene-d5	(23-120)
S6	(FBP)	=	2-Fluorobiphenyl	(30-115)
S7		=	2,4,6-Tribromophenol	(19-122)
S8	(TPH)	=	Terphenyl-d14	(18-137)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

GC Column (1) : DB-1701 ID: 0.32 (mm) GC Column (2) : DB-17 ID: 0.32 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	TOT OUT
01	PBLK1	104	66	100	87	0
02	SBFBAR	91	57	111	94	0

			ADVISORY QC LIMITS
TCX	=	Tetrachloro-m-xylene	(30-150)
DCB	=	Decachlorobiphenyl	(30-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

GC Column (1) : DB-1701 ID: 0.32 (mm) GC Column (2) : DB-17 ID: 0.32 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	TOT OUT
01	PBLK2	72	57	143	75	0
02	PBLK2MS	79	66	97	77	0
03	SB51ASDL	119 12 D	99 10 D	81 8 D	225 25 D*	1 0
04	SB52AS	55	64	94	50	0
05	SB52AD	55	63	71	47	0
06	SB53ASDL	104 10 D	86 8 D	72 7 D	224 22 D*	1 0
07	SB51AS	83	80	82	144	0
08	SB51ASMS	58	46	77	102	0
09	SB51ASMSD	73	65	84	118	0
10	SB53AS	70	69	85	100	0

TEB 3/4/97

			ADVISORY QC LIMITS
TCX	=	Tetrachloro-m-xylene	(30-150)
DCB	=	Decachlorobiphenyl	(30-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: SB50AS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	62	0.0	69	111	59 - 172
Benzene	62	0.0	66	106	62 - 137
Trichloroethene	62	19	64	73	66 - 142
Toluene	62	4.6	78	118	59 - 139
Chlorobenzene	62	0.0	63	102	60 - 133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	62	71	115	4	22	59 - 172
Benzene	62	70	113	6	24	62 - 137
Trichloroethene	62	72	85	15	21	66 - 142
Toluene	62	77	116	2	21	59 - 139
Chlorobenzene	62	65	105	3	21	60 - 133

8/5/0

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

_____

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SB50ASMS

Lab Name: CAS-ROC Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621 1.0MS

Sample wt/vol: 5.0 (g/ml) G Lab File ID: AQ709.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 19.2 Date Analyzed: 02/18/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
75-01-4	Vinyl chloride	12	U
75-00-3	Chloroethane	12	U
74-83-9	Bromomethane	12	U
67-64-1	Acetone	13	
75-35-4	1,1-Dichloroethene	69	
75-09-2	Methylene chloride	2	J
75-15-0	Carbon disulfide	12	U
75-34-3	1,1-Dichloroethane	5	J
78-93-3	2-Butanone	3	J
540-59-0	1,2-Dichloroethene (total)	4	J
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
71-55-6	1,1,1-Trichloroethane	21	
56-23-5	Carbon tetrachloride	12	U
71-43-2	Benzene	66	
79-01-6	Trichloroethene	64	
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
124-48-1	Dibromochloromethane	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	78	
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	15	
108-90-7	Chlorobenzene	63	
100-41-4	Ethylbenzene	3	J
1330-20-7	Xylenes (total)	6	J
100-42-5	Styrene	12	U
108-88-3	1,1,2,2-Tetrachloroethane	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB50ASMSD

Lab Name: CAS-ROC Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621 1.0MS

Sample wt/vol: 5.0 (g/ml) G Lab File ID: AQ710.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 19.2 Date Analyzed: 02/18/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
75-01-4	Vinyl chloride	12	U
75-00-3	Chloroethane	12	U
74-83-9	Bromomethane	12	U
67-64-1	Acetone	17	
75-35-4	1,1-Dichloroethene	71	
75-09-2	Methylene chloride	2	J
75-15-0	Carbon disulfide	12	U
75-34-3	1,1-Dichloroethane	4	J
78-93-3	2-Butanone	4	J
540-59-0	1,2-Dichloroethene (total)	2	J
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
71-55-6	1,1,1-Trichloroethane	16	
56-23-5	Carbon tetrachloride	12	U
71-43-2	Benzene	70	
79-01-6	Trichloroethene	72	
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
124-48-1	Dibromochloromethane	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	77	
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	15	
108-90-7	Chlorobenzene	65	
100-41-4	Ethylbenzene	6	J
1330-20-7	Xylenes (total)	20	
100-42-5	Styrene	12	U
108-88-3	1,1,2,2-Tetrachloroethane	12	U

Q1/4

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: cas-roc Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: SB49BS Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	9400	0.0	10000	106	59 - 172
Benzene	9400	0.0	9400	100	62 - 137
Trichloroethene	9400	17000	24000	74	66 - 142
Toluene	9400	1100	11000	101	59 - 139
Chlorobenzene	9400	0.0	9300	99	60 - 133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	9400	9600	102	4	22	59 - 172
Benzene	9400	9700	103	3	24	62 - 137
Trichloroethene	9400	24000	74	0	21	66 - 142
Toluene	9400	10000	95	10	21	59 - 139
Chlorobenzene	9400	8900	95	4	21	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

_____

GJ 3/6

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB49BSMS

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130626 125MS

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2957.D

Level: (low/med) MED Date Received:

% Moisture: not dec. 33.7 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1900	U
75-01-4	Vinyl chloride	1900	U
75-00-3	Chloroethane	1900	U
74-83-9	Bromomethane	1900	U
67-64-1	Acetone	1900	U
75-35-4	1,1-Dichloroethene	10000	
75-09-2	Methylene chloride	1900	U
75-15-0	Carbon disulfide	1900	U
75-34-3	1,1-Dichloroethane	1300	J
78-93-3	2-Butanone	1900	U
540-59-0	1,2-Dichloroethene (total)	1900	U
67-66-3	Chloroform	1900	U
107-06-2	1,2-Dichloroethane	1900	U
71-55-6	1,1,1-Trichloroethane	1900	U
56-23-5	Carbon tetrachloride	1900	U
71-43-2	Benzene	9400	
79-01-6	Trichloroethene	24000	
78-87-5	1,2-Dichloropropane	1900	U
75-27-4	Bromodichloromethane	1900	U
10061-01-5	cis-1,3-Dichloropropene	1900	U
10061-02-6	trans-1,3-Dichloropropene	1900	U
79-00-5	1,1,2-Trichloroethane	1900	U
124-48-1	Dibromochloromethane	1900	U
75-25-2	Bromoform	1900	U
108-10-1	4-Methyl-2-pentanone	1900	U
108-88-3	Toluene	11000	
591-78-6	2-Hexanone	1900	U
127-18-4	Tetrachloroethene	1900	U
108-90-7	Chlorobenzene	9300	
100-41-4	Ethylbenzene	260	J
1330-20-7	Xylenes (total)	1100	J
100-42-5	Styrene	1900	U
108-88-3	1,1,2,2-Tetrachloroethane	1900	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB49BSMSD

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130626 125MS

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2958.D

Level: (low/med) MED Date Received:

% Moisture: not dec. 33.7 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1900	U
75-01-4	Vinyl chloride	1900	U
75-00-3	Chloroethane	1900	U
74-83-9	Bromomethane	1900	U
67-64-1	Acetone	1900	U
75-35-4	1,1-Dichloroethene	9600	
75-09-2	Methylene chloride	1900	U
75-15-0	Carbon disulfide	1900	U
75-34-3	1,1-Dichloroethane	1200	J
78-93-3	2-Butanone	1900	U
540-59-0	1,2-Dichloroethene (total)	1900	U
67-66-3	Chloroform	1900	U
107-06-2	1,2-Dichloroethane	1900	U
71-55-6	1,1,1-Trichloroethane	1900	U
56-23-5	Carbon tetrachloride	1900	U
71-43-2	Benzene	9700	
79-01-6	Trichloroethene	24000	
78-87-5	1,2-Dichloropropane	1900	U
75-27-4	Bromodichloromethane	1900	U
10061-01-5	cis-1,3-Dichloropropene	1900	U
10061-02-6	trans-1,3-Dichloropropene	1900	U
79-00-5	1,1,2-Trichloroethane	1900	U
124-48-1	Dibromochloromethane	1900	U
75-25-2	Bromoform	1900	U
108-10-1	4-Methyl-2-pentanone	1900	U
108-88-3	Toluene	10000	
591-78-6	2-Hexanone	1900	U
127-18-4	Tetrachloroethene	1900	U
108-90-7	Chlorobenzene	8900	
100-41-4	Ethylbenzene	260	J
1330-20-7	Xylenes (total)	1200	J
100-42-5	Styrene	1900	U
108-88-3	1,1,2,2-Tetrachloroethane	1900	U

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3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: VBLK01 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0.0	54	108	59 - 172
Benzene	50	0.0	53	106	62 - 137
Trichloroethene	50	0.0	37	74	66 - 142
Toluene	50	0.0	52	104	59 - 139
Chlorobenzene	50	0.0	52	104	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 5 out of 5 outside limits

Spike Recovery: 5 out of 10 outside limits

COMMENTS: _____

_____

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK01MS

Lab Name: CAS-ROC Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: VBLK01MS

Sample wt/vol: 5.0 (g/ml) G Lab File ID: AQ707.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 02/18/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
75-00-3	Chloroethane	10	U
74-83-9	Bromomethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	54	
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	53	
79-01-6	Trichloroethene	37	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	52	
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	10	U
1330-20-7	Xylenes (total)	10	U
100-42-5	Styrene	10	U
108-88-3	1,1,2,2-Tetrachloroethane	10	U

3/6

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: cas-roc Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: VBLK02 Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	6200	0.0	6300	102	59 - 172
Benzene	6200	0.0	6100	98	62 - 137
Trichloroethene	6200	0.0	6200	100	66 - 142
Toluene	6200	0.0	6000	97	59 - 139
Chlorobenzene	6200	0.0	6000	97	60 - 133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 5 out of 5 outside limits

Spike Recovery: 5 out of 10 outside limits

COMMENTS: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02MS

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: VBLK02MS

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2948.D

Level: (low/med) MED Date Received:

% Moisture: not dec. 0 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
75-01-4	Vinyl chloride	1200	U
75-00-3	Chloroethane	1200	U
74-83-9	Bromomethane	1200	U
67-64-1	Acetone	1200	U
75-35-4	1,1-Dichloroethene	6300	
75-09-2	Methylene chloride	1200	U
75-15-0	Carbon disulfide	1200	U
75-34-3	1,1-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon tetrachloride	1200	U
71-43-2	Benzene	6100	
79-01-6	Trichloroethene	6200	
78-87-5	1,2-Dichloropropane	1200	U
75-27-4	Bromodichloromethane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
124-48-1	Dibromochloromethane	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-pentanone	1200	U
108-88-3	Toluene	6000	
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
108-90-7	Chlorobenzene	6000	
100-41-4	Ethylbenzene	1200	U
1330-20-7	Xylenes (total)	1200	U
100-42-5	Styrene	1200	U
108-88-3	1,1,2,2-Tetrachloroethane	1200	U

R 3/6

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: SB50AS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	3100	0.0	2200	71	26 - 90
2-Chlorophenol	3100	0.0	2300	74	25 - 102
1,4-Dichlorobenzene	2100	0.0	1300	62	28 - 104
N-Nitroso-Di-n-propylamine	2100	0.0	1400	67	41 - 126
1,2,4-Trichlorobenzene	2100	0.0	1600	76	38 - 107
4-Chloro-3-methylphenol	3100	0.0	2200	71	26 - 103
Acenaphthene	2100	0.0	1500	71	31 - 137
2,4-Dinitrotoluene	2100	0.0	1700	81	28 - 89
4-Nitrophenol (3100)	2100	0.0	2300	(74)110	11 - 114
Pentachlorophenol	3100	0.0	2400	77	17 - 109
Pyrene	2100	0.0	1400	67	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	3100	2300	74	4	35	26 - 90
2-Chlorophenol	3100	2400	77	4	50	25 - 102
1,4-Dichlorobenzene	2100	1400	67	8	27	28 - 104
N-Nitroso-Di-n-propylamine	2100	1400	67	0	38	41 - 126
1,2,4-Trichlorobenzene	2100	1600	76	0	23	38 - 107
4-Chloro-3-methylphenol	3100	2300	74	4	33	26 - 103
Acenaphthene	2100	1600	76	7	19	31 - 137
2,4-Dinitrotoluene	2100	1800	86	6	47	28 - 89
4-Nitrophenol (3100)	2100	2700	(87)129 *	16	50	11 - 114
Pentachlorophenol	3100	2700	87	12	47	17 - 109
Pyrene	2100	1600	76	13	36	35 - 142

refer to comments in Validation Narrative (re: spike conc. for 4 NO_2 phenol

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 1 out of 22 outside limits

COMMENTS: _____

_____

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB50ASMS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621MS

Sample wt/vol: 30 (g/ml) G Lab File ID: DL272.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200	
111-44-4	bis(-2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	2300	
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	1300	
95-50-1	1,2-Dichlorobenzene	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
95-48-7	2-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	1400	
67-72-1	Hexachloroethane	410	U
106-44-5	4-Methylphenol	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(-2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	1600	
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	2200	
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
208-96-8	Acenaphthylene	410	U
131-11-3	Dimethyl Phthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
83-32-9	Acenaphthene	1500	
99-09-2	3-Nitroaniline	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	1700	
100-02-7	4-Nitrophenol	2300	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB50ASMS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621MS

Sample wt/vol: 30 (g/ml) G Lab File ID: DL272.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
84-66-2	Diethylphthalate	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2400	
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	2200	B
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	1400	B
85-68-7	Butyl benzyl phthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	110	J
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SB50ASMSD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621MSD

Sample wt/vol: 30 (g/ml) G Lab File ID: DL273.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/01/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2300	
111-44-4	bis(-2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	2400	
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	1400	
95-50-1	1,2-Dichlorobenzene	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
95-48-7	2-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	1400	
67-72-1	Hexachloroethane	410	U
106-44-5	4-Methylphenol	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(-2-Chloroethoxy)Methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	1600	
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	2300	
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
208-96-8	Acenaphthylene	410	U
131-11-3	Dimethyl Phthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
83-32-9	Acenaphthene	1600	
99-09-2	3-Nitroaniline	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	1800	
100-02-7	4-Nitrophenol	2700	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB50ASMSD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130621MSD

Sample wt/vol: 30 (g/ml) G Lab File ID: DL273.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 19 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/01/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
84-66-2	Diethylphthalate	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2700	
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-Butylphthalate	220	JB
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	1600	B
85-68-7	Butyl benzyl phthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)Anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	110	J
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)Fluoranthene	410	U
50-32-8	Benzo(a)Pyrene	410	U
193-39-5	Indeno(1,2,3-cd)Pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)Perylene	410	U

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: SBLK2 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	2500	0.0	1700	68	26 - 90
2-Chlorophenol	2500	0.0	1800	72	25 - 102
1,4-Dichlorobenzene	1700	0.0	1000	59	28 - 104
N-Nitroso-Di-n-propylamine	1700	0.0	1000	59	41 - 126
1,2,4-Trichlorobenzene	1700	0.0	1100	65	38 - 107
4-Chloro-3-methylphenol	2500	0.0	1600	64	26 - 103
Acenaphthene	1700	0.0	1100	65	31 - 137
2,4-Dinitrotoluene	1700	0.0	1200	71	28 - 89
4-Nitrophenol (2500)	(1700)	0.0	1600	(64) 94	11 - 114
Pentachlorophenol	2500	0.0	1800	72	17 - 109
Pyrene	1700	120	1000	53	35 - 142

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: out of outside limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS: _____

Columbia Analytical Services

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2MS

Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: SBLK2MS

Sample wt/vol: 30 (g/ml) G Lab File ID: DL268.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 0 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1700	
111-44-4	bis(-2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	1800	
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	1000	
95-50-1	1,2-Dichlorobenzene	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
95-48-7	2-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	1000	
67-72-1	Hexachloroethane	330	U
106-44-5	4-Methylphenol	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(-2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	1100	
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	1600	
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
208-96-8	Acenaphthylene	330	U
131-11-3	Dimethyl Phthalate	330	U
606-20-2	2,6-Dinitrotoluene	330	U
83-32-9	Acenaphthene	1100	
99-09-2	3-Nitroaniline	830	U
51-28-5	2,4-Dinitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	1200	
100-02-7	4-Nitrophenol	1600	

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK2MS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: SBLK2MS

Sample wt/vol: 30 (g/ml) G Lab File ID: DL268.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 0 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
84-66-2	Diethylphthalate	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1800	
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	1500	B
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	1000	B
85-68-7	Butyl benzyl phthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	34	J
117-84-0	Di-n-octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID: AQ706.D Lab Sample ID: VBLK01

Date Analyzed: 02/18/97 Time Analyzed: 17:59

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: GCMS#1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK01MS	VBLK01MS	AQ707.D	19:28
02	SB50AS	130621 1.0	AQ708.D	20:07
03	SB50ASMS	130621 1.0MS	AQ709.D	20:44
04	SB50ASMSD	130621 1.0MSD	AQ710.D	21:21

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COMMENTS

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK01

Lab Name: CAS-ROC Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: VBLK01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: AQ706.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 02/18/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

R 3/6

NYSDEC Sample No.: VBLK01

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 1

Contract: EMCON
SAS No.: -- SDG No.: SB49A
Lab Sample ID: VBLK01
Lab File ID: AQ706
Date Received: --
Date Analyzed: 02/18/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown probable CO_2 (m/z 44)	2.55	43	J
2.					
3.					
4.					
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7.					
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10.					
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17.					
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22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK02

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID: R2947.D Lab Sample ID: VBLK02

Date Analyzed: 02/20/97 Time Analyzed: 11:51

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK02MS	VBLK02MS	R2948.D	12:34
02	SB49AS	130619 500	R2952.D	14:57
03	SB49ASDL	130619 2500	R2954.D	16:27
04	SB49AD	130620 1250	R2955.D	17:06
05	SB49BS	130626 125	R2956.D	17:41
06	SB49BSMS	130626 125MS	R2957.D	18:18
07	SB49BSMSD	130626 125MSD	R2958.D	18:52

COMMENTS

CT 3/6

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK02

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: VBLK02

Sample wt/vol: 4.0 (g/ml) G Lab File ID: R2947.D

Level: (low/med) MED Date Received:

% Moisture: not dec. 0 Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume 10000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
75-01-4	Vinyl chloride	1200	U
75-00-3	Chloroethane	1200	U
74-83-9	Bromomethane	1200	U
67-64-1	Acetone	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-09-2	Methylene chloride	1200	U
75-15-0	Carbon disulfide	1200	U
75-34-3	1,1-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon tetrachloride	1200	U
71-43-2	Benzene	1200	U
79-01-6	Trichloroethene	1200	U
78-87-5	1,2-Dichloropropane	1200	U
75-27-4	Bromodichloromethane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
124-48-1	Dibromochloromethane	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-pentanone	1200	U
108-88-3	Toluene	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
1330-20-7	Xylenes (total)	1200	U
100-42-5	Styrene	1200	U
108-88-3	1,1,2,2-Tetrachloroethane	1200	U

3/6

NYSDEC Sample No.: VBLK02

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) SOIL
Sample wt/vol: 4.0 (g/mL) G
Level (low/med): MED
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AP
Lab Sample ID: VBLK02
Lab File ID: R2947
Date Received: --
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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25.					
26.					
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28.					
29.					
30.					

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK03

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID: R2949.D Lab Sample ID: VBLK03

Date Analyzed: 02/20/97 Time Analyzed: 13:10

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	SBTBAT	130641 1.0	R2950.D	13:47
02	SBFBAR	130637 1.0	R2951.D	14:20

COMMENTS

_____ 3/6

_____

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK03

Lab Name: cas-roc Contract: EMCON-M

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: VBLK03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: R2949.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/20/97

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

R3/6

NYSDEC Sample No.: VBLK03

1E - VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES
Lab Code: 10145 Case No.: --
Matrix: (soil/water) WATER
Sample wt/vol: 5.0 (g/mL) ML
Level (low/med): LOW
% Moisture:
Column (pack/cap): CAP

Number TIC's found: 0

Contract: EMCON
SAS No.: -- SDG No.:SB49AD
Lab Sample ID: VBLK03
Lab File ID: R2949
Date Received: --
Date Analyzed: 02/20/97
Dilution Factor: 1.0
Concentration Units:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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20.					
21.					
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25.					
26.					
27.					
28.					
29.					
30.					

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID (Standard): AQ704.D Date Analyzed: 02/18/97

Instrument ID: GCMS#1 Time Analyzed: 16:43

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR ST	704341	9.09	3186626	10.79	2376022	17.34
	LOWER LIMIT	352171	8.59	1593313	10.29	1188011	16.84
	UPPER LIMIT	1408682	9.59	6373252	11.29	4752044	17.84
	EPA SAMPLE NO.						
01	VBLK01	641826	9.00	2993030	10.70	2217805	17.32
02	VBLK01MS	673222	9.07	3061203	10.77	2206100	17.44
03	SB50AS	541380	9.08	2573008	10.79	1798255	17.42
04	SB50ASMS	536536	9.11	2525626	10.83	1575363	17.45
05	SB50ASMSD	528829	9.11	2404995	10.83	1460504	17.47

IS1 = Bromochloromethane

IS2 = 1,4-Difluorobenzene

IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: cas-roc Contract: EMCON-MAHWA

Lab Code: 10145 Case No.: 97-2-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID (Standard): R2946.D Date Analyzed: 02/20/97

Instrument ID: GCMS#5 Time Analyzed: 11:02

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) Y N mw 3/10/97

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR ST	124066	9.76	533402	11.49	503602	17.89
	LOWER LIMIT	62033	9.26	266701	10.99	251801	17.39
	UPPER LIMIT	248132	10.26	1066804	11.99	1007204	18.39
	EPA SAMPLE NO.						
01	VBLK02	128778	9.75	667548	11.49	562492	17.90
02	VBLK02MS	133828	9.79	601597	11.51	566039	17.91
03	VBLK03	130000	9.79	618445	11.52	542600	17.91
04	SBTBAT	128297	9.78	650060	11.50	563227	17.88
05	SBFBAR	136441	9.76	603735	11.49	571761	17.91
06	SB49AS	129543	9.76	592636	11.48	561654	17.91
07	SB49ASDL	135716	9.77	608502	11.48	578114	17.87
08	SB49AD	140211	9.81	635248	11.52	586484	17.91
09	SB49BS	128710	9.78	574179	11.50	553543	17.91
10	SB49BSMS	127431	9.78	657696	11.51	579608	17.91
11	SB49BSMSD	125101	9.81	550431	11.52	542476	17.95

IS1 = Bromochloromethane

IS2 = 1,4-Difluorobenzene

IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

R 3/6

Column to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

4B

EPA SAMPLE NO.

SEMIVOLATILE METHOD BLANK SUMMARY

SBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID: DL265.D Lab Sample ID: SBLK1

Instrument ID: MS #4 Date Extracted: 02/13/97

Matrix: (soil/water) WATER Date Analyzed: 02/28/97

Level: (low/med) LOW Time Analyzed: 18:26

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBFBAR	130637	DL266.D	02/28/97

COMMENTS:

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: SBLK1

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL265.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 02/13/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(-2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
95-48-7	2-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(-2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
208-96-8	Acenaphthylene	10	U
131-11-3	Dimethyl Phthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
83-32-9	Acenaphthene	10	U
99-09-2	3-Nitroaniline	25	U
51-28-5	2,4-Dinitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
100-02-7	4-Nitrophenol	25	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: SBLK1

Sample wt/vol: 1000 (g/ml) ML Lab File ID: DL265.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: _____ decanted:(Y/N) N Date Extracted: 02/13/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
84-66-2	Diethylphthalate	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butyl benzyl phthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

NYSDEC Sample No: SBLK1

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: SBLK1
Sample wt/vol: 1000 (g/mL) ML Lab File ID: DL265
Level (low/med): LOW Date Received: --
% Moisture: Date Extracted:02/13/97
Extraction: (SepF/Cont/Sonc)SEPF Date Analyzed: 02/28/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 1 Concentration Units:
(ug/L or ug/Kg)UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	112345	Ethanol, 2-(2-butoxyethoxy)-	13.23	6.1	J N
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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30.					

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK2

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID: DL267.D Lab Sample ID: SBLK2

Instrument ID: MS #4 Date Extracted: 02/14/97

Matrix: (soil/water) SOIL Date Analyzed: 02/28/97

Level: (low/med) LOW Time Analyzed: 20:01

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK2MS	SBLK2MS	DL268.D	02/28/97
02	SB49AS	130619	DL269.D	02/28/97
03	SB49AD	130620	DL270.D	02/28/97
04	SB50ASMS	130621MS	DL272.D	02/28/97
05	SB50ASMSD	130621MSD	DL273.D	03/01/97
06	SB49ASRE	130619RE	DL280.D	03/05/97

COMMENTS:

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK2

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: SBLK2

Sample wt/vol: 30 (g/ml) G Lab File ID: DL267.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 0 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(-2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
95-48-7	2-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
106-44-5	4-Methylphenol	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(-2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
208-96-8	Acenaphthylene	330	U
131-11-3	Dimethyl Phthalate	330	U
606-20-2	2,6-Dinitrotoluene	330	U
83-32-9	Acenaphthene	330	U
99-09-2	3-Nitroaniline	830	U
51-28-5	2,4-Dinitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
100-02-7	4-Nitrophenol	830	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: SBLK2

Sample wt/vol: 30 (g/ml) G Lab File ID: DL267.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 0 decanted:(Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 02/28/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
84-66-2	Diethylphthalate	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	46	J
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	1500	
206-44-0	Fluoranthene	64	J
129-00-0	Pyrene	120	J
85-68-7	Butyl benzyl phthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	45	J
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	76	J
193-39-5	Indeno(1,2,3-cd)Pyrene	42	J
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	79	J

NYSDEC Sample No: SBLK2

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: SBLK2
Sample wt/vol: 30 (g/mL) G Lab File ID: DL267
Level (low/med): LOW Date Received: --
% Moisture: Date Extracted:02/12/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 02/28/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 24 Concentration Units:
(ug/L or ug/Kg)UG/L

CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.	Unknown	6.89	7700	J
2. 3074713	Heptane, 2,3-dimethyl-	7.15	130	JN
3. 3074779	Hexane, 3-ethyl-4-methyl-	7.21	100	JN
4.	Unknown	7.25	220	J
5.	Unknown Hydrocarbon	7.28	170	J
6. 3221612	Octane, 2-methyl-	7.33	120	JN
7.	Unknown	8.30	120	J
8.	Unknown	8.40	220	J
9.	Unknown	8.75	560	J
10.	Unknown	8.83	93	J
11.	Unknown	8.99	1100	J
12.	Unknown	9.24	760	J
13.	Unknown	10.29	380	J
14.	Unknown	11.19	120	J
15.	Unknown	11.33	150	J
16.	Unknown	11.45	78	J
17.	Unknown	11.52	220	J
18.	Unknown	11.62	200	J
19.	Unknown	12.36	90	J
20. 112345	Ethanol, 2-(2-butoxyethoxy)-	13.23	98	J
21.	Unknown	17.71	74	J
22.	Unknown	22.14	120	J
23.	Unknown	23.08	74	J
24.	Unknown Hydrocarbon	28.31	92	J
25.				
26.				
27.				
28.				
29.				
30.				

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK3

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID: DL282.D Lab Sample ID: SBLK3

Instrument ID: MS #4 Date Extracted: 03/04/97

Matrix: (soil/water) SOIL Date Analyzed: 03/05/97

Level: (low/med) LOW Time Analyzed: 13:33

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SB50AS	130621	DL283.D	03/05/97
02	SB50ASRE	130621RE	DL284.D	03/05/97

COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: SBLK3

Sample wt/vol: 30 (g/ml) G Lab File ID: DL282.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 0 decanted:(Y/N) N Date Extracted: 03/04/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(-2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
95-48-7	2-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
106-44-5	4-Methylphenol	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(-2-Chloroethoxy)Methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
208-96-8	Acenaphthylene	330	U
131-11-3	Dimethyl Phthalate	330	U
606-20-2	2,6-Dinitrotoluene	330	U
83-32-9	Acenaphthene	330	U
99-09-2	3-Nitroaniline	830	U
51-28-5	2,4-Dinitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
100-02-7	4-Nitrophenol	830	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: SBLK3

Sample wt/vol: 30 (g/ml) G Lab File ID: DL282.D

Level: (low/med) LOW Date Received: 02/12/97

% Moisture: 0 decanted:(Y/N) N Date Extracted: 03/04/97

Concentrated Extract Volume: 500 (uL) Date Analyzed: 03/05/97

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
86-73-7	Fluorene	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
84-66-2	Diethylphthalate	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-Butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butyl benzyl phthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)Anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	330	U
117-84-0	Di-n-octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)Fluoranthene	330	U
50-32-8	Benzo(a)Pyrene	330	U
193-39-5	Indeno(1,2,3-cd)Pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)Perylene	330	U

NYSDEC Sample No: SBLK3

1F - SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COLUMBIA ANALYTICAL SERVICES Contract: EMCON
Lab Code: 10145 Case No.: -- SAS No.: -- SDG No.:SB49AS
Matrix: (soil/water) SOIL Lab Sample ID: SBLK3
Sample wt/vol: 30 (g/mL) G Lab File ID: DL282
Level (low/med): LOW Date Received: --
% Moisture: Date Extracted:03/04/97
Extraction: (SepF/Cont/Sonc)SONC Date Analyzed: 03/05/97
GPC Cleanup (Y/N) pH Dilution Factor: 1.0
Number TIC's found: 9 Concentration Units:
(ug/L or ug/Kg)UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST.CONC.	Q
1.		Unknown	8.80	95	J
2.		Unknown	9.10	95	J
3.		Unknown	12.21	340	J
4.		Unknown	14.42	170	J
5.		Unknown	14.47	410	J
6.		Unknown	16.27	200	J
7.		Unknown	17.68	140	J
8.		Unknown	22.14	100	J
9.		Unknown	23.41	74	J
10.					
11.					
12.					
13.					
14.					
15.					
16.					
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27.					
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29.					
30.					

FORM I SV-TIC
NYSDEC B-78

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID (Standard): DL260.D Date Analyzed: 02/28/97

Instrument ID: MS #4 Time Analyzed: 14:29

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	37129	10.58	174618	13.48	127289	17.03
	UPPER LIMIT	74258	11.08	349236	13.98	254578	17.53
	LOWER LIMIT	18565	10.08	87309	12.98	63645	16.53
	EPA SAMPLE NO.						
01	SBLK1	35253	10.57	163923	13.47	121500	17.02
02	SBFBAR	38894	10.57	182883	13.47	135416	17.02
03	SBLK2	37503	10.57	172550	13.47	123195	17.02
04	SBLK2MS	37453	10.57	170029	13.47	121769	17.02
05	SB49AS	37069	10.58	168586	13.47	88890	17.02
06	SB49AD	40148	10.57	181744	13.47	131872	17.02
07	SB50ASMS	38725	10.58	175341	13.47	128377	17.02
08	SB50ASMSD	39064	10.58	177860	13.47	129022	17.02

IS1 (DCB) = d4-1,4-Dichlorobenzene
IS2 (NPT) = d8-Naphthalene
IS3 (ANT) = d10-Acenaphthene
IS4 (PHN) = d10-Phenanthrene
IS5 (CRY) = d12-Chrysene
IS6 (PRY) = d12-Perylene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID (Standard): DL260.D Date Analyzed: 02/28/97

Instrument ID: MS #4 Time Analyzed: 14:29

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	274356	19.82	293217	24.78	315496	28.69
	UPPER LIMIT	548712	20.32	586434	25.28	630992	29.19
	LOWER LIMIT	137178	19.32	146609	24.28	157748	28.19
	EPA SAMPLE NO.						
01	SBLK1	279916	19.81	319694	24.76	323430	28.67
02	SBFBAR	311979	19.81	351208	24.75	356884	28.67
03	SBLK2	286139	19.81	320981	24.75	287893	28.68
04	SBLK2MS	279096	19.81	313118	24.75	243785	28.68
05	SB49AS	271507	19.81	275882	24.75	22590 *	28.66
06	SB49AD	303535	19.81	341706	24.76	333927	28.68
07	SB50ASMS	296884	19.82	330228	24.76	300607	28.69
08	SB50ASMSD	301236	19.82	332795	24.76	312538	28.70

< 10% of 12 HR. STD. VALUE

IS1 (DCB) = d4-1,4-Dichlorobenzene
IS2 (NPT) = d8-Naphthalene
IS3 (ANT) = d10-Acenaphthene
IS4 (PHN) = d10-Phenanthrene
IS5 (CRY) = d12-Chrysene
IS6 (PRY) = d12-Perylene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID (Standard): DL279.D Date Analyzed: 03/05/97

Instrument ID: MS #4 Time Analyzed: 10:25

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	25378	10.54	123889	13.45	101713	16.99
	UPPER LIMIT	50756	11.04	247778	13.95	203426	17.49
	LOWER LIMIT	12689	10.04	61945	12.95	50857	16.49
	EPA SAMPLE NO.						
01	SB49ASRE	33360	10.54	148373	13.44	78837	16.99
02	SBLK3	34192	10.54	148340	13.44	112587	16.99
03	SB50AS	37944	10.54	160184	13.44	106081	16.99
04	SB50ASRE	39942	10.55	166737	13.44	106902	16.99

IS1 (DCB) = d4-1,4-Dichlorobenzene
IS2 (NPT) = d8-Naphthalene
IS3 (ANT) = d10-Acenaphthene
IS4 (PHN) = d10-Phenanthrene
IS5 (CRY) = d12-Chrysene
IS6 (PRY) = d12-Perylene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab File ID (Standard): DL279.D Date Analyzed: 03/05/97

Instrument ID: MS #4 Time Analyzed: 10:25

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	237476	19.79	246559	24.73	261857	28.64
	UPPER LIMIT	474952	20.29	493118	25.23	523714	29.14
	LOWER LIMIT	118738	19.29	123280	24.23	130929	28.14
	EPA SAMPLE NO.						
01	SB49ASRE	256771	19.78	235686	24.72	9426 *	28.60
02	SBLK3	266183	19.78	286678	24.72	263134	28.63
03	SB50AS	287731	19.79	304119	24.72	123315 *	28.62
04	SB50ASRE	291949	19.78	305119	24.72	122531 *	28.62

< 10% OF 12HR. STD. VALUE

IS1 (DCB) = d4-1,4-Dichlorobenzene
IS2 (NPT) = d8-Naphthalene
IS3 (ANT) = d10-Acenaphthene
IS4 (PHN) = d10-Phenanthrene
IS5 (CRY) = d12-Chrysene
IS6 (PRY) = d12-Perylene

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

4C

EPA SAMPLE NO.

PESTICIDE METHOD BLANK SUMMARY

PBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab Sample ID: PBLK1 Lab File ID: FH834.D

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) Y Date Extracted: 02/14/97

Date Analyzed (1) : 03/01/97 Date Analyzed (2) : 03/01/97

Time Analyzed (1) : 0115 Time Analyzed (2) : 0115

Instrument ID (1) : HP5890-F Instrument ID (2) : HP5890-F

GC Column (1) : DB-1701 ID: 0.32 (mm) GC Column (2) : DB-17 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	SBFBAR	130637	03/01/97	03/01/97

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLK2

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Lab Sample ID: PBLK2 Lab File ID: FH836.D

Matrix. (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) Y Date Extracted: 02/14/97

Date Analyzed (1) : 03/01/97 Date Analyzed (2) : 03/01/97

Time Analyzed (1) : 0222 Time Analyzed (2) : 0222

Instrument ID (1) : HP5890-F Instrument ID (2) : HP5890-F

GC Column (1) : DB-1701 ID: 0.32 (mm) GC Column (2) : DB-17 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PBLK2MS	PBLK2MS	03/01/97	03/01/97
02	SB51ASDL	130629 1/10	03/01/97	03/01/97
03	SB52AS	130630	03/01/97	03/01/97
04	SB52AD	130633	03/01/97	03/01/97
05	SB53ASDL	130635 1/10	03/01/97	03/01/97
06	SB51AS	130629	03/01/97	03/01/97
07	SB51ASMS	130629MS	03/01/97	03/01/97
08	SB51ASMSD	130629MSD	03/01/97	03/01/97
09	SB53AS	130635	03/01/97	03/01/97

COMMENTS:

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK1

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: PBLK1

Sample wt/vol: 1000 (g/ml) ML Lab File ID: FH834.D

% Moisture: _____ decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/14/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
1024-57-3	Heptachlor Epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
72-55-9	4,4'-DDE	0.10	U
60-57-1	Dieldrin	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
50-29-3	4,4'-DDT	0.10	U
7421-36-3	Endrin Aldehyde	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U
8001-35-2	Toxaphene	5.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK2

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: PBLK2

Sample wt/vol: 30 (g/ml) G Lab File ID: FH836.D

% Moisture: 0 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
1024-57-3	Heptachlor Epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
5103-71-9	alpha-Chlordane	1.7	U
72-55-9	4,4'-DDE	3.3	U
60-57-1	Dieldrin	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
50-29-3	4,4'-DDT	3.3	U
7421-36-3	Endrin Aldehyde	3.3	U
1031-07-8	Endosulfan Sulfate	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin Ketone	3.3	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
8001-35-2	Toxaphene	170	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PIBLK01

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: PIBLK01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: FH824.D

% Moisture: _____ decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/14/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
1024-57-3	Heptachlor Epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
72-55-9	4,4'-DDE	0.10	U
60-57-1	Dieldrin	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
50-29-3	4,4'-DDT	0.10	U
7421-36-3	Endrin Aldehyde	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U
8001-35-2	Toxaphene	5.0	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PIBLK02

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) WATER Lab Sample ID: PIBLK02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: FH849.D

% Moisture: _____ decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/14/97

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
1024-57-3	Heptachlor Epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
5103-71-9	alpha-Chlordane	0.050	U
72-55-9	4,4'-DDE	0.10	U
60-57-1	Dieldrin	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
50-29-3	4,4'-DDT	0.10	U
7421-36-3	Endrin Aldehyde	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U
8001-35-2	Toxaphene	5.0	U

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: SB51AS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	20	0.0	7.5	38 *	46 - 127
Heptachlor	20	0.0	8.8	44	35 - 130
Aldrin	20	0.0	8.9	45	34 - 132
Dieldrin	41	0.0	20	49	31 - 134
Endrin	41	0.0	17	45 ~~41~~	42 - 139
4,4'-DDT	41	140	88	0 *	23 - 134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	20	9.8	49	25	50	46 - 127
Heptachlor	20	12	60	31	31	35 - 130
Aldrin	20	12	60	29	43	34 - 132
Dieldrin	41	26	63	25	38	31 - 134
Endrin	41	23	56	31	45	42 - 139
4,4'-DDT	41	110	0 *	0	50	23 - 134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits

Spike Recovery: 4 out of 12 outside limits

COMMENTS: _____

_____

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SB51ASMS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130629MS

Sample wt/vol: 30 (g/ml) G Lab File ID: FH845.D

% Moisture: 18 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	7.5	P
76-44-8	Heptachlor	8.8	P
309-00-2	Aldrin	8.9	P
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
1024-57-3	Heptachlor Epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
5103-71-9	alpha-Chlordane	2.0	U
72-55-9	4,4'-DDE	33	
60-57-1	Dieldrin	20	P
72-20-8	Endrin	17	
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	2.5	JP
50-29-3	4,4'-DDT	88	EP
7421-36-3	Endrin Aldehyde	4.1	U
1031-07-8	Endosulfan Sulfate	4.1	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin Ketone	4.1	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U
8001-35-2	Toxaphene	200	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SB51ASMSD

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: 130629MSD

Sample wt/vol: 30 (g/ml) G Lab File ID: FH846.D

% Moisture: 18 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	9.8	
76-44-8	Heptachlor	12	P
309-00-2	Aldrin	12	P
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
1024-57-3	Heptachlor Epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
5103-71-9	alpha-Chlordane	2.0	U
72-55-9	4,4'-DDE	40	
60-57-1	Dieldrin	26	P
72-20-8	Endrin	23	
33213-65-9	Endosulfan II	4.1	U
72-54-8	4,4'-DDD	2.4	J
50-29-3	4,4'-DDT	110	EP
7421-36-3	Endrin Aldehyde	4.1	U
1031-07-8	Endosulfan Sulfate	4.1	U
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin Ketone	4.1	U
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	81	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U
8001-35-2	Toxaphene	200	U

3E

SOIL PESTICIDE MATRIX SPIKE BLANK RECOVERY

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix Spike - EPA Sample No.: PBLK2

COMPOUND	SPIKE ADDED (ug/Kg	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENT. (ug/Kg	BS % REC	#	QC LIMITS % REC.
gamma-BHC	17	0.0	12	71		56-123
Heptachlor	17	0.0	11	65		40-131
Aldrin	17	0.0	12	71		40-120
Dieldrin	34	0.0	27	79		52-126
Endrin	34	0.0	27	79		56-121
4-4'-DDT	34	0.0	30	88		38-127

* Values outside QC limits

Spike Recovery: 0 out of 6 outside limits.

COMMENTS: _____

_____

FORM III PEST-1

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

PBLK2MS

Lab Name: Columbia Analytical Services Contract: EMCON

Lab Code: 10145 Case No.: 9702-163 SAS No.: _____ SDG No.: SB49AS

Matrix: (soil/water) SOIL Lab Sample ID: PBLK2MS

Sample wt/vol: 30 (g/ml) G Lab File ID: FH837.D

% Moisture: 0 decanted:(Y/N) N Date Received: 02/12/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/14/97

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	12	
76-44-8	Heptachlor	11	
309-00-2	Aldrin	12	P
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
1024-57-3	Heptachlor Epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
5103-71-9	alpha-Chlordane	1.7	U
72-55-9	4,4'-DDE	0.70	JP
60-57-1	Dieldrin	27	
72-20-8	Endrin	27	
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	0.13	JP
50-29-3	4,4'-DDT	30	
7421-36-3	Endrin Aldehyde	3.3	U
1031-07-8	Endosulfan Sulfate	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin Ketone	0.52	J
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	67	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
8001-35-2	Toxaphene	170	U

APPENDIX D

THIRD PARTY DATA VALIDATION

DATA USABILITY ASSESSMENT

The purpose of the data usability assessment is to determine whether the analytical results are appropriate for drawing conclusions about the nature and extent of contamination. Data usability is determined based on the analytical reliability (determined in the data validation process) in the context of critical site contaminant issues.

Independent third-party data validation for the project was performed by Environmental Quality Associates, Inc. (EQA) of Middletown, New York. Validation was performed in accordance with the NYSDEC 1995 Analytical Services Protocol (ASP) and USEPA Region II Standard Operating Procedures (SOPs) for Organics Data Review, Inorganics Data Review, and Low-Level Volatiles Data Review. Two data validation reports were prepared for the project, one for all data samples in February and March 1997 (the majority of the project), and one for follow-up groundwater sampling of two wells performed in June 1997. These reports, and associated correspondence, are attached.

All analyses were conducted as specified in the RI/FS Work Plan (Blasland, Bouck & Lee, Inc., January 1997). Dilutions performed by the laboratory were appropriate based on the presence of target compounds.

Sporadic results were qualified as estimated ("J") due to deviations from QC specifications for calibrations and internal standard recoveries for organic fractions, and interference check samples, analytical spikes and serial dilutions for inorganics. No target compound results in site samples were qualified as unusable ("R").

The principal issue noted in the validation review was that several soil and most of the groundwater samples were analyzed for volatile organic compounds (VOCs) between eight and ten days following verified time of sample receipt (VTSR). These holding times exceeded the specified holding time of seven days between VTSR and analysis. Initially, EQA's judgement was that this excursion did not require associated qualification of all the results (i.e., only the aromatic VOCs were qualified). However, at the request of NYSDEC, all VOCs for these samples were subsequently flagged with a "J" to indicate possible low bias. Results of one additional soil sample were also qualified due to extraction beyond the specified five-day holding time.

The qualification of the affected soil and groundwater data not alter overall site conclusions. The target compounds and their general concentrations are confirmed. NYSDEC formally concluded that the data set for the project is usable in correspondence dated July 22, 1997 and September 8, 1997. Copies of these letters are inluded with this Apeendix.

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

John P. Cahill
Commissioner

July 22, 1997

LOCKHEED MARTIN
OR & SS

JUL 24 1997

Environment Safety
& Health

Patrick D. Salvador, P.E.
Principal Engineer
Lockheed Martin Corporation
P.O. Box 4840
Syracuse, New York 13221-4840

Re: Former GE Court Street 5/5A Plant (Site ID# 734070)

Dear Mr. Salvador:

The Department has reviewed Lockheed Martin's June 23, 1997 submission of a data validation package for samples collected in February and March 1997 as part of the Remedial Investigation at the Court Street 5/5A site. The Department has determined that the data obtained is useable. However, as has been discussed previously, some data have been qualified due to extraction holding time excursion. This data must be considered estimated and biased low. Specific comments on the data validation package are presented below;

1. Page 4, Holding Times
Table 2 in Appendix 1 of the Remedial Investigation/Feasibility Study Work Plan for the Court Street 5/5A site clearly specifies the maximum holding time requirement for volatile organics analysis of both soil and groundwater samples as 7 days from VTSR. This criteria must be used for data evaluation and useability determination.

2. Page 14, Holding Times - Soil Samples
Section 4.2 in Appendix 1 of the Remedial Investigation/Feasibility Study Work Plan for the Court Street 5/5A site clearly specifies that samples will be delivered to the laboratory within 24 to 48 hours. Therefore, if "from time of collection" criteria are to be used, the maximum holding time from time of collection is 7 days from VTSR + 48 hours or 9 days, and not the 10 day "from time of collection" criteria used in the validation report.

3. Page 14, Holding Times - Aqueous Samples
The NYSDEC holding time for unpreserved (i.e. without HCL) aqueous samples is 7 days from VTSR for both purgeable aromatics and purgeable halocarbons.

Lockheed Martin's cover letter submitting the data validation package requested that both NYSDEC and USEPA review the package and provide a written useability determination. The data validation package has been provided to USEPA. However, USEPA has declined to provide comment. It is USEPA's prerogative as to whether the agency will review such deliverables within its Onondaga Lake oversight role.

If you have any questions, feel free to contact me at (518) 457-1641.

Sincerely,

Alyse Peterson
Environmental Engineer
Bureau of Central Remedial Action
Division of Environmental Remediation

cc: R. Heerkens (NYSDOH)
A. Hess (USEPA)

Lockheed Martin Ocean, Radar & Sensor Systems
Post Office Box 4840 Syracuse, NY 13221-4840

LOCKHEED MARTIN

September 16, 1997

Ms. Alyse Peterson
Environmental Engineer
Bureau of Central Remedial Action
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010

Re: Remedial Investigation - Data Validation
Former GE Court Street 5/5A Site
Town of Dewitt, Onondaga County, New York
NYSDEC Site No. 734070

Dear Ms. Peterson:

In a July 22, 1997 letter, the New York State Department of Environmental Conservation (NYSDEC) determined that the data from the Remedial Investigation (RI) samples collected in February and March 1997 at the Former GE Court Street 5/5A Site are useable. In addition, the NYSDEC provided Lockheed Martin Corporation (LMC) with three specific comments on the data validation package prepared by Environmental Quality Associates, Inc. (EQA). LMC's response to each of those comments is as follows:

Response to NYSDEC Comment No. 1: As indicated by NYSDEC, Table 2 of Volume 1 (Field Sampling Plan) of Appendix 1 (Sampling and Analysis Plan) of the RI/FS Work Plan specifies the maximum holding time requirement for volatile organic compound (VOC) analysis of soil and groundwater samples as seven (7) days from the verifiable time of sample receipt (VTSR). However, data validation and qualification is discussed in Volume 2 (Quality Assurance Project Plan) of Appendix 1 of the RI/FS Work Plan. The QAPP specifies that samples analyzed beyond the specified holding times (seven days from VTSR for VOC's) will be qualified. Therefore, LMC acknowledges NYSDEC's comment and the results will be qualified as estimated.

Response to NYSDEC Comment No. 2: As discussed above, LMC acknowledges the requirement of the RI/FS Work Plan to qualify VOC results from soil samples which were analyzed more than seven (7) days from VTSR. These results will be qualified as estimated with potential negative bias suggested.

Response to NYSDEC Comment No. 3: As discussed above, LMC acknowledges the requirement of the RI/FS Work Plan to qualify VOC results from groundwater samples which were analyzed more than seven (7) days from VTSR. These results will be qualified as estimated with potential negative bias suggested.

In response to the NYSDEC's July 22, 1997 letter, LMC requested EQA to consider NYSDEC's comments. As a result, EQA revised page 4 and page 14 of the May 30, 1997 validation report. A copy of the revised data validation report, dated September 3, 1997, is enclosed. This revised validation report will be used for the preparation of the RI Report.

Please contact me at (315) 456-3199 if you have any questions or require additional information.

Sincerely,

Patrick D. Salvador

Patrick D. Salvador, P.E.
Principal Engineer

Enclosure

cc: Robert K. Davies, Esq. - NYSDEC (without enclosure)
Sandra Lee Fenske, Esq. - Lockheed Martin (without enclosure)
Henriette Hamel - Bureau of Environmental Exposure Investigation, NYSDOH (with enclosure)
Kenneth P. Lynch, Esq. - NYSDEC Director, Region 7 (without enclosure)
Virginia C. Robbins, Esq. - Bond, Schoeneck & King, LLP (with enclosure)

Environmental Quality Associates, Inc.
Specialists in Data Validation and Quality Assurance

September 3, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corporate Center
One International Boulevard, Suite 700
Mahwah, New Jersey 07495

Re: Data Validation Report for Lockheed-Martin / Court Street 5/5A; Project No. 86143-001.000

Dear Mr. Taylor,

We are pleased to submit to EMCON, under cover of this letter, our Data Validation Reports (DVR) for Laboratory Submission Nos. 9702000163 and 9703000158 pertaining to the above referenced Site. These data deliverables encompass laboratory Sample Delivery Group (SDG) Nos. SB49AS, MW2D, GW10S and GW14S. Please note that this DVR was revised on 8/18/97, to incorporate the issues addressed in NYSDEC's letter dated July 22, 1997 (Alyse Peterson to Patrick salvador) in regards to Volatiles holding time requirements contained in the site Work Plan.

The associated samples were analyzed by Columbia Analytical Services, Inc., Rochester, New York. The aqueous samples were analyzed for Low-level Volatiles, Semi-volatiles and Total / Dissolved Metals, and the soil samples for Volatiles, Semi-volatiles and Polychlorinated biphenyls per NYSDEC 1995 Analytical Services Protocols. All samples were reviewed and validated in accordance with the above noted protocols, QA guidelines and QC requirements, in conjunction with guidance set forth in USEPA Region II's SOP for Organics Data Review [1] and Inorganics Data Review [2].

The DVR is compiled in the following format:

1) A Cover Page, summarizing SDG#, associated samples and IDs, sample matrix, collection and VTSR dates, and testing performed.
2) An Organics Review Summary, detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer.
3) An Inorganics Review Summary,detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer. (Please note that data qualifiers applied have been entered on the associated sample Form Is.
4) Summary Tables detailing specific areas of evaluation.

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[1] USEPA Region II, SOP No. HW-6, Revision #11, June, 1996
[2] USEPA Region II, SOP No. HW-2, Revision #11, January 1992

5) Laboratory Case Narrative and Sample Summary Sheets, Form Is, and any other SDG Forms / data which have been corrected, qualified or modified from the original SDG.

We trust that the enclosed DVR satisfies your data validation needs and expectations for this phase of the project, and we look forward to fulfilling EMCON's requirements for similar projects in the future. Should you have any questions regarding the contents of this report, please do not hesitate to contact me.

Very truly yours,
Environmental Quality Associates, Inc.

Chris W. Taylor
Vice President

CWT/sr

encl.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Sample Summary SDG No. SB49AS

Lab. ID No.	Sample ID	Matrix	Date Collected	VTSR	Analysis
130619	SB49AS	soil	2/11/97	2/12/97	NYSDEC 95-1, 95-2
130620	SB49AD	soil	2/11/97	2/12/97	NYSDEC 95-1, 95-2
130621	SB50AS	soil	2/11/97	2/12/97	NYSDEC 95-1, 95-2
130626	SB49BS	soil	2/11/97	2/12/97	NYSDEC 95-1
130629	SB51AS	soil	2/10/97	2/12/97	NYSDEC 95-3 (PCBs only)
130630	SB52AS	soil	2/10//97	2/12/97	NYSDEC 95-3 (PCBs only)
130633	SB52AD	soil	2/10//97	2/12/97	NYSDEC 95-3 (PCBs only)
130635	SB53AS	soil	2/10//97	2/12/97	NYSDEC 95-3 (PCBs only)
130637	SBFBAR	water	2/10/97	2/12/97	NYSDEC 95-1, 95-2, 95-3 (PCBs)
130641	SBTBAT	water	2/11/97	2/12/97	NYSDEC 95-1

Organics Review Summary

This section applies to Volatile, Semi-volatile and PCB analyses performed under NYSDEC ASP 95-1, 95-2 and 95-3 methodologies, for soil samples in SDG No. SB49AS. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times
3) Sample Preparation / GPC (Semi-volatiles & PCBs)
4) GC/MS Tuning (Volatiles & Semi-volatiles)
5) Calibration (Initial and Continuing)
6) Blanks
7) Surrogate Recovery
8) Matrix Spike / Matrix Spike Duplicate/ Blank Spike Recovery
9) Internal Standard Recovery (Volatiles & Semi-volatiles)
10) Compound Identification and Quantitation
11) Non-Target Compounds (Volatiles & Semi-volatiles)
12) Instrument Detection Limits
13) Raw Data
14) Calculations and Data Transcription / Reporting

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The Data Package for Volatile Organics Analysis was complete as received.

Holding Times

The following samples were analyzed eight days from laboratory sample receipt (VTSR), which exceeds the holding time requirement for soil samples stated in the RI / FS work Plan of seven days from VTSR to analysis. Results for these samples are considered estimated, and were 'J' qualified. Potential negative bias is suggested for these samples. ***SB49AS, SB49AD, SB49BS, SBFBAR, SBTBAT.***

GC/MS Tuning

All BFB ion abundance ratios were within method-specified limits. All samples were analyzed within 12 hours of associated performance standard injection. Reported results were checked and verified from the raw data.

Calibration

The %RSDs and response factors (RF) for the low-level soils method (heated purge) Initial Calibration (ICAL) performed 2/18/97 on GCMS#1were within specified limits, with the exception of **1,1,2,2-tetrachloroethane**, which exhibited an average RF of 0.202, below the method requirement of 0.500 for this compound. No qualifiers were applied, since validation guidelines allow a minimum RF of 0.050.

The %D for 1,1,2,2-tetrachloroethane in the Continuing Calibration (CCAL) performed 2/18/97 on GCMS#1 (file AQ704.D) was > |25%| (at -27%); **1,1,2,2-tetrachloroethane** results for sample **SB50AS** are considered **estimated** and were '**J**' qualified.

The %RSDs and response factors (RF) for the aqueous and medium-level soils method (ambient purge) ICAL performed 2/6/97 on GCMS#5 were within specified limits.

The %D for compounds **2-butanone** and **2-hexanone** in the CCAL performed 2/20/97 on GCMS#5 (file R2946.D) were > |25%| (at -55% and -34%, resp.);results for these compounds in samples **SBTBAT, SBFBAR, SB49AS, SB49ASDL, SB49AD and SB49BS** are considered **estimated** and were **'J'** qualified. It is noted that these two compounds were not detected in samples; the reported detection limits are potentially affected by this excursion, with positive bias suggested.

Response factor, %RSD and %D for one target compound per each internal standard were verified for each calibration event; please refer to the attached summary tables titled "Verification of VOA Calibration Parameters". Compounds present in associated samples (e.g., trichloroethene, 1,1-dichloroethane) were selected for calibration parameter verification.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Blanks
Method Blanks (VBLK) 01 (low-level soil), 02 (medium-level soil; methanol extraction) and 03 (aqueous) were free of target analytes above their respective established detection limits. VBLK01 exhibited a non-target compound at 2.55 minutes retention time; this compound was not detected in any associated samples.

The Trip and Field Blanks associated with this sampling event were free of target analytes above their respective established detection limits. The Trip Blank (SBTBAT) exhibited a non-target (unknown) compound at 6.81 minutes, with estimated concentration of 6 ug/L; this unknown was not present in other samples.

System Monitor Compound Recovery
All system monitor compound recoveries were within acceptable limits in all reported samples. One surrogate value from each sample was re-calculated and verified; results are contained in the attached summary table titled "Verification of Volatile System Monitor Compound Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery
Matrix spike recovery and precision for SB50AS -MS and -MSD (low-level method) and SB49BS -MS and -MSD (medium-level, methanol extraction method) were within acceptable limits. Blank Spike recoveries for both low- and medium-level methods were also within acceptable limits. Recoveries were verified for all compounds; results are contained in the attached summary table titled "Verification of Volatile Spike Recovery".

Internal Standard Recovery
Recoveries of all internal standard compounds were within acceptable limits; internal standard RTs for all samples were within limits. Reported values were checked and verified at the 100% level.

Compound Identification and Quantitation
All reported concentrations (as qualified) and identifications were in conformance with method requirements.

Non-Target Compounds
Several non-target compounds were present in sample SB49AS, with estimated concentrations between 10,000 and 21,000 ug/Kg. This sample also exhibited significant levels of target compounds.

Instrument Detection Limits
Detection limits for all reported method compounds were below NYSDEC-ASP established CRQLs.

Calculations and Data Transcription / Reporting
Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Sample Dilutions
Samples SB49AS, SB49AD and SB49BS were analyzed by the medium-level (methanol extraction) method, due to high concentrations of several target compounds. Sample SB49AS was reanalyzed at a further 5x dilution due the presence of trichloroethene above calibrated range.

Raw Data
Raw data contained within the SDG were found to be complete as received, except as noted herein.

Semi-volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness
The Data Package for Semi-volatile Organics Analysis was complete as received.

Holding Times
Reported samples were extracted within three days of collection, with the exception of sample **SB50AS**, which was lost during GPC cleanup (see Laboratory Narrative for details) and subsequently re-extracted. The extraction of sample SB50AS was performed on 3/4/97, 21 days after sample collection (2/11/97), with analysis performed on 3/5/97. All samples were analyzed within 20 days from extraction, which is compliant with both the technical and contractual holding time requirements of 40 days from collection to analysis.

Reported results for samples **SB50AS** and **SB50ASRE** are considered **estimated**, and were '**J**' qualified due to extraction holding time excursion. Low bias for positive compounds, and the possibility of false negatives are suggested. The reported values should be considered as the minimum concentrations likely to be present.

Sample Preparation / GPC
Extraction logs and GPC calibration / recovery data were reviewed from the raw data; calibration results were acceptable, and no anomalies were noted between raw and reported data.

GC/MS Tuning
All DFTPP ion abundance ratios were within method-specified limits. All samples were analyzed within 12 hours of associated performance standard injection. Reported results were checked and verified from the raw data.

Calibration

The %RSDs and response factors (RF) for the ICAL performed 2/28/97 on MS#4 were within acceptable validation limits of <30% and >/= 0.05, respectively, and within contractual limits as specified in NYSDEC ASP Method 95-2. The mid-level calibration from the 2/28 ICAL (File ID: DL260.D) was utilized as the CCAL for the associated analytical sequence; all %Ds and RFs were within validation limits of <|25|% and >/= 0.05, respectively, and within specified contractual limits.

The %D for compounds **2,2'-oxybis(1-chloropropane)**, **N-nitroso-di-n-propylamine**, **nitrobenzene**, **isophorone**, **hexachlorobutadiene**, **2-nitroaniline**, **4-nitrophenol** and **nitrobenzene-d5** (surrogate) in the CCAL performed 3/5/97 on MS#4 (file DL279.D) were > |25%| (see raw data pp. 416, 417 for actual values). Results for these compounds in samples **SB49AS-RE, SB50AS and SB50AS-RE,** are considered **estimated** and were **'J'** qualified. It is noted that these compounds were not detected in samples; the reported detection limits are potentially affected by this excursion, with positive bias suggested.

Response factor, %RSD and %D for one target compound (or surrogate) per each internal standard were verified for each calibration event; please refer to the attached summary table titled "Verification of SVOA Calibration Parameters".

Blanks

Method Blank SBLK1 (aqueous; extracted 2/13/97) exhibited a non-target compound at 13.23 minutes retention time (RT); this compound was also detected in associated sample SBFBAR (Field Blank). This compound was negated in the field blank due to concentration, RT and spectral match with SBLK1.

Method Blank **SBLK2** (soil; extracted 2/14/97) exhibited the presence of target compounds **phenanthrene**, **di-n-butylphthalate**, **fluoranthene**, **pyrene**, **benzo(b)fluoranthene**, **benzo(a)pyrene**, **indeno(1,2,3-cd)pyrene** and **benzo(g,h,i)perylene**, at 46 J, 1500, 64 J, 120 J, 45 J, 76 J, 42 J and 79 J ug/Kg, respectively. **Twenty-four non-target compounds were present, with RTs between 6.89 and 28.31 minutes**. Non-targets with reasonable RT and spectral matches in associated (i.e., soil) samples with concentrations < 5x SBLK2 concentrations were rejected '**R**' and red-lined on the applicable sample Form 1 SV-TIC.

Method Blank **SBLK3** (soil; extracted 3/4/97) **exhibited the presence of nine non-target compounds, with RTs between 8.80 and 23.41 minutes.** Non-targets with reasonable RT and spectral matches in associated samples with concentrations < 5x SBLK2 concentrations were rejected '**R**' and red-lined on the applicable sample Form 1 SV-TIC. It is noted that several of the non-target compounds which were 'B' qualified by the laboratory (as present in the associated Method Blank) were poor spectral matches. The B qualifiers in these instances were red-lined out, and the compounds are considered as present in the native samples.
The **Field Blank** associated with this sampling event contained 1.5 ppb of **bis(2-ethylhexyl)phthalate (b2ehp)**, with Action Level (AL) of 7.4 ppb. The reported concentrations of b2ehp were negated in all samples, and changed to undetected at the appropriate sample CRQL, since all samples contained < AL of b2ehp.

Surrogate Recovery

Surrogate compound recoveries were within acceptable limits, with the exception of **2-fluorobiphenyl** in samples **SB49AS** and **SB49ASRE** (131 and 131%, resp., vs. 115% high limit). No data qualification was required, since all base/neutral compounds in both samples were non-detects.

It is noted that the surrogate recoveries from the spike and spike-duplicate of sample SB50AS were significantly higher than those of the sample and sample re-analysis. The spiked samples were extracted on 2/14/97; the sample on 3/4/97. This variation is unexplained, but may be due to sample heterogeneity caused by different sub-sampling times.

One surrogate value from each sample was re-calculated and verified; results are contained in the attached summary table titled "Verification of Semi-volatile Surrogate Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery

Matrix spike recovery and precision for SB50AS -MS and -MSD were within acceptable limits. Blank Spike recoveries were within acceptable limits. It is noted that the reported recovery for compound 4-nitrophenol in SB50AS MSD was outside acceptable range (129% vs. 114%); however, the listed spike concentration of 2100 ug/Kg corresponds to a 100 ng spiking level, as opposed to the 150 ng level required for acid (phenolic) compounds. The reviewer has assumed that the spike solution was made correctly, and that the "spike added" concentration given on Form 3 is incorrect; this was verified with the laboratory by reviewing the spike standard solution certification. Calculated on the basis of correct spike added concentration (i.e. 150 ng), the spike recoveries for 4-nitrophenol in (SB50AS)-MS and -MSD are 74 and 87%, resp., vs. reported recoveries of 110 and 129% . The same anomaly is noted for the SBLK2 Blank Spike; the correct recovery of 4-nitrophenol is 66%, vs. 94% reported.

Recoveries were verified for all compounds; results are contained in the attached summary tables titled "Verification of Semi-volatile Spike Recovery".

Internal Standard Recovery

Recoveries of internal standard (IS) **perylene-d12** were **below 50% of the associated CCAL response** in samples **SB49AS, SB49ASRE, SB50AS and SB50ASRE**; perylene-d12 response in **SB49AS and SB49ASRE** was **below 10% of the associated CCAL, at 7% and 3.5%**, respectively. Results for the following target compounds, associated with IS perylene-d12 in samples **SB50AS** and **SB50ASRE** are considered **estimated**, and were '**J**' qualified: di-n-octyl phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)- pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene. **Results for these same compounds were rejected 'R' in samples SB49AS and SB49ASRE, due to extremely low IS response.** It is noted that the laboratory was contractually compliant in re-analyzing these samples; the cause of the low IS response is unexplained, and may be attributable to sample matrix interference.

Compound Identification and Quantitation
All reported concentrations (as qualified) and identifications were in conformance with method requirements.

Non-Target Compounds
Non-target compounds were present in all samples, characterized typically as straight-chain and branched hydrocarbons, with estimated concentrations ranging from several hundred to several thousand ug/Kg.

Instrument Detection Limits
Detection limits for all reported method compounds were below NYSDEC-ASP established CRQLs.

Calculations and Data Transcription / Reporting
Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

PCB Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness
The PCB chromatograms did not exhibit appropriate scaling for Aroclor standards, which prohibited a precise review of sample chromatograms, since the peak heights typically were app. 10% of full-scale range. Method requirements mandate that the peak heights of standards and samples for multi-component compounds be between 25 and 100% of full-scale; this is due to the fact that identification of PCBs (Aroclors) relies heavily on pattern-recognition techniques in addition to a mere matching of peak retention times. The various Aroclors exhibit significantly different peak-height ratios from one another, which can only be properly discerned when the peaks are correctly scaled on the chromatogram(s). The laboratory was contacted and requested to re-scale the standards and sample chromatograms on an expanded retention time axis between 10 and 20 minutes, in order to allow apppropriate confirmation of reported data. It is noted that no PCBs were reported at > MDL levels in project samples; since a large number of peaks were present in the samples within applicable Aroclor retention time regions, and the quantitation software displayed RTs only for calibrated compounds, an expanded RT scale is necessary to enable recognition of potential Aroclor patterns. Please refer to further comments below under 'Compound Identification and Quantitation'.

Re-scaled chromatograms for Aroclor standards and samples were received via fax on 4/21/97. Review of these chromatograms indicated the presence of Aroclor 1260 in samples SB52AS and SB52AD; peakheights of the major peak @ 16.97 minutes in the above-noted samples were ~ 4x that of the corresponding standard peak. The laboratory was again contacted and requested to re-quantitate the affected samples and report the associated Aroclor 1260 concentrations. It is noted that RTs for both samples were within established windows.

Holding Times
All samples were extracted on 2/14/97, and analyzed on 3/1/97, which is compliant with the technical holding time requirements of seven days from collection to extraction and 40 days from extraction to analysis, and also meets the NYSDEC-ASP contractual holding time requirements.

Sample Preparation / GPC & Florisil Cleanup
GPC calibration and GPC / Florisil recovery results were acceptable, based upon review of the raw data.

Calibration
Method calibration requirements were performed for all TCL analytes. Although only PCBs were analyzed for, per project Work Plan, full method calibration requirements are necessary in order to evaluate GC system performance, including peak resolution, compound breakdown and detector linearity. The method requires that PCBs be calibrated at only one level, and assumes response linearity ; the establishment of linear response (i.e., < 20% RSD) for the single-peak pesticides thus becomes a critical indicator of system performance acceptability. All calibration QC acceptance parameters were met, with the exception of α - BHC and Aldrin %RSDs on Column 2 (DB-17); no data qualification was necessary due to these excursions.

Blanks
Method and instrument blanks were free of target analytes at levels greater than one-half analyte CRDLs.

Surrogate Recovery
Surrogate recoveries in all samples, blanks and standards were within acceptable advisory recovery range of 30 to 150%, with the exception of the 10x dilutions of samples SB51AS and SB53AS, in which surrogate decachlorobiphenyl (DCBP) was outside range (@ 218%) in both (- DL) runs. Since recoveries were acceptable in the initial (undiluted) analyses, results are considered acceptable and unqualified. Surrogate recoveries from each sample were re-calculated and verified; results are contained in the attached summary table titled "Verification of Pest-PCB Surrogate Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery
Recoveries for 4,4'-DDT were negative in both the spike and spike duplicate of sample SB51AS; this is likely due to native sample DDT concentration of 140 (E) ug/Kg, against DDT spike added concentration of 40 ug/Kg. Also, the recovery of γ - BHC in the -MS was below the acceptable limit (38% vs. 46%). Since Blank Spike recoveries for all compounds, including DDT and γ - BHC were well within acceptable limits, the low recovery of γ - BHC in the -MS and absent recoveries of DDT in both -MS and -MSD are likely attributable to concentration and/or matrix suppression effects. It is noted that Endrin recovery in the -MS was reported as 38% ; recalculation from the raw data (column 2 produced the lower result) produced a value of 45%, which is within acceptable recovery range (42 - 139%). The value was corrected on Form 3F (p. 496). Spike recoveries were verified for all compounds; results are contained in the attached summary table titled "Verification of Pest-PCB Spike Recovery".

Compound Identification and Quantitation

It is noted that the peaks selected for PCB quantitation in the calibration standards, especially in 1016, 1232, 1242 and 1248, are not unique to a particular Aroclor, i.e., common peaks are used. As an example, the peak at RT 11.89 minutes is used in Aroclors 1016, 1232, 1242 and 1248. PCB analytical requirements mandate that if more than one multicomponent analyte is observed in a sample, different peaks must be chosen for quantitation of each analyte. During calibration of individual Aroclors, the common quant peaks will not cause difficulty, since a known, single compound is being analyzed. However, since unknown samples often exhibit the presence of more than one Aroclor, different peaks should be chosen for calibration. Chromatographic conditions should be selected to provide greater RT separation between the Aroclor series, such that discrete RT bands unique to a particular compound are produced. This is of particular importance for the multi-component analytes, which rely heavily on pattern-recognition techniques for qualitative verification.

It is noted that the laboratory reported PCB (Aroclor) results for all samples as not-detected at the quantitation levels listed on associated Form 1s (i.e., < 33 ug/Kg wet weight, adjusted upwards for % moisture). Based upon examination of revised (re-scaled) chromatograms, Aroclor 1260 was determined by the reviewer to be present in samples SB52AS and SB52AD, at levels significantly above the calibration standard concentration. The laboratory was contacted on 4/21/97 and requested to correct and re-submit the associated Form 1s for these samples. As was noted above, the RTs for Aroclor 1260 peaks present in both samples were well within the established RT windows for this compound; however, the sample quant reports (see pp. 511-512 and 514-515) did not call the peaks as AR1260. The existing calibration method and chromatography software parameters should be evaluated and corrected by the laboratory in order to properly recognize and quantitate the Aroclors, and all other target analytes.

Re-quantitated results for samples SB52AS and SB52AD were received from the laboratory via fax on 4/22/97; Aroclor 1260 results for these samples were 220 and 290 ug/Kg, respectively. Revised results and associated data are appended to the original results forms, and the original forms were corrected by the reviewer to reflect actual AR1260 results.

Instrument Detection Limits

Detection limit studies were performed for both GC columns; results for all applicable analytes were below the maximum values specified in NYSDEC-ASP Exhibit C (Target Compound Lists and Contract Required Quantitation Limits).

Calculations and Data Transcription / Reporting

Reported results were recalculated and verified from the raw data; unless noted elsewhere in this report, no discrepant items were discovered.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Sample Summary SDG Nos. MW2D, GW10S, GW14S

Lab. ID No.	Sample ID	Matrix	Date Collected	VTSR	Requested Analysis
134564	MW16S	water	3/11/97	3/12/97	NYSDEC 95-4
134565	MW16D	water	3/11/97	3/12/97	NYSDEC 95-4
134566	MW8S	water	3/11/97	3/12/97	NYSDEC 95-4 Note: rec'd. broken
134567	MW3D	water	3/11/97	3/12/97	NYSDEC 95-4
134568	MW3S	water	3/11/97	3/12/97	NYSDEC 95-4
134569	MW2D	water	3/11//97	3/12/97	NYSDEC 95-4
134570	TB01	water		3/12/97	NYSDEC 95-4
134868	GW01DS	water	3/12/97	3/13/97	NYSDEC 95-4
134869	GW05DS	water	3/12/97	3/13/97	NYSDEC 95-4
134871	GW015S	water	3/12/97	3/13/97	NYSDEC 95-4
134876	GW010S	water	3/12/97	3/13/97	TAL Metals, Total
134880	GW010S	water	3/12/97	3/13/97	TAL Metals, Dissolved
134870	GW17SS	water	3/12/97	3/13/97	NYSDEC 95-4
134872	GW17DS	water	3/12/97	3/13/97	NYSDEC 95-4
134873	GW013S	water	3/12/97	3/13/97	NYSDEC 95-4
134877	GW07SS	water	3/12/97	3/13/97	NYSDEC 95-4, 95-2, Metals (Total)
134881	GW07SS	water	3/12/97	3/13/97	TAL Metals, Dissolved
134878	GW07SD	water	3/12/97	3/13/97	NYSDEC 95-4, 95-2, Metals (Total)
134882	GW07SD	water	3/12/97	3/13/97	TAL Metals, Dissolved
134874	GW08SS	water	3/12/97	3/13/97	NYSDEC 95-4
134879	GWFB1R	water	3/12/97	3/13/97	NYSDEC 95-4, 95-2, Metals (Total)
134883	GWFB1R	water	3/12/97	3/13/97	TAL Metals, Dissolved
134875	GWTB2T	water		3/13/97	NYSDEC 95-4
135096	OF001S	water	3/13/97	3/14/97	NYSDEC 95-4
135097	OF001D	water	3/13/97	3/14/97	NYSDEC 95-4
135098	SW004S	water	3/13/97	3/14/97	NYSDEC 95-4
135099	OF002S	water	3/13/97	3/14/97	NYSDEC 95-4
135100	SW006S	water	3/13/97	3/14/97	NYSDEC 95-4
135101	GW014S	water	3/13/97	3/14/97	NYSDEC 95-4
135102	GW18SS	water	3/13/97	3/14/97	NYSDEC 95-4
135103	GW18DS	water	3/13/97	3/14/97	NYSDEC 95-4
135104	GW06DS	water	3/13/97	3/14/97	NYSDEC 95-4
135108	GW012S	water	3/13/97	3/14/97	NYSDEC 95-4, 95-2, Metals (Total)
135110	GW012S	water	3/13/97	3/14/97	TAL Metals, Dissolved
135105	OFTB3T	water		3/14/97	NYSDEC 95-4

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Sample Summary (cont'd.) ...

Lab. ID No.	Sample ID	Matrix	Date Collected	VTSR	Requested Analysis
135116	SS01DS	soil	3/13/97	3/14/97	NYSDEC 95-1, TOC
135118	SS01US	soil	3/13/97	3/14/97	NYSDEC 95-1
135119	SS01UD	soil	3/13/97	3/14/97	NYSDEC 95-1
135121	SS02DS	soil	3/13/97	3/14/97	NYSDEC 95-1, TOC
135123	SS02US	soil	3/13/97	3/14/97	NYSDEC 95-1
135426	GW010S	water	3/14/97	3/15/97	NYSDEC 95-4
135425	GW011S	water	3/14/97	3/15/97	NYSDEC 95-4, Metals (Total)
135428	GW011S	water	3/14/97	3/15/97	TAL Metals, Dissolved
135427	GWTB4T	water	3/14/97	3/15/97	NYSDEC 95-4

Organics Review Summary

This section applies to Volatile and Semi-volatile analyses performed under NYSDEC ASP 95-1, 95-2 and 95-4 methodologies, respectively. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times
3) Sample Preparation / GPC (Semi-volatiles)
4) GC/MS Tuning
5) Calibration (Initial and Continuing)
6) Blanks
7) Surrogate Recovery
8) Matrix Spike / Matrix Spike Duplicate/ Blank Spike Recovery
9) Internal Standard Recovery
10) Compound Identification and Quantitation
11) Non-Target Compounds
12) Instrument Detection Limits
13) Raw Data
14) Calculations and Data Transcription / Reporting

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The Data Package for Volatile Organics Analysis for soil samples (NYSDEC 95-1) did not include raw QC data (tunes, blanks and spikes); the laboratory was contacted by phone on 4/23/97 and the missing data requested; the raw QC data were received by mail on 4/26/97. Also, the chain-of-custody indicated that both vials for VOA analysis of sample MW8S (Lab ID: 134566) were received broken.

Holding Times

All aqueous samples, with the exception of GW2B2T, GW012S, GW011S and GW011S-DL, were analyzed beyond the seven day from VTSR holding time; all aqueous sample results, with the exception of those noted above, are therefore considered estimated, and were 'J' qualified. Potential negative bias is suggested for these samples.

Positive results should be considered as the minimum levels present in the samples.

GC/MS Tuning

All BFB ion abundance ratios were within method-specified limits. All samples were analyzed within 12 hours of associated performance standard injection. Reported results were checked and verified from the raw data. It is noted that the m/z abundance ratios reported on Form 5 for 3/20, 3/21, 3/22 and 3/23 for GCMS#5, and 3/24 for GCMS#1, varied slightly from the raw data; correct ratios were entered manually on Form 5s when the difference between reported and raw values exceeded 0.5%.

Calibration

Soils

The %RSDs and response factors (RF) for the low-level soils method (heated purge) Initial Calibration (ICAL) performed 3/23/97 on GCMS#1 for SDG # GW14S were within specified limits. The %Ds and RFs for the low-level soils Continuing Calibration (CCAL) on 3/24/97 (File ID: ZA253.D) were within acceptable limits. No calibration-related qualifiers were necessary for soil samples in this SDG.

Aqueous (low-level)

The %RSDs for the low-level aqueous method (ASP 95-4) ICAL performed 3/19/97 on GCMS#5 for SDG #s MW2D and GW14S were within specified limits. Average RF values for acetone and 2-butanone were below the validation limit of 0.050, at 0.028 and 0.048, respectively. Although only positive results for these compounds require qualification in associated samples, this action was superseded by subsequent similar low response in the CCALs of 3/20, 3/21, 3/22 and 3/23/97. Refer to the narrative on CCALs below.

The RF values for compounds acetone and 2-butanone in the CCALs of 3/20, 3/21, 3/22 and 3/23/97 on GCMS#5 (file IDs R3473, 3484, 3496, 3505, 3515 and 3526, resp.) were below the validation level of 0.050; results for these compounds in all samples run under these CCALs in SDGs MW2D and GW14S are considered estimated and were **'J'** qualified.

The %D values for chloromethane in the CCAL of 3/21/97 (File R3496.D) and bromomethane in the CCAL of 3/21/97 (File R3505.D) exceeded the validation limit of 30.0%, at 32 and 35%, respectively. Results for chloromethane in associated samples VBLK03, GW07SS, GW01DS, GW05DS, GW17S, GW015S and GW011S , and bromomethane results in associated samples VBLK04, GW17DS, GW013S, GW08SS, GW07SD, GW011SDL and CBLK1, are considered estimated and were '**J**' qualified due to these excursions.

Response factors, %RSDs and %Ds were verified for each calibration event; please refer to the attached summary tables titled "Verification of VOA Calibration Parameters". Compounds present in associated samples (e.g., vinyl chloride, trichloroethene) were selected for calibration verification.

Blanks

Method Blanks (VBLK) -01, -02, -03 and -04 for aqueous samples in SDG# MW2D were free of target and non-target analytes above their respective established detection limits, as were VBLK01 and -02 for aqueous samples in SDG# GW14S.

Method Blank VBLK03 for soil samples in SDG#GW14S was free of target anlytes ; it exhibited a non-target at 3.45 minutes RT, with estimated concentration of 13 ug/Kg, of indeterminate structure. Non-targets in associated soil samples with similar RTs and spectra with concentrations below 5x that of VBLK03 were **red-lined** and **rejected.**

GWTB1T, identified on the C-O-C as TB01, associated with samples collected on 3/11/97, exhibited methylene chloride ($MeCL_2$) at 1 ug/L; $MeCL_2$ levels below the Action Limit of 10 ug/L in associated samples were negated (U). The other Trip Blanks associated with this sampling event were free of target analytes above their respective established detection limits. The Field Blank associated with these samples (GWFB1R) exhibited a non-target compound at 22.11 minutes RT, which is a probable siloxane compound from column-bleed. Non-targets at similar RT and spectral configuration in associated samples were red-lined and rejected R.

System Monitor Compound Recovery

All system monitor compound (SMC) recoveries were within acceptable limits in all reported samples. One SMC value from each sample was re-calculated and verified; results are contained in the attached summary table titled "Verification of Volatile System Monitor Compound Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery
Matrix spike recovery and precision for GW012S -MS and -MSD (SDG# MW2D), SW004S -MS and -MSD (SDG# GW14S aqueous samples) and SS02DS -MS and -MSD (SDG# GW14S soil samples) were within acceptable limits. Blank Spike recoveries for both aqueous and soil methods were also within acceptable limits. Recoveries were verified for all compounds; results are contained in the attached summary tables titled "Verification of Volatile Spike Recovery".

Internal Standard Recovery
Recoveries of all internal standard compounds were within acceptable limits; internal standard RTs for all samples were within limits. Reported values were checked and verified at the 100% level.

Compound Identification and Quantitation
All reported concentrations (as qualified) and identifications were in conformance with method requirements.

Non-Target Compounds
Several non-target compounds were present in samples at low levels; RT and spectral matches with blank compounds were rejected. Spectral Ids were reviewed and confirmed, and N qualifiers added to identified compounds to indicate presumptive presence of the particular compound.

Instrument Detection Limits
Detection limits for all reported method compounds were below the ASP Exhibit C established CRQLs.

Calculations and Data Transcription / Reporting
Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

Sample Dilutions
The following samples were analyzed at the indicated dilution factors due to the presence of target compounds identified by screening as being greater than the established calibration upper limit of 25 ug/L :
OF001S (10x)
OF001D (10x)
OF002S (2x)
GW18SS (10x)
GW010S (25x)
GW16SS (50x)
GW07SS (50x)
GW07SD (50x)
GW011S-DL (50x). This sample was initially analyzed undiluted.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Raw Data
Raw data contained within the SDG were found to be complete as received, except as noted herein.

Semi-volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness
The Data Package for Semi-volatile Organics Analysis was complete as received.

Holding Times
Reported samples were extracted within five days of collection, and were analyzed within seven days from extraction, which is compliant with both the technical (validation) holding time requirements of seven days from collection to extraction, and 40 days from extraction to analysis, and ASP requirements of five days from VTSR to extraction, and 40 days from extraction to analysis.

Sample Preparation
Extraction conditions were reviewed from the raw data.It is noted that the extraction log (p.00412) does not indicate the L/L extraction stop time, nor the final pH value after H_2SO_4 adjustment; ASP requires 18-hour continuous extraction of aqueous samples, and recording of final pH. Although associated QC parameters (i.e., surrogate recoveries) were within acceptable limits, the laboratory should ensure that proper documentation of extraction times and final pH are performed.

GC/MS Tuning
All DFTPP ion abundance ratios were within method-specified limits. All samples were analyzed within 12 hours of associated performance standard injection. Reported results were checked and verified from the raw data.

Calibration
The %RSDs and response factors (RF) for the ICAL performed 3/24/97 on MS#4 were within acceptable validation limits of <30% and >/= 0.05, respectively, and within contractual limits as specified in NYSDEC ASP Method 95-2. The 50 ppb calibration from the 3/24 ICAL (File ID: DL444.D) was utilized as the CCAL for the associated analytical sequence; all %Ds and RFs were within validation limits of <|25|% and >/= 0.05, respectively, and within specified contractual limits. No data qualifications were required.

Calibration (cont'd.) ...
Response factor, %RSD and %D for one target compound (or surrogate) per each internal standard were verified for each calibration event; please refer to the attached summary table titled "Verification of SVOA Calibration Parameters".

Blanks
Method Blank SBLK1 (aqueous; extracted 3/17/97) exhibited the presence of bis(2-ethylhexylphthalate) at 2 J ug/Kg, and two non-target compounds at 11.46 and 21.60 minutes retention time (RT); the compound at 11.46 RT was also detected in Field Blank GWFB1R, and several associated samples. The presence of b2ehp was qualified in associated samples. The non-target compound was negated (red-lined and rejected, **R**) in the associated samples with similar concentration, RT and spectral matches.

Surrogate Recovery
Surrogate compound recoveries were within acceptable limits in all samples.
One surrogate value from each sample was re-calculated and verified; results are contained in the attached summary table titled "Verification of Semi-volatile Surrogate Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery
Blank Spike recoveries were within acceptable limits. The recoveries for acid-fraction spike compound 4-nitrophenol were outside the high limit of 80% in GW012S -MS and -MSD, at 116 and 113%, respectively. No data qualifications were required due to these excursions.
Recoveries were verified for all compounds; results are contained in the attached summary table titled "Verification of Semi-volatile Spike Recovery".

Internal Standard Recovery
Recoveries of all internal standard (IS) compounds were within the required range between +100% and -50% of the associated calibration standard response. RT for all IS compounds were within $\pm$ 0.50 minutes from associated standard values.

Compound Identification and Quantitation
All reported concentrations (as qualified) and identifications were in conformance with method requirements.

Non-Target Compounds
Non-target compounds were present in all samples, with RT between seven and 27 minutes, characterized typically as unknown hydrocarbons, with estimated concentrations ranging from 2 to 5 ug/L.

Instrument Detection Limits
Detection limits for all reported method compounds were below NYSDEC-ASP established CRQLs.

Calculations and Data Transcription / Reporting

Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

Inorganics Review Summary / Metals

This section applies to metals analyses evaluated under NYSDEC ASP and EPA Regon II protocols and guidelines, respectively. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times / Sample Preservation
3) Calibration (Initial and Continuing)
4) Blanks (Digestion / Preparative and Instrument)
5) CRDL Check Samples
6) Interference Check Samples (ICP analytes)
7) Matrix Spikes
8) Duplicates (Laboratory and Field)
9) Laboratory Control Samples
10) Serial Dilutions (ICP analytes)
11) Instrument Detection Limits
12) Raw Data (Instrument results, Digestion / Prep. Logs)
13) Calculations and Data Transcription / Reporting

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Project: Lockheed-Martin
Lab. Job No.: 97-02-163 ; 97-03-158

Laboratory: Columbia Analytical Services, Inc.
SDG Nos: SB49AS, MW2D , GW10S , GW14S

Data Completeness

The sample custody chains (C-O-C) did not indicate pH values for aqueous samples. ASP method protocols require aqueous sample preservation with nitric acid to a pH <2, in addition to temperature (4° C ±2) preservation. The laboratory was contacted via fax on 4/23/97 for resolution; it was indicated that metals samples had been acid-preserved, and that supporting documentation would be forthcoming. The laboratory transmitted copies via fax on 5/2/97 of forms titled "Receiving / Breakdown Area Analysis" for 3/13, 3/14 and 3/17/97 indicating pH values of "2 U" for all samples; the reviewer's assumption is that this is equivalent to <2, and is presumptive evidence of proper pH preservation. It is strongly recommended that the measured pH value of all applicable samples be documented upon receipt, either on the chain of custody or a sample receipt checklist.

Holding Times / Sample Preservation

Samples were collected between 3/11 and 3/14/97, received at the laboratory between 3/12 and 3/15/97, extracted between 3/18 and 4/3/97, and analyzed between 3/19 and 4/3/97.

The above holding times were within the validation technical holding times of six months maximum from collection to analysis for metals (other than mercury) and 28 days maximum from collection to analysis for mercury.

Refer to comments under Data Completeness above regarding sample preservation.

Calibration

All initial (ICV) and continuing (CCV) calibration recoveries were within acceptable limits of 90 to 100%. No data qualifiers were required.

Blanks (Digestion / Preparative and Instrument)

Prep blanks were free of contamination above the CRDL for all target analytes. Instrument blanks (ICB, CCB) were below CRDLs for all target analytes.

CRDL Check Samples

Recoveries for all applicable target analytes in the CRDL samples were within acceptable limits of 80 - 120%.

Interference Check Samples (ICP analytes)

Recoveries of all applicable target analytes in the interference check samples were within acceptable range of 80 - 120%. It is noted that arsenic and thallium exhibited significant negative response in both solutions A and AB (-118 ; -130, -124, resp.); potential negative bias for arsenic due to incorrect background correction (BGC) and/or interelement correction (IEC) factor settings exists.

Interference Check Samples (cont'd.)...
The Form 11 (IEC) summary indicated only IEC determinations for Al, Ca, Fe and Mg; the laboratory was contacted on 5/5/97 and requested to provide a full IEC factor determination, in order to evaluate potential bias for As due to other interferents.
The full IEC factor listing was received via fax on 5/6/97; review indicated no other significant interferent effects for As which would explain the large negative bias exhibited in the ICS A/ICS AB solutions. The possibility of either (a) instrument control parameter drift between IEC determination on 3/11/97 and sample analysis on 3/26/97, or (b) incorrect BGC setting affecting the data is likely.

Reported results for arsenic and thallium in all reported samples are considered estimated, and were '**J**' qualified; negative bias is suggested.

Matrix Spikes
Recovery for aluminum in spike sample GW012S was outside the acceptable range of 75 - 125%, at 4.9%; this was mitigated by the fact that the Al concentration in the native (unspiked) sample was 5x the spike added concentration. Matrix spike recoveries outside range are not qualified when the concentration in the native sample exceeds that of the spike added by a factor of 4x or greater, nor do these elements require a post-digestion spike. It is noted that sample GW012S was cold-spiked (i.e., post-digestion), with Al recovery at 123%; matrix suppression of Al is suggested, and the reported values for Al may be biased low. It is also noted that calcium, iron and magnesium post-spike results were all low, at -300, 48 and -6%, resp.; this indicates potential inaccuracies in reported results for these analytes in the approximate amount of the spike added, i.e., ± 2,000, 1,000 and 2,000 ug/L, respectively. Further, the disparity between the calcium spiked and un-spiked values of 212 and 218 mg/L, resp., indicate a lack of precision at a corresponding level (i.e., 6 - 8 mg/L) for Ca results, which supercede the duplicate sample results of 218 and 221 mg/L.

Analytical Spikes
Spike recoveries for selenium by GFAA were outside the acceptable range of 85 - 115% in samples GW010S, GW011S, GW012S and GW07SD (total Se), and GW010S F, GW011S F, and GW07SS F (dissolved Se). Since all results were > IDL, but < ½ spike concentration, analysis by MSA was not required. **Se** results for these samples are considered estimated and were '**J**' qualified.

Duplicates
The %RPDs (or absolute difference, as applicable) for all target analytes in duplicate sample GW012S D were within the control limits of 20% for analytes with concentrations > 5x CRDL , or ± CRDL for analyte concentrations < 5x CRDL.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-02-163 ; 97-03-158 SDG Nos: SB49AS, MW2D , GW10S , GW14S

Field Duplicates

Aqueous sample GW07SD was identified by EMCON as the field duplicate sample of GW07SS. %RPDs were calculated (as for Lab Duplicates); the results are presented in the attached Tables titled "Metals Field Duplicate Precision". Results for all target analytes were within applicable limits, indicating acceptable field collection techniques and analytical system precision.

Laboratory Control Samples (LCS)

Recoveries for all analytes in the LCS, which indicate overall system accuracy and efficiency, including the preparative digestion process, were within acceptable limits. Indicated problems with matrix spike recoveries are likely due to sample matrix interference and suppression effects.

Serial Dilution

Serial dilution sample recoveries, for ICP analytes present in selected samples at a concentration > 10x IDL, were within acceptable limits (max. 10%D) , with the exception of sodium in samples GW012S L (for total metals), and sample GW012SF L (for dissolved metals). Results for **sodium** in all associated samples with concentrations > 10x IDL (i.e., > 675 ug/L) are considered estimated and were '**J**' qualified. (Note that the only sample with Na concentration less than 675 ug/L was the filtered Field Blank, GWFB1F).

Instrument Detection Limits

NYSDEC-ASP Contract Required Detection Limits (CRDLs) were met for all target analytes.

Total / Dissolved Metals Correlation

Results for target analytes in corresponding samples were generally well correlated, with dissolved (filtered) results less than total (unfiltered) results. However, the following anomalies were noted:

GW10S	Ba 134	GW10S F	Ba 279
	Zn 14.6		Zn 57.8
GW11S	Ba 44.7	GW11S F	Ba 231
	Zn 7.5		Zn 71.6
GW12S	Ba 111	GW12S F	Ba 142
	Zn 42.6		Zn 48.2
GW7SD	Na 18200	GW7SD F	Na 20300
	Tl 2.1 **U**		Tl 3.9
	Zn 17.5		Zn 26.6
GW7SS	Na 18300	GW7SS F	Na 21200
	Zn 22.6		Zn 28.5

Total / Dissolved Metals Correlation (cont'd.)...
Analytes Ba and Zn are consistently higher in the filtered samples versus the un-filtered; results for the filtered vs. unfiltered field blank samples do not exhibit this pattern, which precludes the filtration media as a potential contamination source for these analytes.

Raw Data
Raw data submitted with this package are complete, unless noted otherwise elsewhere in this report.

Calculations and Data Transcription / Reporting
Calculations and reported values were verified at random from raw data values; no anomalies were noted.

IMPORTANT NOTICE TO DATA USER

THE DATA RESULTS CONTAINED IN THIS PACKAGE HAVE BEEN TECHNICALLY REVIEWED AND QUALIFIED IN ACCORDANCE WITH METHOD PROTOCOLS AND EPA REGION II GUIDELINES. DATA WHICH DO NOT EXHIBIT EVIDENCE OF QUALIFICATION OR REVIEW SHOULD NOT BE USED.

PLEASE CALL EQA @ (914) 386 - 4705 IF YOU HAVE ANY QUESTIONS PERTAINING TO THE CONTENTS OF THIS DATA DELIVERABLES PACKAGE.

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

John P. Cahill
Commissioner

September 8, 1997

Patrick D. Salvador, P.E.
Principal Engineer
Lockheed Martin Corporation
P.O. Box 4840
Syracuse, New York 13221-4840

Re: Former GE Court Street 5/5A Plant (Site ID# 734070)

Dear Mr. Salvador:

The Department has reviewed Lockheed Martin's August 1, 1997 submission of a data validation package for samples collected in June 1997 as part of the Remedial Investigation at the Court Street 5/5A site. The Department has determined that the data is useable.

If you have any questions, feel free to contact me at (518) 457-1641.

Sincerely,

Alyse Peterson

Alyse Peterson
Environmental Engineer
Bureau of Central Remedial Action
Division of Environmental Remediation

cc: H. Hamel (NYSDOH)
A. Hess (USEPA)

Lockheed Martin Ocean, Radar & Sensor Systems
Post Office Box 4840 Syracuse, NY 13221-4840

LOCKHEED MARTIN

August 1, 1997

William L. Daigle, P.E.
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010

Re: Analytical Data and Data Validation Package (MW-17B and MW-19S)
Former GE Court Street 5/5A Plant
Town of Dewitt, Onondaga County, New York
NYSDEC Site No. 734070

Dear Mr. Daigle:

Please find enclosed the laboratory analytical data and the July 22, 1997 data validation package for the samples collected in June 1997 as part of the Remedial Investigation at the above referenced site. The data validation package was prepared by Environmental Quality Associates, Inc. and the laboratory analysis was performed by Columbia Analytical Services, Inc.

LMC requests New York State Department of Environmental Conservation (NYSDEC) and United States Environmental Protection Agency (USEPA) to review the enclosed analytical data and data validation package and provide written confirmation that the data obtained is useable for the Remedial Investigation (RI), Feasibility Study (FS) and Interim Remedial Measures (IRM). Please contact me at (315) 456-3199 if additional information is required.

Sincerely,

Patrick D. Salvador

Patrick D. Salvador, P.E.
Principal Engineer

Enclosure

cc: Robert K. Davies, Esq. - NYSDEC (without enclosure)
Sandra Lee Fenske, Esq. - Lockheed Martin Corporation (without enclosure)
Henriette Hamel - NYSDOH (without enclosure)
Kenneth P. Lynch, Esq. - NYSDEC Region 7 Director (without enclosure)
Virginia C. Robbins, Esq. - Bond, Schoeneck & King, LLP (without enclosure)

Environmental Quality Associates, Inc.
Specialists in Data Validation and Quality Assurance

July 22, 1997

Mr. Curtis Taylor
EMCON
Crossroads Corporate Center
One International Boulevard, Suite 700
Mahwah, New Jersey 07495

Re: Data Validation for Lockheed-Martin Court Street Investigation

Dear Mr. Taylor,

We are pleased to submit to EMCON, under cover of this letter, our Data Validation Report (DVR) for Laboratory Submission No. 9706000268 pertaining to the above referenced Site. These data deliverables encompass laboratory Sample Delivery Group (SDG) No. MW17B.

The associated samples were analyzed by Columbia Analytical Services, Inc., Rochester, New York. The aqueous samples were analyzed for Low-level Volatiles, per NYSDEC 1995 Analytical Services Protocols. All samples were reviewed and validated in accordance with the above noted protocols, QA guidelines and QC requirements, in conjunction with guidance set forth in USEPA Region II's SOP for Low-level Volatiles Data Review.

The DVR is compiled in the following format:

1) A Cover Page, summarizing SDG#, associated samples and IDs, sample matrix, collection and VTSR dates, and testing performed.
2) A Volatile Organics Review Summary, detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer.
3) Laboratory Case Narrative and Sample Summary Sheets, Form Is, and any other SDG Forms / data which have been corrected, qualified or modified from the original SDG.

We trust that the enclosed DVR satisfies your data validation needs and expectations for this phase of the project, and we look forward to fulfilling EMCON's requirements for similar projects in the future. Should you have any questions regarding the contents of this report, please do not hesitate to contact me.

Very truly yours,
Environmental Quality Associates, Inc.

Chris W. Taylor
Vice President

Project: Lockheed-Martin
Lab. Job No.: 97-06-268
Laboratory: Columbia Analytical Services, Inc.
SDG No: MW17B

Sample Summary

SDG No. MW17B

Lab. ID No.	Sample ID	Matrix	Date Collected	VTSR	Requested Analysis
153411	MW-17B	water	6/17/97	6/18/97	NYSDEC 95-4
153412	FB-01	water	6/17/97	6/18/97	NYSDEC 95-4
153413	MW-19S	water	6/17/97	6/18/97	NYSDEC 95-4
153414	DUP	water	6/17/97	6/18/97	NYSDEC 95-4
153415	TB-01	water	6/17/97	6/18/97	NYSDEC 95-4

Organics Review Summary

This section applies to Volatile analyses performed under NYSDEC ASP 95-4 protocols. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times
3) GC/MS Tuning
4) Calibration (Initial and Continuing)
5) Blanks
6) Surrogate Recovery
7) Matrix Spike / Matrix Spike Duplicate/ LCS Recovery
8) Internal Standard Recovery / Retention Times
9) Compound Identification and Quantitation
10) Non-Target Compounds
11) Instrument Detection Limits
12) Raw Data
13) Calculations and Data Transcription / Reporting

Volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The Data Package for Volatile Organics Analysis was complete as received.

Project: Lockheed-Martin
Lab. Job No.: 97-06-268
Laboratory: Columbia Analytical Services, Inc.
SDG No: MW17B

Holding Times

All aqueous samples were analyzed within seven days of sample collection. The NYSDEC ASP specifies maximum holding times from VTSR to analysis for both purgeable halocarbons and aromatics of seven days unpreserved and 10 days preserved (w/ HCl), respectively. USEPA Region II validation guidelines for technical holding time evaluation, are seven and 14 days from collection to analysis for unpreserved and preserved samples, respectively. No qualifications were necessary.

GC/MS Tuning

All BFB ion abundance ratios were within method-specified limits. All samples were analyzed within 12 hours of associated performance standard injection. Reported results were checked and verified from the raw data.

Calibration

The %RSDs for compounds acetone and 2-butanone in the ICAL performed 6/20/97 on GCMS#5 were outside the validation action limit of 30.0%, at 36 and 39%, respectively. Average RF values for acetone and 2-butanone were also below the validation limit of 0.050, at 0.013 and 0.023, respectively.

The RF values for compounds acetone and 2-butanone in the CCAL of 6/24/97 on GCMS#5 (file ID R4915.D) were below the validation action limit of 0.050, at 0.009 and 0.016, resp.; results for these compounds in all samples are considered estimated and were **'J'** qualified. Due to the low response factors and area response for these compounds, low bias (i.e., the potential for false negatives at the reported quantitation level) is suggested.

The %D values for acetone and 2-butanone exceeded the validation action limit of 30.0%, at 33 and 31%, resp., in the 6/24/97 CCAL; these compounds are considered estimated and were '**J**' qualified due to these excursions.

Blanks

Method Blank VBLK -01 was free of target and non-target analytes above their respective established detection limits.

The trip blank (TB-01) exhibited a non-target compound (possibly furan, CAS # 000110-00-9) at 5.70 minutes RT; this compound was not detected in associated samples.

System Monitor Compound Recovery

All system monitor compound (SMC) recoveries were within acceptable limits in all reported samples. One SMC value from each sample was re-calculated and verified; results are contained in the attached summary table titled "Verification of Volatile System Monitor Compound Recovery".

Project: Lockheed-Martin
Lab. Job No.: 97-06-268

Laboratory: Columbia Analytical Services, Inc.
SDG No: MW17B

Matrix Spike / Matrix Spike Duplicate / LCS Recovery
Compound recovery and precision for spiked analytes in MW-17B -MS and -MSD were within acceptable limits.

Recovery of spiked analytes in the laboratory control sample (LCS) were within acceptable limits.

Internal Standard Recovery
Recoveries of all internal standard compounds were within acceptable limits; internal standard RTs for all samples were within limits.

Compound Identification and Quantitation
All reported concentrations (as qualified) and identifications were in conformance with method requirements. The laboratory was asked to provide hard-copy confirmation that early-eluting peaks (in the first 3 to 5 minutes of the chromatograms in several samples) had been properly scanned to ensure that no false-negative target compounds were present. The laboratory's faxed response was received by EQA on 7/22/97; see fax transmission from Mark Wilson, Columbia Analytical Services, attached.

Non-Target Compounds
Spectral ID was reviewed, and N qualifier added to identified compound to indicate presumptive presence of the particular compound (i.e., furan; sample TB-01).

Instrument Detection Limits
Detection limits for all reported method compounds were below the ASP Exhibit C established CRQLs.

Calculations and Data Transcription / Reporting
Calculations and transcription of reported parameters were checked on a random basis; no anomalies were noted.

Project: Lockheed-Martin Laboratory: Columbia Analytical Services, Inc.
Lab. Job No.: 97-06-268 SDG No: MW17B

Sample Dilutions
No sample dilutions were required for this SDG; all target compound results were non-detects at the reported quantitation levels.

Raw Data
Raw data contained within the SDG were found to be complete as received.

IMPORTANT NOTICE TO DATA USER

THE DATA RESULTS CONTAINED IN THIS PACKAGE HAVE BEEN TECHNICALLY REVIEWED AND QUALIFIED IN ACCORDANCE WITH METHOD PROTOCOLS AND EPA REGION II GUIDELINES. DATA WHICH DO NOT EXHIBIT EVIDENCE OF QUALIFICATION OR REVIEW SHOULD NOT BE USED.

PLEASE CALL EQA @ (914) 386 - 4705 IF YOU HAVE ANY QUESTIONS PERTAINING TO THE CONTENTS OF THIS DATA DELIVERABLES PACKAGE.

CAS Rochester

RECEIVED
JUL 22 1997

[redacted] Associates, Inc.
RD #5, Box 800
Middletown, NY 10940

Columbia Analytical Services inc.

Date: 7/21

Number of pages including cover sheet:

To: Chris Taylor
EQA

Phone:
Fax phone: 914 386 4705
CC:

From: Mark Wilson

Phone: (716) 288-5380
Fax phone: (716) 288-8475

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please comment

(Please Note that our phone number and fax number are now different.

Columbia Analytical Services, Inc.
1 Mustard Street, Suite 250
P.O Box 90859
Rochester, NY 14609-0589

Re: CAS submission # 9706000268 95-4 VOA Analysis
First 3-5 minutes of chromatograms have been checked and confirmed to Not have target compounds present.

Mark J.

IMPORTANT NOTE:

APPENDIX E

ENVIRONMENTAL SETTING CORRESPONDENCE

New York State Department of Environmental Conservation
Division of Environmental Permits, Suite 206
615 Erie Blvd. W., Syracuse, NY 13204-2400
(315) 426-7438

John P. Cahill
Commissioner

July 30, 1997

Sara Kapp
EMCON
Crossroads Corporate Center
One International Boulevard
Suite 700
Mahwah, NJ 07495

RE: Project #86143-001.000

Dear Ms. Kapp:

The Department has reviewed your letter of July 23, 1997 concerning possible environmental impacts on and around (within ½ mile) the old G.E. - Court Street Facility.

Enclosed is a map with various items of concern shown as clarification and in addition, the Department offers the following:

1. Natural Heritage including NYS endangered, threatened and rare species or species of concern: None are located on our maps for this area.

2. Regulated Wetlands: Are shown in light blue with stripes. Although none appear to be directly on site, two wetlands, SYE-29 & SYE-6 are nearby. These are NYS wetlands, only. We recommend you contact the Army Corps of Engineers for their wetlands determination.

3. Protected bodies of water are shown with a dark blue line. One starts just south of the property (Court Street).

4. For specifics on aquatic habitats you may wish to contact our Cortland office for assistance: 1-800-388-8244 Fisheries Department or (607) 753-3095.

5. A 100-year floodplain lies west of the site and possibly on-site. You should check with the local municipality for any special permits/approvals under the National Flood Insurance Program.

6. There are 3 hazardous waste sites located near this site:

   a) Ley Creek PCB dredgings
   b) Valenite
   c) UTC, Carrier

These are shown in red on the map. For more information on these, contact our Hazardous Waste Remediation Division, Charles Branagh, at (315) 426-7551.

7. The following do not appear to be on or near the site:

a) NYS Agricultural District
b) Archaeological/Cultural sites: No sites appear on our circles and squares map
c) Primary Aquifer

Thank you for checking with our office. If we can be of further assistance, please let us know.

Sincerely,

Joanne L. March
Environmental Analyst I

- Hazsites
- Onondaga Co.
- County lines
- Political Boundaries
- Aquifers
- Article 24 Wetlands
- Mines
- Natural Heritage
- Protected Stream Areas

N
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PROJECT

0.5 0 0.5 1 Miles

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13045

August 18, 1997

Ms. Sara Kapp
Staff Scientist
EMCON
Crossroads Corporate Center
One International Boulevard, Suite 700
Mahwah, NJ 07495

Dear Mr. Kapp:

This responds to your letter of July 23, 1997, requesting information on the presence of endangered or threatened species in the vicinity of the property located on Court Street (former GE Court Street site) in the Town of Dewitt, Onondaga County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under the Fish and Wildlife Coordination Act or other legislation.

For additional information on fish and wildlife resources or State-listed species, we suggest you contact:

New York State Department of
Environmental Conservation
Region 7
1285 Fisher Avenue
Cortland, NY 13045-1090
(607) 753-3095

New York State Department of
Environmental Conservation
Wildlife Resources Center - Information Serv.
New York Natural Heritage Program
700 Troy-Schenectady Road
Latham, NY 12110-2400
(518) 783-3932

The National Wetlands Inventory (NWI) map of the Syracuse East Quadrangle is available and may show wetlands in the project vicinity. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes.

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting Mr. Paul Leuchner, Chief, Regulatory Branch, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, NY 14207 (telephone: [716] 879-4321).

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

Mark W. Clough

ACTING FOR

Sherry W. Morgan
Field Supervisor

cc: NYSDEC, Cortland, NY (Env. Permits)
NYSDEC, Latham, NY
COE, Buffalo, NY

New York State Department of Environmental Conservation
Wildlife Resources Center
700 Troy-Schenectady Road
Latham, New York 12110-2400
(518) 783-3932

John P. Cahill
Commissioner

August 6, 1997

Sara Kapp
EMCON
Crossroads Corporate Center, Suite 700
1 International Blvd.
Mahwah, NJ 07495

Dear Ms. Kapp:

We have reviewed the New York Natural Heritage Program files with respect to your recent request for biological information concerning the Court Street property, NYS DEC #734070, site as indicated on your enclosed map, located in the Town of DeWitt, Onondaga County, New York State.

> We did not identify any potential impacts to endangered, threatened, or special concern wildlife species, rare plant, animal, or natural community occurrences, or other significant habitat.

The absence of data does not necessarily mean that rare or endangered elements, natural communities or other significant habitats do not exist on or adjacent to the proposed site, but rather that our files currently do not contain any information which indicates the presence of these. Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we cannot provide a definitive statement on the presence or absence of species, habitats or communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare plants and natural communities. . You should contact our regional office, Division of Regulatory Affairs, at the address enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State Law.

If this proposed project is still active one year from now we recommend that you contact us again so that we may update this response.

Sincerely,

Nancy Davis Ricci

Nancy Davis-Ricci
Information Services
New York Natural Heritage Program

Encs.
cc: Reg. 7, Wildlife Mgr.
Reg. 7, Fisheries Mgr.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL PERMITS REGIONAL OFFICES

REGION	COUNTIES	NAME	ADDRESS AND PHONE NO.
Region 1	Nassau Suffolk	Robert Greene Permit Administrator	Loop Road, Bldg. 40 SUNY Stony Brook, NY 11790-2356 (516) 444-0365
Region 2	New York City	George Danskin Permit Administrator	Hunters Point Plaza 4740 21st Street Long Island City, NY 11101-5407 (718) 482-4997
Region 3	Dutchess Orange Putnam Rockland, Sullivan Ulster, Westchester	Margaret Duke Permit Administrator	21 South Putt Corners Road New Paltz, NY 12561-1696 (914) 256-3059
Region 4	Albany Columbia Delaware Greene, Montgomery, Otsego Rensselaer, Schenectady, Schoharie	William J. Clarke Permit Administrator	1150 N. Westcott Road Schenectady, NY 12306-2014 (518) 357-2234
Region 5	Clinton Essex Franklin Fulton, Hamilton Saratoga, Warren, Washington	Richard Wild Permit Administrator	Route 86 Ray Brook, NY 12977 (518) 897-1234
Region 6	Herkimer Jefferson Lewis Oneida, St. Lawrence	Randy Vaas Permit Administrator	State Office Building 317 Washington Street Watertown, NY 13601 (315) 785-2246
Region 7	Broome Cayuga Chenango Cortland, Madison, Onondaga Oswego, Tioga, Tompkins	Ralph Manna, Jr. Permit Administrator	615 Erie Blvd. West Syracuse, NY 13204-2400 (315) 426-7439
Region 8	Chemung Genesee Livingston Monroe, Ontario, Orleans Schuyler, Seneca, Steuben Wayne, Yates	Albert Butkas Permit Administrator	6274 East Avon-Lima Road Avon, NY 14414 (716) 226-2466
Region 9	Allegany Cattaraugus Chautauqua Erie, Niagara, Wyoming	Steven Doleski Permit Administrator	270 Michigan Avenue Buffalo, NY 14203-2999 (716) 851-7165

New York State Department of Environmental Conservation
Wildlife Resources Center
700 Troy-Schenectady Road
Latham, New York 12110-2400
(518) 783-3932

John P. Cahill
Commissioner

August 22, 1997

Sara Kapp
Emcon
Crossroads Corporate Center
1 International Blvd., Suite 700
Mahwah, NJ 07495

Dear Ms. Kapp:

We have reviewed the New York Natural Heritage Program files with respect to your recent request for biological information concerning the Ecological Impact Assessment on a property on Court Street, site as indicated on your enclosed map, located in the Town of Dewitt, Onondaga County, New York State.

We did not identify any potential impacts to endangered, threatened, or special concern wildlife species, rare plant, animal, or natural community occurrences, or other significant habitat.

The absence of data does not necessarily mean that rare or endangered elements, natural communities or other significant habitats do not exist on or adjacent to the proposed site, but rather that our files currently do not contain any information which indicates the presence of these. Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we cannot provide a definitive statement on the presence or absence of species, habitats or communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare plants and natural communities. . You should contact our regional office, Division of Regulatory Affairs, at the address enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State Law.

If this proposed project is still active one year from now we recommend that you contact us again so that we may update this response.

Sincerely,

Deborah Albert

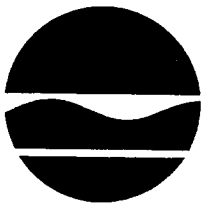
Deborah L. Albert
Information Services
New York Natural Heritage Program

Enc.
cc: Reg. 7, Wildlife Mgr.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL PERMITS REGIONAL OFFICES

REGION	COUNTIES	NAME	ADDRESS AND PHONE NO.
Region 1	Nassau Suffolk	Robert Greene Permit Administrator	Loop Road, Bldg. 40 SUNY Stony Brook, NY 11790-2356 (516) 444-0365
Region 2	New York City	George Danskin Permit Administrator	Hunters Point Plaza 4740 21st Street Long Island City, NY 11101-5407 (718) 482-4997
Region 3	Dutchess Orange Putnam Rockland, Sullivan Ulster, Westchester	Margaret Duke Permit Administrator	21 South Putt Corners Road New Paltz, NY 12561-1696 (914) 256-3059
Region 4	Albany Columbia Delaware Greene, Montgomery, Otsego Rensselaer, Schenectady, Schoharie	William J. Clarke Permit Administrator	1150 N. Westcott Road Schenectady, NY 12306-2014 (518) 357-2234
Region 5	Clinton Essex Franklin Fulton, Hamilton Saratoga, Warren, Washington	Richard Wild Permit Administrator	Route 86 Ray Brook, NY 12977 (518) 897-1234
Region 6	Herkimer Jefferson Lewis Oneida, St. Lawrence	Randy Vaas Permit Administrator	State Office Building 317 Washington Street Watertown, NY 13601 (315) 785-2246
Region 7	Broome Cayuga Chenango Cortland, Madison, Onondaga Oswego, Tioga, Tompkins	Ralph Manna, Jr. Permit Administrator	615 Erie Blvd. West Syracuse, NY 13204-2400 (315) 426-7439
Region 8	Chemung Genesee Livingston Monroe, Ontario, Orleans Schuyler, Seneca, Steuben Wayne, Yates	Albert Butkas Permit Administrator	6274 East Avon-Lima Road Avon, NY 14414 (716) 226-2466
Region 9	Allegany Cattaraugus Chautauqua Erie, Niagara, Wyoming	Steven Doleski Permit Administrator	270 Michigan Avenue Buffalo, NY 14203-2999 (716) 851-7165

New York State Department of Environmental Conservation
Region 7 - Bureau of Fisheries
1285 Fisher Avenue
Cortland, New York 13045-1090
(607) 753-3095 FAX: (607) 753-8532



John P. Cahill
Commissioner

August 19, 1997

Mr. Sara Kapp
EMCON
Crossroads Corporate Center, Suite 700
1 International Blvd.
Mahwah, NJ 07495

Dear Ms. Kapp:

In your July 23rd letter you requested information about the fisheries of the South Branch of Ley Creek and Sanders Creek, tributary to Onondaga Lake. These streams are small and do not produce a fishery. They contain fish communities dominated by minnow species.

Sincerely,

Leslie R. Wedge
Regional Fisheries Manager

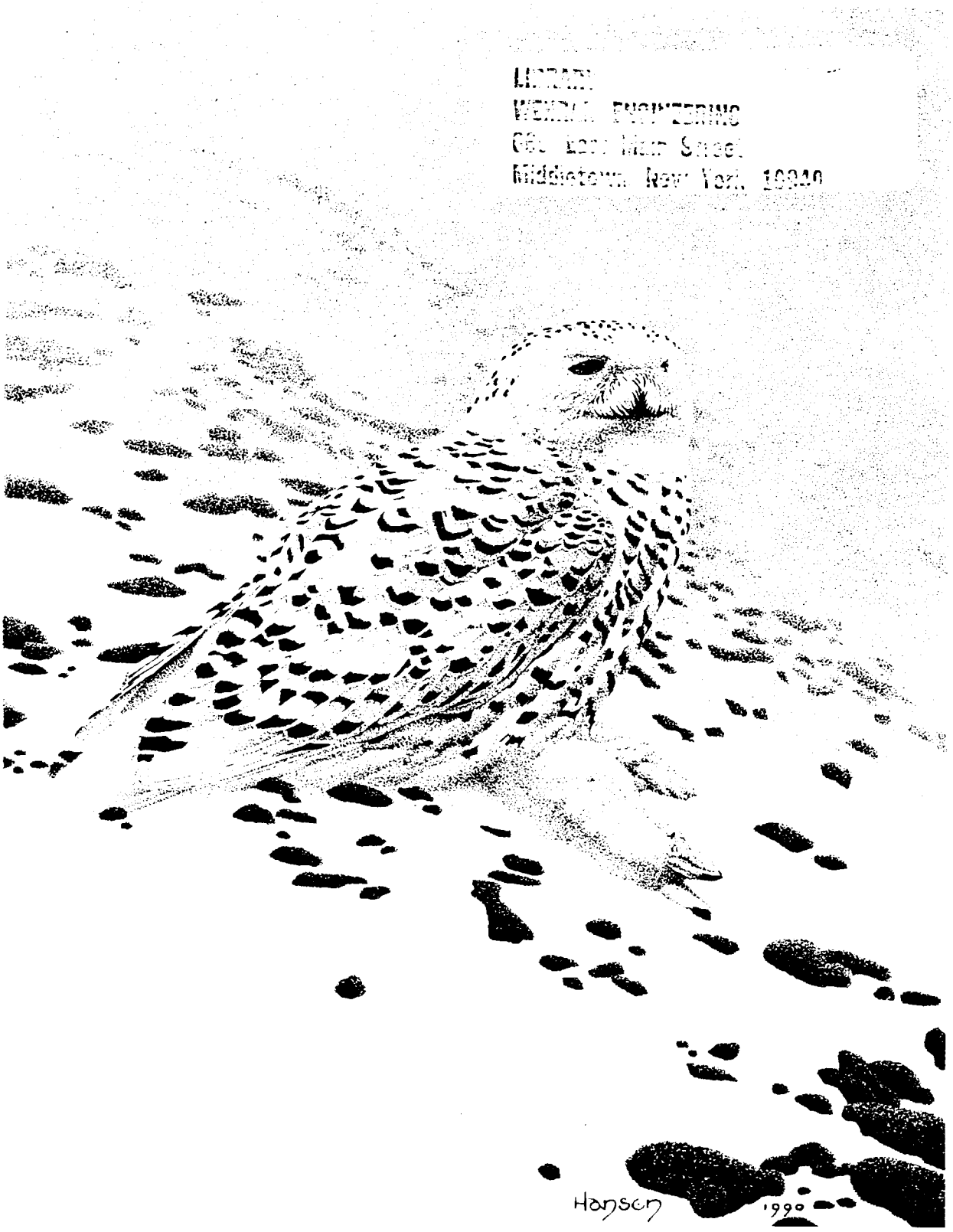
LRW:klw

cc: E. Thomee

1989-1990

AMERICAN BIRDS

90th Christmas Bird Count



Kestrel 1; Wild Turkey 2; Ring-billed Gull 66; Herring Gull 407; Glaucous Gull 1; Great Black-backed Gull 22; Rock Dove 252; Mourning Dove 284; Belted Kingfisher 1; Downy Woodpecker 61; Hairy Woodpecker 13; N. (Yel.-sh.) Flicker 2; Horned Lark 1; Blue Jay 118; Am. Crow 8327; Black-capped Chickadee 499; Tufted Titmouse 108; Red-breasted Nuthatch 7; White-breasted Nuthatch 48; Brown Creeper 5; Carolina Wren 1; Winter Wren 2; Golden-crowned Kinglet 3; E. Bluebird 6; Hermit Thrush 2; Am. Robin 1; N. Mockingbird 8; Cedar Waxwing 56; Eur. Starling 1244; N. Cardinal 106; Am. Tree Sparrow 144; Song Sparrow 10; White-throated Sparrow 55; Dark-eyed (Slate-col.) Junco 156; Lapland Longspur 3; Snow Bunting 260; Purple Finch 3; House Finch 288; Com. Redpoll 1; Pine Siskin 46; Am. Goldfinch 181; Evening Grosbeak 3; House Sparrow 314.

Total: 53 species; 13799 individuals.

Participants: Compiler—William J. Lee, 2171 Grand Blvd., Schenectady NY 12309; Kate Beale, Robert Boehm, Robert Budliger, John Callanan, Karen Crevier, Michael Crevier, Carl George, Jane Graves, Bernard Grossman, Clifford Lamere, William Lee, Samuel Madison, Bill Quandt, Walton Sabin, Robert Seelye, Nancy Slack, Henry Stebbins, Richard Waugh, Robert Yunick.

SY NY
Syracuse, NY

43°06'N 76°05'W, as described 1956, center Collamer. Dec 23; 6:30 a.m. to 5 p.m. Temp -4° to 12°F. Wind var., 3-6 mph. Snow cover 18 in. Still water frozen. Moving water partly open. Clear. Observers: 21 in field in 9-10 parties (non-owling); 0.5 hour and 4.75 miles owling. Total party-hours 68.25; party-miles 441.25; 32.75 hours and 34.25 miles on foot, 35.5 hours and 407 miles by car.

• Am. Black Duck 89; Mallard 402; Gadwall 3; Com. Goldeneye 3; Com. Merganser 208; Bald Eagle 1; (a) 1; Sharp-shinned Hawk 3; Cooper's Hawk 7; Red-tailed Hawk 35; Rough-legged Hawk 2; Am. Kestrel 2; Ring-necked Pheasant 3; Ruffed Grouse 1; Wild Turkey 2; Ring-billed Gull 74; Herring Gull 325; Glaucous Gull 1; Great Black-backed Gull 55; Rock Dove 1405; Mourning Dove 518; Great Horned Owl 1; Snowy Owl CW; Belted Kingfisher 2; Red-bellied Woodpecker 14; Downy Woodpecker 106; Hairy Woodpecker 24; N. (Yel.-sh.) Flicker 10; Blue Jay 114; Am. Crow 335; Black-capped Chickadee 633; Tufted Titmouse 1; Red-breasted Nuthatch 17; White-breasted Nuthatch 42; Brown Creeper 4; Hermit Thrush 1; Am. Robin 47; N. Mockingbird 4; Cedar Waxwing 114; N. Shrike 1; Eur. Starling 2530; N. Cardinal 193; Am. Tree Sparrow 348; Song Sparrow 8; White-throated Sparrow 5; Dark-eyed (Slate-col.) Junco 57; Snow Bunting 27; Red-winged Blackbird 2; Rusty Blackbird 10; Com. Grackle 1; Brown-headed Cowbird 3; Pine Grosbeak 1; House Finch 1413; Am. Goldfinch 74; House Sparrow 1771.

Total: 53 species; 11052 individuals.

Participants: Compiler—Jeanne L. Ryan, 3457 Rt. 20 East RD 3, Cazenovia NY 13035; John Adair, Sue Adair, Peg Arinsen, Sue Boettger, Dorothy Crumb, Paul DeBenedictis, Bill Gruenbaum, John Hanyak, Elva Hawken, Gene Huggins, Steve Kahl, Ferd LaFrance, Margaret Napolean, Paul Radway, Tom Riley, John Rogers, David Ryan, Jeanne Ryan, Tom Shuman, Gerald Smith, Judy Wright.

TR NY
Troy, NY

42°50'N 73°40'W, as described 1967, center River & Turner Rds., Schaghticoke. Dec 30; 6:30 a.m. to 4:30 p.m. Temp 8° to 13°F. Wind calm. Snow cover 4 in. Still water frozen. Moving water partly frozen. Cloudy; light snow. Observers: 20 in field in 7 parties (non-owling) plus 1 at feeders (8 hours). Total party-hours 66.5; party-miles 443.5; 23.25 hours and 22.25 miles on foot, 43.25 hours and 421 miles by car.

• Great Blue Heron 1; Mute Swan 1; Canada Goose 9021; Am. Black Duck 504; Mallard 514; Am. Wigeon CW; Ring-necked Duck 1; Lesser Scaup 1; Com. Goldeneye 58; Com. Merganser 403; N. Harrier 2; Sharp-shinned Hawk 2; Cooper's Hawk 4; N. Goshawk 1; Red-tailed Hawk 80; Rough-legged Hawk 21; Am. Kestrel 2; Ruffed Grouse 5; Wild Turkey 11; Ring-billed Gull 3; Herring Gull 1323; **Thayer's Gull 1** [IM-Ed.]; Iceland Gull 9; Glaucous Gull 2; Great Black-backed Gull 439; Rock Dove 436; Mourning Dove 521; E. Screech-Owl 1; Great Horned Owl 2; Short-eared Owl 1; Downy Woodpecker 78; Hairy Woodpecker 28; N. (Yel.-sh.) Flicker 5; Pileated Woodpecker 3; Horned Lark 349; Blue Jay 215; Am. Crow 650; Black-capped Chickadee 542; Tufted Titmouse 81; Red-breasted Nuthatch 9; White-breasted Nuthatch 89; Brown Creeper 4; Golden-crowned Kinglet 5; E. Bluebird 2; Hermit Thrush 1; Am. Robin 3; N. Mockingbird 11; Eur. Starling 1495; N. Cardinal 104; Am. Tree Sparrow 165; Savannah Sparrow 1.

Song Sparrow 30; Swamp Sparrow 1; White-throated Sparrow 38; Dark-eyed (Slate-col.) Junco 311; Lapland Longspur 4; Snow Bunting 471; E. Meadowlark 1; Com. Grackle CW; Brown-headed Cowbird 49; House Finch 355; Com. Redpoll 22; Pine Siskin 15; Am. Goldfinch 116; Evening Grosbeak 34; House Sparrow 517.

Total: 64 species; 19174 individuals.

Participants: Compiler—William W. Shuster, P.O. Box 76, Melrose NY 12121; Kenneth Able, Gilbert Banner, Kurt Boluch, Robert Budliger, Patricia Canavan, Marilyn Fancher, Norman Fancher, Betsy Franz, William Gorman, Monte Gruett, Richard Guthrie, Rebecca Holberton, William Lee, Samuel Madison, Walton Sabin, Claire Sack, Nancy Shuster, William Shuster, Scott Terrill, Ned Worrell, Ruthanna Worrell.

WA NY
Watertown, NY

44°00'N 76°00'W, as described 1969, center Brownville. Dec 16; 8 a.m. to 5 p.m. Temp 6°F. Wind calm. Snow cover 12 in. Still water frozen. Moving water partly open. Clear. Observers: 8 plus 3 at feeders (6 hours). Total party-hours 18; party-miles 229; 1 hour and 1 mile on foot, 17 hours and 228 miles by car.

• Canada Goose 1; Am. Black Duck 16; Mallard 33; Com. Goldeneye 8; Com. Merganser 5; Red-breasted Merganser 4; N. Harrier 1; Sharp-shinned Hawk 1; Cooper's Hawk 1; Red-tailed Hawk 20; Rough-legged Hawk 6; Gray Partridge 10; Ruffed Grouse 2; Herring Gull 61; Rock Dove 447; Mourning Dove 169; Red-bellied Woodpecker 1; Downy Woodpecker 24; Hairy Woodpecker 6; N. (Yel.-sh.) Flicker CW; Horned Lark 80; Blue Jay 92; Am. Crow 81; Black-capped Chickadee 102; Red-breasted Nuthatch 1; White-breasted Nuthatch 16; Brown Creeper 1; Am. Robin 1; N. Mockingbird 1; Cedar Waxwing 61; Eur. Starling 846; N. Cardinal 46; Am. Tree Sparrow 96; Song Sparrow 8; White-throated Sparrow 10; Dark-eyed (Slate-col.) Junco 22; Snow Bunting 60; Com. Grackle 4; Brown-headed Cowbird 11; Pine Grosbeak CW; House Finch 261; White-winged Crossbill 38; Com. Redpoll 50; Pine Siskin 1; Am. Goldfinch 33; Evening Grosbeak 88; House Sparrow 266.

Total: 45 species; 3092 individuals.

Participants: Compiler—Glen D. Snell, HC 31, Box 5, Watertown NY 13601; Marion Brouse, Richard Brouse, Lee Chamberlaine, Alice Cooper, Deborah Litwhiler, Stephen Litwhiler, June Walker, Robert Walker.

WG NY
Watkins Glen, NY

42°22'N 76°52'W, as described 1975, center Franklin & Fourth Sts. Dec 30; 7:30 a.m. to 5 p.m. Temp 30° to 34°F. Wind NW, 0-8 mph. Snow cover 8 in. Water partly open. Cloudy. Observers: 5 in field in 5 parties (non-owling) plus 7 at feeders (15 hours); 3 hours and 8 miles owling. Total party-hours 34; party-miles 179; 23 hours and 19 miles on foot, 11 hours and 160 miles by car.

• Com. Loon 1; Pied-billed Grebe 5; Horned Grebe 1; Canada Goose 165; Wood Duck 1; Am. Black Duck 44; Mallard 587; Gadwall 2; Redhead 27; Greater Scaup 93; Lesser Scaup 1; Com. Goldeneye 11; Bufflehead 3; Com. Merganser 57; N. Harrier 1; Sharp-shinned Hawk 3; Cooper's Hawk 2; Red-tailed Hawk 13; Rough-legged Hawk 6; Am. Kestrel 2; Ring-necked Pheasant 13; Ruffed Grouse 9; Wild Turkey 22; Am. Coot 113; Ring-billed Gull 296; Herring Gull 100; Great Black-backed Gull 7; Rock Dove 127; Mourning Dove 262; Great Horned Owl 8; Long-eared Owl 1; Short-eared Owl 1; Red-bellied Woodpecker 10; Downy Woodpecker 64; Hairy Woodpecker 11; N. (Yel.-sh.) Flicker 2; Pileated Woodpecker 1; Horned Lark 52; Blue Jay 137; Am. Crow 606; Black-capped Chickadee 297; Tufted Titmouse 21; Red-breasted Nuthatch 4; White-breasted Nuthatch 43; Brown Creeper 2; Carolina Wren 11; Golden-crowned Kinglet 1; E. Bluebird 6; Am. Robin 29; N. Mockingbird 2; Cedar Waxwing 70.