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LIMITED REMEDIAL INVESTIGATION/ FEASIBILITY STUDY (RI/FS)

FIRE TRAINING AREA NO. 1, IRP SITE 10
NIAGARA FALLS INTERNATIONAL AIRPORT (IAP) NEW YORK
PRELIMINARY SUMMARY REPORT

Prepared For

914 TACTICAL AIRLIFT GROUP

(AFRES)/LGC

Niagara Falls IAP, New York

April 1992

WEHRAN-NEW YORK, INC.
Grand Island, New York

and

BABINSKY KLEIN ENGINEERING, P.C.
Amherst, New York

Environmental Engineers • Scientists • Constructors

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1.0 INTRODUCTION

1.1 PURPOSE OF THE LIMITED RI/FS PROGRAM

In September 1987, Science Applications International Corporation (SAIC) was contracted by the United States Air Force to perform an Installation Restoration Program (IRP) Remedial Investigation/Feasibility Study (RI/FS) at Niagara Falls International Airport, (IAP), Niagara Falls, New York. The purpose of the program was to determine the extent and magnitude of environmental contamination that has occurred at the Base as a result of waste disposal practices, fuel spills, and fire training activities; perform a risk assessment based on analytical findings; and provide a preliminary screening of remedial technologies. The first draft of the IRP RI/FS report was published in August 1990. This Draft Report was subsequently revised to address comments from the 914 Tactical Airlift Group (AFRES) and issued as a final draft in October 1990.

In September 1990, Babinsky-Klein Engineering, P.C. (BKE) was requested to perform a Limited RI/FS for Site 10 - Fire Training Area No. 1 under their existing architectural/engineering contract with the AFRES at Niagara Falls IAP, New York. Wehran-New York, Inc. (Wehran) was subsequently retained by BKE to provide the required environmental services to perform the Limited RI/FS.

The initial work performed under this contract consisted of revising the existing approved RI/FS Work Plan, Quality Assurance Project Plan (QAPP) and Health and Safety Plan prepared by SAIC, dated June 1989, to address the scope of work, methodologies and field procedures, and health and safety aspects for the supplemental field activities planned for Fire Training Area No. 1.

The revised documents were submitted to the AFRES for review and comment in February 1991. Following review by the AFRES, New York State Department of Environmental Conservation (NYSDEC) and United States Environmental Protection Agency (USEPA), all the applicable comments were incorporated with the final revised documents being issued in February 1991.

The IRP RI/FS Draft Report was completed at Niagara Falls IAP, New York, by SAIC in October 1990. This study consisted of the installation of monitoring wells and analytical testing of soil and groundwater samples to provide data on the magnitude and extent of

contamination at Fire Training Area No. 1. The report provided data on the subsurface conditions and hydrogeology of the site and identified potential health/environmental risks.

The objectives of the Limited RI Study at Niagara Falls IAP are:

- Further define the extent and type of groundwater and sediment contamination.
- Provide supplemental data on hydrogeology and geology of the site.
- Perform additional analytical sampling to characterize type of contamination.

This preliminary summary report has been prepared in accordance with Section 6.2 of the Limited RI/FS Work Plan and presents the findings of the Limited RI. This report, which has been specifically prepared as a supplement to the IRP RI/FS report, includes a summary of all field and laboratory work completed to date as part of the Limited RI.

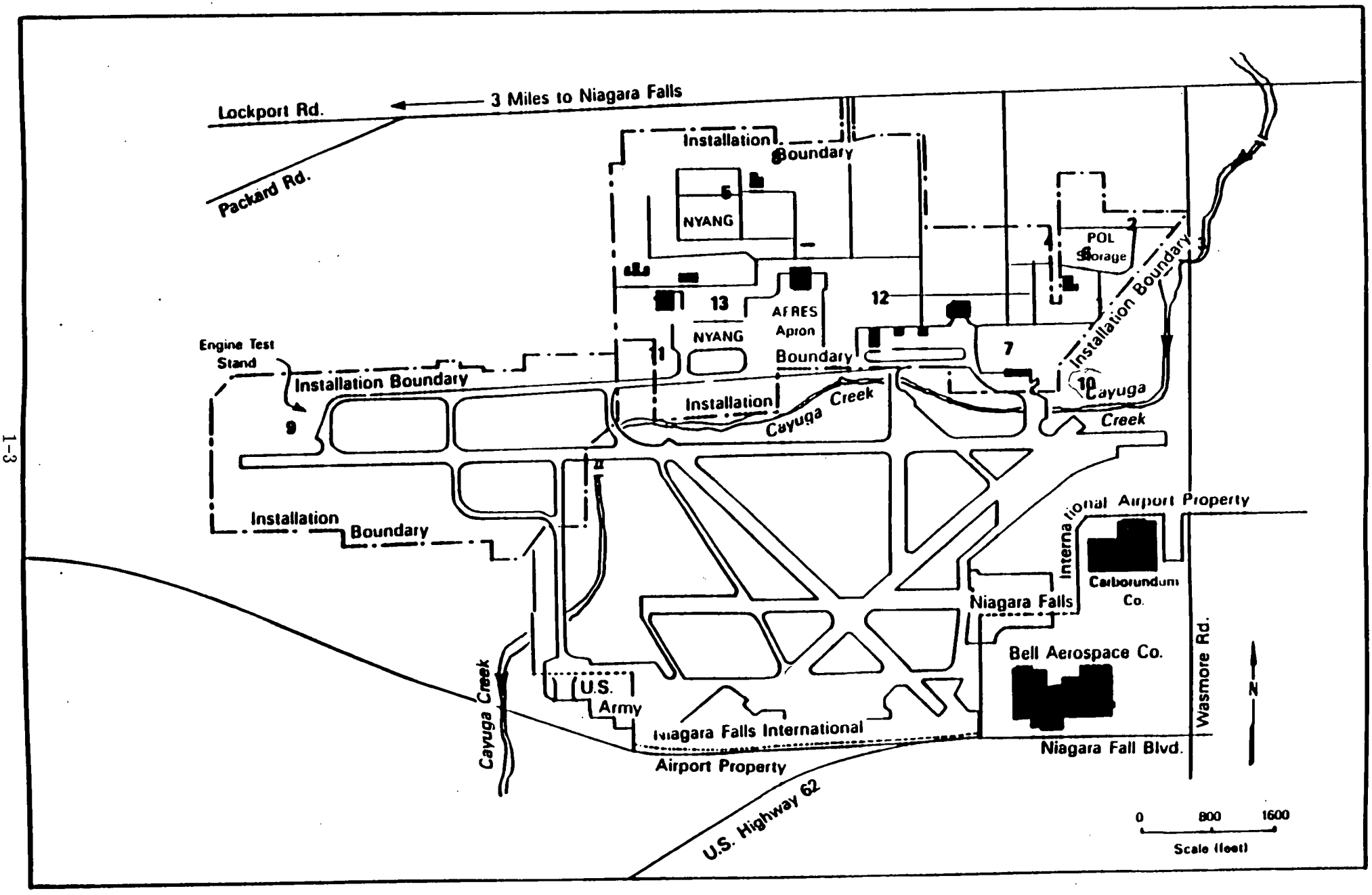
The interpretation and evaluation of any new data and the impact on the RI or Risk Assessment will be subsequently presented in the Limited RI/FS Report. Additionally, a discussion of available remedial technologies and alternatives, and a description of any additional proposed work with data quality objectives will be included in the final report.

The site investigation activities conducted during the Limited RI included:

- Drilling and installation of two overburden and two bedrock wells downgradient of the site and one bedrock well upgradient of the site;
- Collection and analysis of groundwater samples from the five new and five existing monitoring wells (total of ten samples);
- Collection of two sediment samples from the drainage ditch downgradient of Fire Training Area No. 1;
- Analysis of groundwater and sediment samples; and
- Collection and analysis of a composite sample of the drummed drill cuttings for chemical characterization.

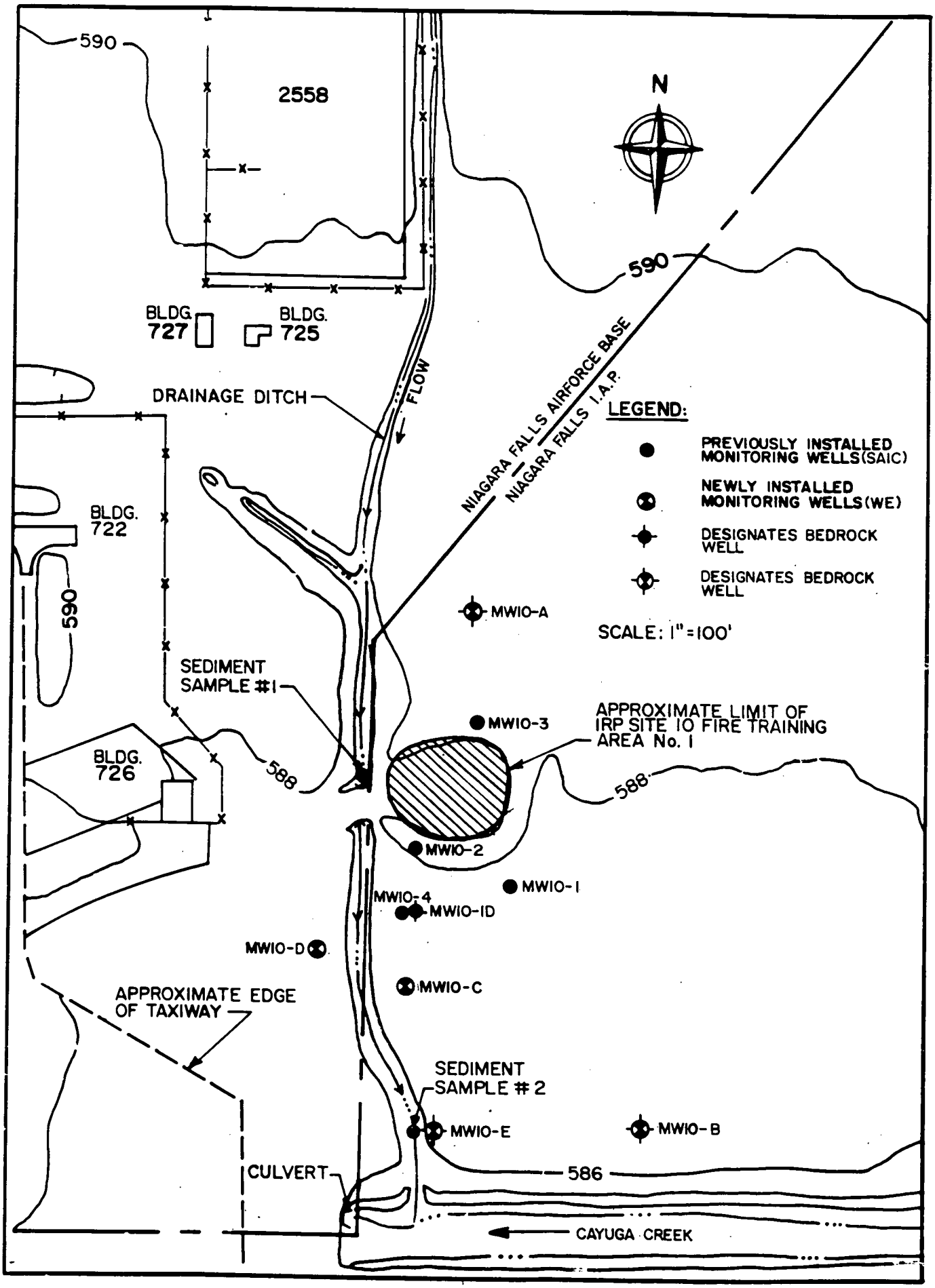
1.2 DESCRIPTION AND HISTORY OF SITE 10

IRP Site 10 - Fire Training Area No. 1 (the site) is located in the extreme northeast corner of Niagara Falls IAP, just east of the Niagara Falls Air Force Base in the Town of Wheatfield as shown on Figure 1-1. More specifically, the site is located east of Building 726 as shown on Figure 1-2. The site which is generally flat with a gentle slope to the south is covered with heavy grasses and weeds. Cayuga Creek passes within about 1,000



(Source: IRP RI/FS Workplan -SAIC 6/89) **Figure 1-1 Site Locations at Niagara Falls IAP**

FIGURE 1-2



SITE IO: EXISTING SITE CONDITIONS MAP

feet east and 400 feet south of the site. A drainage swale runs from north to south approximately 50 feet west of the site. Surface drainage flows to the south in this swale and discharges into Cayuga Creek which flows west and then south across the Niagara Falls IAP.

The site served as the base's principal fire training area during the late 1950's and early 1960's. A variety of combustible oils, solvents and jet fuel (JP-4) were burned in the pit and extinguished with fire-fighting foams during training exercises.

1.3 PREVIOUS FINDINGS

A brief description of the waste types and concentrations detected at the site during the Phase II, Stage 1 field investigation and the IRP RI/FS is provided in the following section. A more detailed discussion is provided in the IRP RI/FS Report dated October 1990.

The results of the Phase II, Stage I Field Investigation indicated that the oil and grease levels in groundwater samples were less than 1 mg/L. Elevated levels of TOC (71.2 and 64.2 mg/L) were detected in two groundwater samples. TDS and TOX levels in the surface water were higher upstream of the site than downstream. Oil and grease levels in the sediment samples were high both upstream and downstream; however, the concentrations downstream were nearly triple the upstream values. Elevated oil and grease levels in the sediment may be attributable to run-off from the hardstand area just west of the stream.

The results of the IRP RI/FS indicate that the soils at Site 10 contain elevated levels of zinc, although they fall within the range established by the background borings. Chromium levels were elevated in the downgradient boring (650 mg/kg). Cadmium was also detected at levels above background (1.55 mg/kg). Beryllium and boron were detected at 0.556 and 76.2 mg/kg respectively at Site 10 but did not appear in background borings. Other parameters which were detected at levels above those in the background borings include: barium (1420 mg/kg); lead (56.6 mg/kg); total petroleum hydrocarbons; and trichloroethene (0.010 - 0.190 mg/kg).

Groundwater samples collected from wells at the site indicated a number of volatile organic compounds above background levels, with the highest concentrations detected downgradient of the fire pit. Benzene, total xylenes, toluene, trichloroethene, and vinyl

chloride were detected in nearly all downgradient wells. Additionally, several metals (total) were detected at levels above background. These include: iron, manganese, lead, chromium, nickel, barium, copper, zinc, cobalt, molybdenum and vanadium.

The pattern of contamination found in the unconsolidated water bearing zone suggests the development of a plume with its major axis aligned parallel to the groundwater flow direction. There is reason to speculate that an independent plume of perhaps greater extent, as a consequence of higher flow velocities, may have formed in the upper bedrock water bearing zone. Although this has not been verified.

Contaminants migrating south southwest away from Site 10 would be intercepted by Cayuga Creek to the south. In any event, Cayuga Creek would likely act as a hydrogeological barrier to dissolved contaminants migrating via the shallow water bearing zone.

The potential pathways identified at the site for contaminant migration include surface water, groundwater, and the drainage swale. As mentioned above, the likely discharge point for contaminants would be Cayuga Creek south of the site.

2.0 ENVIRONMENTAL SETTING

A very comprehensive discussion of the site's environmental setting has been previously presented in Section 2.0 of the IRP RI/FS Report, dated October 26, 1990 on pages 2-1 through 2-58.

3.0 FIELD INVESTIGATION PROGRAM

3.1 REMEDIAL INVESTIGATION OVERVIEW

The remedial investigation consisted of several field activities as outlined below:

- Subsurface soil and bedrock sampling using hollow stem augers and rock coring techniques;
- Installation of shallow (overburden) and deep (bedrock) groundwater monitoring wells;
- Surface sediment sampling of on-site drainage swale;
- Groundwater sampling of the five new monitoring and the five existing monitoring wells;
- Composite sampling of drummed drill cuttings; and
- Surveying of new and existing wells.

Tasks performed during the RI were designed to provide additional field and analytical data to confirm or supplement data generated during the IRP RI/FS. This data will subsequently be used to further delineate the extent and type of contamination at the site and in the development of remedial alternatives.

The procedures and methodologies employed during the Limited RI are summarized below and presented in detail in the Limited RI/FS Work Plan and QAPP.

3.2 SUMMARY OF FIELD PROGRAM ACTIVITIES

Section 3.1 provides an overview of the activities completed during the Limited RI at Site 10 and Table 4-3 summarizes the analytical testing conducted in support of the field activities. Figure 1-2 shows the locations of the new monitoring wells and sample collection points relative to the previously completed borings/monitoring wells.

3.2.1 Program Scheduling

The limited RI/FS program performed at IRP Site 10 proceeded in the following chronology as indicated in Table 3-1:

TABLE 3-1

CHRONOLOGY OF RI FIELD INVESTIGATION PROGRAM

IRP SITE 10 NIAGARA FALLS IAP

TASK	PERIOD OF PERFORMANCE	TOTAL NUMBER OF DAYS
Subsurface Soil Borings	11/18 - 11/26, 1991	7
Bedrock Borings and Monitoring Well	11/18 - 11/26, 1991	7
Installations	11/18 - 11/26, 1991	7
Well Development	11/27/91, 12/02/91	2
Groundwater Level Measurements	12/09/91, 12/18/91	2
Groundwater and Sediment Sample Collection	12/09/91, 12/10/91	2
Surveying	11/21/91, 12/01/91	1
Drum Sampling	12/23/91	1

- Notice to proceed;
- Work Plan preparation;
- QAPP preparation;
- Health and Safety Plan preparation;
- Notice to proceed with field work;
- RI Field Program; and
- Data analysis.

3.2.2 Identification and Role of Subcontractors

The following subcontractors were utilized during the Limited RI at Site 10:

- Parratt Wolff, Syracuse, New York
  Soil and rock boring and shallow/deep monitoring well installations.
- General Testing Corporation, Rochester, New York
  Groundwater and sediment sample collection, laboratory analytical services.

3.3 INVESTIGATION PROCEDURES

Prior to initiation of field activities, an initial walkover of the site was conducted with Base personnel to acquaint Wehran field geologists with the site and the existing monitoring well locations. Additionally, the proposed locations of the five new borings were also checked for accessibility.

A digging permit was obtained from the AFRES and a check was made with the local utility companies to confirm that no utilities existed within the study area. The Decontamination Area and Staging Area for drummed cuttings and containerized development/purge water were also identified.

3.3.1 Drilling and Well Installation Procedures

As indicated previously, a total of five new monitoring wells were installed during the Limited RI. Two of these wells (MW10-C and MW10-D) were installed in the overburden downgradient of the site and the existing monitoring wells in the direction of the suspected contaminant plume. The remaining three wells were installed in the upper portion of the bedrock to investigate the possibility of contamination and to provide

additional information on groundwater flow in the rock. Monitoring well MW10-A was located approximately 100 feet upgradient of the site and wells MW10-B and MW10-E were positioned downgradient about 350 and 300 feet southeast and south of the site respectively. The locations of the five new wells and the five existing wells are shown on Figure 1-2.

In general, the procedures outlined in the Limited RI/FS QAPP were followed. However, it was necessary to modify some of the methods based on field conditions. All borings were advanced through the soil (overburden) utilizing four and one quarter inch ID hollow stem augers. Bedrock was drilled using a nominal four inch OD HQ-size core barrel. The depths of the borings ranged from 9.5 to 25.1 feet below ground surface. The specific procedures followed for drilling and installing the overburden and bedrock monitoring wells are described separately below.

1. The drill rig was set up over the staked location and plumbed.
2. The first split spoon sample was collected in accordance with ASTM Method D-1586 from zero to two feet and the plugged augers were advanced to the top of the next interval to be sampled.
3. The auger plug was removed and the next two foot long sample was collected. This procedure was repeated in a manner so that the soil was continuously sampled until the top of bedrock was reached. All samples collected were described according to the "Standard Practice for Description and Identification of Soils" and classified according to the Unified Soil Classification System. Additionally, during sampling, each split spoon soil sample was scanned with an HNu photoionization detector (PID). The results are included on the soil boring logs which are presented in Appendix A.
4. Once the borehole had been drilled to completion depth, the auger plug was removed and a PVC well screen with a bottom plug and an appropriate length of riser was installed (two-inch ID, PVC Schedule 40). All screens and risers were threaded flush joint. The screens were all Schedule 40 PVC with 0.02 inch factory cut slots. All well screen and casing was steam cleaned prior to installation in the borehole. The screen interval was set at a suitable depth to allow for fluctuation in the groundwater table elevation and to allow any

free-floating petroleum, oils, and lubricants to enter the well during sampling. The well screen lengths varied from three to five feet based on the field conditions at each location. All screens extend to the top of bedrock. The top of the PVC casings extended from approximately one and a half feet to two and a half feet above ground elevation.

5. Once the well assembly was placed in the borehole, the augers were raised gradually while silica sand of a grain size distribution compatible with the screen and the formation was placed into the annulus by the Tremie method. Sand was maintained at a level inside the augers throughout installation. This process was continued until the sand pack extended a minimum of one foot above the top of the screen. A six inch layer of finer sand was then installed above the filter pack to prevent the downward migration of the bentonite or cement bentonite grout.
6. After the sand pack had been tremied in place and measurements taken to ensure the proper location of the sand pack, approximately two to three feet of a bentonite seal was placed on top of the sand pack. Seal thickness was adjusted in the field, depending on thickness of overburden to allow well installation.
7. After the bentonite seal was in place, and had been allowed to hydrate, and measurements were taken to ensure its proper location, a cement and bentonite grout was placed by the Tremie method from the top of the seal to the land surface. This was accomplished in such a manner that a tight, continuous grout seal was ensured through the entire interval. Cement and bentonite grout mixtures consisted of potable water, bentonite, and Type I or II Portland cement with 94 pounds of cement and five pounds of bentonite per six and one half gallons of water. The grout was allowed to set a least 72 hours before the well was developed.
8. Prior to development, the water level was measured to the nearest 0.01 foot below the top of the casing.
9. Each well was developed using a bottom-filling bailer until the Supervisory Geologist determined that the specific conductance pH, and conductivity had stabilized and showed no further changes with continued development. The

total volume of removed water was estimated and recorded. All purge/development water was containerized at the boring locations, then transported to the on-site staging area designated by Base personnel where it was transferred to a common holding tank. Based on field observations (visual), field screening (organic vapor analyzer results), and analytical data, the purge/development water will be characterized and disposal options recommended to Base personnel. Conditions and observations noted during development were recorded and are presented in Appendix B.

10. All wells were completed having the PVC casing extended two to two and one half feet above land surface (ALS). An end plug was placed on each well, along with a screw-type casing cap. The PVC casing was covered by a six inch diameter steel casing with a locking lid seated in a two foot diameter by four inch thick concrete surface pad. In order to minimize the deleterious effects of frost action, the concrete pads were constructed with galvanized steel reinforcing fibers which will impart a greater durability to the well pads. The pads were sloped away from the steel casing. A slot was cut in the side of the protective casing near the concrete pad to permit drainage. The drilling subcontractor provided and installed keyed-alike locks. Three, three inch diameter by six foot cement-filled steel guard posts were installed radially around each well. These guard posts were recessed approximately two feet into the ground and set in concrete. The posts were placed around, but not in, the concrete pad placed at the well base. The well number was marked on the steel casing using paint.

The procedures for drilling the bedrock monitoring wells were initially the same as those described for overburden monitoring well drilling (Steps 1 through 3). Steps 1 through 3 were repeated until the Lockport Dolomite was reached. The following procedures were then followed:

4. Once the top of the bedrock was encountered, the augers were advanced approximately six more inches into the bedrock. The auger plug was removed and a two foot thick bentonite seal was placed in the bottom of the boring.

Once the seal was placed, the augers were removed from the boring and a six inch diameter black steel casing was pushed through to the top of rock and hammered into place to assure a tight seal.

5. The remainder of the hole around the steel casing was then backfilled with uncontaminated cuttings. The bentonite seals were then allowed to hydrate usually overnight before proceeding with the coring activity.
6. After allowing the bentonite to hydrate, an HQ-size double tube core barrel was used to advance the hole to the desired depth in the Lockport Dolomite.
7. All rock cores recovered were thoroughly examined and logged by the geologist for both lithology and jointing/fracture information. The cores were placed in wooden core boxes, properly labeled and retained for future reference.

Steps eight through ten of the overburden monitoring well installation procedures were then followed. Monitoring well construction details are summarized on Table 3-2.

OVERBURDEN WELLS

In accordance with the QAPP the ambient air was monitored with an HNu during all drilling operations. Additionally, the drill cuttings were screened with the HNu with the intention of separating the cuttings which exhibited elevated readings (indicative of VOC's) from those cutting with no elevated readings. Since no elevated readings were observed for any of the drill cuttings they were all containerized in pre-cleaned 55 gallon metal drums without any separation. The drums were properly labelled and moved to the designated staging area located in a fuel tank storage area just north of the site.

3.4 SAMPLING

Media sampled as part of the Limited RI/FS for Fire Training Area No. 1, IRP Site 10 included soil, groundwater, surface sediments and drummed drill cuttings (soil). The types and number of samples collected are presented in Table 4-3.

TABLE 3-2
NIAGARA FALLS INTERNATIONAL AIRPORT LIMITED RI/FS, SITE 10
MONITORING WELL CONSTRUCTION DETAIL SUMMARY

WELL/ PIEZ.	GROUND SURFACE ELEV. (FT)	TOTAL BORING DEPTH	FILTER PACK DIMENSIONS		BENTONITE SEAL DIMENSIONS		SCREENED INTERVAL		TOP OF CASING ELEVATIONS (FEET)
		DEPTH / ELEVATION (FT)	BOTTOM DEPTH / ELEVATION (FT)	TOP DEPTH / ELEVATION (FT)	BOTTOM DEPTH / ELEVATION (FT)	TOP DEPTH / ELEVATION (FT)	BOTTOM DEPTH / ELEVATION (FT)	TOP DEPTH / ELEVATION (FT)	INNER / OUTER (FT)
MW10A	588.08	20.00 / 568.08	20.00 / 568.08	7.60 / 580.48	7.60 / 580.48	5.60 / 582.48	19.90 / 568.18	9.90 / 578.18	590.12 / 590.55
MW10B	586.71	19.20 / 567.51	19.20 / 567.51	9.50 / 577.21	9.50 / 577.21	7.50 / 579.21	19.00 / 567.71	11.50 / 575.21	588.84 / 588.99
MW10C	586.95	9.60 / 577.35	9.60 / 577.35	3.00 / 583.95	3.00 / 583.95	1.00 / 585.95	9.30 / 577.65	4.30 / 582.65	589.11 / 589.57
MW10D	587.49	9.50 / 577.99	9.50 / 577.99	4.00 / 583.49	4.00 / 583.49	1.50 / 585.99	9.00 / 578.49	6.00 / 581.49	589.49 / 589.65
MW10E	586.52	25.10 / 561.42	25.10 / 561.42	12.30 / 574.22	12.30 / 574.22	9.50 / 577.02	24.65 / 561.87	15.10 / 571.42	588.24 / 588.41

3.4.1 Soil Samples (Split Spoon)

Soil samples were collected continuously in each boring for lithologic purposes and to allow field screening of VOC's. No soil samples were retained for analytical testing (in accordance with the work plan). Soil samples were collected utilizing a standard two foot long, two inch OD split spoon sampler in accordance with ASTM D-1586 Procedures. Upon removal from the boring the split spoon was opened and the required soil scanned with a HNu Model PI-101 Photoionization Detector (PID) to determine if any VOC's were present. The readings were recorded on the boring logs. The soil was then logged by the geologist with the description recorded on the field log form.

Soil samples were examined, prior to their containment, for various characteristics including, but not limited to:

- PID Monitoring Results;
- Recovery;
- Lithology;
- Visual Grain Size;
- Color;
- Texture;
- Consistency;
- Density;
- Moisture.

Soil descriptions were used to characterize the sample and recorded on the borehole log (Appendix A).

A representative sample from each split spoon was placed in a pre-cleaned, properly labeled glass jar and retained for archival purposes. The remaining portion of each soil sample was disposed in a pre-cleaned 55 gallon steel drum. In accordance with the work plan, the soil samples and drill cuttings which exhibited any elevated (above background levels) readings with the PID were to be segregated from the non-volatile portion. However, since none of the drill cutting or soil samples exhibited elevated readings, they were all co-disposed and labelled as non-volatile.

3.4.2 Drummed Cuttings

As indicated above, all drill cuttings as well as the excess split spoon samples were placed in pre-cleaned 55 gallon steel drums. On the basis of PID monitoring of drill cuttings and split spoon samples, all the samples and cuttings were considered to be non-volatile and co-disposed in appropriately labeled drums.

The drums were placed in the designated staging area to await final disposal.

In order to characterize the containerized cuttings for proper disposal, a single composite sample consisting of soils from all the drums was taken for analysis. The procedures utilized to produce the composite sample are as follows:

- Drums containing borehole cuttings were opened and screened for volatile organics using a PID meter, (no elevated levels were recorded);
- Samples of the cuttings were obtained from varied depths in each drum using a small diameter stainless steel hand auger and placed in a stainless steel bowl;
- Once sampling was completed for all drums, the samples were mixed in the stainless steel bowl to form a composite sample for analysis;
- The composite sample was placed in appropriately labeled laboratory jars, in accordance with the QAPP and sent to the analytical laboratory; and
- All sampling tools were decontaminated between each drum in accordance with the QAPP.

3.4.3 Groundwater Sampling

Groundwater samples were collected within 24 hours after purging three to five well volumes from each of the five new wells and the five previously installed wells. Stainless steel bailers were used for both purging and sampling. The decontaminated stainless steel bailer was lowered into to the well to a point below the static water level in order to collect a representative groundwater sample. The wells were purged and sampled beginning with the upgradient wells and progressing to the downgradient wells.

During sample collection, the stainless steel bailer was filled, removed from the well and the groundwater dispensed into the appropriate containers in order of volatilization sensitivity. Preservatives were added in the field in order to meet analytical protocol. One

additional groundwater sample was collected from each of the five new wells and field filtered through a 0.45 micron filter. These samples were to be utilized in comparison testing for soluble metals. The samples were packaged and placed in ice filled cooler chests which were maintained at 4 degree C or less until they were delivered to the lab at the end of the day. All sampling and purging equipment were properly decontaminated between wells.

3.4.4 Surface Sediment

Surface sediment was collected from two locations within the drainage ditch to the west of the site (see Figure 1-2). Sampling was performed using a stainless steel trowel that was decontaminated between sampling locations. The sediments were placed directly into appropriately labelled sample containers, and then packed in ice filled coolers. The samples were maintained at 4 degree C or below until they were delivered to the laboratory at the end of the day.

3.4.5 Field Quality Assurance/Quality Control Program

Prior to initiation of the field investigation and sampling program at Site 10, a Quality Assurance Project Plan (QAPP) was prepared and approved. The procedures outlined in this document were followed rigorously to that the data quality objectives were achieved.

Additionally as specified in the work plan the following QC samples were collected during the field sampling program:

- 1 Trip Blank
- 1 Field Blank
- 1 Equipment Blank
- 1 Field Duplicates

3.4.6 Laboratory Program

All analytical testing was performed in accordance with the methods and protocols outlined in Section 1.8 of the QAPP. As indicated, CLP Protocols were not required for the Limited RI/FS Program.

4.0 DISCUSSION OF RESULTS

4.1 SITE SPECIFIC GEOLOGY

Data obtained from the recent investigations generally tends to substantiate the previous description of the site geology as presented in the IRP RI/FS Report. As previously indicated the site is covered with a thin veneer of glacially derived sediments consisting of glaciolacustrine silts, sands and clay and glacial till. The unconsolidated deposits vary in thickness across the site with a minimum thickness of 5.2 feet at well MW10-A and a maximum thickness of 9.9 feet at well MW10-3, Table 4-1. The glacial till forms the lowermost unit and rests unconformably on the Lockport Dolostone Surface. The glaciolacustrine deposits overlie the glacial tills and form the uppermost unit at the site.

Both units are similar in color and vary only slightly in texture, which makes it difficult to distinguish between them. However, an attempt was made to define the contact between the units. The units are described in greater detail in the following sections.

4.1.1 Glaciolacustrine Silt, Sand and Clay

The entire site appears to be covered with a layer of Glaciolacustrine Silt, Sand and Clay ranging in thickness from approximately four feet at MW10-A and MW10-C to 6.3 feet at MW10-B. This unit is characterized by thin bedded to laminated, gray brown to reddish brown mottled silty clays. A general field description of this material is as follows: Red brown Silt, some clay, trace very fine sand to Red brown Silt and very fine sand, damp, medium dense.

The boring logs in Appendix A present more specific and detailed soil descriptions across the site.

4.1.2 Glacial Till

Underlying the glaciolacustrine unit and immediately overlying the bedrock is a thin layer of Glacial Till. This layer varies in thickness from 1.2 feet at MW10-A to 5.4 feet at MW10-C. A general field description of this unit is as follows: Red brown Silt and very fine sand, little clay, trace fine Gravel, moist and soft to medium stiff. Gravel found in this unit generally consists of sub-rounded to sub-angular clasts of dolomite, shale, and

TABLE 4-1

NIAGARA FALLS INTERNATIONAL AIRPORT

LIMITED RI/FS - SITE 10

SUMMARY OF BORING DATA

BORING	GROUND SURFACE ELEVATION (FT)	TOTAL BORING DEPTH DEPTH / ELEVATION (FT)	TOP OF GLACIOLACUSTRINE SILT AND CLAY DEPTH / ELEVATION (FT)	TOP OF GLACIAL TILL DEPTH / ELEVATION (FT)	TOP OF BEDROCK DEPTH / ELEVATION (FT)
MW10A	588.08	20.00 / 568.08	0.00 / 588.08	4.00 / 584.08	5.20 / 582.88
MW10B	586.71	19.20 / 567.51	0.00 / 586.71	6.30 / 580.41	7.70 / 579.01
MW10C	586.95	9.60 / 577.35	0.00 / 586.95	4.00 / 582.95	9.40 / 577.55
MW10D	587.49	9.50 / 577.99	0.00 / 587.49	5.10 / 582.39	9.30 / 578.19
MW10E	586.52	25.10 / 561.42	0.00 / 586.52	4.50 / 582.02	9.50 / 577.02

crystalline rock. The boring logs in Appendix A present more specific and detailed soil descriptions across the site.

4.1.3 Lockport Dolostone

The entire site and surrounding area is underlain by the Lockport Dolostone which reportedly is approximately 180 feet thick in this area of Niagara Falls. As described by Johnston (1964), the Lockport is a dark gray to grayish brown dolomite, massive to thin bedded locally containing algal reefs and small masses of gypsum. The lower portion of the unit tends to be gray to brown dolomite, locally containing gypsum and light gray coarse grained limestone with shale dolomite at the base.

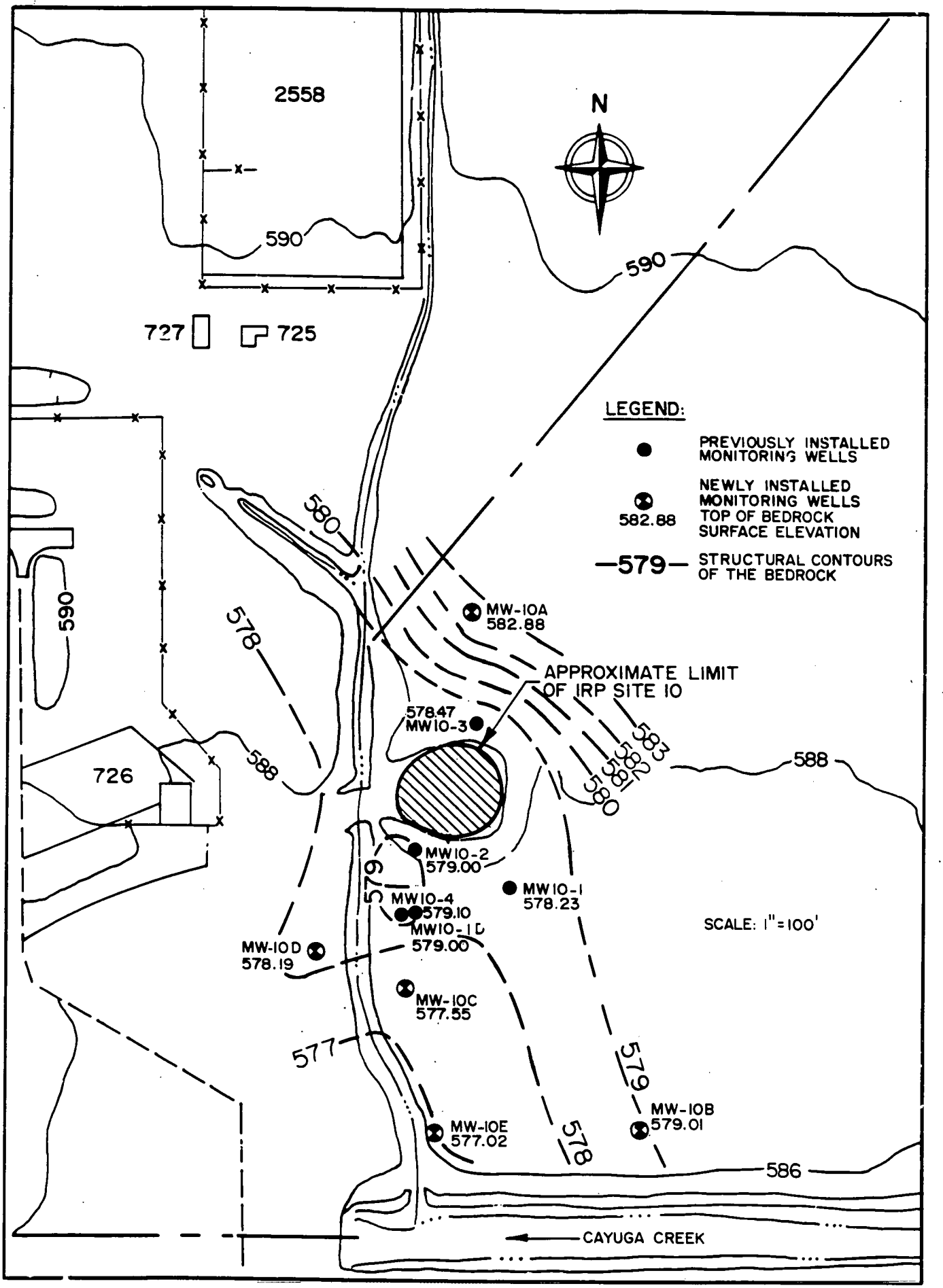
Bedrock thickness of 14.8, 11.5 and 15.6 feet was cored in borings MW10-A, MW10-B and MW10-E respectively. Based on the core samples, the dolostone bedrock is generally gray to dark gray, porous or vuggy (with gypsum), fossiliferous and massive.

In all bedrock borings the rock quality designation (RQD), which is a measure of the overall competency of the rock, was moderate to high averaging 85 percent for all nine core runs. As indicated in the boring logs, the majority of the fractures are perpendicular to the core axis along bedding planes. The upper five to ten feet is generally more fractured showing increasing competence with depth.

A contour map of the bedrock surface (Figure 4-1) was constructed utilizing data from all the borings on site. Boring logs for the five new wells are contained in Appendix A. The logs for the previous wells are presented in the earlier IRP RI/FS reports.

As indicated on Figure 4-1, the bedrock surface is somewhat irregular, but overall exhibits a general slope to the southwest at approximately 0.02 - 0.04 ft/ft. Bedrock elevations range from a maximum of 582.88 feet at MW10-A to a minimum of 577.02 feet at MW10-E. The apparent irregularities in the rock surface may be natural, but are more likely reflective of the criteria utilized during the various drilling programs to define the "top of bedrock". During the initial boring program (MW-10-1, 2 and 3) soil samples were collected at five foot intervals. Consequently, the split-spoon samples were planned for zero to two feet, five to seven feet and 10-12 feet. Since the bedrock is typically at eight to ten feet below ground surface, it falls within a non-sampling interval. This means that the augers were advanced following collection of the second split-spoon at the five foot level with the intent of stopping at ten feet for the third sample. It is not indicated on the logs

FIGURE 4-1



SITE 10: STRUCTURAL CONTOURS OF THE BEDROCK SURFACE

for these holes, but it appears likely that the augers were advanced to "refusal", with this depth being considered the "top-of-bedrock". Considering the fractured and weathered condition of the upper portion of the bedrock, as evidenced in the recent borings, it is probable that the augers could have been advanced a few inches to as much as a foot into the bedrock before reaching refusal. This would result in the reported top-of-bedrock in these holes being shown at elevations lower than the actual top-of-rock.

This problem was eliminated in the more recent borings (MW10-4, -10, -10A, -B, -C, -D and -E) in that continuous split-spoon sampling was utilized to define the stratigraphy and the top-of-bedrock.

4.2 SITE HYDROGEOLOGY

As indicated in the IRP RI/FS Report "The first potential water bearing zone encountered was the thin silty-clay horizon containing some gravel which rests directly on the bedrock surface. This horizon represents a slightly more permeable section of till. All other materials penetrated generally lacked sufficient permeability to serve as viable water-bearing formations and collectively function as an aquitard."

The data from the borings installed during this limited RI/FS tend to support this conclusion. However, the three additional wells installed in the under portion of the bedrock indicate that this zone is fractured and jointed and also water-bearing. Initially, individual maps were prepared based on water level readings obtained on December 18, 1991 and January 15, 1992 (Table 4-2) to present the potentiometric surface in the overburden and shallow bedrock zones, Figures 4-2 and 4-3 respectively.

These maps indicated that there is essentially no difference between the two potentiometric surfaces. Additionally, the water elevations in wells MW10-1D and MW10-4 which are located adjacent to one another and screened in the bedrock and overburden respectively to form a couplet, are almost identical. The water surface in the overburden well MW10-4 ranged from 0.25 to 0.15 feet above the water level in the bedrock well MW10-1D between the December 18, 1991 and January 15, 1992 readings. This indicates a very slight vertical downward gradient from the overburden aquifer to the bedrock aquifer. An examination of the two water surfaces also indicates that they are reflective of the bedrock topography as opposed to the surface topography. The water levels recorded

TABLE 4-2

NIAGARA FALLS INTERNATIONAL AIRPORT

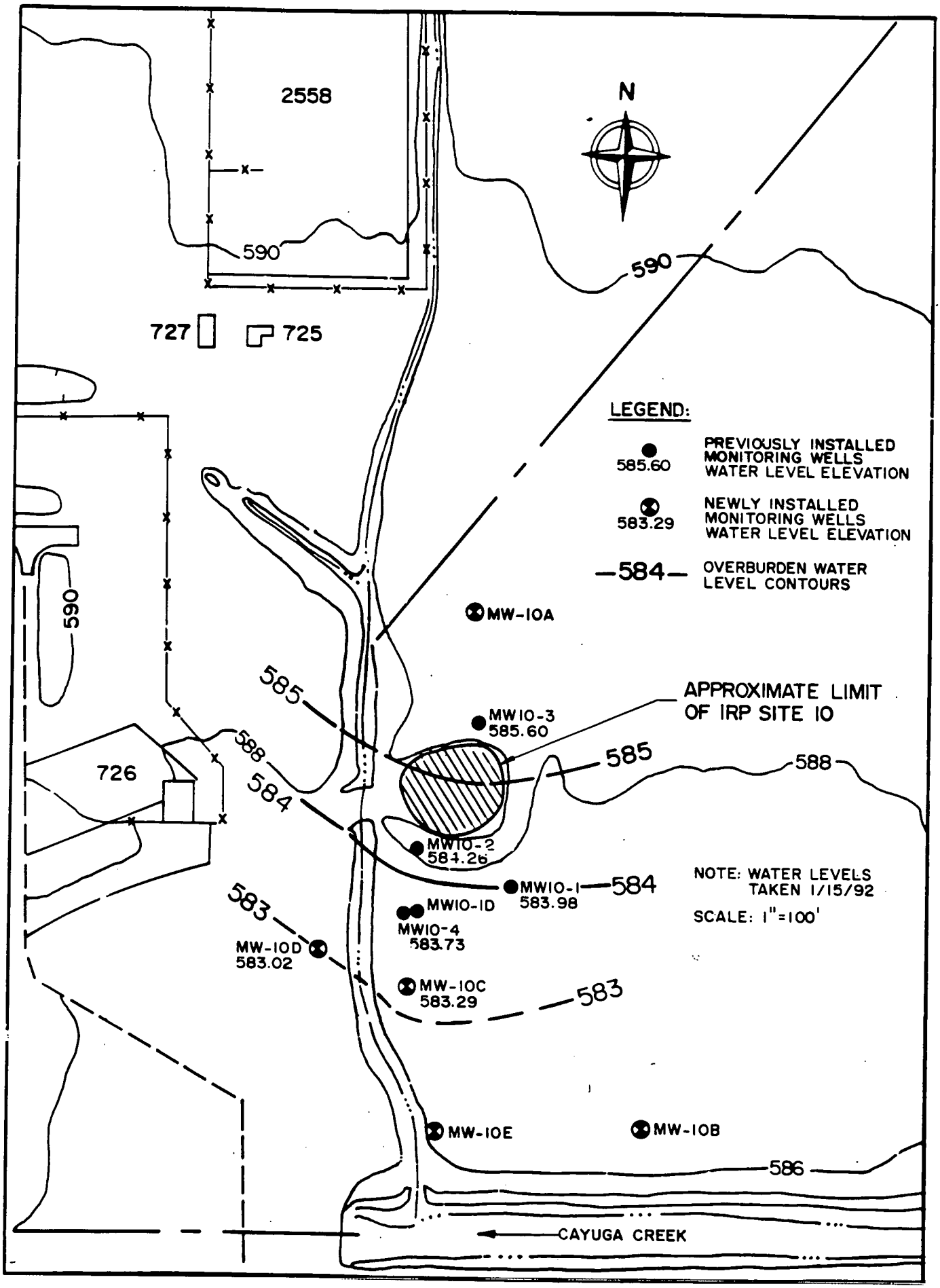
LIMITED RI/FS - SITE 10

SUMMARY OF WATER LEVELS

Well No.	T.O.C. Elev.	Ground Elev.	Well Depth (ft)	Dec. 18, 1991 Depth To Water (ft)	Dec. 18, 1991 Water Elev. (ft)	Jan. 15, 1992 Depth To Water (ft)	Jan. 15, 1992 Water Elev. (ft)
MW-10A *	590.12	588.08	19.90	4.17	585.95	3.40	586.72
MW-10B *	588.84	586.71	19.20	9.61	579.23	7.68	581.16
MW-10C	589.11	586.95	9.60	7.27	581.84	5.82	583.29
MW-10D	589.49	587.49	10.00	7.24	582.25	6.47	583.02
MW-10E *	588.24	586.52	25.10	8.27	579.97	6.95	581.29
MW-10-1	589.92	587.39	8.80	7.8	582.12	5.94	583.98
MW-10-1D *	589.69	587.28	32.90	7.24	582.45	6.10	583.59
MW-10-2	590.46	587.99	9.00	7.3	583.16	6.20	584.26
MW-10-3	590.76	588.25	9.90	5.85	584.91	5.16	585.60
MW-10-4	589.65	587.08	7.90	6.95	582.70	5.92	583.73

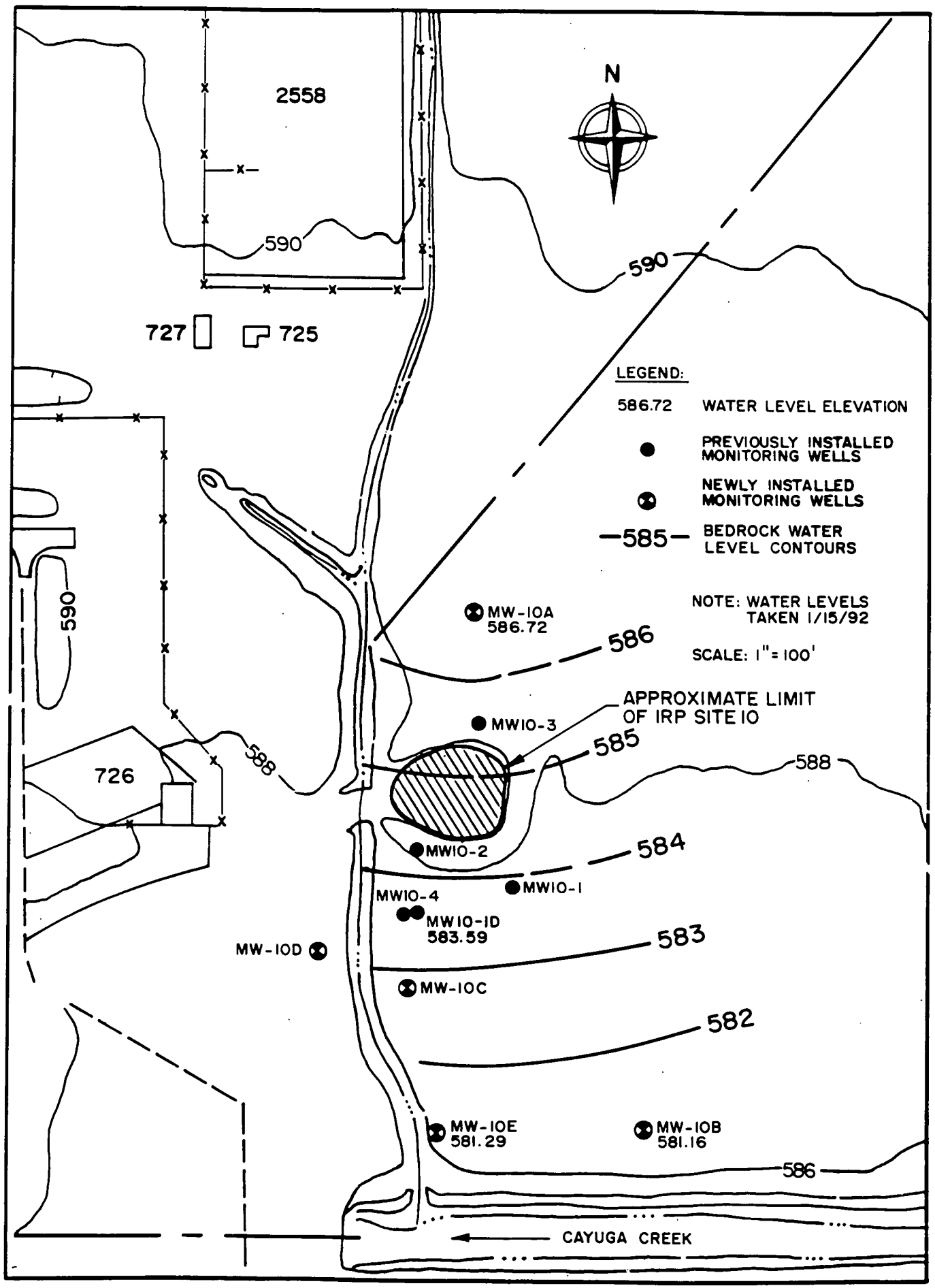
* Denotes Well Installed in the Bedrock

FIGURE 4-2



SITE 10: OVERBURDEN WATER LEVEL CONTOUR MAP

FIGURE 4-3



SITE 10: BEDROCK WATER LEVEL CONTOUR MAP

in December 1991 and January 1992 show that the potentiometric surface in both zones is roughly three feet above the bedrock surface and parallel to it.

The glaciolacustrine deposits and the upper portion of the glacial till exhibit low permeabilities and collectively act as a confining layer to the water bearing zones in the lower portion of the till and the upper bedrock. There is no confining layer between the two water-bearing zones, which results in the two zones being highly interconnected and essentially acting as a single unit in that groundwater flow direction is the same. Groundwater flow in both systems is to the south, with a hydraulic gradient of approximately 0.014 ft/ft. This is consistent with the value of 0.0101 ft/ft stated in the IRP RI/FS report.

Although the two zones act as a single unit, the estimated flow velocities in the two zones are considerably different. As indicated in the IRP RI/FS report, horizontal groundwater flow velocities were estimated to be 7.7×10^{-2} to 7.7×10^{-1} ft/year for the unconsolidated aquifer and 6.3×10^{-1} ft/day or 230 ft/year for the upper bedrock aquifer. This higher flow velocity in the upper bedrock is related directly to the higher permeability of this zone as a result of the fracturing and open horizontal bedding planes/joints present.

4.3 ANALYTICAL RESULTS

Analytical testing was performed on groundwater samples collected from all ten monitoring wells, sediment samples from two locations and one composite sample of the drummed drill cuttings. Table 4-3 provides a summary of the number and type of analyses performed for each matrix. The analytical results for all samples are contained in Appendix C. The matrix-specific results are presented in Tables 4-4, 4-5, 4-6, and 4-7.

Organic Analysis

Two sediment samples, and one composite sample of the drill cuttings which was subjected to TCLP, were analyzed for volatile organics and semi-volatile organics. Ten groundwater samples and associated field QC blanks were analyzed for purgeable halocarbons and purgeable aromatics. Additionally, the composite sample of drill cuttings was analyzed for pesticides and herbicides.

TABLE 4-3

NIAGARA FALLS INTERNATIONAL AIRPORT

LIMITED RI/FS - SITE 10

SAMPLING AND ANALYSES

PARAMETER	Groundwater							Sediments		Drill Cuttings		
	Analytical Method	New Wells (No.)	Existing Wells (No.)	QC Samples				Analytical Methods	Drainage Ditch (No.)	Analytical Methods	Non-Volatile Soils	Volatile Soils
				Duplicate	Equip. Blank	Field Blank	Trip Blank					
Alkalinity - Carbonate Bicarbonate & Hydroxide	A403	5		1	1	1						
Common Anoins (Choride, Flouride, Nitrate, Sulfate, Orthophosphate)	A429	5		1	1	1						
Common Cations (Calium, Magnesium, Sodium, Potassium)	SW 3050/ SW 6010	5		1	1	1						
Specific Conductance (Field)	E 120.1	5		1	1	1						
pH (Field)	E 150.1	5		1	1	1						
Total Dissolved Solids	E 160.1	5		1	1	1						
Temperature	E 170.1	5		1	1	1						
Metal Screen (Total Metals) (Zinc, Chromium, Iron, Manganese, Barium, Aluminumm Copper, Nickel, Potassium, Silicon, Boron)	E 200.7	5		1	1	1						
Metal Screen (Dissolved Metals) Test for any parameters which exceeds part 703 standards based on total concentration results.	E 200.7	5										

Tab4-3.wk1

20.4/92.00640.JMcC

TABLE 4-3 (continued)

NIAGARA FALLS INTERNATIONAL AIRPORT

LIMITED RI/FS - SITE 10

SAMPLING AND ANALYSES

PARAMETER	Groundwater							Sediments		Drill Cuttings		
	Analytical Method	New Wells (No.)	Existing Wells (No.)	QC Samples				Analytical Methods	Drainage Ditch (No.)	Analytical Methods	Non-Volatile Soils	Volatile Soils
				Duplicate	Equip. Blank	Field Blank	Trip Blank					
Lead	E 239.2	5		1	1	1						
Petroleum Hydrocarbons	E 418.1	5		1	1	1		SW 3550/E 418.1	2			
Purgeable Halocarbons	SW 5030/8021	5	5	1	1	1	1					
Purgeable Aromatics	SW 5030/8020	5	5	1	1	1	1					
Volatile Organic compounds								SW 8240	2			
Semi-Volatile Organic compounds								SW 3550/SW 8270	2			
TCLP ANALYSIS												
Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag)											1	NA
Volatile Organics										SW 8240	1	NA
Semi-Volatile Organic Compounds										SW 3550/ 8270	1	NA
Pesticides										SW 8080	1	NA
Herbicides										SW 8150	1	NA

Tab4-3.wk1

20.4/92.00640.JMcC

TABLE 4-4

NIAGARA FALLS INTERNATIONAL AIRPORT

LIMITED RI/FS - SITE 10

ANALYTICAL RESULTS : SEDIMENTS

PARAMETER (units)	DETECTION LIMITS	SAMPLE FIELD I.D.	
		SEDIMENT 1	SEDIMENT 2
EPA Method SW3550/E418.1 PETROLEUM HYDROCARBONS (ug/g)		192	50.9
EPA Method SW 8240 VOLATILE ORGANICS (ug/kg)	SEE APPENDIX C	ND	ND
EPA Method SW 3550/8270 SEMIVOLATILE ORGANICS (ug/kg)	SEE APPENDIX C		
PYRENE	330	ND	340
OTHERS		ND	ND

ND - Not Detected

TABLE 4-5

NIAGARA FALLS INTERNATIONAL AIRPORT

LIMITED RI/FS - SITE 10

ANALYTICAL RESULTS - GROUNDWATER

PARAMETER (units)	DETECTION LIMITS	ARARs	MW10-1	MW10-2	MW10-3	MW10-4	MW10-1D	MW10-A	MW10-B	MW10-C	MW10-D	MW10-E	MW10-E DUPLICATE	EQUIP. BLANK	FIELD BLANK	TRIP BLANK
EPA METHOD SW 5030/8021 VOLATILE ORGANICS/ PURGEABLE HALOCARBONS (ug/l)																
VINYL CHLORIDE	2	2	76.3	ND	ND	ND	1160	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	1		202	7530	73.3	3210	13100	ND	ND	121	ND	6.81	11.1	ND	ND	ND
CHLOROFORM	1		ND	ND	42.6	ND	ND	ND	ND	ND	ND	ND	1.76	ND	ND	ND
1,1,1-TRICHLOROETHANE	1		ND	ND	1.73	ND	ND	ND	ND	ND	ND	ND	1.97	ND	ND	ND
CARBON TETRACHLORIDE	1		ND	ND	9.96	ND	ND	ND	ND	ND	ND	ND	1.15	ND	ND	ND
1,2-DICHLOROPROPANE	1		ND	ND	3.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	1	5.0	6.95	(20800)	124	3450	1720	ND	ND	(497)	ND	ND	1.36	ND	ND	ND
TETRACHLOROETHENE	1		ND	ND	1.14	ND	ND	ND	ND	ND	ND	ND	1.78	ND	ND	ND
OTHERS	SEE APPENDIX C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA METHOD SW 5030/8020 PURGEABLE AROMATICS (ug/l)																
BENZENE	2	ND	8.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	2	2000	4.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
OTHERS	SEE APPENDIX C		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA METHOD E 200.7 * METALS (TOTAL) (mg/l)																
ALUMINUM	0.1	0.10						35.2	20.3	6.81	8.23	3.51	15.6	0.10 U	0.10 U	
BARIUM	0.1	1.0						0.52	0.38	0.21	0.24	0.27	0.33	0.10 U	0.10 U	
BORON	0.25	1.0						0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.25 U	0.25 U	
CALCIUM	0.5							337	480	228	415	543	833	0.50 U	0.50 U	
CHROMIUM	0.01	0.05						0.0484	0.0279	0.017	0.0185	0.0108	0.0342	0.01 U	0.01 U	
COPPER	0.01	0.20						0.107	0.0308	0.01 U	0.01 U	0.01 U	0.0954	0.01 U	0.01 U	
IRON	0.05	0.30						41.5	18.2	5.68	7.25	3.09	15.1	0.05 U	0.05 U	

NOTES: * or as indicated for those metals analyzed by alternate methods

NA - Not Appilicable

U or ND - Not Detected

N - Spiked sample recovery not within control limits.

TABLE 4-5 (continued)

NIAGARA FALLS INTERNATIONAL AIRPORT

LIMITED RI/FS - SITE 10

ANALYTICAL RESULTS - GROUNDWATER

PARAMETER (units)	DETECTION LIMITS	ARARs	MW10-1	MW10-2	MW10-3	MW10-4	MW10-1D	MW10-A	MW10-B	MW10-C	MW10-D	MW10-E	MW10-E DUPLICATE	EQUIP. BLANK	FIELD BLANK	TRIP BLANK
EPA METHOD E 200.7 *																
METALS (TOTAL) (mg/l)																
LEAD (Furnace)	0.005	0.03						0.0099 N	0.0529 N	0.0086 N	0.0096 N	0.0076 N	0.0169 N	0.005 U	0.005 U	
MAGNESIUM	0.5	35						170	158	90.2	164	121	242	0.05 U	0.05 U	
MANGANESE	0.005	0.30						0.783	0.606	0.544	0.409	0.193	0.854	0.005 U	0.005 U	
NICKEL	0.02							0.0563	0.02 U	0.02 U	0.02 U	0.02 U	0.0329	0.02 U	0.02 U	
POTASSIUM	0.25							12.1	59.6	3.11	4.1	1.74	3.92	0.25 U	0.25 U	
SILICA	0.004							4.78	5.17	5.76	7.08	4.78	5.12	0.004 U	0.004 U	
SODIUM		20						9.69	25.8	18.2	26.7	8.88	5.74	0.156	0.216	
ZINC	0.01	0.30						3.75	1.14	0.18	0.412	0.188	0.745	0.010 U	0.010 U	
METALS (SOLUABLE) (mg/l)																
ALUMINUM	0.1	0.10						5.05	3.12	0.112	0.608	0.137				
IRON	0.05	0.30						3.4	2.17	0.0631	0.382	0.389				
LEAD	0.005	0.03							0.0282							
MAGNESIUM	0.5	35						59.5	76.2	74	142	104				
MANGANESE	0.005	0.30						0.101	0.104	0.361	0.189	0.0831				
SODIUM		20							8.37		27.8					
ZINC	0.01	0.30						0.4	0.175		0.147	0.0277				
EPA METHOD 418.1 (mg/l)																
TOTAL PETROLEUM HYDROCARBONS	0.1	NA	NA	NA	NA	NA	NA	ND	1.68	ND	0.4	ND	ND	ND	ND	
MISCELLANEOUS INORGANICS (mg/l)																
TOTAL DISSOLVED SOLIDS (E160.1)	10	500	NA	NA	NA	NA	NA	773	1880	1020	2130	2180	2200	ND	ND	
COMMON ANIONS (A429)																
FLOURIDE	0.1	1.5	NA	NA	NA	NA	NA	0.515	0.844	0.455	1.08	1.17	1.32	ND	ND	
CHLORIDE	1	250	NA	NA	NA	NA	NA	21.3	18.7	50.6	26.7	16.9	15	ND	ND	
SULFATE	0.1	250	NA	NA	NA	NA	NA	256	1040	361	1220	259	1350	ND	ND	

NOTES: * or as indicated for those metals analyzed by alternate methods
NA - Not Applicable
U or ND - Not Detected
N - Spiked sample recovery not within control limits.

TABLE 4-6
NIAGARA FALLS INTERNATIONAL AIRPORT
LIMITED RI/FS - SITE 10
FIELD WATER QUALITY DATA

WELL NO.	TEMP. °C	pH	SPECIFIC CONDUCTANCE (umhos/cm)	ALKALINITY (mg/l)	WATER CLARITY
MW10-1	10	7.35	1435		Muddy
MW10-2	9.5	7.65	1245		Muddy Red
MW10-3	9	7.74	1165		Clear but Cloudy
MW10-4	9	7.82	930		Cloudy
MW10-1D	9.5	7.58	1225		Muddy
MW10-A	9	7.67	935	332	Muddy Reddish Tint
MW10-B	10	8.14	1595	257	Muddy Greyish Tint
MW10-C	9.5	7.64	985	429	Muddy Reddish Tint
MW10-D	10	7.76	1665	327	Muddy
MW10-E	9	7.79	1545	260	Muddy
Equip. Blank	11.5	8.06	55.25	2.0 U	Clear
Field Blank	9	8.05	54.75	2.0 U	D.I. Water

Samples Collected 12/9/91

TABLE 4-7
NIAGARA FALLS INTERNATIONAL AIRPORT
LIMITED RI/FS - SITE 10
ANALYTICAL RESULTS - DRILL CUTTINGS

TCLP ANALYSIS	DETECTION LIMITS	COMPOSITE NON-VOLATILE CUTTINGS
EPA METHOD SW 8240 TCLP VOLATILE ORGANICS	SEE APPENDIX C	ND
EPA METHOD 8240 TCLP SEMI-VOLATILE ORGANICS	SEE APPENDIX C	ND
GC METHOD 8080 TCLP PESTICIDES	SEE APPENDIX C	ND
GC METHOD 8150 TCLP HERBICIDES	SEE APPENDIX C	ND
TCLP EXTRACTION METALS (mg/l)		
BARIUM	0.1	0.551
OTHERS	SEE APPENDIX C	ND

Inorganic Analysis

Two sediment samples were analyzed for total petroleum hydrocarbons (TPH). One composite sample of the drill cuttings which was subjected to TCLP, was analyzed for the TCLP metals. The QC samples associated with the groundwater sampling, with the exception of the trip blank, were analyzed for metals, TPH, total dissolved solids (TDS), and common anions.

4.3.1 Significance of Findings

Groundwater, sediments and drill cuttings were investigated at Site 10 to provide additional data regarding contaminant levels and distribution in the various media to supplement the previous investigations. Tables 4-4, 4-5 and 4-6 present a comparison of the analytical results for all contaminants found with the ARARs (if applicable).

4.3.1.1 Sediment Analysis

During the on-site investigation, two sediment samples were collected from the drainage ditch located immediately west of the site (Figure 1-2). When flowing, the ditch drains southward into Cayuga Creek. At the time of sampling, no flow was observed, however, there was some localized ponding within the ditch.

Sediment Sample 1 was collected from the bottom area of the ditch, adjacent to the burn pit area. Sediment Sample 2 also collected from the bottom area of the ditch at a location approximately ten feet north of the confluence of the ditch and Cayuga Creek. All sampling was performed in accordance with procedures outlined in the Work Plan. Samples were transported to the analytical testing laboratory which were received the day after sampling. Analyses were performed on the samples as outlined in the QAPP and Work Plan.

The following presents a discussion of the analytical data for the sediments as presented in Table 4-4.

- Total petroleum hydrocarbons (TPH) were detected in both sediment samples. The sample adjacent to the fire training area exhibited a level of 192 ug/g whereas the sample at the confluence of the drainage ditch and Cayuga Creek was at 50.9 ug/g. The presence of TPH in the sediments could be related to the fuels which were burned during the fire training exercises. However, the

drainage ditch collects and transports run-off from other areas of the base upgradient of Site 10, which include at least one fuel storage area.

- Pyrene was the only semi-volatile organic compound detected in the sediments in the drainage ditch. The concentration (340 ug/kg) is only slightly above the detection limit of 330 ug/kg. Pyrene was not detected in any of the previous soil or groundwater samples from Site 10 and may not be related to the fire training activities.

4.3.1.2 Groundwater Analysis

Unfiltered groundwater samples were collected from the five new wells and analyzed for 15 metals. The results as reported in Table 4-5 are very comparable to the total metal concentrations reported for groundwater samples from the five existing wells in the IRP RI/FS Report. As stated in the previous report, the elevated metal levels found in groundwater at the site are not considered to be the result of hazardous waste management activities at the site. The evidence indicates that the elevated metals concentrations are a result of naturally occurring metals found in the suspended sediment. The most common of these metals are calcium, iron, manganese, magnesium, aluminum and zinc. The basic constituents of the dolomitic bedrock are calcium and magnesium. Minerals commonly associated with the Lockport Dolomite include but are not limited to sphalerite (ZnS) and galena (PbS). Elevated levels of silica, iron and aluminum are believed to be associated with the glacial sediments at the site which consist of clay minerals (phyllosilicales) that may contain various concentrations of aluminum, silica, magnesium, calcium, sodium and other less common metals such as nickel or lithium.

In order to investigate the relationship between the metals concentrations and suspended sediment in the samples, duplicate groundwater samples were taken during the initial sampling event and filtered prior to analyses. The filtered samples were analyzed for those metals which occurred in the corresponding unfiltered sample at concentrations exceeding NYSDEC Part 703 standards for Class GA waters. The results of the analyses for soluble metals are presented in Table 4-5. As indicated, the soluble concentrations for most of the metals, with the exception of magnesium, are considerably lower than the total metals concentration for the unfiltered samples. This generally substantiates the idea that

suspended sediment is the primary source of metals in the samples. The following presents a comparison of metal levels measured in groundwater at Site 10 with the ARARs.

- Total and soluble levels of aluminum exceeded the 0.10 mg/l ARAR in all five wells as established by New York State Water Quality Standards. Total concentrations varied from 35.2 mg/l in MW10-A to 3.51 mg/l in MW10-E; while soluble levels ranged from 5.05 mg/l in MW10-A to 0.112 mg/l in MW10-C.
- Iron levels in all wells for both total and soluble metals analyses exceeded the 0.300 mg/l state ARAR. Total iron levels ranged from 41.5 mg/l in MW10-A to 3.09 mg/l in MW10-E. Soluble concentrations varied from 3.40 mg/l in MW10-A to 0.382 mg/l in MW10-D.
- Total and soluble lead measured at 0.0529 mg/l and 0.0282 mg/l respectively in well MW-10B exceed the New York State ARAR 0.025 mg/l.
- Magnesium exceeds the New York State ARAR of 35 mg/l for both total and soluble levels in all wells.
- Total manganese concentration in all wells and soluble manganese in MW10-C exceed the New York State ARAR of 0.30 mg/l.
- The New York State ARAR of 20 mg/l for sodium was exceeded in MW10-B and MW10-D for the unfiltered samples and in MW10-D for the filtered samples.
- Total zinc in MW10-A, MW10-D and MW10-E (duplicate) and soluble zinc in MW10-A exceeded the New York State ARAR of 0.30 mg/l.

Groundwater samples were collected in all ten monitoring wells at Site 10. Analyses for purgeable halocarbon (GC Method 8021), for purgeable aromatics (GC Method 8020) and total petroleum hydrocarbons (Method E418.1) were performed. The analytical results are summarized in Table 4-5. As indicated, a number of volatile organic compounds and TPH were detected in some of the downgradient wells. Groundwater obtained from wells in the immediate vicinity of the burn pit showed the greatest number of parameters above detection limits. No organic parameters were detected in the upgradient well (MW10-A). The following presents a

comparison of organic compounds measured in the Site 10 monitoring wells with ARARs.

- Benzene and toluene were only detected in MW10-1 at 8.04 ug/l and 4.32 ug/l, respectively. The benzene level exceeds the "non-detect" New York State Water Quality ARAR, however, the toluene levels do not exceed the ARARs.
- Trichloroethene (TCE) and 1,2-dichloroethene (a common biotransformation product of TCE) were detected in all five of the existing wells and two of the new downgradient wells. TCE concentrations were highest in MW10-2, MW10-4 and MW10-1D which are immediately downgradient of the burn pit at levels of 20,800 ug/l, 3450 ug/l and 1720 ug/l. Concentrations decrease rapidly as the distance from the burn pit increases. Although TCE was detected in MW10-E at 1.36 ug/l, this is below the New York State Water Quality ARAR of 5.0 ug/l. The highest concentrations of 1,2-dichloroethene were also found in MW10-2, MW10-4 and MW10-1D at 7530 ug/l, 3210 ug/l and 13,100 ug/l respectively. The lowest detected level of 6.81 ug/l was measured in MW10-E. No ARAR has been established for Cis-1,2-DCE in groundwater.
- Vinyl chloride, another common biotransformation product of TCE, was detected in MW10-1 and MW10-1D at 76.3 ug/l and 1160 ug/l, respectively. Both these levels exceed the New York State ARAR of 2 ug/l.
- Other organic compounds were detected in the groundwater at MW10-3 which is located on the upgradient edge of the burn pit, and the duplicate sample from MW10-E. These included chloroform; 1,1,1-trichloroethane; carbon tetrachloride and tetrachloroethene at concentrations of 42.6 ug/l - 1.76 ug/l; 1.73 ug/l - 1.97 ug/l; 9.96 ug/l - 1.15 ug/l; and, 1.14 ug/l - 1.78 ug/l, respectively. With the exception of chloroform and carbon tetrachloride in MW10-3, these values are only slightly above the detection limit of 1.0 ug/l. Additionally, 1,2-dichloropropane was measured at 3.17 ug/l in MW10-3. These values are all below the respective New York State ARARs.

- Total petroleum hydrocarbons (TPH) were measured at 1.68 mg/l and 0.40 mg/l in MW10-B and MW10-D respectively. No ARAR has been established for TPH in groundwater.

The following presents a comparison of the general chemistry analyses with ARAR, if available, for groundwater samples from the five new wells.

- Total dissolved solids (TDS) ranged from 773 mg/l to 2200 mg/l in all wells, which exceeds the 500 mg/l secondary drinking water standard.
- Sulfate levels exceed the 250 mg/l New York State ARAR in all wells, ranging from 256 mg/l to 1350 mg/l.
- Chloride levels range from 15.0 mg/l to 50.6 mg/l and do not exceed the New York State ARAR of 250 mg/l.
- Flouride levels range from 0.455 mg/l to 1.32 mg/l.

As previously reported in the IRP RI/FS Report, these values are typically representative of the poor water quality in the Lockport Dolomite which is described as very hard and moderately to highly mineralized.

A composite sample of the drummed drill cuttings (soil) was collected and analyzed for TCLP, to characterize the materials for future disposal. Based on HNu readings during drilling, the soils were free of any volatiles and were consequently co-disposed. The analytical results from the TCLP testing are presented in Table 4-7. As indicated, all parameters were below detection limits with the exception of barium which was measured at 0.55 mg/l. This level is below the maximum allowable contaminant level of 100 mg/l for TCLP analysis.

APPENDIX A

Boring Logs

BORING/WELL NO. MW10A

SHEET 1 of 1

PROJECT: *Limited RI/FS IRP Site 10* PROJECT NO: *00640-02*
CLIENT: *United States Air Force - AFRES*
CONTRACTOR: *Parratt - Wolff* RIG: *D-50*

GS ELEV: *588.08 ft.*
N-S COORD: *1185.37*
E-W COORD: *1100.00*
WL REF ELEV: *590.12ft.*
DATE STARTED: *11/19/91*
DATE FINISHED: *11/20/91*
OPERATOR: *Doug Richmond*
GEOLOGIST: *GWH*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*Iron*	*SS*		
DIAM.	*6"*			
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	BLOWS (per 6")	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
		1		10	3,8 8,10		ML CL	Dark brown SILT, some (-) fine SAND, trace CLAY, medium dense, damp, roots.	Cuttings and barrel at background HNu.
		2		10	7,10 17,21			Red, brown, laminated SILT and CLAY, trace fine SAND, damp, medium dense.	
	5	3		12	13,24 50/0.2		SM ML	Red, brown SILT and fine SAND, trace CLAY, moist dense. At 5.2 feet, weathered Lockport Dolomite.	Slight petroleum odor.
		4		0	50/0			Top of Rock at 5.2 feet. Lockport Dolostone.	Attempt spoon at 6.0 feet. Competent at 6.0 feet. Advanced augers to 6.5 ft. Bentonite seal to 6.5 feet to 4.5 feet. 6-inch casing set at 6.5 feet.
	10							See next sheet for description.	
	15								
	20							End of hole at 20.0 feet.	
	25								

ROCK BORING/WELL NO. MW10A

SHEET 1 of 1

PROJECT: Limited RI/FS IRP Site 10 — PROJECT NO: 00640-02
CLIENT: United States Air Force - AFRES
CONTRACTOR: Parratt - Wolff — RIG: D-50

GS ELEV: 588.08 ft.
N-S COORD: 1185.37
E-W COORD: 1100.00
WL REF ELEV: 590.12ft.
DATE STARTED: 11/19/91
DATE FINISHED: 11/20/91
OPERATOR: Doug Richmond
GEOLOGIST: GWH

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	Iron			
DIAM.	6"			2.5"
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	RUN NUMBER	SAMPLE & TYPE	RECOVERY %	RQD %	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
	5							Top of Rock at 5.2 feet.	
								No samples. Start of coring at 6.5 feet.	Augered to 6.5 ft.
	10	1		3.5' 51	63.4			Gray porous, fine textured, vuggy Dolomitic LIMESTONE. Lockport DOLOMITE with gypsum and thin bedding. Fractures at 6.5 to 6.66 ft. (rubble); 6.85 ft., 7.2 ft., 7.27 ft. (at 90°); 7.5 ft. (60°); 7.85 ft. (fracture at 30°); 8.0 ft. (fracture at 45°); 8.8 ft. (fracture at 30°); 9.05 ft. (joint at 0° to 10 ft.); 9.2ft., 9.35 ft. (at 90°).	Return water has petroleum odor. Rate at 5min./ft.
	15	2		5.0' 92	100			Lockport DOLOMITE, fossiliferous limestone with frequent small vugs and gypsum. Fractures at 10.8 ft. (90°); 13.12 ft., 13.46 ft. (at 90° drill breaks on bedding); 13.65 ft., 13.75 ft., 13.90 ft. as drill breaks. Vugs layer at 13.9 to 15 ft.	Barrel stuck in hole.
	20	3		5.0' 100	100			Lockport DOLOMITE, sphalerite. No fractures, all hand breaks and vugs.	
								End of hole at 20.0 feet.	
	25								

BORING/WELL NO. MW10B

SHEET 1 of 1

PROJECT: *Limited RI/FS IRP Site 10* PROJECT NO: *00640-02*
CLIENT: *United States Air Force - AFRES*
CONTRACTOR: *Parratt - Wolff* RIG: *D-50*

GS ELEV: *586.71 ft.*
N-S COORD: *785.66*
E-W COORD: *1213.00*
WL REF ELEV: *588.84ft.*
DATE STARTED: *11/20/91*
DATE FINISHED: *11/21/91*
OPERATOR: *Doug Richmond*
GEOLOGIST: *GWH*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*Iron*	*SS*		
DIAM.	*6"*			
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	BLOWS (per 6")	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
		1		10	3, 4 8, 10		ML CL	Dark brown SILT, little (+) CLAY, moist, dense, roots to 0.5 ft. Red brown SILT and CLAY, trace fine SAND, moist, dense.	Cuttings and barrel at background HNu.
		2		12	9, 13 16, 22		ML	Red brown laminated, mottled SILT, trace (+) fine SAND, some (-) CLAY, moist, medium dense.	
	5	3		14	4, 8 9, 9		CL	Red brown CLAY, varved, trace (+) SILT, moist, medium stiff.	
		4		12	3, 3 7 50/0.4			Red brown CLAY and SILT to 6.3 feet. 6.3 to 7.7 feet, red brown fine SAND, little SILT, trace fine GRAVEL, moist, medium dense.	Augers advanced to 8.5 feet. Bentonite seal 8.5 to 6.5 feet. Set 6-inch casing to 8.5 feet.
		5		0	50/0.4			No recovery. Top of Rock at 7.7 feet. Lockport Dolostone.	
	10							See next sheet for description.	
	15								
	20							End of hole at 20.0 feet.	
	25								

ROCK BORING/WELL NO. MW10B

SHEET 1 of 1

PROJECT: *Limited RI/FS IRP Site 10* PROJECT NO: *00640-02*
CLIENT: *United States Air Force - AFRES*
CONTRACTOR: *Parratt - Wolff* RIG: *D-50*

GS ELEV: *586.71 ft.*
N-S COORD: *785.66*
E-W COORD: *1213.00*
WL REF ELEV: *588.84ft.*
DATE STARTED: *11/19/91*
DATE FINISHED: *11/20/91*
OPERATOR: *Doug Richmond*
GEOLOGIST: *GWH*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*Iron*			
DIAM.	*6"*			*2.5"*
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	RUN NUMBER	SAMPLE & TYPE	RECOVERY %	RQD %	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
	5							Top of Rock at 7.7 feet.	
								Start of coring at 8.5 feet.	
	10	1		1.5' 100	100			Lockport DOLOMITE, porous, fossiliferous, lams, no infitted fractures, small vugs. Fractures at 9.68 feet (at 30°).	Petroleum odor on water and rock.
		2		5.0' 97	99			Gray Lockport DOLOMITE, fossiliferous. Rod drop at 14.4 feet. Void 0.15 feet thick has rubble. Void at 14.4 feet, fractures at 10.4 ft., 13.6 ft. (at 90°); 14.06 ft. (bedding).	
	15	3		5.0' 100	99			Lockport DOLOMITE, vuggy with fractures. Fracture at 16.45 feet, calcite and CLAY filled (at 90°).	Barrel locked in hole, hard to remove, some sand. Fell to total depth. Taped hole to 19.2 ft.
	20							End of hole at 20.0 feet.	
	25								

BORING/WELL NO. MW10C

SHEET 1 of 1

PROJECT: Limited RI/FS IRP Site 10 — PROJECT NO: 00640-02
CLIENT: United States Air Force - AFRES
CONTRACTOR: Parratt - Wolff — RIG: D-50

GS ELEV: 586.95 ft.
N-S COORD: 900.59
E-W COORD: 1039.45
WL REF ELEV: 589.11ft.
DATE STARTED: 11/20/91
DATE FINISHED: 11/20/91
OPERATOR: Doug Richmond
GEOLOGIST: GWH

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	Iron	SS		
DIAM.	6"			
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	BLOWS (per 6")	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
		1		12	3,6 7,10		ML	Black brown SILT, some (-) fine SAND, trace CLAY, moist, loose. Red brown CLAY in shoe.	Cuttings and barrel at background HNu.
		2		6	8,10 14,11		ML CL	Red brown mottled CLAY, little (+) SILT, trace (-) fine SAND, stiff, moist.	
	5	3		15	17,16 15,13		SC	Red brown SILT, some (+) CLAY, trace very fine SAND, trace fine GRAVEL, medium dense, moist. TILL.	▼
		4		18	6,3 9,11		SM	Red brown SILT and very fine SAND, little (+) very fine GRAVEL, trace CLAY, moist, wet.	
		5		14	6,9 50/0.4			Red brown SILT and very fine SAND, trace very fine GRAVEL, trace CLAY, moist to wet. At 9.4 feet, weathered Lockport DOLOMITE.	
	10							End of hole at 9.4 feet.	
	15								
	20								
	25								

BORING/WELL NO. MW10D

SHEET 1 of 1

PROJECT: *Limited RI/FS IRP Site 10* PROJECT NO: *00640-02*
CLIENT: *United States Air Force - AFRES*
CONTRACTOR: *Parratt - Wolff* RIG: *D-50*

GS ELEV: *587.49 ft.*
N-S COORD: *929.60*
E-W COORD: *972.21*
WL REF ELEV: *589.49ft.*
DATE STARTED: *11/21/91*
DATE FINISHED: *11/21/91*
OPERATOR: *Doug Richmond*
GEOLOGIST: *GWH*

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	*Iron*	*SS*		
DIAM.	*6"*			
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	BLOWS (per 6")	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
		1		13	2,5 6,4		ML	Topsoil to 1 ft. Brown black SILT and fine SAND, trace CLAY, moist, roots. Red brown SILT, some (+) CLAY, roots, moist, stiff.	Cuttings and barrel at background HNu.
		2		12	9,8 9,10		CL	Red brown CLAY, little (-) SILT, stiff, damp.	
	5	3		24	6,9 15,11		CL	Red brown mottled, varved CLAY, little SILT, trace (+) fine SAND, damp, stiff to 5.1 feet.	
							SM ML	Red brown SILT, little (-) very fine SAND, little CLAY, moist, dense, percent GRAVEL increases to 6.0 feet.	
		4		12	4,5 7,7		ML	Red brown SILT, little (+) CLAY, trace (+) SAND, trace (-) medium to fine GRAVEL, moist.	
		5		8	5,8 50/0.3			Red brown SILT, little (+) CLAY, trace (+) SAND, trace (-) medium to fine GRAVEL, moist, soft. Top of rock at 9.3 feet.	
	10							End of hole at 9.3 feet.	
	15								
	20								
	25								

BORING/WELL NO. MW10E

SHEET 1 of 1

PROJECT: *Limited RI/FS IRP Site 10* PROJECT NO: *00640-02*
CLIENT: *United States Air Force - AFRES*
CONTRACTOR: *Parratt - Wolff* RIG: *D-50*

GS ELEV: *586.52 ft.*
N-S COORD: *789.17*
E-W COORD: *1055.38*
WL REF ELEV: *588.24ft.*
DATE STARTED: *11/22/91*
DATE FINISHED: *11/25/91*
OPERATOR: *Doug Richmond*
GEOLOGIST: *GWH/GOC*

GROUNDWATER DATA (feet)						
DATE	GW DEPTH	GW ELEV	INTAKE			

	CASING	SAMPLE	TUBE	CORE
TYPE	*Iron*	*SS*		
DIAM.	*6"*			
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	SAMPLE NUMBER	SAMPLE & TYPE	RECOVERY (inches)	BLOWS (per 6")	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
		1		12	2, 3 5, 10		ML	Black brown SILT, little CLAY, trace fine SAND, roots, moist to 0.65 ft. Red brown SILT and CLAY, stiff, damp to 2.0 ft.	Cuttings and barrel at background HNu.
		2		8	13, 16 16, 17			Red brown SILT and CLAY, damp, stiff, mottled.	
	5	3		14	5, 9 14, 14		SM ML	Red brown SILT and CLAY, stiff, damp, mottled, laminated from 4.0 to 4.5 feet. Red brown SILT and (-) very fine SAND, little (-) CLAY, trace (-) fine GRAVEL, moist, dense.	
		4		14	7, 8 9, 10			Red brown SILT and very fine SAND, trace CLAY, trace fine GRAVEL, moist, soft.	
		5		18	5, 5 14 50/0			Red brown SILT and very fine SAND, trace (+) CLAY, trace (+) fine GRAVEL, wet, soft	
	10	6		0	50/0			Top of Rock at 9.5 feet. Lockport Dolostone.	6-inch casing set at 10 ft. through bentonite at 8 to 10 ft.
	15							See next sheet for description.	
	20								
	25							End of hole at 25.0 feet.	

ROCK BORING/WELL NO. MW10E

SHEET 1 of 1

PROJECT: Limited RI/FS IRP Site 10
PROJECT NO: 00640-02
CLIENT: United States Air Force - AFRES
CONTRACTOR: Parratt - Wolff
RIG: D-50

GS ELEV: 586.52 ft.
N-S COORD: 789.17
E-W COORD: 1055.38
WL REF ELEV: 588.24ft.
DATE STARTED: 11/22/91
DATE FINISHED: 11/25/91
OPERATOR: Doug Richmond
GEOLOGIST: GWH/GOC

GROUNDWATER DATA (feet)

DATE	GW DEPTH	GW ELEV	INTAKE

	CASING	SAMPLE	TUBE	CORE
TYPE	Iron			
DIAM.	6"			2.5"
WEIGHT				
FALL				

WELL CONSTRUCT	DEPTH (feet)	RUN NUMBER	SAMPLE & TYPE	RECOVERY %	RQD %	LOG	UNIFIED	FIELD DESCRIPTION	REMARKS
	5							Top of Rock at 9.5 feet.	
	10							No samples. Start of coring at 10.0 feet.	Augered to 10.0 ft.
		1		5.0' 100	50			Dark gray vuggy, somewhat fossiliferous Lockport DOLOSTONE. 10.3 ft. (irregular at 30°); 10.8 ft. (irregular angle at horizontal); 11.9 ft. (irregular, angle varied with clay infill); 12.3 ft. (smooth at 30°); 12.85 ft. (irregular, angle at sub horizontal); 12.85 to 13.2 ft. (smooth at 70°); 13.5 to 14.4 ft. (drill breaks).	
	15								
		2		5.0' 90	75			Dark gray vuggy, somewhat fossiliferous Lockport DOLOSTONE. 15.3 ft. (rough, angle at sub horizontal); 15.5 ft. (smooth, angle at horizontal); 16.05 to 16.2 ft. (irregular, sub horizontal, infilled with clay and fine gravel); 16.7 ft. (smooth, angle at horizontal); 16.95 to 17.5 ft. (irregular, some clay and fine gravel infill - zone of possible core loss).	
	20								
		3		5.0' 100	76			Dark gray vuggy, somewhat fossiliferous Lockport DOLOSTONE. 20.1 to 20.3 ft. (rubble); 20.8 to 21.1 ft. (drill break in vuggy zone); 21.5 to 21.8 ft. (broken up in vuggy area); 22.6 ft. (smooth, angle at sub horizontal - possible drill break).	
	25							End of hole at 25.0 feet.	

APPENDIX B

Well Development Data

TABLE B1

NIAGARA FALLS AIRBASE

WELL DEVELOPMENT DATA SUMMARY

Well	Amount Bailed (Gallons)	pH	Specific Conductance (umhos/m)	Description
MW10-A	25	7.37	1100	Turbid, brown with oily sheen
	45	7.28	1100	Turbid brown with oily sheen
	55	7.31	1110	Less turbid, brown with oily sheen still present
	75	7.32	1100	Less turbid, brown, still >100 NTU
MW10-B	25	6.87	2050	Turbid, brown sweet odor
	50	6.91	2050	Turbid brown still has odor
	70	6.89	2070	Turbid, brown
	90	6.85	2020	Turbid, brown
MW10-C	2	6.2	1520	Slightly turbid
	3 (to Dry)	6.98	1610	Increase of turbidity
MW10-D	3 (to Dry)	7.07	2500	Turbid, brown
MW10-E	20	7.32	2420	Turbid gray strong sulphur odor
	45	7.41	2400	Same
	75	7.38	2420	Same – less turbidity

APPENDIX C

Analytical Results

General Testing Corporation

A Full Service Environmental Laboratory

January 17, 1992

Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Re: Niagara Falls Air Force Base

Dear Mr. Combes:

Enclosed please find the data package for the above referenced site. Ten monitoring wells, 2 surface waters, one equipment blank, one field blank and one trip blank were sampled by our field crew on December 10, 1991.

Analytical data can be found in Section A and the corresponding Quality Control Data is in Section B. Sections C and D contain the Analytical Chronology and Field Documentation. All data has been reviewed prior to report submittal. Should you have any questions, please contact me at 454-3760.

Thank you for your continued use of our services.

Sincerely,

GENERAL TESTING CORP.

Janice M Jaeger
Client Representative

Enc.
SL:sm

710 Exchange Street • Rochester, New York 14608 • (716) 454-3760 • Fax (716) 454-1245
85 Trinity Place • Hackensack, NJ 07601 • (201) 488-5242 • Fax (201) 488-6386
435 Lawrence Bell Drive • Amherst, NY 14221 • (716) 634-0454 • Fax (716) 634-9019

General Testing Corporation

COMPANY: WEHRAN ENVIROTECH - NIAGARA FALLS AIR FORCE BASE
JOB #: R91/5639

VOLATILE ORGANICS

Wehran-water samples were analyzed for priority pollutant volatiles by method 8021 from SW-846.

The initial calibration criteria of 20% RSD was met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

All matrix spike, matrix spike duplicate, reference check standard recoveries, and % RPD data were within QC acceptance limits.

The equipment and field trip blanks were free of any contamination.

The trip and laboratory blanks were free of any contamination.

All required analysis holding times were met.

Sample R91/5639-002 was analyzed at a 1/10 dilution to bring target analytes within the linear range of the system.

No analytical problems were encountered.

INORGANIC ANALYSIS

Wehran-water samples were analyzed for site specific inorganic analytes using approved EPA methodologies.

The precision analysis performed on sample R91/5639-001 for TDS and nitrite showed the % relative error to be outside QC acceptance limits. All results have been flagged with "*" accordingly.

The matrix spike recovery for the lead analysis was outside QC limits for sample R91/5639-001. The data has been flagged "N".

No other analytical or QC problems were encountered with these analysis.

General Testing Corporation

COMPANY: WEHRAN ENVIROTECH-NIAGARA FALLS AIR FORCE BASE
JOB #: R91/5640

VOLATILE ORGANICS

Wehran-water samples were analyzed for target compound list volatiles by method 8021 from SW-846.

The initial calibration criteria of 20% RSD was met for all analytes.

The continuing calibration criteria of 15% D was met for all analytes in all daily calibration check standards.

All surrogate standard recoveries were within acceptance limits for all samples.

All matrix spike, matrix spike duplicate, reference check standard recoveries, and % RPD data were within QC acceptance limits.

Both laboratory blanks were free of any contamination.

All required analysis holding times were met.

Sample R91/5640-002, 003 and 004 were analyzed at dilutions to bring target analytes within the linear range of the system.

No analytical problems were encountered.

General Testing Corporation

CASE NARRATIVE

JOB #: R91/5641
COMPANY: WEHRAN NIAGARA FALLS AIR FORCE BASE

Soil samples were analyzed for target compound list semivolatile organics by EPA method 8270. The recovery of pyrene in the matrix spike duplicate of sample 1 was outside QC limits, however the reference check recovery was within limits for this compound. The recovery of 4-Nitrophenol was outside QC limits in the reference check sample, but was within limits in the MS and MSD for this sample group. The data has been accepted.

General Testing Corporation

Effective 10/1/91

GTC LIST OF QUALIFIERS

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

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 and reanalysis could not be performed.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analytes only)

* - Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)

- Also used to qualify Organics QC data outside limits. (Only used on the QC summary sheets)

M - Duplication injection precision not met (GFA only).

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

General Testing Corporation

GTC REPORT # WEHRAN ENVIROTECH
NIAGARA FALLS AIR FORCE BASE

REPORT INDEX

SECTION A. ANALYTICAL DATA

SECTION B. QUALITY CONTROL

SECTION C. ANALYTICAL CHRONOLOGY

SECTION D. FIELD DOCUMENTATION

SECTION A

General Testing Corporation

GTC REPORT # WEHRAN ENVIROTECH
NIAGARA FALLS AIR FORCE BASE

SECTION A

ANALYTICAL DATA

Presented in this section is analytical data for the parameters requested. The following references concerning units and analytical methodology apply to the data herein

Units: see report

Analytical Methodology Obtained From:

( ) Federal Register, 40 CFR Part 136, Guidelines Establishing Test Procedures for the analyses of Pollutants under the Clean Water Act, 10/26/84.

(X) SW-846, Test Methods for Evaluating Solid Waste, 3rd Edition, 9/86.

( ) Other: NYS Part 360

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls
Air Force Base

Collected : 12/10/91 P.O. #:

ANALYTICAL RESULTS - mg/l

Sample:	-001	-002	-003	-004	-005	-006	-007	-008
Location:	MW-10-A	MW-10-C	MW-10-E	MW-10-E Duplicate	MW-10-B	MW-10-D	Equipment Blank	Field Blank
Date Collected:	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91
Time Collected:	09:25	10:45	11:10	11:25	11:58	12:15	13:00	11:10
pH	7.67	7.66	7.83	7.78	8.16	7.75	8.06	8.06
Spec. Cond. (umhos/cm)	926	997	1750	1540	1580	1670	55.0	54.5
Temperature °C -Field	9.0	9.5	9.0	9.0	10.0	10.0	11.5	9.0
Alkalinity, Total	332	429	260	267	257	327	2.0 U	2.0 U
Chloride	21.3	50.6	16.9	15.0	18.7	26.7	1.0 U	1.0 U
Fluoride	0.515	0.455	1.17	1.32	0.844	1.08	0.10 U	0.10 U
Nitrogen, Nitrate	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U
Nitrogen, Nitrite	0.047*	0.016*	0.010 U*	0.011*	0.020*	0.029*	0.010 U*	0.010 U*
Nitrogen,Nitrate/Nitrite	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U
Pet. Hydrocarbons, IR	0.10 U	0.10 U	0.10 U	0.10 U	1.68	0.40	0.10 U	0.10 U
Phosphorous, Ortho as P	0.0362	0.0180	0.010 U	0.010 U	0.010 U	0.0180	0.010 U	0.010 U
Silica, Total	4.78	5.76	4.78	5.12	5.17	7.08	0.004 U	0.004 U
Solids, Dissolved @180 C	773*	1020*	2180*	2200*	1880*	2130*	10.0 U*	10.0 U*
Sulfate	256	361	259	1350	1040	1220	10.0 U	10.0 U
Aluminum	35.2	6.81	3.51	15.6	20.3	8.23	0.10 U	0.10
Barium	0.42	0.21	0.27	0.33	0.38	0.24	0.10 U	0.10 U
Boron, Total	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U
Calcium, Total	337	228	543	833	480	415	0.50 U	0.50 U
Chromium, Total	0.0484	0.017	0.0108	0.0342	0.0279	0.0185	0.010 U	0.010 U
Copper, Total	0.107	0.010 U	0.010 U	0.0954	0.0308	0.010 U	0.010 U	0.010 U
Iron, Total	41.5	5.68	3.09	15.1	18.2	7.25	0.050 U	0.050 U
Lead, Furnace	0.0099 N	0.0086 N	0.0076 N	0.0169 N	0.0529 N	0.0096 N	0.0050 UN	0.0050 UN
Magnesium, Total	170	90.2	121	242	158	164	0.50 U	0.50 U
Manganese, Total	0.783	0.544	0.193	0.854	0.606	0.409	0.0050 U	0.0050 U
Nickel, Total	0.0563	0.020 U	0.020 U	0.0329	0.020 U	0.020 U	0.020 U	0.020 U
Potassium, Total	12.1	3.11	1.74	3.92	59.6	4.10	0.250 U	0.250 U
Sodium, Total	9.69	18.2	8.88	5.74	25.8	26.7	0.156	0.216
Zinc, Total	3.75	0.180	0.188	0.745	1.14	0.412	0.010 U	0.0153

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145 NJ ID# in Hackensack: 02317

NJ ID# in Rochester: 73331 NY ID# in Hackensack: 10801

Michael K. Peng

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

Niagara Falls

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD *8021 ANALYTICAL RESULTS - ug/l

Sample:	-001	-002	-003	-004	-005	-006	-007	-008
Location:	MW-10-A	MW-10-C	MW-10-E	MW-10-E Duplicate	MW-10-B	MW-10-D	Equipment Blank	Field Blank
Date Collected:	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91
Time Collected:	09:25	10:45	11:10	11:25	11:58	12:15	13:00	11:10
Date Analyzed:	12/17/91	12/18/91	12/18/91	12/18/91	12/18/91	12/17/91	12/17/91	12/18/91
Dilution:	1/1	1/10	1/1	1/1	1/1	1/1	1/1	1/1
Chloromethane	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Methylene Chloride	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	1 U	121	6.81	11.1	1 U	1 U	1 U	1 U
Chloroform	1 U	10 U	1 U	1.76	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	1 U	10 U	1 U	1.97	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	10 U	1 U	1.15	1 U	1 U	1 U	1 U
Bromodichloromethane	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene-Trans	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	1 U	497	1 U	1.36	1 U	1 U	1 U	1 U
1,3-Dichloropropene (Cis)	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Chloroethylvinyl Ether	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethene	1 U	20 U	1 U	1.78	1 U	1 U	1 U	1 U
Chlorobenzene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichlorobenzene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Total Xylene (o,m,p)	2 U	20 U	2 U	2 U	2 U	2 U	2 U	2 U
Total Volatiles	ND	517.01	6.81	19.12	ND	ND	ND	ND

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
Niagara Falls
Air Force Base

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD 8021 ANALYTICAL RESULTS - %

Sample:	-001	-002	-003	-004	-005	-006	-007	-008
Location:	MW-10-A	MW-10-C	MW-10-E	MW-10-E Duplicate	MW-10-B	MW-10-D	Equipment Blank	Field Blank
Date Collected:	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91
Time Collected:	09:25	10:45	11:10	11:25	11:58	12:15	13:00	11:10
SURROGATE STANDARD RECOVERIES								
% Recovery								
Bromochloromethane (Acceptance Limits: 60-138%)	118%	96%	107%	106%	106%	91%	117%	98%
2-Bromo-1-chloropropane (Acceptance Limits: 60-134%)	122%	99%	99%	105%	98%	103%	105%	88%
a,a,a-Trifluorotoluene (Acceptance Limits: 60-134%)	111%	84%	82%	85%	91%	100%	97%	85%

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls
Air Force Base

Collected : 12/10/91 P.O. #:

ANALYTICAL RESULTS - mg/l

Sample:	-017						
Location:	Trip Blank						
Date Collected:	12/10/91						
Time Collected:	--						
pH							
Spec. Cond. (umhos/cm)							
Temperature °C -Field							
Alkalinity, Total							
Chloride							
Fluoride							
Nitrogen, Nitrate							
Nitrogen, Nitrite							
Nitrogen,Nitrate/Nitrite							
Pet. Hydrocarbons, IR							
Phosphorous, Ortho as P							
Silica, Total							
Solids, Dissolved @180 C							
Sulfate							
Aluminum							
Barium							
Boron, Total							
Calcium, Total							
Chromium, Total							
Copper, Total							
Iron, Total							
Lead, Furnace							
Magnesium, Total							
Manganese, Total							
Nickel, Total							
Potassium, Total							
Sodium, Total							
Zinc, Total							

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145 NJ ID# in Hackensack: 02317

NJ ID# in Rochester: 73331 NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

Niagara Falls

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD *8021 ANALYTICAL RESULTS - ug/l

Sample:	-017						
Location:	Trip Blank						
Date Collected:	12/10/91						
Time Collected:	--						
Date Analyzed:	12/18/91						
Dilution:	1/1						
Chloromethane	5 U						
Bromomethane	5 U						
Vinyl Chloride	2 U						
Chloroethane	2 U						
Methylene Chloride	1 U						
Trichlorofluoromethane	1 U						
1,1-Dichloroethene	1 U						
1,1-Dichloroethane	1 U						
trans-1,2-Dichloroethene	1 U						
cis-1,2-Dichloroethene	1 U						
Chloroform	1 U						
1,2-Dichloroethane	1 U						
1,1,1-Trichloroethane	1 U						
Carbon Tetrachloride	1 U						
Bromodichloromethane	1 U						
1,2-Dichloropropane	1 U						
1,3-Dichloropropene-Trans	2 U						
Trichloroethene	1 U						
1,3-Dichloropropene (Cis)	1 U						
Dibromochloromethane	2 U						
1,1,2-Trichloroethane	2 U						
2-Chloroethylvinyl Ether	2 U						
Bromoform	2 U						
1,1,2,2-Tetrachloroethane	2 U						
Tetrachloroethene	1 U						
Chlorobenzene	2 U						
1,3-Dichlorobenzene	2 U						
1,2-Dichlorobenzene	2 U						
1,4-Dichlorobenzene	2 U						
Benzene	2 U						
Toluene	2 U						
Ethylbenzene	2 U						
Total Xylene (o,m,p)	2 U						
Total Volatiles	ND						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
Niagara Falls
Air Force Base

Collected : 12/10/91

P.O. #:

ANALYSIS * BY GC METHOD 8021	ANALYTICAL RESULTS - %						
Sample:	-017						
Location:	Trip Blank						
Date Collected:	12/10/91						
Time Collected:	--						
SURROGATE STANDARD RECOVERIES							
% Recovery							
Bromochloromethane (Acceptance Limits: 60-138%)	79%						
2-Bromo-1-chloropropane (Acceptance Limits: 60-134%)	83%						
a,a,a-Trifluorotoluene (Acceptance Limits: 60-134%)	77%						

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05640 Date: 30 DEC., 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

NIAGARA FALLS
AIR FORCE BASE

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD 8021 ANALYTICAL RESULTS - ug/l

Sample:	-001	-002	-003	-004	-005			
Location:	10-3	10-2	10-1D	10-4	10-1			
Date Collected:	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91			
Time Collected:	09:45	09:55	10:10	10:25	12:00			
Date Analyzed:	12/18/91	12/19/91	12/19/91	12/19/91	12/19/91			
Dilution :	1/1	1/200	1/100	1/25	1/2			
Chloromethane	5 U	1000 U	500 U	125 U	10 U			
Bromomethane	5 U	1000 U	500 U	125 U	10 U			
Vinyl Chloride	2 U	400 U	1160	50 U	76.3			
Chloroethane	2 U	400 U	200 U	50 U	4 U			
Methylene Chloride	1 U	200 U	100 U	25 U	2 U			
Trichlorofluoromethane	1 U	200 U	100 U	25 U	2 U			
1,1-Dichloroethene	1 U	200 U	100 U	25 U	2 U			
1,1-Dichloroethane	1 U	200 U	100 U	25 U	2 U			
Chloroform	42.6	200 U	100 U	25 U	2 U			
1,2-Dichloroethane	1 U	200 U	100 U	25 U	2 U			
1,1,1-Trichloroethane	1.73	200 U	100 U	25 U	2 U			
Carbon Tetrachloride	9.96	200 U	100 U	25 U	2 U			
Bromodichloromethane	1 U	200 U	100 U	25 U	2 U			
1,2-Dichloropropane	3.17	200 U	100 U	25 U	2 U			
1,3-Dichloropropene-Trans	2 U	400 U	200 U	50 U	4 U			
Trichloroethene	124	20,800	1720	3450	6.95			
1,3-Dichloropropene (Cis)	1 U	200 U	100 U	25 U	2 U			
Dibromochloromethane	2 U	400 U	200 U	50 U	4 U			
1,1,2-Trichloroethane	2 U	400 U	200 U	50 U	4 U			
2-Chloroethylvinyl Ether	2 U	400 U	200 U	50 U	4 U			
Bromoform	2 U	400 U	200 U	50 U	4 U			
1,1,2,2-Tetrachloroethane	2 U	400 U	200 U	50 U	4 U			
Tetrachloroethene	1.14	200 U	100 U	25 U	2 U			
Chlorobenzene	2 U	400 U	200 U	50 U	4 U			
1,3-Dichlorobenzene	2 U	400 U	200 U	50 U	4 U			
1,2-Dichlorobenzene	2 U	400 U	200 U	50 U	4 U			
1,4-Dichlorobenzene	2 U	400 U	200 U	50 U	4 U			
Benzene	2 U	400 U	200 U	50 U	8.04			
Toluene	2 U	400 U	200 U	50 U	4.32			
Ethylbenzene	2 U	400 U	200 U	50 U	4 U			
Total Xylene (o,m,p)	2 U	400 U	200 U	50 U	4 U			
cis-1,2-Dichloroethene	73.3	7530	13,100	3210	202			
trans-1,2-Dichloroethene	1 U	200 U	100 U	25 U	2 U			

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05640 Date: DEC. 24 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
NIAGARA FALLS
AIR FORCE BASE

Collected : 12/10/91

P.O. #:

ANALYSIS * BY GC METHOD 8021 ANALYTICAL RESULTS - %

Sample:	-001	-002	-003	-004	-005			
Location:	10-3	10-2	10-1D	10-4	10-1			
Date Collected:	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91			
Time Collected:	09:45	09:55	10:10	10:25	12:00			
SURROGATE STANDARD RECOVERIES								
% Recovery								
Bromochloromethane (Acceptance Limits: 60-138%)	123%	92%	106%	108%	100%			
2-Bromo-1-chloropropane (Acceptance Limits: 60-134%)	112%	78%	88%	96%	91%			
a,a,a-Trifluorotoluene (Acceptance Limits: 60-134%)	106%	114%	127%	134%	116%			

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: JAN. 22 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
Niagara Falls Air Force Base
CORRECTED COPY

Collected : 12/10/91

P.O. #:

ANALYTICAL UNITS - ug/g Wet Wt.

Sample:	-001	-002
Location:	Sediment Sample 1	Sediment Sample 2
Date Collected:	12/10/91	12/10/91
Time Collected:	13:15	13:45
Pet. Hydrocarbons, IR	192	50.9

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K Perry
Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: JAN. 22 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base
CORRECTED COPY

Collected : 12/10/91 P.O. #:

HSL VOLATILES BY EPA METHOD 8240* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-001	-002						
Location:	Sediment Sample 1	Sediment Sample 2						
Date Collected:	12/10/91	12/10/91						
Time Collected:	13:15	13:45						
Date Analyzed:	12/20/91	12/20/91						
Dilution:	1/1	1/1						
Chloromethane	5 U	5 U						
Bromomethane	5 U	5 U						
Vinyl Chloride	5 U	5 U						
Chloroethane	5 U	5 U						
Methylene Chloride	5 U	5 U						
Acetone	20 U	20 U						
Carbon Disulfide	10 U	10 U						
Trichlorofluoromethane	5 U	5 U						
Vinyl Acetate	10 U	10 U						
1,1-Dichloroethene	5 U	5 U						
1,1-Dichloroethane	5 U	5 U						
trans-1,2-Dichloroethene	5 U	5 U						
cis-1,2-Dichloroethene	5 U	5 U						
Chloroform	5 U	5 U						
2-Butanone (MEK)	10 U	10 U						
1,2-Dichloroethane	5 U	5 U						
1,1,1-Trichloroethane	5 U	5 U						
Carbon Tetrachloride	5 U	5 U						
Bromodichloromethane	5 U	5 U						
1,2-Dichloropropane	5 U	5 U						
1,3-Dichloropropene (Trans)	5 U	5 U						
Trichloroethene	5 U	5 U						
Dibromochloromethane	5 U	5 U						
1,1,2-Trichloroethane	5 U	5 U						
Benzene	5 U	5 U						
1,3-Dichloropropene(Cis)	5 U	5 U						
Bromoform	5 U	5 U						
4-Methyl-2-pentanone(MIBK)	10 U	10 U						
2-Hexanone	10 U	10 U						
Tetrachloroethene	5 U	5 U						
1,1,2,2-Tetrachloroethane	5 U	5 U						
Toluene	5 U	5 U						
Chlorobenzene	5 U	5 U						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: JAN. 22 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base
CORRECTED COPY

Collected : 12/10/91 P.O. #:

HSL VOLATILES BY EPA METHOD 8240* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-001	-002
Location:	Sediment Sample 1	Sediment Sample 2
Date Collected:	12/10/91	12/10/91
Time Collected:	13:15	13:45
Date Analyzed:	12/20/91	12/20/91
Dilution:	1/1	1/1
Ethylbenzene	5 U	5 U
Styrene	5 U	5 U
Total Xylene (o,m,p)	5 U	5 U
Surrogate Standard Recoveries		
1,2-Dichloroethane-d4 (Acceptance limits: 73-116%)	106%	111%
Toluene d8 (Acceptance limits 80-114%)	102%	106%
4-Bromofluorobenzene (Acceptance limits 78-116%)	95%	91%

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry
Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: JAN. 22 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base
CORRECTED COPY

Collected : 12/10/91 P.O. #:

HSL ACID EXTRACTABLES BY EPA METHOD 8270* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-001	-002
Location:	Sediment Sample 1	Sediment Sample 2
Date Collected:	12/10/91	12/10/91
Time Collected:	13:15	13:45
Date Extracted:	12/12/91	12/12/91
Date Analyzed:	12/13/91	12/16/91
Dilution:	1/2	1/2
Phenol	660 U	660 U
2-Chlorophenol	660 U	660 U
2-Nitrophenol	660 U	660 U
2,4-Dimethylphenol	660 U	660 U
2,4-Dichlorophenol	660 U	660 U
4-Chloro-3-methylphenol	660 U	660 U
2,4,6-Trichlorophenol	660 U	660 U
2,4-Dinitrophenol	1320 U	1320 U
4-Nitrophenol	1320 U	1320 U
2-Methyl-4,6-dinitrophenol	1320 U	1320 U
Pentachlorophenol	1320 U	1320 U
2-Methylphenol	660 U	660 U
4-Methylphenol	660 U	660 U
Benzoic Acid	3300 U	3300 U
2,4,5-Trichlorophenol	660 U	660 U
SURROGATE STANDARD RECOVERIES		
2-Fluorophenol	65%	80%
(Acceptance Limits: 16-122%)		
Phenol-d6	62%	80%
(Acceptance Limits: 30-100%)		
2,4,6-TriBromophenol	59%	80%
(Acceptance Limits: 24-143%)		

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry
Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: JAN. 22 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base
CORRECTED COPY

Collected : 12/10/91 P.O. #:

HSL BASE NEUTRALS BY EPA METHOD 8270* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-001	-002						
Location:	Sediment Sample 1	Sediment Sample 2						
Date Collected:	12/10/91	12/10/91						
Time Collected:	13:15	13:45						
Date Extracted:	12/12/91	12/12/91						
Date Analyzed:	12/13/91	12/16/91						
Dilution:	1/2	1/2						
N-Nitrosodimethylamine	330 U	330 U						
Bis(2-chloroethyl) ether	330 U	330 U						
1,3 Dichlorobenzene	330 U	330 U						
1,4 Dichlorobenzene	330 U	330 U						
1,2 Dichlorobenzene	330 U	330 U						
bis(-2-chloroisopropyl)ether	330 U	330 U						
N-Nitroso-Di-n-propylamine	330 U	330 U						
Hexachloroethane	330 U	330 U						
Nitrobenzene	330 U	330 U						
Isophorone	330 U	330 U						
bis(-2-chloroethoxy)methane	330 U	330 U						
1,2,4-Trichlorobenzene	330 U	330 U						
Naphthalene	330 U	330 U						
Hexachlorobutadiene	330 U	330 U						
Hexachlorocyclopentadiene	330 U	330 U						
2-Chloronaphthalene	330 U	330 U						
Dimethyl phthalate	330 U	330 U						
Acenaphthylene	330 U	330 U						
Acenaphthene	330 U	330 U						
2,4-Dinitrotoluene	330 U	330 U						
2,6-Dinitrotoluene	330 U	330 U						
Diethyl phthalate	330 U	330 U						
4-Chlorophenyl-phenyl-ether	330 U	330 U						
Fluorene	330 U	330 U						
1,2-Diphenylhydrazine	330 U	330 U						
N-Nitrosodiphenylamine	330 U	330 U						
4-Bromophenyl-phenylether	330 U	330 U						
Hexachlorobenzene	330 U	330 U						
Phenanthrene	330 U	330 U						
Anthracene	330 U	330 U						
Di-n-butyl phthalate	330 U	330 U						
Benzidine	3300 U	3300 U						
Fluoranthene	330 U	330 U						
Pyrene	330 U	340						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job Number: R91/05641 Date: JAN. 22 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base
CORRECTED COPY

Collected : 12/10/91 P.O. #:

HSL BASE NEUTRALS BY EPA METHOD 8270* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-001	-002						
Location:	Sediment Sample 1	Sediment Sample 2						
Date Collected:	12/10/91	12/10/91						
Time Collected:	13:15	13:45						
Date Extracted:	12/12/91	12/12/91						
Date Analyzed:	12/13/91	12/16/91						
Dilution:	1/2	1/2						
Butyl benzyl phthalate	330 U	330 U						
3,3'-Dichlorobenzidine	330 U	330 U						
Benzo(a)anthracene	330 U	330 U						
Bis(2-ethylhexyl)phthalate	330 U	330 U						
Chrysene	330 U	330 U						
Di-n-octyl phthalate	330 U	330 U						
Benzo(b)Fluoranthene	330 U	330 U						
Benzo(k)fluoranthene	330 U	330 U						
Benzo(a)pyrene	330 U	330 U						
Indeno(1,2,3-cd)pyrene	330 U	330 U						
Dibenzo(a,h)anthracene	330 U	330 U						
Benzo(g,h,i)perylene	330 U	330 U						
Benzyl Alcohol	1320 U	1320 U						
4-Chloroaniline	660 U	660 U						
2-Methyl Naphthalene	660 U	660 U						
2-Nitroaniline	1320 U	1320 U						
3-Nitroaniline	1320 U	1320 U						
Dibenzofuran	660 U	660 U						
4-Nitroaniline	3300 U	3300 U						
SURROGATE STANDARD RECOVERIES								
Nitrobenzene-d5	61%	76%						
(Acceptance Limits: 19-103%)								
2-Fluorobiphenyl	64%	82%						
(Acceptance Limits: 26-119%)								
Terphenyl-d14	76%	118%						
(Acceptance Limits: 18-142%)								

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145 NY ID# in Hackensack: 10801
NJ ID# in Rochester: 73331 NJ ID# in Hackensack: 02317

Michael K Peng
Laboratory Director

SECTION B

General Testing Corporation

GTC REPORT # WEHRAN ENVIROTECH
NIAGARA FALLS AIR FORCE BASE

SECTION B

LABORATORY QUALITY CONTROL DATA

Presented in this section is Quality Control Associated with the data provided in Section A of this report.

Quality Control Explanations:

(1) RUN QUALITY CONTROL - Selected QC data from the analytical run in which your sample(s) were involved.

(2) JOB SPECIFIC QUALITY CONTROL - QC data specific to your set of samples.

(3) DUPLICATES - Replicate analyses of a given sample used to monitor precision. Relative Percent Difference is calculated as the difference divided by the average, times 100.

(4) MATRIX SPIKES - Addition of a known amount of analyte to a sample. Recovery is calculated by subtracting original value attributable to the sample from the combined value. The difference is then divided by the amount added to calculate percent recovery. Poor recoveries may indicate analytical interference due to the matrix of the sample. Any other samples of this matrix may also have been affected, high or low as indicated by the percent recovery.

(5) LABORATORY CONTAMINANTS - Laboratory de-ionized water used to monitor for contamination during analysis.

(6) BLANK SPIKES - Same as item #4 but analyte is added to laboratory de-ionized water. This indicates the accuracy of analysis.

(7) REFERENCE CHECK SAMPLES - Samples from an outside source having a known concentration of analyte. Used as a measure of analytical accuracy.

When possible, all components of the above listed QC protocol are performed during an analytical run. The resulting data is compared to historical records when evaluating the quality of analytical runs. The data provided in your report has passed our Quality Assurance review.

Quality Control Notes:

GTC LABORATORY QUALITY CONTROL REPORT

CUSTOMER: Wehran Envirotech JOB # : R91/05639 UNITS: mg/l REPORT TYPE: Job Specific

PARAMETER	SAMPLE	ORIGINAL RESULT	DUPLICATE RESULT	% REL. ERROR	ACCEPT. LIMIT %	ORIGINAL RESULT	SPIKE ADDED	PERCENT RECOVERY	ACCEPT. LIMIT %	METHOD BLANK	SPIKE ADDED	PERCENT RECOVERY	ACCEPT. LIMITS %	REFERENCE #	KNOWN PMVAL	PERCENT RECOVERY	ACCEPT. LIMITS %
//////////		* PRECISION				* MATRIX SPIKING				BLANK SPIKES				REFERENCE STANDARD			
PH	-001	7.67	7.67	0.0%	*+	7.67	NA			NA				NA			
Spec.Cond.	-001	926	935	1.0%	*+	926	NA			NA				NA			
Temperature	-001	9.0	9.0	0.0%	*+	9.0	NA			NA				NA			
Alkalinity	-001	332	335	0.9%	10	332	100	102%	82-126	2.0 U	20.0	100%	88-123	REF STD	196	100%	90-115
Chloride	-001	21.3	21.4	0.5%	10	21.3	25.0	107%	68-132	1.0 U	5.0	95%	82-121	REF STD	65.0	101%	90-110
Fluoride	-001	0.515	0.494	4.1%	10	0.515	0.500	104%	67-133	0.10 U	0.500	107%	85-115	REF STD	1.81	106%	85-115
NO2	-001	0.0470	0.0530	12.0%*	10	0.0470	0.500	102%	84-126	0.010 U	0.050	102%	85-115	REF STD	0.900	102%	90-110
NO3/NO2	-001	0.050 U	0.050 U	NC	10	0.050 U	0.500	101%	75-131	0.050 U	0.250	100%	85-115	REF STD	1.80	101%	90-111
Pet. Hydro	-002	124	131	5.5	36.6	NA				0.010 U	4.238	62.3	61.1-113	REF STD	124.5	124	99.6
Phos. Ortho	-001	0.0362	0.0362	0.0%	10	0.0362	0.100	94%	70-130	0.010 U	0.050	106%	70-130	REF STD	0.900	101%	80-120
Silica	-001	0.0478	0.0469	1.9%	10	0.0478	0.040	100%	81-124	0.0040 U	0.020	104%	88-121	REF STD	0.0500	99%	88-110
Solids, Dis	-001	773	665	15.0%*	10	773	NA			NA				REF STD	1240	98%	90-110
Sulfate	-001	25.6	26.0	1.6%	10	25.6	20.0	101%	69-130	10.0 U	20.0	98%	79-116	REF STD	236	97%	77-114
Aluminum	-001	35.2	34.9	0.9%	30	35.2	0.50	V	60-140	0.10 U	0.50	102%	70-130	REF STD	4.00	99%	80-120

**Reference Check samples are not available for all analyses.

*+Currently no limits established.

GTC LABORATORY QUALITY CONTROL REPORT

CUSTOMER: Wehran Envirotech | JOB # : R91/05639 | UNITS: mg/l | REPORT TYPE: Job Specific

PARAMETER	SAMPLE	ORIGINAL RESULT	DUPLICATE RESULT	% REL. ERROR	ACCEPT. LIMIT %	ORIGINAL RESULT	SPIKE ADDED	PERCENT RECOVERY	ACCEPT. LIMIT %	METHOD BLANK	SPIKE ADDED	PERCENT RECOVERY	ACCEPT. LIMITS %	REFERENCE #	KNOWN PMVAL	PERCENT RECOVERY	ACCEPT. LIMITS %
//////////////////////		* PRECISION				* MATRIX SPIKING				BLANK SPIKES				REFERENCE STANDARD			
Barium	-001	0.42	0.47	11.2%	30	0.42	0.50	104%	60-135	0.10 U	0.50	98%	70-123	REF STD	4.00	101%	80-120
Boron	-001	0.250 U	0.250 U	NC	30	0.250 U	50.0	96%	80-120	0.250 U	5.0	98%	80-120	REF STD	5.00	100%	90-110
Calcium	-001	337	336	0.3%	20	337	10.0	V	80-120	0.50 U	2.00	103%	80-120	REF STD	50.0	103%	90-110
Chromium	-001	0.0484	0.0426	12.7%	30	0.0484	0.250	92%	80-120	0.010 U	0.250	106%	80-120	REF STD	5.00	100%	90-110
Copper	-001	0.107	0.104	2.8%	20	0.107	0.100	100%	80-120	0.010 U	0.100	103%	80-120	REF STD	5.00	101%	90-110
Iron	-001	41.5	39.6	4.7%	20	41.5	0.250	V	80-120	0.050 U	0.250	108%	80-120	REF STD	5.00	100%	90-110
Lead, Furn	-001	0.0099	0.0094	5.2%	30	0.0099	0.020	164%*	50-150	0.0050 U	0.020	109%	70-130	REF STD	0.030	102%	80-120
Magnesium	-001	170	169	0.6%	20	170	10.0	V	80-120	0.50 U	2.00	100%	80-120	REF STD	50.0	99%	90-110
Manganese	-001	0.783	0.762	2.7%	20	0.783	0.0500	V	80-120	0.0050 U	0.050	100%	80-120	REF STD	5.00	100%	90-110
Nickel	-001	0.0563	0.0482	15.5%	30	0.0563	0.200	93%	80-120	0.020 U	0.200	102%	80-120	REF STD	5.00	100%	90-110
Potassium	-001	12.1	12.1	0.0%	20	12.1	10.0	72%	60-140	0.250 U	2.00	96%	80-128	REF STD	4.00	99%	80-120
Sodium	-001	9.69	9.90	2.1%	20	9.69	10.0	79%	60-140	0.10 U	2.00	100%	83-119	REF STD	4.00	99%	80-117
Zinc	-001	3.75	3.60	4.1%	20	3.75	0.0500	V	80-120	0.010 U	0.050	99%	80-120	REF STD	1.00	102%	90-110

**Reference Check samples are not available for all analyses.

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD *8021 ANALYTICAL RESULTS - ug/l

Sample:	-018	-019						
Location:	Lab Meth. Blank	Lab Meth. Blank						
Date Collected:	--	--						
Time Collected:	--	--						
Date Analyzed:	12/16/91	12/17/91						
Dilution:	1/1	1/1						
Chloromethane	5 U	5 U						
Bromomethane	5 U	5 U						
Vinyl Chloride	2 U	2 U						
Chloroethane	2 U	2 U						
Methylene Chloride	1 U	1 U						
Trichlorofluoromethane	1 U	1 U						
1,1-Dichloroethene	1 U	1 U						
1,1-Dichloroethane	1 U	1 U						
trans-1,2-Dichloroethene	1 U	1 U						
cis-1,2-Dichloroethene	1 U	1 U						
Chloroform	1 U	1 U						
1,2-Dichloroethane	1 U	1 U						
1,1,1-Trichloroethane	1 U	1 U						
Carbon Tetrachloride	1 U	1 U						
Bromodichloromethane	1 U	1 U						
1,2-Dichloropropane	1 U	1 U						
1,3-Dichloropropene-Trans	2 U	2 U						
Trichloroethene	1 U	1 U						
1,3-Dichloropropene (Cis)	1 U	1 U						
Dibromochloromethane	2 U	2 U						
1,1,2-Trichloroethane	2 U	2 U						
2-Chloroethylvinyl Ether	2 U	2 U						
Bromoform	2 U	2 U						
1,1,2,2-Tetrachloroethane	2 U	2 U						
Tetrachloroethene	1 U	1 U						
Chlorobenzene	2 U	2 U						
1,3-Dichlorobenzene	2 U	2 U						
1,2-Dichlorobenzene	2 U	2 U						
1,4-Dichlorobenzene	2 U	2 U						
Benzene	2 U	2 U						
Toluene	2 U	2 U						
Ethylbenzene	2 U	2 U						
Total Xylene (o,m,p)	2 U	2 U						
Total Volatiles	ND	ND						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05639 Date: JAN. 8 1992

Client:
Mr.Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
Niagara Falls
Air Force Base

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD 8021	ANALYTICAL RESULTS - %							
Sample:	-018	-019						
Location:	Lab Meth. Blank	Lab Meth. Blank						
Date Collected:	--	--						
Time Collected:	--	--						
SURROGATE STANDARD RECOVERIES								
% Recovery								
Bromochloromethane (Acceptance Limits: 60-138%)	76%	96%						
2-Bromo-1-chloropropane (Acceptance Limits: 60-134%)	70%	89%						
a,a,a-Trifluorotoluene (Acceptance Limits: 60-134%)	92%	79%						

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

3A - WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: General Testing Corp. Contract: _____

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

Matrix Spike - EPA Sample No. : R91/05639 -001

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENT. (ug/l)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	19.8	0.00	24.1	122%	28-167
Trichloroethene	21.4	0.00	27.7	130%	35-146
Benzene	20.0	0.00	23.5	118%	39-150
Toluene	19.7	0.00	24.9	127%	46-148
Chlorobenzene	20.2	0.00	24.7	122%	55-135

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENT. (ug/l)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	19.8	25.5	129%	5.8%	30	28-167
Trichloroethene	21.4	29.4	137%	5.7%	30	35-146
Benzene	20.0	23.7	119%	0.9%	30	39-150
Toluene	19.7	25.1	128%	0.7%	30	46-148
Chlorobenzene	20.2	24.9	123%	1.0%	30	55-135

Columns to be used to flag recovery and RPD values with an asterik

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

FORM III VOA-1
NYSDEC B-85

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05640 Date: 30 DEC., 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

NIAGARA FALLS
AIR FORCE BASE

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD 8021 ANALYTICAL RESULTS - ug/l

Sample:	-006	-007						
Location:	Lab Meth. Blank	Lab Meth. Blank						
Date Collected:	--	--						
Time Collected:	--	--						
Date Analyzed:	12/17/91	12/18/91						
Dilution :	1/1	1/1						
Chloromethane	5 U	5 U						
Bromomethane	5 U	5 U						
Vinyl Chloride	2 U	2 U						
Chloroethane	2 U	2 U						
Methylene Chloride	1 U	1 U						
Trichlorofluoromethane	1 U	1 U						
1,1-Dichloroethene	1 U	1 U						
1,1-Dichloroethane	1 U	1 U						
Chloroform	1 U	1 U						
1,2-Dichloroethane	1 U	1 U						
1,1,1-Trichloroethane	1 U	1 U						
Carbon Tetrachloride	1 U	1 U						
Bromodichloromethane	1 U	1 U						
1,2-Dichloropropane	1 U	1 U						
1,3-Dichloropropene-Trans	2 U	2 U						
Trichloroethene	1 U	1 U						
1,3-Dichloropropene (Cis)	1 U	1 U						
Dibromochloromethane	2 U	2 U						
1,1,2-Trichloroethane	2 U	2 U						
2-Chloroethylvinyl Ether	2 U	2 U						
Bromoform	2 U	2 U						
1,1,2,2-Tetrachloroethane	2 U	2 U						
Tetrachloroethene	1 U	1 U						
Chlorobenzene	2 U	2 U						
1,3-Dichlorobenzene	2 U	2 U						
1,2-Dichlorobenzene	2 U	2 U						
1,4-Dichlorobenzene	2 U	2 U						
Benzene	2 U	2 U						
Toluene	2 U	2 U						
Ethylbenzene	2 U	2 U						
Total Xylene (o,m,p)	2 U	2 U						
cis-1,2-Dichloroethene	1 U	1 U						
trans-1,2-Dichloroethene	1 U	1 U						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05640 Date: DEC. 24 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
NIAGARA FALLS
AIR FORCE BASE

Collected : 12/10/91 P.O. #:

ANALYSIS * BY GC METHOD 8021 ANALYTICAL RESULTS - %

Sample:	-006	-007
Location:	Lab Meth. Blank	Lab Meth. Blank
Date Collected:	--	--
Time Collected:	--	--
SURROGATE STANDARD RECOVERIES		
% Recovery		
Bromochloromethane (Acceptance Limits: 60-138%)	96%	98%
2-Bromo-1-chloropropane (Acceptance Limits: 60-134%)	89%	112%
a,a,a-Trifluorotoluene (Acceptance Limits: 60-134%)	79%	104%

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

ID# in Rochester: 10145
ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
ID# in Hackensack: 10801

Michael K. Feng

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

3A - WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: General Testing Corp. Contract: _____

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

Matrix Spike - EPA Sample No. : R91/05640 -001

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENT. (ug/l)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	19.8	0.0	20.1	101%	28-167
Trichloroethene	21.4	124	131	V	35-146
Benzene	20.0	0.0	15.5	78%	39-150
Toluene	19.6	0.0	15.6	80%	46-148
Chlorobenzene	20.2	0.0	18.8	93%	55-135

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENT. (ug/l)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	19.8	21.8	110%	8.4%	30	28-167
Trichloroethene	21.4	125	V	4.1%	30	35-146
Benzene	20.0	16.8	84%	7.9%	30	39-150
Toluene	19.6	16.2	82%	3.5%	30	46-148
Chlorobenzene	20.2	20.1	99%	6.4%	30	55-135

Columns to be used to flag recovery and RPD values with an asterik

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

FORM III VOA-1
NYSDEC B-85

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Job No: R91/05640

Date: 24 DEC., 1991

EPA METHOD 8010/8020	REFERENCE CHECK TRUE VALUE	REFERENCE CHECK % RECOVERY	ACCEPTANCE LIMITS (%)
Date Analyzed: 12/18/91			
Chloromethane	40.0	131%	D - 193
Bromomethane	40.0	102%	D - 144
Vinyl Chloride	20.0	136%	28 - 163
Chloroethane	--	--	46 - 137
Methylene Chloride	20.0	121%	25 - 162
Trichlorofluoromethane	20.0	80%	21 - 156
1,1-Dichloroethene	20.0	120%	28 - 167
1,1-Dichloroethane	20.0	112%	47 - 132
Total 1,2-Dichloroethene	20.0	119%	38 - 155
Chloroform	20.0	117%	49 - 133
1,2-Dichloroethane	20.0	118%	51 - 147
1,1,1-Trichloroethane	20.0	109%	41 - 138
Carbon Tetrachloride	20.0	118%	43 - 143
Bromodichloromethane	20.0	108%	42 - 172
1,2-Dichloropropane	20.0	105%	44 - 156
1,3-Dichloropropene-Trans	20.0	123%	22 - 178
Trichloroethene	20.0	104%	35 - 146
1,3-Dichloropropene(Cis)	20.0	106%	22 - 178
Dibromochloromethane	20.0	112%	24 - 191
1,1,2-Trichloroethane	20.0	93%	39 - 136
2-Chloroethylvinyl Ether	--	--	14 - 186
Bromoform	20.0	114%	13 - 159
1,1,2,2-Tetrachloroethane	20.0	119%	8 - 184
Tetrachloroethene	20.0	102%	26 - 162
Chlorobenzene	40.0	101%	38 - 150
1,3-Dichlorobenzene	40.0	75%	7 - 187
1,2-Dichlorobenzene	40.0	67%	D - 208
1,4-Dichlorobenzene	40.0	81%	42 - 143
Benzene	20.0	86%	39 - 150
Toluene	20.0	90%	46 - 148
Ethylbenzene	20.0	80%	32 - 160
Total Xylene (o,m,p)	60.0	78%	59 - 127

GTC LABORATORY QUALITY CONTROL REPORT

CUSTOMER: Wehran Envirotech JOB # : R91/05641 UNITS: ug/g Wet Wt. REPORT TYPE: Job Specific

PARAMETER	SAMPLE	MAT SPK	MAT SPK DUP	% REL. ERROR	ACCEPT. LIMIT %	ORIGINAL RESULT	SPIKE ADDED	PERCENT RECOVERY	ACCEPT. LIMIT %	METHOD BLANK	SPIKE ADDED	PERCENT RECOVERY	ACCEPT. LIMITS %	REFERENCE #	KNOWN PMVAL	PERCENT RECOVERY	ACCEPT. LIMITS %
		* PRECISION				* MATRIX SPIKING				BLANK SPIKES				REFERENCE STANDARD			
Pet. Hydro.	-001	708	670	5.52	18.11	192	4238	94.4	55.9-130	10.0 U	4238	96.6	61.1-123	REF STD	124.5	102	*+

* Analytical results previous to accounting for dilutions. ** Reference Check samples are not available for all analyses. ++ Outside of Quality Control Limits.

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: DEC. 26 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Collected : 12/10/91 P.O. #:

HSL VOLATILES BY EPA METHOD 8240* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-003						
Location:	Lab Meth. Blank						
Date Collected:	--						
Time Collected:	--						
Date Analyzed:	12/20/91						
Dilution:	1/1						
Chloromethane	5 U						
Bromomethane	5 U						
Vinyl Chloride	5 U						
Chloroethane	5 U						
Methylene Chloride	5 U						
Acetone	20 U						
Carbon Disulfide	10 U						
Trichlorofluoromethane	5 U						
Vinyl Acetate	10 U						
1,1-Dichloroethene	5 U						
1,1-Dichloroethane	5 U						
trans-1,2-Dichloroethene	5 U						
cis-1,2-Dichloroethene	5 U						
Chloroform	5 U						
2-Butanone (MEK)	10 U						
1,2-Dichloroethane	5 U						
1,1,1-Trichloroethane	5 U						
Carbon Tetrachloride	5 U						
Bromodichloromethane	5 U						
1,2-Dichloropropane	5 U						
1,3-Dichloropropene (Trans)	5 U						
Trichloroethene	5 U						
Dibromochloromethane	5 U						
1,1,2-Trichloroethane	5 U						
Benzene	5 U						
1,3-Dichloropropene(Cis)	5 U						
Bromoform	5 U						
4-Methyl-2-pentanone(MIBK)	10 U						
2-Hexanone	10 U						
Tetrachloroethene	5 U						
1,1,2,2-Tetrachloroethane	5 U						
Toluene	5 U						
Chlorobenzene	5 U						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: DEC. 26 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

Niagara Falls Air Force Base

Collected : 12/10/91 P.O. #:

HSL VOLATILES BY EPA METHOD 8240* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-003							
Location:	Lab Meth. Blank							
Date Collected:	--							
Time Collected:	--							
Date Analyzed:	12/20/91							
Dilution:	1/1							
Ethylbenzene	5 U							
Styrene	5 U							
Total Xylene (o,m,p)	5 U							
Surrogate Standard Recoveries								
1,2-Dichloroethane-d4 (Acceptance limits: 75-119%)	106%							
Toluene d8 (Acceptance limits 85-110%)	101%							
4-Bromofluorobenzene (Acceptance limits 84-116%)	97%							

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

VOLATILE ORGANICS - SOIL SAMPLE
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: General Testing Corp.
Matrix Spike - Sample No. : R91/05641 -001

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENT. (ug/kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0.0	46.8	94%	D-234
Trichloroethene	50	0.0	37.4	75%	71-157
Benzene	50	0.0	40.4	81%	37-151
Toluene	50	0.0	43.2	86%	47-150
Chlorobenzene	50	0.0	42.4	85%	37-160

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	48.1	96%	2.7%	30	D-234
Trichloroethene	50	39.6	79%	5.7%	30	71-157
Benzene	50	42.6	85%	5.3%	30	37-151
Toluene	50	45.7	91%	5.6%	30	47-150
Chlorobenzene	50	44.7	89%	5.3%	30	37-160

Columns to be used to flag recovery and RPD values with ++.
++ = Values outside of QC limits
MS QC Limits = EPA Acceptance Criteria
RPD Limits = Internal Acceptance Criteria

RPD:___0____ out of ___5____ outside limits
Spike Recovery:___0__ out of __10___ outside limits

COMMENTS: _____

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: DEC. 31 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

Niagara Falls Air Force Base

Collected : 12/10/91 P.O. #:

HSL ACID EXTRACTABLES BY EPA METHOD 8270* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-003
Location:	Lab Meth. Blank
Date Collected:	--
Time Collected:	--
Date Extracted:	12/12/91
Date Analyzed:	12/13/91
Dilution:	1/2
Phenol	660 U
2-Chlorophenol	660 U
2-Nitrophenol	660 U
2,4-Dimethylphenol	660 U
2,4-Dichlorophenol	660 U
4-Chloro-3-methylphenol	660 U
2,4,6-Trichlorophenol	660 U
2,4-Dinitrophenol	1320 U
4-Nitrophenol	1320 U
2-Methyl-4,6-dinitrophenol	1320 U
Pentachlorophenol	1320 U
2-Methylphenol	660 U
4-Methylphenol	660 U
Benzoic Acid	3300 U
2,4,5-Trichlorophenol	660 U
SURROGATE STANDARD RECOVERIES	
2-Fluorophenol	72%
(Acceptance Limits: 16-122%)	
Phenol-d6	71%
(Acceptance Limits: 30-100%)	
2,4,6-TriBromophenol	67%
(Acceptance Limits: 24-143%)	

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

SEMI-VOLATILE - SOIL SAMPLE

SOIL ACID EXTRACTABLE SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: General Testing Corp.

Matrix Spike - Sample No. : R91/05641 -001

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC #	QC LIMITS REC.
Phenol	13,500	0.00	9580	71%	5-112
2-Chlorophenol	13,400	0.00	10,700	80%	23-134
4-Chloro-3-methylphenol	13,400	0.00	11,800	88%	22-147
4-Nitrophenol	13,300	0.00	15,400	116%	D-132
Pentachlorophenol	13,300	0.00	14,400	108%	14-176

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	13,500	9660	72%	1.4%	30	5-112
2-Chlorophenol	13,400	11,300	84%	4.9%	30	23-134
4-Chloro-3-methylphenol	13,400	12,600	94%	6.6%	30	22-147
4-Nitrophenol	13,300	17,500	132%	13%	30	D-132
Pentachlorophenol	13,300	16,800	126%	15%	30	14-176

- Columns to be used to flag recovery and RPD values with ++.
+ - Values outside of QC limits
QC Limits = EPA Acceptance Criteria
RPD Limits = Internal Acceptance Criteria

RPD:___0____ out of ___5____ outside limits
Spike Recovery:___0__ out of __10___ outside limits

COMMENTS: _____

_____

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Job No: R91/05641

Date: 26 DEC., 1991

Acid Extractables By EPA Method 8270	REFERENCE CHECK TRUE VALUE	% RECOVERY	ACCEPTANCE LIMITS (%)
Date Extracted: 12/12/91			
Date Analyzed: 12/13/91			
Phenol	13,500	64%	5 - 112
2-Chlorophenol	13,400	63%	23 - 134
4-Chloro-3-methylphenol	13,400	70%	22 - 147
4-Nitrophenol	13,300	220%*	D - 132
Pentachlorophenol	13,330	97%	14 - 176

Michael K. Perry

Lab Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05641 Date: DEC. 31 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Collected : 12/10/91 P.O. #:

HSL BASE NEUTRALS BY EPA METHOD 8270* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-003						
Location:	Lab Meth. Blank						
Date Collected:	--						
Time Collected:	--						
Date Extracted:	12/12/91						
Date Analyzed:	12/13/91						
Dilution:	1/2						
N-Nitrosodimethylamine	330 U						
Bis(2-chloroethyl) ether	330 U						
1,3 Dichlorobenzene	330 U						
1,4 Dichlorobenzene	330 U						
1,2 Dichlorobenzene	330 U						
bis(-2-chloroisopropyl)ether	330 U						
N-Nitroso-Di-n-propylamine	330 U						
Hexachloroethane	330 U						
Nitrobenzene	330 U						
Isophorone	330 U						
bis(-2-chloroethoxy)methane	330 U						
1,2,4-Trichlorobenzene	330 U						
Naphthalene	330 U						
Hexachlorobutadiene	330 U						
Hexachlorocyclopentadiene	330 U						
2-Chloronaphthalene	330 U						
Dimethyl phthalate	330 U						
Acenaphthylene	330 U						
Acenaphthene	330 U						
2,4-Dinitrotoluene	330 U						
2,6-Dinitrotoluene	330 U						
Diethyl phthalate	330 U						
4-Chlorophenyl-phenyl-ether	330 U						
Fluorene	330 U						
1,2-Diphenylhydrazine	330 U						
N-Nitrosodiphenylamine	330 U						
4-Bromophenyl-phenylether	330 U						
Hexachlorobenzene	330 U						
Phenanthrene	330 U						
Anthracene	330 U						
Di-n-butyl phthalate	330 U						
Benzidine	3300 U						
Fluoranthene	330 U						
Pyrene	330 U						

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job Number: R91/05641 Date: DEC. 31 1991

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Collected : 12/10/91 P.O. #:

HSL BASE NEUTRALS BY EPA METHOD 8270* ANALYTICAL RESULTS - ug/kg Wet Wt.

Sample:	-003
Location:	Lab Meth. Blank
Date Collected:	--
Time Collected:	--
Date Extracted:	12/12/91
Date Analyzed:	12/13/91
Dilution:	1/2
Butyl benzyl phthalate	330 U
3,3'-Dichlorobenzidine	330 U
Benzo(a)anthracene	330 U
Bis(2-ethylhexyl)phthalate	330 U
Chrysene	330 U
Di-n-octyl phthalate	330 U
Benzo(b)Fluoranthene	330 U
Benzo(k)fluoranthene	330 U
Benzo(a)pyrene	330 U
Indeno(1,2,3-cd)pyrene	330 U
Dibenzo(a,h)anthracene	330 U
Benzo(g,h,i)perylene	330 U
Benzyl Alcohol	1320 U
4-Chloroaniline	660 U
2-Methyl Naphthalene	660 U
2-Nitroaniline	1320 U
3-Nitroaniline	1320 U
Dibenzofuran	660 U
4-Nitroaniline	3300 U
SURROGATE STANDARD RECOVERIES	
Nitrobenzene-d5	65%
(Acceptance Limits: 19-103%)	
2-Fluorobiphenyl	71%
(Acceptance Limits: 26-119%)	
Terphenyl-d14	86%
(Acceptance Limits: 18-142%)	

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.

NY ID# in Rochester: 10145 NY ID# in Hackensack: 10801
NJ ID# in Rochester: 73331 NJ ID# in Hackensack: 02317

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

SEMI-VOLATILE - SOIL SAMPLE

SOIL BASE/NEUTRAL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: General Testing Corp.

Matrix Spike - Sample No. : R91/05641 -001

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENT. (ug/kg)	MS CONCENT. (ug/kg)	MS % REC #	QC LIMITS REC.
1,4 Dichlorobenzene	6730	0.00	5030	75%	20-124
-Nitroso-Di-n-propylamine	6410	0.00	5260	82%	D-230
,2,4-Trichlorobenzene	6730	0.00	5190	77%	44-142
Acenaphthene	5790	0.00	5094	88%	47-145
,4-Dinitrotoluene	6660	0.00	5190	78%	39-139
yrene	6330	0.00	7060	112%	52-115

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENT. (ug/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,4 Dichlorobenzene	6730	5150	77%	2.6%	30	20-124
-Nitrsodi-n-propylamine	6410	5510	86%	4.8%	30	D-230
,2,4-Trichlorobenzene	6730	5380	80%	3.8%	30	44-142
Acenaphthene	5790	5430	94%	6.6%	30	47-145
,4-Dinitrotoluene	6660	5910	89%	13%	30	39-139
yrene	6330	7990	126%*	12%	30	52-115

- Columns to be used to flag recovery and RPD values with ++.
++ - Values outside of QC limits
MS QC Limits = EPA Acceptance Criteria
RPD Limits = Internal Acceptance Criteria

RPD:___0____ out of ___6____ outside limits
Spike Recovery:___1__ out of __12___ outside limits

COMMENTS: _____

_____

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Job No: R91/05641

Date: 26 DEC., 1991

	REFERENCE CHECK		
BASE NEUTRALS BY EPA METHOD 8270	TRUE VALUE	% RECOVERY	ACCEPTANCE LIMITS (%)
Date Extracted: 12/12/91			
Date Analyzed: 12/13/91			
1,4 Dichlorobenzene	6730	62%	20 - 124
N-Nitroso-Di-n-propylamine	6410	64%	D - 230
1,2,4-Trichlorobenzene	6730	67%	44 - 142
Acenaphthene	5790	83%	47 - 145
2,4-Dinitrotoluene	6660	76%	39 - 139
Pyrene	6330	63%	

SECTION C

General Testing Corporation

GTC REPORT # WEHRAN ENVIROTECH
NIAGARA FALLS AIR FORCE BASE

SECTION C

ANALYTICAL CHRONOLOGY

Presented in this section is a Laboratory Chronology listing the dates of all preparations and analyses performed on the samples covered in this report. Holding times (maximum times in which to analyze a sample) are derived from the referenced methodology.

Chronology Notes:

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No. R91/05639 Date JAN. 8 1992

Client:

Wehran Envirotech

Sample(s) Reference

Niagara Falls
Air Force Base

Date Received: 12/11/91

Date Sample Taken: 12/10/91

LABORATORY CHRONICLE
DATE ANALYZED

Sample: / Location:	-001 MW-10-A	-002 MW-10-C	-003 MW-10-E	-004 MW-10-E Duplicate	-005 MW-10-B	-006 MW-10-D	-007 Equipment Blank	-008 Field Blank	-017 Trip Blank
pH - Field Measured	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91		12/10/91	
Spec. Cond. (umhos/cm)	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91		12/10/91	
Temperature °C -Field	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91		12/10/91	
Alkalinity, Total	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	
Chloride	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	
Fluoride	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	
Nitrogen, Nitrate	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	Calc.	
Nitrogen, Nitrite	12/11/91	12/11/91	12/11/91	12/11/91	12/11/91	12/11/91	12/11/91	12/11/91	
Nitrogen,Nitrate/Nitrite	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	12/13/91	
Pet. Hydrocarbons, IR	12/31/91	12/31/91	12/31/91	12/31/91	12/31/91	12/31/91	12/31/91	12/31/91	
Phosphorous, Ortho as P	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	
Silica, Total	12/31/91	12/23/91	12/23/91	12/23/91	12/23/91	12/23/91	12/23/91	12/23/91	

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No. R91/05639 Date JAN. 2 1992

Client:

Wehran Envirotech

Sample(s) Reference

Niagara Falls
Air Force Base

Date Received: 12/11/91

Date Sample Taken: 12/10/91

LABORATORY CHRONICLE
DATE ANALYZED

Sample: / Location:	-001 MW-10-A	-002 MW-10-C	-003 MW-10-E	-004 MW-10-E Duplicate	-005 MW-10-B	-006 MW-10-D	-007 Equipment Blank	-008 Field Blank	-017 Trip Blank
Solids, Dissolved @180 C	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	
Sulfate	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	12/12/91	
Aluminum	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	
Barium	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	
Boron, Total	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	
Calcium, Total	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	
Chromium, Total	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	
Copper, Total	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	
Iron, Total	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	12/19/91	
Lead, Furnace	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	12/20/91	
Magnesium, Total	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	12/24/91	
Manganese, Total	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No. R91/05639 Date JAN. 2 1992

Client:

Wehran Envirotech

Sample(s) Reference

Niagara Falls
Air Force Base

Date Received: 12/11/91

Date Sample Taken: 12/10/91

LABORATORY CHRONICLE
DATE ANALYZED

Sample: / Location:	-001 MW-10-A	-002 MW-10-C	-003 MW-10-E	-004 MW-10-E Duplicate	-005 MW-10-B	-006 MW-10-D	-007 Equipment Blank	-008 Field Blank	-017 Trip Blank
Nickel, Total	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	
Potassium, Total	12/17/91	12/17/91	12/17/91	12/17/91	12/17/91	12/17/91	12/17/91	12/17/91	
Sodium, Total	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	12/16/91	
Zinc, Total	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	12/18/91	

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05640 Date: DEC. 26 1991

Client:

Wehran Envirotech

Sample(s) Reference

NIAGARA FALLS
AIR FORCE BASE

Date Received: 12/11/91

Date Sample Taken: 12/10/91

LABORATORY CHRONICLE
DATE ANALYZED

Sample:	-001	-002	-003	-004	-005				
Location:	10-3	10-2	10-1D	10-4	10-1				
8021 Scan	12/18/91	12/19/91	12/19/91	12/19/91	12/19/91				

General Testing Corporation

GTC REPORT # WEHRAN ENVIROTECH
NIAGARA FALLS AIR FORCE BASE

SECTION D

FIELD DOCUMENTATION

Presented in this section is all support documentation requested.

Documentation Provided:

(X) Chain of Custody Forms

( ) Analytical Request Forms

( ) Shipping Receipts

( ) Laboratory Receipt Log

(X) Other: FIELD FORMS

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

39

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job No. R91/5639 Client Project No. _____

Sample Origination & Shipping Information

Collection Site Niag. Falls Airbase

Address _____ Street _____ City _____ State _____ Zip _____

Collector C. Thompson (Print) Clinton Thompson (Signature)

Bottles Prepared by GTC

Bottles Shipped to Client via GTC

Samples Shipped via GTC

Rec'd by _____

Seal/Shipping # _____

Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date/Time
1. Sign	1. Sign	/ /
for	for	:
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by _____ 12/11/91 @ 08:00

	Client I.D.# / Lab#	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
1	#1 QC / R91/5639-001 -009	MW 10-A / 12/10/91 9:25		See Analitical Request	✓		✓		1,1,10,4,8,8,4
2	#2 / R91/5639-002 -010	MW 10-C / 12/10/91 10:45		" "					1,3,4,5,7,8
3	#3 / R91/5639-003 -011	MW 10-E / 12/10/91 11:10		" "					1,3,4,5,7,8
4	#4 / R91/5639-004 -012	MW 10-E / 12/10/91 11:25		" "					1,3,4,5,7,8
5	#5 / R91/5639-005 -013	MW 10-13 / 12/10/91 11:58		" "					1,3,4,5,7,8

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.	Gallon Glass	
# of each	19 (34)		2	3	2		2	1		1	

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____ (X), _____ (Y).

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

39

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job No. R91/5639

Client Project No. _____

Sample Origination & Shipping Information

Collection Site NIAG. FALLS Airbase

Address _____ Street _____ City _____ State _____ Zip _____

Collector C. Thompson (Print) Clinton Thompson (Signature)

Bottles Prepared by GTC

Bottles Shipped to Client via GTC

Samples Shipped via GTC

Rec'd by _____

Seal/Shipping # _____

Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date/Time
1. Sign	1. Sign	/ /
for	for	:
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by _____ 12/11/91 @ 09:60

	Client I.D.# / Lab#	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Sample Prep Preserved N	Sample Prep Filtered Y	Sample Prep Filtered N	Bottle Set(s) (see below)
1	#6 / R91/5639-006 -014	MW 10-D / 12/10/91 12 15		See Analitical request	✓		✓		1, 3, 4, 5, 7, 8
2	#7 / R91/5639-007 -015	Equipt. BLANK / 12/10/91 13 00		" "	✓		✓		1, 3, 4, 5, 7, 8
3	#8 / R91/5639-008 -016	Field BLANK MW10-E / 12/10/91 11 10		" "	✓		✓		1, 3, 4, 5, 7, 8
4	R91/5639-017	Trip Blank / 12/10/91 ✓		8020/8021					1
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each	9 ~~8~~ 4		2	3	2		2	1			

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____ (X), _____ (Y).

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job No. R91/5640

Client Project No. _____

Sample Origination & Shipping Information

Collection Site NIAG. FALLS Airbase

Address _____

Collector C. Thompson (Print) — Street _____ City _____ State _____ Zip _____ — Clinton Thompson (Signature)

Bottles Prepared by GTC

Bottles Shipped to Client via GTC

Samples Shipped via GTC

Rec'd by _____

Seal/Shipping # _____

Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date/Time
1. Sign	1. Sign	/ /
for	for	:
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by _____ 12/11/91 @ 09:00

	Client I.D.# / Lab#	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Sample Prep Preserved N	Sample Prep Filtered Y	Sample Prep Filtered N	Bottle Set(s) (see below)
1	#1 QC / R91/5640-001	10-3 / 12/10/91 9:45		See Analitical request	✓		✓	✓	1
2	#2 / R91/5640-002	10-2 / 12/10/91 9:55		" "					1
3	#3 / R91/5640-003	10-1D / 12/10/91 10:10		" "					1
4	#4 / R91/5640-004	10-4 / 12/10/91 10:25		" "					1
5	#5 / R91/5640-005	10-1 / 12/10/91 12:00		" "					1

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each	4										

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____(X), _____(Y).

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job No. 291/5641

Client Project No. _____

Sample Origination & Shipping Information

Collection Site Niag. Falls Airbase

Address _____ Street _____ City _____ State _____ Zip _____

Collector C. Thompson (Print) Clinton Thompson (Signature)

Bottles Prepared by GTC

Bottles Shipped to Client via GTC

Samples Shipped via GTC

Rec'd by _____

Seal/Shipping # _____

Seal/Shipping # _____

Sample(s) Relinquished by:	Received by:	Date/Time
1. Sign	1. Sign	/ /
for	for	:
2. Sign	2. Sign	/ /
for	for	:
3. Sign	3. Sign	/ /
for	for	:

Sample(s) Received in Laboratory by Tom Hastings 12/11/91 @ 14:55

	Client I.D.# / Lab#	Sample Location / Date/Time	★	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)
1	#1 QC / 291/5641-001	Sediment Pond / 12/10/91 13:15		See Analitical request				✓	4
2	#2 / 291/5641-002	Creek / 12/10/91 13:45		" "				✓	4
3		/ / :							
4		/ / :							
5		/ / :							

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. ~~Plastic~~ Glass	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each				4							

Additional Analytes _____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

★ Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), _____ (X), _____ (Y).

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number 5639 R91/~~5439~~

Well I.D. MW 10A (New) Lab Number # 1 QC

PURGE INFORMATION Purge Method stainless steel bailer

Well Depth (ft) 21.75

Static Water Level (ft)— 4.06

Depth of Water Column (gal/ft)x 17.69

Well Constant (gal/ft)x .16

Volume standing in well 2.83 gallons x 5 vols = 14.15

Start of Purge: Date 12 / 9 / 91 Time 9 : 35 - 9:59

Purge Observations muddy red good recharge

Total Volume Purged 15 gallons # of Volume Casings Purged 5 vols

SAMPLING INFORMATION Sample Method stainless steel bailer

Sample Date: 12 / 10 / 91 Time: 9 : 25 Sample Depth: 5.96 ft.

Sample Appearance: muddy reddish tint

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.67	7.67
4.00	Spec. Cond.	umhos/cm	926	935
10.00	Temp	°Celsius	9.0	9.0
1,413	Spec. Grav.		1.001	1.001

Field Filtered Y/N Date/Time 12 / 10 / 91 10 : 15

Meter Calibration: Date/Time 12 / 10 / 91 9 : 20

FIELD OBSERVATIONS: Weather 35°, overcast, west breeze

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12 / 10 / 91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niagara Falls Airbase Job Number P91/5639

Well I.D. MW-10C Lab Number #2

PURGE INFORMATION Purge Method Stainless steel bailer

Well Depth (ft) 11.05

Static Water Level (ft)— 7.95

Depth of Water Column (gal/ft)x 3.10

Well Constant (gal/ft)x .16

Volume standing in well .49 gallons x 5 vols = 2.48

Start of Purge: Date 12 / 9 / 91 Time 12 : 30 - 12:45

Purge Observations muddy red good recharge

Total Volume Purged 3 gallons # of Volume Casings Purged 5+ vols

SAMPLING INFORMATION Sample Method Stainless steel bailer

Sample Date: 12 / 10 / 91 Time: 10 : 45 Sample Depth: 7.99 ft.

Sample Appearance: Muddy, reddish tint

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.66	7.64
4.00	Spec. Cond.	umhos/cm	997	985
10.00	Temp	°Celsius	9.5	9.5
1413	Spec. Grav.		1.000	1.000

Field Filtered (Y)N Date/Time 12 / 10 / 91 11 : 35

Meter Calibration: Date/Time 12 / 10 / 91 10 : 40

FIELD OBSERVATIONS: Weather 35°, overcast, west breeze

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12 / 10 / 91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niagara Falls Airbase Job Number P91/5639

Well I.D. MW ~~6~~ 10E (New) Lab Number #344

PURGE INFORMATION Purge Method Stainless steel bailer

Well Depth (ft) 26.59

Static Water Level (ft)— 5.12

Depth of Water Column (gal/ft)x 21.47

Well Constant (gal/ft)x .16

Volume standing in well 3.43 gallons x 5 VOLs = 17.17

Start of Purge: Date 12/9/91 Time 12:50 - 13:15

Purge Observations greyish to red good recharge

Total Volume Purged 18 gallons # of Volume Casings Purged 5 VOLs

SAMPLING INFORMATION Sample Method Stainless Steel bailer

Sample Date: 12/10/91 Time: 11:00 Sample Depth: 5.30 ft.

Sample Appearance: muddy

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 3	3	4	4
7.00	pH	stnd	7.83	7.83	7.78	7.79
4.00	Spec. Cond.	umhos/cm	1752	1725	1543	1545
10.00	Temp	°Celsius	9.0	9.0	9.0	9.0
1413	Spec. Grav.		1.001	1.001	1.001	1.001

Field Filtered (Y)/N Date/Time 12/10/91 12:05

Meter Calibration: Date/Time 12/10/91 11:05

FIELD OBSERVATIONS: Weather 35°, overcast, west breeze

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niagara Falls Airbase Job Number R91/5639

Well I.D. MW-10 ST B (New) Lab Number # 5

PURGE INFORMATION Purge Method Stainless steel bailer

Well Depth (ft) 21.15

Static Water Level (ft)— 9.75

Depth of Water Column (gal/ft)x 11.4

Well Constant (gal/ft)x .16

Volume standing in well 1.82 gallons x 5 vols = 9.12

Start of Purge: Date 12 / 9 / 91 Time 13 : 28 - 13: 43

Purge Observations greyish to red good recharge

Total Volume Purged 10 gallons # of Volume Casings Purged 5+ vols

SAMPLING INFORMATION Sample Method Stainless steel bailer

Sample Date: 12 / 10 / 91 Time: 11 : 58 Sample Depth: 10.99 ft.

Sample Appearance: Muddy, with greyish tint

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	8.16	8.14
4.00	Spec. Cond.	umhos/cm	1,585	1,595
10.00	Temp	°Celsius	10.0	10.0
1,413	Spec. Grav.		1.001	1.001

Field Filtered (Y) N Date/Time 12 / 10 / 91 12 : 36

Meter Calibration: Date/Time 12 / 10 / 91 11 : 45

FIELD OBSERVATIONS: Weather 35°, overcast, slight breeze

C. Thompson, S. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12 / 10 / 91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number R91/5639

Well I.D. MW-10D (NEW) Lab Number #6

PURGE INFORMATION Purge Method stainless steel bailer

Well Depth (ft) 11.96

Static Water Level (ft)— 7.58

Depth of Water Column (gal/ft)x 4.38

Well Constant (gal/ft)x .16

Volume standing in well .70 gallons x 5 Vols = 3.50

Start of Purge: Date 12/9/91 Time 14:15 - 14:20

Purge Observations redish slow recharge

Total Volume Purged 1½ gallons # of Volume Casings Purged 1+ to DRY

SAMPLING INFORMATION Sample Method Stainless Steel Bailer

Sample Date: 12/10/91 Time: 12:15 Sample Depth: 8.96 ft.

Sample Appearance: Muddy

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.75	7.76
4.00	Spec. Cond.	umhos/cm	1,676	1,665
10.00	Temp	°Celsius	10.0	10.0
1.413	Spec. Grav.		1.001	1.001

Field Filtered (Y)N Date/Time 12/10/91 12:55

Meter Calibration: Date/Time 12/10/91 12:10

FIELD OBSERVATIONS: Weather 35°, Slight Breeze, overcast

C. Thompson, S. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): Christo Thompson

Date: 12/10/91 Signature Christo Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location NIAGARA FALLS AIR BASE Job Number 1291/5639

Well I.D. EQUIPMENT BLANK Lab Number 29B #7

PURGE INFORMATION Purge Method N/A

Well Depth (ft) _____

Static Water Level (ft)— _____

Depth of Water Column (gal/ft)x _____

Well Constant (gal/ft)x _____

Volume standing in well N/A gallons

Start of Purge: Date ____/____/____ Time ____:____

Purge Observations _____

Total Volume Purged _____ gallons # of Volume Casings Purged N/A

SAMPLING INFORMATION Sample Method DI RINSE STAINLESS BAILER

Sample Date: 12/10/91 Time: 13:00 Sample Depth: N/A ft.

Sample Appearance: CLEAR NO ODOR

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	8.06	8.06
4.00	Spec. Cond.	umhos/cm	54.50	55.25
10.00	Temp	°Celsius	11.5	11.5
1.413	Spec. Grav.		.999	.999

Field Filtered Y/N Date/Time ____/____/____ ____:____

Meter Calibration: Date/Time 12/10/91 12:55

FIELD OBSERVATIONS: Weather _____

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature Clinton Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niagara Falls Airbase Job Number R91/5639

Well I.D. Field blank done at well # MW10-E Lab Number #8

PURGE INFORMATION Purge Method N/A

Well Depth (ft) _____

Static Water Level (ft)— _____

Depth of Water Column (gal/ft)x _____

Well Constant (gal/ft)x _____

Volume standing in well _____ gallons

Start of Purge: Date ____/____/____ Time ____:____

Purge Observations _____

Total Volume Purged _____ gallons # of Volume Casings Purged _____

SAMPLING INFORMATION Sample Method _____

Sample Date: 12/10/91 Time: 11:10 Sample Depth: N/A ft.

Sample Appearance: D.I. Water

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	8.06	8.05
4.00	Spec. Cond.	umhos/cm	54.50	54.75
10.00	Temp	°Celsius	9.0	9.0
1413	Spec. Grav.		.999	.999

Field Filtered Y (N) Date/Time ____/____/____ ____:____

Meter Calibration: Date/Time 12/10/91 11:05

FIELD OBSERVATIONS: Weather 35°, overcast, slight breeze

C. Thompson, S. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number R91/5840

Well I.D. 10-3 (OLD) Lab Number ~~#~~ QC

PURGE INFORMATION Purge Method stainless steel bailer

Well Depth (ft) 11.90

Static Water Level (ft)— 6.09

Depth of Water Column (gal/ft)x 5.81

Well Constant (gal/ft)x .16

Volume standing in well .92 gallons x 5 vols = 4.64

Start of Purge: Date 12 / 9 / 91 Time 10 : 10 - 10:31

Purge Observations Muddy red good recharge

Total Volume Purged 5 gallons # of Volume Casings Purged 5+ vols

SAMPLING INFORMATION Sample Method stainless steel bailer

Sample Date: 12 / 10 / 91 Time: 9 : 45 Sample Depth: 6.86 ft.

Sample Appearance: clear but cloudy

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.74	7.74
4.00	Spec. Cond.	umhos/cm	1,150	1,165
10.00	Temp	°Celsius	9.0	9.0
1,413	Spec. Grav.		1.000	1.000

Field Filtered (Y)/N Date/Time 12 / 10 / 91 10 : 35

Meter Calibration: Date/Time 12 / 10 / 91 9 : 40

FIELD OBSERVATIONS: Weather 35°, overcast, west breeze

C. Thompson, S. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12 / 10 / 91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number R91/5640

Well I.D. 10-2 Lab Number # 2

PURGE INFORMATION Purge Method Stainless steel bailer

Well Depth (ft) 10.93

Static Water Level (ft)— 7.03

Depth of Water Column (gal/ft)x 3.90

Well Constant (gal/ft)x .16

Volume standing in well .62 gallons x 5 VOLS = 3.12

Start of Purge: Date 12/9/91 Time 10:41 - 10:51

Purge Observations Muddy red Slow recharge

Total Volume Purged 2 gallons # of Volume Casings Purged 1+ VOL TO DRY

SAMPLING INFORMATION Sample Method Stainless steel bailer

Sample Date: 12/10/91 Time: 9:55 Sample Depth: 8.02 ft.

Sample Appearance:

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.67	7.65
4.00	Spec. Cond.	umhos/cm	1,233	1,245
10.00	Temp	°Celsius	9.5	9.5
1,413	Spec. Grav.		1.000	1.000

Field Filtered Y (N) Date/Time ___/___/___ ___:___

Meter Calibration: Date/Time 12/10/91 9:50

FIELD OBSERVATIONS: Weather 35°, overcast, slight breeze

C. Thompson

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

~~291~~ 5640

Site Location Niag. Falls Airbase Job Number ~~291/5640~~

Well I.D. 10-1D Lab Number #3

PURGE INFORMATION Purge Method stainless steel/bailer

Well Depth (ft) 34.65

Static Water Level (ft)— 7.86

Depth of Water Column (gal/ft)x 26.79

Well Constant (gal/ft)x .16

Volume standing in well 4.28 gallons x 5 vols = 21.43

Start of Purge: Date 12/9/91 Time 11:00 - 11:50

Purge Observations black to red good recharge

Total Volume Purged 22 gallons # of Volume Casings Purged 5

SAMPLING INFORMATION Sample Method Stainless steel bailer

Sample Date: 12/10/91 Time: 10:10 Sample Depth: 7.94 ft.

Sample Appearance: muddy

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.60	7.58
4.00	Spec. Cond.	umhos/cm	1,233	1,225
10.00	Temp	°Celsius	9.5	9.5
1413	Spec. Grav.		1.000	1.000

Field Filtered Y (N) Date/Time 12/10/91 1:

Meter Calibration: Date/Time 12/10/91 10:05

FIELD OBSERVATIONS: Weather 35°, overcast, slight breeze

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature Clinton Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number P91/5640

Well I.D. MW 10-4 Lab Number #4

PURGE INFORMATION Purge Method Stainless steel bailer

Well Depth (ft) 10.06

Static Water Level (ft)— 7.25

Depth of Water Column (gal/ft)x 2.81

Well Constant (gal/ft)x .16

Volume standing in well .44 gallons x 5 vols = 2.24

Start of Purge: Date 12/9/91 Time 12:00 - 12:05

Purge Observations rusty red to muddy red slow recharge

Total Volume Purged 1 gallons # of Volume Casings Purged 1st To Dry

SAMPLING INFORMATION Sample Method Stainless steel bailer

Sample Date: 12/10/91 Time: 10:25 Sample Depth: 7.86 ft.

Sample Appearance: cloudy

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.81	7.82
4.00	Spec. Cond.	umhos/cm	925	930
10.00	Temp	°Celsius	9.0	9.0
1.413	Spec. Grav.		1.000	1.000

Field Filtered (Y)/N Date/Time 12/10/91 ____:____

Meter Calibration: Date/Time 12/10/91 10:20

FIELD OBSERVATIONS: Weather 35°, overcast, west breeze

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number R91/5640

Well I.D. 10-1 OLD Lab Number # 5

PURGE INFORMATION Purge Method stainless steel bailer

Well Depth (ft) 10.95

Static Water Level (ft)— 5.39

Depth of Water Column (gal/ft)x 5.56

Well Constant (gal/ft)x .16

Volume standing in well .88 gallons x 5 vols = 4.44

Start of Purge: Date 12 / 9 / 91 Time 13 : 55 - 13:59

Purge Observations muddy red slow recharge

Total Volume Purged 1 gallons # of Volume Casings Purged 1 vol to dry

SAMPLING INFORMATION Sample Method Stainless steel bailer

Sample Date: 12 / 10 / 91 Time: 12 : 00 Sample Depth: 6.98 ft.

Sample Appearance: Muddy

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
7.00	pH	stnd	7.34	7.35
4.00	Spec. Cond.	umhos/cm	1,447	1,435
10.00	Temp	°Celsius	10.0	10.0
1413	Spec. Grav.		1.001	1.001

Field Filtered Y (N) Date/Time ___/___/___ ___:___

Meter Calibration: Date/Time 12/10/91 11:55

FIELD OBSERVATIONS: Weather 35°, overcast, slight breeze

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niagfalls Airbase Job Number 91/5641

Well I.D. ~~Sediment pond~~ Sediment Sample 1 Lab Number #1 QC

PURGE INFORMATION Purge Method N/A

Well Depth (ft) _____

Static Water Level (ft)— _____

Depth of Water Column (gal/ft)x _____

Well Constant (gal/ft)x _____

Volume standing in well _____ gallons

Start of Purge: Date ____/____/____ Time ____:____

Purge Observations _____

Total Volume Purged _____ gallons # of Volume Casings Purged _____

SAMPLING INFORMATION Sample Method Grabbed dirt

Sample Date: 12/10/91 Time: 13:15 Sample Depth: N/A ft.

Sample Appearance: N/A

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
	pH	stnd		
	Spec. Cond.	umhos/cm	N/A	
	Temp	°Celsius		
	Spec. Grav.			

Field Filtered Y/N Date/Time ____/N/A ____:____

Meter Calibration: Date/Time ____/____/N/A ____:____

FIELD OBSERVATIONS: Weather 40, slight breeze, overcast

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature C. Thompson

GENERAL TESTING CORPORATION
GROUNDWATER MONITORING FIELD FORM

Site Location Niag. Falls Airbase Job Number R91/5641

Well I.D. ~~Creek~~ Sediment sample 2 Lab Number #2
Smd 1/21

PURGE INFORMATION Purge Method N/A

Well Depth (ft) _____

Static Water Level (ft)— _____

Depth of Water Column (gal/ft)x _____

Well Constant (gal/ft)x _____

Volume standing in well _____ gallons

Start of Purge: Date ___/___/___ Time ___:___

Purge Observations _____

Total Volume Purged _____ gallons # of Volume Casings Purged _____

SAMPLING INFORMATION Sample Method GRABBED DIRT

Sample Date: 12/10/91 Time: 13:45 Sample Depth: N/A ft.

Sample Appearance: N/A

FIELD MEASUREMENTS

Meter Number	Parameter	Unit Stnd.	Replicates 1	2
	pH	stnd		
	Spec. Cond.	umhos/cm	N/A	
	Temp	°Celsius		
	Spec. Grav.			

Field Filtered Y/N Date/Time ___/N/A___:___

Meter Calibration: Date/Time ___/___/N/A___:___

FIELD OBSERVATIONS: Weather 40°, slight breeze, overcast

C. Thompson, J. Williams

I certify that sampling procedures were in accordance with all applicable EPA, state and corporate protocols.

Sampler (Print): C. Thompson

Date: 12/10/91 Signature Clinton Thompson

APPENDIX C-1

Groundwater Samples

General Testing Corporation

A Full Service Environmental Laboratory

FEB. 4 1992

Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Re: Niagara Falls Air Force
Base R91/5639

Dear Mr. Glen Combes

Enclosed are the results of the analysis requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at 454-3760.

Thank you for letting us provide this service.

Sincerely,

GENERAL TESTING CORPORATION

Janice Jaeger
Customer Service Representative

aa

Enc.

710 Exchange Street • Rochester, New York 14608 • (716) 454-3760 • Fax (716) 454-1245
85 Trinity Place • Hackensack, NJ 07601 • (201) 488-5242 • Fax (201) 488-6386
435 Lawrence Bell Drive • Amherst, NY 14221 • (716) 634-0454 • Fax (716) 634-9019

General Testing Corporation

Effective 10/1/91

GTC LIST OF QUALIFIERS

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

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 and reanalysis could not be performed.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analytes only)

* - Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)

- Also used to qualify Organics QC data outside limits. (Only used on the QC summary sheets)

M - Duplication injection precision not met (GFA only).

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R92/00216 Date: FEB. 4 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force
Base R91/5639

Received : 01/14/92 P.O. #:

ANALYTICAL RESULTS - mg/l

Sample:	-001	-002	-003	-004	-005			
Location:	MW-10A	MW-10E	MW-10B	MW-10C	MW-10D			
	R91/5636-1	R91/5639-3	R91/5639-5	R91/5639-2	R91/5639-6			
Date Collected:	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91			
Time Collected:	09:25	11:10	11:58	10:45	12:15			
Aluminum, Soluble	5.05	0.137	3.12	0.112	0.608			
Iron, Soluble	3.40	0.389	2.17	0.0631	0.382			
Lead, Sol. (Furnace)			0.0282					
Magnesium, Soluble	59.5	104	76.2	74.0	142			
Manganese, Soluble	0.101	0.0831	0.104	0.361	0.189			
Sodium, Soluble			8.37		27.8			
Zinc, Soluble	0.400	0.0277	0.175		0.147			

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

Michael K. Peng

Laboratory Director

APPENDIX C-2

Sediment Samples

General Testing Corporation

RECEIVED JAN 2 9 1992

A Full Service Environmental Laboratory

JAN. 16 1992

Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Re: Niagara Falls Air Force
Base

Dear Mr. Glen Combes

Enclosed are the results of the analysis requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at 454-3760.

Thank you for letting us provide this service.

Sincerely,

GENERAL TESTING CORPORATION

Janice Jaeger

Janice Jaeger
Customer Service Representative

aa

Enc.

710 Exchange Street • Rochester, New York 14608 • (716) 454-3760 • Fax (716) 454-1245
85 Trinity Place • Hackensack, NJ 07601 • (201) 488-5242 • Fax (201) 488-6386
435 Lawrence Bell Drive • Amherst, NY 14221 • (716) 634-0454 • Fax (716) 634-9019

General Testing Corporation

Effective 10/1/91

GTC LIST OF QUALIFIERS

U - Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. For further explanation see case narrative / cover letter.

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 and reanalysis could not be performed.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

N - Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analytes only)

* - Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)

\- Also used to qualify Organics QC data outside limits. (Only used on the QC summary sheets)

M - Duplication injection precision not met (GFA only).

S - Reported value determined by Method of Standard Additions. (MSA)

X - As specified in the case narrative.

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05981 Date: JAN. 16 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Received : 12/24/91 P.O. #:

ANALYTICAL RESULTS - mg/l

Sample:	-001		
Location:	Drum		
	Composite		
Date Collected:	12/23/91		
Time Collected:	10:30		
	BIASED	UNBIASED	% RECOVERY
TCLP Extraction Metals ***			
Arsenic	0.50 U	0.50 U	86%
Barium	0.551	0.471	85%
Cadmium	0.10 U	0.10 U	74%
Chromium	0.10 U	0.10 U	82%
Lead	0.10 U	0.10 U	71%
Mercury	0.0020 U	0.0020 U	99%
Selenium	0.50 U	0.50 U	90%
Silver	0.10 U	0.10 U	87%

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

***TCLP Toxicity Characteristic Leaching Procedure.
Federal Register, Part 261, Vol. 55, No. 126,
June 29, 1990.

Data reported is biased on the above regulation.

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05981 Date: JAN. 16 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Received : 12/24/91 P.O. #:

TCLP VOLATILES BY EPA METHOD 8240*** ANALYTICAL RESULTS - ug/l

Sample:	-001		
Location:	Drum		
	Composite		
Date Collected:	12/23/91		
Time Collected:	10:30		
	BIASED	UNBIASED	% RECOVERY
Date Analyzed:	01/07/92		
Dilution:	1/10		
Benzene	50 U	50 U	106%
Carbon Tetrachloride	50 U	50 U	105%
Chlorobenzene	50 U	50 U	107%
Chloroform	50 U	50 U	108%
1,2-Dichloroethane	50 U	50 U	104%
1,1-Dichloroethene	50 U	50 U	102%
Methyl Ethyl Ketone	100 U	100 U	78%
Tetrachloroethene	50 U	50 U	106%
Trichloroethene	50 U	50 U	112%
Vinyl Chloride	50 U	50 U	106%
SURROGATE STANDARD RECOVERIES			
1,2-Dichloroethane-d4	100%		
(Acceptance Limits: 75-119%)			
Toluene d8	100%		
(Acceptance Limits: 85-110%)			
Bromofluorobenzene	98%		
(Acceptance Limits: 84-116%)			

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

**TCLP Toxicity Characteristic Leaching Procedure.
Federal Register, Part 261, Vol. 55, No. 126,
June 29, 1990.

Data reported is biased on the above regulation.

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05981 Date: JAN. 16 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Received : 12/24/91 P.O. #:

TCLP ACID EXTRACTABLES BY EPA METHOD 8270*** ANALYTICAL RESULTS - ug/l

Sample:	-001							
Location:	Drum							
	Composite							
Date Collected:	12/23/91							
Time Collected:	10:30							
	BIASED	UNBIASED	% RECOVERY					
Date Extracted:	01/07/92							
Date Analyzed:	01/09/92							
Dilution:								
m+p-cresol	100 U	100 U	52%					
o-cresol	100 U	100 U	20%					
Pentachlorophenol	200 U	200 U	50%					
2,4,5-Trichlorophenol	100 U	100 U	52%					
2,4,6-Trichlorophenol	100 U	100 U	55%					
Surrogate Standard Recoveries:								
2-Fluorophenol	1.7%*							
(Acceptance Limits: 10-109%)								
Phenol-d6	0.6%*							
(Acceptance Limits: 10-73%)								
2,4,6-TriBromophenol	41%							
(Acceptance Limits: 10-141%)								

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

***TCLP Toxicity Characteristic Leaching Procedure.
Federal Register, Part 261, Vol. 55, No. 126,
June 29, 1990.

Data reported is biased on the above regulation.

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05981 Date: JAN. 16 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference
Niagara Falls Air Force Base

Received : 12/24/91 P.O. #:

TCLP BASE NEUTRALS BY EPA METHOD 8270*** ANALYTICAL RESULTS - ug/l

Sample:	-001		
Location:	Drum		
	Composite		
Date Collected:	12/23/91		
Time Collected:	10:30		
	BIASED	UNBIASED	% RECOVERY
Date Extracted:	01/07/92		
Date Analyzed:	01/09/92		
Dilution:	1/10		
1,4 Dichlorobenzene	50 U	50 U	59%
2,4-Dinitrotoluene	50 U	50 U	81%
Hexachlorobenzene	50 U	50 U	67%
Hexachloroethane	50 U	50 U	15%
Nitrobenzene	50 U	50 U	72%
Pyridine	100 U	100 U	32%
Hexachloro-1,3-butadiene	50 U	50 U	66%
Surrogate Standard Recoveries:			
Nitrobenzene-d5	57%		
(Acceptance Limits: 26-111%)			
2-Fluorobiphenyl	80%		
(Acceptance Limits: 23-131%)			
Terphenyl-d14	80%		
(Acceptance Limits: 20-151%)			

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

***TCLP Toxicity Characteristic Leaching Procedure.
Federal Register, Part 261, Vol. 55, No. 126,
June 29, 1990.

Data reported is biased on the above regulation.

Michael K. Perry

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05981 Date: JAN. 16 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference

Niagara Falls Air Force Base

Received : 12/24/91 P.O. #:

TCLP PESTICIDES-BY GC METHOD 8080 *** ANALYTICAL RESULTS - ug/l

Sample:	-001		
Location:	Drum		
	Composite		
Date Collected:	12/23/91		
Time Collected:	10:30		
	BIASED	UNBIASED	% RECOVERY
Date Extracted:	01/08/92		
Date Analyzed:	01/10/92		
Dilution:	1/10		
Chlordane	20 U	20 U	76%
Endrin	5.0 U	5.0 U	89%
Heptachlor	5.0 U	5.0 U	87%
Heptachlor epoxide	5.0 U	5.0 U	75%
gamma-BHC (Lindane)	5.0 U	5.0 U	90%
Methoxychlor	20 U	20 U	65%
Toxaphene	100 U	--	--
Surrogate Standard Recovery			
% Recovery			
Dibutylchlorendate (Acceptance Limits: 24-154)	92%		
Tetrachloro-meta-xylene (Acceptance Limits: 27-119)	80%		

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145 NY ID# in Hackensack: 10801
NJ ID# in Rochester: 73331 NJ ID# in Hackensack: 02317

***TCLP Toxicity Characteristic Leaching Procedure.
Federal Register, Part 261, Vol. 55, No. 126,
June 29, 1990.

Data reported is biased on the above regulation

Michael K. Penny

Laboratory Director

General Testing Corporation

A Full Service Environmental Laboratory

LABORATORY REPORT

Job No: R91/05981 Date: JAN. 16 1992

Client:
Mr. Glen Combes
Wehran Envirotech
345 Lang Blvd.
Grand Island, NY 14072

Sample(s) Reference:
Niagara Falls Air Force Base

Received : 12/24/91 P.O. #:

TCLP HERBICIDES-ANALYSIS BY GC METHOD 8150 *** ANALYTICAL RESULTS - ug/l

Sample:	-001		
Location:	Drum		
	Composite		
Date Collected:	12/23/91		
Time Collected:	10:30		
	BIASED	UNBIASED	% RECOVERY
Date Extracted:	01/07/92		
Date Analyzed:	01/10/92		
Dilution:	1/100		
2,4-D	50 U	50 U	86%
2,4,5-TP (Silvex)	50 U	50 U	78%
SURROGATE STANDARD RECOVERIES			
% Recovery			
2,4-DB	58%		
(Acceptance Limits 18-152)			

Unless otherwise noted, analytical methodology has been obtained from references as cited in 40 CFR, parts #136 & #261.
NY ID# in Rochester: 10145
NJ ID# in Rochester: 73331
NJ ID# in Hackensack: 02317
NY ID# in Hackensack: 10801

*** TCLP Toxcity Characteristic Leaching Procedure.
Federal Register, Part 261, Vol.55, No. 126,
June 29, 1990

Data reported is biased on the above regulation.

Michael K. Perry
Laboratory Director

GENERAL TESTING CORPORATION/CHAIN-OF-CUSTODY RECORD

710 Exchange Street, Rochester, NY 14608 | 85 Trinity Place, Hackensack, NJ 07601 | 435 Lawrence Bell Drive, Amherst, NY 14221-7077

GTC Job No. R9115981

Client Project No. 00640-02

Sample Origination & Shipping Information

Collection Site: Niagara Falls AFB

Address: Street ____ City ____ State ____ Zip ____

Collector: George Hormance (Print) ____ (Signature)

Bottles Prepared by: GTC — Rec'd by: Client

Bottles Shipped to Client via: Courier — Seal/Shipping #: ____

Samples Shipped via: Fed Ex — Seal/Shipping #: ____

Sample(s) Relinquished by:	Received by:	Date/Time
1. Sign: George Hormance	1. Sign	/ / :
for: Weiss	for	
2. Sign	2. Sign	/ / :
for	for	
3. Sign	3. Sign	/ / :
for	for	

Sample(s) Received in Laboratory by: Tom Hastings — 12/24/91 @ 09:30

	Client I.D.# / Lab#	Sample Location / Date/Time	*	Analyte or Analyte Group(s) Required (see below for additional)	Sample Prep Preserved Y	Preserved N	Filtered Y	Filtered N	Bottle Set(s) (see below)	
1	1 / R9115981-001	Drum Composite / 12/23/91 10:30		FULL TCLP 8240, 8270, metals; Pest/PCB/Herb						
2		/ / :								
3		/ / :								
4		/ / :								
5		/ / :								

Use Bottle No. for indicating type bottles used in each bottle set and fill in box with # of bottles used for each type.

Bottle No.	1	2	3	4	5	6	7	8	9	10	11
Bottle Type	40 ml Vial	Pint Glass	Qt. Glass	4 oz. Plastic	8 oz. Plastic	16 oz. Plastic	Qt. Pl.	Gal. Pl.	Steril. Pl.		
# of each											

Additional Analytes: ____

Shaded area for Lab use only; bottom copy for client; maximum of 5 samples per page.

* Source Codes: Monitoring Well (W), Soil (S), Treatment Plant (T), Drinking Water (D), Leachate (L), Hazardous Waste (H), River or Stream (R), Pond (P), Industrial Discharge (I), ____ (X), ____ (Y).