

**ENGINEERING INVESTIGATIONS AT
INACTIVE HAZARDOUS WASTE SITES
IN THE STATE OF NEW YORK
PHASE II INVESTIGATIONS**

**MACNAUGHTON-BROOKS
NYS SITE NUMBER 915034
CITY OF BUFFALO
ERIE COUNTY
NEW YORK STATE**

Prepared For

**DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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SECTION I

EXECUTIVE SUMMARY

SITE BACKGROUND

The MacNaughton-Brooks site is located at 717 Elk Street, City of Buffalo, Erie County, New York (Figure I-1). The City of Buffalo had a population of 357,870 in 1980 (Rand McNally, 1981).

The MacNaughton-Brooks site is owned by the Dold Feed Company of Buffalo, New York (Erie County, 1987). Previous owners include the Thomas Paper Company and the Victory Chemical Company who manufactured smoke bombs at the site during World War II. There is little information available regarding waste disposal practices of the previous owners.

The site was leased to the MacNaughton-Brooks Company between 1960 and 1974, who used the site to manufacture paint products. Wastes generated during this time included paint sludges and solvents. Mineral spirits used to dilute oil based paints were the principle chemical waste disposed on-site during this period. Between 1960 and 1966, approximately 100 gallons of waste per year were poured over a pile of construction debris located behind the southernmost building on the site. The pile was located approximately 1,000 feet from the Buffalo River. The pile is no longer present. After 1966, waste generated by the MacNaughton-Brooks Company was removed from the site by a contract waste hauler. Since the MacNaughton-Brooks Company moved from the site in 1974, the property has been occupied by Gro-Green Products, Inc., a subsidiary of the Dold Feed Company (Kotrys, 1989). The old disposal pile was reportedly cleared and removed from the site. However, unauthorized dumping of various wastes periodically occurs. Gro-Green reportedly removes accumulated debris about once a year.

In 1982, the U. S. Geological Survey drilled four boreholes where the demolition pile used to stand (USEPA, 1988). Analyses of soil samples collected from these boreholes indicated elevated levels of cadmium, chromium, lead, and methylene chloride. Although the quality assurance and control of these samples are questionable, the New York State Department of Environmental Conservation felt they were enough evidence of contaminants to warrant further investigation.

A Phase I investigation for this site was completed in 1985. That report concluded that a Phase II investigation was necessary to complete a final Hazard Ranking System (HRS) score.

On May 13, 1987, NUS Corporation Region 2 FIT conducted a site inspection at the facility during which five soil samples were collected from the former disposal area (USEPA, 1988). Analyses of these samples detected elevated levels of 27 of the Target Compound List substances.

Several of these, including dibenzofuran, chlordane, benzo(a)anthracene, and chrysene, are known or suspected carcinogens. However, based on the lack of target populations, no remedial action was recommended.

PHASE II INVESTIGATION

As part of the Phase II investigation three groundwater monitoring wells were installed, one upgradient and two downgradient of the suspected disposal area. Groundwater, soil and air samples were analyzed to determine the presence of hazardous substances at the MacNaughton-Brooks site.

SITE ASSESSMENT

The geologic stratigraphy of the site can be summarized as soil and nonsoil fill over clayey lacustrine sediments. The aquifer of concern is considered to be the groundwater within the unconsolidated deposits, because that unit is likely to be hydraulically connected with the Buffalo River. The depth to water in three monitoring wells at the site is about 4 feet, with local groundwater flow to the south, toward the Buffalo River. Groundwater is not used as a drinking water source within three miles of the site. The surrounding area is served by a municipal water supply which has its source in the Niagara River. There are no drinking water intakes within three miles of the site.

As part of the Phase II investigation, three groundwater samples were collected at the MacNaughton-Brooks site and analyzed for Hazardous Substance List (HSL) volatile and semivolatile organic compounds and HSL metals. Seven HSL organic compounds were detected in the groundwater samples. The downgradient concentrations for these compounds were not in excess of three times the upgradient concentrations. The Class GA standard for benzene was exceeded in one sample.

Eighteen HSL metals were detected in the groundwater samples. Sodium and potassium were present downgradient in a concentration which was more than three times the upgradient concentration, indicating releases potentially attributable to the site. The concentrations for five metals exceeded the applicable standards or guidance values.

Two surface soil samples were collected from the area where the wastes had reportedly been disposed. These samples were analyzed for HSL volatile and semivolatile organic compounds, metals, and cyanide. Thirteen HSL organic compounds were detected in the soil samples. Three pesticides and two polynuclear aromatic hydrocarbons (PAHs) were detected at elevated concentrations. The concentrations of the other organic compounds detected were low, generally below detection limits. The presence of the PAH compounds in the soil is not surprising since the site is located next to a former oil refinery. The refinery is one possible source for the PAHs. The presence of the pesticides is more difficult to explain. Pesticides were not known to have been disposed on-site. The concentrations of the pesticides are near the EPA target risk

range for ingestion of soil by children. However, the site is not located in an area likely to be accessed by small children.

Twenty metals and cyanide were detected in the soil samples. Six metals were present in one or both samples at concentrations exceeding the published naturally-occurring ranges for NYS soils.

Air quality monitoring with a Photovac photoionization detector did not indicate the presence of volatile organic compounds in the breathing zone at concentrations above background levels.

HAZARD RANKING SYSTEM SCORE

In an attempt to establish the relative risk associated with this site, the Hazard Ranking System (HRS) was applied. As currently used by the NYSDEC, the HRS is employed to aid the evaluation of inactive hazardous waste sites in New York State. This system takes into account the types of wastes at the site, receptors, and transport routes to calculate a numerical score for the site. As stated in 40 CFR Subpart H Section 300.81, the HRS was developed for evaluating the relative potential of uncontrolled hazardous disposal facilities to cause human health or safety problems or ecological and environmental damage. It is assumed by the EPA that a uniform application of the ranking system in each state will permit EPA to identify releases of hazardous substances that pose the greatest hazard to human health and/or the environment

Under the HRS, three numerical scores are computed for each site to express the relative risk or danger from the site. These scores take into account the population at risk, the potential for contamination of drinking water supplies, for direct human contact, for destruction of sensitive ecological systems and other appropriate factors. The three scores are:

- S_M - reflects the potential for harm to humans or the environment from migration of a hazardous substance away from the facility by routes involving groundwater, surface water and air. It is a composite of separate scores for each of the three routes (S_{GW} = groundwater route score, S_{SW} = surface water route score, and S_A = air route score).
- S_{FE} - reflects the potential for harm from substances that can explode or cause fires.
- S_{DC} - reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

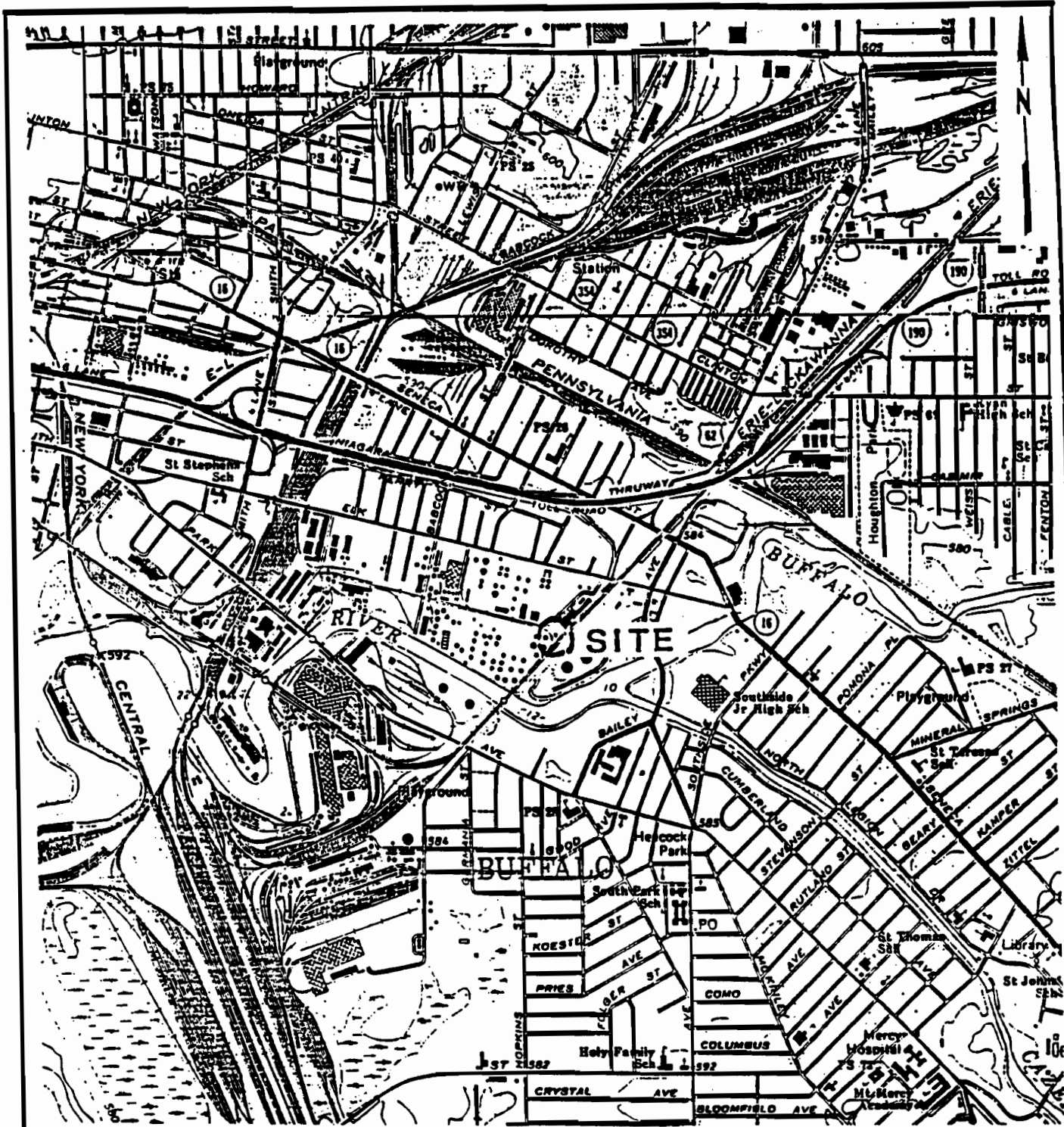
Based on the results of this and previous studies, the HRS for the MacNaughton-Brooks site have been calculated as follows:

$S_M = 3.09$	$S_{GW} = 4.47$
$S_F = 0$	$S_{SW} = 2.92$
$S_{DC} = 62.5$	$S_A = 0$

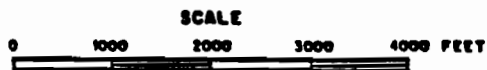
RECOMMENDATIONS

The scope of the Phase II investigation at the MacNaughton-Brooks site was generally adequate to provide an assessment of the site condition. The overall HRS score of 3.09 indicates a relatively low risk associated with this site.

Based on the analytical results for groundwater and soil at the site, as well as the historical and current use patterns of the site, it appears that no remedial action is necessary at present. However, since heptachlor and chlordane and other organic compounds were detected at relatively high concentrations in soil samples (as well as in USEPA soil samples), but were not reliably analyzed in groundwater, it is recommended that further sampling be conducted. Samples collected should include groundwater from all three wells. These samples should be analyzed for TCL pesticides/PCBs. If results confirm that the site does not pose a significant threat to health or the environment, then it should be delisted. If, on the other hand, a significant threat does exist in the form of high concentrations, it may be less costly to remove contaminated soils over the roughly 400 square foot area and increase security, than it would be to conduct an RI/FS.

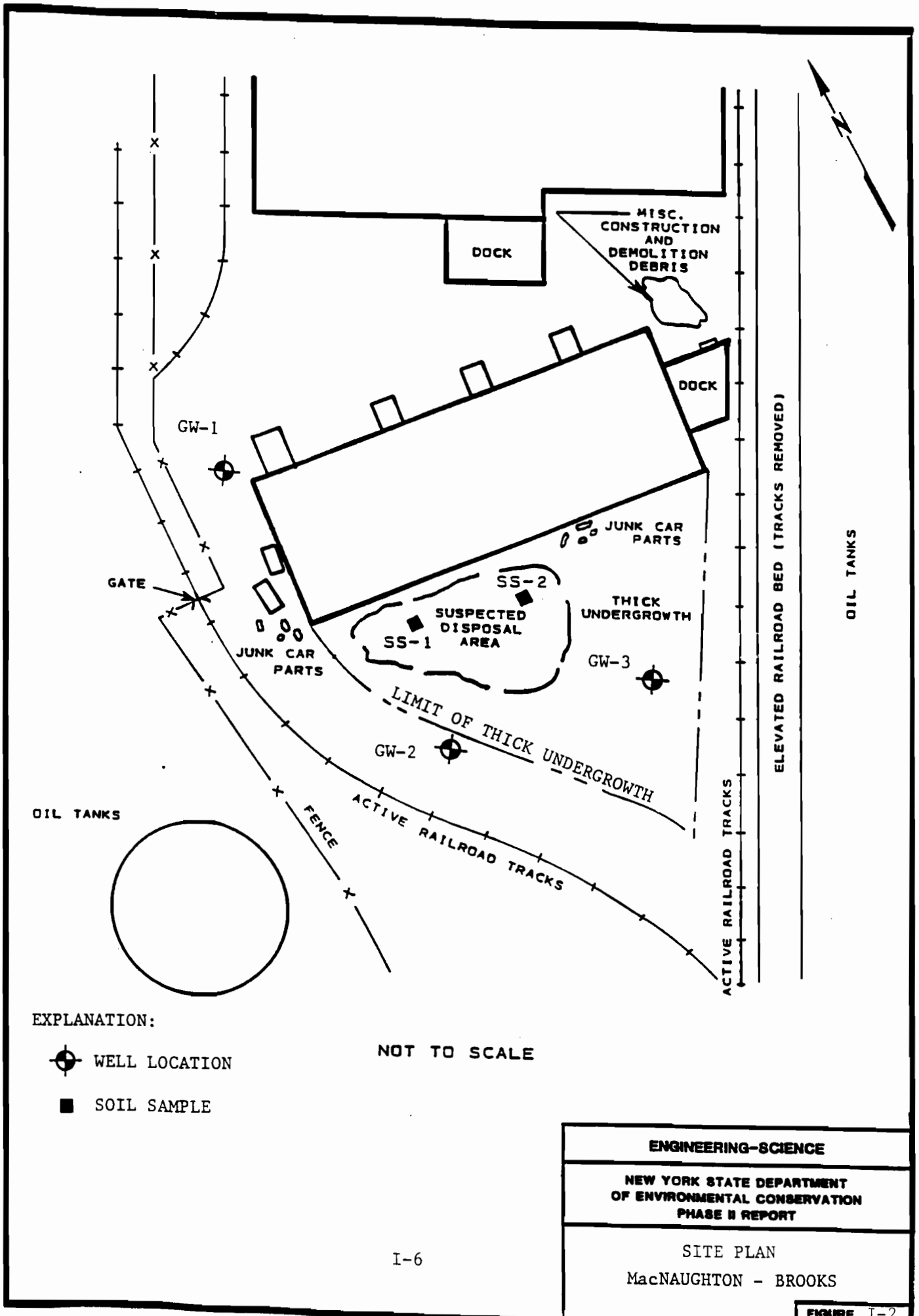


LATITUDE: 42°51'49"
 LONGITUDE: 78°49'49"



REFERENCE: U.S.G.S. 7.5' Topographic Map
 Buffalo SE, NY (1965) and Buffalo NE, NY
 (1965) Quadrangles

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SITE LOCATION MAP MacNAUGHTON - BROOKS
FIGURE I-1



EXPLANATION:

- ⊕ WELL LOCATION
- SOIL SAMPLE

NOT TO SCALE

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SITE PLAN MacNAUGHTON - BROOKS
FIGURE I-2

SECTION II

PURPOSE

The objective of a Phase II investigation is to determine if hazardous wastes have been disposed of in the site, if contaminants exist in the various mediums (air, groundwater, surface water or soils) and whether or not threats to human health or the environment exist. Information gathered relative to the above will allow the Department to reclassify the site or if warranted delist it.

Wastes from paint manufacturing reportedly were disposed of on-site. This Phase II investigation was designed to supplement the limited data previously collected about the site and determine whether the potential exists for contamination of the groundwater or surface water pathways.

SECTION III

SCOPE OF WORK

INTRODUCTION

Field work for the Phase II investigation at the MacNaughton-Brooks site began in September, 1987 and was completed in October, 1988. The Phase II Work Plan dated April 28, 1986 was approved by NYSDEC prior to commencing the field investigations. The Work Plan was later revised with NYSDEC approval, based on the preliminary findings of the field investigations. Field work was performed in accordance with a NYSDEC-approved project Quality Assurance/Quality Control Plan and site-specific Health and Safety Plan.

PHASE II SITE INVESTIGATION

The scope of the investigation is summarized in Table III-1 and is described below. All field work was performed or supervised by qualified Engineering-Science (ES) staff.

Monitoring Well Installations

Three monitoring wells were installed around the perimeter of the site on November 16-17, 1987 by Rochester Drilling Co. Inc. (Figure III-1). Wells were installed upgradient and downgradient of the suspected waste disposal area. The wells monitor the upper portion of the water table. The wells were drilled and constructed in accordance with NYSDEC guidelines. Soil samples were generally collected at intervals of five feet throughout the depth of the boring. Selected soil samples were analyzed for grain-size characteristics and Atterberg Limits.

The monitoring wells were constructed with two-inch inside diameter, threaded, flush-joint PVC pipe and slotted screen. For all three well installations, a quartz sandpack was used to surround the well screen. A bentonite pellet seal was used to isolate the screened section from above. Water levels in the wells were measured on at least two dates following installation and well development. Well development generally consisted of removing water by air-lift utilizing compressed air. The monitoring wells were covered with a PVC cap and a locking steel protective casing.

Field procedures for the monitoring well installations are presented in Appendix A. Boring logs, well schematics and grain-size analyses results are included in Appendix B.

Surface Soil Sampling and Analysis

Two surface soil samples were collected on September 9, 1987 and analyzed for Hazardous Substance List (HSL) volatiles, semivolatiles, and metals by Nanco Labs, Inc. In addition, a trip blank was analyzed for HSL volatiles. On October 13, 1988 ES resampled the locations for analysis of HSL pesticide/PCBs by York Laboratories, Inc. All analyses and reporting were performed utilizing the applicable NYSDEC Superfund and Contract Laboratory Protocols dated June, 1986 and its latest amendments (NYSDEC CLP).

Groundwater Sampling and Analysis

Groundwater samples were collected from the three Phase II monitoring wells on November 24, 1987. These samples were analyzed for HSL volatiles, semivolatiles, metals and TOX by Nanco Labs, Inc. In addition, a trip blank and field blank (GW-3B) were analyzed for HSL volatiles. Analyses and reporting were performed utilizing applicable NYSDEC CLP methods. The samples were collected with teflon bailers and dedicated polypropylene line. Field procedures for the groundwater sampling are presented in Appendix A. Analytical results are discussed in Section IV and listed in Appendix C.

Air Monitoring

A Photovac Total Ionizables Present (TIP-II) was used to screen for volatile organic compounds present in the air. This monitoring was performed as a health and safety measure during on-site field work. Air in the breathing zone (4 to 5 feet above ground) was monitored during drilling and sampling activities. Soil samples were also screened, as was the headspace over each monitoring well, as a preliminary means of determining the presence of volatile organic compounds.

TABLE III-1

**SUMMARY OF PHASE II TASKS
MACNAUGHTON-BROOKS SITE**

Task	Description of Task
Prepare and Update Work Plan	Reviewed the information in the Phase I report and supplemental data, conducted a site visit, examined aerial photography, and prepared the Phase II work plan.
Conduct Records Search/Data Compilation	Reviewed Phase I information by contacting or visiting central and local offices of NYSDEC, NYSDOH, County DOH, NYSDOT, etc.
Site Reconnaissance	Checked locations and conditions of existing wells, examined terrain for accessibility by drill rigs, examined suitability for geophysical surveys, and determined appropriate locations of sampling points.
Conduct Borings/Install Monitoring Wells	Installed three wells. The borings were drilled to a depth of 17 to 22 feet. Wells were constructed of 2-inch PVC pipe.
Soil samples from borings	Soil samples were collected at 5-ft. intervals, and at changes in subsurface lithologies during drilling. Performed grain size analyses, and Atterberg limits tests.
Perform Sampling and Analysis	
Soil samples from surface soils	Two samples were collected and analyzed for HSL metals, and organics.
Groundwater samples	Three groundwater samples were collected and analyzed for HSL metals, organics and TOX.

TABLE III-1

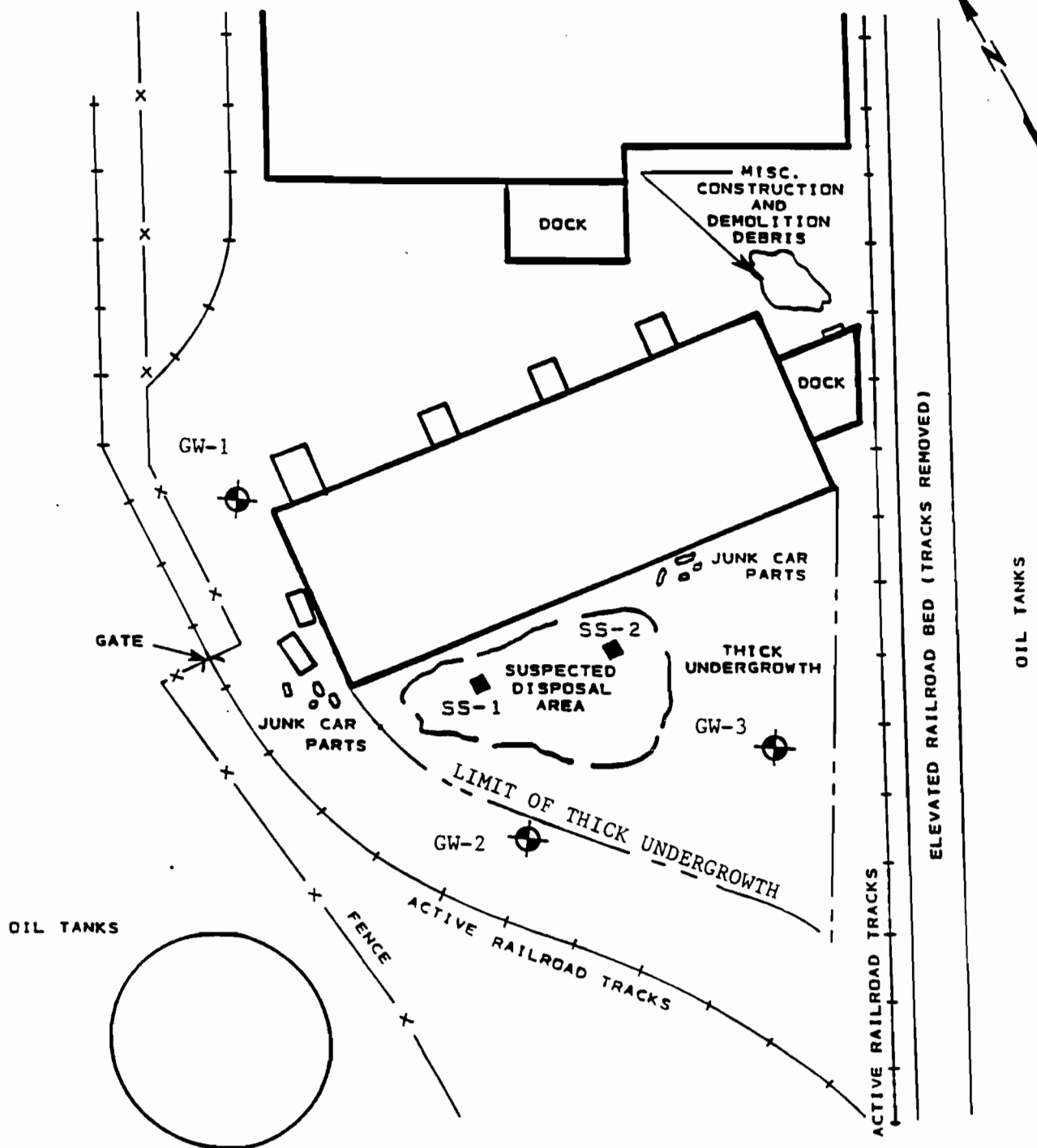
**SUMMARY OF PHASE II TASKS
MACNAUGHTON-BROOKS SITE**

Task	Description of Task
Air monitoring	Using the Photovac TIP II, the presence of volatile organic compounds was monitored during on-site activities.
Conduct Site Assessment	A preliminary site contamination assessment was conducted to complete the final HRS and HRS documentation records.
Report Preparation	Prepared final report containing significant Phase I information, additional field data, final HRS and HRS documentation records, and site assessments.
Project Management	Project coordination, administration, and reporting.

TABLE III-2

**MONITORING WELL LOCATIONS AND SPECIFICATIONS
MACNAUGHTON BROOKS**

Well Number	Unit Screened	Location	Depth (Feet)	Screened Interval (Feet)
GW-1	Overburden	Upgradient	17	7 - 17
GW-2	Overburden	Downgradient	17	7 - 17
GW-3	Overburden	Downgradient	18	8 - 18



EXPLANATION:

- ⊕ WELL LOCATION
- SOIL SAMPLE

NOT TO SCALE

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE II REPORT
SAMPLE LOCATIONS PLAN MacNAUGHTON - BROOKS

SECTION IV

SITE ASSESSMENT

SITE HISTORY

The MacNaughton-Brooks site is owned by the Dold Feed Company of Buffalo, New York (Erie County, 1987). Previous owners include the Thomas Paper Company and the Victory Chemical Company, who manufactured smoke bombs on-site during World War II. There is little information available regarding waste disposal practices of the previous owners. The site was leased to the MacNaughton-Brooks Company between 1960 and 1974, which used the site to manufacture paint products. Wastes generated during this time included paint sludges and solvents. Mineral spirits, used to dilute oil-based paints, was the principle chemical waste disposed on-site. Between 1960 and 1966, approximately 100 gallons of waste per year were poured over a pile of construction debris located behind the southernmost building on-site. The pile was located approximately 1,000 feet from the Buffalo River. After 1966, waste generated by the MacNaughton-Brooks Company was removed from the site by a contract waste hauler. After 1974, the MacNaughton-Brooks Company moved from the site and the property was leased to the Gro-Green Fertilizer Company. The old disposal area was reportedly cleared and the waste was removed from the site. However, unauthorized dumping of various wastes continued periodically. Gro-Green reportedly removes accumulated debris about once a year (Olson, 1985).

REGIONAL SETTING

Regional Geology

The MacNaughton-Brooks site is located within the Erie-Ontario Lowland physiographic province of New York State (LaSala, 1968). This portion of the Erie-Ontario Lowland is underlain by layers of sedimentary bedrock which are largely covered with unconsolidated deposits. The bedrock consists mainly of shale, limestone, and dolomite. The bedrock units were fine-grained sediments deposited in seas during the Silurian and Devonian Periods, and are bedded or layered. The dip of the rocks (inclination of the bedding planes) is gently southward at 20 to 60 feet per mile.

The Onondaga Limestone, about 110 feet thick, is thought to be the bedrock beneath the site. The formation consists of three members. The lowest member is a gray coarse-grained limestone, generally only a few feet thick. The middle member of the Onondaga is a cherty limestone. In some zones the chert exceeds the amount of limestone. This member is probably

40 to 45 feet thick. The upper member is a dark-gray to tan limestone of varying texture and is probably about 50 to 60 feet thick.

In the site vicinity, the unconsolidated deposits overlying bedrock are mostly glacial deposits formed during Pleistocene time, about 10,000 to 15,000 years ago, when an ice sheet covered the area. The glacial deposits consist of glacial till, which is a nonsorted mixture of clay, silt, sand, and stones deposited directly from the ice sheet; lake deposits, which are bedded clay, silt, and sand that settled out in lakes fed by the melting ice, and; sand and gravel deposits, which were laid down in glacial streams. The glacial sand and gravel deposits may be either ice-contact or outwash types. The glacial deposits generally are less than 50 feet thick in the vicinity of the site. Other unconsolidated deposits are alluvium formed by streams in Recent times.

Relief of the present land surface is due to preglacial erosion of the bedrock and subsequent topographic modification by glaciation.

Regional Hydrology

The MacNaughton-Brooks site occurs within the Lake Erie and Niagara River drainage basin. Waters in this system ultimately reach the Atlantic Ocean via Lake Ontario and the St. Lawrence River. The Buffalo River, which is to the south of the site, is classified as a Class D waterway (6NYCRR). The Buffalo River is approximately 75 feet wide, and flows west into Lake Erie. The Buffalo River is presently used by commercial shipping barges. Lake Erie and the Niagara River are sources of drinking water for much of Erie and Niagara Counties.

Groundwater can be found locally in both the unconsolidated glacial deposits and the limestone bedrock. In the vicinity of the site, the unconsolidated glacial deposits are primarily fine grained lake sediments overlying a thin layer of glacial till. Both of these deposits generally have low permeability and yield only small quantities of water, or none at all.

Greater quantities of groundwater occur in the bedrock. Much of the groundwater is transmitted through features such as horizontal bedding plains and vertical joints, which are further widened by dissolution. The availability of groundwater in the limestone bedrock will vary widely, based on the frequency of fractures and the size of the solution openings.

Lake Erie is the municipal water supply source for the City of Buffalo. Surface water sources provide most of the water used in the area. Some groundwater is used for industrial purposes and is obtained primarily from the bedrock aquifer.

SITE GEOGRAPHY

Site Topography

The MacNaughton-Brooks site is located in the City of Buffalo, Erie County, New York, population 357,870 (Rand McNally, 1981). The disposal area is approximately 400 square feet in

size and was used by MacNaughton-Brooks Company to dispose of waste solvents laden with paint residues. The site is relatively flat, and is bordered by railroad tracks on the east, south and west and by the former oil refining plant to the west. The elevation of the site is approximately 580 feet above mean sea level (USGS, 1965).

The site has also been used for disposal of junk car parts, scrap metal, concrete blocks, tires, and wood. The site is located in an industrial area. Nearby facilities include the Mobil Oil Terminal and the former Allied Chemical site, which is also the subject of an ongoing Phase II investigation by the NYSDEC. Although this is an industrial area, densely populated residential areas are located within one quarter mile as shown on Figure IV-1.

The disposal area is roughly circular and approximately 20 feet in diameter as shown on Figure IV-2. Surface water occurs around the disposal area as temporary puddles, with no predominant surface water drainage direction.

Soils

Based on the Phase II soil borings at the site, surface soils consist of black sandy fill, mixed with brick, gravel, silt and clay in varying amounts. This fill, which is eleven feet deep, was probably placed at the site to raise the elevation of the site above the river flood stage. The fill is generally a loose granular material with a moderate to high permeability.

Soils present on the property are listed as Urban Land (Ud) by the Erie County Soil Survey. This classification applies to land that is greater than 80% covered with asphalt, concrete or buildings (USDA, 1986).

SITE HYDROGEOLOGY

This discussion is based on information from the Phase II site investigation activities which included three monitoring well installations. Boring logs and well schematics are presented in Appendix B. Additional information used to develop an understanding of the site included USGS topographic maps, New York State Geological Survey Maps, regional groundwater resource reports, and investigations at nearby sites as referenced in the text.

Geology

During the Phase II investigation, three monitoring wells were installed. The groundwater monitoring well locations are shown on Figure IV-2.

The subsurface geology of the site can be characterized as eleven feet of fill, consisting of sand, gravel, clay and brick over lacustrine clay. A cross section of the site is located on Figure IV-3 and shown on Figure IV-4. No borings penetrated the clay to bedrock at the site, however at the nearby Allied Chemical site, the Onondaga Limestone is about 50 feet below the surface (ES, 1989). The Allied Chemical site is located about 1000 feet southwest of the MacNaughton-Brooks

site. The bedrock was sampled at the Allied Chemical site and was described as massive, blue-gray in color with a slight degree of weathering. A thin layer of glacial till (0.5 to 3.0 feet) was encountered above the bedrock in well borings at the Allied Chemical site.

Each well at the MacNaughton-Brooks site terminated within the lacustrine clay layer. Borings at the Allied Chemical site found that this layer was about 24 feet thick. The grain-size characteristics of the lacustrine clay are summarized in Table IV-1. The unit appears to contain less sand and more clay toward the bottom of the well borings. The lacustrine clay layer has varves or laminations with thin interlayers of very fine sand and silt.

The fill material at the site is a mixture of black sand, silt, clay, gravel and brick. The fill extends from the surface to a depth of 11 feet. The fill is generally coarse; the predominant grain-sizes are sand and gravel (Table IV-1).

Groundwater Hydrology

Three monitoring wells were installed to intersect the water table surface, which occurs within the fill and lacustrine clay. Water level data are summarized in Table IV-2. The well boring logs and well schematics are presented in Appendix B.

The Phase II monitoring well data, based on the water level elevations measured on November 24, 1987 and February 18, 1988, indicate that groundwater flow is to the southeast, toward the Buffalo River (Figure IV-5). Monitoring well GW-1 is upgradient, and monitoring wells GW-2 and GW-3 are downgradient of the suspected disposal area.

The estimated permeability of the fill has a wide range (10^{-4} to 10^1 cm/sec) due to varying amounts of silt and clay in this layer. The upper portion of the clay layer having a higher percentage of sand is estimated to have a permeability in the range of 10^{-5} to 10^{-3} cm/sec. The lower portion of the clay layer with a higher clay content is estimated to have a lower permeability, in the range of 10^{-8} to 10^{-6} cm/sec. (Freeze and Cherry, 1979).

Due to the low permeability of the clay layer, vertical groundwater flow may be significantly less than lateral flow toward the Buffalo River. There may be preferential flow through the silty interbeds within the clay.

Surface Water Hydrology

There are no surface water bodies within the site boundaries. The closest natural surface water body is the Buffalo River, located approximately 1000 feet southeast of the site. The Buffalo River is classified by the NYSDEC as a Class D waterway, suitable for secondary contact recreation. The Buffalo River flows to the west in a meandering pattern and discharges into Lake Erie, about five miles downstream of the MacNaughton-Brooks site.

SITE CONTAMINATION ASSESSMENT

Potential contamination of the environment within the site boundary was evaluated by a review of the character and quantity of wastes suspected at the site, chemical analysis of the groundwater and surface soils, and monitoring of the air quality with a Photovac Tip II photoionization meter.

Waste Characterization

During the period from approximately 1960 to 1974, the MacNaughton-Brooks Company manufactured paint products on-site. Waste residues generated by the manufacturing operations reportedly included paint sludges and waste solvents (xylene, toluene, and mineral spirits). These waste materials were dumped on a demolition pile (cinders, bricks, etc.) located on-site from approximately 1960 to 1966. An estimated 100 gallons per year of waste residues were disposed in this manner. The disposal area is approximately 400 square feet in size (Figure IV-2).

The following subsections summarize the results of the Phase II investigation sampling and tasks. Whenever possible, samples were collected upgradient of the site to establish background conditions. These levels were compared to those found on-site or downgradient of the site. Concentrations downgradient of the site in excess of three times the upgradient concentrations may indicate a release from a contaminant source located on-site. The value of three times is generally recognized by the USEPA and NYSDEC as constituting a "significantly higher" concentration for purposes of scoring an HRS observed release for a particular pathway. Therefore, reference is made to the number and types of analytes considered to be observed releases under each pathway, as discussed in the following subsections.

The analytical results have also been compared to applicable New York State standards or guidance values. Standards that have been promulgated for groundwater appear in NYCRR Part 703. These regulations also provide authority for the use of guidance values when a standard does not exist. Soil results have been compared to the background soil sample results and published, naturally-occurring ranges in New York State or conterminous United States soils.

The analytical data has been reviewed for compliance with the NYSDEC CLP analytical methods and reporting requirements. Quality control sample results were used to evaluate the data and to make recommendations regarding usability. Based on the quality control sample results and other criteria, some analytical results have been designated as estimated and others have been rejected as unusable.

The analytical data were reviewed and validated for data usability. Included in the evaluation was a review of the results of "blank" sample analyses. In cases where blank (method, trip, or field) contamination was detected, the individual constituent concentrations were judged as follows: 1) if the sample value was less than 10 times the highest blank value, the sample value was rejected (flagged "R"); 2) if the sample value was between 10 and 20 times the highest blank value, the sample was considered an estimate (flagged "X"); and 3) if the sample value was greater

than 20 times the highest blank value, it was accepted (unflagged). These criteria were used as guidance limits to help determine whether blank contamination was potentially responsible for the presence of these constituents in the field samples.

Groundwater Contamination Assessment

Groundwater samples were collected from the three Phase II monitoring wells and analyzed for HSL volatile and semivolatile organic compounds and HSL metals. Seven HSL organic compounds were detected in the groundwater samples (Table IV-3). Acetone, methylene chloride and bis(2-ethylhexyl)phthalate were also found in laboratory blank samples; the results for these compounds have been rejected as being attributable to laboratory contamination. The other organic compounds detected were at very low concentrations. One HSL organic compound, benzene, exceeded the Class GA standard in both downgradient wells.

Eighteen HSL metals were detected in the groundwater samples (Table IV-4). Two of these metals, sodium and potassium, were present downgradient in concentrations which were more than three times the concentrations found in the upgradient well. This indicates potential releases to the groundwater attributable to the site. Five HSL metals exceeded the Class GA standards or guidance values. Arsenic, barium, iron, and manganese exceeded the Class GA standards, while magnesium exceeded the Class GA guidance value.

Soil Contamination Assessment

Two soil samples were collected and analyzed for HSL organic (volatile, semivolatile, pesticide/PCB) compounds, HSL metals, and cyanide. The detection limits for semivolatile compounds were fairly high due to the fact that the CLP procedure for medium concentrations was used. Thirteen HSL organic compounds were detected in the soil samples (Table IV-5). Three pesticides and two polynuclear aromatic hydrocarbons (PAHs) were detected at elevated concentrations. Twenty HSL metals and cyanide were detected in the soil samples (Table IV-6). Six of the metals were present at concentrations exceeding the published naturally-occurring ranges for New York State or United States soils: antimony, barium, cadmium, lead, mercury, and zinc.

Air Quality Monitoring

The air quality monitoring with a Photovac Tip II did not indicate the presence of volatile organic compounds (VOCs) in the breathing zone at concentrations above background. Monitoring of soil samples from the surface to a depth of two feet at well borings GW-1 and GW-3 found VOC concentrations slightly above background levels (at 1.7 and 3.2 ppm, respectively). These readings are not sufficiently above background to indicate that contamination of the surface soils with volatile organic compounds exists at the site.

Contamination Assessment Discussion

In summary, the groundwater results indicate releases of two metals; the surface soil results indicate very low concentrations of VOCs and higher concentrations of PAHs and pesticides. Two of the volatile organic chemicals believed to have been dumped at the site were detected at low concentrations on-site: toluene in the soil, and xylenes in the groundwater. In view of the mobility, volatility, and biodegradability of these compounds, it is not surprising to find them at such low concentrations more than 20 years after their disposal. Based on the analytical results, it appears that most of the wastes have volatilized, degraded or have migrated from the area, and are no longer present in significant concentrations. The source of the sodium and potassium which were indicated as released to the groundwater from the site is unknown. The source of the pesticides in the soil is also unknown. The PAHs may be present due to on-site burning of the thick undergrowth which previously covered the site, or nearby petroleum refining activity which formerly took place adjacent to the site. The concentrations of pesticides in soils are near the EPA target range for presenting a threat to human health via ingestion of soil by small children. However, the site is located in an area which is likely not accessed by small children.

The results of the Phase II investigation are generally consistent with the soil sample results generated during the 1988 USEPA site inspection (USEPA, 1988). A summary of these results is presented in Appendix C. A greater number of semivolatile compounds were detected in the 1988 USEPA results, and the concentrations were of a similar magnitude of those shown on Table IV-5 for phenanthrene and fluoranthene. The pesticide chlordane was also detected in the USEPA samples.

RECOMMENDATIONS

The scope of the Phase II investigation at the MacNaughton-Brooks site was generally adequate to provide an assessment of the site condition. The overall HRS score of 3.09 indicates a relatively low risk associated with this site.

Based on the analytical results for groundwater and soil at the site, as well as the historical and current use patterns of the site, it appears that no remedial action is necessary at present. However, since heptachlor and chlordane and other organic compounds were detected at relatively high concentrations in soil samples (as well as in USEPA soil samples), but were not reliably analyzed in groundwater, it is recommended that further sampling be conducted. Samples collected should include groundwater from all three wells. These samples should be analyzed for TCL pesticides/PCBs. If results confirm that the site does not pose a significant threat to health or the environment, then it should be delisted. If, on the other hand, a significant threat does exist in the form of high concentrations, it may be less costly to remove contaminated soils over the roughly 400 square foot area and increase security, than it would be to conduct an RI/FS.

TABLE IV-1
GRAIN-SIZE ANALYSIS RESULTS
MACNAUGHTON-BROOKS SITE

Well Number	Depth (ft)	% Gravel	% Sand	% Silt and Clay	Unified Soil Classification	Stratigraphic Unit
GW-1	0 - 2	40.1	31.4	28.5	GM	Fill
	10 - 12	1.3	1.9	96.8	ML	Fill
	15 - 17	8	14	78	CL	Lacustrine Clay
GW-2	0 - 2	55.1	30.8	14.1	GM	Fill
	10 - 12	5.5	12.7	81.8	CL	Lacustrine Clay
	15 - 17	4.3	7.9	87.8	CL	Lacustrine Clay
GW-3	15 - 17	1.4	3.5	95.1	CL	Lacustrine Clay

TABLE IV-2

WATER LEVEL DATA

MACNAUGHTON-BROOKS SITE

Well I.D.	Ground Surface Elevation (feet*)	Top of PVC Well Pipe Elevation (feet*)	Well Screen Interval Elevation (feet*)	Date: 2/18/88		Date: 11/24/87	
				Depth to Water Level (feet**)	Water Level Elevation (feet*)	Depth to Water Level (feet**)	Water Level Elevation (feet*)
GW-1	499.82	501.76	492.8 - 482.8	4.1	497.7	4.46	497.30
GW-2	499.40	501.50	492.4 - 482.4	4.1	497.4	4.29	497.21
GW-3	499.12	501.12	491.1 - 481.1	3.9	497.2	4.15	496.97

*Based on an assumed on-site datum.

**Water level depth from top of PVC.

TABLE IV-3
 MACNAUGHTON-BROOKS
 GROUNDWATER RESULTS
 HSL ORGANIC COMPOUNDS (ug/L)
 SAMPLES COLLECTED 11/24/87

COMPOUND (a)	NYS STANDARDS/ GUIDANCE VALUES (b)		Sample Location		
	50	G	GW-1(c)	GW-2	GW-3
Methylene chloride			R	R	R
Acetone			R	R	R
Di-n-Butylphthalate	770		16.0		
2-Butanone				X	2.2 J
Benzene	ND	(d)		1.3 J	1.7 J
Total xylenes	50	G			6.7
bis(2-Ethylhexyl)Phthalate	4200			R	R

FOOTNOTES:

- (a) Only HSL organic compounds that were detected are presented.
- (b) Referenced from; "Ambient Water Quality Standards and Guidance Values" for Class GA drinking supply waters, 6NYCRR Part 703, NYSDEC, 9/1/78, as amended through 4/1/87. The value presented is the standard except where noted by "G", in which case it is the guidance value. All units are ug/L.
- (c) Upgradient well location.
- (d) ND = not detectable; i.e., the standard is the lower limit of detectability as defined by the NYSDEC.

DATA QUALIFIERS:

- B: This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable contamination and warns the data user to take appropriate action.
- J: Indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero.
- : Indicates that the compound was analyzed for but not detected. Refer to Appendix C for detection limit.
- R: Data validation recommends that this value be rejected.
- X: Data validation recommends that this value be considered an estimate.

TABLE IV-4
 MACNAUGHTON-BROOKS
 GROUNDWATER RESULTS
 HSL METALS (ug/L)
 SAMPLES COLLECTED 11/24/87

METAL (a)	NYS STANDARDS/ GUIDANCE VALUES (b)	Sample Location		
		GW-1(c)	GW-2	GW-3
Aluminum		61500.0 (d)	143500.0	17060.0
Arsenic	25	55.0 X	33.0 X (f)	10.0 X
Barium	1000	790.0 X	1310.0 X	400.0 X
Cadmium	10	8.0	---	---
Calcium		960000.0 X (d)	795000.0 X (d)	355000.0 X (e)
Chromium		R	R	R
Cobalt		80.0	---	---
Copper	1000	280.0 X	400.0 X	40.0 X
Iron	300	136200.0	341200.0	32600.0
Lead	25	R	R	R
Magnesium	35000 G	277400.0	234100.0	132900.0
Manganese	300	8700.0 X	13200.0 X (d)	3800.0 X
Mercury	2	0.9 X	---	---
Nickel	13.4 Z	210.0	450.0	60.0
Potassium		11700.0	[35200.0]	[4300.0]
Sodium		45000.0 (d)	610000.0 (d)	130000.0 (d)
Vanadium		150.0	[340.0]	[30.0]
Zinc	5000	1000.0	1500.0	200.0
TOX (g)		94	206	130

FOOTNOTES:

- (a) Only HSL metals that were detected are presented. If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit the value is reported in brackets (i.e.; [10]).
- (b) Referenced from: "Ambient Water Quality Standards and Guidance Values" for Class GA groundwater drinking supply waters, 6 NYCRR Part 703, NYSDEC, 9/1/78, as amended through 4/1/87. The value presented is the standard except where noted by "G", in which case it is the guidance value. For Nickel (flagged "Z") the value presented is the ambient water quality criterion for human health, from; "Quality Criteria for Water, 1986", USEPA, 5/1/87. All units are ug/L.
- (c) Upgradient well location.
- (d) Concentration/dilution factor = 50.
- (e) Concentration/dilution factor = 25.
- (f) Concentration/dilution factor = 10.
- (g) TOX = Total organic halogens.

DATA QUALIFIERS:

- : Indicates that the metal was analyzed for but not detected. Refer to Appendix C for detection limit.
- R: Data validation recommends that this value be rejected.
- X: Data validation recommends that this value be considered an estimate.

TABLE IV-5
MACNAUGHTON-BROOKS
SOIL RESULTS
HSL ORGANIC COMPOUNDS (ug/kg)
SAMPLES COLLECTED 9/9/87 AND 10/13/88 (a)

COMPOUND (b)	Sample Location	
	SS-1	SS-2
Methylene chloride	R	R
Acetone	R	R
1,1-Dichloroethene	---	2.1 J
1,1,1-Trichloroethane	---	4.0 J
Vinyl acetate	--- X	33.0 BX
Trichloroethene	2.8 J	2.4 J
Benzene	4.0 J	3.0 J
Toluene	R	---
Phenanthrene	25000.0	---
Fluoranthene	24000.0	---
Heptachlor	--- X	21000 X
alpha Chlordane	--- X	78000 X
gamma Chlordane	---	92000

FOOTNOTES:

- (a) Volatiles and semivolatiles were collected on 9/9/87, while pesticides/PCBs were collected on 10/13/88.
(b) Only HSL organic compounds that were detected are presented.

DATA QUALIFIERS:

- B: This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable contamination and warns the data user to take appropriate action.
J: Indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero.
---: Indicates that the compound was analyzed for but not detected. Refer to Appendix C for detection limit.
R: Data validation recommends that this value be rejected.
X: Data validation recommends that this value be considered an estimate.

TABLE IV-6
 MACNAUGHTON-BROOKS
 SOIL RESULTS
 HSL INORGANICS (mg/kg)
 SAMPLES COLLECTED 9/9/87

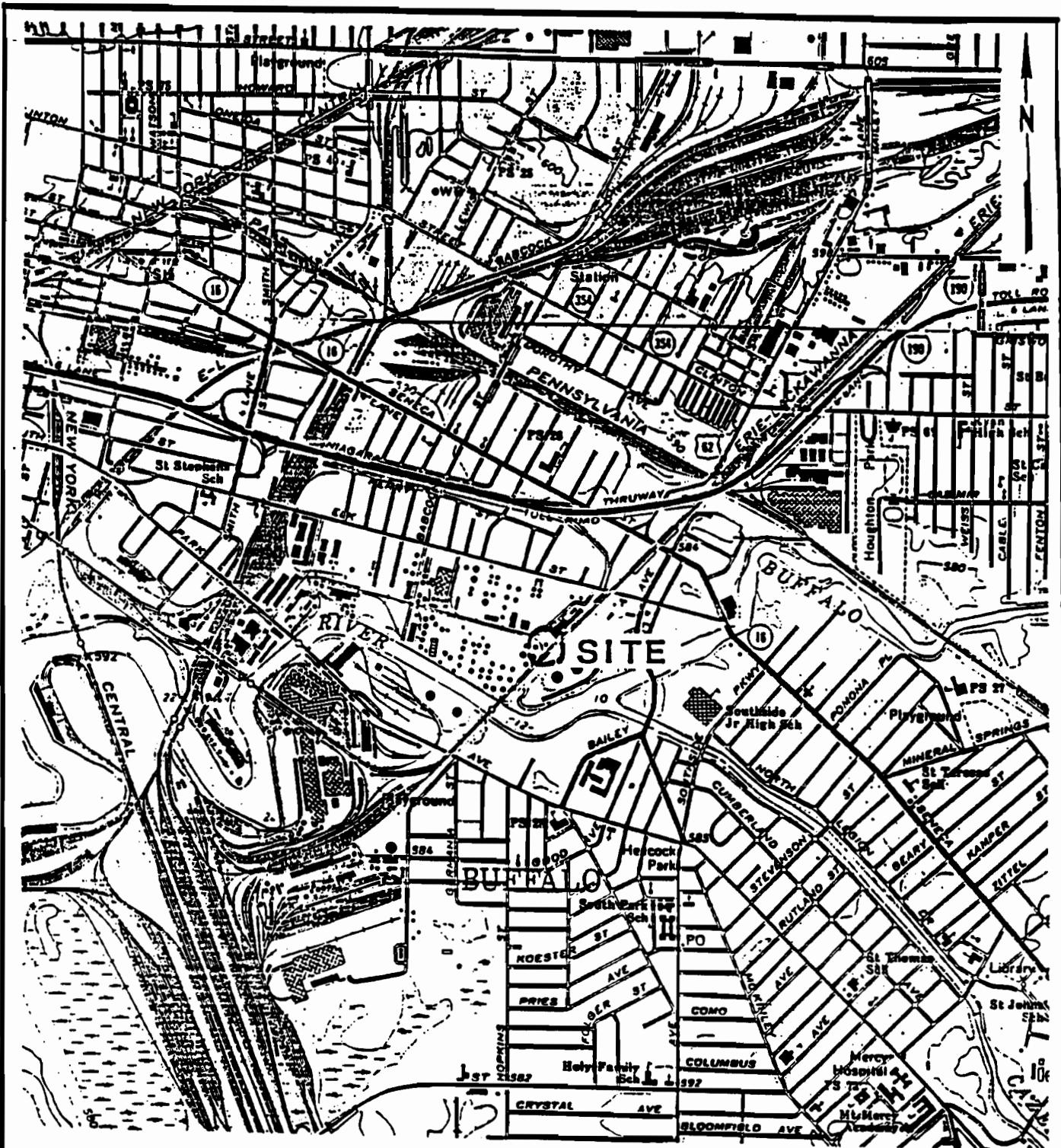
ANALYTE (a)	NATURALLY OCCURRING RANGES IN NYS SOILS (b)	Sample Location	
		SS-1	SS-2
Aluminum		11517.2	7214.2
Antimony	<1-10	118.4	74.8
Arsenic	0.1-100	22.0 (d)	20.0 (d)
Barium	10-500	838.0	709.7
Beryllium	<1-15	[1.2]	[0.9]
Cadmium	0.01-7 (c)	54.4	15.5
Calcium		67459.6	40954.2
Chromium	1-2000	507.2	128.8
Cobalt	<3-70	24.8	[7.9]
Copper	1-700	442.4	175.5
Iron		65547.6	31426.4
Lead	<10-700	1280.4	1270.9
Magnesium		5420.4	3765.2
Manganese	<2-7000	1241.2	690.3
Mercury	0.02-0.5	---	1.1
Nickel	<5-7000	98.4	34.2
Potassium		[1308.4]	[1334.5]
Silver		47.6	24.8
Vanadium	20-500	59.6	39.1
Zinc	<5-3500	2342.4	12559.4
Cyanide		20.5	15.0

FOOTNOTES:

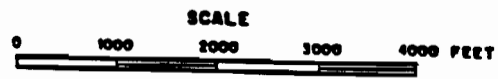
- (a) Only HSL analytes that were detected are presented. If the result is a value greater than or equal to the instrument detection limit but less than the contract-required limit the value is reported in brackets (i.e.; [10]).
- (b) USGS Professional Paper 1270 (1984): New York State Soils.
- (c) Booz, Allen & Hamilton, Inc. (1983): Range in U.S. Soils.
- (d) Dilution factor = 10.

DATA QUALIFIER:

---: Indicates that the metal was analyzed for but not detected. Refer to Appendix C for detection limit.

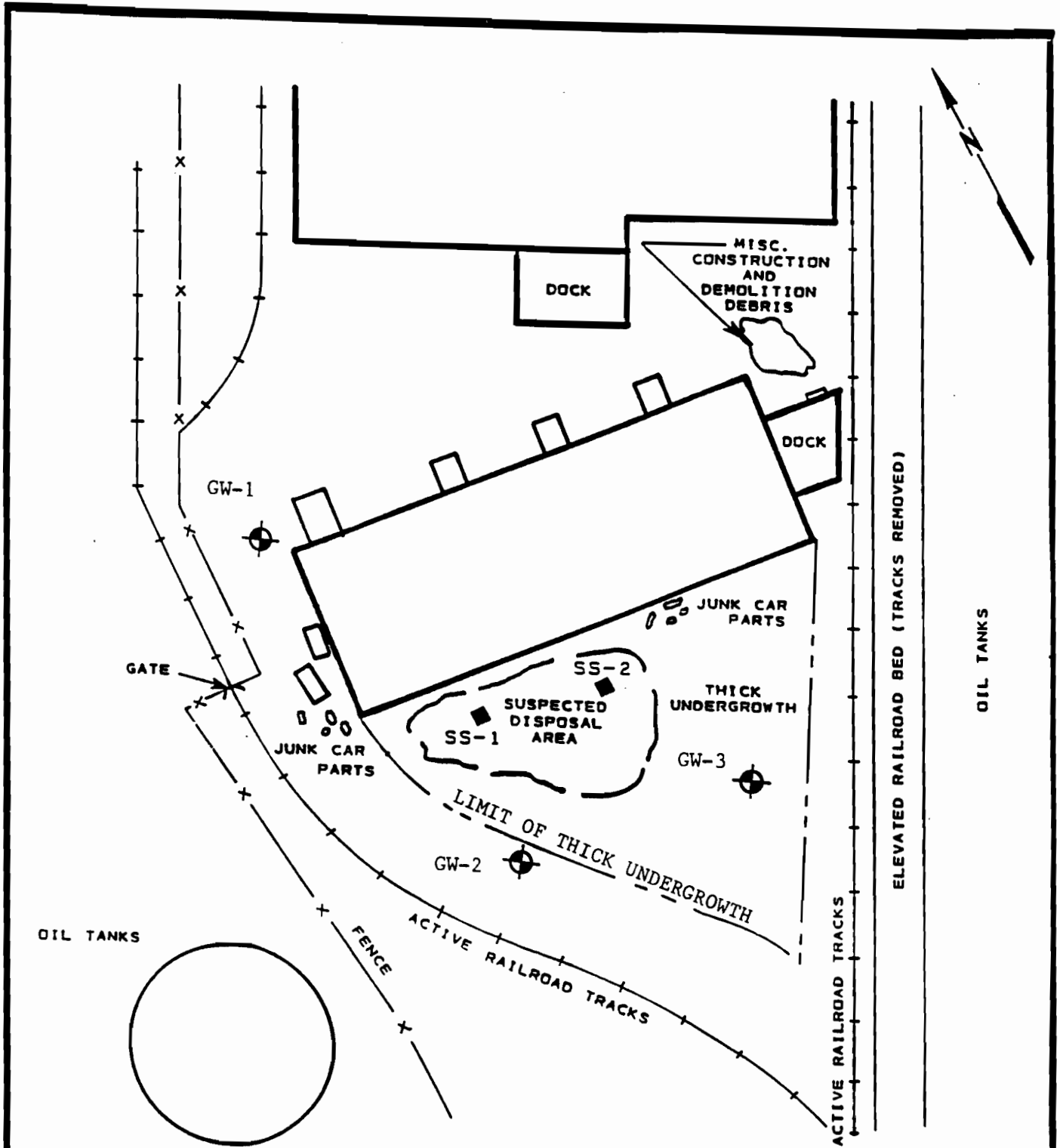


LATITUDE: 42°51'49"
 LONGITUDE: 78°49'49"



REFERENCE: U.S.G.S. 7.5' Topographic Map
 Buffalo SE, NY (1965) and Buffalo NE, NY
 (1965) Quadrangles

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE II REPORT
SITE LOCATION MAP MacNAUGHTON - BROOKS



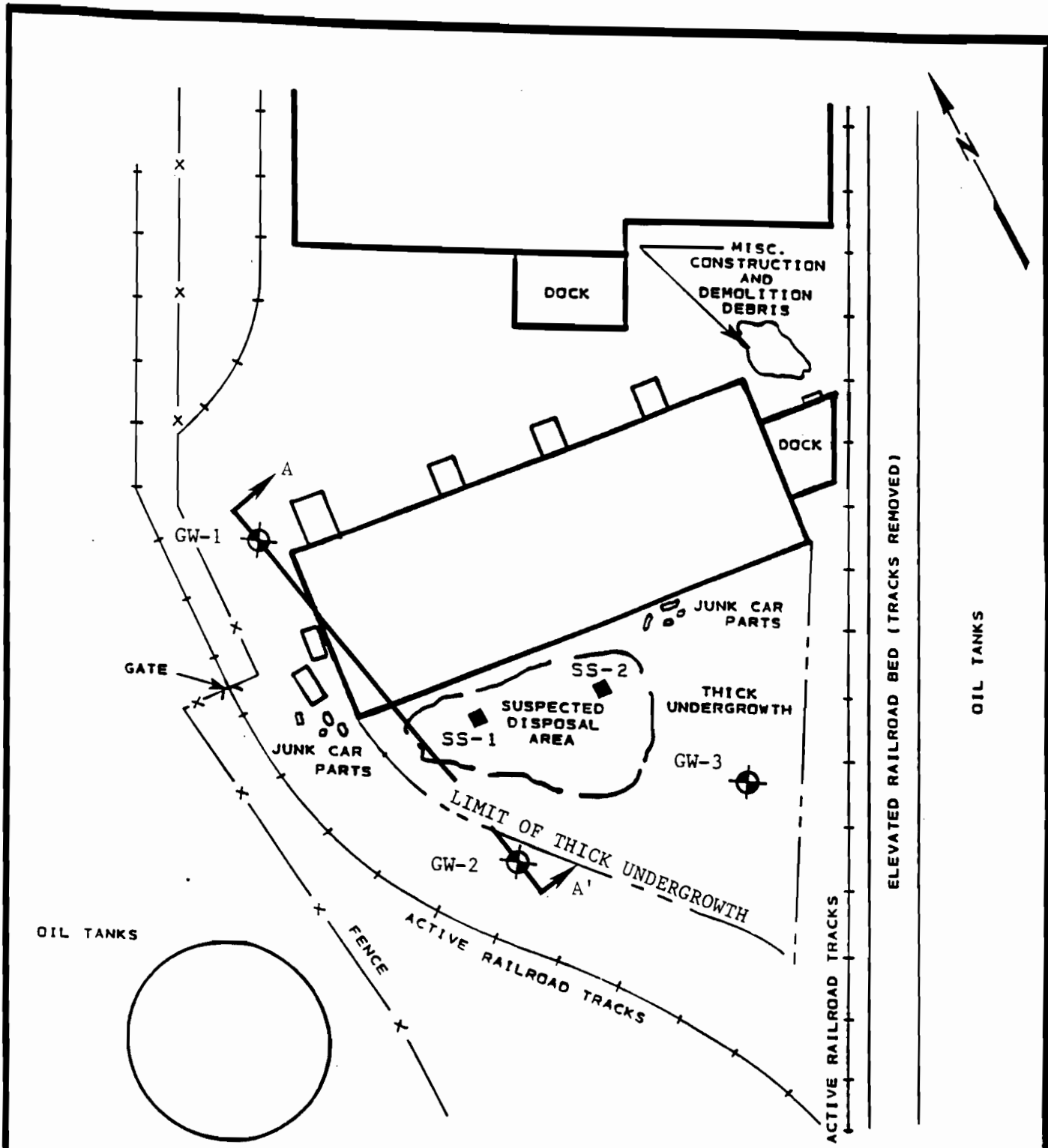
EXPLANATION:

- ⊕ WELL LOCATION
- SOIL SAMPLE




NOT TO SCALE

ENGINEERING-SCIENCE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE II REPORT
SITE PLAN MacNAUGHTON - BROOKS

FIGURE IV-2

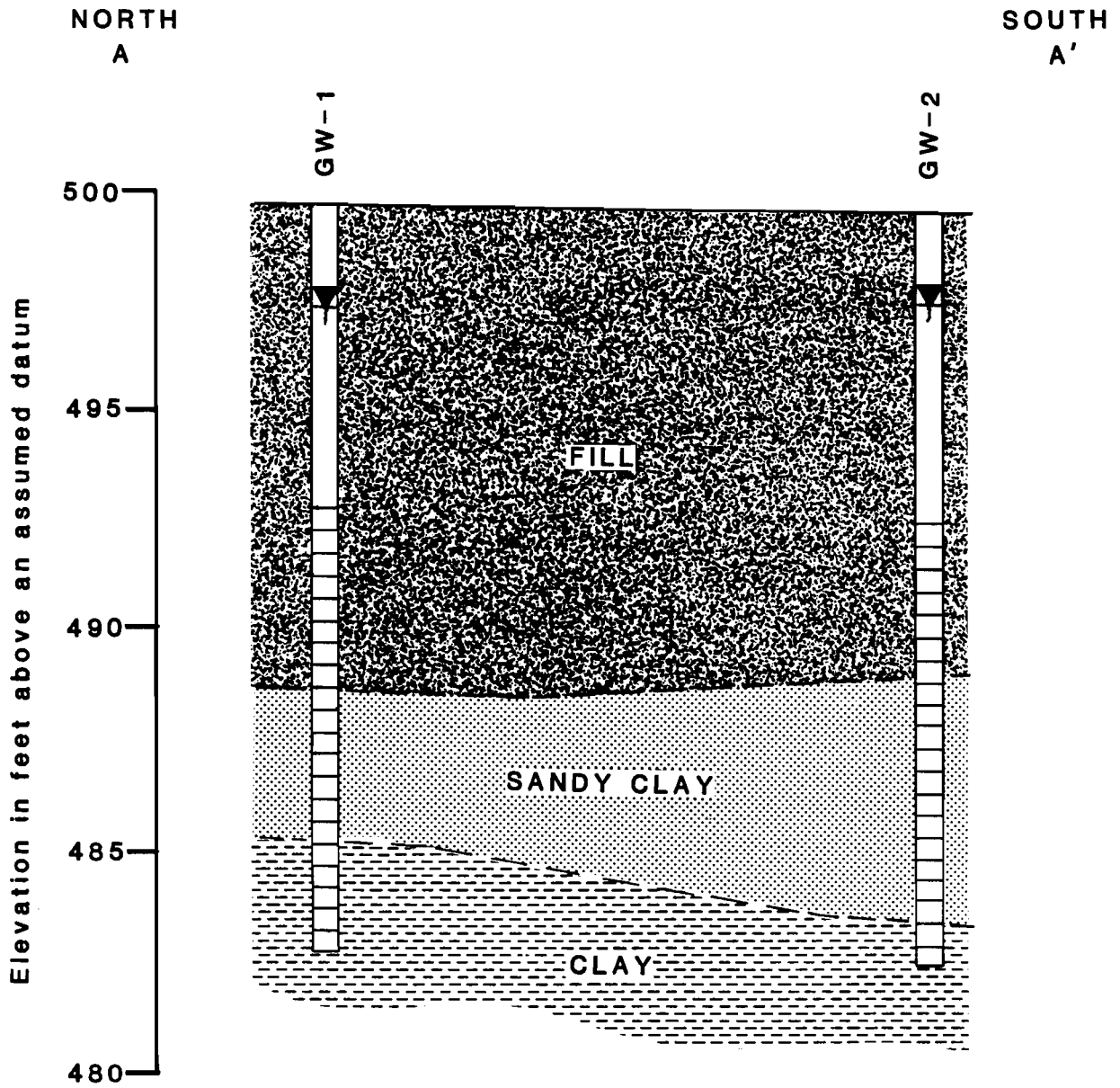


EXPLANATION:

-  WELL LOCATION
-  SOIL SAMPLE
-  GEOLOGIC CROSS SECTION

NOT TO SCALE

ENGINEERING-SCIENCE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE II REPORT
GEOLOGIC CROSS SECTION LOCATION MacNAUGHTON - BROOKS
FIGURE IV-3



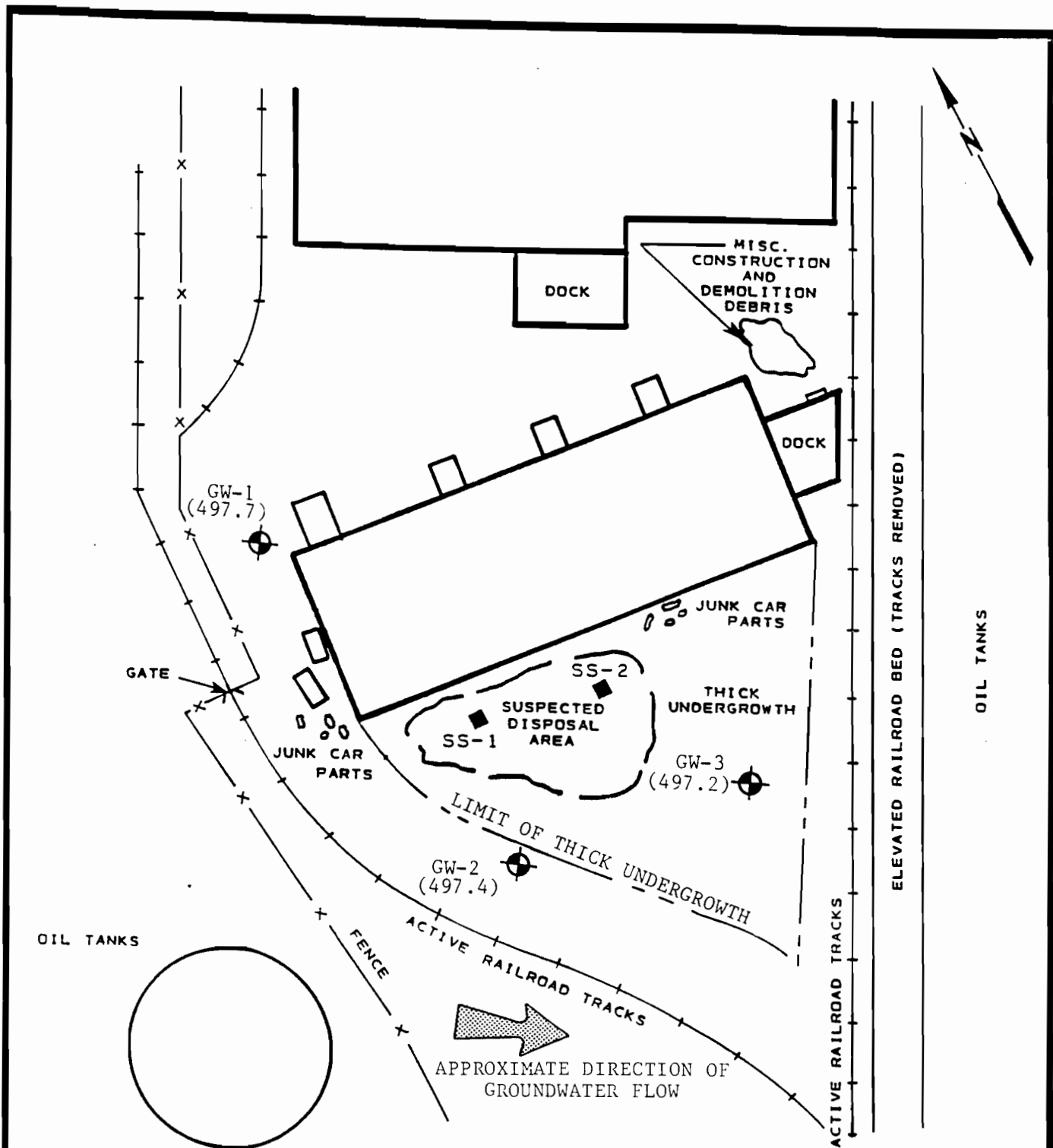
0 40 80 feet
 HORIZONTAL SCALE

VERTICAL EXAGGERATION = 10x



▼ Water level in feet as measured
 on February 18, 1988

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 OF ENVIRONMENTAL CONSERVATION
 PHASE II REPORT

GEOLOGIC CROSS SECTION A-A'
 MACNAUGHTON-BROOKS



EXPLANATION:

-  WELL LOCATION
-  SOIL SAMPLE

(497.4) GROUNDWATER ELEVATION IN FEET ABOVE AN ASSUMED DATUM.

NOT TO SCALE

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PHASE II REPORT
GROUNDWATER ELEVATION CONTOUR MAP
MacNAUGHTON - BROOKS

SECTION V

FINAL APPLICATION OF HAZARD RANKING SYSTEM

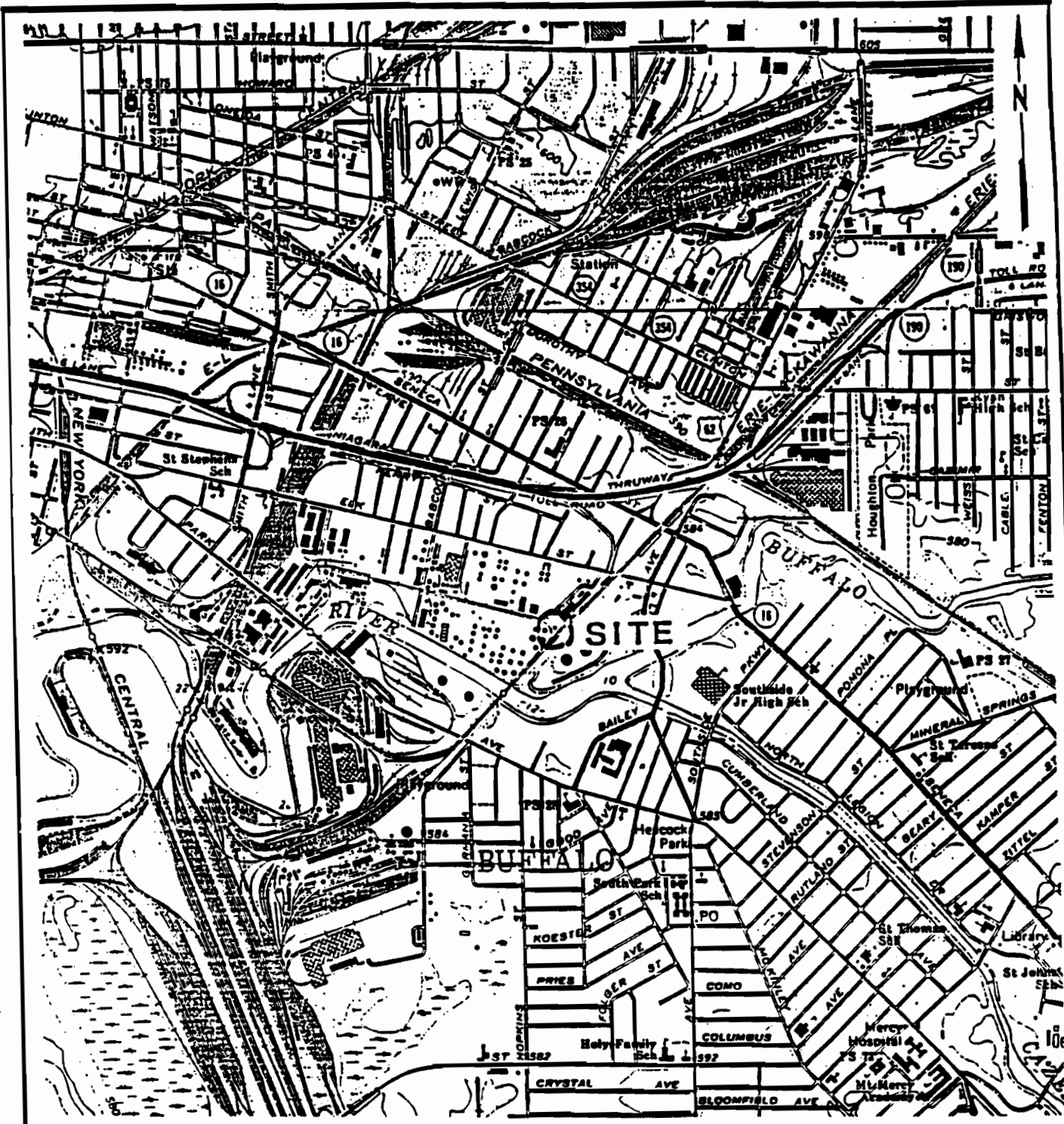
NARRATIVE SUMMARY

The MacNaughton-Brooks site is located at 717 Elk Street in the City of Buffalo, Erie County, New York (Figure V-1). The site is approximately 400 square feet in size, and is owned by The Dold Feed Company of Buffalo (Figure V-2). The site was used by the MacNaughton-Brooks Company, a manufacturer of paint products, to dispose of waste solvents (xylene, toluene, and mineral spirits) laden with paint residues. An estimated 600 gallons were disposed from 1960 to 1966 by pouring the fluid on a pile of demolition material located on-site (Erie County, 1982). The demolition pile was cleared and disposed off-site subsequent to 1974 (Olson, 1985).

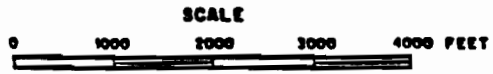
Based on sampling and analysis conducted during the Phase II investigation in 1988, an assessment was made for the presence of hazardous substances at the site. A total of 25 HSL substances were detected in the groundwater samples collected at the site. Sodium and potassium are apparently being released to the groundwater from an on-site source.

Thirty-three HSL substances were also detected in the surface soil samples collected. Six metals were present at concentrations exceeding the published naturally-occurring ranges for NYS soils. Concentrations of two PAH compounds and three pesticides were also relatively high in the soil samples.

Approximately 13,000 people reside within a one-mile radius of the site. The area drinking water supply is drawn from Lake Erie; the intakes are more than three miles downstream of the site. There have been no remedial, cleanup or enforcement actions undertaken at the site, other than the removal of the debris pile previously mentioned.

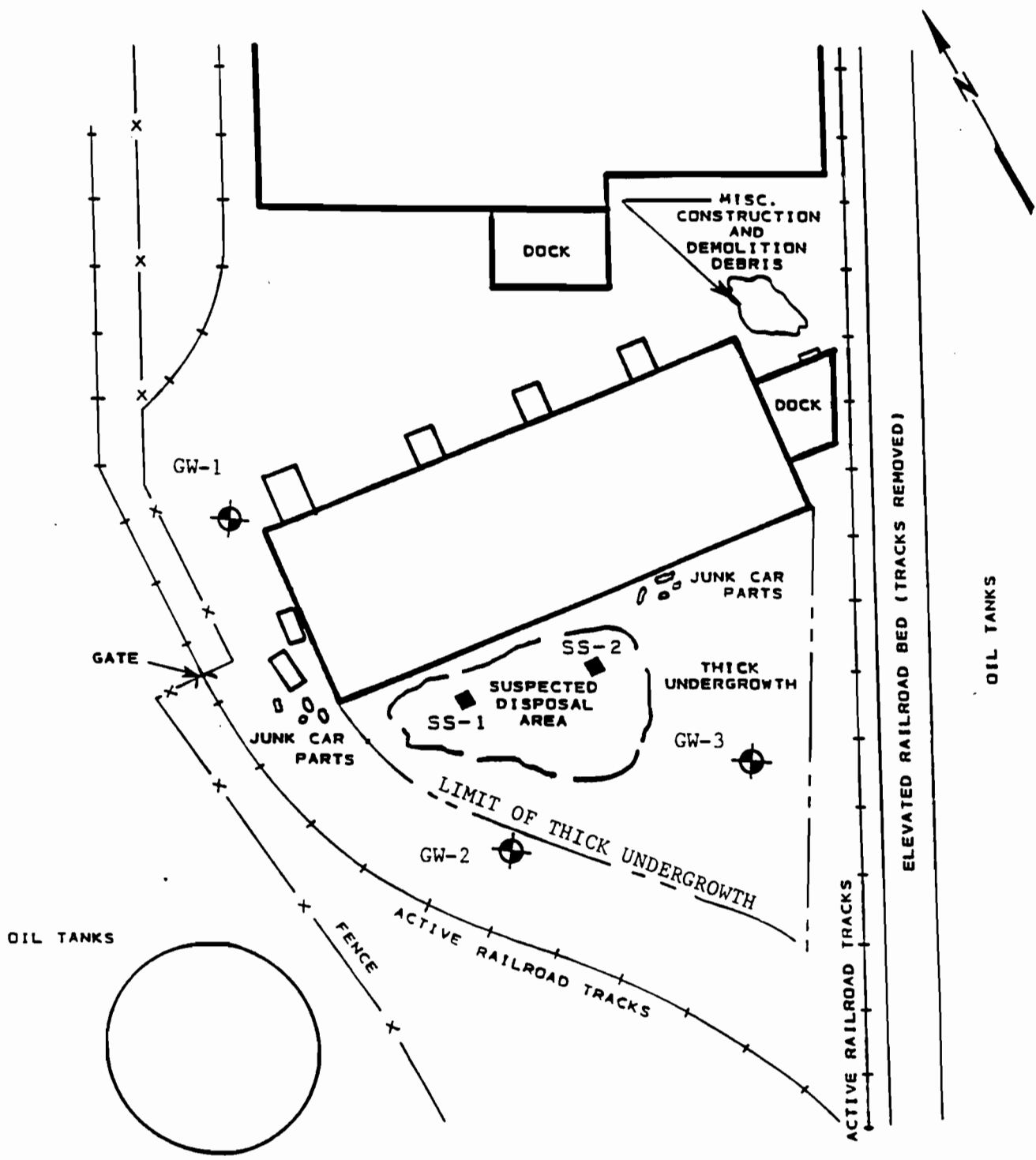


LATITUDE: 42°51'49"
 LONGITUDE: 78°49'49"





REFERENCE: U.S.G.S. 7.5' Topographic Map
 Buffalo SE, NY (1965) and Buffalo NE, NY
 (1965) Quadrangles

ENGINEERING-SCIENCE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE II REPORT
SITE LOCATION MAP MacNAUGHTON - BROOKS
FIGURE V-1



EXPLANATION:

-  WELL LOCATION
-  SOIL SAMPLE

NOT TO SCALE

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE II REPORT
SITE PLAN MacNAUGHTON - BROOKS
FIGURE V-2

HRS WORKSHEETS

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	45	45	3.1	
If observed release is given a score of 45, proceed to line 4 . If observed release is given a score of 0, proceed to line 2 .						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2	6	6		
Net Precipitation	0 1 2 3	1	2	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	2	3		
Physical State	0 1 2 3	1	3	3		
Total Route Characteristics Score			13	15		
3 Containment	0 1 2 3	1	3	3	3.3	
4 Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		
5 Targets					3.5	
Ground Water Use	0 1 2 3	3	3	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40		
Total Targets Score			3	49		
6 If line 1 is 45, multiply 1 x 4 x 5						
If line 1 is 0, multiply 2 x 3 x 4 x 5			2565	57,330		
7 Divide line 6 by 57,330 and multiply by 100				$S_{gw} = 4.47$		

GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	(0) 45	1	0	45	4.1	
If observed release is given a value of 45, proceed to line 4 . If observed release is given a value of 0, proceed to line 2 .						
2 Route Characteristics					4.2	
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3		
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3		
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6		
Physical State	0 1 2 (3)	1	3	3		
Total Route Characteristics Score			11	15		
3 Containment	0 1 2 (3)	1	3	3	4.3	
4 Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18		
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8		
Total Waste Characteristics Score			19	26		
5 Targets					4.5	
Surface Water Use	0 (1) 2 3	3	3	9		
Distance to a Sensitive Environment	(0) 1 2 3	2	0	6		
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40		
Total Targets Score			3	55		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			1,881	64,350		
7 Divide line 6 by 64,350 and multiply by 100			$S_{sw} = 2.92$			

SURFACE WATER ROUTE WORK SHEET

Facility Name: MacNaughton-Brooks

Date: 3/21/88

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the $S_a = 0$. Enter on line 5 . If line 1 is 45, then proceed to line 2 .					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	(0) 1 2 3	1	0	3	
Toxicity	(0) 1 2 3	3	0	9	
Hazardous Waste	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			0	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 (24) 27 30	1	24	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	1	3	3	
Total Targets Score			27	39	
4 Multiply 1 x 2 x 3			0	35,100	
5 Divide line 4 by 35,100 and multiply by 100			$S_a = 0$		

AIR ROUTE WORK SHEET

Facility Name: MacNaughton-Brooks

Date: 3/21/88

Fire and Explosion Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Containment	① 3	1	1	3	7.1	
2 Waste Characteristics					7.2	
Direct Evidence	① 3	1	0	3		
Ignitability	① 1 2 3	1	0	3		
Reactivity	① 1 2 3	1	0	3		
Incompatibility	① 1 2 3	1	0	3		
Hazardous Waste Quantity	① 1 2 3 4 5 6 7 8	1	0	8		
Total Waste Characteristics Score			0	20		
3 Targets					7.3	
Distance to Nearest Population	0 1 2 ③ 4 5	1	3	5		
Distance to Nearest Building	0 1 2 ③	1	3	3		
Distance to Sensitive Environment	① 1 2 3	1	0	3		
Land Use	0 1 2 ③	1	3	3		
Population Within 2-Mile Radius	0 1 2 3 4 ⑤	1	5	5		
Buildings Within 2-Mile Radius	0 1 2 3 4 ⑤	1	5	5		
Total Targets Score			19	24		
4 Multiply 1 x 2 x 3			0	1,440		
5 Divide line 4 by 1,440 and multiply by 100			$S_{FE} = 0$			

FIRE AND EXPLOSION WORK SHEET

Facility Name: MacNaughton-Brooks

Date: 3/21/88

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 (3)	1	3	3	8.2
3 Containment	0 (15)	1	15		8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within 1-Mile Radius	0 1 2 3 4 (5)	4	20	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			13,500	21,600	
7 Divide line 6 by 21,600 and multiply by 100			$S_{DC} = 62.50$		

DIRECT CONTACT WORK SHEET

Facility Name: MacNaughton-Brooks Date: 3/21/88

Worksheet for Computing S_M

	s	s ²
Groundwater Route Score (S_{gw})	4.47	19.98
Surface Water Route Score (S_{sw})	2.92	8.53
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		28.51
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		5.34
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		3.09

WORK SHEET FOR COMPUTING S_M

HRS DOCUMENTATION RECORDS

**DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM**

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: MacNaughton-Brooks

LOCATION: 717 Elk Street, City of Buffalo, Erie County, New York

GROUND WATER ROUTE

1.OBSERVED RELEASE

Assigned Value = 45

Contaminants detected (5 maximum):

	Concentrations (ug/L)	
	GW-1	GW-2
	(Upgradient)	(Downgradient)
Potassium	11,700.0	[35,200.0]
Sodium	45,000.0	610,000.0

(Nanco Laboratories, Inc., 1987)

Rationale for attributing the contaminants to the facility:

The downgradient concentrations were greater than three times the upgradient concentrations.
(Nanco Laboratories, Inc., 1987).

2.ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Assigned Value = 3

Name/description of aquifer(s) of concern:

Overburden aquifer. (ES boring logs, 1987).

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

1.9 feet in GW-3 on 2/18/88. (ES, 1989).

Depth from the ground surface to the lowest point of waste disposal/storage:

0.0; wastes were disposed on the ground surface (NYSDEC, 1987).

Net Precipitation

Assigned Value = 2

Mean annual or seasonal precipitation (list months for seasonal):

Mean annual precipitation is 36 inches. (USDOC, 1979).

Mean annual lake or seasonal evaporation (list months for seasonal):

Mean annual lake evaporation is 27 inches. (USDOC, 1979).

Net precipitation (subtract the above figures):

The net precipitation = 9 inches (36 inches - 27 inches).

Permeability of Unsaturated Zone

Assigned Value = 2

Soil type in unsaturated zone:

Poorly drained silty sand. (NYSDEC, 1987).

Permeability associated with soil type:

The permeability associated with this soil type is 10^{-3} to 10^{-5} cm/sec. (EPA, 1984).

Physical State

Assigned Value = 3

Physical state of substances at time of disposal (or at present time for generated gases):

Liquid. (NYSDEC, 1987).

3.CONTAINMENT

Assigned Value = 3

Containment

Method(s) of waste or leachate containment evaluated:

None; uncovered, unstabilized, unlined pile. (NYSDEC, 1987).

Method with highest score:

An uncovered, unstabilized, unlined pile receives a score of 3.

4.WASTE CHARACTERISTICS

Toxicity and Persistence

Assigned Value = 18

Compound(s) evaluated:

Groundwater samples were analyzed for HSL organics and metals. (Nanco Laboratories, Inc., 1987).

Compound with highest score:

Sodium is assigned a toxicity/persistence score of 18. (Sax, 1984; EPA, 1984).

Hazardous Waste Quantity

Assigned Value = 1

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

600 gallons. (NYSDEC, 1987).

Basis of estimating and/or computing waste quantity:

During the period of 1960-1966, approximately 100 gallons per year of waste solvents were poured onto a rubble pile. (NYSDEC, 1987).

5.TARGETS

Ground Water Use

Assigned Value = 1

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

None: no wells. (Koczaja, 1988; NYSDOH, 1982).

Groundwater not used, but usable.

Distance to Nearest Well

Assigned Value (Matrix) = 0

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

There are no wells within three miles. (Koczaja, 1988; NYSDOH, 1982).

Distance to above well or building:

Not applicable; see above comment.

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

There are no water-supply wells within three miles. (Koczaja, 1988; NYSDOH, 1982).

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

No wells; urban area. (Koczaja, 1988; NYSDOH, 1982; USGS, 1965).

Total population served by ground water within a 3-mile radius:

Zero; see above comment. (Koczaja, 1988; NYSDOH, 1982; USGS, 1965).

Surface Water Route

1.OBSERVED RELEASE

Assigned Value = 0

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No surface water samples were analyzed for contamination.

Rationale for attributing the contaminants to the facility:

Not applicable. No surface samples were analyzed for contamination.

2.ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Assigned Value = 0

Average slope of facility in percent:

0.0% (USGS, 1965).

Name/description of nearest downslope surface water:

Buffalo River (USGS, 1965).

Average slope of terrain between facility and above-cited surface water body in percent:

1.4% (USGS, 1965).

Is the facility located either totally or partially in surface water?

No. (USGS, 1965).

Is the facility completely surrounded by areas of higher elevation?

No. (USGS, 1965).

1-Year 24-Hour Rainfall in Inches

Assigned Value = 2

2.1 inches. (USDOC, 1963).

Distance to Nearest Downslope Surface Water

Assigned Value = 3

0.13 miles. (USGS, 1965).

Physical State of Waste

Assigned Value = 3

Liquid. (NYSDEC, 1987).

3.CONTAINMENT

Assigned Value = 3

Containment

Method(s) of waste or leachate containment evaluated:

There is no diversion or containment system at the site. Waste solvents were poured onto demolition material and a rubble pile. This pile has since been removed. (Erie County Dept. of Env. & Planning, 1982; NYSDEC, 1987; Olson, 1985).

Method with highest score:

A score of 3 is assigned based on an uncovered landfill with no diversion system.

4.WASTE CHARACTERISTICS

Toxicity and Persistence

Assigned Value = 18

Compound(s) evaluated

Heptachlor, alpha and gamma chlordane, metals. (York Laboratories, 1988; Nanco Labs, 1987).

Compound with highest score:

Heptachlor has a toxicity/persistence score of 18. (EPA, 1984).

Hazardous Waste Quantity

Assigned Value = 1

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

600 gallons of waste solvents and paint residues = 12 drums. A score of 1 is assigned on the basis of 12 drums.

Basis of estimating and/or computing waste quantity:

MacNaughton-Brooks Site Profile Report prepared by Erie County Department of Environment and Planning, March 1982. (NYSDEC, 1987).

5.TARGETS

Surface Water Use

Assigned Value = 1

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Industrial and commercial shipping and secondary contact recreation. (6NYCRR).

Is there tidal influence?

No. The site is not near the coast. (USGS, 1965).

Distance to a Sensitive Environment

Assigned Value = 0

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

The site is not near the coast. (USGS, 1965).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

There are no NYS designated wetlands within 1 mile. (Farquhar, 1987).

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

There are no federally designated critical habitats of endangered species within the State of New York. (Ozard, 1988).

Population Served by Surface Water

Assigned Value (Matrix) = 0

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

There are no water supply intakes within one mile of the facility. (NYSDOH, 1982).

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

There are no water supply intakes within one mile of the facility. (NYSDOH, 1982).

Total population served:

There are no water supply intakes within one mile of the facility. (NYSDOH, 1982).

Name/description of nearest of above water bodies:

There are no water supply intakes within one mile of the facility. (NYSDOH, 1982).

Distance to above-cited intakes, measured in stream miles:

There are no water supply intakes within one mile of the facility. (NYSDOH, 1982).

AIR ROUTE

1.OBSERVED RELEASE

Assigned Value = 0

Contaminants detected:

Readings above background were not detected during routine on-site monitoring for organic vapors. (ES boring logs, 1987).

Date and location of detection of contaminants:

Not applicable. No contaminants were detected.

Methods used to detect the contaminants:

Photovac-Tip.

Rationale for attributing the contaminants to the site:

Not applicable.

2.WASTE CHARACTERISTICS

Reactivity and Incompatibility

Assigned Value = 0

Most reactive compound:

No reactive compounds with the potential to impact the air pathway are known to exist on-site. (NYSDEC, 1987).

Most incompatible pair of compounds:

No incompatible pairs of compounds with the potential to impact the air pathway are known to exist on-site. (NYSDEC, 1987).

Toxicity

Assigned Value = 0

Most toxic compound:

No hazardous waste in concentrations with the potential to impact the air pathway is known to exist on-site. (NYSDEC, 1987).

Hazardous Waste Quantity

Assigned Value = 0

Total quantity of hazardous waste:

The score is zero because no hazardous wastes in concentrations with the potential to impact the air pathway are known to exist on-site. (NYSDEC, 1987).

Basis of estimating and/or computing waste quantity:

Not applicable; See the comment above.

3.TARGETS

Population Within 4-Mile Radius

Assigned Value = 24

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

12,868 people live within a one-mile radius of the site. (US Census Tract Data, 1980).

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

The site is not near the coast. (USGS, 1965).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

There are no NYS designated wetlands within 1 mile. (Farquhar, 1987).

Distance to critical habitat of an endangered species, if 1 mile or less:

There are no federally designated critical habitats of endangered species within the State of New York. (Ozard, 1988).

Land Use

Assigned Value = 3

Distance to commercial/industrial area, if 1 mile or less:

0.0 miles. Site is located in an industrial area. (ES Field Investigations, 1987-88).

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Tiffit Farm is located 1.5 miles to the southwest of the facility (USGS, 1965).

Distance to residential area, if 2 miles or less:

0.15 miles. (USGS, 1965).

Distance to agricultural land in production within past 5 years, if 1 mile or less:

None within 1 mile. (USGS, 1965).

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

None within 2 miles. (USGS, 1965).

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

There is no historic or landmark site within view of the site. (US Department of the Interior, National Park Service, 1983; Federal Register, 1983).

Fire and Explosion

1.CONTAINMENT

Assigned Value = 1

Hazardous substances present:

No information which indicates that fire and explosion has occurred (or could occur) at the site was discovered during the Phase II study.

Type of containment, if applicable:

Not applicable.

2.WASTE CHARACTERISTICS

Direct Evidence

Assigned Value = 0

Type of instrument and measurements:

No measurements of the potential for fire and explosion were taken on-site.

Ignitability

Assigned Value = 0

Compound used:

No ignitable compounds with the potential to present a fire or explosion hazard are known to be present on-site. (NYSDEC, 1987).

Reactivity

Assigned Value = 0

Most reactive compound:

No reactive compounds with the potential to present a fire or explosion hazard are known to be present on-site. (NYSDEC, 1987).

Incompatibility

Assigned Value = 0

Most incompatible pair of compounds:

No incompatible compounds with the potential to present a fire or explosion threat are known to exist on-site. (NYSDEC, 1987).

Hazardous Waste Quantity

Assigned Value = 0

Total quantity of hazardous substances at the facility:

Ignitable and/or reactive waste is not known to be present on-site. The wastes were apparently removed after 1974. (NYSDEC, 1987).

Basis of estimating and/or computing waste quantity:

Not applicable; see comment above.

3.TARGETS

Distance to Nearest Population

Assigned Value = 3

A residential area is 0.15 miles from the facility. (USGS, 1965).

Distance to Nearest Building

Assigned Value = 3

The nearest building is a warehouse which is less than 50 feet from the disposal area. (ES Field Investigations, 1987-88).

Distance to Sensitive Environment

Assigned Value = 0

Distance to wetlands:

There are no NYS designated wetlands within 1 mile. (Farquhar, 1987).

Distance to critical habitat:

There are no federally designated critical habitats of endangered species within the State of New York. (Ozard, 1988).

Land Use

Assigned Value = 3

Distance to commercial/industrial area, if 1 mile or less:

0.0 miles. Site is located in an industrial area. (ES Field Investigations, 1987-88).

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Tift Farms is located 1.5 miles to the southwest. (USGS, 1965).

Distance to residential area, if 2 miles or less:

A residential area is located 0.15 miles from the site. (ES Field Investigations, 1987-88).

Distance to agricultural land in production within past 5 years, if 1 mile or less:

None within one mile. (USGS, 1965).

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

None within two miles. (USGS, 1965).

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

There is no historic or landmark site within view of the site. (US Department of the Interior, National Park Service, 1983; Federal Register, 1983).

Population Within 2-Mile Radius

Assigned Value = 5

69,083 people. (US Census Tract Data, 1980).

Buildings Within 2-Mile Radius

Assigned Value = 5

Estimated to be no more than 18,180 (69,083 people/3.8). (US Census Tract Data, 1980).

DIRECT CONTACT

1.OBSERVED INCIDENT

Assigned Value = 0

Date, location, and pertinent details of incident:

Based on information revealed during the Phase II Study, there is not a confirmed instance in which contact with hazardous substances at the site has caused injury, illness or death to humans or animals.

2.ACCESSIBILITY

Assigned Value = 3

Describe type of barrier(s):

The facility is not completely surrounded by barriers. (ES Field Investigations, 1987-88).

3.CONTAINMENT

Assigned Value = 15

Type of containment, if applicable:

Wastes were dumped over an inadequately covered pile of rubble and demolition materials. (NYSDEC, 1987).

4.WASTE CHARACTERISTICS

Assigned Value = 3

Toxicity

Compounds evaluated:

Heptachlor. (York Laboratories, 1988).

Compound with highest score:

Heptachlor can be assigned a toxicity rating of 3. (EPA, 1984).

5.TARGETS

Assigned Value = 5

Population within one-mile radius

12,868 people. (US Census Tract Data, 1980).

Distance to critical habitat (of endangered species)

Assigned Value = 0

There are no federally designated critical habitats of endangered species within the State of New York. (Ozard, 1988).

EPA 2070-13



Site Inspection Report

MacNaughton-Brooks



**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION**

I. IDENTIFICATION

01 STATE NY	02 SITE NUMBER 0980507016
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II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site) Mac Naughton-Brooks		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 717-Elk Street			
03 CITY Buffalo	04 STATE NY	05 ZIP CODE 14210	06 COUNTY Erie	07 COUNTY CODE 029	08 CONG DIST 37
09 COORDINATES LATITUDE <u>42 51 49</u> LONGITUDE <u>078 49 49</u>		10 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER _____ <input type="checkbox"/> G. UNKNOWN			

III. INSPECTION INFORMATION

01 DATE OF INSPECTION <u>3 / 18 85</u> MONTH DAY YEAR	02 SITE STATUS <input type="checkbox"/> ACTIVE <input checked="" type="checkbox"/> INACTIVE	03 YEARS OF OPERATION <u>1960-1966</u> BEGINNING YEAR ENDING YEAR		UNKNOWN
04 AGENCY PERFORMING INSPECTION (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <u>Engineering-Science</u> <input type="checkbox"/> C. MUNICIPAL <input type="checkbox"/> D. MUNICIPAL CONTRACTOR _____ <input type="checkbox"/> E. STATE <input checked="" type="checkbox"/> F. STATE CONTRACTOR _____ <input type="checkbox"/> G. OTHER _____ <small>(Name of firm) (Name of firm) (Specify)</small>				
05 CHIEF INSPECTOR S. Robert Steele II	06 TITLE Environmental Scientist	07 ORGANIZATION ES	08 TELEPHONE NO. (703) 591-7575	
09 OTHER INSPECTORS Eileen Gilligan	10 TITLE Geologist	11 ORGANIZATION D & M	12 TELEPHONE NO. (315) 638-2572	
13 SITE REPRESENTATIVES INTERVIEWED				
Mr. Olson	14 TITLE owner	15 ADDRESS 717 Elk Street, Buffalo NY 14210	16 TELEPHONE NO. (716) 826-3300	
Mr. Walker	owner	717 Elk Street, Buffalo, NY 14210	(716) 826-3300	
Mr. A.J MacDonald	previous plant Mngr.	11 Bolton Ave. Buffalo, NY 14210	(716) 822-5000	
17 ACCESS GAINED BY (Check one) <input checked="" type="checkbox"/> PERMISSION <input type="checkbox"/> WARRANT				
18 TIME OF INSPECTION 2:30 pm		19 WEATHER CONDITIONS cold (20° F) Sunny, Clear skies		

IV. INFORMATION AVAILABLE FROM

01 CONTACT George Moreau	02 OF (Agency/Organization) Engineering-Science, Inc.		03 TELEPHONE NO. (315) 451-9560	
04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM S. Robert Steele II	05 AGENCY	06 ORGANIZATION ES	07 TELEPHONE NO. 703-591-7575	08 DATE <u>3 / 18 / 85</u> MONTH DAY YEAR



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE NY 02 SITE NUMBER D0980507016

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- A. SOLID
 B. POWDER, FINES
 C. SLUDGE
 D. OTHER _____
(Specify)
- E. SLURRY
 F. LIQUID
 G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS 600 gallons
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- A. TOXIC
 B. CORROSIVE
 C. RADIOACTIVE
 D. PERSISTENT
- E. SOLUBLE
 F. INFECTIOUS
 G. FLAMMABLE
 H. IGNITABLE
- I. HIGHLY VOLATILE
 J. EXPLOSIVE
 K. REACTIVE
 L. INCOMPATIBLE
 M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	600	gallons	solvents and paint-solvent laden
PSD	PESTICIDES			sludges, Mineral spirits (varso!)
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	Toluene	108-88-3	OD	100	percent
SOL	Xylene	1300-71-6	OD	100	percent
SOL	Mineral spirits		OD	100	percent
MES	Lead	7439-92-1	OD	1271	ppm (soil)
MES	Benzene	71-43-2	OD	4.0	ppb (soil)
MES	Cadmium	7400-43-9	OD	55.4	ppm (soil)
MES	Chromium	7440-43-9	OD	507.2	ppm (soil)
OCC	Phenanthrene	85-01-8	OD	25,000.0	ppb (soil)

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

Hazardous Waste Site Profile Report prepared by Erie County, Department of Environment and Planning, March 1982.
Memorandum from Ronald O. Koczaja to Donald Campbell, Erie County, Department of Environment and Planning, Division of Environmental Control, 2 October 1984.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER
NY 0980507016

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 A. GROUNDWATER CONTAMINATION 02 OBSERVED (DATE: 1/15/88) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 04 NARRATIVE DESCRIPTION

Sodium and potassium were present downgradient at greater than 3 times the upgradient concentrations.

01 B. SURFACE WATER CONTAMINATION 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Not known

01 C. CONTAMINATION OF AIR 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 D. FIRE/EXPLOSIVE CONDITIONS 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 E. DIRECT CONTACT 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

The facility is not surrounded by barriers and surface soil is contaminated with pesticides.

01 F. CONTAMINATION OF SOIL 02 OBSERVED (DATE: 10/87) POTENTIAL ALLEGED
03 AREA POTENTIALLY AFFECTED: 1 (Acres) 04 NARRATIVE DESCRIPTION

Two PAH compounds and three pesticides were detected in surface soils.

01 G. DRINKING WATER CONTAMINATION 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 H. WORKER EXPOSURE/INJURY 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No

01 I. POPULATION EXPOSURE/INJURY 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

No



**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT**
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	098050716

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 J. DAMAGE TO FLORA 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION

No

01 K. DAMAGE TO FAUNA 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

No

01 L. CONTAMINATION OF FOOD CHAIN 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION

Through soil and plants

01 M. UNSTABLE CONTAINMENT OF WASTES 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
(Spills/Runoff/ Standing liquids, Leaking drums)
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Wastes poured over a debris pile

01 N. DAMAGE TO OFFSITE PROPERTY 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION

No

01 O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 OBSERVED (DATE: _____) POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION

Not known

01 P. ILLEGAL/UNAUTHORIZED DUMPING 02 OBSERVED (DATE: 1985) POTENTIAL ALLEGED
04 NARRATIVE DESCRIPTION

Due to unrestricted access, some "midnight" dumping has occurred.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Nanco Laboratories, Inc., 1987-88
Erie Co. Dept. Env. Planning, 1982
ES Site Visit, 1985



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER 0980507016

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED <i>(Check all that apply)</i>	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
<input type="checkbox"/> A. NPDES				
<input type="checkbox"/> B. UIC				
<input type="checkbox"/> C. AIR				The formerly used disposal site is not a permitted disposal facility.
<input type="checkbox"/> D. RCRA				
<input type="checkbox"/> E. RCRA INTERIM STATUS				
<input type="checkbox"/> F. SPCC PLAN				
<input type="checkbox"/> G. STATE <i>(Specify)</i>				
<input type="checkbox"/> H. LOCAL <i>(Specify)</i>				
<input type="checkbox"/> I. OTHER <i>(Specify)</i>				
<input type="checkbox"/> J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL <i>(Check all that apply)</i>	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT <i>(Check all that apply)</i>	05 OTHER
<input type="checkbox"/> A. SURFACE IMPOUNDMENT <input type="checkbox"/> B. PILES <input type="checkbox"/> C. DRUMS, ABOVE GROUND <input type="checkbox"/> D. TANK, ABOVE GROUND <input type="checkbox"/> E. TANK, BELOW GROUND <input type="checkbox"/> F. LANDFILL <input type="checkbox"/> G. LANDFARM <input checked="" type="checkbox"/> H. OPEN DUMP <input type="checkbox"/> I. OTHER <i>(Specify)</i>			<input type="checkbox"/> A. INCENERATION <input type="checkbox"/> B. UNDERGROUND INJECTION <input type="checkbox"/> C. CHEMICAL/PHYSICAL <input type="checkbox"/> D. BIOLOGICAL <input type="checkbox"/> E. WASTE OIL PROCESSING <input type="checkbox"/> F. SOLVENT RECOVERY <input type="checkbox"/> G. OTHER RECYCLING/RECOVERY <input type="checkbox"/> H. OTHER <i>(Specify)</i> N/A	<input checked="" type="checkbox"/> A. BUILDINGS ON SITE 440 sq. feet 06 AREA OF SITE less than 1 <i>(Acres)</i>
	600	gallons		

07 COMMENTS

Approximately 100 gallons/year (from 1960-66) of waste solvents (ie, xylene, toluene, mineral spirits) were disposed on a pile of demolition material consisting of brick, concrete, etc. The demolition material has been removed and presently scavenger dumping occurs at the site.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES <i>(Check one)</i>			
<input type="checkbox"/> A. ADEQUATE, SECURE	<input type="checkbox"/> B. MODERATE	<input type="checkbox"/> C. INADEQUATE, POOR	<input checked="" type="checkbox"/> D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

The disposal site was used in the past for the disposal of construction debris. Solvents and paint residue were later disposed on the debris pile. The debris was later removed and currently the site has debris (ie, tires, wood, etc.) from scavenger dumping.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: YES NO

02 COMMENTS
The site is not enclosed by a fence to prevent unauthorized entry.

VI. SOURCES OF INFORMATION *(Cite specific references, e.g. state files, sample analysis, reports)*

County of Erie, Department of Environment and Planning, Memorandum from Ronald O. Koczaja to Donald Campbell, 10/2/84
Erie County, Department of Environment and Planning, Hazardous Waste Site Profile Report, March 1982.



**POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA**

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	0980507016

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY <i>(Check as applicable)</i>			02 STATUS			03 DISTANCE TO SITE more than	
	SURFACE	WELL	ENDANGERED	AFFECTED	MONITORED	A.	3 (mi)
COMMUNITY	A. <input checked="" type="checkbox"/>	B. <input type="checkbox"/>	A. <input type="checkbox"/>	B. <input type="checkbox"/>	C. <input type="checkbox"/>	B.	(mi)
NON-COMMUNITY	C. <input type="checkbox"/>	D. <input type="checkbox"/>	D. <input type="checkbox"/>	E. <input type="checkbox"/>	F. <input type="checkbox"/>		

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY *(Check one)*

A. ONLY SOURCE FOR DRINKING
 B. DRINKING *(Other sources available)*
 C. COMMERCIAL, INDUSTRIAL, IRRIGATION *(Limited other sources available)*
 D. NOT USED, UNUSEABLE *(No other water sources available)*

02 POPULATION SERVED BY GROUND WATER <u>0</u>		03 DISTANCE TO NEAREST DRINKING WATER WELL more than <u>3</u> (mi)		
04 DEPTH TO GROUNDWATER <u>2.27</u> (ft)	05 DIRECTION OF GROUNDWATER FLOW <u>S</u>	06 DEPTH TO AQUIFER OF CONCERN <u>2.27</u> (ft)	07 POTENTIAL YIELD OF AQUIFER _____ (gpd)	08 SOLE SOURCE AQUIFER <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

09 DESCRIPTION OF WELLS *(including usage, depth, and location relative to population and buildings)*

None - other than 3 monitoring wells on-site screened in the unconsolidated deposits

10 RECHARGE AREA		11 DISCHARGE AREA	
<input type="checkbox"/> YES	COMMENTS	<input type="checkbox"/> YES	COMMENTS
<input type="checkbox"/> NO	unknown	<input type="checkbox"/> NO	unknown

IV. SURFACE WATER

01 SURFACE WATER USE *(Check one)*

A. RESERVOIR, RECREATION DRINKING WATER SOURCE
 B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
 C. COMMERCIAL, INDUSTRIAL
 D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER		
NAME:	AFFECTED	DISTANCE TO SITE
<u>Buffalo River</u>	<input type="checkbox"/>	<u>0.13</u> (mi)
<u>Niagara River</u>	<input type="checkbox"/>	<u>3.8</u> (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN			02 DISTANCE TO NEAREST POPULATION	
ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE		
A. <u>12,868</u> NO. OF PERSONS	B. <u>69,083</u> NO. OF PERSONS	C. <u>115,332</u> NO. OF PERSONS	<u>0.15</u> (mi)	

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE <u>18,180</u>	04 DISTANCE TO NEAREST OFF-SITE BUILDING <u>0.1</u> (mi)
--	---

05 POPULATION WITHIN VICINITY OF SITE *(Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)*

The site is located between old residential and old industrial sections of the city.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE NY 02 SITE NUMBER 0980507016

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

A. 10^{-6} - 10^{-8} cm/sec B. 10^{-4} - 10^{-6} cm/sec C. 10^{-4} - 10^{-3} cm/sec D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

A. IMPERMEABLE (Less than 10^{-6} cm/sec) B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK

about 50 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE

unknown (ft)

05 SOIL pH

unknown

06 NET PRECIPITATION

9 (in)

07 ONE YEAR 24 HOUR RAINFALL

2.1 (in)

08 SLOPE

SITE SLOPE

0.0 %

DIRECTION OF SITE SLOPE

N/A

TERRAIN AVERAGE SLOPE

1.4 %

09 FLOOD POTENTIAL

more than
SITE IS IN 100 YEAR FLOODPLAIN

10

SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acres minimum)

ESTUARINE
more than
A. 2 (mi)

OTHER
none within a 1
B. mile radius

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

none within 1 mile (mi)

ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL

A. 0.0 (mi)

RESIDENTIAL AREAS; NATIONAL/STATE PARKS,
FORESTS, OR WILDLIFE RESERVES

B. 1.5 (mi)

AGRICULTURAL LANDS
PRIME AG LAND AG LAND

more than more than
C. 2 (mi) D. 1 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The ground surface is flat, no permanent surface water bodies occur on site. Surface runoff would probably move south into the Buffalo River.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

ECDEP Site Profile Report, 3/82
URS Engineers Report, 1/80
NYS Wetlands Maps
USDOC Technical Paper, No. 40
USDOC Climatic Atlas of the U.S., 1979

USGS Topographic Maps
Freeze & Cherry, Groundwater, 1979
NYS Atlas of Community Water System Sources, 1982.
Letter from J. Farquhar to L. Debon (ES) to M. Anatra-7/21/87
ES Field Sampling Records, 1987



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER 0980507016

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Nanco Laboratories, Inc.	now
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	Nanco Laboratories, Inc., York Labs	now
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU	Meter readings were taken during site inspection. All readings were non-detectable.

IV. PHOTOGRAPHS AND MAPS

01 TYPE <input checked="" type="checkbox"/> GROUND <input type="checkbox"/> AERIAL	02 IN CUSTODY OF <u>Engineering-Science</u> <small>(Name of organization or individual)</small>
03 MAPS <input type="checkbox"/> YES <input type="checkbox"/> NO	04 LOCATION OF MAPS

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Blank area for narrative description of other field data collected.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis reports)

Blank area for sources of information.



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER 0980507016

II. CURRENT OWNER(S)				PARENT COMPANY (If applicable)			
01 NAME Dold Feed Company		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 717 Elk Street			04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY Buffalo,		06 STATE NY	07 ZIP CODE 14210	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)			11 SIC CODE
05 CITY		06 STATE	07 ZIP CODE	12 CITY		13 STATE	14 ZIP CODE
III. PREVIOUS OWNER(S) (List most recent first)				IV. REALTY OWNER(S) (If applicable; list most recent first)			
01 NAME Thompson Paper Co.		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 717 Elk Street			04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE
05 CITY Buffalo,		06 STATE NY	07 ZIP CODE 14210	05 CITY		06 STATE	07 ZIP CODE
01 NAME Victory Chemical		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 717 Elk Street			04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE
05 CITY Buffalo		06 STATE NY	07 ZIP CODE 14210	05 CITY		06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)			04 SIC CODE
05 CITY		06 STATE	07 ZIP CODE	05 CITY		06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

County of Erie Dept. of Environment and Planning, Div. Of Environmental Control,
memorandum from Ronald Koczaja to Donald Campbell-10/84
Interview with owners of Gro-Green Fertilizer Co. during Site Inspection



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER
NY | 0980507016

II. CURRENT OPERATOR (Provide if different from owner)				OPERATOR'S PARENT COMPANY (If applicable)			
01 NAME James Kotrys, Manager Gro-Green Fertilizer Co.		02 D+B NUMBER		10 NAME		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 717 Elk Street		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY Buffalo		06 STATE NY	07 ZIP CODE 14210	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 1960-1987		09 NAME OF OWNER Mr. Walter Olson					
III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)				PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)			
01 NAME MacNaughton-Brooks Inc.		02 D+B NUMBER		10 NAME		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) 11 Bolton		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY Buffalo		06 STATE NY	07 ZIP CODE 14210	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 1960-1982		09 NAME OF OWNER DURING THIS PERIOD Mr. MacNaughton					
01 NAME Thompson Paper Co.		02 D+B NUMBER		10 NAME		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION 1945-1960		09 NAME OF OWNER DURING THIS PERIOD					
01 NAME Victory Chemical Co.		02 D+B NUMBER		10 NAME		11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)		13 SIC CODE	
05 CITY		06 STATE	07 ZIP CODE	14 CITY		15 STATE	16 ZIP CODE
08 YEARS OF OPERATION -1945		09 NAME OF OWNER DURING THIS PERIOD					
IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)							
County of Erie, Department of Environment and Planning Division of Environmental Control, memorandum from Ronald D. Koczaja to Donald Campbell, dated 10/84 Interview with Mr. Olson of Gro-Green Fertilizer during ES and D & M site inspection, 3/18/85							



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER
NY0980507016

II. ON-SITE GENERATOR

01 NAME none	02 D+B NUMBER	No hazardous wastes are generated on site.	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		
05 CITY	06 STATE | 07 ZIP CODE		

III. OFF-SITE GENERATOR(S)

01 NAME none	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE | 07 ZIP CODE	05 CITY	06 STATE | 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE | 07 ZIP CODE	05 CITY	06 STATE | 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME none	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE | 07 ZIP CODE	05 CITY	06 STATE | 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE | 07 ZIP CODE	05 CITY	06 STATE | 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Interview with Mr. Olson of Gro-Green Fertilizer Co. during site inspection by ES and D & M, 3/18/85



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER
NY | 0980507016

II. PAST RESPONSE ACTIVITIES

01 <input type="checkbox"/> A. WATER SUPPLY CLOSED 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> D. SPILLED MATERIAL REMOVED 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION demolition material removed from site	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> F. WASTE REPACKAGED 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> H. ON SITE BURIAL 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> L. ENCAPSULATION 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> N. CUTOFF WALLS 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____
01 <input type="checkbox"/> Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION no	02 DATE _____	03 AGENCY _____



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	098050016

II FAST RESPONSE ACTIVITIES (Continued)

01 <input type="checkbox"/> R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> S. CAPPING/COVERING 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> V. BOTTOM SEALED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> W. GAS CONTROL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> X. FIRE CONTROL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> Y. LEACHATE TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> Z. AREA EVACUATED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> 1. ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
no		
01 <input type="checkbox"/> 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE _____	03 AGENCY _____

The demolition debris pile previously used to dispose solvents and waste paint residues has been removed off-site. The area where disposal activities are suspected is used to dispose of misc. wastes. Gro-Green removes all accumulated debris (ie, tires, trash) on a as needed basis. It is not known where the demolition pile was disposed.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Interview with owners of Gro-Green Fertilizer Company during ES' and D & M site inspection, 3/18/85



POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE NY	02 SITE NUMBER 0980507016

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION YES NO no enforcement actions have been taken

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NYSDEC, Environmental Enforcement Division
NYS, Attorney General's Office
Letter from Vance Bryant (NYSDEC Div. Env. Enforcement) to M. Anatra(ES)-7/7/787

REFERENCES

HRS REFERENCES*

MACNAUGHTON-BROOKS

1. Nanco Laboratories, Inc., 1987. Analytical results.
2. ES boring logs, 1987.
3. ES, 1989. Table IV-2 from MacNaughton-Brooks Phase II Report.
4. NYSDEC, 1987. Inactive Hazardous Waste Disposal sites in New York State, New York State Department of Environmental Conservation, Volume 9, December, 1987..
5. USDOC, 1979. Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Asheville, NC, 1979.
6. EPA, 1984. Uncontrolled Hazardous Waste Site Ranking System: A Users Manual (HW-10). United States Environmental Protection Agency.
7. Sax, N.I., 1984. Dangerous Properties of Industrial Materials, Sixth Edition. Van Nostrand Reinhold Company, New York. 3124 pp.
8. Koczaja, R., 1988. Telephone conversation between R. Koczaja of the Erie Co. Dept. of Health and M. Anatra of Engineering-Science, dated February 18, 1988.
9. NYSDOH, 1982. New York State Atlas of Community Water System Sources, 1982. New York State Dept. of Health, Division of Environmental Protection, Bureau of Public Water Supply Protection.
10. USGS, 1965. Topographic Maps: Buffalo SE, 1965, Buffalo NE, 1965, and Buffalo NW, 1965 Quadrangles.
11. USDOC, 1963. US Department of Commerce Technical Paper No. 40.
12. Erie County Dept. of Env. & Planning, 1982. Hazardous Waste Site Profile: MacNaughton-Brooks, Inc., City of Buffalo, Site #915034. Erie County Department of Environment and Planning, March, 1982.
13. York Laboratories, 1988. Analytical results for MacNaughton-Brooks site.
14. 6NYCRR, New York Codes, Rules, Regulations Title 6 Volume E Article 8, Part 837, Map 6.
15. Farquhar, J. F., 1987. Letter and maps sent from J. F. Farquhar of the NYSDEC to E. Dobson of Engineering-Science, dated September 2, 1987.

*All these references were used for HRS Documentation, while some of them were also used as General References

16. Ozard, J., 1988 (NYSDEC). Interview for Phase II Investigation, dated April 14, 1988.
17. US Census Tract Data, 1980.
18. US Department of the Interior, National Park Service, 1983. "National Register of Historic Places Annual Listing of Properties January 1979 through December 1982", dated August, 1983.
19. Federal Register, 1983. Department of the Interior, National Park Service: National Registry of Natural Landmarks, dated March 1, 1983.
20. ES Field Investigations, 1987-88.
21. Olson, 1985. Telephone interview with W. Olson, owner of the Dold Feed Company and Gro-Green Fertilizer Company, dated March 18, 1985.

GENERAL REFERENCES**

MACNAUGHTON-BROOKS

22. Erie County, 1982. Hazardous Waste Site Profile: MacNaughton-Brooks, Inc., City of Buffalo, Site # 915034. Erie County Department of Environment and Planning, March, 1982.
23. Erie County, 1987. Tax Maps, Erie County Division of Real Property, reviewed June 25, 1987.
24. ES, 1989. Engineering Investigations at Inactive Hazardous Waste Sites, Phase II Investigation, Allied Chemical Site, Site No. 915004. Engineering-Science, work in progress.
25. Freeze, R.A. and Cherry, J.A., 1979. Groundwater, Prentice-Hall, Englewood Cliffs, New Jersey.
26. Kotrys, J., 1989. Telephone interview with James Kotrys of Gro Green Products, Inc., dated January 11, 1989.
27. LaSala, A. M., 1968. Ground-Water Resources of the Erie-Niagara Basin, New York, U.S. Geological Survey, Basin Planning Report ENB-3.
28. NYCRR, New York Codes Rules and Regulations, Title 6, Volume E.
29. USDA, 1986. Soil Survey of Erie County, New York, U.S. Department of Agriculture.
30. Rand McNally, 1981. Worldmaster World Atlas, New Census Edition, Rand McNally Co., New York.
31. USEPA, 1988. Final Draft Site Inspection Report MacNaughton-Brooks Buffalo, NY dated December 30, 1988.

**These references were not used for HRS Documentation. See also "HRS References" above.

INORGANIC ANALYSIS DATA SHEET

FORM 1

SMPL NO.: GW.2.11

①

Lab Name : MANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 11/25/87

Lab Sample ID: 87-EW-4492

Date Reported: 1/15/88

LOCATION ID: ~~ALLIED CHEMICAL~~
Ms. Naughton Brothers

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW X MEDIUM _____

MATRIX : WATER X SOIL _____ SLUDGE _____ OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	143500.0 P	(1:50)	13. MAGNESIUM	234100.0 P	
2. ANTIMONY	50.0 UP <i>N</i>		14. MANGANESE	13200.0 P <i>E</i>	(1:50)
3. ARSENIC	33.0 SF <i>N</i>	(1:10)	15. MERCURY	0.4 U C.V. <i>N</i>	
4. BARIUM	1310.0 P <i>E</i>		16. NICKEL	450.0 P	
5. BERYLLIUM	5.0 UP <i>N</i>		17. POTASSIUM	[35200.0] P	
6. CADMIUM	5.0 UP		18. SELENIUM	30.0 UF <i>N</i>	(1:10)
7. CALCIUM	795000.0 P <i>E</i>	(1:50)	19. SILVER	10.0 UP	
8. CHROMIUM	310.0 P <i>*</i>		20. SODIUM	610000 P	(1:50)
9. COBALT	160.0 UP		21. THALLIUM	2.0 UF <i>N</i>	
10. COPPER	400.0 P <i>N</i>		22. VANADIUM	[340.0] P	
11. IRON	341200.0 P		23. ZINC	1500.0 P	
12. LEAD	260.0 SF <i>N</i> <i>*</i>	(1:10)	PERCENT SOLIDS (%)	N/A	
CYANIDE	NR				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

This sample was a brown cloudy liquid. This sample turned light yellow after ICP digestion procedures and was colorless after furnace digestion procedures. Al, CA, MN + NA were analyzed at a (1:50) dilution. AS, Pb, and Se were analyzed at a (1:10) dilution.

George Orel
LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

000005

SMPL NO.: GW.1.11

①

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 11/25/87

Lab Sample ID: 87-EW-4488

Date Reported: 1/15/88

LOCATION ID: ~~FIELD - METAL~~
Mac Naughton - Brooks

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW X MEDIUM _____
MATRIX : WATER X SOIL _____ SLUDGE _____ OTHER _____

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	61500.0 P	(1:50)	13. MAGNESIUM	277400.0 P	
2. ANTIMONY	50.0 UP <i>N</i>		14. MANGANESE	8700.0 P <i>E</i>	
3. ARSENIC	55.0 +SF <i>N</i>		15. MERCURY	0.9 C.V. <i>N</i>	
4. BARIUM	790.0 P <i>E</i>		16. NICKEL	210.0 P	
5. BERYLLIUM	2.0 UP <i>N</i>		17. POTASSIUM	11700.0 P	
6. CADMIUM	8.0 P		18. SELENIUM	3.0 UF <i>N</i>	
7. CALCIUM	960000.0 P <i>E</i>	(1:50)	19. SILVER	10.0 UP	
8. CHROMIUM	150.0 P <i>A</i>		20. SODIUM	45000 P	(1:50)
9. COBALT	80.0 P		21. THALLIUM	2.0 UF <i>N</i>	
10. COPPER	280.0 P <i>N</i>		22. VANADIUM	150.0 P	
11. IRON	136200.0 P		23. ZINC	1000.0 P	
12. LEAD	450.0 F <i>N</i> <i>A</i>	(1:20)	PERCENT SOLIDS (X)	N/A	
CYANIDE	NR				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was of a brown cloudy liquid. It became colorless after furnace digestion and a Lt yellow after QCP digestion procedure. Pb was analyzed at a 1:20 dilution and Al, Ca, & Na were analyzed at a 1:50 dilution.

George Obell
LAB MANAGER

DRILLING CONTRACTOR:
 Miller: D. MILLER
 Director: K. ISAKOWER
 Type: MOBILE 61
 Drilling Method: H.S. AUGER

ENGINEERING-SCIENCE
 DRILLING RECORD
 PROJECT NAME: McNAUGHTON - BROOKS
 PROJECT NO.: 54012.11

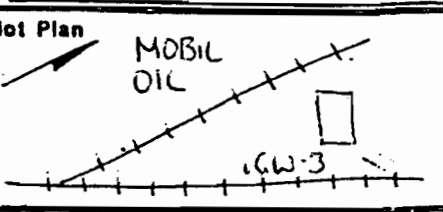
BORING NO. GW-3
 Sheet 1 of 2
 Location: BEHIND BUILDING
NEXT TO ELEVATED
R.R. TRACKS.

(2)

ROUND WATER OBSERVATIONS

Water Level	
Time	
State	
casing Depth	

Weather: CLEAR, COOL
 Date/Time Start: 11/16/87 0730
 Date/Time Finish: 11/16/87 1000



Elevation	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
3.2	0-2 IS-1		1	16" BLACK SILTY SAND WITH BRICK (FILL)		2" ID PVC RISER
	REC# 18"		5	2" BROWN CLAYEY SAND		Cement/Bentonite grout
			6			Bentonite pellets
0.7	5-7 IS-2		7	4" BROWN CLAYEY SAND		NO RECOVERY
	REC# 18"		8	12" WET BLACK SILTY SAND WITH BRICK (FILL)		ON FIRST ATTEMPT - RESAMPLED
			8			
2.0	10-12 IS-3		4	5" WET BLACK SANDY SILT WITH BRICK (FILL)		
	REC# 24"		10	19" RED-TAN SANDY CLAY		
			15			
2.0	15-17 IS-4		2	WET BROWN "STICKY" CLAY		2" ID #10 5/16" PVC Screen
	REC# 19"		3			
			3			
			4			
					18 #4 Q.Pok	
					20	

• STANDARD PENETRATION TEST
 D - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary SOIL & NON-SOIL FILL TO
 10.5' OVER STEEP CLAY WITH SAND STRINGERS
 TO 15' OVER FAT CLAY

DRILLING CONTRACTOR:
 Name: D. MILLER
 Director: K. ISAKOWER
 Type: MOBILE 61
 Drilling Method: H.S. AUGER

ENGINEERING-SCIENCE
 DRILLING RECORD

PROJECT NAME: Mc NAUGHTIN-BROOKS
 PROJECT NO.: 54012.11

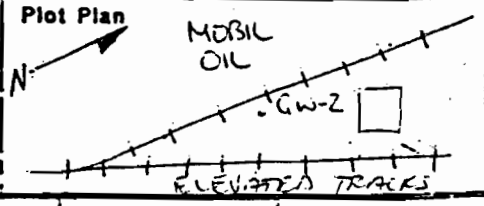
BORING NO. GLI-2
 Sheet 1 of 1
 Location: BEHIND BUILDING
NEXT TO R.R. TRACKS
(MOBIL)

(2)

GROUND WATER OBSERVATIONS

Water Level	Time	Date	Time	Depth

Weather: _____
 Date/Time Start: 11/16/87 1245
 Date/Time Finish: 11/16/87 1430



Device Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
	0-2	1 5-1	2	BLACK SILTY SAND WITH BRICK (FILL)		2" ID PVC RISER Cement/Bentonite grout OBSTRUCTION AT NOSE OF SPOON - LOW RECOVERY, SOME FILL Bentonite pellets #4 GRD 2" ID #10 SLOT PVC SCREEN
	1		8			
	RECE 11"		14			
			8			
	5-7	1 5-2	2	WET BLACK "STICKY" CLAY WITH BRICK		
	1		5			
	RECE 3"		5			
			5			
	10-12	1 5-3	5	4" - WET BLACK SILTY SAND		
	1		5			
	RECE 24"		9			
			14	20" - DRY RED-BROWN SANDY CLAY		
	15-17	1 5-4	2	12" - RED BROWN DRY CLAY WITH SAND STRINGERS AT 7" AND 12"		
	1		2			
	RECE 20"		4			
			7	8" - WET BROWN-GREY "STICKY" CLAY		
				Boring Completed at 17 feet		

STANDARD PENETRATION TEST
 D - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary: SOIL & NON-SOIL FILL TO 10.5' OVER STIFF CLAY WITH SAND STRINGERS TO 16' OVER FAT CLAY

DRILLING CONTRACTOR:
 Miller: D. MILLER
 Operator: K. ISAKOWER
 Type: MOBILE BI
 Drilling Method: H.S. AUGER

ENGINEERING-SCIENCE
 DRILLING RECORD

PROJECT NAME MCNAUGHTON - BROOKS
 PROJECT NO. 54012.11

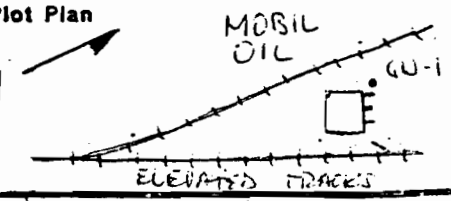
BORING NO. GW-1
 Sheet 1 of 1
 Location BESIDE RAMP AT
END OF BUILDING

2

GROUND WATER OBSERVATIONS

Water Level	
Time	
casing Depth	

Weather _____
 Date/Time Start 11/16/87 1530
 Date/Time Finish 11/17/87 0910



Stovec Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.7	0-2	S-1	4	11" - BLACK SAND WITH GRAVEL, BRICK (FILL) 4" - WOOD		Cement/Bentonite GROUT Bentonite Pellets
			8			
	REG = 15"		8			
			17			
0.7	5-7	S-2	4	9" - BLACK SAND WITH GRAVEL, BRICK (FILL) 6" - BROWN-GREY, DRY CLAY 3" - BROWN-GREY CLAYEY SAND		2" ID PVC RISER
			4			
	REG = 18"		6			
			9			
0.9	10-12	S-3	4	4" - BLACK SAND FILL DOMINATED BY WOOD 17" - BROWN-RED STIFF CLAY, SOME SAND AT BOTTOM OF SPOON		WOOD FILL MAY HAVE DROPPED DOWN HOLE 2" ID #10 SLOT PVC SCREEN
			8			
	REG = 21"		8			
			14			
2.0	15-17	S-4	5	BROWN-GREY WET "STICKY" CLAY		#4 Q-Rok
			3			
	REG = 7"		2			
			3	17'		
				Boring completed at 17.0 feet		

STANDARD PENETRATION TEST
 D - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary: SOIL AND NON-SOIL FILL TO 10.5' OVER STIFF CLAY WITH SOME SAND STRINGERS TO 15' OVER FAT CLAY

TABLE IV-2

WATER LEVEL DATA

MACNAUGHTON-BROOKS SITE

Well I.D.	Ground Surface Elevation (feet*)	Top of PVC Well Pipe Elevation (feet*)	Well Screen Interval Elevation (feet*)	Date: 2/18/88		Date: 11/24/87	
				Depth to Water Level (feet**)	Water Level Elevation (feet*)	Depth to Water Level (feet**)	Water Level Elevation (feet*)
GW-1	499.82	501.76	492.8 - 482.8	4.1	497.7	4.46	497.30
GW-2	499.40	501.50	492.4 - 482.4	4.1	497.4	4.29	497.21
GW-3	499.12	501.12	491.1 - 481.1	3.9	497.2	4.15	496.97

*Based on an assumed on-site datum.

**Water level depth from top of PVC.



Division of Hazardous Waste Remediation

Inactive Hazardous Waste Disposal Sites in New York State

Site List by Counties; Volume 9

- Allegany
 - Erie
 - Cattaraugus
 - Niagara
 - Chautauqua
 - Wyoming
-

December 1987

A Joint Report
of the New York State Departments of Environmental Conservation and Health

New York State/Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

4

CLASSIFICATION CODE: 2a

REGION: 9

SITE CODE: 915034
EPA ID: NYD980507016

NAME OF SITE : MacNaughton-Brooks

STREET ADDRESS: 717 Elk Street

TOWN/CITY:

Buffalo

COUNTY:

Erie

ZIP:

14210

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: -1 Acres

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER NAME....: Gro Green Products Inc.

CURRENT OWNER ADDRESS.: 717 Elk St., Buffalo, NY

OWNER(S) DURING USE...: MacNaughton-Brooks

OPERATOR DURING USE...: MacNaughton-Brooks

OPERATOR ADDRESS.....: 11 Balton Place, Buffalo, NY

PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1960 To 1966

SITE DESCRIPTION:

During the period of 1960-1966, approximately 100 gallons per year of waste solvents were poured onto demolition material and a rubble pile located in the back of the plant. The company has indicated that there has not been any on-site waste disposal since 1966. Aerial photographs do not show any evidence of landfilling operations for the period indicated. The site was sampled by U.S.G.S. in 1982. Samples were analyzed for Cd, Cr, Fe, Pb and the organic pollutants. Concentrations of Pb exceeds the background level. Ten of the organic priority pollutants were also detected. Six of the samples showed concentrations above 10 ppm levels. Phase I State Superfund investigation was completed in June of 1985. A Phase II investigation is underway.

HAZARDOUS WASTE DISPOSED: Confirmed-X
TYPE

Suspected-
QUANTITY (units)

Paint sludges, solvents, xylol, toluol

600 gallons total

SITE CODE: 915034

4

ANALYTICAL DATA AVAILABLE:

Air- Surface Water- Groundwater- Soil-X Sediment- None-

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE...: None State- Federal-
STATUS: Negotiation in Progress- Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-
NATURE OF ACTION: None

GEOTECHNICAL INFORMATION:

SOIL TYPE: Urban/poorly drained silty soil

GROUNDWATER DEPTH: Unknown

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Soil samples collected by the U.S.G.S. revealed the presence of numerous organic parameters, some at elevated concentrations. Further investigation is warranted to determine the extent of environmental problems.

ASSESSMENT OF HEALTH PROBLEMS:

Medium	Contaminants Available	Migration Potential	Potentially Exposed Population	Need for Investigation
Air	Likely	Highly Likely	Yes	High
Surface Soil	Identified	Highly Likely	Yes	High
Groundwater	Likely	Likely	No	Low
Surface Water	Likely	Unlikely	Yes	Medium

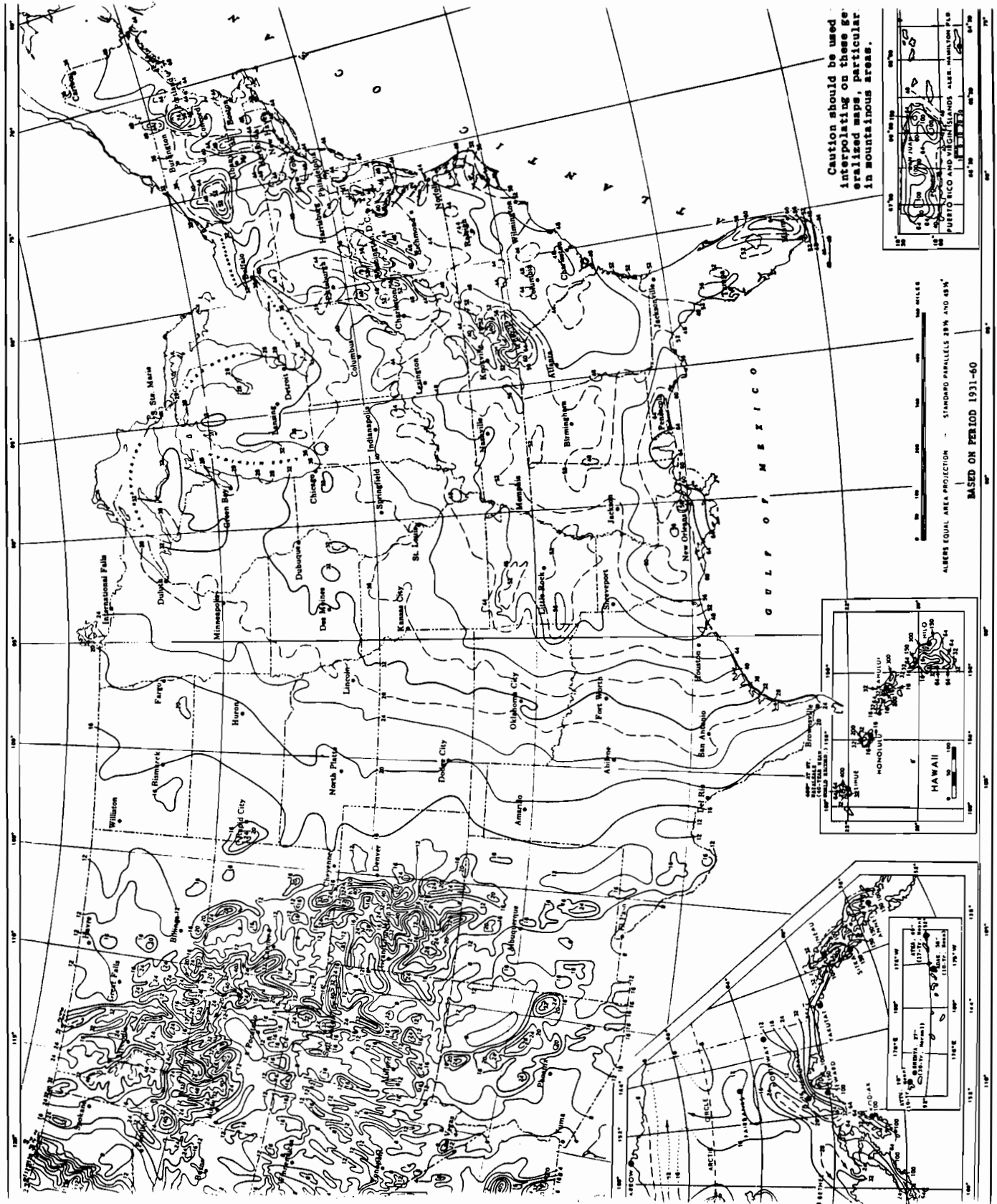
Health Department Site Inspection Date : 4/85

MUNICIPAL WASTE ID:



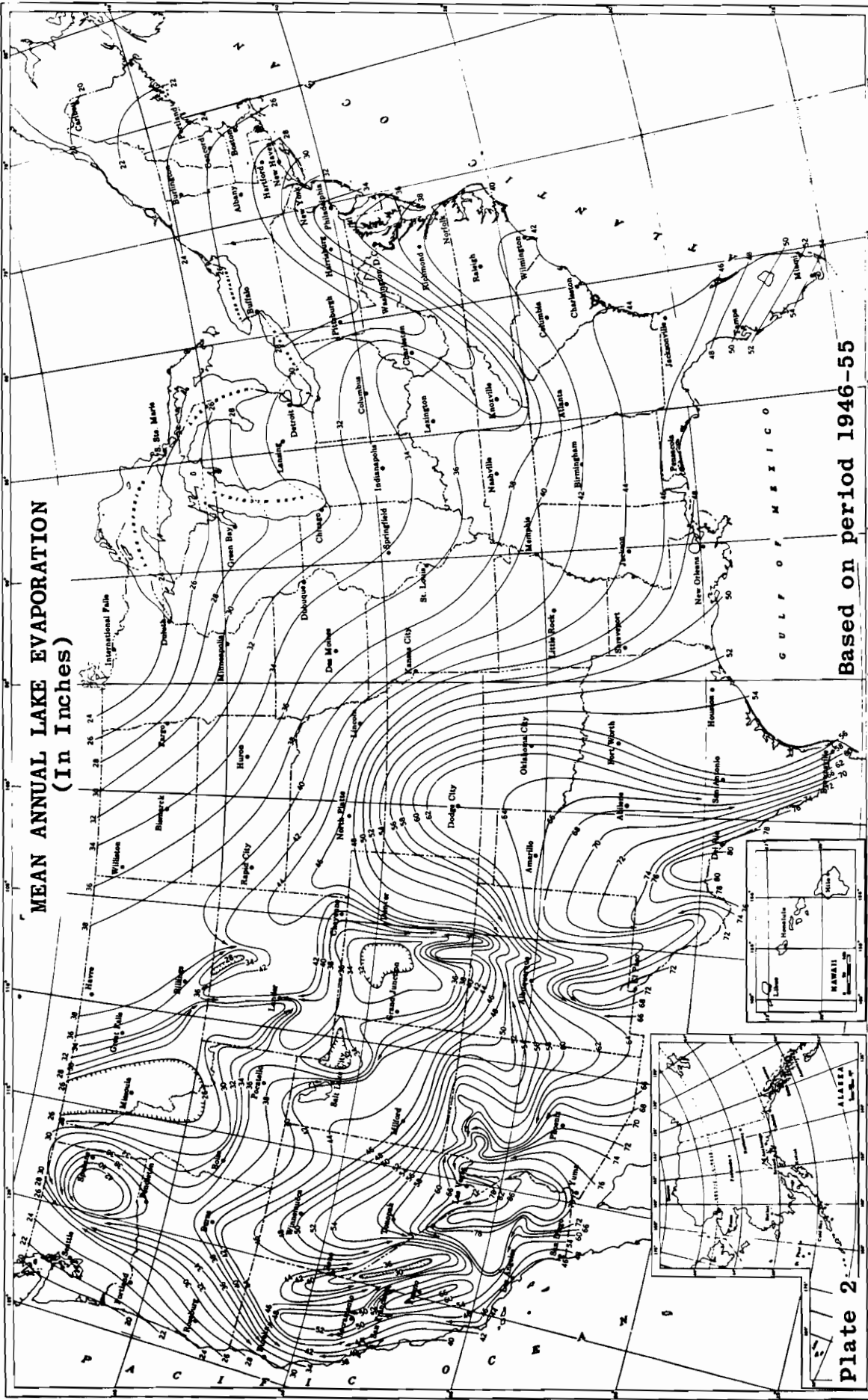
CLIMATIC ATLANTAS OF THE STATES

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



AND LAKE EVAPORATION

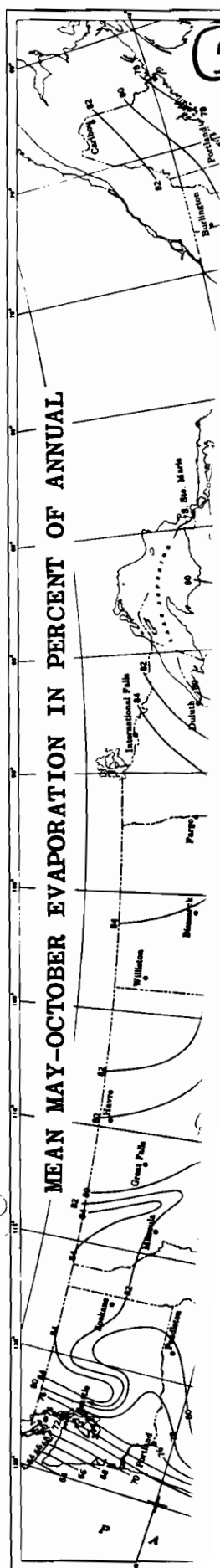
MEAN ANNUAL LAKE EVAPORATION (In Inches)



Based on period 1946-55

Plate 2

MEAN MAY-OCTOBER EVAPORATION IN PERCENT OF ANNUAL



Uncontrolled Hazardous Waste Site Ranking System

⑥

A Users Manual (HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

(6)

TABLE 2
PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.H. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

substance used in rating waste characteristics. Where the total inventory of substances in a facility is known, only those present in amounts greater than the reportable quantity (see CERCLA Section 102 for definition) may be evaluated.

Toxicity and Persistence have been combined in the matrix below because of their important relationship. To determine the overall value for this combined factor, evaluate each factor individually as discussed below. Match the individual values assigned with the values in the matrix for the combined rating factor. Evaluate several of the most hazardous substances at the facility independently and enter only the highest score in the matrix on the work sheet.

Value for Toxicity	Value for Persistence			
	0	1	2	3
0	0	0	0	0
1	3	6	9	12
2	6	9	12	15
3	9	12	15	18

Persistence of each hazardous substance is evaluated on its biodegradability as follows:

<u>Substance</u>	<u>Assigned Value</u>
Easily biodegradable compounds	0
Straight chain hydrocarbons	1
Substituted and other ring compounds	2
Metals, polycyclic compounds and halogenated hydrocarbons	3

Table I (cont.)

(6)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Fluorine	18	9
Formaldehyde	9	9
Formic Acid	9	6
Heptachlor	18	9
Hexachlorobenzene	15	6
Hexachlorobutadiene	18	9
Hexachlorocyclohexane, NOS	18	9
Hexachlorocyclopentadiene	18	9
Hydrochloric Acid	9	6
Hydrogen Sulfide	18	9
Indene	12	6
Iron & Compounds, NOS	18	9
Isophorone	12	6
Isopropyl Ether	9	3
Kelthane	15	6
Kepon	18	9
Lead	18	9
Lindane	18	9
Magnesium & Compounds, NOS	15	6
Manganese & Compounds, NOS	18	9
Mercury	18	9
Mercury Chloride	18	9
Methoxychlor	15	6
4, 4-Methylene-Bis-(2- Chloroaniline)	18	9
Methylene Chloride	12	6
Methyl Ethyl Ketone	6	6
Methyl Isobutyl Ketone	12	6
4-Methyl-2-Nitroaniline	12	9
Methyl Parathion	9	9
2-Methylpyridine	12	6
Mirex	18	9

②

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger



VAN NOSTRAND REINHOLD COMPANY
New York



2406 SMOKELESS POWDER

SMOKELESS POWDER

Nitrocellulose containing about 13.1% nitrogen produced by blending material of somewhat lower (12.6%) and slightly higher (13.2%) nitrogen content, converting to a dough with alcohol-ether mixture, extruding, cutting and drying to a hard horny product. Small amounts of stabilizers (amines) and plasticizers are usually present, as well as various modifying agents (nitrotoluene, nitroglycerine, salts). See also nitrocellulose and explosives, high.

SNAKEROOT OIL CANADIAN

CAS RN: 8016691 NIOSH #: VX 8125000

Consists of Linalool, Geraniol, 1-alpha-terpineol, eugenol and methyl eugenol (FCTXAV 16,637,78)

SYN: WILD GINGER OIL

TOXICITY DATA: CODEN:
orl-rat LD50:4480 mg/kg FCTXAV 16,637,78

Reported in EPA TSCA Inventory, 1980.
THR: LOW orl. See also constituents as listed above.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

SODA LIME, (SOLID)

CAS RN: 8006288 NIOSH #: VW 0550000

White to gray granules. Rapidly deteriorates on exposure to air.

TOXICITY DATA:
DOT: Corrosive Material, Label: Corrosive FEREAC 41,57018,76.

THR: No data. A corrosive material irr to skn, eyes, mu mem. See also sodium hydroxide and lime, i.e., CaO + 5-20% NaOH contg 6-18% H₂O.

SODIUM

CAS RN: 7440235 NIOSH #: VY 0686000
af: Na; aw: 22.99

Light, soft, ductile, malleable, silver-white metal. mp: 97.81°, bp: 881.4°, d: 0.9710 @ 20°, autoign. temp.: > 115° in dry air, vap. press: 1.2 mm @ 400°.

SYNS:
NATRIUM SODIUM METAL (DOT)

TOXICITY DATA: 3
DOT: Flammable Solid, Label: Flammable Solid and Dangerous When Wet FEREAC 41,57018,76. "NIOSH Manual of Analytical Methods" VOL 5 173#. Reported in EPA TSCA Inventory, 1980.

THR: Sodium in elemental form is highly reactive, particularly with moisture, with which it reacts violently and therefore attacks living tissue. Also, Na + HOH yields NaOH. See also sodium hydroxide. Metallic sodium reacts exothermally with the moisture of body or tissue surfaces, causing thermal and chemical burns due to

the reaction with sodium and the sodium hydroxide formed.

Fire Hazard: Dangerous, when exposed to heat and moisture. In dry air it reacts very slowly up to 550° or by chemical reaction with moisture, air, AlBr₃, AlCl₃, AlF₃, NH₄ chlorocuprate, NH₄NO₃, SbBr₃, SbCl₃, SbI₃, AsCl₃, AsI₃, BiBr₃, BiCl₃, BiI₃, Bi₂O₃, BBr₃, bromoazide, CO₂, (CO + NH₃), CCl₄, Cl₂, ClF₃, CrCl₄, CrO₃, CoBr, CoCl, CuCl₂, CuO, FeBr₃, FeCl₃, FeBr₂, FeCl₂, FeI₂, hydrazine hydrate, H₂O₂, H₂S, HCl, HF, F₂, 1,2-dichloroethylene, dichloromethane, Br₂, hydroxylamine, iodine, iodine monochloride, iodine pentafluoride, lead oxide, maleic anhydride, manganous chloride, mercuric bromide, mercuric chloride, mercuric fluoride, mercuric iodide, mercurous chloride, mercurous oxide, methyl chloride, molybdenum trioxide, monoammonium phosphate, nitric acid, nitrogen peroxide, nitrosyl fluoride, nitrous oxide, phosgene, phosphorus, phosphorous pentafluoride, phosphorus pentoxide, phosphorus tribromide, phosphorus trichloride, phosphoryl chloride, potassium oxides, potassium ozonide, potassium superoxide, selenium, silicon tetrachloride, silver bromide, silver chloride, silver fluoride, silver iodide, sodium peroxide, stannic chloride, (stannic iodide + sulfur), stannic oxide, stannous chloride, sulfur, sulfur dibromide, sulfur dichloride, sulfur dioxide, sulfuric acid, tellurium, tetrachloroethane, thallos bromide, thiophosphoryl bromide, trichlorethylene, vanadium pentachloride, vanadyl chloride, zinc bromide, or any oxidizing material, decomp moisture to evolve hydrogen and heat; reacts exothermally with the halogens, acids and halogenated hydrocarbons. Heated sodium is spont flam in air. Can be safely stored under liquid hydrocarbons.

Spontaneous Heating: No.
Explosion Hazard: Dangerous, when exposed to moisture in any form! Keep dry at all times!

Disaster Hazard: Dangerous; when heated in air, emits tox fumes of sodium oxide; will react with water or steam to produce heat, hydrogen, and flam vapors; can react vigorously to explosively with oxidizing materials. See hydrogen.

To Fight Fire: Soda ash, dry sodium chloride or graphite, in order of preference.

Storage and Handling: In the absence of moisture, oxygen or halides, sodium is safe to handle. As to indoor storage of drums, the important thing in storing sodium is that the storage area must be kept dry, since explosions may result from the contact of sodium with water. No automatic sprinkler system, or water or steam pipes containing water should be allowed in the room. Sufficient heat should be provided (without the use of open flames) to prevent condensation of moisture in the room due to changes in atmospheric conditions. Empty sodium drums should be stored in this same area.

Fire extinguishers (preferably color-coded) must be provided in the storage area, but only those containing sodium chloride, sodium carbonate, or graphite may be used. Pails are adequate for storing extinguishant if special care is taken to insure that the materials are

JOB NO. 57012. Allied, Pratt & Letchworth,
FILE DESIGNATION McNaughton - Brooks
DATE 2/18/88 TIME 11:00 AM

PHONE CALL FROM Michele Anatra PHONE NO. _____

PHONE CALL TO Ron Kozcoja, Erie Co. DOH PHONE NO. 716-846-7677
[sic; s/b: Kozcoja]

CONFERENCE WITH _____

PLACE _____

SUBJECT Ground Water Use within 3-mile radii of the
Allied Chemical site on Babcock Road, McNaughton-Brooks,
and Pratt & Letchworth.

Everyone in the area is serviced by the city of
Buffalo Public Water Supply. Mr Kozcoja
stated that the only industrial well he was
aware of is located at the Dunlap Plant
in Tonawanda.

SIGNED Michele A Anatra

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE
DEPARTMENT OF HEALTH

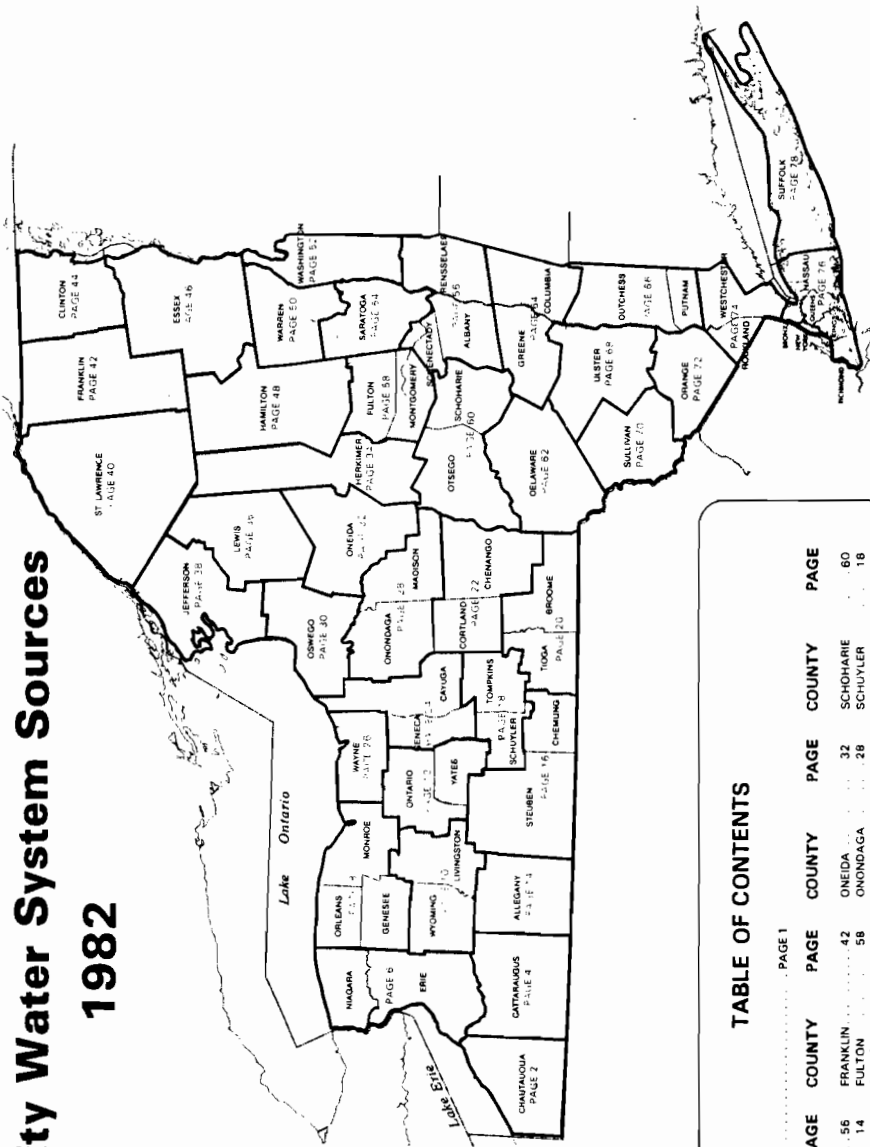


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DELAWARE	62	NIAGARA	46	YATES	58		
DUTCHESS	66						
ERIE	6						
ESSEX	46						

LEGEND

- BOUNDARIES AND PLACES**
- International
 - State
 - County
 - Town
 - Indian Reservation
 - City
 - Village
 - Unincorporated Place
 - Federal Reservation
 - Built-up Area (Over 25,000 population including any contiguous city or village)

CLASSIFICATION OF POPULATED PLACES

- YONKERS**
- 100,000 or more
 - 50,000 to 100,000
 - 12,500 to 50,000
 - 2,500 to 12,500
 - 250 to 2,500
 - 250 or less
- Levittown**
- Poughkeepsie**
- Hampton Bays**
- B3 - Seville**

TRANSPORTATION

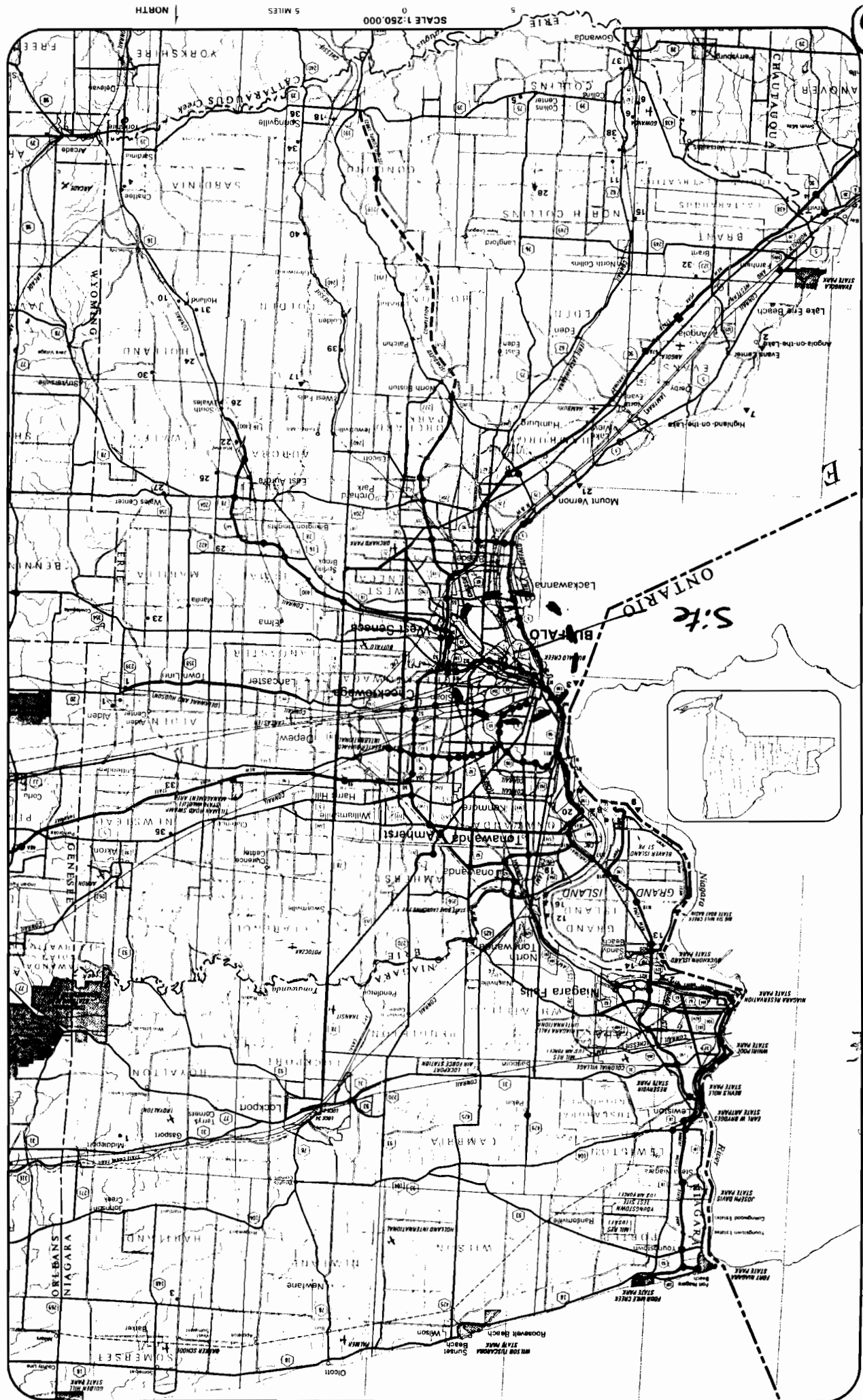
- Highways**
- Divided Highways
 - Full Control of Access
 - Partial or No Control of Access
 - Undivided Highway
 - Interchange
 - Touring Route (State U.S. Interstate) or State Parkway
 - Touring Route Markers
 - State U.S. Interstate
- Railroads**
- Operating Line
 - Service Discontinued
 - Operator
 - Owner (If Other than Operator)
 - Company Having Trackage Rights
 - Airports (Open to the Public, Military)
 - Runway under 4000'
 - Runway over 4000'

- Rest Areas**
- Food, Gas, Rest Rooms
 - Gas, Rest Rooms
 - Rest Rooms
 - Parking Only
- RECREATION FACILITIES**
- State or National Recreation Area
 - State Campground
 - State Boat Launching Site
 - State Canal Park
 - State Fish Hatchery
 - Other State Recreation Site

ERIE and NIAGARA COUNTIES

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

LOCATION OF COMMUNITY WATER SYSTEM SOURCES-1982



SCALE 1:250,000
5 MILES
NORTH

ERIE COUNTY

IO NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Akron Village (See No 1 Wyoming Co, Page 10)	3640	.Wells
2	Angola Village	3600	.Lake Erie
3	Buffalo City Division of Water	357870	.Lake Erie
4	Barrie Water Company	700	.Wells
5	Collins Water District #3	700	.Wells
6	Collins Water Districts #1 and #2	1384	.Wells
7	Erie County Water Authority (Sturgeon Point Intake)	375000	.Lake Erie
8	Erie County Water Authority (Van DeWater Intake)	.NA.	.Niagara River - East Branch
9	Grand Island Water District #2	9390	.Niagara River
10	Holland Water District	1670	.Wells
11	Lawtons Water Company	138	.Wells
12	Lockport City (Niagara Co)	.NA.	.Niagara River - East Branch
13	Niagara County Water District (Niagara Co)	.NA.	.Niagara River - West Branch
14	North Collins Village (Niagara Co)	1500	.Wells
15	North Tonawanda City (Niagara Co)	1500	.Wells
16	Orchard Park Village	3671	.Niagara River - West Branch
17	Springville Village	4169	.Pipe Creek Reservoir
18	Tonawanda City	18538	.Wells
19	Tonawanda Water District #1	91269	.Niagara River - East Branch
20	Manakah Water Company	10750	.Lake Erie

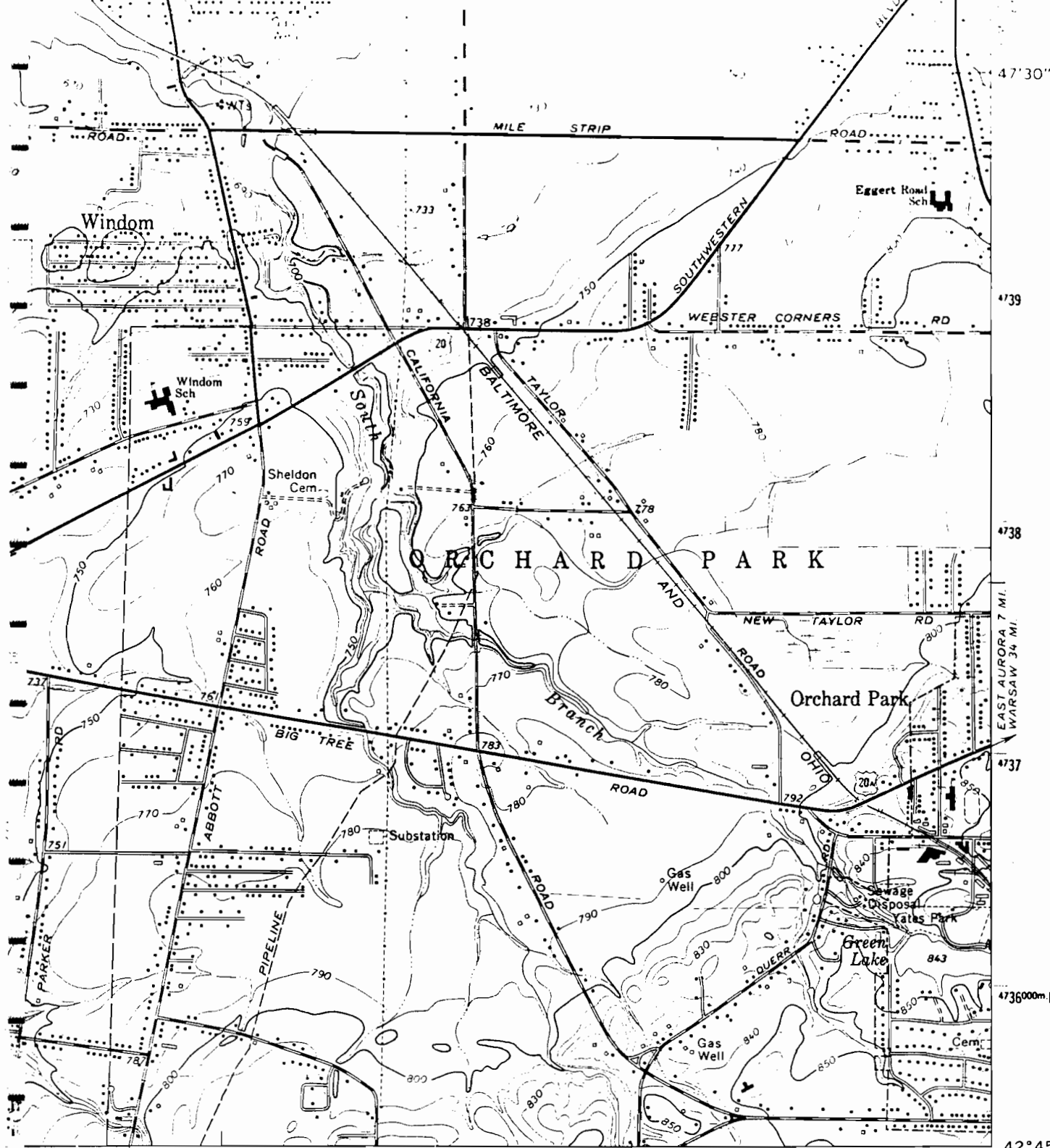
Non-Municipal Community

22	Aurora Mobile Park	125	.Wells
23	Burgess Mobile Home Park	270	.Wells
24	Circle Court Mobile Park	50	.Wells
25	Circle Court Mobile Park	125	.Wells
26	Creekside Mobile Home Park	120	.Wells
27	Donnelly's Mobile Home Court	99	.Wells
28	Gowanda State Hospital	.NA.	.Clear Lake
29	Hillside Estates	160	.Wells
30	Hunters Creek Mobile Home Park	150	.Wells
31	Knox Apartments	NA.	.Wells
32	Maple Grove Trailer Court	102	.Wells
33	Maple Grove Mobile Park	175	.Wells
34	Paradise Park	75	.Wells
35	Quarry Hill Estates	400	.Wells
36	Springville Mobile Park	114	.Wells
37	Springwood Mobile Village	132	.Wells
38	Taylor's Grove Trailer Park	39	.Wells
39	Valley View Mobile Court	42	.Wells
40	Villager Apartments	NA.	.Wells

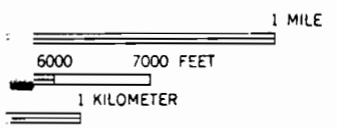
NIAGARA COUNTY

IO NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Lockport City (See No 12, Erie Co)	25000	.Wells (Springs)
	Midreport Village District (See No 13 Erie Co)	2000	.Wells
2	Niagara Falls City (See also No 14 Erie Co)	77384	.Niagara River - East Branch
	North Tonawanda City (See No 16 Erie Co)	36000	
Non-Municipal Community			
3	Country Estates Mobile Village	28	.Wells

10



ARMOR 0.7 MI. 47°30" 681 682000m E. 42°45' 78°45'



568.6 FEET

STANDARDS
 W. D. C. 20242
 AVAILABLE ON REQUEST



QUADRANGLE LOCATION

ROAD CLASSIFICATION

- Heavy-duty ————— Light-duty —————
- Medium-duty ————— Unimproved dirt —————
- Interstate Route U.S. Route State Route

GOLDEN
 5269 IV NW

BUFFALO SE, N. Y.
 SE/4 BUFFALO 15' QUADRANGLE
 N4245—W7845/7.5

1965

AMS 5269 IV SE—SERIES V821

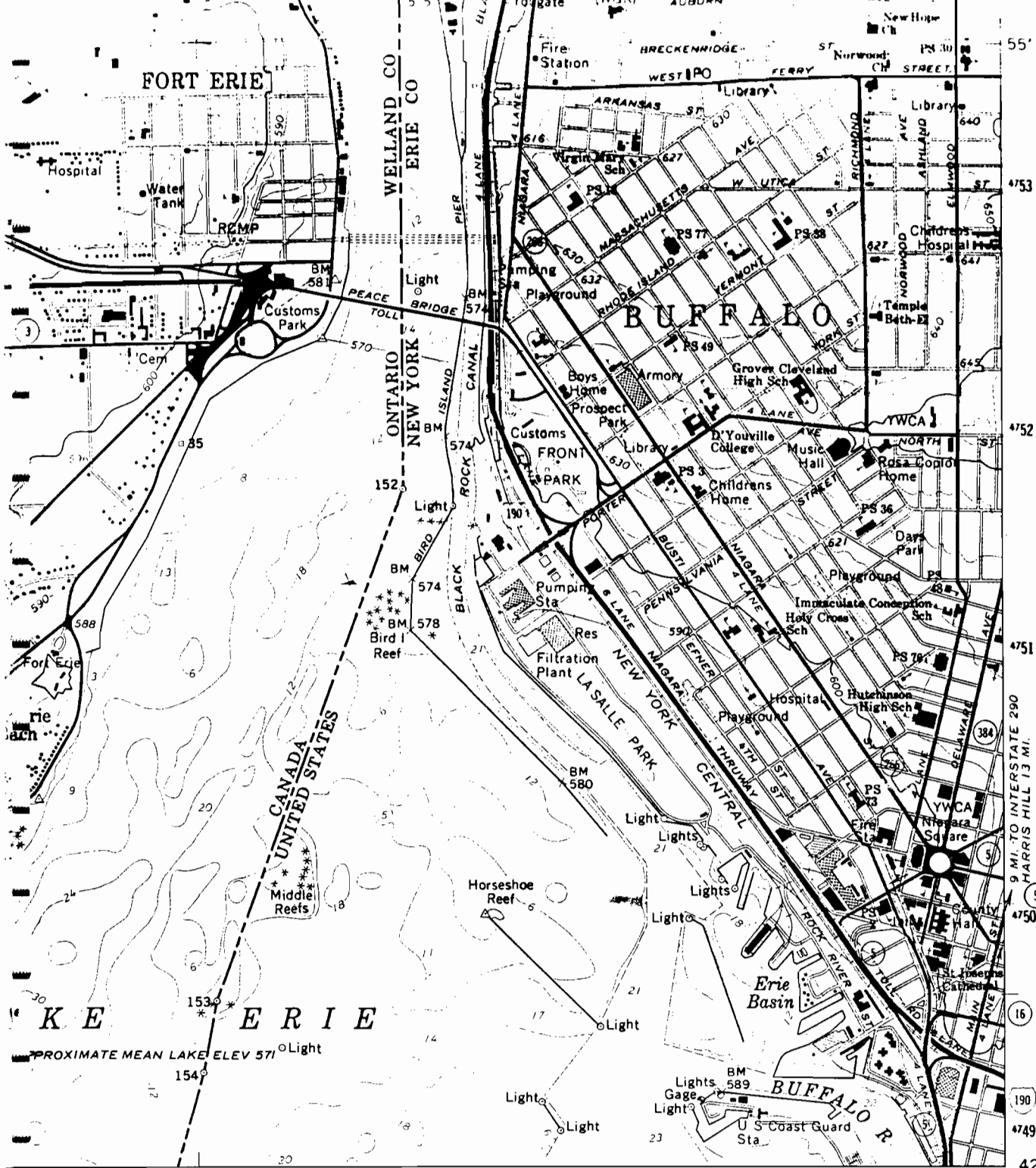
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

10

MI. TO INTERSTATE 290 190 675000m. E. 676 50' 678 5269 IV NE (BUFFALO NE)



10



670 55' 671000m.E 78°52'30" 42°52'30"

INTERIOR—GEOLOGICAL SURVEY WASHINGTON D C—1967
 (BUFFALO SE) LACKAWANNA 4.3 MI.
 5269 IV SE MT. VERNON 9 MI.

ROAD CLASSIFICATION

Heavy-duty	—————	Light-duty	—————
Medium-duty	—————	Unimproved dirt	-----

○ Interstate Route ○ State Route

BUFFALO NW, N.Y.—ONT.
 NW/4 BUFFALO 15' QUADRANGLE
 N4252.5—W7852.5/7.5

1965
 AMS 5269 IV NW—SERIES V821

1 MILE
 7000 FEET
 1 KILOMETER

3.6 FEET

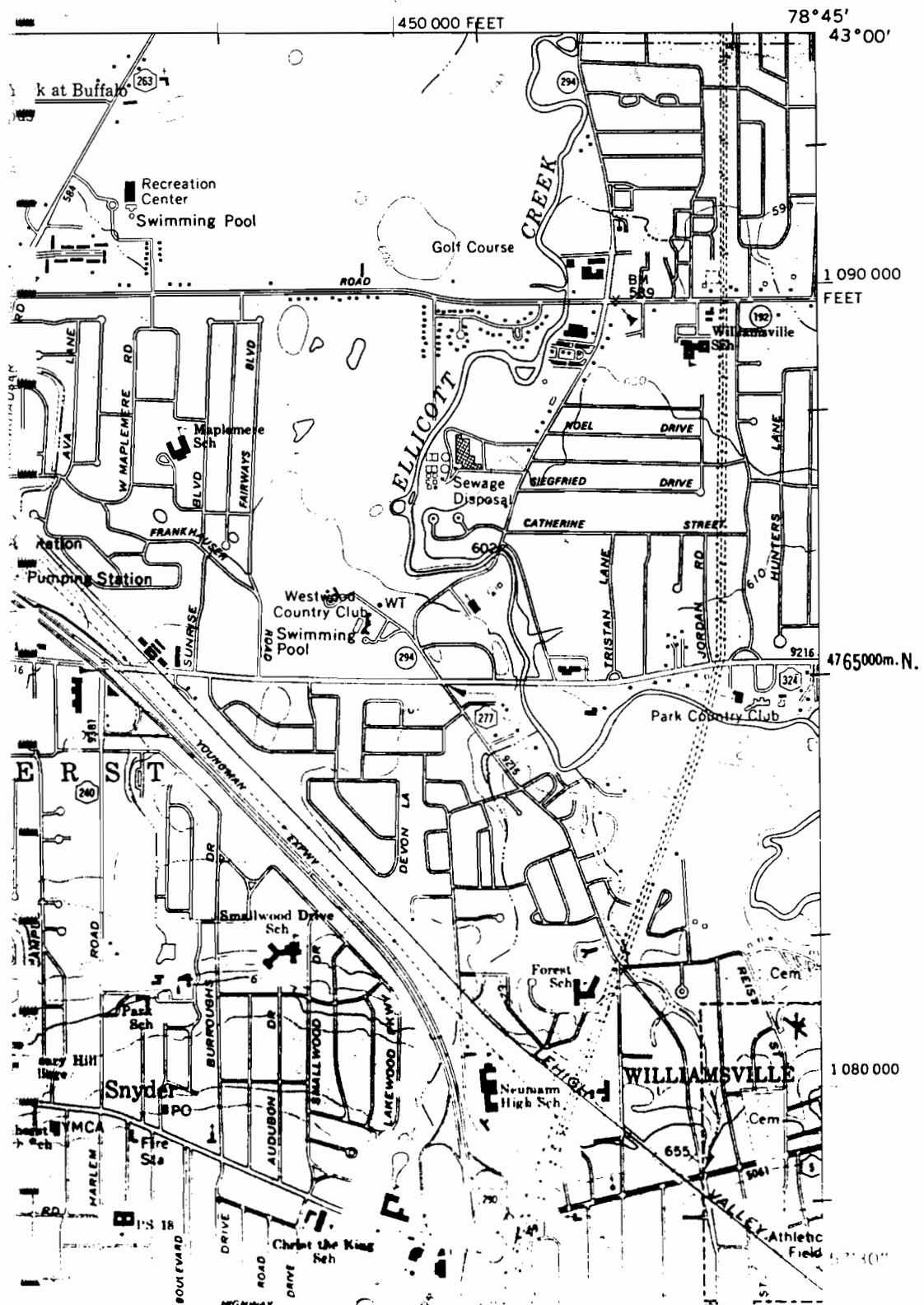
NEW YORK
 QUADRANGLE LOCATION

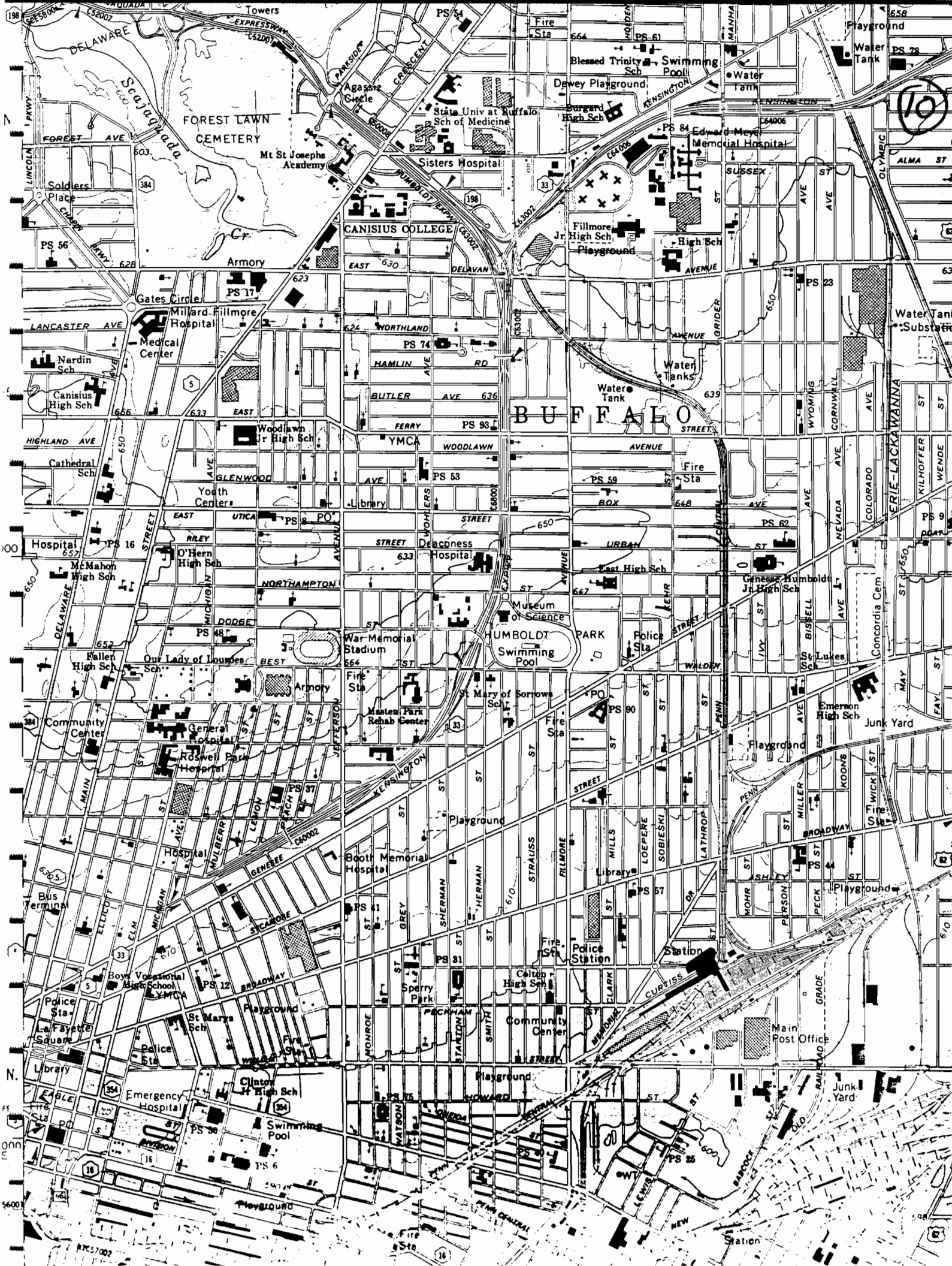
STANDARDS
 DEC. 20242
 REE ON REQUEST

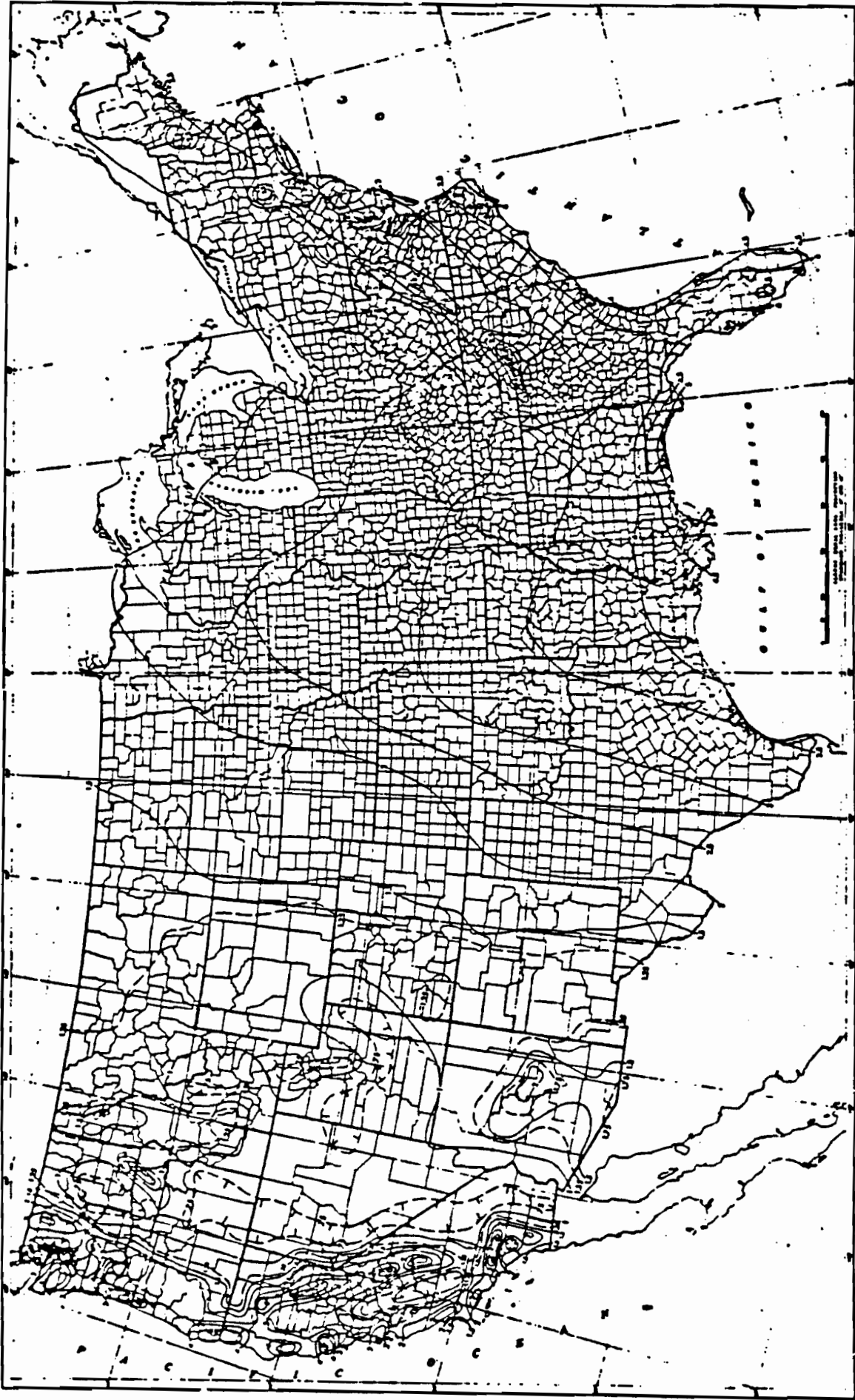
427786 DP

BUFFALO NE QUADRANGLE
NEW YORK-ERIE CO.
7.5 MINUTE SERIES PLANIMETRIC
NE/4 BUFFALO 15' QUADRANGLE

CLARENCE CENTER







Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

FIGURE 8
1-YEAR 24-HOUR RAINFALL
(INCHES)

(=)

(12)

HAZARDOUS WASTE SITE PROFILE

MacNaughton-Brooks, Inc.

City of Buffalo

Site # 915034

Prepared by Erie County
Dept. Env. & Planning
MARCH 1982

MacNaughton-Brooks, Inc.

717 Elk Street

Buffalo, New York

(12)

The Interagency Task Force (IATF), in Volume 3 of Hazardous Waste Disposal Sites in New York State, reported that 600 gallons total of xylol, toluol and paint sludges were landspread onto bricks in the rear of the plant. The site is coded "F" indicating that no in-place toxics are present in dangerous amounts and that no further action would be required.

BACKGROUND INFORMATION

The MacNaughton-Brooks Company was incorporated in New York in 1960, and started operations in Buffalo at that time. The Company manufactures paint products.

Waste products consist of solvents and solvent sludge (water, solvent, paint powder). From 1960 to 1966 about 100 gallons per year of waste solvents were poured onto bricks and other demolition material in the back of the plant. The Company had indicated that there has not been any on-site waste disposal since 1966. ^{Since then} All wastes are ~~now~~ handled by Newco Chemical Waste Systems.

AERIAL PHOTOGRAPHY

Aerial photographs for the years 1950, 1958, 1960 and 1972 were evaluated. No evidence of landfilling was observed.

SITE INSPECTION

The disposal site is approximately 20 feet by 20 feet and is about 6 feet high. There was no evidence of leachate or ground staining or odors at the site. The disposal site is overgrown with heavy weed growth (Exhibit 2).

ENVIRONMENTAL DATA

General soil map and interpretations for Erie County by the U.S.D.A. Soil Conervations Service (1979) reports that the soils in the area are Urban Land-Niagara. This unit consists of nonsoil areas and deep somewhat poorly drained silty soils.

The Urban land (nonsoil) portion of this unit is covered by man-made structures. In these areas the ^{SURFACE} soil layers have been disturbed or removed. The undisturbed areas of this unit are dominated by Niagara soils that were formed in silty, gravel and stone-free, lake-laid sediments. The Niagara soils are somewhat poorly drained and have a seasonal high water table in the upper part of the subsoil during the spring and other excessively wet periods. The rate of water movement (permeability) through the soil layers is moderately slow. Depth to bedrock in the area ranges between 20 to 40 feet.

The disposal area is approximately 600 feet north of the Buffalo River. The site is not within the 100 year flood plain of the Buffalo River. Surface drainage from the area would run southwest to the Buffalo River. No other surface waters are within a 1 mile radius of the disposal site.

The U.R.S. Study reports a "miscellaneous" natural groundwater table.

GEOGRAPHIC DATA

Land use within a 1-mile radius of the disposal site is commercial, residential and industrial. The 1980 census reports that the population in this area is over 10,000. There are no known private drinking water wells within the City of Buffalo. All residents receive their water supply from a City of Buffalo municipal water supply system which comes from the mouth of the Niagara River.

DIRECT CONTACT

There is no access control on site. However, the area is private property and the only contact that could be expected would be by MacNaughton-Brooks employees.

FIRE OR EXPLOSION POTENTIAL

There is no evidence that this site represents a fire or explosion potential.

CONCLUSIONS

There is no evidence that this area was ever used as a landfill or that substantial quantities of hazardous materials were disposed of. The solvents which were disposed of on the site would have evaporated by this time leaving a minute residue along with small amounts of paint pigment.

TABLE 2.7
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB'S

All results reported as ug/Kg.

Sample Identification

<u>Dilution Factor</u>	<u>288.0</u>	<u>1,380.0</u>	
	1019	1019	
<u>Method Blank I.D.</u>	<u>-B02</u>	<u>-B02</u>	
<u>Compound</u>	<u>SS- 1.11</u>	<u>SS- 2.11</u>	<u>Lower Limits of Detection with no Dilution</u>
alpha BHC	U	U	8.0
beta BHC	U	U	8.0
delta BHC	U	U	8.0
gamma BHC	U	U	8.0
Heptachlor	U	21,000	8.0
Aldrin	U	U	8.0
Heptachlor Epoxide	U	U	8.0
Endosulfan I	U	U	8.0
Dieldrin	U	U	16
4,4' DDE	U	U	16
Endrin	U	U	16
Endosulfan II	U	U	16
4,4' DDD	U	U	16
Endosulfan Sulfate	U	U	16
4,4' DDT	U	U	16
Methoxychlor	U	U	80
Endrin Ketone	U	U	16
alpha Chlordane	U	78,000	80
gamma Chlordane	U	92,000	80
Toxaphene	U	U	160
Aroclor - 1016	U	U	80
Aroclor - 1221	U	U	80
Aroclor - 1232	U	U	80
Aroclor - 1242	U	U	80
Aroclor - 1248	U	U	80
Aroclor - 1254	U	U	160
Aroclor - 1260	U	U	160

U - See Appendix for definition.

Stream Classification

6 NYCRR Volume E

To Name	Stream	Classif.	Standards	Reference		
				Article	Part #	Map
Luille	Delaware R.	A	A(T) Tent.	4	815	N-19
al team	Fall Kill	C	C	10	862	N-24
anton	McTame R.	C	C(T)	7	830	G-26
Copeland	Valatie Kill Trib.	D	D	10	863	K-25 se
in Breen	Waterbase Creek	D	D	14	897	G-14 se
	Cowego River	C	C	14	897	G-14 se
le Roy	Mud River	D	D	5	821	J-8 NW
	Trib. to Catskill Creek	D	D			
Ontario Tribe	Ishua Creek	C	C(T)	1	801	1
Buffalo Pumps	Niagara River	A*	A*	8	837	2
Watt-Litchman	Senjagade Creek	B	B	8	837	6
McNaughton Brook	Buffalo River	D	D	8	837	6
William Byden	Niagara River	A*	A*	8	837	1
Josh Rd	Snyper Creek	D	D	8	837	2
Water Res.	N. Branch Plum ^{Bottom} Creek	D	D	8	837	7
Mina	French Creek Trib.	D	D	1	800	2
Fox Rd. area	Jenning Creek	B	B	8	837	10
Allied	Buffalo R.	D	D	8	837	6
Island	Niagara R.	A*	A*	8	837	6
	Two Mile Creek	B	B	8	837	2
pt. Rock						
Quondago L.						
SWOCO						

100 French Creek D. Basin / 801 - Open Creek / 837 L. Co. N. River D. Basin / 897 Cowego R. in fr.

New York State Department of Environmental Conservation
FISH AND WILDLIFE DIVISION - REGION 9
600 Delaware Avenue, Buffalo, New York 14202-1073
(716) 847-4550



Thomas C. Jorling
Commissioner

September 2, 1987

Ms. Elizabeth M. Dobson
Engineering-Science
290 Elwood Davis Road
Liverpool, New York 13088

Dear Ms. Dobson:

This letter will serve as verification that I traced NYS designated wetland boundaries on the accompanying maps. The boundaries shown are from official Department of Environmental Conservation Maps promulgated on September 10, 1986 (Erie County) and December 5, 1984 (Niagara County).

Very truly yours,

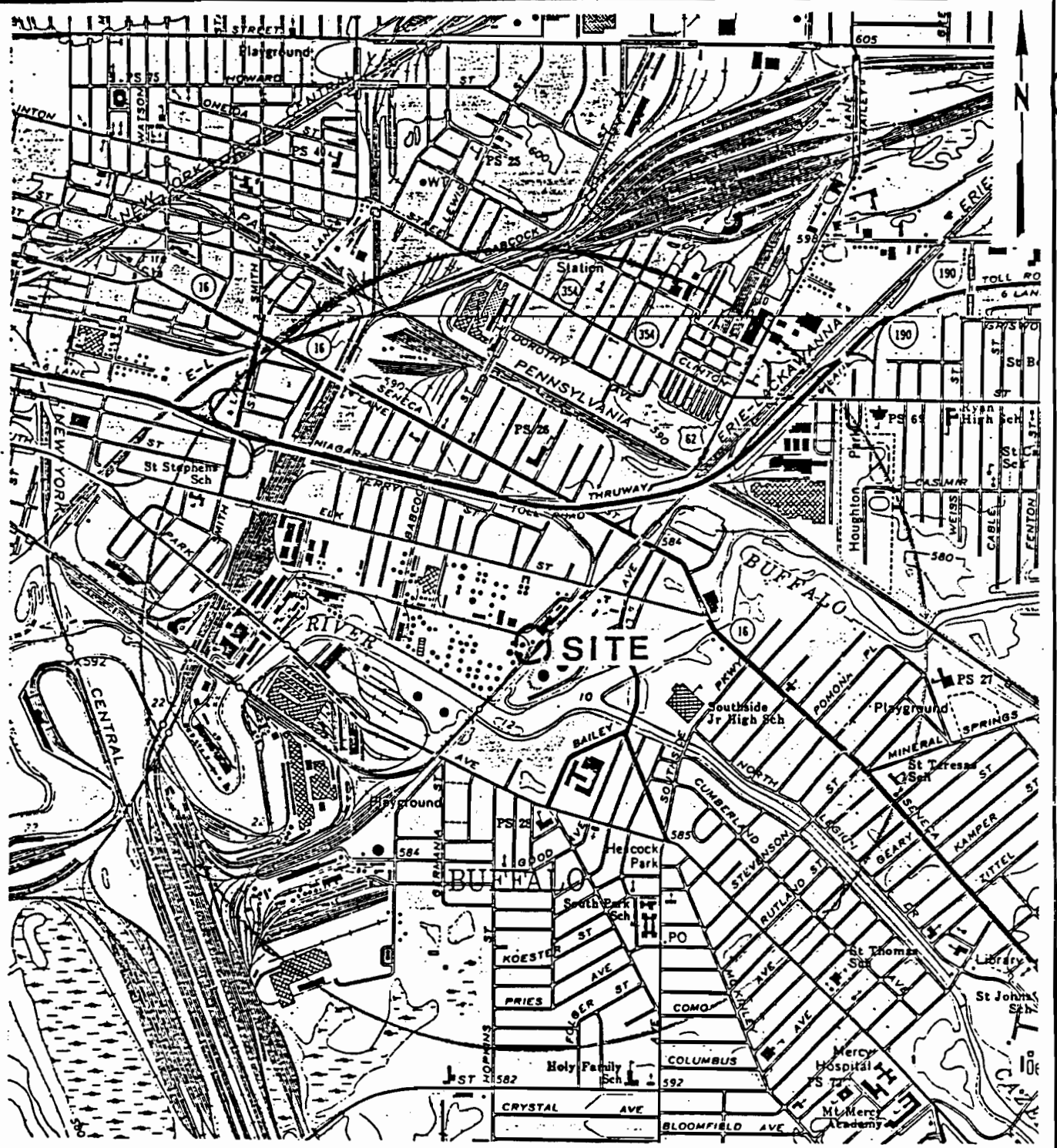
A handwritten signature in cursive script that reads "James F. Farquhar III".

James F. Farquhar III
Fish and Wildlife Division

JFF:slm

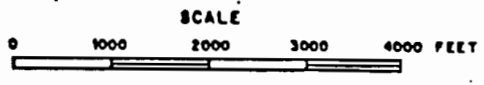
cc: Mr. Gordon R. Batcheller

Enclosures



LATITUDE: 42°51'49"
 LONGITUDE: 78°49'49"

Erie County



ENGINEERING-SCIENCE, INC. IN ASSOCIATION WITH DAMES & MOORE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PHASE I REPORT
SITE LOCATION MAP McNAUGHTON BROOKS
FIGURE iv-1

REFERENCE: U.S.G.S. 7.5' Topographic Map
 Buffalo-SE, NY (1965) and Buffalo NE, NY
 (1965) Quadrangles

INTERVIEW FORM

INTERVIEWEE/CODE John W. Ozard /

TITLE - POSITION Senior Wildlife Biologist

ADDRESS WRC New York State DEC

CITY Delmar STATE NY ZIP 12054

PHONE (518) 439-7488 RESIDENCE PERIOD _____ TO _____

LOCATION: phone conversation INTERVIEWER W. Bradford

DATE/TIME 4/14/88 / 11:00 AM

SUBJECT: Critical habitats in New York state.

REMARKS: There are no federally designated
critical habitats of endangered species
located within New York state.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

John W. Ozard

SIGNATURE: John W. OZARD

COMMENTS:

US CENSUS DATA, 1980

US Census Data used in the HRS scoring was obtained from various County Planning Offices. This data was not obtained from a report. The raw census data combined with County Planning Maps was used to estimate the population within 1, 2, 3, and 4 miles of the Phase II site being investigated. Because of the voluminous amount of data used, the data are not provided.

18

NATIONAL REGISTER OF HISTORIC PLACES

ANNUAL LISTING OF PROPERTIES

JANUARY 1979 THROUGH DECEMBER 1982



U.S. DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

JULY 1983

174 207-2-13

Federal Register

Tuesday
March 1, 1983

19

Part III

Department of the
Interior

National Park Service

National Registry of Natural Landmarks

20

JOB NO. S7012.11

FILE DESIGNATION Background

DATE 1/9/89 TIME 11:30 AM

PHONE CALL FROM W. Bradford PHONE NO. _____

PHONE CALL TO _____ PHONE NO. _____

CONFERENCE WITH _____

PLACE _____

SUBJECT ES Field Investigations, 1987-88, at
the MacNaughton-Brooks site

During the course of ES field investigations the following features of the site and vicinity were noted:

- 1) The Buffalo River is used for commercial shipping and recreational boating.
- 2) The site is located in a commercial/industrial area.
- 3) There is a residential area approximately 0.15 miles from the site.
- 4) The nearest building is a warehouse which is less than 50 feet from the disposal area.
- 5) The site is not completely surrounded by barriers.

Additionally, no measurements of the potential for fire and explosion were taken onsite.

SIGNED William Bradford

INTERVIEW FORM

INTERVIEWEE/CODE Mr. DISON, Gro-Green Fertilizer Co 1
 TITLE - POSITION OWNER
 ADDRESS 717 Elk Street
 CITY Buffalo STATE NY ZIP 14210
 PHONE (716) 926-3300 RESIDENCE PERIOD _____ TO _____
 LOCATION During site inspection INTERVIEWER S. Robert STEELE, II
 DATE/TIME 3/18/85 2³⁰ PM 1
 SUBJECT: DISPOSAL AREA

REMARKS: The demolition debris pile, previously used to dispose of solvents and waste paint residues by MacNaughton-Brook from 1960-1966 has been removed off-site. The area where disposal activities previously occurred is plagued by scavenger dumping including tires, scrap metal etc. The site is not currently used to dispose of chemical wastes. Further, the Gro-Green Fertilizer Company is engaged in the formation of fertilizer blends and as hazardous wastes are generated from this business activity. The Old Feed Company is the owner of the property located at 717 Elk Street, Buffalo, NY and Gro-Green Fertilizer Co leases the property.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE: W. A. Olson 4/9/85

COMMENTS:

HAZARDOUS WASTE SITE PROFILE

MacNaughton-Brooks, Inc.

City of Buffalo

Site # 915034

Prepared by Erie County
Dept. Env. & Planning
MARCH 1982

MacNaughton-Brooks, Inc.

117 Elk Street

Buffalo, New York

22

The Interagency Task Force (IATF), in Volume 3 of Hazardous Waste Disposal Sites in New York State, reported that 600 gallons total of xylol, toluol and paint sludges were landspread onto bricks in the rear of the plant. The site is coded "F" indicating that no in-place toxics are present in dangerous amounts and that no further action would be required.

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Waste products consist of solvents and solvent sludge (water, solvent, paint powder). From 1960 to 1966 about 100 gallons per year of waste solvents were poured onto bricks and other demolition material in the back of the plant. The Company had indicated that there has not been any on-site waste disposal since 1966. ^{Since then} All wastes are ~~now~~ handled by Newco Chemical Waste Systems.

AERIAL PHOTOGRAPHY

Aerial photographs for the years 1950, 1958, 1960 and 1972 were evaluated. No evidence of landfilling was observed.

SITE INSPECTION

The disposal site is approximately 20 feet by 20 feet and is about 6 feet high. There was no evidence of leachate or ground staining or odors at the site. The disposal site is overgrown with heavy weed growth (Exhibit 2).

ENVIRONMENTAL DATA

General soil map and interpretations for Erie County by the U.S.D.A. Soil Conservation Service (1979) reports that the soils in the area are Urban Land-Niagara. This unit consists of nonsoil areas and deep somewhat poorly drained silty soils.

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The disposal area is approximately 600 feet north of the Buffalo River. The site is not within the 100 year flood plain of the Buffalo River. Surface drainage from the area would run southwest to the Buffalo River. No other surface waters are within a 1 mile radius of the disposal site.

The U.R.S. Study reports a "miscellaneous" natural groundwater table.

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Land use within a 1 mile radius of the disposal site is commercial, residential and industrial. The 1980 census reports that the population in this area is over 10,000. There are no known private drinking water wells within the City of Buffalo. All residents receive their water supply from a City of Buffalo municipal water supply system which comes from the mouth of the Niagara River.

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There is no access control on site. However, the area is private property and the only contact that could be expected would be by MacNaughton-Brooks employees.

FIRE OR EXPLOSION POTENTIAL

There is no evidence that this site represents a fire or explosion potential.

CONCLUSIONS

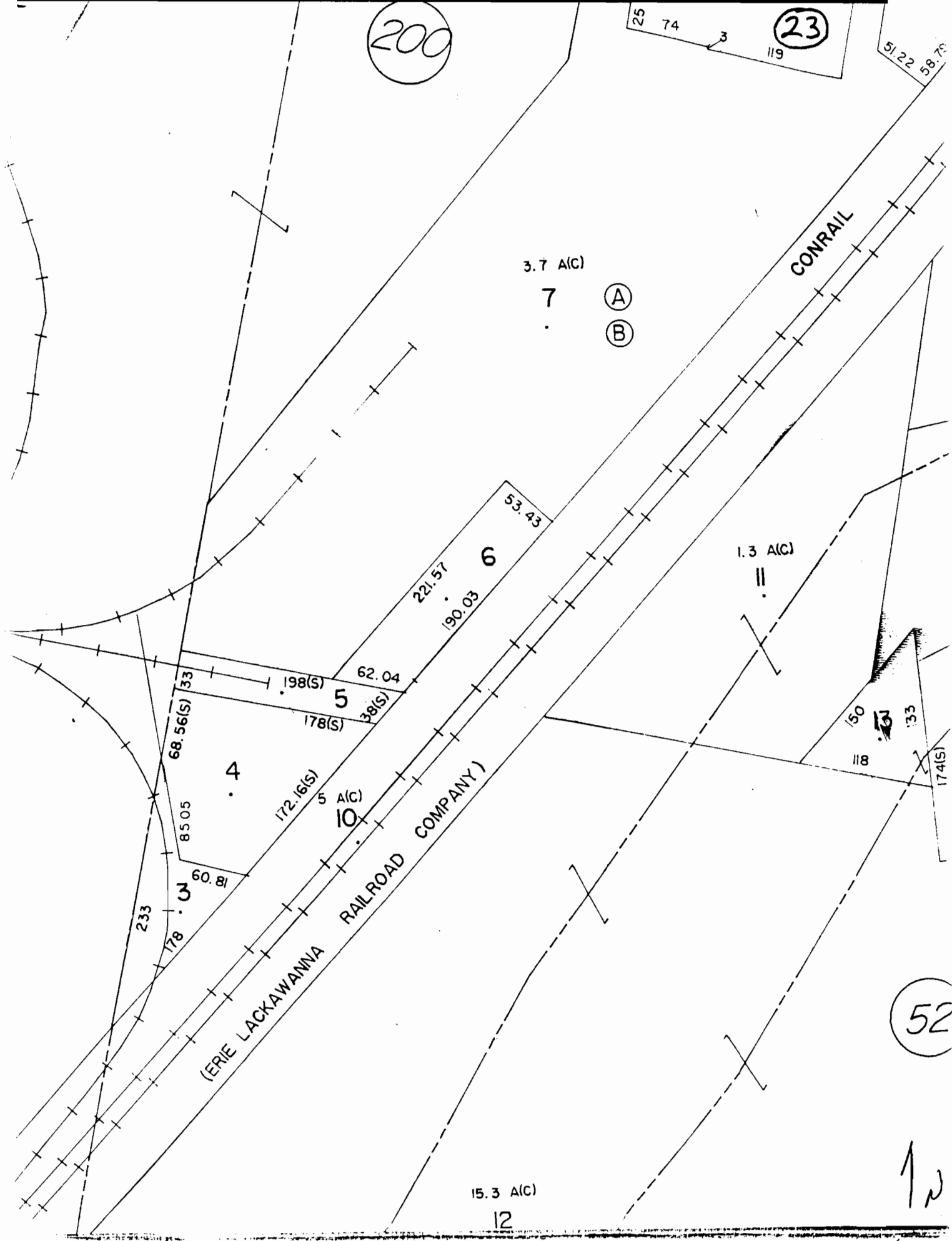
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MacNaughton-Brooks, Inc.
Page 4

There is no evidence which would indicate that this site has sufficient quantities of waste material to represent a health hazard or pose as a degradation to the environment.

RECOMMENDATION

We concur with the IATF's report findings and recommend no further action is necessary.



223 Mobil
4-7 Dold Feed Co.

Mc Naughton - Brooks Buffalo
1" = 100
123.13-1

DRAFT

**ENGINEERING INVESTIGATIONS AT
INACTIVE HAZARDOUS WASTE SITES
IN THE STATE OF NEW YORK
PHASE II INVESTIGATIONS**

**ALLIED CHEMICAL, INDUSTRIAL CHEMICAL DIVISION SITE
NYS SITE NUMBER 915004
CITY OF BUFFALO
ERIE COUNTY
NEW YORK STATE**

Prepared For

**DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233-0001**

Prepared By

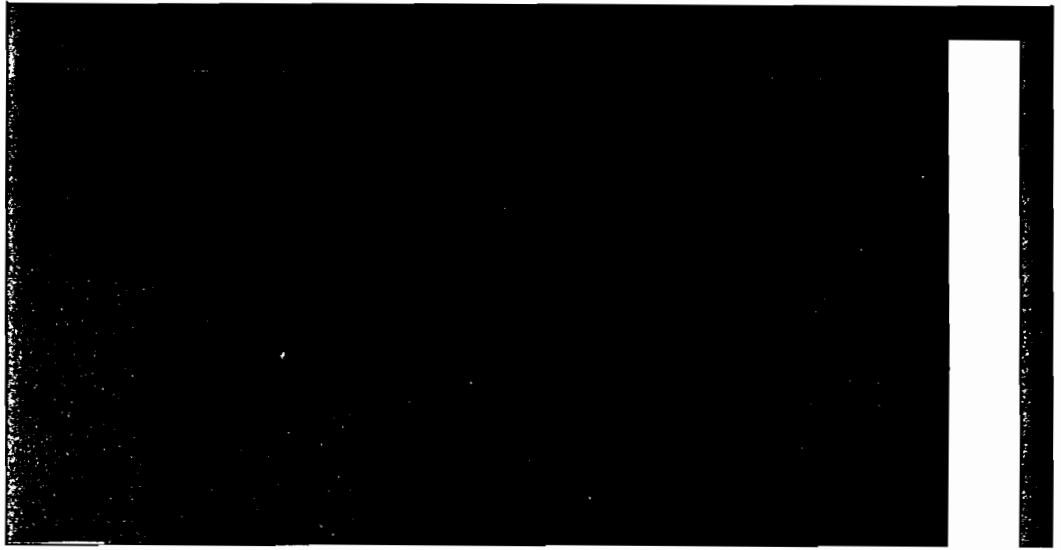
**ENGINEERING-SCIENCE, INC.
290 ELWOOD DAVIS ROAD
LIVERPOOL, NEW YORK 13088**

FEBRUARY, 1989

Table IV-1
Site Stratigraphy Summary
Allied Chemical Site

Stratigraphic Unit	GW-1 (582.8)	GW-2 (582.7)	GW-3 (581.7)	GW-4 (581.6)	B-1 (584.4)	B-2 (582.9)
Fill	0 - 3.0	0 - 6.0	0 - 3.0	0 - 3.0	0 - 8.0	0 - 13.0
Alluvial Silt and Clay or Fine Sand and Silt	3.0 - 8.0	6.0 - 21.0	3.0 - 15.5	3.0 - 15.5	8.0 - 26.0	13.0 - 24.5
Alluvial/Outwash Sand and Gravel	8.0 - 26.0	21.0 - 26.5	15.5 - 26.0	15.5 - 26.0		
Lacustrine Clay and Silt	26.0 - 28.0	26.5 - 27.0	26.0 - 27.0	26.0 - 50.0	26.0 - 50.0	24.5 - 49.5
Glacial Till				50.0 - 53.0	50.0 - 50.5	49.5 - 50.5
Limestone Bedrock				53.0 - 62.0	50.5 - 55.0	50.5 - 55.0

Note: All depths are in feet below ground surface.
Ground surface elevations are in parentheses. Elevations are in feet above mean sea level.



R. Allan Freeze

Department of Geological Sciences
University of British Columbia
Vancouver, British Columbia

John A. Cherry

Department of Earth Sciences
University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

Conductance
so petroleum
substituted

(2.29)

will lead to
a hydraulic
analysis approxi-

or hydraulic
terms of Eq.

regard to this
point. However,
used this formal
of measure-
can influence
(2). The effect is
makes good
been carried
ment are very
dependent on the
rather than con-

ity and perme-
al materials.
review. The
hydraulic conductivity
that take on
implies that
be very useful.
probably has

common units
be converted to
in from ft² to

Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

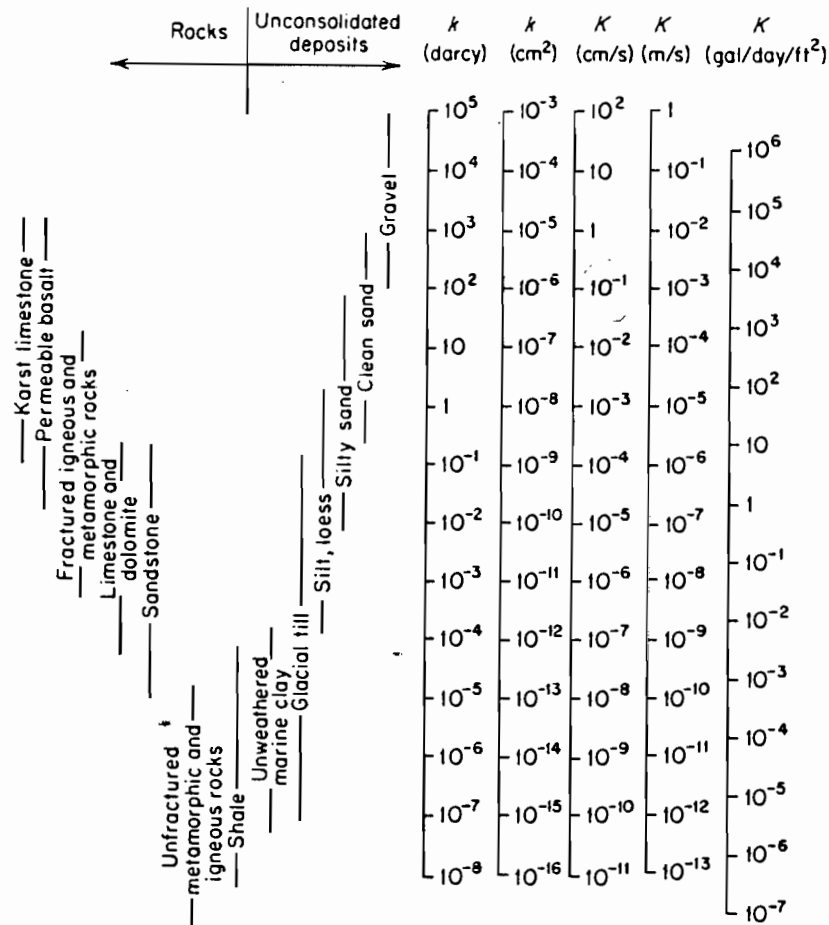


Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm ²	ft ²	darcy	m/s	ft/s	gal/day/ft ²
cm ²	1	1.08 × 10 ⁻³	1.01 × 10 ⁸	9.80 × 10 ²	3.22 × 10 ³	1.85 × 10 ⁹
ft ²	9.29 × 10 ²	1	9.42 × 10 ¹⁰	9.11 × 10 ⁵	2.99 × 10 ⁶	1.71 × 10 ¹²
darcy	9.87 × 10 ⁻⁹	1.06 × 10 ⁻¹¹	1	9.66 × 10 ⁻⁶	3.17 × 10 ⁻⁵	1.82 × 10 ¹
m/s	1.02 × 10 ⁻³	1.10 × 10 ⁻⁶	1.04 × 10 ⁵	1	3.28	2.12 × 10 ⁶
ft/s	3.11 × 10 ⁻⁴	3.35 × 10 ⁻⁷	3.15 × 10 ⁴	3.05 × 10 ⁻¹	1	5.74 × 10 ⁵
gal/day/ft ²	5.42 × 10 ⁻¹⁰	5.83 × 10 ⁻¹³	5.49 × 10 ⁻²	4.72 × 10 ⁻⁷	1.74 × 10 ⁻⁶	1

*To obtain k in ft², multiply k in cm² by 1.08 × 10⁻³.

ES ENGINEERING - SCIENCE
INTERVIEW FORM

Interviewee/Code Mr. James Kotrys /

Title-Position Manager, Gro Green Products, Inc.

Address 717 Elk St.

City Buffalo State NY Zip 14210

Phone (716) 826-3300 Residence Period _____ to _____

Location Telephone Interviewer W. Bradford

Date/Time 1/11/89 11:45 AM

Subject: Ownership of Gro Green Products, Inc.

Remarks: Gro Green is a subsidiary of
The Dold Feed Company, both of
which are owned by Walter Olson
of Buffalo. Mr. Kotrys stated that,
as far as he knows, the Gro Green
property is officially owned by
The Dold Feed Company.

I agree with the above summary of the interview: _____

Signature: _____

Comments: _____

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK



Prepared for the
Erie-Niagara Basin Regional Water Resources
Planning Board

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

in cooperation with

THE NEW YORK STATE CONSERVATION DEPARTMENT
DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3

1968

MOREAU

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK

By
A. M. La Sala, Jr.

ABSTRACT

The Erie-Niagara basin, New York, borders Lake Erie and the Niagara River and includes the principal part of their drainage basin in New York. The area extends from the Cattaraugus Creek basin on the south to the Tonawanda Creek basin on the north. The northern part of the area and a narrow belt along Lake Erie are in the Erie-Ontario Lowlands, a region of low relief. The remainder of the area lies in the Appalachian Uplands, an area of considerable relief.

The principal water-bearing formations in the area are glacial sand and gravel deposits; the Camillus Shale, which contains interbedded gypsum; a limestone aquifer unit consisting of the Onondaga Limestone, Akron Dolomite, and Bertie Limestone; and the Lockport Dolomite. A number of thick and permeable sand and gravel deposits lie in valleys of the upland region and will yield supplies of 500 to 1,400 gpm (gallons per minute) to individual wells that are properly constructed. Several communities now obtain public water supplies from such deposits. The Camillus Shale, limestone unit, and Lockport Dolomite vary widely in water-bearing characteristics. Generally, only small to moderate supplies (less than 50 gpm) are available from these formations. However, where the water-bearing openings have been widened by solution of gypsum and carbonate minerals, the rocks provided large supplies. In and near Buffalo and Tonawanda, the Camillus Shale yields 400 to 1,200 gpm to individual wells, and the limestone unit yields as much as 300 gpm but more usually 100 gpm. The Lockport Dolomite does not yield more than 90 gpm to individual wells in the area. Data from nearby areas indicate the Lockport only occasionally yields as much as 100 gpm. Only small yields from wells, about enough for individual domestic supplies, can be obtained from shale, lake deposits, and till.

Average annual recharge to the sand and gravel deposits in the upland region ranges from about half a million to 4 million gallons per day per square mile. As the larger deposits are each several square miles in extent, the potential for development is large. To this potential should be added infiltration from streams that could be induced by pumping large quantities of ground water.

Stream Classification

6 NYCRR Volume E

Site Name	Stream	Classif.	Standards	Reference		
				Article	Part #	Map*
Andville	Delaware R	A	A(T) TRWT	4	815	N-19
Quail Run	Fall Kill	C	C	10	862	N-24
Norton	Mettance R	C	C(T)	7	830	G-26
Copeland	Volatic Kill Trib.	D	D	10	863	K-25 sc
Van Buren	Waterbase Creek	D	D	14	897	G-14 sc
	Oswego River	C	C	14	897	G-14 sc
Le Roy	Mud River	D	D	5	821	J-8 NW
	Trib to Oatka Creek	D	D			
Ontarioville	Ishua Creek	C	C(T)	1	801	1
Buffalo Pumps	Niagara River	A*	A*	8	837	2
Pratt & Letchworth	Senjagado Creek	B	B	8	837	6
MacNaughton Brook	Buffalo River	D	D	8	837	6
Whistler Ryder	Niagara River	A*	A*	8	837	1
Wash Rd	Sawyer Creek	D	D	8	837	2
Wester Rec.	N. Branch Plum Creek	D	D	8	837	7
Mina	French Creek Trib.	D	D	1	800	2
Fox Rd - Circ	Jenning Creek	B	B	8	837	10
Allied	Buffalo R.	D	D	8	837	6
Ashland	Niagara R	A*	A*	8	837	6
	Two Mile Creek	B	B	8	837	2
Split Rock						
Chondaga L.						
SWOCO						

800 - French Creek D. Basin / 801 - Oton Creek / 837 L. Crie - N. River D. Basin / 897 Oswego River Trib.

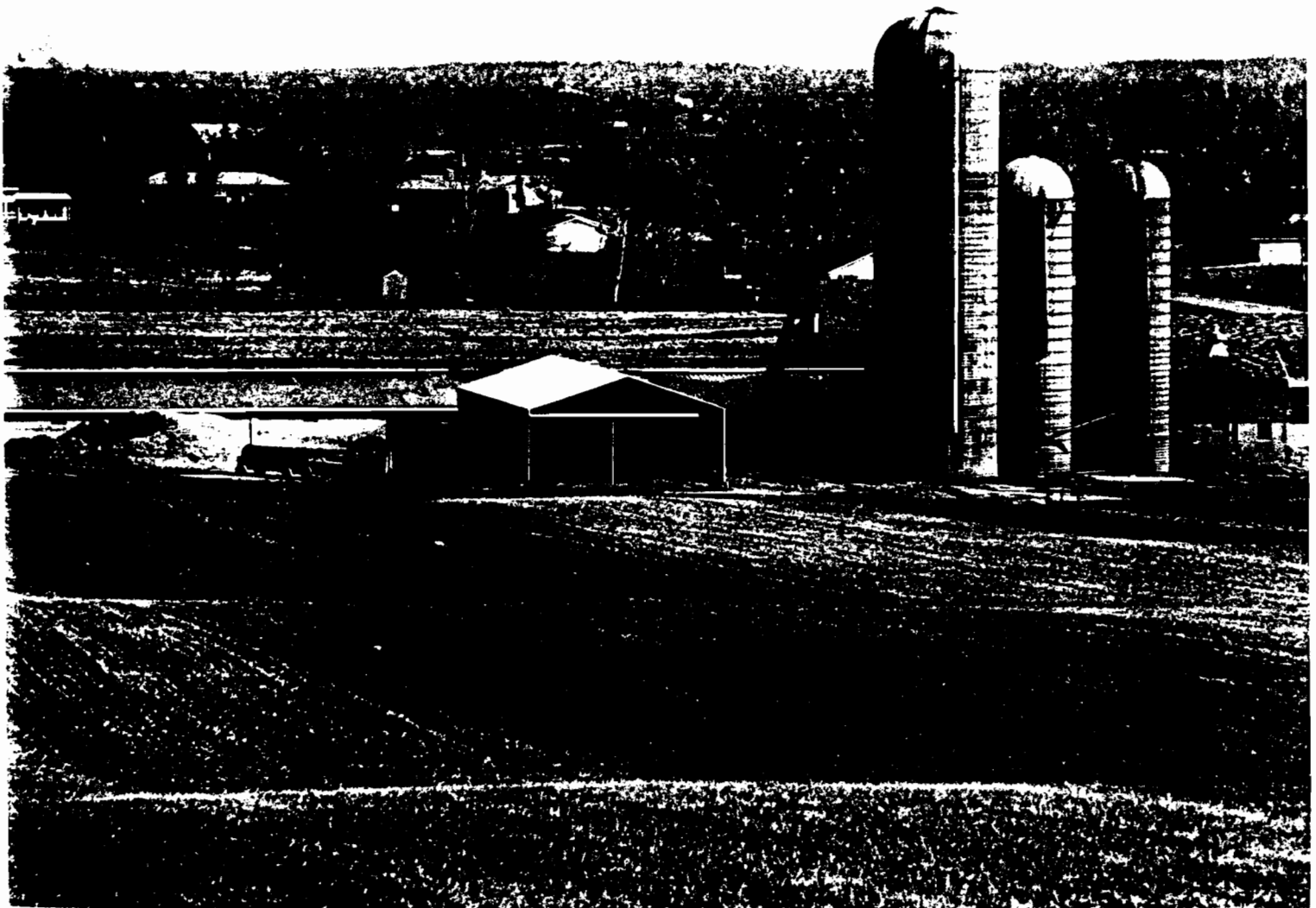
* - SPECIAL INTERNATIONAL boundaries with 862 Hudson 815 Delaware R / 830 Champlain - Mettance Sub-basin.

United States
Department of
Agriculture

In Cooperation with
the Cornell University
Agricultural
Experiment Station

Soil
Conservation
Service

Soil Survey of Erie County, New York



Cover crops and sod crops in the cropping system protect the surface from scour when flooding occurs. This nearly level soil is well suited to special crops that require irrigation and a stone-free plow layer.

This soil is also well suited to pasture and hay. Overgrazing can restrict plant growth and cause the loss of the pasture seeding. Proper stocking, rotation of pastures, yearly mowing, and deferment of grazing when the soil is wet are the main management concerns. Applications of lime are needed for optimum growth of pasture grasses.

The potential of this soil for wood crops is good. Only a small acreage is wooded. There are few limitations for timber production. Trees that require acid conditions do well on this soil.

Flooding is a serious limitation for most urban uses of this soil. Where the soil is used for septic tank absorption fields, pollution of the water supply can occur because of flooding and because the substratum is moderately to rapidly permeable. Some areas are well suited to recreational uses, such as athletic fields that require a gravel- and stone-free, nearly level site. This soil is an excellent source of topsoil.

This Tioga soil is in capability class I.

Uc—Udorthents, smoothed. These soils formed in deep manmade cuts or fills. Most of these areas are near industrial sites, urban developments, or construction sites. These soils consist of various kinds of excavated earthy material that has been stockpiled for use as fill or topdressing, soil and rock material that has been trucked from other areas and leveled, or soil deposits that are left in areas that have been excavated or deeply scalped. Fill material is variable in composition, but loamy, earthy material is dominant. In some places, the fill is mixed with slag or cinders around abandoned railroad yards. In other places, the earthy fill contains up to 10 percent concrete or asphalt and other trashy wastes.

This map unit is mainly nearly level or gently sloping. Some areas are steeper, particularly at the edge of cuts and along the sides of mounded fill. The areas are variable in shape, depending mostly on ownership boundaries. They range from 5 to 700 acres or more. The larger areas are in the city of Buffalo and adjacent suburbs near the larger industrial complexes.

Udorthents are too variable to have a typical profile, but in one of the more common profiles the surface layer is brown or grayish brown very gravelly loamy sand to silty clay loam 1 to 8 inches thick. The substratum is commonly light olive brown, brown, or dark yellowish brown and varies widely in texture from very gravelly loamy sand to silty clay.

Most areas are idle and support scattered weeds and grasses. A few areas have reverted to brush and tree saplings. Some areas, particularly around railroad yards, are used for urban development.

These Udorthents are mostly excessively drained to moderately well drained. Often the fill has been placed on very poorly drained to moderately well drained soils. Texture, stone content, soil reaction, and depth to bedrock vary considerably from one area to another. Bedrock, however, is usually at a depth of more than 5 feet. Depth to the seasonal high water table and permeability are variable and depend on topography, degree of compaction, soil texture, and other related factors.

These cut and fill areas are usually poorly suited to farm or recreational uses. Onsite investigation is essential to determine the feasibility of using areas for any purpose.

These Udorthents have not been assigned a capability subclass.

Ud—Urban land. This map unit is a miscellaneous area in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures. It includes parking lots, shopping and business centers, and industrial parks—in the cities of Buffalo and Lackawanna but also the business districts and adjacent shopping centers of villages in the suburban area near Buffalo. These areas generally range from 3 to 500 acres or more and are mostly nearly level to sloping.

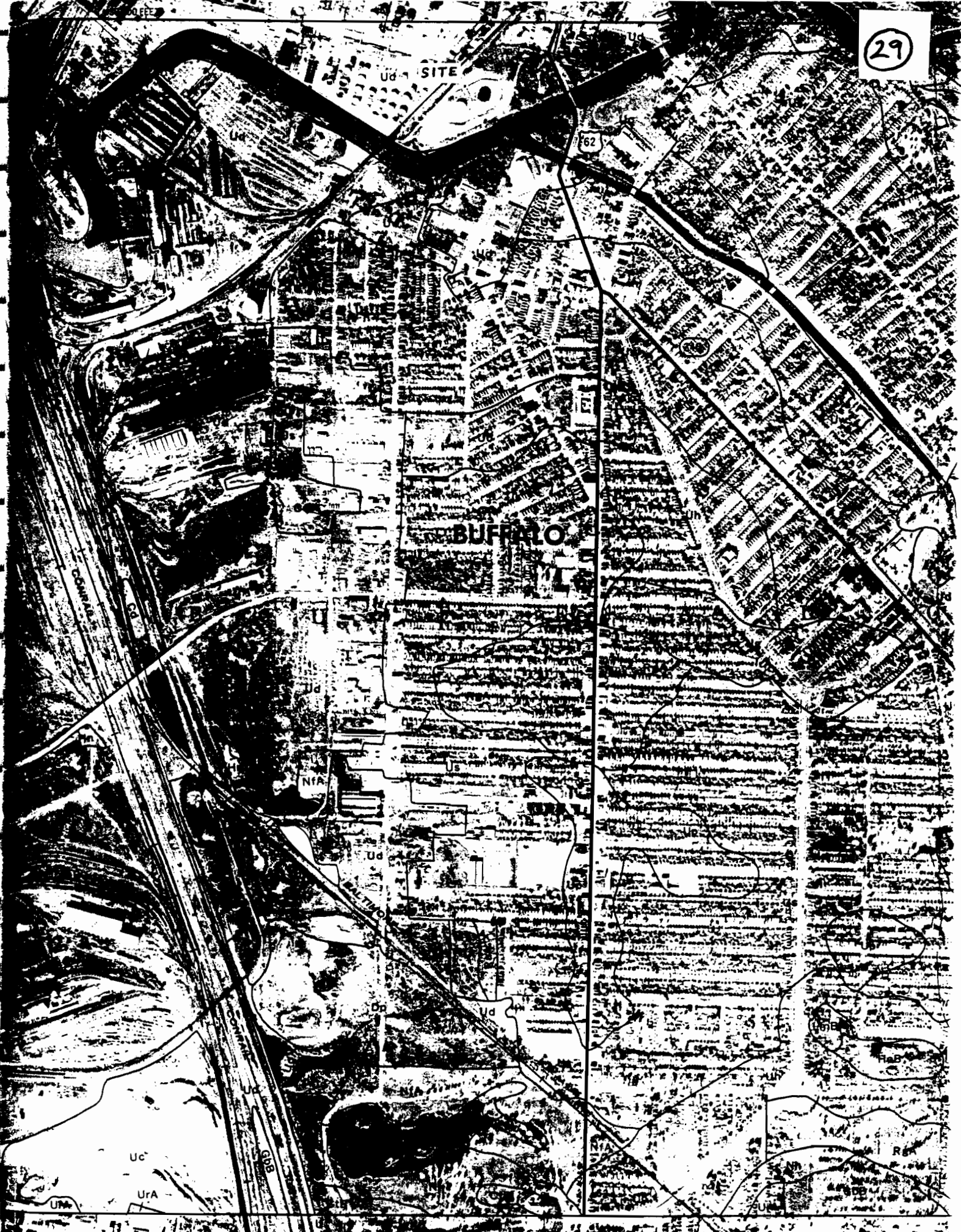
Included in mapping are some landfills that have not been built upon or covered with asphalt. In many of these, several feet of fill has been placed over marshes and flood plains. The included areas range up to 3 acres.

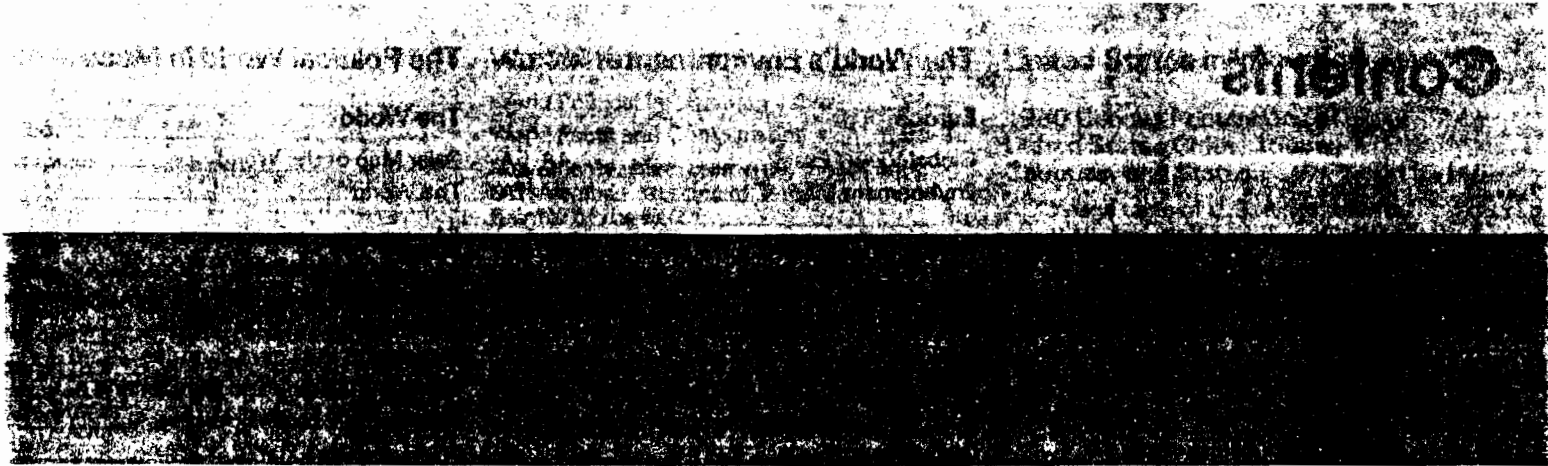
It was not practical to examine and identify the soils underlying these impervious Urban land areas. Careful onsite investigation is necessary to determine the suitability and limitations of any abandoned areas for any proposed use. Some abandoned areas are suitable for asphalt-covered playgrounds or other recreation uses requiring a hard, impervious surface.

These Urban lands have not been assigned a capability subclass.

UeB—Urban land-Benson complex, 3 to 6 percent slopes. This complex is made up of gently sloping areas of Urban land and excessively drained and somewhat excessively drained Benson soils. Some areas of the Benson soils have been graded, scalped, or filled during urbanization. This complex is underlain by shallow limestone bedrock. These areas are generally about 5 to 100 acres. Slopes are long and gradual and are occasionally interrupted by ledges of rock outcrop.

A typical area of this complex is about 60 percent Urban land that is covered by concrete, asphalt, buildings, or other impervious surfaces; about 25 percent undisturbed Benson soils; and 15 percent other soils. Urban land and Benson soils occur together in such an





World Atlas

CENSUS EDITION

RAND McNALLY & COMPANY
Chicago / New York / San Francisco

Table listing population data for various locations in New York, including Albany, Amsterdam, and Westchester County.

Table listing population data for various locations in New Mexico, including Albuquerque, Santa Fe, and Santa Rosa.

Table listing population data for various locations in New York, including Albany, Amsterdam, and Westchester County.

Population of entire township or town, including rural area. Independent city. Population not included in county total.

APPENDIX A
FIELD PROCEDURES

APPENDIX A

PHASE II FIELD PROCEDURES

These procedures have been utilized by Engineering-Science and NYSDEC field personnel during the Phase II field investigations. These procedures are taken from the NYSDEC-approved "Quality Assurance Project Plan for the Phase II Engineering Investigations and Evaluations at Inactive Hazardous Waste Disposal Sites", dated June, 1987.

The following procedures are contained in this appendix: drilling overburden and bedrock, monitoring well installations, well development, and sampling program, including groundwater sampling, surface soil sampling, and air monitoring.

DRILLING OVERBURDEN AND BEDROCK

The procedures utilized in drilling overburden and bedrock were taken from "Guidelines for Exploratory Boring, Monitoring Wells Installation, and Documentation of these Activities", as developed by NYSDEC. These procedures, as found in the project Work Plan and Quality Assurance Plan, were modified in the field with NYSDEC approval, in response to site-specific conditions encountered.

Prior to beginning each well boring, the downhole drilling equipment and tools were steam-cleaned. During the progress of the work, the downhole equipment and tools were generally placed on wooden pallets or on sheets of plastic to limit cross-contamination.

Drilling was accomplished with a Mobile B-61 truck-mounted drilling rig. Generally, the overburden was drilled with 4-1/4 inch inside diameter hollow-stem augers. In general, soil samples were collected at intervals of five feet and visually classified in terms of moisture content, color, texture, density, and structure. The soil samples were also screened with a Photovac Tip-II to determine the presence of volatile organic compounds. To accomplish this, the Photovac inlet tube was placed within one inch of the soil sample as the split-spoon was opened and the reading was recorded. The soil cuttings were also monitored with the Photovac. Since no readings in excess of 5 (ppm) above background were recorded, the soil materials were left on the ground surface.

MONITORING WELL INSTALLATION

All wells were constructed of two-inch inside diameter PVC riser pipe and .010-inch slotted screen. Depending on the location, well screens were 10 feet in length. All well materials were steam cleaned prior to insertion in the borehole.

Once the PVC well materials were set in place through the augers, quartz sand backfill was placed around the well screen with tremie, to a point one to two feet above the screen. A two-foot

thick bentonite seal was placed above the sandpack to isolate the screened zone. Above the bentonite seal, a cement/bentonite grout was placed up to ground surface. A vented PVC cap was placed on the well pipe, and the well was secured with the installation of a locking 4-inch inside diameter steel protective casing.

WELL DEVELOPMENT

Once the well installation was complete, the well materials were allowed to set up for a period of approximately 12 hours or more. Each well was then developed by removing water until the water was less than 100 Jackson Turbidity units, or was visually sediment-free.

Development methods included bailing and air-lift pumping. For the air-lift method, the discharge of the air line was first monitored with a Photovac to ensure readings were not above background. An oil separating device was placed on the discharge line of the compressor. The air line was steam-cleaned prior to placement in the well. Once the air line was in place just above the screened section, the air pressure was increased until the water could be lifted out of the top of the well casing. Under both development methods, the wells were periodically surged to aid in removing sediment.

SAMPLING PROGRAM

The sampling program at the MacNaughton-Brooks site consisted of groundwater and surface soil sampling. Samples were collected in accordance with the Quality Assurance Project Plan. In addition to the media sampled, two types of blanks were collected. Two trip blanks consisting of organic-free water were prepared by the laboratory and accompanied the sample bottle shipment. This blank provides a measure of the impact of bottle preparation procedures and shipment on the samples. The trip blanks were analyzed for volatile organic compounds. Two field wash blanks were also collected by pouring organic-free water provided by the laboratory or a commercial distributor over the sampling equipment as a measure of the field decontamination procedures. One of the wash blanks was assigned a non-existent well designation (GW-3B) and the other was labelled "Field Blank". Both field blanks were analyzed for volatile organic compounds.

Prior to sampling at each location, the sampling equipment was decontaminated by successively rinsing with detergent (Alconox) water, methanol, and distilled water. After collection of the water samples, field tests were performed on an additional sample to determine pH, temperature and specific conductivity. Field sampling records are presented in Appendix C.

Groundwater Sampling

Prior to collecting the groundwater samples, the static water level in the well was recorded from the top of the PVC casing, and at least three well volumes of water were removed with a teflon

bailer. The sample bottles were then filled using the same teflon bailer. Dedicated polypropylene rope was used to bail each well.

Surface Soil Sampling

Two surface soil samples were collected using a spade shovel to break the ground and a long handled stainless steel spoon to collect the soil sample. Samples were taken from depths of 0 to 12 inches.

AIR QUALITY MONITORING

Air quality monitoring for volatile organic compounds with a Photovac Tip-II photoionization meter was implemented during the drilling and well installations and sampling events. Monitoring was generally performed as a health and safety measure. The intake of the instrument was held at head height for 30 seconds and the reading was recorded. During drilling, the split-spoon samples were held within several inches of the intake to test for organic vapors emanating from the soil samples. The air in the completed well was monitored by placing the intake over the well opening and removing the PVC cap. The intake was then placed into the well opening and readings were noted.

APPENDIX B
GEOLOGIC DATA

BORING LOGS AND WELL SCHEMATICS

DRILLING CONTRACTOR:
 Name: D. MILLER
 Director: L. ISAKOFFER
 Type: MOBILE OIL
 Logging Method: H.S. POWER

ENGINEERING-SCIENCE
 DRILLING RECORD

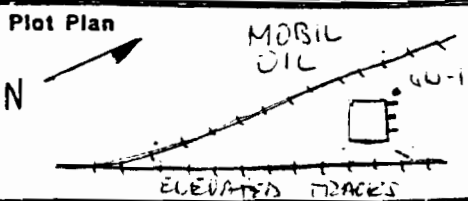
BORING NO. GW-1
 Sheet 1 of 1
 Location BESIDE CAMP #2
END OF BUILDING

PROJECT NAME McNACHTON - Brooks
 PROJECT NO. 54012.11

GROUND WATER OBSERVATIONS

Water Level	
Time	
Rate	
Screening Depth	

Weather _____
 Date/Time Start 11/16/87 1530
 Date/Time Finish 11/17/87 0910



Interval	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.7	0-2	S-1	4	11" - BLACK SAND WITH GRAVEL, BRICK (FILL)		
	REG = 15"		8	4" - WOOD		
			17			
0.7	5-7	S-2	4	9" - BLACK SAND WITH GRAVEL, BRICK (FILL)		Cement/Bentonite GROUT
	REG = 18"		6	6" - BROWN-GREY, DRY CLAY		Bentonite Pellets
			9	3" - BROWN-GREY CLAY/SAND		2" ID PVC RISER
0.9	10-12	S-3	4	4" - BLACK SAND FILL DOMINATED BY WOOD		WOOD FILL MAY HAVE DROPPED DOWN HOLE
	REG = 21"		8	17" - BROWN-RED STIFF CLAY, SOME SAND AT BOTTOM OF SPOON		2" ID #10 SLOT PVC SCREEN
			14			
0.0	15-17	S-4	5	BROWN-GREY WET "STICKY" CLAY		
	REG = 7"		2			
			3			#4 Q-ROK
Boring completed at 17.0 feet						

T - STANDARD PENETRATION TEST
 O - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary: SOIL AND NON-SOIL FILL TO 10.5' OVER STIFF CLAY WITH SOME SAND STRINGERS TO 15' OVER FAT CLAY

DRILLING CONTRACTOR:
 Name: D. MILLER
 Director: R. ISAKOWER
 Type: MOBILE RT
 Drilling Method: 2.5 AUGER

**ENGINEERING-SCIENCE
 DRILLING RECORD**

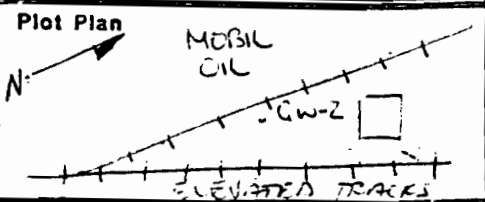
PROJECT NAME: Mc NAUGHTON-BROOKS
 PROJECT NO.: 54012.11

BORING NO. GLI-2
 Sheet 1 of 1
 Location: BEHIND BUILDING
NEXT TO R.R. TRACKS
 (MOBIL)

GROUND WATER OBSERVATIONS

Water Level	
Time	
Date	
Drilling Depth	

Weather _____
 Date/Time Start: 11/16/87 1245
 Date/Time Finish: 11/16/87 1430



Elevation Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
	0-2	S-1	2	BLACK SILTY SAND WITH BRICK (FILL)		2" ID PVC RISER
	REC= 11"	14	8			
			8			
	5-7	S-2	2	WET BLACK "STICKY" CLAY WITH BRICK		OBSTRUCTION AT NOSE OF SPOON - LOW RECOVERY - SOME FILL
	REC= 3"		5			
			5			
	10-12	S-3	5	4" - WET BLACK SILTY SAND		#4 ROCK
	REC= 24"		9			
			14	20" - DRY RED-BROWN SANDY CLAY		
	15-17	S-4	2	12" - RED-BROWN DRY CLAY WITH SAND STRINGERS AT 7" AND 12"		2" ID #10 SLOT PVC SCREEN
	REC= 20'		4			
			7			
				8" - WET BROWN-GREY "STICKY" CLAY		
				Boring Completed at 17 feet		

STANDARD PENETRATION TEST

D - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary: SOIL & NON-SOIL FILL TO 10.5'
OVER STIFF CLAY WITH SAND STRINGERS TO
16' OVER FAT CLAY

DRILLING CONTRACTOR:
 Name: J MILLER
 Director: J MILLER
 Type: MOBILE
 Logging Method: U.S. AUGER

ENGINEERING-SCIENCE
 DRILLING RECORD

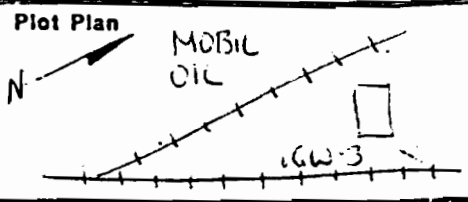
BORING NO. GW-3
 Sheet 1 of 2
 Location: BEHIND BUILDING
 NEXT TO ELEVATED
 R.R. TRACKS

PROJECT NAME: McNAUGHTON - RIZZO'S
 PROJECT NO.: SYC12.11

ROUND WATER OBSERVATIONS

Water Level	
Time	
Site	
Logging Depth	

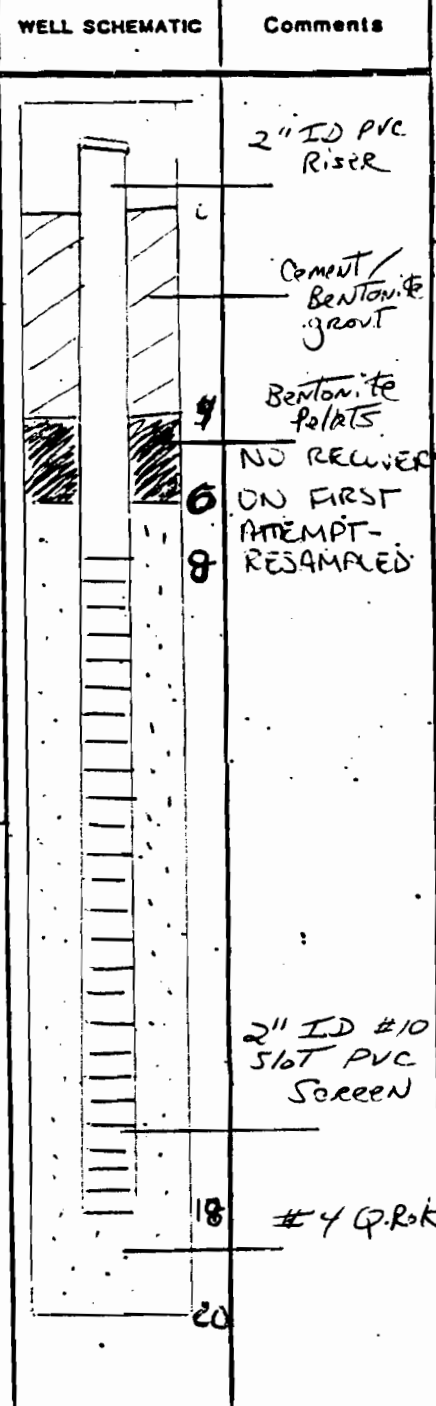
Weather: CLEAR, COOL
 Date/Time Start: 11/16/87 0730
 Date/Time Finish: 11/16/87 1000



Water Level Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT
5.2	0-2	S-1	1
			6
	REC=18"		5
			6
0.7	5-7	S-2	7
			12
	REC=16"		8
			8
0.0	10-12	S-3	4
			7
	REC=24"		10
			5
0.0	15-17	S-4	2
			3
	REC=19"		3
			4

FIELD IDENTIFICATION OF MATERIAL

16" BLACK SILTY SAND WITH BRICK (FILL)
 2" BROWN CLAYEY SAND
 4" BROWN CLAYEY SAND
 12" WET BLACK SILTY SAND WITH BRICK (FILL)
 5" WET BLACK SANDY SILT WITH BRICK (FILL)
 19" RED TAN SANDY CLAY
 WET BROWN "STICKY" CLAY



PT - STANDARD PENETRATION TEST
 D - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary SOIL & NON-SOIL FILL TO 10.5' OVER STIFF CLAY WITH SAND STRINGERS TO 15' OVER FAT CLAY

DRILLING CONTRACTOR:
 Name: D. MILLER
 Director: K. ISAKOWER
 Type: MOBILE HI
 Drilling Method: J.S. AXLER

**ENGINEERING-SCIENCE
 DRILLING RECORD**

PROJECT NAME: McNAXLTON - Brooks
 PROJECT NO.: 54012

BORING NO. GW-3
 Sheet 2 of 2
 Location: BEHIND BUILDING
NEXT TO ELEVATED
R.R. TRACKS

ROUND WATER OBSERVATIONS

Water Level	
Time	
Site	
Drilling Depth	

Weather _____
 Date/Time Start _____
 Date/Time Finish _____

Plot Plan

Elevation Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	20-22	S-5	1	DARK BROWN WET "STICKY" CLAY, TRACE GRAVEL		
			3			
	REC 21"		6			
			7			
			22			
				Boring completed at 22 feet.		

STANDARD PENETRATION TEST

D - DRY W - WASHED C - CORED
 U - UNDISTURBED SS - SPLIT SPOON
 P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

GEOTECHNICAL ANALYSES RESULTS



PROJECT: ENGINEERING-SCIENCE, MacNAUGHTON BROOKS PROJECT NUMBER: 870828

MOISTURE AND GRADATION ANALYSIS

Gradation
 (% Retained on Standard Sieve)

<u>BORING NUMBER</u>	<u>DEPTH (FT.)</u>	<u>MOISTURE PERCENT</u>	<u>#4</u>	<u>#10</u>	<u>#40</u>	<u>#100</u>	<u>#200</u>	<u>SILT AND CLAY (%)</u>	<u>CLASSIFICATION</u>
GW-1	0.2	23.8	40.1	16.0	2.8	8.0	4.6	28.5	GM
	10.12	21.2	1.3	0.2	0.9	0.4	0.4	96.8	ML
GW-2	0.2	28.9	55.1	8.2	17.1	4.5	1.1	14.1	GM
GW-3	0.2	45.4	31.7	12.2	18.7	13.1	5.9	18.4	SM
	5.7	21.7	3.9	3.5	16.1	23.8	5.0	47.7	SM
	10.0	22.7	0.1	0.6	0.1	0.2	0.5	98.5	ML
	20.22	22.2	0.6	0.8	2.4	1.4	0.8	94.0	CL



PROJECT: Engineering Science, Inc. PROJECT NUMBER: 870828

MOISTURE AND GRADATION ANALYSIS

<u>BORING NUMBER</u>	<u>DEPTH (FT.)</u>	<u>MOISTURE PERCENT</u>	<u>Gradation</u>					<u>SILT AND CLAY (%)</u>	<u>CLASSIFICATION</u>
			<u>#4</u>	<u>#10</u>	<u>#40</u>	<u>#100</u>	<u>#200</u>		
GW-1	15/17	25.7	8.0	5.8	5.0	2.1	1.1	78.0	CL
GW-2	10-12	22.1	5.5	1.8	4.7	4.2	2.0	81.8	CL
	15-17	24.6	4.3	0.8	1.0	3.5	2.6	87.8	CL
GW-3	15-17	28.9	1.4	0.8	1.3	0.9	0.5	95.1	CL

No. Boreholes



PROJECT: ENGINEERING-SCIENCE, MacNAUGHTON BROOKS PROJECT NUMBER: 870828

ATTERBERG LIMITS

<u>BORING NUMBER</u>	<u>DEPTH (FT.)</u>	<u>MOISTURE PERCENT</u>	<u>L.L.</u>	<u>P.L.</u>	<u>P.I.</u>
GW-3	5.7	21.7	24.3	16.6	7.7
GW-3	20.22	22.2	30.8	19.4	11.4



PROJECT: Engineering Science, Inc., New York PROJECT NUMBER: 870828

ATTERBERG LIMITS

<u>BORING NUMBER</u>	<u>DEPTH (FT.)</u>	<u>MOISTURE PERCENT</u>	<u>L.L.</u>	<u>P.L.</u>	<u>P.I.</u>
GW-2	10-12	22.1	33.0	19.0	14.0
GW-2	15-17	24.6	28.5	16.8	11.7

11/20/87

APPENDIX C
LABORATORY ANALYTICAL DATA

· Groundwater Results

· Soil Results

Results are listed in the following order for each sample number: volatile organics, semivolatile organics, pesticide/PCBs, metals, cyanide and TOX. All samples may not have undergone all analyses. Organic data qualifiers can be found at the bottom of each Form I, page 1 (volatile compounds). Inorganic data qualifiers are listed following this cover page.

Lab Name: NANCO LABORATORIES, INC.
Lab Address: Robinson Lane, RD 6
Wappingers Falls, New York

DATE REPORTED:

VALUE - IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT-REQUIRED DETECTION LIMIT, THE VALUE IS REPORTED IN BRACKETS (i.e., [10]). THE ANALYTICAL METHOD USED IS INDICATED WITH P (FOR ICP), A (FOR FLAME AA) OR F (FOR FURNACE AA).

U - INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORTED WITH THE INSTRUMENT DETECTION LIMIT VALUE (e.g., 10 U).

E - INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE.

s - INDICATES A VALUE DETERMINED BY METHOD OF STANDARD ADDITION.

N - INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.

* - INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.

+ - INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995

M - INDICATES DUPLICATE INJECTION RESULTS EXCEEDED CONTROL LIMITS.

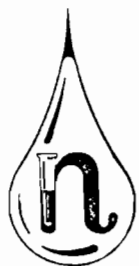
P - INDICATES ICP ANALYSIS

F - INDICATES FURNACE ANALYSIS

[] - INDICATES SAMPLE VALUE IS BETWEEN IDL AND CRDL

COMMENTS :

GROUNDWATER RESULTS



SAMPLE DATA

GW.1.11

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW.1.11

Laboratory Name: NANCO LABORATORY INC.
Lab File ID No: >A3370
Sample Matrix: WATER
Data Release Authorized By:

MACNAUGHTON BROOKS
Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 11/25/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12/01/87
Date Analyzed: 12/01/87
Conc/Dil Factor: 1 pH: 7.9
Percent Moisture: N/A

CAS Number	<u>ug/L</u> or ug/Kg (Circle One)	CAS Number	<u>ug/L</u> or ug/Kg (Circle One)
|74-87-3	| Chloromethane | 10.0 U |	|79-34-5	| 1,1,2,2-Tetrachloroethane | 5.0 U |
|74-83-9	| Bromomethane | 10.0 U |	|78-87-5	| 1,2-Dichloropropane | 5.0 U |
|75-01-4	| Vinyl Chloride | 10.0 U |	|10061-02-6	| Trans-1,3-Dichloropropene | 5.0 U |
|75-00-3	| Chloroethane | 10.0 U |	|79-01-6	| Trichloroethene | 5.0 U |
|75-09-2	| Methylene Chloride | 25.0 B |	|124-48-1	| Dibromochloromethane | 5.0 U |
|67-64-1	| Acetone | 29.0 B |	|79-00-5	| 1,1,2-Trichloroethane | 5.0 U |
|75-15-0	| Carbon Disulfide | 5.0 U |	|71-43-2	| Benzene | 5.0 U |
|75-35-4	| 1,1-Dichloroethene | 5.0 U |	|10061-01-5	| cis-1,3-Dichloropropene | 5.0 U |
|75-34-3	| 1,1-Dichloroethane | 5.0 U |	|110-75-8	| 2-Chloroethylvinylether | 10.0 U |
|156-60-5	| Trans-1,2-Dichloroethene | 5.0 U |	|75-25-2	| Bromoform | 5.0 U |
|67-66-3	| Chloroform | 5.0 U |	|591-78-6	| 2-Hexanone | 10.0 U |
|107-06-2	| 1,2-Dichloroethane | 5.0 U |	|108-10-1	| 4-Methyl-2-Pentanone | 10.0 U |
|78-93-3	| 2-Butanone | 10.0 U |	|127-18-4	| Tetrachloroethene | 5.0 U |
|71-55-6	| 1,1,1-Trichloroethane | 5.0 U |	|108-88-3	| Toluene | 5.0 U |
|56-23-5	| Carbon Tetrachloride | 5.0 U |	|108-90-7	| Chlorobenzene | 5.0 U |
|108-05-4	| Vinyl Acetate | 10.0 U |	|100-41-4	| Ethylbenzene | 5.0 U |
|75-27-4	| Bromodichloromethane | 5.0 U |	|100-42-5	| Styrene | 5.0 U |
			| Total Xylenes | 5.0 U |

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS.

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NO.
GW.1.11

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 11/30/87
Date Analyzed: 12/12/87
Conc/Dil Factor:-----> 1
Percent Moisture: N/A

GPC Cleanup: Yes ___ No X ___
Separatory Funnel Extraction: Yes X ___
Continuous Liquid - Liquid Extraction: Yes ___

CAS Number		<u>ug/L</u> or ug/Kg (Circle One)	CAS Number		<u>ug/L</u> or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U	83-32-9	Acenaphthene	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U	51-28-5	2,4-Dinitrophenol	50.0 U
95-57-8	2-Chlorophenol	10.0 U	100-02-7	4-Nitrophenol	50.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U	132-64-9	Dibenzofuran	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U	121-14-2	2,4-Dinitrotoluene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U	606-20-2	2,6-Dinitrotoluene	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U	84-66-2	Diethylphthalate	10.0 U
95-48-7	2-Methylphenol	10.0 U	7005-72-3	4-Chlorophenyl-phenylether	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U	86-73-7	Fluorene	10.0 U
106-44-5	4-Methylphenol	10.0 U	100-01-6	4-Nitroaniline	50.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U	534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
67-72-1	Hexachloroethane	10.0 U	86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
98-95-3	Nitrobenzene	10.0 U	101-55-3	4-Bromophenyl-phenylether	10.0 U
78-59-1	Isophorone	10.0 U	118-74-1	Hexachlorobenzene	10.0 U
88-75-5	2-Nitrophenol	10.0 U	87-86-5	Pentachlorophenol	50.0 U
105-67-9	2,4-Dimethylphenol	10.0 U	85-01-8	Phenanthrene	10.0 U
65-85-0	Benzoic Acid	50.0 U	120-12-7	Anthracene	10.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U	84-74-2	Di-n-Butylphthalate	16.0
120-83-2	2,4-Dichlorophenol	10.0 U	206-44-0	Fluoranthene	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U	129-00-0	Pyrene	10.0 U
91-20-3	Naphthalene	10.0 U	85-68-7	Butylbenzylphthalate	10.0 U
106-47-8	4-Chloroaniline	10.0 U	91-94-1	3,3'-Dichlorobenzidine	20.0 U
87-68-3	Hexachlorobutadiene	10.0 U	56-55-3	Benzo(a)Anthracene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U	117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U	218-01-9	Chrysene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U	117-84-0	Di-n-Octyl Phthalate	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U	205-99-2	Benzo(b)Fluoranthene	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U	207-08-9	Benzo(k)Fluoranthene	10.0 U
91-58-7	2-Chloronaphthalene	10.0 U	50-32-8	Benzo(a)Pyrene	10.0 U
88-74-4	2-Nitroaniline	50.0 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
131-11-3	Dimethyl Phthalate	10.0 U	53-70-3	Dibenz(a,h)Anthracene	10.0 U
208-96-8	Acenaphthylene	10.0 U	191-24-2	Benzo(g,h,i)Perylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U			

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKSSAMPLE NUMBER
GW.1.11

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/L or ug/Kg)
1 ----	UNKNOWN	VOA	96	13.0 J
2 ----	UNKNOWN	VOA	348	16.0 J
3				
4				
5 ----	UNKNOWN	BNA	39	18.0 J
6 ----	UNKNOWN	BNA	85	56.0 J
7 ----	UNKNOWN	BNA	92	35.0 J
8 ----	UNKNOWN KETONE	BNA	95	13.0 J
9 ----	UNKNOWN	BNA	146	48.0 J
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

INORGANIC ANALYSIS DATA SHEET
FORM I

0000005

SMPL NO.: GW.1.11

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 11/25/87

Lab Sample ID: 87-EW-4488

Date Reported: 1/15/88

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW X MEDIUM
MATRIX : WATER X SOIL SLUDGE OTHER

 C UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	61500.0 P	(1:50)	13. MAGNESIUM	277400.0 P	
2. ANTIMONY	50.0 UP <i>N</i>		14. MANGANESE	8700.0 P <i>E</i>	
3. ARSENIC	55.0 +SF <i>N</i>		15. MERCURY	0.9 C.V. <i>N</i>	
4. BARIUM	790.0 P <i>E</i>		16. NICKEL	210.0 P	
5. BERYLLIUM	2.0 UP <i>N</i>		17. POTASSIUM	11700.0 P	
6. CADMIUM	8.0 P		18. SELENIUM	3.0 UF <i>N</i>	
7. CALCIUM	960000.0 P <i>E</i>	(1:50)	19. SILVER	10.0 UP	
8. CHROMIUM	150.0 P <i>A</i>		20. SODIUM	45000 P	(1:50)
9. COBALT	80.0 P		21. THALLIUM	2.0 UF <i>N</i>	
10. COPPER	280.0 P <i>N</i>		22. VANADIUM	150.0 P	
11. IRON	136200.0 P		23. ZINC	1000.0 P	
12. LEAD	450.0 F <i>N</i>	(1:20)	PERCENT SOLIDS (%)	N/A	
CYANIDE	NR				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

This sample was of a brown cloudy liquid. It became colorless after furnace digestion and a Lt yellow after ICP digestion procedures. Pb was analyzed at a 1:20 dilution and Al, Ca, & Na were analyzed at a 1:50 dilution.

George O'Neil
LAB MANAGER

Reporting Date: 12/31/87

TOX

Results of analysis on ~~Drinking water~~ sample received 11/25/87

SAMPLE ID : GW-1

NABCO ID: 87-EW4488

PARAMETERS

RESULTS

UNITS

TOX

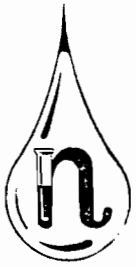
94*

ug/l

* Minimum Detection Level = 25 ug/l
• Dilution Factor 1:5

ALL RESULTS ARE EXPRESSED IN UG/L UNLESS OTHERWISE INDICATED

CONSTANCE H. GAINE
CHIEF EXECUTIVE OFFICER,
LABORATORY DIRECTOR



SAMPLE DATA

GW.2.11

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW.2.11

Laboratory Name: NANCO LABORATORY INC.
Lab File ID No: >F249F
Sample Matrix: WATER
Data Release Authorized By:

MACNAUGHTON BROOKS
Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 11/25/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 11/29/87
Date Analyzed: 11/29/87
Conc/Dil Factor: 1 pH: 6.9
Percent Moisture: N/A

CAS Number	ug/L or ug/Kg (Circle One)	CAS Number	ug/L or ug/Kg (Circle One)
74-87-3	10.0 U	79-34-5	5.0 U
74-83-9	10.0 U	78-87-5	5.0 U
75-01-4	10.0 U	10061-02-6	5.0 U
75-00-3	10.0 U	79-01-6	5.0 U
75-09-2	16.0 B	124-48-1	5.0 U
67-64-1	6.1 JB	79-00-5	5.0 U
75-15-0	5.0 U	71-43-2	1.3 J
75-35-4	5.0 U	10061-01-5	5.0 U
75-34-3	5.0 U	110-75-8	10.0 U
156-60-5	5.0 U	75-25-2	5.0 U
67-66-3	5.0 U	591-78-6	10.0 U
107-06-2	5.0 U	108-10-1	10.0 U
78-93-3	10.0 U	127-18-4	5.0 U
71-55-6	5.0 U	108-88-3	5.0 U
56-23-5	5.0 U	108-90-7	5.0 U
108-05-4	10.0 U	100-41-4	5.0 U
75-27-4	5.0 U	100-42-5	5.0 U
			5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g. 10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.	B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).	OTHER Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET

(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NO.
GW.2.11

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 11/30/87
Date Analyzed: 12/13/87
Conc/Dil Factor:-----> 1
Percent Moisture: N/A

GPC Cleanup: Yes ___ No X
Separatory Funnel Extraction: Yes X
Continuous Liquid - Liquid Extraction: Yes ___

CAS Number		ug/L or ug/Kg (Circle One)	CAS Number		ug/L or ug/Kg (Circle One)
			83-32-9	Acenaphthene	10.0 U
108-95-2	Phenol	10.0 U	51-28-5	2,4-Dinitrophenol	50.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U	100-02-7	4-Nitrophenol	50.0 U
95-57-8	2-Chlorophenol	10.0 U	132-64-9	Dibenzofuran	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U	121-14-2	2,4-Dinitrotoluene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U	606-20-2	2,6-Dinitrotoluene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U	84-66-2	Diethylphthalate	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U	7005-72-3	4-Chlorophenyl-phenylether	10.0 U
95-48-7	2-Methylphenol	10.0 U	86-73-7	Fluorene	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U	100-01-6	4-Nitroaniline	50.0 U
106-44-5	4-Methylphenol	10.0 U	534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U	86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
67-72-1	Hexachloroethane	10.0 U	101-55-3	4-Bromophenyl-phenylether	10.0 U
98-95-3	Nitrobenzene	10.0 U	118-74-1	Hexachlorobenzene	10.0 U
78-59-1	Isophorone	10.0 U	87-86-5	Pentachlorophenol	50.0 U
88-75-5	2-Nitrophenol	10.0 U	85-01-8	Phenanthrene	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U	120-12-7	Anthracene	10.0 U
65-85-0	Benzoic Acid	50.0 U	84-74-2	Di-n-Butylphthalate	10.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U	206-44-0	Fluoranthene	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U	129-00-0	Pyrene	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U	85-68-7	Butylbenzylphthalate	10.0 U
91-20-3	Naphthalene	10.0 U	91-94-1	3,3'-Dichlorobenzidine	20.0 U
106-47-8	4-Chloroaniline	10.0 U	56-55-3	Benzo(a)Anthracene	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U	117-81-7	bis(2-Ethylhexyl)Phthalate	53.0 B
59-50-7	4-Chloro-3-Methylphenol	10.0 U	218-01-9	Chrysene	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U	117-84-0	Di-n-Octyl Phthalate	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U	205-99-2	Benzo(b)Fluoranthene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U	207-08-9	Benzo(k)Fluoranthene	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U	50-32-8	Benzo(a)Pyrene	10.0 U
91-58-7	2-Chloronaphthalene	10.0 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
88-74-4	2-Nitroaniline	50.0 U	53-70-3	Dibenz(a,h)Anthracene	10.0 U
131-11-3	Dimethyl Phthalate	10.0 U	191-24-2	Benzo(g,h,i)Perylene	10.0 U
208-96-8	Acenaphthylene	10.0 U			
99-09-2	3-Nitroaniline	50.0 U			

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW.2.11

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

Tentatively Identified Compounds

CAS Number	Compound Name	RT or Scan Fraction Number	Estimated Concentration (ug/L or ug/Kg)
1 ----	UNKNOWN ALKENE	VOA 445	7.9 J
2			
3			
4 ----	UNKNOWN	BNA 23	24.0 J
5 ----	UNKNOWN	BNA 41	13.0 J
6 ----	UNKNOWN ALKANE	BNA 93	26.0 J
7 930574	CYCLOPROPANE,BUTYL	BNA 96	11.0 J
8 288131	1H-PYRAZOLE	BNA 148	58.0 J
9 ----	UNKNOWN	BNA 461	19.0 J
10 ----	UNKNOWN	BNA 832	16.0 J
11 ----	UNKNOWN ALKANE	BNA 873	21.0 J
12 4418615	1H-TETRAZOL	BNA 944	21.0 J
13 80057	PHENOL,4,4'-(1-METHYLETHYLIDENE)	BNA 1172	150.0 J
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: GW.2.11

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 11/25/87

Lab Sample ID: 87-EW-4492

Date Reported: 1/15/88

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW X MEDIUM

MATRIX : WATER X SOIL SLUDGE OTHER

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	143500.0 P	(1:50)	13. MAGNESIUM	234100.0 P	
2. ANTIMONY	50.0 UP <i>N</i>		14. MANGANESE	13200.0 P <i>E</i>	(1:50)
3. ARSENIC	33.0 SF <i>N</i>	(1:10)	15. MERCURY	0.4 U C.V. <i>N</i>	
4. BARIUM	1310.0 P <i>E</i>		16. NICKEL	450.0 P	
5. BERYLLIUM	5.0 UP <i>N</i>		17. POTASSIUM	[35200.0] P	
6. CADMIUM	5.0 UP		18. SELENIUM	30.0 UF <i>N</i>	(1:10)
7. CALCIUM	795000.0 P <i>E</i>	(1:50)	19. SILVER	10.0 UP	
8. CHROMIUM	310.0 P <i>*</i>		20. SODIUM	610000 P	(1:50)
9. COBALT	160.0 UP		21. THALLIUM	2.0 UF <i>N</i>	
10. COPPER	400.0 P <i>N</i>		22. VANADIUM	[340.0] P	
11. IRON	341200.0 P		23. ZINC	1500.0 P	
12. LEAD	260.0 SF <i>N</i> <i>*</i>	(1:10)	PERCENT SOLIDS (%)	N/A	
CYANIDE	NR				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

This sample was a brown cloudy liquid. This sample turned light yellow after ICP digestion procedures and was colorless after furnace digestion procedures. Al, Ca, Mn + Na were analyzed at a (1:50) dilution. As, Pb, and Se were analyzed at a (1:10) dilution.

George Ouel
LAB MANAGER

Reporting Date: 12/31/87

TOX

Results of analysis on ~~Drinking water~~ sample received 11/25/87

SAMPLE ID : GW-2

HANCO ID: 87-EW4492

PARAMETERS

TOX

RESULTS

206*

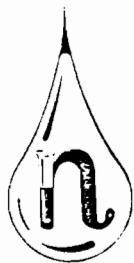
UNITS

ug/l

* Minimum Detection Level = 25 ug/l
• Dilution Factor 1:5

ALL RESULTS ARE EXPRESSED IN UG/L UNLESS OTHERWISE INDICATED

CONSTANCE N. GAIN
CHIEF EXECUTIVE OFFICER,
LABORATORY DIRECTOR



SAMPLE DATA

GW-3.11

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
GW-3.11

Laboratory Name: NANCO LABORATORY INC.
Lab File ID No: >B3272
Sample Matrix: WATER
Data Release Authorized By:

MACNAUGHTON BROOKS
Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 11/25/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12/01/87
Date Analyzed: 12/01/87
Conc/Dil Factor: 1 pH: 8.1
Percent Moisture: N/A

CAS Number	ug/L or ug/Kg (Circle One)	CAS Number	ug/L or ug/Kg (Circle One)
74-87-3	Chloromethane | 10.0 U	79-34-5	1,1,2,2-Tetrachloroethane | 5.0 U
74-83-9	Bromomethane | 10.0 U	78-87-5	1,2-Dichloropropane | 5.0 U
75-01-4	Vinyl Chloride | 10.0 U	10061-02-6	Trans-1,3-Dichloropropene | 5.0 U
75-00-3	Chloroethane | 10.0 U	79-01-6	Trichloroethene | 5.0 U
75-09-2	Methylene Chloride | 44.0 B	124-48-1	Dibromochloromethane | 5.0 U
67-64-1	Acetone | 40.0 B	79-00-5	1,1,2-Trichloroethane | 5.0 U
75-15-0	Carbon Disulfide | 5.0 U	71-43-2	Benzene | 1.7 J
75-35-4	1,1-Dichloroethene | 5.0 U	10061-01-5	cis-1,3-Dichloropropene | 5.0 U
75-34-3	1,1-Dichloroethane | 5.0 U	110-75-8	2-Chloroethylvinylether | 10.0 U
156-60-5	Trans-1,2-Dichloroethene | 5.0 U	75-25-2	Bromoform | 5.0 U
67-66-3	Chloroform | 5.0 U	591-78-6	2-Hexanone | 10.0 U
107-06-2	1,2-Dichloroethane | 5.0 U	108-10-1	4-Methyl-2-Pentanone | 10.0 U
78-93-3	2-Butanone | 2.2 J	127-18-4	Tetrachloroethene | 5.0 U
71-55-6	1,1,1-Trichloroethane | 5.0 U	108-88-3	Toluene | 5.0 U
56-23-5	Carbon Tetrachloride | 5.0 U	108-90-7	Chlorobenzene | 5.0 U
108-05-4	Vinyl Acetate | 10.0 U	100-41-4	Ethylbenzene | 5.0 U
75-27-4	Bromodichloromethane | 5.0 U	100-42-5	Styrene | 5.0 U
			Total Xylenes | 6.7

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.	B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).	OTHER Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NO.
GW-3.11

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 11/30/87
Date Analyzed: 12/13/87
Conc/Dil Factor:-----> 1
Percent Moisture: N/A

GPC Cleanup: Yes ___ No X
Separatory Funnel Extraction: Yes X
Continuous Liquid - Liquid Extraction: Yes ___

CAS Number	ug/l or ug/Kg (Circle One)	CAS Number	ug/l or ug/Kg (Circle One)		
108-95-2	Phenol	10.0 U	83-32-9	Acenaphthene	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U	51-28-5	2,4-Dinitrophenol	50.0 U
95-57-8	2-Chlorophenol	10.0 U	100-02-7	4-Nitrophenol	50.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U	132-64-9	Dibenzofuran	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U	121-14-2	2,4-Dinitrotoluene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U	606-20-2	2,6-Dinitrotoluene	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U	84-66-2	Diethylphthalate	10.0 U
95-48-7	2-Methylphenol	10.0 U	7005-72-3	4-Chlorophenyl-phenylether	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U	86-73-7	Fluorene	10.0 U
106-44-5	4-Methylphenol	10.0 U	100-01-6	4-Nitroaniline	50.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U	534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
67-72-1	Hexachloroethane	10.0 U	86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
98-95-3	Nitrobenzene	10.0 U	101-55-3	4-Bromophenyl-phenylether	10.0 U
78-59-1	Isophorone	10.0 U	118-74-1	Hexachlorobenzene	10.0 U
88-75-5	2-Nitrophenol	10.0 U	87-86-5	Pentachlorophenol	50.0 U
105-67-9	2,4-Dimethylphenol	10.0 U	85-01-8	Phenanthrene	10.0 U
65-85-0	Benzoic Acid	50.0 U	120-12-7	Anthracene	10.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U	84-74-2	Di-n-Butylphthalate	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U	206-44-0	Fluoranthene	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U	129-00-0	Pyrene	10.0 U
91-20-3	Naphthalene	10.0 U	85-68-7	Butylbenzylphthalate	10.0 U
106-47-8	4-Chloroaniline	10.0 U	91-94-1	3,3'-Dichlorobenzidine	20.0 U
87-68-3	Hexachlorobutadiene	10.0 U	56-55-3	Benzo(a)Anthracene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U	117-81-7	bis(2-Ethylhexyl)Phthalate	37.0 B
91-57-6	2-Methylnaphthalene	10.0 U	218-01-9	Chrysene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U	117-84-0	Di-n-Octyl Phthalate	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U	205-99-2	Benzo(b)Fluoranthene	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U	207-08-9	Benzo(k)Fluoranthene	10.0 U
91-58-7	2-Chloronaphthalene	10.0 U	50-32-8	Benzo(a)Pyrene	10.0 U
88-74-4	2-Nitroaniline	50.0 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
131-11-3	Dimethyl Phthalate	10.0 U	53-70-3	Dibenz(a,h)Anthracene	10.0 U
208-96-8	Acenaphthylene	10.0 U	191-24-2	Benzo(g,h,i)Perylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U			

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW-3.11

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT of Scan Number	Estimated Concentration (ug/l or ug/Kg)
1 ----	NONE FOUND	VOA	----	----
2				
3				
4 ----	UNKNOWN	BNA	22	39.0 J
5 ----	UNKNOWN	BNA	39	22.0 J
6 ----	UNKNOWN	BNA	89	24.0 J
7 108941	CYCLOHEXANONE	BNA	93	9.7 J
8 ----	UNKNOWN	BNA	145	39.0 J
9 ----	UNKNOWN ALKANE	BNA	871	10.0 J
10 ----	UNKNOWN ALKANE	BNA	942	11.0 J
11 ----	UNKNOWN	BNA	1508	9.9 J ^B
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: GW.3.11

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 11/25/87

Lab Sample ID: 87-EW-4491

Date Reported: 1/15/88

ELEMENTS ANALYZED AND MEASURED

CONCENTRATION : LOW X MEDIUM

MATRIX : WATER X SOIL SLUDGE OTHER

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	17060.0 P	13. MAGNESIUM	132900.0 P
2. ANTIMONY	50.0 UP <i>N</i>	14. MANGANESE	3800.0 P <i>E</i>
3. ARSENIC	10.0 SF <i>N</i>	15. MERCURY	0.2 U C.V. <i>N</i>
4. BARIUM	400.0 P <i>E</i>	16. NICKEL	60.0 P
5. BERYLLIUM	2.0 UP <i>N</i>	17. POTASSIUM [4300.0] P	
6. CADMIUM	5.0 UP	18. SELENIUM	30.0 UF <i>N</i> (1:10)
7. CALCIUM	355000.0 P <i>E</i> (1:25)	19. SILVER	10.0 UP
8. CHROMIUM	20.0 P <i>*</i>	20. SODIUM	130000 P (1:50)
9. COBALT	30.0 UP	21. THALLIUM	2.0 UF <i>N</i>
10. COPPER	40.0 P <i>N</i>	22. VANADIUM [30.0] P	
11. IRON	32600.0 P	23. ZINC	200.0 P
12. LEAD	41.3 SF <i>N</i> <i>*</i>	PERCENT SOLIDS (%)	N/A
CYANIDE	NR		
PHENOL	NR		

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

This sample was a cloudy tan liquid. This sample turned light yellow after ICP digestion and colorless after furnace digestion procedures. Ca was analyzed at a (1:25) dilution. Se was analyzed at a (1:10) dilution and NA was analyzed at a (1:50) dilution.

George Oehl
LAB MANAGER

Reporting Date: 12/31/87

TOX

Results of analysis on ~~Drinking water~~ sample received 11/25/87

SAMPLE ID: GW-3

HABCO ID: 87-EW4491

PARAMETERS

RESULTS

UNITS

TOX

130*

ug/l

* Minimum Detection Level = 25 ug/l
• Dilution Factor 1:5

ALL RESULTS ARE EXPRESSED IN UG/L UNLESS OTHERWISE INDICATED

CONSTANCE M. GAINES
CHIEF EXECUTIVE OFFICER,
LABORATORY DIRECTOR



SAMPLE DATA

GW-3B.11

(Wash Blank)

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW-3B.11

Laboratory Name: NANCO LABORATORY INC.
Lab File ID No: >B3270
Sample Matrix: WATER
Data Release Authorized By:

MACNAUGHTON BROOKS
Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 11/25/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12/01/87
Date Analyzed: 12/01/87
Conc/Dil Factor: 1 pH: 7.2
Percent Moisture: N/A

CAS
Number

ug/l or ug/Kg
(Circle One)

CAS
Number

ug/l or ug/Kg
(Circle One)

74-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
74-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
75-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
75-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	5.0 U
75-09-2	Methylene Chloride	66.0 B	124-48-1	Dibromochloromethane	5.0 U
67-64-1	Acetone	39.0 B	79-00-5	1,1,2-Trichloroethane	5.0 U
75-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
67-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
107-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
78-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
108-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
75-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U	B
Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.	This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J	OTHER
Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 11 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).	Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NUMBER
GW-3B.11

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)	
1	----	UNKNOWN	VOA	73	6.4 JB
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

SURFACE SOIL RESULTS



SAMPLE DATA

SS-1

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SS-1

Laboratory Name: NANCO LABORATORY INC.
Lab File ID No: >A2445
Sample Matrix: SOIL
Data Release Authorized By:

MACNAUGHTON BROOKS
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/12/87
Date Analyzed: 09/12/87
Conc/Dil Factor: 1 pH: 7.3
Percent Moisture: 50

CAS Number	ug/l or <u>ug/Kg</u> (Circle One)	CAS Number	ug/l or <u>ug/Kg</u> (Circle One)		
74-87-3	Chloromethane	10.0 U	79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
74-83-9	Bromomethane	10.0 U	78-87-5	1,2-Dichloropropane	5.0 U
75-01-4	Vinyl Chloride	10.0 U	10061-02-6	Trans-1,3-Dichloropropene	5.0 U
75-00-3	Chloroethane	10.0 U	79-01-6	Trichloroethene	2.8 J
75-09-2	Methylene Chloride	8.3 B	124-48-1	Dibromochloromethane	5.0 U
67-64-1	Acetone	4.4 JB	79-00-5	1,1,2-Trichloroethane	5.0 U
75-15-0	Carbon Disulfide	5.0 U	71-43-2	Benzene	4.0 J
75-35-4	1,1-Dichloroethene	5.0 U	10061-01-5	cis-1,3-Dichloropropene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U	110-75-8	2-Chloroethylvinylether	10.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U	75-25-2	Bromoform	5.0 U
67-66-3	Chloroform	5.0 U	591-78-6	2-Hexanone	10.0 U
107-06-2	1,2-Dichloroethane	5.0 U	108-10-1	4-Methyl-2-Pentanone	10.0 U
78-93-3	2-Butanone	10.0 U	127-18-4	Tetrachloroethene	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U	108-88-3	Toluene	9.2 B
56-23-5	Carbon Tetrachloride	5.0 U	108-90-7	Chlorobenzene	5.0 U
108-05-4	Vinyl Acetate	10.0 U	100-41-4	Ethylbenzene	5.0 U
75-27-4	Bromodichloromethane	5.0 U	100-42-5	Styrene	5.0 U
				Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	DEFINITION
VALUE	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.
J	Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit and was added to the sample prior to analysis. (e.g. 10J).
C	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS.
B	This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
OTHER	Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.
S	This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
MACNAUGHTON BROOKS

SAMPLE NO.
SS-1

SEMIVOLATILE COMPOUNDS

Concentration: ~~Low~~ Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed: 10/02/87
Conc/Dil Factor: -----> 1
Percent Moisture: 50

GPC Cleanup: Yes ___ No X
Separatory Funnel Extraction: Yes ___
Continuous Liquid - Liquid Extraction: Yes ___

CAS
Number

~~ug/l~~ or ug/Kg
(Circle One)

CAS
Number

~~ug/l~~ or ug/Kg
(Circle One)

108-95-2	Phenol	19800.0 U	83-32-9	Acenaphthene	19800.0 U
111-44-4	bis(-2-Chloroethyl)Ether	19800.0 U	51-28-5	2,4-Dinitrophenol	96000.0 U
95-57-8	2-Chlorophenol	19800.0 U	100-02-7	4-Nitrophenol	96000.0 U
541-73-1	1,3-Dichlorobenzene	19800.0 U	132-64-9	Dibenzofuran	19800.0 U
106-46-7	1,4-Dichlorobenzene	19800.0 U	121-14-2	2,4-Dinitrotoluene	19800.0 U
100-51-6	Benzyl Alcohol	19800.0 U	606-20-2	2,6-Dinitrotoluene	19800.0 U
95-50-1	1,2-Dichlorobenzene	19800.0 U	84-66-2	Diethylphthalate	19800.0 U
95-48-7	2-Methylphenol	19800.0 U	7005-72-3	4-Chlorophenyl-phenylether	19800.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	19800.0 U	86-73-7	Fluorene	19800.0 U
106-44-5	4-Methylphenol	19800.0 U	100-01-6	4-Nitroaniline	96000.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	19800.0 U	534-52-1	4,6-Dinitro-2-Methylphenol	96000.0 U
67-72-1	Hexachloroethane	19800.0 U	86-30-6	N-Nitrosodiphenylamine (1)	19800.0 U
98-95-3	Nitrobenzene	19800.0 U	101-55-3	4-Bromophenyl-phenylether	19800.0 U
78-59-1	Isophorone	19800.0 U	118-74-1	Hexachlorobenzene	19800.0 U
88-75-5	2-Nitrophenol	19800.0 U	87-86-5	Pentachlorophenol	96000.0 U
105-67-9	2,4-Dimethylphenol	19800.0 U	85-01-8	Phenanthrene	25000.0
65-85-0	Benzoic Acid	96000.0 U	120-12-7	Anthracene	19800.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	19800.0 U	84-74-2	Di-n-Butylphthalate	19800.0 U
120-83-2	2,4-Dichlorophenol	19800.0 U	206-44-0	Fluoranthene	24000.0
120-82-1	1,2,4-Trichlorobenzene	19800.0 U	129-00-0	Pyrene	19800.0 U
91-20-3	Naphthalene	19800.0 U	85-68-7	Butylbenzylphthalate	19800.0 U
106-47-8	4-Chloroaniline	19800.0 U	91-94-1	3,3'-Dichlorobenzidine	39600.0 U
87-68-3	Hexachlorobutadiene	19800.0 U	56-55-3	Benzo(a)Anthracene	19800.0 U
59-50-7	4-Chloro-3-Methylphenol	19800.0 U	117-81-7	bis(2-Ethylhexyl)Phthalate	19800.0 U
91-57-6	2-Methylnaphthalene	19800.0 U	218-01-9	Chrysene	19800.0 U
77-47-4	Hexachlorocyclopentadiene	19800.0 U	117-84-0	Di-n-Octyl Phthalate	19800.0 U
88-06-2	2,4,6-Trichlorophenol	19800.0 U	205-99-2	Benzo(b)Fluoranthene	19800.0 U
95-95-4	2,4,5-Trichlorophenol	96000.0 U	207-08-9	Benzo(k)Fluoranthene	19800.0 U
91-58-7	2-Chloronaphthalene	19800.0 U	50-32-8	Benzo(a)Pyrene	19800.0 U
88-74-4	2-Nitroaniline	96000.0 U	193-39-5	Indeno(1,2,3-cd)Pyrene	19800.0 U
131-11-3	Dimethyl Phthalate	19800.0 U	53-70-3	Dibenz(a,h)Anthracene	19800.0 U
208-96-8	Acenaphthylene	19800.0 U	191-24-2	Benzo(g,h,i)Perylene	19800.0 U
99-09-2	3-Nitroaniline	96000.0 U			

(1) - Cannot be separated from diphenylamine

TABLE 2.7
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB's

All results reported as ug/Kg.

Sample Identification

<u>Dilution Factor</u>	<u>288.0</u>	<u>1,380.0</u>	
	1019	1019	
<u>Method Blank I.D.</u>	<u>-B02</u>	<u>-B02</u>	
<u>Compound</u>	<u>SS- 1.11</u>	<u>SS- 2.11</u>	<u>Lower Limits of Detection with no Dilution</u>
alpha BHC	U	U	8.0
beta BHC	U	U	8.0
delta BHC	U	U	8.0
gamma BHC	U	U	8.0
Heptachlor	U	21,000	8.0
Aldrin	U	U	8.0
Heptachlor Epoxide	U	U	8.0
Endosulfan I	U	U	8.0
Dieldrin	U	U	16
4,4' DDE	U	U	16
Endrin	U	U	16
Endosulfan II	U	U	16
4,4' DDD	U	U	16
Endosulfan Sulfate	U	U	16
4,4' DDT	U	U	16
Methoxychlor	U	U	80
Endrin Ketone	U	U	16
alpha Chlordane	U	78,000	80
gamma Chlordane	U	92,000	80
Toxaphene	U	U	160
Aroclor - 1016	U	U	80
Aroclor - 1221	U	U	80
Aroclor - 1232	U	U	80
Aroclor - 1242	U	U	80
Aroclor - 1248	U	U	80
Aroclor - 1254	U	U	160
Aroclor - 1260	U	U	160

U - See Appendix for definition.

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER

SS-1

LABORATORY NAME :NANCO LABS.INC.

CASE NO: ENGINEERING SCIENCE

MACNAUGHTON BROOKS

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT of Scan Number	Estimated Concentration (ug/l or ug/Kg)
1 75694	TRICHLORO-METHANE	VOA	98	6.0 J
2 -----	UNKNOWN	VOA	148	11.0 J
3 -----	UNKNOWN ALKANE	VOA	239	6.0 J
4 -----	UNKNOWN ALKANE	VOA	293	8.0 J
5 -----	UNKNOWN	VOA	331	6.0 J
6 -----	UNKNOWN	VOA	387	8.0 J
7 -----	UNKNOWN	VOA	398	8.0 J
8				
9 260	FLUORANTHRENE	BNA	1236	61000.0 J
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SS-1

Lab Name : MANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-ES-2447

Date Reported: 10/07/87

Location ID: MacNaughton Brooks

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW X MEDIUM
MATRIX : WATER SOIL X SLUDGE OTHER

UG/L OR (MG/KG DRY WEIGHT) (CIRCLE ONE)

1. ALUMINUM	11517.2 P		13. MAGNESIUM	5420.4 P	
2. ANTIMONY	118.4 P [~]		14. MANGANESE	1241.2 P	
3. ARSENIC	22.0 F [~] (1:10)		15. MERCURY	1.8 U C.V. [~]	
4. BARIUM	838.0 P [~]		16. NICKEL	98.4 P	
5. BERYLLIUM [	1.2] P [~]		17. POTASSIUM [	1308.4] P	
6. CADMIUM	54.4 P		18. SELENIUM	20.0 UF [~] (1:10)	
7. CALCIUM	67459.6 P		19. SILVER	47.6 P [~]	
8. CHROMIUM	507.2 P		20. SODIUM [	712.4] P	
9. COBALT	24.8 P		21. THALLIUM	2.0 UF [~]	
10. COPPER	442.4 P		22. VANADIUM	59.6 P	
11. IRON	65547.6 P		23. ZINC	2342.4 P	
12. LEAD	1280.4 P	PERCENT SOLIDS (%)		50.0	
CYANIDE	20.5				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : *This sample was after fine texture and brown / black in coloration. The sample became light yellow after ICP and furnace digestion procedures.*

George Odell
LAB MANAGER

As and Se were analyzed at 1:10 dilution.



SAMPLE DATA

SS-2

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

SS-2

Laboratory Name: NANCO LABORATORY INC.

Case No: ENG. SCIENCE

Lab File ID No: >A257A

QC Report No: N/A

Sample Matrix: SOIL

Contract No: N/A

Data Release Authorized By: *P.J. Yurchak*

Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: LOW Medium (Circle One)

Date Extracted/Prepared: 09/14/87

Date Analyzed: 09/14/87

Conc/Dil Factor: 1 pH: 7.0

Percent Moisture: 34

CAS Number	ug/l or <u>ug/Kg</u> (Circle One)	CAS Number	ug/l or <u>ug/Kg</u> (Circle One)
74-87-3	Chloromethane | 10.0 U	79-34-5	1,1,2,2-Tetrachloroethane | 5.0 U
74-83-9	Bromomethane | 10.0 U	78-87-5	1,2-Dichloropropane | 5.0 U
75-01-4	Vinyl Chloride | 10.0 U	10061-02-6	Trans-1,3-Dichloropropene | 5.0 U
75-00-3	Chloroethane | 10.0 U	79-01-6	Trichloroethene | 2.4 J
75-09-2	Methylene Chloride | 104.0 B	124-48-1	Dibromochloromethane | 5.0 U
67-64-1	Acetone | 29.0 B	79-00-5	1,1,2-Trichloroethane | 5.0 U
75-15-0	Carbon Disulfide | 5.0 U	71-43-2	Benzene | 3.0 J
75-35-4	1,1-Dichloroethene | 2.1 J	10061-01-5	cis-1,3-Dichloropropene | 5.0 U
75-34-3	1,1-Dichloroethane | 5.0 U	110-75-8	2-Chloroethylvinylether | 10.0 U
156-60-5	Trans-1,2-Dichloroethene | 5.0 U	75-25-2	Bromoform | 5.0 U
67-66-3	Chloroform | 5.0 U	591-78-6	2-Hexanone | 10.0 U
107-06-2	1,2-Dichloroethane | 5.0 U	108-10-1	4-Methyl-2-Pentanone | 10.0 U
78-93-3	2-Butanone | 10.0 U	127-18-4	Tetrachloroethene | 5.0 U
71-55-6	1,1,1-Trichloroethane | 4.0 J	108-88-3	Toluene | 5.0 U
56-23-5	Carbon Tetrachloride | 5.0 U	108-90-7	Chlorobenzene | 5.0 U
108-05-4	Vinyl Acetate | 33.0 B	100-41-4	Ethylbenzene | 5.0 U
75-27-4	Bromodichloromethane | 5.0 U	100-42-5	Styrene | 5.0 U
			Total Xylenes | 5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.	B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data	OTHER Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.
S indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit and was added to the sample prior to analysis but greater than zero (e.g. 10J).	S This flag denotes that the compound is a spike compound

ORGANIC ANALYSIS DATA SHEET

(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
MACNAUGHTON BROOKS

SAMPLE NO.
SS-2

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed: 10/01/87
Conc/Dil Factor:-----> 1
Percent Moisture: 34

GPC Cleanup: Yes ___ No X
Separatory Funnel Extraction: Yes ___
Continuous Liquid - Liquid Extraction: Yes ___

CAS Number	ug/l or <u>ug/Kg</u> (Circle One)	CAS Number	ug/l or <u>ug/Kg</u> (Circle One)		
108-95-2	Phenol	19800.0 U	83-32-9	Acenaphthene	19800.0 U
111-44-4	bis(-2-Chloroethyl)Ether	19800.0 U	51-28-5	2,4-Dinitrophenol	96000.0 U
95-57-8	2-Chlorophenol	19800.0 U	100-02-7	4-Nitrophenol	96000.0 U
541-73-1	1,3-Dichlorobenzene	19800.0 U	132-64-9	Dibenzofuran	19800.0 U
106-46-7	1,4-Dichlorobenzene	19800.0 U	121-14-2	2,4-Dinitrotoluene	19800.0 U
100-51-6	Benzyl Alcohol	19800.0 U	606-20-2	2,6-Dinitrotoluene	19800.0 U
95-50-1	1,2-Dichlorobenzene	19800.0 U	84-66-2	Diethylphthalate	19800.0 U
95-48-7	2-Methylphenol	19800.0 U	7005-72-3	4-Chlorophenyl-phenylether	19800.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	19800.0 U	86-73-7	Fluorene	19800.0 U
106-44-5	4-Methylphenol	19800.0 U	100-01-6	4-Nitroaniline	96000.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	19800.0 U	534-52-1	4,6-Dinitro-2-Methylphenol	96000.0 U
67-72-1	Hexachloroethane	19800.0 U	86-30-6	N-Nitrosodiphenylamine (1)	19800.0 U
98-95-3	Nitrobenzene	19800.0 U	101-55-3	4-Bromophenyl-phenylether	19800.0 U
78-59-1	Isophorone	19800.0 U	118-74-1	Hexachlorobenzene	19800.0 U
88-75-5	2-Nitrophenol	19800.0 U	87-86-5	Pentachlorophenol	96000.0 U
105-67-9	2,4-Dimethylphenol	19800.0 U	85-01-8	Phenanthrene	19800.0 U
65-85-0	Benzoic Acid	96000.0 U	120-12-7	Anthracene	19800.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	19800.0 U	84-74-2	Di-n-Butylphthalate	19800.0 U
120-83-2	2,4-Dichlorophenol	19800.0 U	206-44-0	Fluoranthene	19800.0 U
120-82-1	1,2,4-Trichlorobenzene	19800.0 U	129-00-0	Pyrene	19800.0 U
91-20-3	Naphthalene	19800.0 U	85-68-7	Butylbenzylphthalate	19800.0 U
106-47-8	4-Chloroaniline	19800.0 U	91-94-1	3,3'-Dichlorobenzidine	39600.0 U
87-68-3	Hexachlorobutadiene	19800.0 U	56-55-3	Benzo(a)Anthracene	19800.0 U
59-50-7	4-Chloro-3-Methylphenol	19800.0 U	117-81-7	bis(2-Ethylhexyl)Phthalate	19800.0 U
91-57-6	2-Methylnaphthalene	19800.0 U	218-01-9	Chrysene	19800.0 U
77-47-4	Hexachlorocyclopentadiene	19800.0 U	117-84-0	Di-n-Octyl Phthalate	19800.0 U
88-06-2	2,4,6-Trichlorophenol	19800.0 U	205-99-2	Benzo(b)Fluoranthene	19800.0 U
95-95-4	2,4,5-Trichlorophenol	96000.0 U	207-08-9	Benzo(k)Fluoranthene	19800.0 U
91-58-7	2-Chloronaphthalene	19800.0 U	50-32-8	Benzo(a)Pyrene	19800.0 U
88-74-4	2-Nitroaniline	96000.0 U	193-39-5	Indeno(1,2,3-cd)Pyrene	19800.0 U
131-11-3	Dimethyl Phthalate	19800.0 U	53-70-3	Dibenz(a,h)Anthracene	19800.0 U
208-96-8	Acenaphthylene	19800.0 U	191-24-2	Benzo(g,h,i)Perylene	19800.0 U
99-09-2	3-Nitroaniline	96000.0 U			

(1) - Cannot be separated from diphenylamine

TABLE 2.7
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB's

All results reported as ug/Kg.

Sample Identification

<u>Dilution Factor</u>	<u>288.0</u>	<u>1,380.0</u>	
<u>Method Blank I.D.</u>	<u>1019</u>	<u>1019</u>	
	<u>-B02</u>	<u>-B02</u>	
<u>Compound</u>	<u>SS- 1.11</u>	<u>SS- 2.11</u>	<u>Lower Limits of Detection with no Dilution</u>
alpha BHC	U	U	8.0
beta BHC	U	U	8.0
delta BHC	U	U	8.0
gamma BHC	U	U	8.0
Heptachlor	U	21,000	8.0
Aldrin	U	U	8.0
Heptachlor Epoxide	U	U	8.0
Endosulfan I	U	U	8.0
Dieldrin	U	U	16
4,4' DDE	U	U	16
Endrin	U	U	16
Endosulfan II	U	U	16
4,4' DDD	U	U	16
Endosulfan Sulfate	U	U	16
4,4' DDT	U	U	16
Methoxychlor	U	U	80
Endrin Ketone	U	U	16
alpha Chlordane	U	78,000	80
gamma Chlordane	U	92,000	80
Toxaphene	U	U	160
Aroclor - 1016	U	U	80
Aroclor - 1221	U	U	80
Aroclor - 1232	U	U	80
Aroclor - 1242	U	U	80
Aroclor - 1248	U	U	80
Aroclor - 1254	U	U	160
Aroclor - 1260	U	U	160

U - See Appendix for definition.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
SS-2

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1 -----	UNKNOWN	VOA	76	80.0 J
2				
3 -----	UNKNOWN	BNA	84	3100.0 J
4 -----	UNKNOWN	BNA	1026	12000.0 J
5 -----	UNKNOWN	BNA	1212	7000.0 J
6 258	FLURANTHENE	BNA	1245	44000.0 J
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SS-2

012

Lab Name : NAMCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-ES-2450

Date Reported: 10/07/87

Location ID: MacNaughton Brooks

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW X MEDIUM

MATRIX : WATER SOIL X SLUDGE OTHER

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

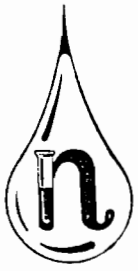
1. ALUMINUM	7214.2 P		13. MAGNESIUM	3765.2 P
2. ANTIMONY	74.8 P		14. MANGANESE	690.3 P
3. ARSENIC	20.0 F	(1:10)	15. MERCURY	1.1 C.V.
4. BARIUM	709.7 P		16. NICKEL	34.2 P
5. BERYLLIUM [	0.9 JP		17. POTASSIUM [	1334.5 JP
6. CADMIUM	15.5 P		18. SELENIUM	15.2 UF
7. CALCIUM	40954.2 P		19. SILVER	24.8 P
8. CHROMIUM	128.8 P		20. SODIUM	297.3 UP
9. COBALT [	7.9 JP		21. THALLIUM	1.5 UF
10. COPPER	175.5 P		22. VANADIUM	39.1 P
11. IRON	31426.4 P		23. ZINC	12559.4 P
12. LEAD	1270.9 P		PERCENT SOLIDS (%)	66.0
CYANIDE	15.0			
PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : *This sample was off-white to light grey in coloration. The sample became light yellow for ICP and fusane digestion procedure. As was analyzed at ~ 1:10.*

George A. Della

LAB MANAGER



SAMPLE DATA

TRIP Blank

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

MACNAUGHTON BROOKS

TRIP BLANK

Laboratory Name: NANCO LABORATORY INC.

Case No: ENGINEERING SCIENCE

Lab File ID No: >A3369

QC Report No: N/A

Sample Matrix: WATER

Contract No: N/A

Data Release Authorized By:

Date Sample Received: 11/25/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 12/01/87

Date Analyzed: 12/01/87

Conc/Dil Factor: 1 pH: 7.0

Percent Moisture: N/A

CAS Number	ug/l or ug/Kg (Circle One)	CAS Number	ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane | 10.0 U	79-34-5	1,1,2,2-Tetrachloroethane | 5.0 U
74-83-9	Bromomethane | 10.0 U	78-87-5	1,2-Dichloropropane | 5.0 U
75-01-4	Vinyl Chloride | 10.0 U	10061-02-6	Trans-1,3-Dichloropropene | 5.0 U
75-00-3	Chloroethane | 10.0 U	79-01-6	Trichloroethene | 5.0 U
75-09-2	Methylene Chloride | 21.0 B	124-48-1	Dibromochloromethane | 5.0 U
67-64-1	Acetone | 23.0 B	79-00-5	1,1,2-Trichloroethane | 5.0 U
75-15-0	Carbon Disulfide | 5.0 U	71-43-2	Benzene | 5.0 U
75-35-4	1,1-Dichloroethene | 5.0 U	10061-01-5	cis-1,3-Dichloropropene | 5.0 U
75-34-3	1,1-Dichloroethane | 5.0 U	110-75-8	2-Chloroethylvinylether | 10.0 U
156-60-5	Trans-1,2-Dichloroethene | 5.0 U	75-25-2	Bromoform | 5.0 U
67-66-3	Chloroform | 5.0 U	591-78-6	2-Hexanone | 10.0 U
107-06-2	1,2-Dichloroethane | 5.0 U	108-10-1	4-Methyl-2-Pentanone | 10.0 U
78-93-3	2-Butanone | 10.0 U	127-18-4	Tetrachloroethene | 5.0 U
71-55-6	1,1,1-Trichloroethane | 5.0 U	108-88-3	Toluene | 5.0 U
56-23-5	Carbon Tetrachloride | 5.0 U	108-90-7	Chlorobenzene | 5.0 U
108-05-4	Vinyl Acetate | 10.0 U	100-41-4	Ethylbenzene | 5.0 U
75-27-4	Bromodichloromethane | 5.0 U	100-42-5	Styrene | 5.0 U
			Total Xylenes | 5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.	B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).	OTHER Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

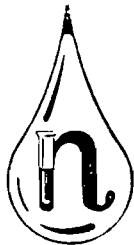
ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NUMBER
TRIP BLANK

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1 ----	UNKNOWN	VOA	97	6.8 J
2 ----	UNKNOWN	VOA	487	5.9 J
3				
4				
5 ----	NOT REQUIRED	BNA	----	----
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				



SAMPLE DATA

FIELD BLANK

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
FIELD BLANK

MACNAUGHTON BROOKS

Laboratory Name: NANCO LABORATORY INC.

Case No: ENG. SCIENCE

Lab File ID No: >F0961

QC Report No: N/A

Sample Matrix: WATER

Contract No: N/A

Data Release Authorized By: *P.Y. Wunsch*

Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
 Date Extracted/Prepared: 09/14/87
 Date Analyzed: 09/14/87
 Conc/Dil Factor: 1 pH: 7.1
 Percent Moisture: N/A

CAS Number	<u>ug/l</u> or ug/Kg (Circle One)	CAS Number	<u>ug/l</u> or ug/Kg (Circle One)
74-87-3	10.0 U	79-34-5	5.0 U
74-83-9	10.0 U	78-87-5	5.0 U
75-01-4	10.0 U	10061-02-6	5.0 U
75-00-3	10.0 U	79-01-6	5.0 U
75-09-2	2.0 JB	124-48-1	5.0 U
67-64-1	11.0 B	79-00-5	5.0 U
75-15-0	5.0 U	71-43-2	5.0 U
75-35-4	5.0 U	10061-01-5	5.0 U
75-34-3	5.0 U	110-75-8	10.0 U
156-60-5	5.0 U	75-25-2	5.0 U
67-66-3	7.0	591-78-6	10.0 U
107-06-2	5.0 U	108-10-1	10.0 U
78-93-3	10.0 U	127-18-4	5.0 U
71-55-6	5.0 U	108-88-3	5.0 U
56-23-5	5.0 U	108-90-7	5.0 U
108-05-4	10.0 U	100-41-4	5.0 U
75-27-4	5.0 U	100-42-5	5.0 U
			Total Xylenes
			5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.	B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit and was added to the sample prior to analysis. but greater than zero (e.g. 10J).	OTHER Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.
	S This flag denotes that the compound is a spike compound

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NUMBER
FIELD BLANK

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/L or ug/Kg)
1	75285 PROPANE,2-METHYL	VOA	56	6.3 J
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
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25				
26				



SAMPLE DATA

TRIP BLANK

ORGANIC ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER

MACNAUGHTON BROOKS

TRIP BLANK

Laboratory Name: NANCO LABORATORY INC.

Case No: ENG. SCIENCE

Lab File ID No: >F0961

QC Report No: N/A

Sample Matrix: WATER

Contract No: N/A

Data Release Authorized By: *P.H. Yurch*

Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 09/14/87

Date Analyzed: 09/14/87

Conc/Dil Factor: 1 pH: 7.1

Percent Moisture: N/A

CAS Number	ug/l or ug/Kg (Circle One)	CAS Number	ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane | 10.0 U	79-34-5	1,1,2,2-Tetrachloroethane | 5.0 U
74-83-9	Bromomethane | 10.0 U	78-87-5	1,2-Dichloropropane | 5.0 U
75-01-4	Vinyl Chloride | 10.0 U	10061-02-6	Trans-1,3-Dichloropropene | 5.0 U
75-00-3	Chloroethane | 10.0 U	79-01-6	Trichloroethene | 5.0 U
75-09-2	Methylene Chloride | 3.0 JB	124-48-1	Dibromochloromethane | 5.0 U
67-64-1	Acetone | 8.2 JB	79-00-5	1,1,2-Trichloroethane | 5.0 U
75-15-0	Carbon Disulfide | 5.0 U	71-43-2	Benzene | 5.0 U
75-35-4	1,1-Dichloroethene | 5.0 U	10061-01-5	cis-1,3-Dichloropropene | 5.0 U
75-34-3	1,1-Dichloroethane | 5.0 U	110-75-8	2-Chloroethylvinylether | 10.0 U
156-60-5	Trans-1,2-Dichloroethene | 5.0 U	75-25-2	Bromoform | 5.0 U
67-66-3	Chloroform | 5.0 U	591-78-6	2-Hexanone | 10.0 U
107-06-2	1,2-Dichloroethane | 5.0 U	108-10-1	4-Methyl-2-Pentanone | 10.0 U
78-93-3	2-Butanone | 62.0	127-18-4	Tetrachloroethene | 5.0 U
71-55-6	1,1,1-Trichloroethane | 5.0 U	108-88-3	Toluene | 5.0 U
56-23-5	Carbon Tetrachloride | 5.0 U	108-90-7	Chlorobenzene | 5.0 U
108-05-4	Vinyl Acetate | 10.0 U	100-41-4	Ethylbenzene | 5.0 U
75-27-4	Bromodichloromethane | 5.0 U	100-42-5	Styrene | 5.0 U
			Total Xylenes | 5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE	C
If the result is a value greater than or equal to the detection limit, report the value.	This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS
U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.	B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.
J Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data	OTHER Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.
S indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit and was added to the sample prior to analysis. but greater than zero (e.g. 10J).	S This flag denotes that the compound is a spike compound

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
MACNAUGHTON BROOKS

SAMPLE NUMBER
TRIP BLANK

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/Kg)
1	NONE FOUND	VOA		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
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21				
22				
23				
24				
25				
26				

FIELD SAMPLING RECORDS

FIGURE 6.3
FIELD SAMPLING RECORD

GW-1

Site MacNaughton Brooks NYSDEC Site No. 54012-11 Date: 11/24/87
Well GW-1

Samplers: Liz Dolson of ES
Garry Gould of ES

Initial Static Water Level. 4.46
(from top of well protective casing) stick up = 1.88

Evacuation: Well Volume Calculation:
Using: Submersible _____ Centrifugal _____ 2" Casing: 22.42 ft. of water x .16 = 3.59 gals.
Airlift _____ Positive Displacement _____ 3" Casing: _____ ft. of water x .36 = _____ gals.
Balled ✓ _____ Times 4" Casing: _____ ft. of water x .65 = _____ gals.

Depth to Intake from top of protective well casing 27'
Volume of Water removed 10.76 ~ 11 Gals. (> 3 Well Volumes)

Sampling: Time 1500 _____ a.m.
_____ p.m.

Bailer Type: Stainless Steel _____
Teflon ✓
From Pos. Dis. Pump Discharge Tube _____
Other _____

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank			
Field Blank <u>Wash</u> /Atmospheric. (circle one)	<u>3</u>	<u>GW-3B.11</u>	<u>Volatiles</u>
Ground-water Sample	<u>6</u>	<u>GW-3.11</u>	<u>See below</u>

Physical Appearance and Odor dark brown, cloudy -
Slightly more oily sheen than GW-2, GW-3

Refrigerate: Date 11/24/87 Time 1300

Field Tests: Photovac
Temperature (C°/F) 11.1
pH 7.39
Spec. Conduc (umhos/cm) 1900
-0.4 / 0.3
from bailer

Weather cloudy, Overcast 35-40°F, Windy

Comments Analyses: HCL metals, semivolatiles, volatiles, Pest/PCB, TOX

FIGURE 6.3
FIELD SAMPLING RECORD

GW-2

Site MacNaughton Bracks NYSDEC Site No. 5Y012.11 Date: 12/1/87
Well GW-2

Samplers: Liz Dobson of ES
Gerry Gould of ES

Initial Static Water Level. 4.29
(from top of well protective casing) Stick up 20 1/2"

Evacuation: Well Volume Calculation:
Using: Submersible _____ Centrifugal _____ 2" Casing: 22.4 ft. of water x .16 = 3.59 gals.
Airlift _____ Positive Displacement _____ 3" Casing: _____ ft. of water x .36 = _____ gals.
Balled X _____ Times 4" Casing: _____ ft. of water x .65 = _____ gals.

Depth to Intake from top of protective well casing 27' (including stick up)
Volume of Water removed 10.76 ~ 11.00 Gals. (> 3 Well Volumes)

Sampling: Time 1100 _____ a.m.
_____ p.m.

Baller Type: Stainless Steel _____
Teflon X
From Pos. Dis. Pump Discharge Tube _____
Other _____

No. of Bottles Filled I.D. No. Analyses

Trip Blank _____
Field Blank - Wash/Atmospheric. (circle one) _____
Ground-water Sample 1 GW-2.11 see below

Physical Appearance and Odor No odor - slight oily sheen dark brown
cloudy

Refrigerate: Date 1/14/87 Time 1300

Field Tests:
Temperature (C°/F) 10.4° C
pH 7.13
Spec. Conduc (umhos/cm) 3000

Photovac
0.0 / 0.9 - After removing 3 vol.

Weather Overcast, Cloudy, Windy 35° F - 40° F

Comments rest/PCB
Analysis: TOX, metals, HSL ~~and~~ volatiles, semivolatiles

FIGURE 6.3
FIELD SAMPLING RECORD

GW-3

Site MacNaughton Brooks NYSDEC Site No. 58012-11 Date: 11 Feb 87
Well GW-3

Samplers: Liz Dobson of ES
Gerry Gould of ES

Initial Static Water Level. 4.15
(from top of well protective casing) stick up = 1.88

Evacuation: Well Volume Calculation:
Using: Submersible _____ Centrifugal _____ 2" Casing: 22.73 ft. of water x .16 = 3.67 gals.
Airlift _____ Positive Displacement _____ 3" Casing: _____ ft. of water x .36 = _____ gals.
Balled _____ Times 4" Casing: _____ ft. of water x .65 = _____ gals.

Depth to Intake from top of protective well casing 27'
Volume of Water removed 10.9 ~ 11 Gals. (> 3 Well Volumes)

Sampling: Time _____ a.m.
_____ p.m.

Baller Type: Stainless Steel _____
Teflon
From Pos. Dis. Pump Discharge Tube _____
Other _____

No. of Bottles Filled I.D. No. Analyses

Trip Blank _____
Field Blank - Wash/Atmospheric. (circle one) _____
Ground-water Sample 6 GW-3.11 See below

Physical Appearance and Odor water light brown - noticed slightly oil sheen

Refrigerate: Date 1/1/1 Time _____

Field Tests:
Temperature (C°/°F) 9.8
pH 7.02
Spec. Conduc (umhos/cm) 2750

Photovac
0.0/0.0 - No water removed.

Weather Overcast, windy 35°F

Comments Analyses: TOX, metals, Pest/PCB HSL volatiles, semi-volatiles

FIGURE 6.4
FIELD SURFACE SAMPLING RECORD

Site MacNaughton - Brooks NYSDEC Site No. _____ Date: 9/9/87

Samplers: Big Dobson of _____
Gerry Gould of _____

SAMPLING: SS-1 Time 1030 a.m.
_____ p.m.

Sample Type: Surface Soil

Sampling Method: Stainless Steel

Depth of Sample: 0-1.0 foot

Description of Sampling Point:

Drainage Direction: NA

Upstream From: NA

Downstream From: NA

Physical Appearance/Odor: NA

Wildlife Observed: None

Sampling Description:

Suspended Matter: NA

Color/Stain: light medium brown

Odor: None

Other: brick brick fragments and roots

Texture: Not as moist as SS-2, Fine medium grained

Analyze for: HSL volatiles & semi volatiles, HSL Pesticides / PCB's, TOX metals

Refrigerated: _____ Date: 9/10/87 Time _____ a.m.
_____ p.m.

Field Tests:

Temperature (C°/F) NA/ Weather Overcast, some sun
pH / 65°F
Conductivity /

Comments: N17°E, 60' FT. from SS-1 to smokestack next to building
Photovac 0.0/0.3 = 0.3 (hole)

FIGURE 6.1
FIELD SAMPLING RECORD

Site McNaughton-Brooks

Site No. 54012.11

Date: 10/13/88

Well 55-1.11

Samplers: Mark Chauvin of ES
Bill Bradford of ES

Initial Static Water Level.
(from top of well protective casing)

Evacuation:
Pumping: Submersible _____ Centrifugal _____ 2" Casing: _____ ft. of water x .16 = _____ gals.
Airlift _____ Positive Displacement _____ 3" Casing: _____ ft. of water x .36 = _____ gals.
Balled _____ Times _____ 4" Casing: _____ ft. of water x .65 = _____ gals.

Depth to Intake from top of protective well casing _____
Volume of Water removed _____ Gals. (> 3 Well Volumes)

Sampling: Time 1315 _____ a.m.
X p.m.

Sampler:
-Bottle Type: Stainless Steel Spoon _____
Teflon _____
From Pos. Dis. Pump Discharge Tube _____
Other _____

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank	_____	_____	_____
Field Blank - Wash/Atmospheric. (circle one)	_____	_____	_____
Ground-water Sample	<u>1</u>	<u>55-1.11</u>	<u>Pest/PCB</u>

Physical Appearance and Odor some hydrocarbon odor, fill & debris

Refrigerate: Date _____ Time _____

Field Tests:
Temperature (C°/F) _____
pH _____
Spec. Conduc (umhos/cm) _____

Weather Cool, cloudy, light snow 35°-40° wind from NW at 10 mph

Comments Sample of variable composition - black-brown, sandy, silty, debris (brick chips + pieces of wood) - sample taken from 2"-3" (1st inch scraped away)

FIGURE 6.4
FIELD SURFACE SAMPLING RECORD

Site MacNaughton Brooks NYSDEC Site No. _____ Date: 9⁹ 10 87

Samplers: Berry Gould of Engineering Science
Liz Dobson of "

SAMPLING: SS-2 Time 11:00 a.m.
 p.m.

Sample Type: Surface Soil

Sampling Method: Stainless steel spoon

Depth of Sample: 0-1.0 foot

Description of Sampling Point:

Drainage Direction: NA

Upstream From: NA

Downstream From: NA

Physical Appearance/Odor: NA

Wildlife Observed: NA

Sampling Description:

Suspended Matter: NA

Color/Stain: dark brown-back, fairly moist

Odor: none

Other: debris in soil - brick fragments, coal slag(?), roots

Texture: Fine medium grained, appears to have some clay - lumps

Analyze for: HSL volatiles & semi volatiles, HSL Pesticides / PCBs, TOX, Metals

Refrigerated:

Date: 9/10/87 Time _____ a.m.
_____ p.m.

Field Tests:

Temperature (C°/F)	<u>NA</u>	Weather	<u>Overcast, some sun</u>
pH	<u>NA</u>		
Conductivity	<u>NA</u>		<u>65°F</u>

Comments: Location N14°W, 42 feet from SS-2 to smokestack next to building
Photovac: -1.1 / -0.5 = 0.6 (hole)

FIGURE 6.1
FIELD SAMPLING RECORD

Site McNaughton-Brooks

Site No. 54012.11
Well SS-2.11

Date: 10/13/88

Samplers: Mark Chauvin of ES
Bill Bradford of ES

Initial Static Water Level.
(from top of well protective casing)

Evacuation: Submersible _____ Centrifugal _____
Airlift _____ Positive Displacement _____
Balled _____ Times _____

Well Volume Calculation:
2" Casing: _____ ft. of water x .16 = _____ gals.
3" Casing: _____ ft. of water x .36 = _____ gals.
4" Casing: _____ ft. of water x .65 = _____ gals.

Depth to Intake from top of protective well casing _____
Volume of Water removed _____ Gals. (> 3 Well Volumes)

Sampling: Time 1315 HRS _____ A.M.
X P.M.

Sampler:
Dipper Type: Stainless Steel spoon X
Teflon _____
From Pos. Dis. Pump Discharge Tube _____
Other _____

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank	_____	_____	_____
Field Blank - Wash/Atmospheric. (circle one)	_____	_____	_____
Ground-water Sample	<u>1</u>	<u>SS-2.11</u>	<u>Pest/PCB</u>

Physical Appearance and Odor No odor, sandy fill & debris

Refrigerate: Date _____ Time _____

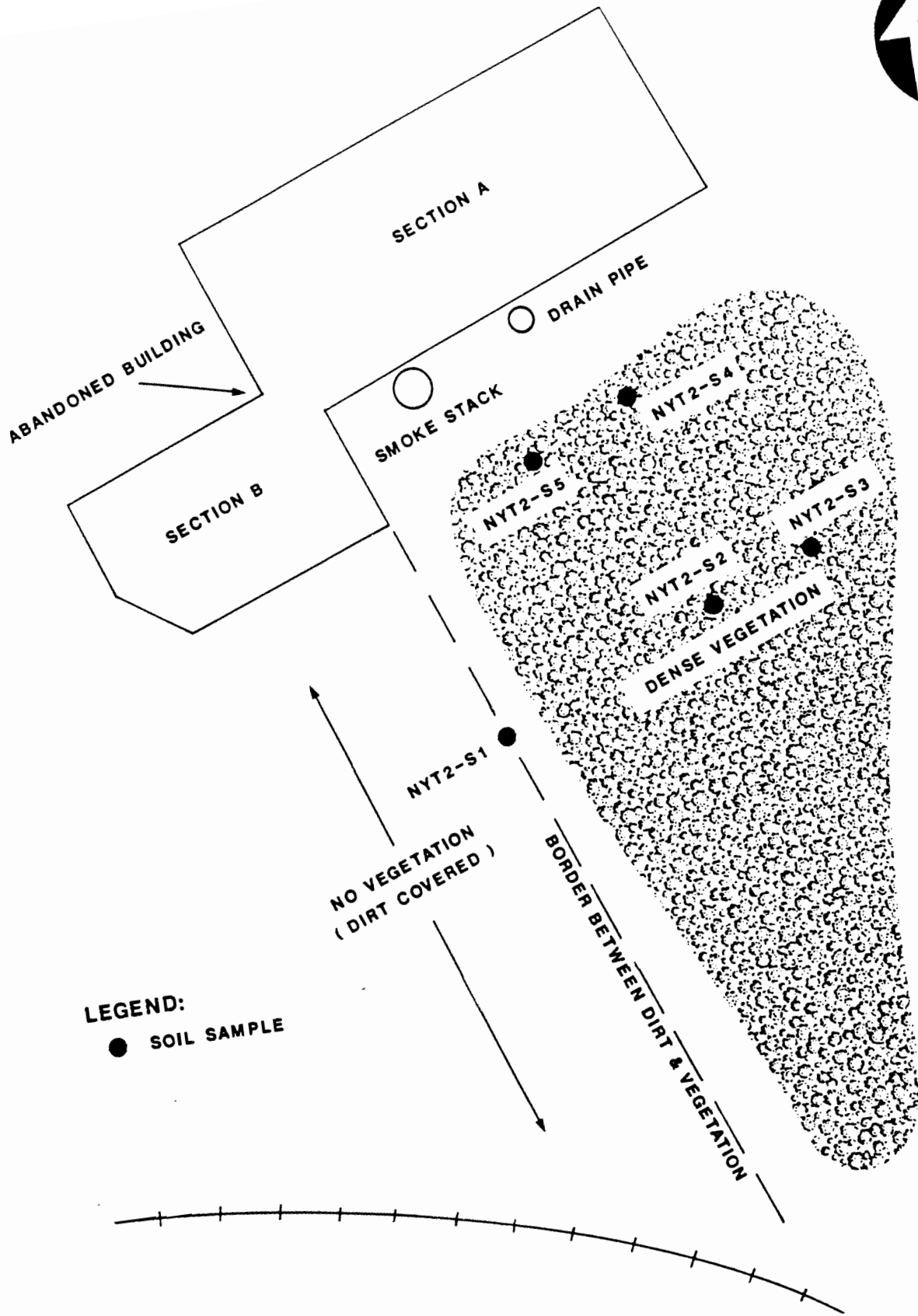
Field Tests:
Temperature (C°/F) _____
pH _____
Spec. Conduc (umhos/cm) _____

Weather Cool, Cloudy, light snow 35°-40° wind from NW at 10 mph

Comments Fill of variable composition (bricks, glass, pieces of wood) - brown sandy silt 0-12"



1988 EPA SITE INSPECTION SOIL SAMPLING RESULTS



SAMPLE LOCATION MAP
MacNAUGHTON BROOKS, BUFFALO, N.Y.
(NOT TO SCALE)

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply) 02 WASTE QUANTITY AT SITE 03 WASTE CHARACTERISTICS (Check all that apply)

<input type="checkbox"/> A. SOLID	<input type="checkbox"/> E. SLURRY	(Measures of waste quantities must be independent)	<input type="checkbox"/> A. TOXIC	<input type="checkbox"/> E. SOLUBLE	<input type="checkbox"/> I. HIGHLY VOLATILE
<input type="checkbox"/> B. POWDER, FINES	<input type="checkbox"/> F. LIQUID		<input type="checkbox"/> B. CORROSIVE	<input type="checkbox"/> F. INFECTIOUS	<input type="checkbox"/> J. EXPLOSIVE
<input type="checkbox"/> C. SLUDGE	<input type="checkbox"/> G. GAS		<input type="checkbox"/> C. RADIOACTIVE	<input checked="" type="checkbox"/> G. FLAMMABLE	<input type="checkbox"/> K. REACTIVE
<input type="checkbox"/> D. OTHER _____			<input checked="" type="checkbox"/> D. PERSISTENT	<input type="checkbox"/> H. IGNITABLE	<input type="checkbox"/> L. INCOMPATIBLE
(Specify)					<input type="checkbox"/> M. NOT APPLICABLE

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____
Gallons 600 (Approximate)

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	600	Gallons	It has been documented several times in background information that approximately 600 gallons of sludge, consisting of various solvents and paint waste, were disposed of on site. Although none of the anticipated solvents were detected in the soil samples collected on site, several other compounds attributable to the company were. Chlordane was also found in significant amounts in all five samples.
OLW	OILY WASTE			
SOL	SOLVENTS	Unknown		
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
ACD	Benzoic Acid	65-85-0	Unknown	230 J	ug/kg
OCC	Naphthalene	91-20-3	Unknown	33,400	ug/kg
OCC	2-Methylnaphthalene	91-57-6	Unknown	15,300 J	ug/kg
OCC	Acenaphthylene	208-96-8	Unknown	1,000 J	ug/kg
OCC	Acenaphthene	83-32-9	Unknown	38,400	ug/kg
OCC	Dibenzofuran	132-64-9	Unknown	33,000	ug/kg
OCC	Fluorene	86-73-7	Unknown	47,500	ug/kg
OCC	Phenanthrene	85-01-8	Unknown	385,300	ug/kg
OCC	Anthracene	120-12-7	Unknown	97,400	ug/kg
OCC	Fluoranthene	206-44-0	Unknown	451,500	ug/kg
OCC	Pyrene	129-00-0	Unknown	284,600	ug/kg
OCC	Benzo(a)anthracene	56-5503	Unknown	157,300	ug/kg

(SEE ATTACHMENT)

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Unknown		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (See specific references. e.g., state files, sample analysis, reports)

Engineering Investigations at Inactive Hazardous Waste Sites, Phase I Investigation, MacNaughton Brooks. Engineering-Science in association with Dames and Moore, May 1985.
 U.S. EPA Contract Laboratory Program, Kemron Laboratories and Compuchem Laboratories. Case No. 7275, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on May 13, 1987.
 Sax, N.I. Dangeorus Properties of industrial materials. 6th ed. New York, Van Nostrand Reinhold Co., 1984.
 Hazardous Waste Site Profile Report, MacNaughton-Brooks Inc. City of Buffalo, Site No. 915034. County of Erie Department of Environment and Planning, Division of Environmental Control, March 1982.
 County of Erie, Department of Environment and Planning memorandum from E. Joseph Sciascia to Peter Buechi of NYSDEC, Subject: MacNaughton Brooks Phase I Investigation Report. August 16, 1988.
 County of Erie, Department of Environment and Planning memorandum from Deputy Commissioner Anthony T. Voell to Peter Buechi of NYSDEC, Subject: Meeting with MacNaughton Brooks. August 7, 1984.
 County of Erie Department of Environment and Planning memorandum from Ronald D. Koczaja to Donald Campbell (both of Erie County Offices), Subject: MacNaughton Brooks. October 2, 1984.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY 0980507016

ATTACHMENT

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	Bis(2-ethylhexyl)phthalate	117-81-7	Unknown	6,650 J	ug/kg
OCC	Chrysene	218-01-9	Unknown	150,000	ug/kg
OCC	Benzo(b)fluoranthene	205-99-2	Unknown	88,200	ug/kg
OCC	Benzo(k)fluoranthene	207-08-9	Unknown	78,500	ug/kg
OCC	Benzo(a)pyrene	50-32-8	Unknown	70,000	ug/kg
OCC	Indeno(1,2,3-cd)pyrene	193-39-5	Unknown	12,700 J	ug/kg
OCC	Dibenzo(a,h)anthracene	53-70-3	Unknown	1,200 J	ug/kg
OCC	Benzo(g,h,i)perylene	191-24-2	Unknown	3,600 J	ug/kg
PSD	Chlordane	57-74-9	Unknown	170,000	ug/kg
MES	Barium	7440-39-3	Unknown	2,900	mg/kg
MES	Cadmium	7440-43-9	Unknown	44	mg/kg
MES	Chromium	7440-47-3	Unknown	655	mg/kg
MES	Copper	7440-50-8	Unknown	481 J	mg/kg
MES	Lead	7439-92-1	Unknown	28,400	mg/kg
MES	Silver	7440-22-4	Unknown	14	mg/kg

J Indicates an estimated value.

02-8704-14-SR
Rev. No. 0

SITE NO. 10000000000000000000
 TOXIC SUBSTANCE
 COMPLIANCE DATE: 05/13/87
 EPA CASE NO.: 10000000000000000000

VOLATILES

Sample ID No.	VYT2-S1	VYT2-S2	VYT2-S3	VYT2-S4	VYT2-S5	VYT2-S6
Traffic Report No.	BJ346	BJ339	BJ340	BJ341	BJ342	BJ343
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor	1	1	1	1	1	1
Percent Moisture	24	20	43	32	38	--

Chloromethane						
Bromomethane						
Vinyl Chloride						
Chloroethane						
Methylene Chloride	B	B	B	B	B	B
Acetone			B	B	B	
Carbon Disulfide						
1,1-Dichloroethene						
1,1-Dichloroethane						
Trans-1,2-Dichloroethene (total)						
Chloroform						J
1,2-Dichloroethane						
2-Butanone						
1,1,1-Trichloroethane						
Carbon Tetrachloride						
Vinyl Acetate						
Bromodichloromethane						
1,2-Dichloropropane						
trans-1,3-Dichloropropene						
Trichloroethene						
Dibromochloromethane						
1,1,2-Trichloroethane						
Benzene						
cis-1,3-Dichloropropene						
2-chloroethylvinylether						
Bromoform						
4-Methyl-2-Pentanone						
2-Hexanone						
Tetrachloroethene						
1,1,2,2-Tetrachloroethane						
Toluene						
Chlorobenzene						
Ethylbenzene						
Styrene						
Xylenes (Total)						

NOTES:

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 R - analysis did not pass EPA QA/QC
 N - Presumptive evidence of the presence of a compound, but can't be identified
 NR - analysis not required
 Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: WINDY HOLLOW BRIDGE
 TOWN: WASHINGTON
 SAMPLING DATE: 5/13/87
 EPA CASE NO.: 7375 LAB: KEMRON

SEMI-VOLATILES

Sample ID No.	VY73-81	VY73-82	VY73-83	VY73-84	VY73-85	VY73-86
Traffic Report No.	BJ346	BJ339	BJ340	BJ341	BJ342	BJ343
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor	22.8	4.9	10	50	46	N/A
Percent Moisture	24	20	43	32	38	N/A

Dieldrin						NR
bis(2-Chloroethyl) ether						NR
2-Chlorophenol						NR
1,3-Dichlorobenzene						NR
1,4-Dichlorobenzene						NR
Benzyl alcohol						NR
1,2-Dichlorobenzene						NR
2-Methylphenol						NR
bis(2-Chloroisopropyl) ether						NR
4-Methylphenol						NR
N-Nitroso-di-n-dipropylamine						NR
Hexachloroethane						NR
Nitrobenzene						NR
Isophorone						NR
2-Nitrophenol						NR
2,4-Dimethylphenol						NR
Benzoic acid		J				NR
bis(2-Chloroethoxy) methane						NR
2,4-Dichlorophenol						NR
1,2,4-Trichlorobenzene						NR
Naphthalene	J	J		33400		NR
4-Chloroaniline						NR
Hexachlorobutadiene						NR
4-Chloro-3-Methylphenol						NR
2-Methylnaphthalene	J	J		J		NR
Hexachlorocycloheptadiene						NR
2,4,6-Trichlorophenol						NR
2,4,5-Trichlorophenol						NR
2-Chloronaphthalene						NR
2-Nitroaniline						NR
Dimethylphthalate						NR
Acenaphthylene		J	J			NR
3-Nitroaniline						NR
Acenaphthene	J	J		38400		NR
2,4-Dinitrophenol						NR
4-Nitrophenol						NR
Dibenzofuran	J	J		33000		NR
2,4-Dinitrotoluene						NR
2,6-Dinitrotoluene						NR
Diethylphthalate						NR
4-Chlorophenyl-phenyl ether						NR
Fluorene	J			47500		NR
4-Nitroaniline						NR
4,6-Dinitro-2-methylphenol						NR
N-nitrosodiphenylamine						NR
4-Bromophenyl-phenyl ether						NR
Hexachlorobenzene						NR

SITE NAME: WASHINGTON BRIDGE
 TOWN: 02-8704-14
 SAMPLING DATE: 5/13/87
 EPA CASE NO.: 7275 LAB: MEMRON

SEMI-VOLATILES

Sample ID No.	NYT2-S1	NYT2-S2	NYT2-S3	NYT2-S4	NYT2-S5	NYT2-S6
Traffic Report No.	BJ346	BJ339	BJ340	BJ341	BJ342	BJ343
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor	22.8	4.8	10	50	46	N/A
Percent Moisture	24	20	43	32	38	N/A

Pentachlorophenol						NR
Phenanthrene	27500	23800		385300	41200	NR
Anthracene	J	5460	J	97400	J	NR
Di-n-butylphthalate						NR
Fluoranthene	20000	26200	7100	451500	51600	NR
Pyrene	17300	22700	7400	284600	37050	NR
Butylbenzylphthalate						NR
3,3'-Dichlorobenzidine						NR
Benzo(a)anthracene	J	11400	5800	157300	J	NR
bis(2-Ethylhexyl)phthalate		J			J	NR
Chrysene	J	10700	6000	150000	J	NR
Di-n-octylphthalate						NR
Benzo(b)fluoranthene	J	5600	8000	88200	J	NR
Benzo(k)fluoranthene	J	5100		78500	J	NR
Benzo(a)pyrene	J	5400	J	70000	J	NR
Indeno(1,2,3-cd)pyrene		J	J	J		NR
Dibenz(a,h)anthracene			J			NR
Benzo(g,h,i)perylene		J	J	J		NR

NOTES:

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 - J - estimated value, compound present below CRQL but above IDL
 - R - analysis did not pass EPA QA/QC
 - N - Presumptive evidence of the presence of a compound, but can't be identified
 - NR - analysis not required
- Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: MONROVIA, BROOKS
 TOID: 12-8714-1A
 SAMPLING DATE: 5/13/87
 EPA CASE NO.: 7275 LAB: KEMRON

PESTICIDES

Sample ID No.	NYT2-S1	NYT2-S2	NYT2-S3	NYT2-S4	NYT2-S5	NYT2-S6
Traffic Report No.	BJ346	BJ339	BJ340	BJ341	BJ342	BJ343
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dilution Factor	50	50	20	200	200	N/A
Percent Moisture	34	20	43	32	38	N/A

alpha-BHC						NR
beta-BHC						NR
delta-BHC						NR
gamma-BHC (Lindane)						NR
Heptachlor						NR
Aldrin						NR
Heptachlor epoxide						NR
Endosulfan I						NR
Dieldrin						NR
4,4'-DDE						NR
Endrin						NR
Endosulfan II						NR
4,4'-DDD						NR
Endosulfan sulfate						NR
4,4'-DDT						NR
Methoxychlor						NR
Endrin ketone						NR
Chlordane	12000	21000	12000	140000	170000	NR
Toxaphene						NR
Aroclor-1016						NR
Aroclor-1221						NR
Aroclor-1232						NR
Aroclor-1242						NR
Aroclor-1248						NR
Aroclor-1254						NR
Aroclor-1260						NR

NOTES:

Blank space - compound analyzed for but not detected
 B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
 E - estimated value
 J - estimated value, compound present below CREL but above IDL
 R - analysis did not pass EPA QA/QC
 N - Presumptive evidence of the presence of a compound, but can't be identified
 NR - analysis not required
 Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: MCNAUGHTON BROOKE

TOXID: 13-8714-1A

SAMPLING DATE: 5/13/87

EPA CASE NO.: 7275

LAB NAME: COMPUCHEM

INORGANICS

Sample ID No.	NYT2-S1	NYT2-S2	NYT2-S3	NYT2-S4	NYT2-S5	NYT2-S6
Traffic Report No.	MBJ421	MBJ422	MBJ423	MBJ424	MBJ425	N/A
Matrix	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Aluminum	5020	3890	5510	7260	5550	NR
Antimony						NR
Arsenic	11 E	11 E	25 E	27 E	22 E	NR
Barium	305	673	221	2900	1510	NR
Beryllium	J	J	J	J	J	NR
Cadmium	6.6	5	11	44	29	NR
Calcium	21900	16900	26700	11200	24000	NR
Chromium	41	41	208	655	404	NR
Cobalt	R	R	R	R	R	NR
Copper	136 E	189 E	177 E	481 E	282 E	NR
Iron	22300	32300	24100	56600	47200	NR
Lead	494 E	28400 E	359 E	996 E	1030 E	NR
Magnesium	2220 E	2040 E	2960 E	1530 E	2750 E	NR
Manganese	550	485	627	1430	867	NR
Mercury	0.86	2.8	1.3	1.8	1.7	NR
Nickel	16	16	27	57	54	NR
Potassium	J	J	J	J	J	NR
Selenium				R	R	NR
Silver		2.8	4	14	7.7	NR
Sodium	J	J	J	J	J	NR
Thallium						NR
Vanadium	23 E	R	17 E	36 E	41 E	NR
Zinc	591	742	719	1840	1420	NR

NOTES:

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E - estimated value

J - estimated value, compound present below CRDL but above IDL

R - analysis did not pass EPA QA/QC

NR - analysis not required