2021 Hazardous Waste Scanning Project

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APPENDIX 6

Remedial Action and Management

Of The Love Canal Site

June, 1985

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Appendix 6

REMEDIAL ACTION AND MANAGEMENT OF THE LOVE CANAL SITE

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Appendix 6

REMEDIAL ACTION AND MANAGEMENT OF THE LOVE CANAL SITE

6.1.0 OVERVIEW

In 1978, Love Canal, a community in the southeast end of Niagara Falls, N.Y., exploded into the news and entered the nation's daily vocabulary as a grim symbol of improper hazardous waste disposal practices. Reports of chemicals entering the basements of homes nearest to the original Love Canal channel, along with reports of high numbers of illnesses in those homes, led to an investigation by New York State and set off a chain of actions and reactions that forced many of the residents to move, and involved a number of state and federal agencies and even the President of the United States.

Probably more than any other single event, the environmental/health tragedy that unfolded at the Love Canal Site, Niagara Falls, New York, focused national attention on the serious problems associated with abandoned hazardous waste disposal sites. The Love Canal remedial program is an ongoing effort to contain and control an abandoned hazardous waste disposal site. By reviewing the history, the objectives, the work that was actually performed, and the work planned for the Love Canal Site it may be possible to gain additional confidence in the habitability of areas removed from the site itself.

The Love Canal story began in the late 1800's when entrepreneur William T. Love began digging a channel from the Upper Niagara River escarpment. He was trying to create a canal with a 280-foot drop that would be a secondary source of cheap direct-current hydroelectric power. His dream was to divert some of the Niagara River's potential water power to new areas in the hope that new industries and towns would spring up nearby.

But before the project was completed, alternating electrical current was developed so industry no longer needed to be near the source of power. The canal project was abandoned, leaving behind, according to newspaper reports of the day, an excavation approximately one mile long and 80-foot wide.

From 1942 to 1953, the Hooker Electrochemical Company dumped about 21,800 tons of chemical wastes from its nearby plants - which produced pesticides and plasticizers - into the abandoned canal.

In 1953, the Niagara Falls Board of Education purchased the property from Hooker and built the 99th Street School on the site. Because of the school, the number of young families moving into the surrounding area increased. During the next 25 years, chemical odors and black oily substances oozing into the nearby basements became more noticeable, and as the dirt fill settled, barrels and chemical wastes were exposed.

In August of 1978, after some investigation by the New York State Department of Environmental Conservation (NYSDEC), the New York State Commissioner of Health declared the area around the old dump site to be a health hazard. The 99th Street School was closed immediately, and over 230 families were permanently relocated from the first two rings of houses around the Love Canal. The area was fenced off. A Presidential emergency declaration let the Federal Government provide funds to assist the State in its relocation efforts. The State purchased homes located along 97th and 99th Streets, at fair-market value.

In May 1980, President Carter issued the second emergency declaration for Love Canal. New boundaries which established the horseshoe-shaped Emergency Declaration Area (EDA) affected approximately 800 additional families. Again, extensive federal funding supplemented the State's resources.

6.1.1 OVERVIEW - REMEDIAL ACTIONS TAKEN

Prior to the 1980 developments, United States Environmental Protection Agency (EPA) and NYSDEC had signed a cooperative agreement to develop a program to contain the chemicals at Love Canal.

The first step by NYSDEC was the installation of a collection system around the dump site and the construction of a facility to treat the collected contaminated ground water (leachate). A 16-acre, three-foot thick clay cap was placed over the Love Canal dump.

Leachate moving through the ground was caught and carried to a drain pipe. This collection system lowers the level of the water inside the dump site and causes water in the ground - outside the canal itself - to flow inward toward the pipes. The system is a barrier, preventing leachate from moving into the ground water. The leachate collection system and treatment plant began operating in December 1979.

The clay cap acts as an umbrella, preventing rainwater and melting snow from mixing with the toxic and hazardous chemicals underneath it. The cap decreased the amount of water entering the dump site; prevented the runoff of contaminated rainfall; prevented human contact with the waste in the dumpsite; and stopped atmospheric emissions from the buried chemicals.

The abandoned homes in the area immediately adjacent to Love Canal were bulldozed into their basements and covered with earth. The 99th Street School was demolished.

Now the way was clear for completing the expanded remedial program by extending the 16-acre cap to about 40 acres. These additional remedial measures further reduced the amount of water entering the leachate collection system.

Eighteen inches of soil materials were put on top of the plastic liner and seeded with a mix of grasses and fertilizer. Before the winter of 1984-1985's first snowfall, healthy grass covered the dumpsite. The eight-foot high chain link fence still limits access to the area.

In 1983, NYSDEC investigations in the EDA confirmed that Love Canal chemicals had moved from the dump site into the storm and sanitary sewers.

Dioxin-contaminated sediments were found in Black and Bergholtz Creeks. EPA and NYSDEC are currently developing plans to clean the sewers and creeks. It is hoped that this work will be completed by 1987. One concern, however, is where and how to dispose of the dioxin-contaminated sediments when they are removed. This issue is still unresolved as this appendix is written.

Additional work will include an extended perimeter survey achieved by drilling into the ground to determine the extent of chemical contamination from the Love Canal dumpsite. Any needed additional work will be done as soon as possible.

6.1.2 OVERVIEW - LOVE CANAL HABITABILITY REVISITED

EPA conducted a study of the Love Canal EDA in 1980 to provide an environmental data base for decisions related to the sale of the homes there. The study results, released in May 1982, concluded that there was no clear evidence of environmental contamination in these residential areas which could be directly attributed to the movement of chemicals from Love Canal.

In June 1983, the Congressional Office of Technology Assessment (OTA) issued a report, "Habitability of the Love Canal Area - An Analysis of the Technical Basis for the Decision on the Habitability of the Emergency Declaration Area," which disputed the EPA's conclusions. The principal OTA finding is that, "with available information, it is not possible to conclude either that unsafe levels of toxic contamination exist or that they do not exist in the EDA."

The OTA says: "There is still a need to demonstrate more unequivocally that the EDA is safe for human habitation now and in the future....If that cannot be done, it may be necessary to accept the original presumption that the area is not habitable."

Since the OTA report was released, a new government committee has been formed to restudy the habitability question. This Love Canal Technical Review Committee (TRC) includes representatives of EPA, NYSDEC, the New York State Department of Health (NYSDOH), and the U.S. Department of Health and Human Services (DHHS). This group acts as a managerial body, coordinating the many interrelated governmental activities necessary to resolve the complex issues related to habitation of the Love Canal EDA and cleanup and protection of the site.

A second group of non-governmental expert scientists from a variety of disciplines was formed by DHHS and the NYSDOH to develop the criteria upon which the habitability of the EDA could be judged. These scientists have met on several occasions in a public forum in the City of Niagara Falls to discuss the development of these habitability criteria.

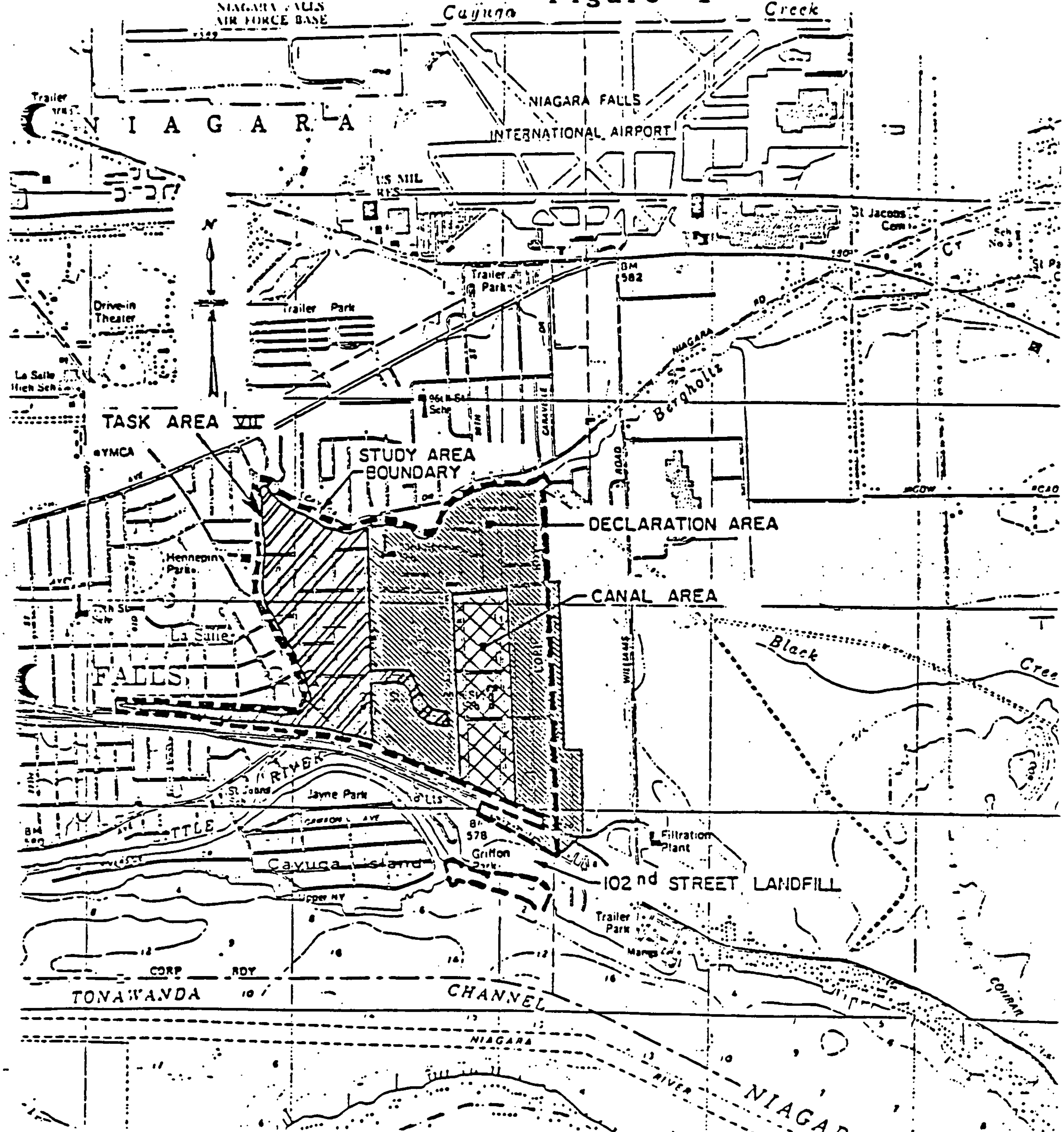
6.2 SETTING

The Love Canal Site is located in the southeast corner of the city of Niagara Falls and is approximately one-quarter mile north of the Niagara River (see Figure 1). It was one of two initial excavations in what was to be a power canal to provide cheap hydroelectric power for industrial development around the turn of the century. The abandoned excavation, partially filled with water, was used largely for recreational purposes.

Aligned nearly north-south, the Love Canal lies in the southeast corner of the City of Niagara Falls. The Canal runs through the center of three city blocks in what was once a residential area in the City.

The portion of the canal project that was abandoned was approximately 3,200 feet long, and perhaps 80 feet wide. The exact depth of the excavation of the canal has not been documented and there are only annecdotal references which

Figure 1



LOVE CANAL
SITE INVESTIGATIONS AND REMEDIAL
ACTION ALTERNATIVES
VICINITY MAP
TASK VII

Source:

Report entitled, "Site Investigation and Remedial Action Alternatives Love Canal"

October 1983

indicate an original depth of about 10 to 12 feet (3.0 to 3.6m) which was subsequently increased to a maximum depth of between 20 to 35 feet (6.1 to 10.7m) prior to placement of wastes in some areas (Hartman, 1981). If true, the latter depths would appear to place the base of the excavation, in some areas, near or at the top of the bedrock. Interpretation of data from geophysical explorations conducted in 1979 by NYSDEC suggest a range of waste deposits from 10 to 15 feet (3.05 to 4.57m) in portions of the central and northern sections of the canal.

6.3 USE

Between the years 1942 and 1953, Hooker Chemical and Plastics Corporation (now Occidental Chemical Corporation) disposed of over 21,800 tons of various chemicals into Love Canal. The solid and liquid wastes deposited into the Love Canal include acids, chlorides, mercaptans, phenols, toluenes, pesticides, chlorophenols, chlorobenzenes and sulfides.

Hooker obtained title to the Canal property in 1947 and continued to dispose of wastes there until about 1953. Portions of the Canal were also used by the City of Niagara Falls for the disposal of municipal refuse.

The early 1950's saw an increase in the rate of residential development in this area of the City. In 1953, the Board of Education of the City of Niagara Falls purchased the Love Canal from Hooker. In 1954 an elementary school was built immediately adjacent to the Canal around which time waste disposal at the Love Canal ceased. Also, 97th and 99th streets and public utilities were installed that ran parallel (north-south) and at some distance from the Canal. Read Avenue and Wheatfield Avenue were also constructed and ran directly across the Canal.

By the mid-1970's approximately 100 homes stood on lots that were immediately adjacent to the abandoned hazardous waste dump. Children from this area attended a public school (the 99th Street School) built at the very edge of the dump and often played on portions of the Canal.

Due to infiltration of precipitation accumulated in the landfill and carried chemically contaminated leachate to the surface where it migrated through the more permeable soils near the land surface into contact with basement foundations. In response to complaints from residents of homes abutting the Canal, NYSDEC and the New York State Department of Health (NYSDOH) with the assistance of the EPA, conducted studies on ground water pollution and basement air and sump water contamination in late 1977.

In April, 1978, on the basis of this initial study data, the Commissioner of the NYSDOH issued an order to the Niagara County Health Department to restrict access to the site and to remove surficial chemical contamination and cover exposed areas. Additional monitoring studies by NYSDEC, NYSDOH and EPA in 1978 led the NYSDOH Commissioner to declare a state of emergency at Love Canal on August 7, 1978. President Carter also declared an environmental emergency at the Canal which enabled the Federal government to provide financial assistance to the State for the initiation of remedial measures.

6.4.0 THE PROBLEM

An understanding of the geology and the hydrogeology of the Love Canal area are very important in order to understand the mechanisms that allowed the buried wastes to become a serious threat to the health and the environment of the Love Canal neighborhood.

The Love Canal was excavated in unconsolidated lacustrine sediments. The upper 5 feet of these sediments vary in texture from a clayey silt to a sandy silt with some zones near the base of this zone grading to a fine sand. This upper zone appears to be the most permeable sediment at the Canal.

Beneath the upper silt zone lies approximately 18-20 feet of varved silty clays. It is most likely that these clays were the bottom of the original canal. Premeabilities of these clays have been reported to be very low.

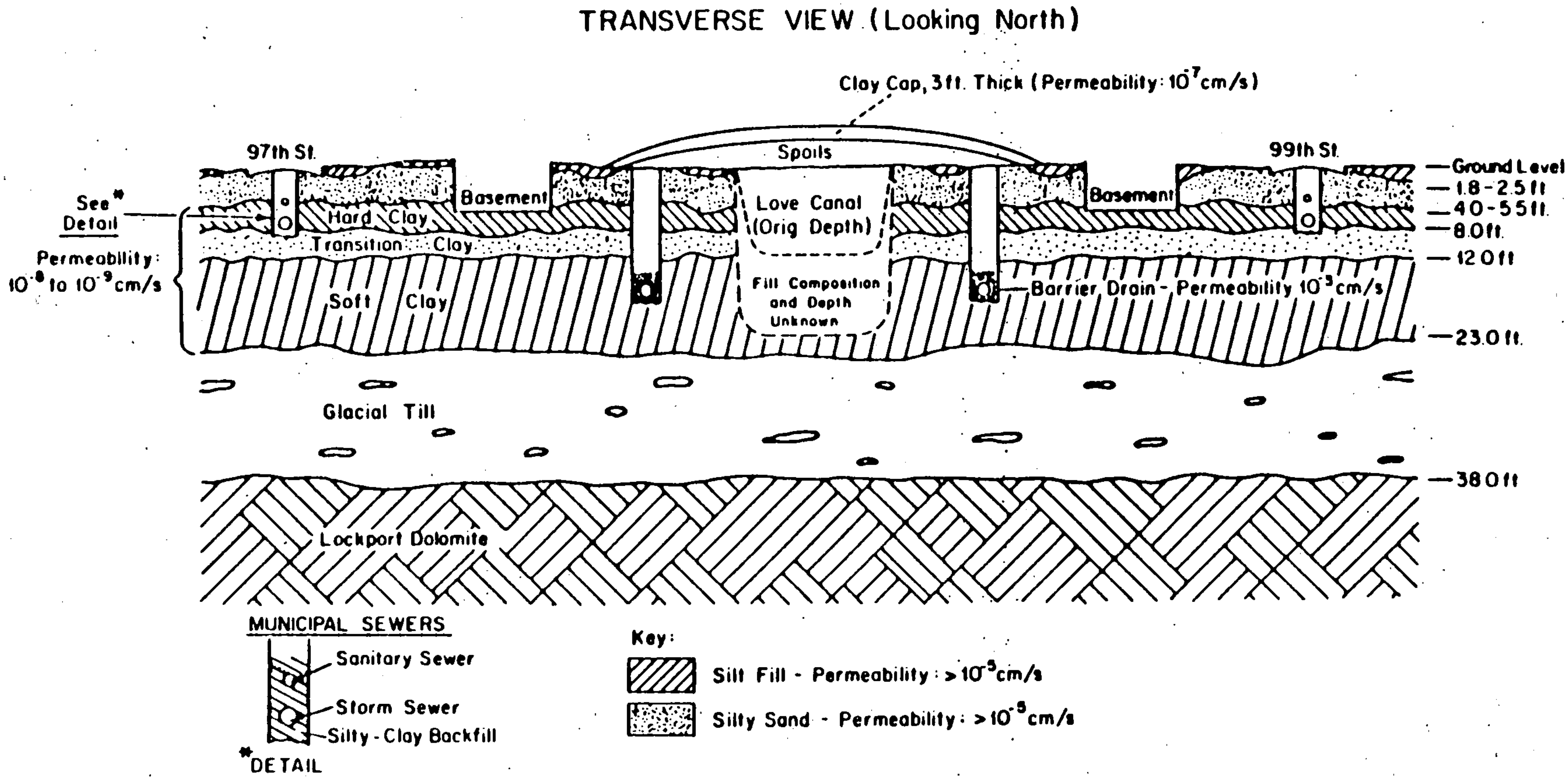
The presence of such a thickness of clay is often considered a desirable geologic setting for waste disposal. However, careful inspection of the clay revealed that it was also part of the problem. The upper 5 to 6 feet of the clays had been exposed and dried at some time following their deposition. However, beneath the desiccated clays lie another 10-15 feet of unaltered lacustrine clays. These clay beds are of very low permeability and are believed to retard migration of contaminants into the underlying bedrock.

Beneath the clays lie approximately 10-15 feet of glacial till also having low permeability. Bedrock is encountered at depths of 35-40 feet and is composed of the Lockport Dolomite (Upper Silurian). Figure 2 presents a typical geologic section of the Love Canal area.

There are two separate groundwater regimes at the Love Canal. The upper groundwater regime occurs within the upper silts and clay. The water table within the upper silt fluctuates seasonally. The area near the Love Canal is relatively flat and is generally poorly drained, and at times the upper zone is completely saturated. Late in the summer the upper groundwater system may be entirely depleted. The deeper regime, a confined system, occurs within the Lockport Dolomite. The piezometric surface lies roughly 10 feet below ground surface.

It is this hydrogeologic setting that allowed chemical wastes to escape from the Love Canal. Over the years infiltrating precipitation mixed with the buried wastes. The underlying clays retarded further downward migration of the now contaminated groundwater (leachate), and in time the wastes became completely saturated.

Figure 2



TRANSVERSE VIEW (Looking North)
Clay Cap, 3ft. Thick (Permeability: 10-7cm/s)
Spoils
97th St.
99th St.
Basement
Basement
Love Canal (Orig Depth)
Fill Composition and Depth Unknown
See* Detail
Hard Clay
Transition Clay
Soft Clay
Permeability: 10-8 to 10-9 cm/s
Barrier Drain - Permeability 10-3cm/s
Ground Level
1.8-2.5ft
4.0-5.5ft
8.0ft
12.0ft
23.0ft
38.0ft
Glacial Till
Lockport Dolomite
MUNICIPAL SEWERS
Sanitary Sewer
Storm Sewer
Silty-Clay Backfill
*DETAIL
Key:
Silt Fill - Permeability: >10-5cm/s
Silty Sand - Permeability: >10-5cm/s

Water grossly contaminated with toxic chemicals and liquid wastes pooled at the landfill's surface. Runoff from the site carried contaminants into area sewers and into the yards of adjacent homes. Differential settlement of the landfill exposed buried wastes at the surface. Volatile compounds and contaminated dust exposed at the surface escaped into the air. Leachate migrated slowly through the upper silts and the desiccated clays, eventually reaching the basements of the homes adjacent to the Canal. Figure 3 presents a schematic of the main routes by which chemicals escaped the Canal.

6.4.1 INVESTIGATION OF THE PROBLEM

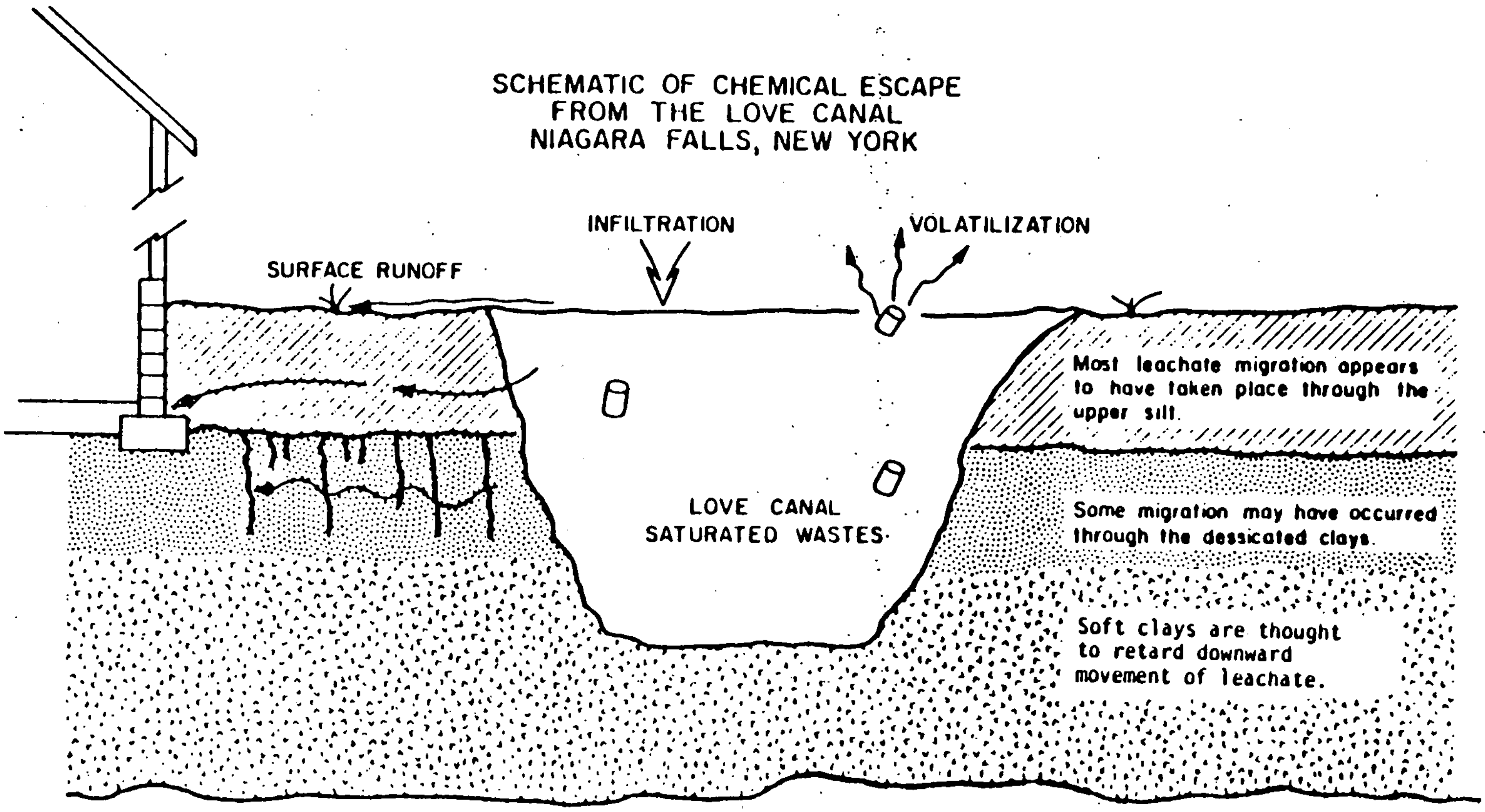
In the spring of 1978, following a series of complaints by local residents, a number of studies were begun to investigate the health and environmental problems at the Love Canal. A preliminary hydrogeologic investigation of the site was conducted by the City of Niagara Falls. The NYSDOH and NYSDEC collected and analyzed samples of soil, groundwater, water from basement sump pits, and air within the homes. An epidemiological study was begun by the State Department of Health.

In August 1978, based upon the results of these studies, then Commissioner Robert Whalen, M.D., NYSDOH, declared that a health emergency existed at the Love Canal. Among other things, Commissioner Whalen ordered that a pollution abatement program be initiated.

6.4.2 THE RESPONSE

On August 7, 1978, President Carter issued a declaration of emergency making federal disaster assistance funds available to the City of Niagara Falls to begin remedial construction. Governor Carey directed that people living closest to the Canal be evacuated. During the fall of 1978, the homes of over 230

Figure 3


SCHEMATIC OF CHEMICAL ESCAPE
FROM THE LOVE CANAL
NIAGARA FALLS, NEW YORK
INFILTRATION
VOLATILIZATION
SURFACE RUNOFF
LOVE CANAL
SATURATED WASTES
Most leachate migration appears to have taken place through the upper silt.
Some migration may have occurred through the dessicated clays.
Soft clays are thought to retard downward movement of leachate.

families were purchased by the State of New York and the families living nearest the Canal were relocated in preparation for the remedial construction.

6.5.0 DESCRIPTION OF THE REMEDIAL PROGRAM

The Love Canal Remedial Action Project was initiated to reduce the environmental and health hazard that resulted from the escape of toxic chemicals from the dump. The initial objective of the Love Canal Remedial Program (Phase I) was to contain the chemical waste at the site. More specifically, the initial objectives of the remedial program were:

1. Prevent further discharge of chemical contaminants into the shallow groundwater system where the chemical contaminants could migrate offsite.
2. Reduce the potential for discharge of chemical contaminants into the bedrock groundwater system.
3. Prevent surface runoff from carrying chemical contaminants offsite.
4. Prevent atmospheric emissions of volatile contaminants and fugitive dust.
5. Prevent direct contact with wastes which had been exposed at the surface of the canal.

More recently, additional remedial work (Phase II) has been performed to meet the following objectives:

1. Further reduce the amount of precipitation infiltrating the site.
2. Reduce the long term costs of operation and maintenance of the leachate collection and treatment system at the site.
3. Eliminate manmade pathways from the site which had in the past allowed chemical migration offsite.

The objectives of the remaining remedial work at Love Canal (Phase III) are to clean up areas beyond the site which have been identified as being impacted by chemical waste migration from the Love Canal, and to develop a long term monitoring program. The objectives of this work are:

1. Identify the extent to which sewers and surface streams which drain the Love Canal area have been contaminated by the Love Canal.
2. Design and carry out remedial programs to remove chemical contaminants found in the sewers and the streams which drained the Love Canal area.
3. Design and install a permanent monitoring program to evaluate the effects and the effectiveness of the Love Canal remedial programs to determine the extent to which Love Canal chemicals have migrated with the groundwater, and to provide sufficient information to determine if any additional effort is needed to address groundwater contamination attributable to the Love Canal Site.

6.5.1 DESCRIPTION OF THE REMEDIAL WORK - PHASE I

The first phase of remedial construction at the Love Canal site consisted primarily of the following elements:

a. A perimeter "Barrier Drain" system was constructed outside of and completely surrounding the Love Canal. The barrier drain served as a hydraulic barrier to prevent the further escape of chemical contaminants in the upper groundwater system. The drain also provided a means of removing leachate from the canal in order to dewater it, and to a limited extent recovered contaminants that had migrated beyond the location of the drain.

b. The entire landfill was covered with a minimum of three feet of well compacted clay. The clay prevented human contact with the waste and prevented further escape of volatiles and fugitive dust from the landfill's surface. The clay cap also greatly reduced infiltration of precipitation and therefore reduced the production of leachate.

c. A treatment plant was built onsite and leachate collected by the barrier drain system is pumped to the plant for onsite treatment.

6.5.2 CONDUCT OF THE REMEDIAL WORK

The first phase of remedial construction at the Love Canal Site was carried out in two separate stages. The City of Niagara Falls was responsible for stage one and contracted with the engineering firm, Conestoga-Rovers and Associates, Waterloo, Ontario to prepare detailed plans and specifications for the work. Following review of the plans and specifications by local, state and federal agencies, the City of Niagara Falls entered into a contract with Newco Chemical Waste Systems, Inc. (now CECOS International, Inc.) to conduct the remedial construction on the southern portion of the canal. This work started in October of 1978 and was substantially complete by October 1979. The work performed by the City included installation of a portion of the barrier drain system along the east and the west sides of the southern section of the Love Canal and the placement of a three foot thick clay cap over the southern section. Please refer to Figure 2. The southern section of the Canal posed the greatest environmental health hazard and the remedial work focused on the "worst-first."

The second stage of the remedial construction was carried out by the NYSDEC. Again, plans and specifications for the remedial work were prepared by Conestoga-Rovers and Associates, Inc. Following the receipt of competitive bids, the NYSDEC entered into a contract with SCA Chemical Waste Services to complete the installation of the barrier drain system along the central and northern sectors of the canal and to complete the installation of the clay cap over the central and northern sectors of the Love Canal. The Department also entered into a contract with the Albert Elia Building Company to construct a permanent leachate treatment plant at the site.

Installation of the drains and clay cap along the central and northern sectors of the canal began in May of 1979 and was substantially complete by November of 1979. Construction of the treatment plant began in September of 1979 and was substantially complete in December of 1979. During the fall of 1980, the clay cap was regraded, recompacted, top soil was placed over the clay and grass was sown to protect the cap from erosion.

6.5.3 MAJOR ELEMENTS OF THE REMEDIAL WORK

6.5.3.1 THE BARRIER DRAIN

The Barrier Drain that now surrounds the Love Canal site consists of approximately 7,000 feet of extra strength perforated vitrified clay tile. The tile is of bell and spigot design with no seal at the joint. The tiles were installed using conventional construction techniques in a trench approximately three feet wide, ranging in depth from 12-20 feet below original grade. The tiles are bedded in and covered with a minimum of one foot of crushed stone. The remainder of the trench is filled with concrete sand. Manholes have been placed in the drain at each change of alignment and at 280 to 300 foot intervals on straight runs. Detailed plans and specifications describing the drain are available for public inspection at the Love Canal Public Information Office, 9820 Colvin Boulevard, Niagara Falls, New York.

In comparison to the adjacent soils, the granular materials used to back-fill the barrier drain trench are very permeable. Leachate migrating away from the canal enters the barrier drain and readily percolates down to the crushed stone bedding. During high flows encountered during construction, liquids entered the perforated tile and flowed rapidly to wet wells where it was pumped out of the ground. Now that a cap is in place and infiltration into the site has been significantly reduced, it appears that the crushed stone bedding has a sufficient hydraulic capacity to transmit current leachate volumes to the pump chambers. Inspection of the manholes reveal little leachate migrating in the tile during normal operating conditions.

Although it was considered feasible to construct the barrier drain system without an underdrain pipe, it was decided that the pipe provided a needed margin of safety for the long term operation of the drain. The tile provided greater flow capacity and a path for leachate flow if a section of the sand and gravel filter materials were ever to become plugged due to migration of adjacent soil particles or if an unexpected chemical reaction occurred with the leachate. The manholes also provided a means to inspect the drain system and offer access to perform cleaning operations if necessary.

6.5.3.2 CLAY CAP AND GRASS COVER

Upon completion of the installation of the barrier drains along both sides of the canal, a three foot thickness of clay was placed over the canal. The cap was installed in six inch lifts and compacted to 90% of the maximum dry density. The final permeability of the cap material was to be less than 1×10^{-7} centimeters per second. Detailed plans and specifications describing the clay cap are available for public inspection at the Love Canal Public Information Office, 9820 Colvin Boulevard, Niagara Falls, New York.

During the installation of the clay cap on the southern sector it became obvious that the canal was not being drained quickly enough. As the clay was placed on the canal, leachate was forced to the surface contaminating parts of the clay cap and making proper compaction impossible. To hasten the draining of the canal in order that the clay cap could be properly installed, a series of lateral drains filled with gravel and sand were constructed that connected the barrier drain with the canal itself. Daily flows of leachate increased substantially as the laterals were completed and the canal was drained to the point where the clay cap could be placed and compacted properly. These lateral drains provide good hydraulic communication between the barrier drain system and the landfill itself.

6.5.3.3 LEACHATE TREATMENT PLANT

The leachate collected by the barrier drain contains a variety of different hazardous organic chemicals. Studies performed by the EPA and the City of Niagara Falls in 1978 and 1979 indicated that granular activated carbon was highly effective in removing the pollutants dissolved in the groundwater. These initial findings were substantiated by the successful performance of the two (2) temporary leachate treatment facilities which were used to treat leachate collected during the installation of the barrier drain. Both temporary facilities utilized granular activated carbon and both consistently produced an effluent which could be safely discharged to the sanitary sewers of the City of Niagara Falls.

In the spring of 1979 the NYSDEC contracted with Conestoga-Rovers and Associates to prepare bidding documents and performance specifications for the construction of a permanent leachate treatment facility. On August 28, 1979 the NYSDEC entered into a contract with the Albert Elia Building Company (AEBC) for the detailed design and construction of the treatment facility.

The treatment system designed by AEBC was approved by the NYSDEC and consists of the following major process units.

a. raw leachate is pumped from the leachate collection system into a large tank within the plant which provides storage needed to accomodate the difference in rates of leachate entering the plant and the rate of treatment;

b. raw leachate is transferred to a clarifier where settleable solids, if any, and immiscible organic liquids are separated from the contaminated groundwater;

c. the clarified leachate flows into a surge tank and is then passed through a bag filter which removes suspended solids;

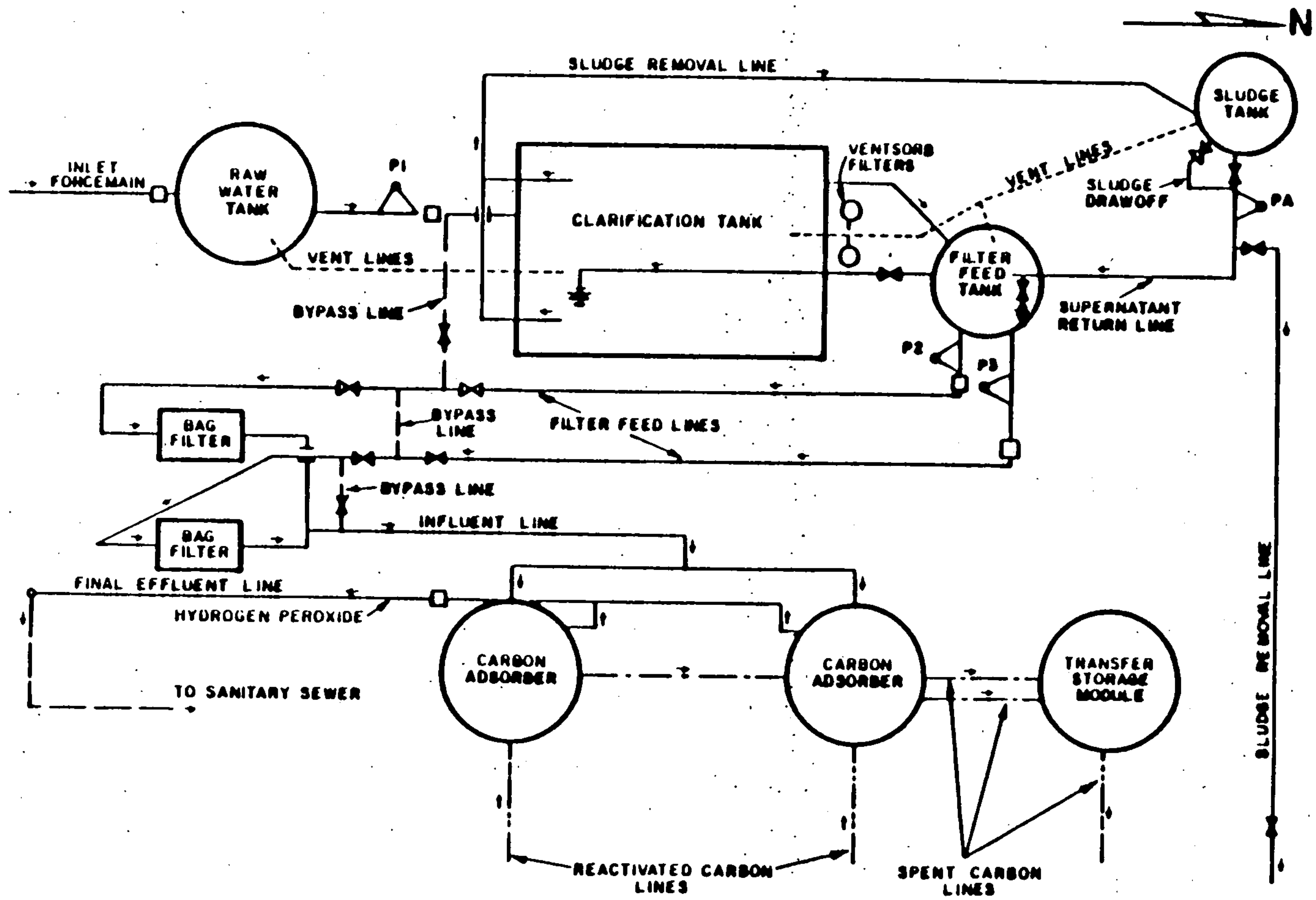
d. the clarified and filtered leachate is passed through two beds of granular activated carbon. The two beds are linked in series and as the leachate passes through first one bed and then the second, organic pollutants dissolved in the groundwater are effectively removed; and

e. hydrogen peroxide is injected into the effluent to oxidize the hydrogen sulfide generated by anaerobic bacteria which grow in the carbon beds.

Construction of the treatment plant was begun in September of 1979 and was substantially complete in December of 1979. Figure 4 presents a flow diagram of the leachate treatment process. A detailed set of plans and specifications describing the leachate treatment plant are available for public inspection. Manuals describing the operation and maintenance of both the leachate collection system and the leachate treatment plant are also available for public inspection.

The treatment process at the Love Canal Leachate Treatment Facility starts with pumping the leachate through a clarifier. The purpose of this clarifier is to separate the heavier chemical sludge and any suspended solids from the leachate. The residence time in the clarifier is approximately two hours. After clarification, the water is pumped through a bag filtration unit to remove any remaining suspended material which might otherwise clog the activated carbon system. Two 8,000 gallon downflow, activated carbon adsorbers, which are operated in series, are utilized to remove organic pollutants from the waste stream. Following the activated carbon treatment, hydrogen peroxide is injected

Figure 4



TREATMENT PROCESS FLOW DIAGRAM

LOVE CANAL LEACHATE TREATMENT FACILITY

into the effluent to control sulfur odors arising as a result of bacterial activity on the carbon. The effluent is then discharged to the City of Niagara Falls sanitary sewer system for additional treatment.

For over five (5) years the NYSDEC has been responsible for leachate treatment at the Love Canal site. During that time the quality of the effluent has been regularly monitored and has consistently been treated to a level allowing for a safe discharge to the City of Niagara Falls' sanitary sewers. A description of the treatment plant routine operations and performance is presented in Section 6.8.4 and Section 6.8.5.

6.6 DESCRIPTION OF THE REMEDIAL WORK - PHASE II

Monitoring of groundwater elevations and the chemical quality of the groundwater near the perimeter of the clay cap revealed that (a) a considerable amount of recharge was occurring at the toe of the cap, and (b) chemical contaminants were present in the groundwater beyond the zone of influence of the barrier drain system.

Precipitation running off the clay cap was by design allowed to run overland to the streets where it entered the storm sewers and was conveyed off-site. Monitoring of groundwater elevations indicated that a significant amount of runoff from the cap percolated into the ground just beyond the toe of the clay cap. An area of unusually high recharge was created at the toe of the cap due to the precipitation it received directly and also received as a result of the significant amount of runoff from the cap. The increased recharge at the toe of the cap resulted in large quantities of relatively clean groundwater entering the barrier drain due to increased infiltration occurring only a small distance from the drain. The increased infiltration also created a mound in the shallow groundwater system which tended during times of high recharge to move contaminated groundwater further away from the drain.

6.6.1 CONDUCT OF THE PHASE II REMEDIAL WORK

At the request of the NYSDEC, in October, 1981 USEPA entered into a contract with CH2M Hill, Inc., Reston, Virginia to design an improved cap for the Love Canal Site that would improve the efficiency of the leachate collection system. Also included in the design provided by CH2M Hill were elements of work which would further isolate the contaminants in and around the Love Canal from the surrounding area. The major elements of this work included:

a. repairs to leachate collection system;

b. expansion of the capped area and upgrading of the cap to include a synthetic membrane;

c. improved surface drainage in the vicinity of the Love Canal;

d. cleaning, abandonment and plugging of storm and sanitary sewers that drained in the Love Canal site;

e. new storm water drainage facilities for the Love Canal Site; and

f. a below grade concrete groundwater cutoff wall.

In July of 1982, NYSDEC entered into an Assistance Agreement with EPA to carry out the construction of the Phase II Remedial Work designed by CH2M Hill for EPA. In August, detailed plans and specifications were complete for the supplemental remedies, and in September 1982, NYSDEC received bids for the remedial construction. NYSDEC also negotiated a contract with CH2M Hill to provide engineering services (construction supervision, contract management) during the remedial construction. In December 1982, NYSDEC awarded a contract to Sevenson Construction Corporation to perform the remedial construction.

6.6.2 MAJOR ELEMENTS OF THE REMEDIAL WORK - PHASE II

Detailed plans and specification of all work performed as a part of the Phase II Remedial Work are available for public inspection. Below is a summary description of each of the major elements of the work included in Phase II.

6.6.2.1 ABANDONMENT OF STORM AND SANITARY SEWERS

The storm and sanitary sewers which served the Love Canal area of the City of Niagara Falls were known to be contaminated with chemicals that had migrated from the Love Canal. The sewers immediately adjacent to the Love Canal Site were taken out of service, plugged, and cleaned. (The contaminated sediment and debris removed from the sewers is now stored in drums on the site until an acceptable means of disposal is found.) The plugging of these sewers prevents the continuing migration of chemical wastes from Love Canal to Black and Bergholtz Creeks, and the Niagara River.

The effluent from the Love Canal Leachate Treatment Plant previously discharged into the 97th Street sanitary sewer. Since the 97th Street sanitary sewer was abandoned and plugged, a new effluent line from the Love Canal Leachate Treatment Plant was constructed and connected with the 95th Street sanitary sewer. Effluent from the Love Canal Leachate Treatment Plant is conveyed to the City of Niagara Fall's wastewater treatment plant before it is discharged to the Niagara River.

6.6.2.2 REPAIRS TO LEACHATE COLLECTION SYSTEM

Before a new cap was constucted over the landfill, the barrier drain was cleaned, inspected, and necessary repairs were made. In the fall of 1982, NYSDEC had hired O.H. Materials to clean and inspect the barrier drain on the southern portion of the Love Canal. As a result of this work, a number of sections of the drain were found to need repairs. Subsequent cleaning and inspection of the barrier drain along the central and northern portion of the Love Canal also revealed a number of areas that required repair.

All areas of the drain requiring repair were removed, were replaced with new pipe, and the entire drain was cleaned. The drain was again inspected, and found to be acceptable. Contaminated sand, gravel, and debris resulting from the repair of the barrier drain were buried on-site. As with any operating facility, the barrier drain, the pumps, the controls, etc. that comprise the leachate collection system will required periodic maintenance and repair. NYSDEC will continue to routinely inspect and repair, as necessary, the leachate collection system.

6.6.2.3 IMPROVED CAP AND SITE DRAINAGE

To reduce the amount of precipitation which infiltrated the ground near the barrier drain, an improved and expanded cap over the landfill was constructed. The clay cap completed in 1980 was stripped of topsoil, regraded, and recompacted. Select soil was brought on-site, graded and compacted to provide a suitable base for the new "cap".

The new cap was a synthetic membrane composed of high-density polyethylene, .040 inches thick. The cap was expanded to cover an area of approximately forty (40) acres and now extends nearly 200+ feet beyond the barrier drain to the east and to the west. Additional select fill was placed over the liner to protect it from weather and sunlight.

The additional fill brought on-site and the spoiled materials from the repairs to the barrier drain created steeper slopes grading away from the landfill. The steeper slopes and the synthetic membrane result in significantly less infiltration of precipitation into the landfill. Precipitation now runs off the site and is collected by a new surface drainage system at the edge of the cap. Surface drainage which is uncontaminated, is conveyed to area storm sewers by a system of new storms which were built for this purpose. The new cap should result in less leachate generation and an expansion of the zone of influence of the barrier drain. Expansion of the zone of influence of the barrier drain should place under hydraulic control polluted groundwater, that without the expanded cap, would be beyond the hydraulic influence of the barrier drain. Recent monitoring shows the hydraulic influence of the drain to extend nearly to the edge of the expanded cap. (See Figure 5)

6.6.2.4 GROUNDWATER CUTOFF WALL

A below ground, concrete wall was included in the original design of the Phase II Remedial Work. The concrete wall was designed to prevent groundwater from migrating beneath the expanded cap toward the barrier drain. It was anticipated that cutting off the influx of relatively clean groundwater would reduce the amount of water treated at the Love Canal Leachate Treatment Plant and was thought to be a cost-effective means of reducing the long-term costs for operation and maintenance of leachate collection and treatment.

Subsequent analysis indicated that the cutoff wall would only slightly reduce the amount of leachate collected for treatment and therefore was not cost effective. Furthermore, the cutoff wall would prevent any groundwater contamination located outside the wall from ever being recovered by the barrier drain. For these reasons NYSDEC, with the approval of EPA, deleted the groundwater cutoff wall from the remedial work.

6.7 SITE MANAGEMENT - OVERVIEW

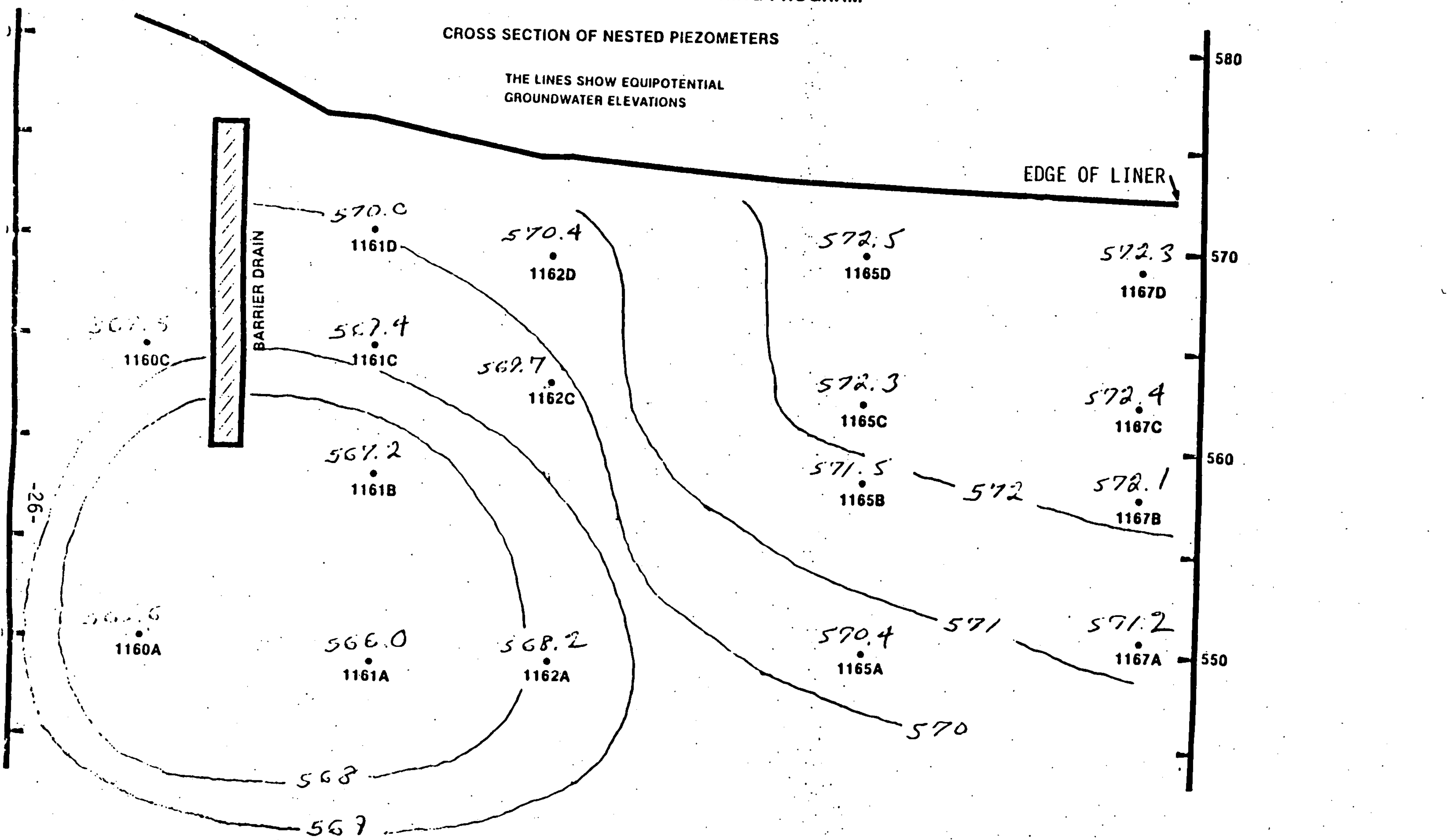
On August 2, 1978, then Commissioner of the NYSDOH, Robert Whalen, issued an order and directive to the Niagara County Board of Health and the Niagara County Health Commissioner; the City of Niagara Falls; and the City of Niagara Falls Board of Education. Among the directives included in this order were that appropriate and necessary corrective actions be taken to abate the public health nuisance existing at the Love Canal chemical waste site and that the City of Niagara Falls and the County of Niagara Board of Health take all appropriate steps to implement a "Pollution Abatement Plan" subject to the approval of the

Figure 5

LOVE CANAL GROUNDWATER MONITORING PROGRAM

CROSS SECTION OF NESTED PIEZOMETERS

THE LINES SHOW EQUIPOTENTIAL GROUNDWATER ELEVATIONS



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Commissioner of NYSDEC. On the same date, then Governor Carey established the Love Canal Interagency Task Force chaired by the Commissioner of the New York State Department of Transportation. The Task Force became the management board responsible for carrying out the Commissioner of Health's orders. By spring of 1979, the initial phase of remedial work at Love Canal was substantially complete and families living in the immediate area of the canal had been relocated. By this time, the NYSDEC had entered into a Cooperative Agreement with the EPA to complete the remedial program begun by the City of Niagara Falls and in the fall of 1979, the NYSDEC assumed all responsibility for the remedial activities at Love Canal.

In assuming responsibility for the remedial activities at the Love Canal Site, the NYSDEC carried out its general functions, powers, and duties as described in Article 3, Title 3 of the New York State Environmental Conservation Law. The Law reads in part that the NYSDEC shall provide for prevention and abatement of all water, land and air pollution (Article 3, Title 3, Section 3-0301.1(i)). Furthermore, guidance is provided to the NYSDEC in Article 27, Title 13 of the New York State Environmental Conservation law, which states in part, "the Department may develop and implement an inactive hazardous waste disposal site remedial program for such site". The purpose of both the State and Federal Superfund Statutes is to facilitate remediation, by the appropriate State agencies, of abandoned or inactive hazardous waste sites, including appropriate operation and maintenance. The NYSDEC must carry out its statutory responsibilities and will continue to implement an inactive hazardous waste disposal site plan at the Love Canal. Execution of this plan has required and will continue to require the following activities:

a. Investigations of problems attributable to Love Canal;

b. Design of appropriate remedial programs to abate pollution attributable to Love Canal;

c. Execution of remedial construction to abate pollution attributable to Love Canal;

d. Operation and maintenance of facilities built to abate pollution of Love Canal; and

e. Monitoring of the effects and the effectiveness of remedial programs implemented at the Love Canal Site.

Such responsibilities will be carried out in accordance with all state and federal rules and regulations by the NYSDEC. Relief from such responsibility may result from the ongoing litigation against Hooker Chemicals and Plastics Corporation now known as Occidental Chemical Corporation (which the State joined in 1980).

Until such time as the NYSDEC has obtained appropriate relief, it shall continue to carry out its statutory obligations and retain full responsibility for the remedial program at the Love Canal Site.

6.7.2 ROLE OF THE DEC DIVISION OF SOLID AND HAZARDOUS WASTE

Within the NYSDEC, responsibility for the development and implementation of the inactive hazardous waste disposal site remedial program for Love Canal has been assigned to the Division of Solid and Hazardous Waste. Since the time at which the NYSDEC accepted responsibility for the Love Canal site, the remedial programs at Love Canal have been under the direct administrative control of Mr. Norman H. Nosenchuck, P.E., Director, Division of Solid and Hazardous Waste. More recently, Mr. Nosenchuck has established the Bureau of Western Remedial Action within the Division of Solid and Hazardous Waste. This Bureau is responsible for carrying out the inactive hazardous waste disposal site remedial program at the canal. Within the Bureau there are two sections that are responsible for remedial activities at Love Canal. The Bureau's Special Projects Section is responsible for the day to day operation and maintenance of the facilities at the canal and for research into new technologies which may have application at the canal. The Bureau's Remedial Section A is responsible for the investigation, design, and execution of remedial construction projects found necessary at Love Canal and for monitoring the effects and the effectiveness of these remedial programs. (See Figure 6 - organizational chart of the NYSDEC).

6.7.3 LOVE CANAL TECHNICAL REVIEW COMMITTEE (TRC): PURPOSE AND FUNCTIONS

6.7.3.1 TRC

- The TRC, established in 1984, is a group formed by Federal and State agencies involved in addressing the issues of habitation of the Love Canal EDA and remediation of the site.
- Its purpose is to act as a Management Group, coordinating the many interrelated governmental activities necessary to resolve these very complex issues.
- The TRC members are:

  William Librizzi - Director, Office of Emergency and Remedial Response, EPA Region II, New York, N.Y. (Chairman)

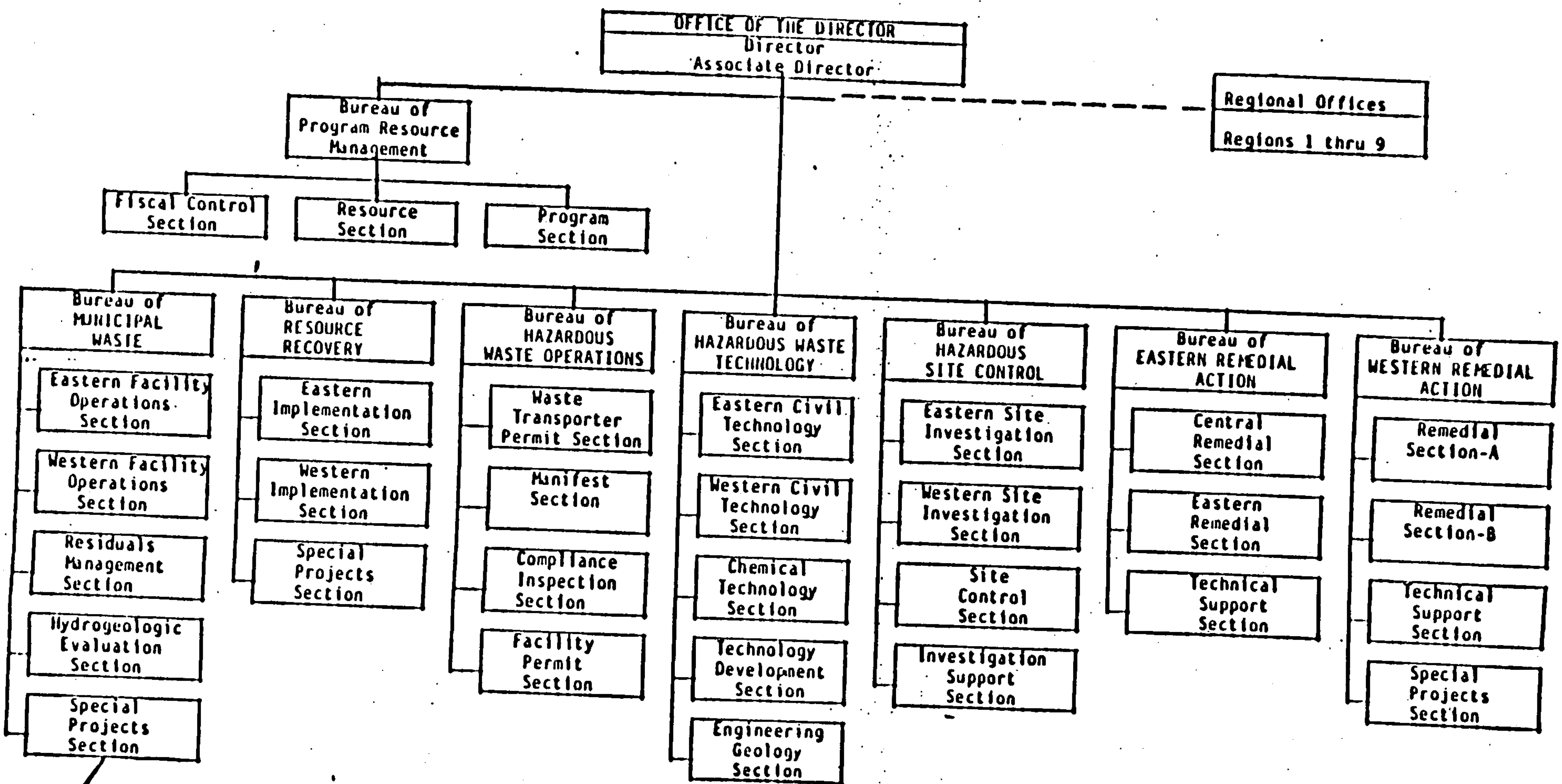
  Robert Ogg - Chief, Hazardous Waste Branch, EPA Region II, New York, N.Y. (Alternate Chairman)

  Vincent Pitruzzello - Environmental Engineer, Hazardous Waste Branch, EPA Region II, New York, N.Y.

  Daniel Van der Meer - Associate Director, Center for Environmental Health, Centers for Disease Control, U.S. Department of Health and Human Services (DHHS), Atlanta, GA.

Figure 6

DIVISION OF SOLID AND HAZARDOUS WASTE
ORGANIZATION CHART
1985-1986



APPROVED: DATE: Feb. 22, 1985

Norman H. Nosenchuck, P.E.
Director, Division of Solid & Hazardous Waste

APPROVED: DATE: February 22, 1985

R. Darryl Banks
Deputy Commissioner

APPROVED: DATE: 2/23/85

Henry G. Williams
Commissioner

Thomas Welty M.D. (Member from beginning thru Spring, 1985) - Medical Epidemiologist, Cancer Branch Chronic Diseases Division, Centers for Disease Control, U.S. Department of Health and Human Services (DHHS), Atlanta, GA.

Robert Huffaker - Associate Director, Office of Public Health, New York State Department of Health (NYSDOH), Albany, N.Y.

Norman Nosenchuck - Director, Division of Solid and Hazardous Waste, New York State Department of Environmental Conservation (NYSDEC), Albany, N.Y.

6.7.3.2 USE OF CONSULTANTS

To assist the TRC in performing many of its activities, EPA has contracted with the consulting firm of CH_2M-Hill. This consultant will assist in the data collection, quality assurance, data computerization activities and provide other support as required by the TRC.

CH_2M-Hill will work with EPA HQ's Office of Research and Development, located in Washington D.C., to formulate Quality Assurance Methodologies for proper evaluation of the quality of the data avialable for addressing the habitation issues.

In addition, CH_2M-Hill will be the mechanism for procurement of the expert scientists selected by DHHS/NYSDOH for assistance in the development of habitability criteria. This was done to expedite the procurement of services. The scientists will not be reporting to or under the direction of CH_2M-Hill, but will be working directly with DHHS/NYSDOH. CH_2M-Hill's funtion in this activity is solely to procure their services and provide support to DHHS/NYSDOH and the scientists as needed.

6.8.0 ONGOING WORK - OPERATION AND MAINTENANCE

The New York State Department of Environmental Conservation has been assigned responsibility for direct administrative control of the Love Canal site and the operation and maintenance of all remedial facilities at the Site. The following presents an overview of the operation and maintenance of the facilities at the Love Canal Site.

6.8.1 BARRIER DRAIN/LEACHATE COLLECTION SYSTEM

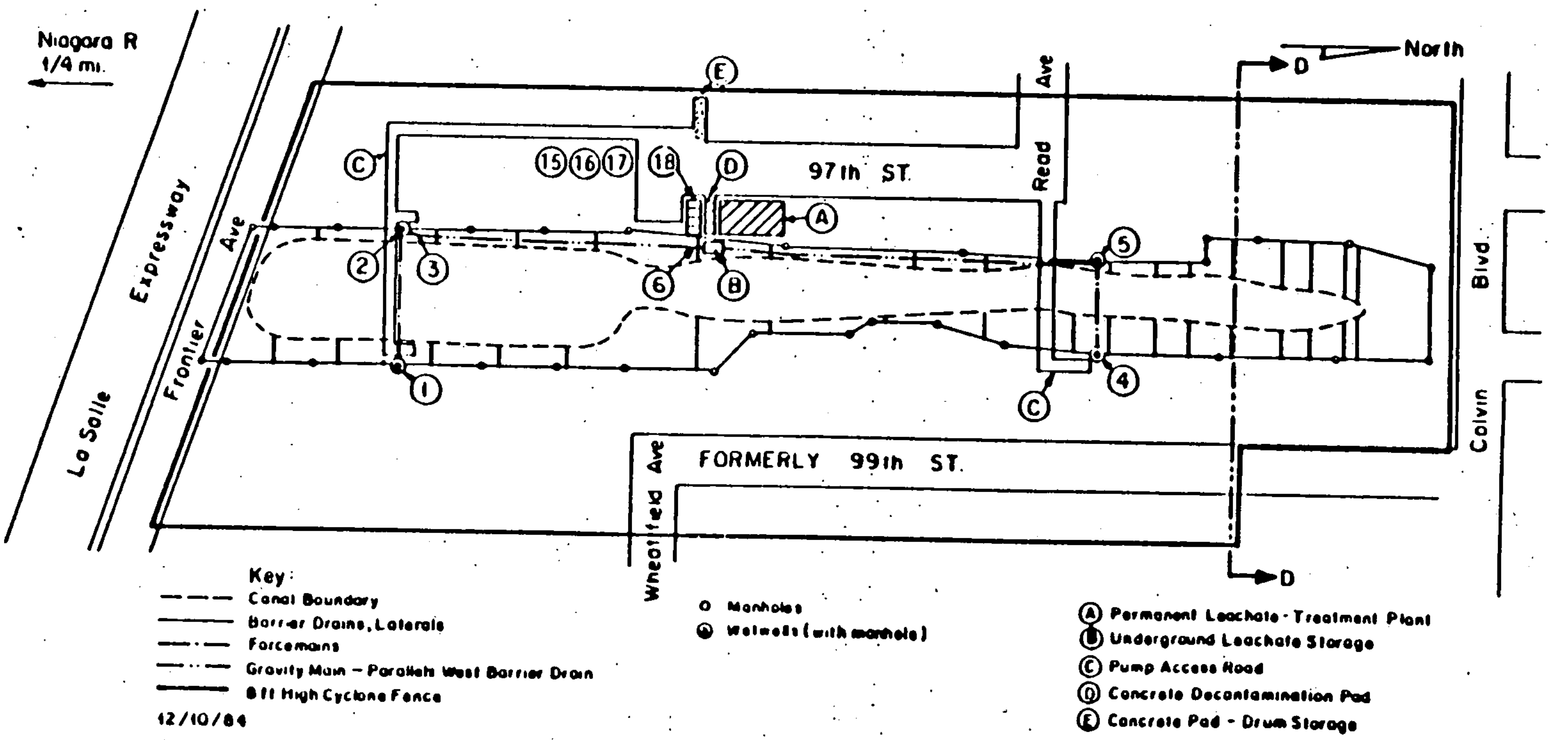
As described previously, a drain which serves as a barrier to leachate migration in the near surface groundwater system completely surrounds the landfill. Leachate which enters the drain system, flows to one of four wet wells included in the drain system. From the wet wells, the leachate is pumped to underground storage tanks which are also located within the perimeter of the drain. From the underground storage tanks, leachate is pumped into the on-site leachate treatment plant for processing. Figure 7 presents a plan view of the leachate collection system.

Like any other buried utility, the leachate collection (including the barrier drain, pumps, storage tanks, etc.) requires continuous maintenance and periodic repair. Pumps, wet wells, and other appurtances comprising the leachate collection system are regularly inspected. Routine maintenance of these facilities includes such activities as lubrication of pumps and motors and replacement of worn or defective parts.

During the summer of 1984, the entire barrier drain was inspected, cleaned, and repaired. The periodic inspection, cleaning, and repair to the leachate collection system will be required as long as the Love Canal Site produces leachate, which it will for an indefinitely long period of time. The State of New York will continue to assure the proper functioning of the system unless and until another responsible entity might be assigned the responsibility.

Figure 7

LOVE CANAL SITE PLAN



Additional details describing the operation and maintenance of the leachate collection system are presented in the "Operation and Maintenance Manual, Love Canal Remedial Action Project, Leachate Collection System and Treatment Facility, NYSDEC, Dec. 1980, Volumes I and II" which are available for public inspection.

6.8.2 LEACHATE TREATMENT PLANT

As described previously, the leachate treatment plant provides for the gravity separation of the contaminated water from the settleable solids and immiscible fluids collected by the leachate collection system. Removal of chemical contaminants from the water is achieved by passing the contaminated groundwater through large tanks filled with granular activated carbon (see Figure 4)

Currently, the NYSDEC has a contract with CECA, Inc. of Tulsa, Oklahoma to provide fresh activated carbon. The carbon is delivered to the plant by truck and is available within two weeks after placement of the order. The activated carbon has a finite capacity for the adsorbtion of chemical contaminants from the leachate. Once that capacity is used (the carbon is "spent"), the carbon is removed from the adsorption vessel and in the past has been transferred to trucks for disposal at CECOS, International, Inc., a secure chemical landfill located in Niagara Falls, New York.

It appears now, that after July 15, 1985 under the Hazardous and Solid Waste Act Amendments of 1984, the spent carbon can no longer be transported to CECOS for disposal and instead will have to be stored at the Love Canal site.

The leachate treatment process also requires the collection of samples for chemical analysis, and the operation of numerous pumps, valves, control devices, air compressors, etc. All these appurtances require regular maintenance and periodic repair or replacement. In addition, the leachate treatment plant building has lighting, heating, and plumbing facilities which must be maintained in proper working order.

Much of this work is performed by NYSDEC staff. Those tasks which cannot be performed by NYSDEC staff are performed by qualified electricians, plumbers, mechanics, etc. under contract with the Department.

Additional details describing the operation and maintenance of the leachate treatment facility are presented in the "Operation and Maintenance Manual, Love Canal Remedial Action Project, Leachate Collection System and Treatment Facility, NYSDEC, Dec. 1980, Volumes I and II" which is available for public inspection at the Love Canal Public Information Office, 9820 Colvin Boulevard, Niagara Falls, New York.

In addition, as experience has been gained in the operation and maintenance of both the leachate collection system and the leachate treatment plant, modifications have been made to improve the ease, the efficiency, and the safety of operations and maintenance. For example, recently an improved ventilation system was installed in the leachate treatment plant to improve working conditions within the plant. Currently plans are designed for another building to be constructed near the leachate treatment plant (see Section 6.10.7). The new building will provide space for storage of tools and equipment, office space, and improved hygiene facilities for increased worker safety and a safe area for equipment repair and maintenance.

6.8.3 RESOURCES

Operation and maintenance of the leachate collection system and the leachate treatment plant is the direct responsibility of the Special Projects Section within the Bureau of Western Remedial Action. Nicholas Kolak, Ph.D., is the supervisor of the Special Projects Section. The Special Projects Section has a staff of seven (7) composed of scientists, engineers, and technicians. All members of the section are trained in and capable of operating the leachate collection and treatment systems.

The leachate collection and treatment systems are normally operated five (5) days per week, eight (8) hours per day. The facilities are operated and maintained by two full time NYSDEC employees hired for this specific purpose. Other staff in the Special Projects Section serve as back-up operators and provide support assistance as required. The on-site operators and all other staff in the Special Projects Section are also familiar with facility contingency plan and are on-call on a continuous basis to handle any problems which may arise.

The NYSDEC currently spends over $500,000 a year on operation and maintenance of the leachate collection and treatment systems. This sum is spent in the following major categories:

- o Personnel services
- o Operating costs
  - carbon
  - carbon disposal
  - heat/light/phone
- o Maintenance/Repairs
- o Improvements

Funding for these activities is approved each year by the New York State Legislature. Such approval is expected each year as long as there is a need to operate and maintain these facilities in order to protect the health and welfare of the people and environment at this site.

6.8.4 DESCRIPTION OF ROUTINE OPERATIONS

Operation of the facility commences each day when the leachate collection system pumps are turned on. Leachate is pumped from the barrier drain to the underground storage tanks. Once the liquid level in the storage tanks warrants processing, the treatment facility is activated and leachate is pumped from the storage tanks into the treatment plant. During the operation, the operators continuously monitor tank levels, pump outputs and various pressure and flow readings as well as taking samples of the process for laboratory analysis. When there is insufficient leachate to require operation of the plant, the operators perform maintenance activities on the system as prescribed in the Operation and Maintenance manuals.

During the plant operation, the quality of the effluent is always monitored through periodic sampling. Samples are taken from the activated carbon influent, the midpoint (between carbon beds) and the effluent. The effluent is discharged directly to the sanitary sewers of the City of Niagara Falls under permit (see Attachment II). In this way, the effectiveness of each carbon bed can be assessed continuously. The first set of samples is taken after 5,000 gallons of leachate have been processed. This procedure ensures the receipt of better data by allowing the system to be flushed of process water which has stood from the preceeding day.

One of the more important decisions made regarding plant operations is to determine the need to change the activated carbon. This decision is based on the performance of the activated carbon and the concentration of pollutants in the effluent. Influent, midpoint, and effluent data are interpreted relative to the plant's discharge permit with the City of Niagara Falls which calls for a limit of 50 pounds of soluble organic carbon (SOC) and 6.25 pounds of total suspended solids (TSS) per day as a quarterly average. The maximum daily load is 75 pounds per day SOC and 16 pounds per day TSS. At a flow rate of 30,000 gallons per day, the latter limits correspond to a concentration of 300 ppm of SOC and 64 ppm TSS. When the SOC concentration in a sample taken between the carbon beds reaches a level which would result in non-compliance with the permit, then a judgment is made whether to change the carbon in the primary tank. In the meantime, the carbon in the polishing tank continues to remove contaminants during the time required to receive a fresh load of carbon.

A data summary for SOC and TSS for 1984 is presented in Table 6.8.4(1).

Table 6.8.4(1)

CARBON EFFLUENT PERMIT PARAMETERS

		Concentrations (ppm)			
	No. Data Points	Low	High	2nd Highest	Average
TSS	41	< 2	120	20	6.8
SOC	40	22	320	290	145

Overall, the data show that TSS values are always well within the permit limit. There was one value at 120 ppm which exceeded the permit but which averages out over time. This single high value is unexplained.

The SOC data illustrate permit compliance as well. The value of 320 ppm and 290 ppm lie on either side of the maximum daily SOC concentration of 300 ppm. Again, these data could be associated with disturbances in the field but the frequency of such events is sufficiently low to not warrant concern. In general, plant operations are readily able to meet the permit conditions to insure the highest performance in decontamination of the leachate.

To further provide for continuous and effective plant performance, the State of New York has entered into a three year contract with CECA, Inc. Tulsa, Oklahoma, for the supply of carbon. Under this contract, the carbon is supplied within two weeks upon receipt of order. Disposal of the spent carbon is handled under a contract with CECOS International, Inc. Notification to the contractor results in scheduling disposal operations within two weeks.

Other types of work performed at the facility include the construction activities required to modify and upgrade the facility. As experience is gained through the operation of the facility, modifications are proposed with the objective of increasing safety and plant performance. This work encompasses equipment and structure or safety modifications which cannot be performed by the treatment facility staff. Subsequent to design, such work is normally performed by private contractors. An example of this type of work is the recent construction of modifications to the ventilation system at the plant. The end result was increased convenience and safety at the plant.

Currently under design is a project to replace the pumps in the south pump chambers. When completed, this project will result in increased operator safety and reduced maintenance and repairs. Also under design is a new administration building. This building will be kept clean from contamination and provide improved shower facilities, increased clean storage space and a small laboratory room to provide for some analyses outside of the treatment plant.

6.8.5 PERFORMANCE

Flow data represent the volume of leachate being pumped through the carbon beds when the plant is in operation. The need to operate the plant daily is determined by the on-site operators and is based upon the quantity of leachate which has accumulated in the underground storage tanks.

The plant capacity of 160 gallons per minute and an eight hour day is sufficient to process the leachate which is produced throughout the year, including the peak volume which occurs during the spring thaw. The average flow processed detected and are consistently present. For the volatile category, 12 of 27 over each operating day in the past five years is 31,000 gallons; the total leachate volume treated as of March 19, 1985 is 21,951,230 gallons. NYSDEC has never had to operate a second or third shift at the plant to accomodate the volume of leachate produced by the landfill. If the need arose to process an unusually large amount of leachate, the treatment plant is designed and can operate three shifts per day.

To fulfill the need to monitor the chemistry of the chlorinated hydrocarbons within the leachate, samples have been collected every operating day from November 1980 to date. Samples are obtained from the influent, midpoint, and effluent stations and submitted to the NYSDOH for analysis. All samples were analyzed using a gas chromatograph-mass spectrometer for positive identification of chemical components.

The priority pollutants which are monitored consist of 113 components which are categorized as follows:

Prioritory Pollutant Categories and Components

Base Neutrals	61	
Acid Extractables	12	
Volatiles	27	
Metals	13	
Total	113	Components

As a result of compiling this data over four years, it is evident that many of these priority pollutant components are not present in the influent samples collected at the treatment plant. In the case of base neutrals, only 9 of 61 components have been observed at levels above the detectable limits established by the laboratory. For acid extractables, only 4 of 12 chemicals have been chemicals are normally observable; in the case of trace metals, none of the 13 components was consistently present to warrant continued monitoring. Therefore, analysis for trace metals has been discontinued.

Most of these chemicals readily adsorb onto the activated carbon and are easily removed from the leachate. For the base neutral category, the 9 components observable in the influent samples at concentrations of several thousand parts per billion are at or below detectable limits in the corresponding midpoint and effluent analyses. Materials such as chlorinated benzenes (including lindane) and a chlorinated napthalene are examples of this category where binding to activated carbon is very strong. Similarly for the acid extractable category, the four observable components are represented by phenols and its chlorinated derivatives, e.g. 2,4,5-trichlorophenol (2,4,5-T). The average range in the influent for these materials reaches 2000 ppb while the corresponding results in the effluent are at the detectable limits of 10 ppb. Such data demonstrate high removal efficiencies for the higher molecular weight components, examples of which are presented in Table 6.8.5(1).

Table 6.8.5(1)

Typical Removal Results for Base Neutral and Acid Extractable Components

	Influent		Effluent	
	Highest Values Observed (PPB) for 1982	Average Value (PPB) for 1982	Highest Values Observed (PPB) for 1982	Average Value (PPB) for 1982
1,4-Dichlorobenzene (Base neutral)	1300	382	11	10.1
	1983	1983	1983	1983
2,4,6-Trichlorophenol (Acid extractable)	1700	562	38	11.4

As a result of such efficiencies evident over five years of monitoring, the base neutral and acid extractable categories are no longer analyzed routinely. Such sampling will be performed quarterly so that we can continue to monitor for any subtle changes in the composition of the leachate over time. The latter type of data also serves to meet the requirements of the discharge permit which has been authorized for the treatment plant by the City of Niagara Falls. In similar fashion, samples will also be submitted quarterly for analysis of total organic phosphorous and total phenols. While three years of data for the latter parameters only revealed levels at the detectable limits in the laboratory, quarterly monitoring will be sufficient to provide notice of any changes in the quality of the leachate.

The volatile priority pollutant chemicals in the influent samples represent the highest concentrations of all monitored components. Data for the three components benzene, toluene and chlorobenzene are presented here in Table 6.8.5(2) to illustrate concentration levels for the selected volatiles.

Table 6.8.5(2)

VOLATILE INFLUENT DATA FOR 1984

	Highest Values Observed (PPB)	Average Value (PPB)
benzene	7,000	2,400
toluene	70,000	17,600
chlorobenzene	15,000	4,500

Upon treatment with activated carbon, the volatile class of materials is removed from the leachate with more difficulty than the base neutral and acid extractable categories. Nevertheless, benzene, toluene, and chlorobenzene are reduced to laboratory detection limits in the effluent discharge stream (Table

6.8.5(3)), well within the requirements of the discharge permit. The treatment plant is operated in a conservative manner to insure removal of the greatest amount of contaminants, thereby producing the highest quality discharge.

Table 6.8.5(3)

VOLATILE EFFLUENT DATA FOR 1984

	Highest Values Observed (PPB)	Average Value (PPB)
benezene	4.2	4
toluene	11	11
chlorobenzene	8	8

The chemicals which comprise the volatile category are normally used in industry as solvents. It should not be surprising that these materials possess a lower binding capacity with the activated carbon. Chloroform and methylene chloride are examples of two components which are not readily retained by carbon and "break through" into the effluent easily. Therefore, the data for these two parameters are constantly monitored to maintain plant operations within the permit limits. The data to date reflect that these two components and the entire class of volatiles have been controlled effectively under the discharge permit for the protection of the residents and the environment.

As discussed previously, materials such as tetrachlorodibenzodioxins (TCDD) and base neutrals bind tightly to the actived carbon and do not readily "break through" to the effluent as do volatile components. While all of the priority pollutants have been monitored in the past, noting that base neutrals and acid extractables have since been discontinued, overall plant performance is governed by SOC and TSS per requirement of the City of Niagara Falls. The latter two parameters are analyzed by RECRA Environmental Laboratories where results are communicated by telephone to the plant operator with a five (5) day turn-around. This time frame is reasonable for the laboratory and is satisfactory for the maintenance of plant operations. "Break-through" of the more toxic chemical components do not occur instantly relative to daily operations; monitoring of SOC and TSS assures that such chlorinated materials do not exceed the permit conditions. As the values for SOC and TSS rise, a decision by staff is made to change the primary bed of activated carbon. Upon replacement of the primary bed of carbon, the cycle starts new.

Treated effluent from the facility is discharged to the City of Niagara Falls sanitary sewer under a permit from the City. Under its industrial pretreatment program, the City has recently revised this permit (see Attachment II).

6.8.6 GROUNDWATER MONITORING PROGRAM

The NYSDEC has a contract with the E.C. Jordan Co., Portland, Maine, to design a long-term groundwater monitoring program. The monitoring program will provide data to evaluate the effects and the effectiveness of the leachate collection system. Please see Section 6.11.1. Until the permanent long-term monitoring program is operational, the NYSDEC has and will continue to use a system of approximately 94 wells to monitor the effects and the effectiveness of the leachate collection system. In fact, the Department's interim monitoring program has provided much useful data to assist in the design of the permanent system.

Monitoring wells are located around the Love Canal Site at varying distances (6-400 feet) from the drain. Figure 8 shows a plan view of the location of the wells currently being monitored. The wells are also installed to differing depths so that data specific to a particular soil or bedrock interval can be obtained.

Generally, measurements of water elevations are made in every well once a month. The NYSDEC has also installed continuous water elevation recording devices on two wells. These devices are moved periodically in order to collect a continuous record of water elevation fluctuations at various locations. Approximately once every three (3) months water samples are collected from approximately twenty (20) wells, and these samples are chemically analyzed for volatiles and base/neutrals.

For the past two (2) years, quarterly reports have been prepared compiling the data collected. One (1) quarterly report is appended to this report. This report covers a period of time before the cover over the Love Canal Site was improved and extended.

Copies of all future quarterly reports will be available for public inspection within approximately three (3) months after the close of the quarter. A summary of the results of the interim monitoring program are presented in Section 6.9.0, "Effects and Effectiveness of the Remedial Programs."

6.9.0 EFFECTS AND EFFECTIVENESS OF THE REMEDIAL PROGRAMS

6.9.1 GROUNDWATER MONITORING

As described in Section 6.8.6 "Groundwater Monitoring Program," the NYSDEC has been monitoring groundwater elevations, and groundwater quality at the Love Canal Site since 1980. All data which has been collected by the Department have been and will in the future be provided to the Technical Review Committee. All data are available for public inspection.

6.9.2 SUMMARY OF FINDINGS

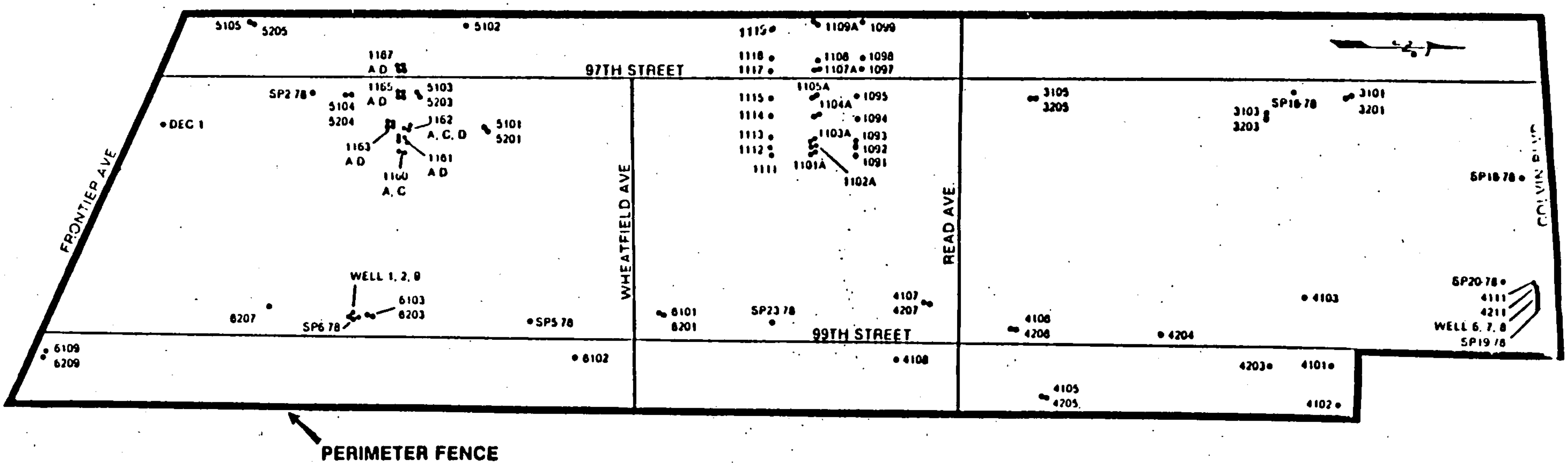
Groundwater Elevations

Groundwater elevations in the shallow groundwater system are lowered in the vicinity of the barrier drain. The amount of and the distance to which this

Figure 8

PLAN VIEW MONITORING WELLS

LOVE CANAL GROUNDWATER MONITORING PROGRAM



lowering is observed varies seasonally and with precipitation (2 to 6 feet). Prior to 1984 and the expansion of the cap over the Love Canal Site, the shallow groundwater system was affected by the drain to a distance of approximately 150 feet parallel to the barrier drain line. It is unlikely that the dewatering effect will extend any significant distance beyond the edge of the expanded cap (if at all) and it may take a number of years for water elevations in the shallow groundwater system beneath the expanded cap to reach equilibrium.

Groundwater elevations measured in the shallow groundwater system in the immediate vicinity of the drain indicate groundwater flow is converging on the drain from all directions. (see Figure 5)

The barrier drain acts as a sink for the shallow groundwater system and therefore will capture any leachate migrating horizontally out of the Love Canal wastes in the shallow groundwater system.

Chemical contaminants dissolved in the groundwater may be recovered by the barrier drain from those areas immediately adjacent to the drain.

6.9.3 CHEMICAL CONCENTRATIONS

From October 1980 through September of 1984, approximately 150 groundwater samples were collected from the 94 wells located within the fence surrounding the Love Canal Site. These samples were chemically analyzed and 13,040 concentration values were determined. Most of the values (93.6 percent) indicate that the concentration of the contaminants, if present, were below the detection limits of the sampling and analytical procedures used.

Tables 6.9.3 (1) and 6.9.3 (2) present lists of all the Love Canal Indicator Compounds as determined by the NYSDEC. The lists are made up of all the organic compounds found in the influent to the Leachate Treatment Plant plus four other compounds that showed a strong correlation with respect to distance from the canal.

TABLE 6.9.3 (1)

Compounds Showing Good Correlation of Concentration With Respect to Distance

Compound Name	N	Corr. Coefficient	Alpha
1,2,4 Trichlorobenzene	114	-0.53687	0.0001
Benzene	114	-0.50549	0.0001
Chlorobenzene	114	-0.53565	0.0001
Chloroform	111	-0.55891	0.0001
Toluene	111	-0.52531	0.0001
Trichloroethylene	114	-0.49761	0.0001
1,2-Tran-dichloroethylene	66	-0.49459	0.0001
alpha BHC	32	-0.31558	0.0785
Bis (2-Et-Hexyl) phthalate	105	-0.25251	0.0094
delta BHC	31	-0.39184	0.0293
gamma BHC	32	-0.45845	0.0083
hexachlorobenzene	113	-0.31368	0.0007
methylene chloride	93	-0.25230	0.0147
phenol	98	-0.32742	0.0010
Tetrachloroethylene	105	-0.37233	0.0001
1,1,2-Trichloroethyane	112	-0.25620	0.0064
1,1,2,2-Tetrachloroethane	113	-0.35120	0.0001
1,2-Dichlorobenzene	113	-0.38974	0.0001
1,3-Dichlorobenzene	113	-0.25945	0.0055
1,4-Dichlorobenzene	113	-0.35442	0.0001
2-Chloronaphthalene	110	-0.27430	0.0037
2,4-Dichlorophenol	102	-0.26691	0.0067
2,4,6-Trichlorophenol	98	-0.30008	0.0027
4-chloro-3-methyl phenol	98	-0.27680	0.0058
hexachlorobutadiene	114	-0.25846	0.0055

TABLE 6.9.3 (2)

Compounds Showing Poor Correlation of Concentration With Respect to Distance

Compound Name			
carbon tetrachloride	112	-0.16163	0.0887
Ethyl benzene	110	-0.20219	0.0341
Di-N-Butyl phthalate	104	-0.14469	0.1428
Di-N-Octyl phthalate	110	-0.02370	0.8058
naphthalene	110	-0.11291	0.2125
phrene	110	-0.11982	0.2125
2-Chlorophenol	98	-0.15444	0.1289
Endosulfar Sulfate	27	0.00000	1.0000
Fluoranthene	109	0.00000	1.0000
1,2 Dichlorophenol	108	0.00000	1.0000
2,4 Dimethyl phenol	98	0.00000	1.0000
4,4 DDT	27	0.00000	1.0000

6.9.4 SUMMARY OF FINDINGS

For the compounds listed in Table 6.9.3 (1) there is a statistically significant correlation between concentration and distance from the sampling location to the Love Canal (Nonparametric, Spearman, correlation coefficient of <-0.25) for one section of the canal between the Love Canal Leachate Treatment Plant and Frontier Avenue on the west side of the canal. This correlation coefficient was chosen as not to exclude possible good indicators. These chemicals may be good indicators of the extent of groundwater contamination attributable to Love Canal.

For the compounds listed on Table 6.9.3 (2) there was no statistically significant correlation between concentration and distance from the sampling location to the Love Canal (nonparametric, Spearman correlation coefficient of >-0.25). The absence of a significant correlation may be due to two reasons; (a) the concentration of the compound was generally below the detection limit and therefore not quantified, and (b) the detection of the compound was sporadic and the concentration varied randomly with distance from the canal. The compounds presented on Table 6.9.3 (2) would not be good indicators of the extent of groundwater contamination attributable to Love Canal.

At a distance of 100 feet from the barrier drain, 86 percent of all analyses were below the limit of detection of the sampling and analytical procedures used.

At a distance of 225 feet from the barrier drain, 95 percent of all analyses were below the limit of detection of the sampling and analytical procedures used. Figure 9 shows a plot of percent detects vs. distance from the barrier drain. Table 6.9.4 (1) lists the compounds that show up with positive results beyond 225 feet.

Variations in chemical concentration with distance from the barrier drain is best observed in closely spaced wells located close to the drain.

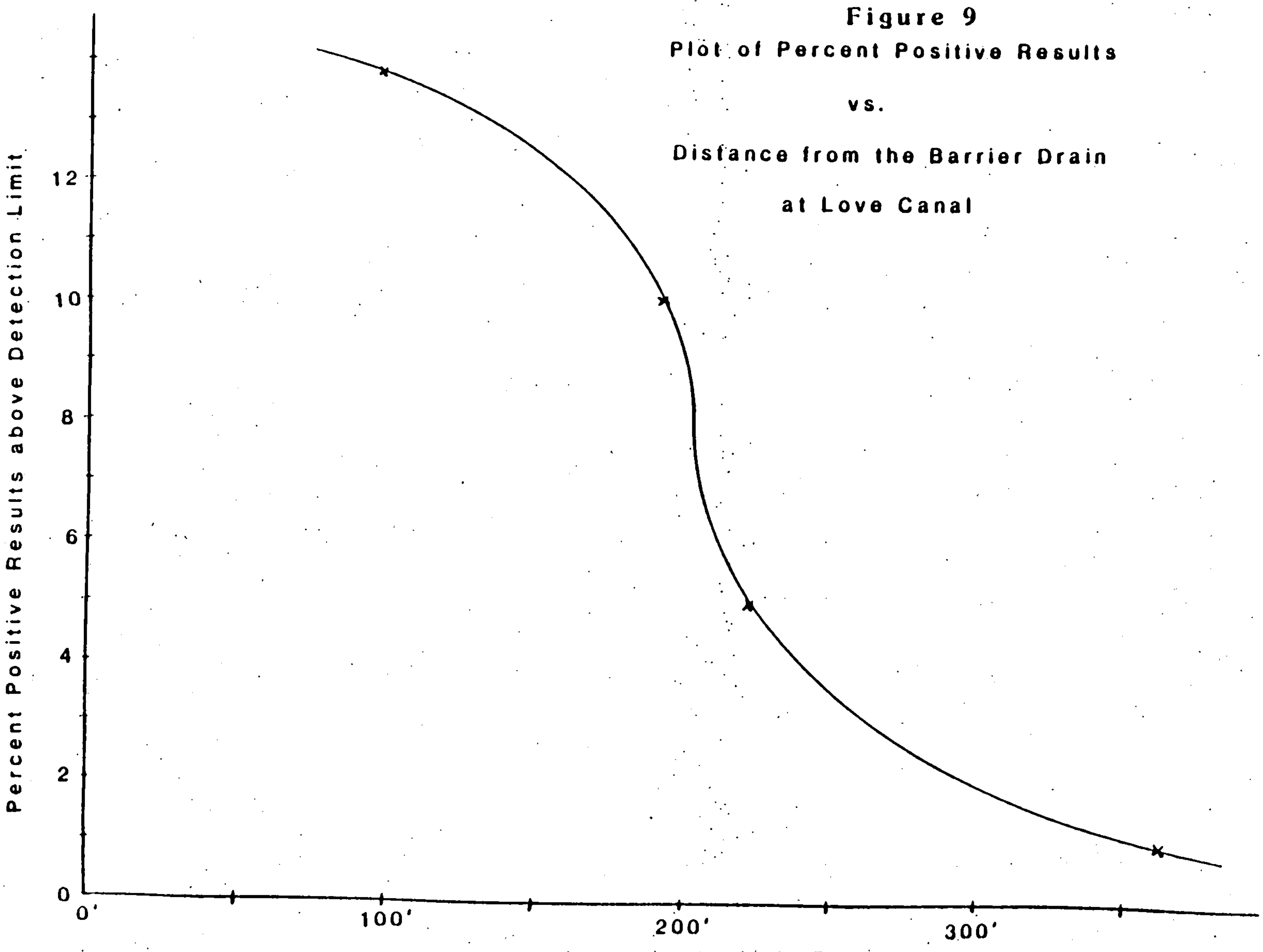


Figure 9

Plot of Percent Positive Results

vs.

Distance from the Barrier Drain

at Love Canal

TABLE 6.9.4 (1)

Compounds in Rings I and II that had Positive Results
Beyond 225 Feet from the Barrier Drain

Compound Name	Number of Positive Hits
BHC alpha	2
Benzene	1
BHC beta	1
Bis (2 Et-Hexyl) Phthalate	4
Chloroform	2
Chromium	3
Copper	4
BHC Delta	2
Di-N-Butylphthalate	1
Endosulfan Sulfate	5
BHC Gamma (lindane)	2
Methylene Chloride	7
Phenol	1
Tolune	1
4,4-DDT	5

The NYDEC observed no statistically significant correlation between chemical concentrations observed in groundwater and time elapsed following installation of the barrier drain. Any correlation between chemical concentration observed in the groundwater and time elapsed following installation of the barrier drain can be best observed by analyses of samples collected very near the drain. Otherwise, most of the concentration values will be found to be below limits of detection or at concentrations too close to the limit of detection to allow for a measurement of any significant change.

6.10.0 CURRENT STATUS

The storm sewers continue to be a source of contamination, transporting contaminants to area waterways. Sanitary sewers also transport contaminated material through the sewer system with overflows and surcharging creating a potentially hazardous situation. As a result of the environmental monitoring study published by EPA in 1980, "Environmental Monitoring at Love Canal", a determination was made by U.S. Department of Health and Human Services (HHS) that the area surrounding the Canal (i.e., the EDA) would be no less habitable than other tested areas in Niagara Falls if the Canal itself were constantly safeguarded against future leakage and local storm sewers and their drainage tracts were cleaned of existing contamination.

In the fall of 1982, the sewers were severed at the Canal to deter future contaminant flow via these pathways. While the contamination that currently exists in the sewers should not increase, these pollutants could eventually migrate from the sewers and end up in creek and river sediments.

During the first three weeks of January 1983, an intensive field investigation was performed and nearly 1,000 samples were collected. Laboratory analysis and contamination assessments were performed and as a result, engineering alternatives to remediate the sewers and creeks were developed and evaluated. More recent sampling by the DOH was undertaken in April 1984 to confirm the presence of dioxin in Bergholtz Creek. This study revealed dioxin concentrations above 1 ppb in Bergholtz Creek sediments west of 93rd Street.

In addition, the EPA has established a process to work with various State and Federal agencies to evaluate the potential for habitation of the EDA. Initial results are expected in 1985.

During any remediation at Love Canal, special consideration will be given to the remedial activities under way at the 102nd Street Landfill, a CERCLA (Comprehensive Environmental Response, Compensation and Liability Act of 1980, Federal Superfund Program P.L. 96-510) site adjacent to the Canal. Remediation recommended for the 102nd Street outfall area will factor in the potential of contamination by this landfill and will be coordinated with any cleanup activities to be undertaken at the 102nd Street Site.

6.10.1 ALTERNATIVE EVALUATION

The Malcolm Pirnie investigation conducted for the NYSDEC, was divided into five (5) study areas:

- North storm and sanitary sewers
- Black and Bergholtz Creeks
- South storm and sanitary sewers
- 102nd Street outfall
- West storm and sanitary sewers

For each area, samples were taken of aqueous and sediment media to determine the levels of contamination. In addition, the bedding of materials encircling the sewers were also sampled. The basis for selecting a remedial alternative was the development of a contamination assessment which established a ranking of remedial actions that incorporated both relative concentration and sampling location.

Subsequently, remedial alternatives were developed for each task area, and then evaluated with emphasis placed on effectiveness, reliability, worker safety, ease of implementation, environmental impacts and public acceptance. Feasible alternatives were then selected and reevaluated including cost to arrive at a recommended cost-effective alternative.

6.10.2 NO-ACTION ALTERNATIVE

The no-action alternative was considered for each study area, but was eliminated for the following reasons:

- o Prior to the initiation of the Malcolm Pirnie investigation, studies by EPA (Survey of Chemical Contamination in Love Canal Storm Sewers) identified the sewers leaving the Canal as pathways of contamination. A previous recommendation by the federal Centers for Disease Control (CDC) supported rehabitation if various remedial actions were initiated, including the cleaning of the storm sewers and contaminated sediment in the receiving waters.
- o As part of the initial cleanup under CERCLA, the storm and sanitary sewers were severed from the Canal area, thus deterring contamination from continuing to leave the site. It is the intention of the State and local authorities to continue to use the existing sewers if the area becomes rehabitated. With or without residential influence, contaminants in the sewers will continue to migrate due to area runoff as well as pipe infiltration. Storm sewers will discharge this hazardous material to area waterways, while sanitary sewers will transport the material to downstream points in its system that are subject to overflows to the storm sewer system.

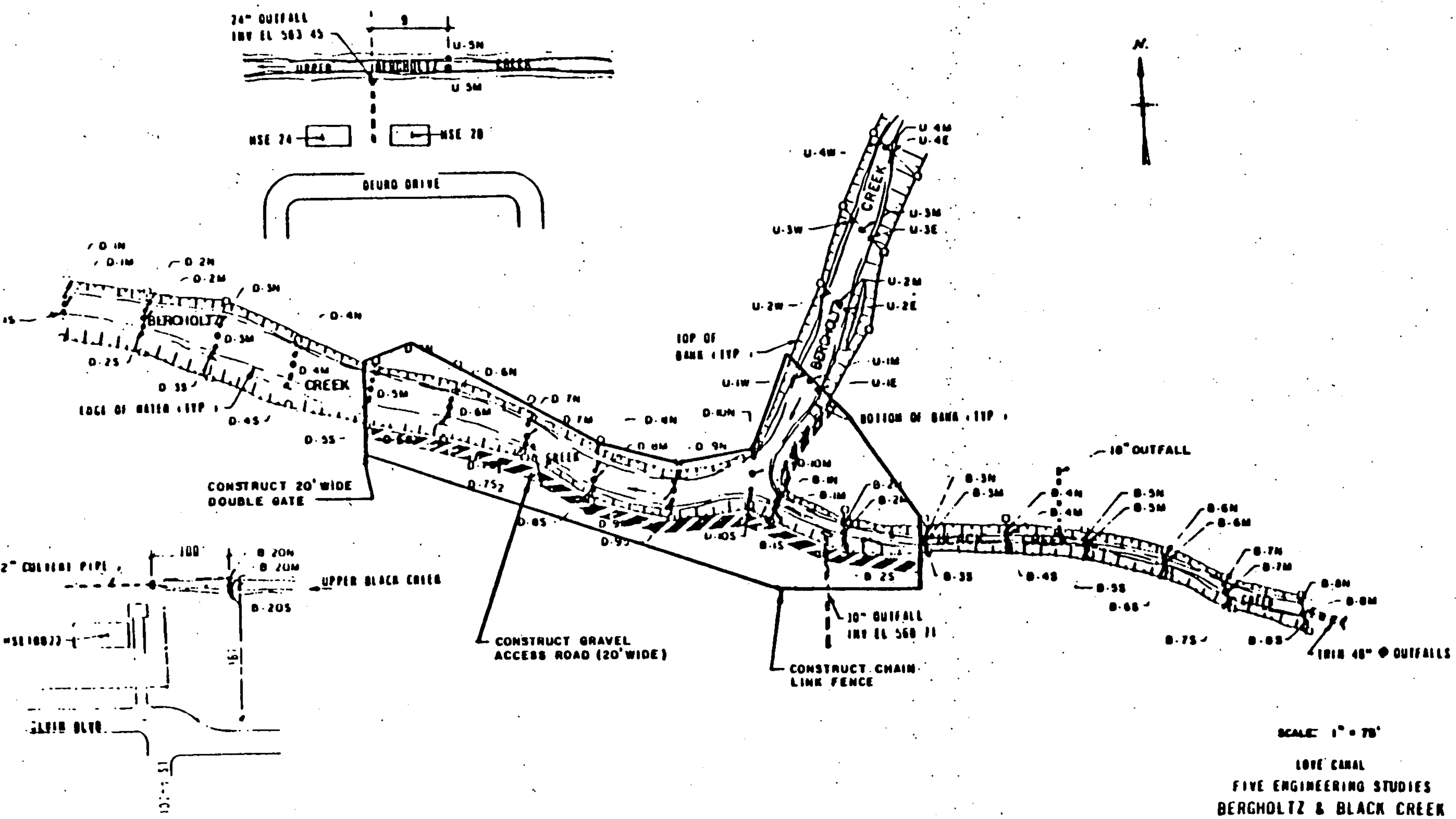
- The detailed sampling effort performed by Malcolm Pirnie provided evidence that contamination does exist, some at high ppm levels, within the sewer system. Within the samples taken, benzene and its derivatives were identified at 2,600 ppm, toluene up to 280 ppm, and trichlorobenzene at up to 310 ppm. Many inorganics such as arsenic and zinc were also identified at levels over 100 ppm. Metals were found throughout the study area and beyond at high concentration levels (ppm's). There is potential for deposition of these hazardous materials in the creeks.
- Of major concern, however, is the presence of dioxin (2,3,7,8 TCDD) in the study area and, because of its toxicity, the potential harm to public health and the environment. The toxic effects of TCDD have been extensively studied in animals. These studies indicate that on a molecular basis TCDD is perhaps the most poisonous synthetic chemical. Human exposure to TCDD has induced chloracne, polyneuropathies, liver dysfunction, and enzyme induction. In animals, TCDD has been shown to be teratogenic, fetotoxic, and carcinogenic. Other chronic effects of TCDD in animals include hepatotoxicity (liver effects), renal toxicity, endocrine effects, immunologic effects (impairment of cellular immunity), and hematologic effects. TCDD has been also shown to accumulate and concentrate in aquatic and terrestrial organisms directly from water uptake as well as from food contaminated with dioxin. TCDD is suspected of being a human carcinogen because of multiple-positive animal carcinogenicity studies.

The EPA sampling effort (1980) detected dioxin in a number of storm sewer sediment samples at decreasing concentrations with distance from the Canal. Dioxin levels as high as 650 ppb were detected. The Malcolm Pirnie study also identified dioxin in various creek and sewer sediments. Eleven samples proved positive, with six exceeding 1 ppb in the waterway sediments and five in the sewers. Figure 10 indicates where these positives were identified. Four sediment samples were taken by NYSDEC in the vicinity of the 93rd Street storm sewer outfall and analyzed by NYSDOH for dioxin during April 1984. Results revealed significant levels of dioxin (6.4-10.2 ppb). Sampling of Bergholtz Creek sediments by NYSDEC in the summer of 1984 indicated dioxin at 11 ppb as far downstream as 90th Street. The dioxin in the EDA has been found in sediment deposits. The potential has existed and will continue to be present for exposure since the location of the dioxin is found in creeks bordering residential areas. These are areas that are inhabited and are considered for rehabitation, and potential increased populations will subsequently increase the population at risk. Since dioxin is persistent in the environment; has been shown to bioaccumulate in the tissues of plants and animals; and has low solubility in water, the contamination will remain in the environment unless efforts are undertaken to contain it. This has been recognized in other cases such as <u>U.S. v. Vertac,</u> 489 F.SUPP. 870 (E.D. Arkansas, 1980), and in consent decrees, such as <u>United States V. Hooker Chemicals and Plastics Corp.</u>, 450 F.SUPP. 1067 (W.D.N.Y., 1982), where Occidental Chemical Corporation agreed to clean up TCDD laden sediment from a local creek and clean out contaminated sediment in a storm sewer system. This consent decree demonstrates that TCDD remedial actions are feasible and have been ordered by the courts or agreed to by responsible parties.

There are several pathways of human exposure to contaminated waters and sediments, as summarized below:

- <u>Ingestion of fish.</u> A compelling rationale for the elimination of stream and sewer sediments as sources of TCDD is that the discharge of TCDD and TCDD-laden sediment from these sewers and streams is contributing to

Figure 10



LOVE CANAL
FIVE ENGINEERING STUDIES
BERGHOLTZ & BLACK CREEK
MECHANICAL EXCAVATION
TASK III

levels of TCDD in many fish in the Niagara River and Lake Ontario that exceed NYSDOH, Canadian, and Federal Food and Drug Administration health advisories (10 ppt, 20 ppt, and 25 ppt, respectively).

Chemical analyses of various species of fish indicate levels of TCDD up to 417 ppt (near Love Canal) and an average level of approximately 34 ppt. EPA and New York State have identified a limited number of sources of TCDD along the Niagara River and Love Canal is one of the most significant sources. TCDD concentrates at high levels in fish tissue from the water, sediment, and ingestion of other fish through what is known as biocon centration, bioaccumulation, and biomagnification. EPA, States, and other researchers have also detected significant levels of TCDD in fish near other TCDD sites, particularly sites in the State of Missouri and the State of Michigan.

The discharge of TCDD should, to the extent practicable, be eliminated from the streams and sewers to the Niagara River.

- Sewer maintenance. If maintenance is required on a typical sewer, standard practice would be to ventilate the sewers before entry and to use no special equipment, such as respirators. The no action alternative would necessitate the use of higher levels of protection for entry into the Love Canal EDA sewers in order to minimize worker exposure.
- Potential inhalation of volatile organics. Volatile organics were detected in some samples in the sewers. Although emissions through manholes or the outfalls will be dispersed to some degree by winds and atmospheric turbulence, there will remain the potential for the public to inhale volatile organics from the sewers.

- Surcharging of sediments to surface. Surcharging to within a few feet of the surface was observed in the manholes by Malcolm Pirnie. Surcharging of the sanitary sewers has been reported in the area of 91st, 92nd, 93rd Streets and Read Avenue during periods of high rainfall, and of the storm sewers to the surface along 93rd Street. Chemical concentrations in material surcharged to the surface will become diluted as mixing with water and surface material occurs. The amount of deposited sediment will depend on local conditions. Human exposure will depend on the duration of the condition (e.g., surface washing by city service, rain and chemical degradation will decrease concentrations), contact time, and the rates of soil ingestion, intestinal absorption, dermal absorption and inhalation of entrained soil.
- Potential backflow of sanitary sewer sediments to basements. Backflow preventers were not installed in the Love Canal EDA homes. Therefore, the potential exists that the sanitary sewer sediments may be discharged to the homes. If the discharge remains undetected, exposure to contaminated material may result.
- Exfiltration to ground water. The spread of contaminants that may have left pipes, may be enhanced in the Love Canal EDA by the absence of a drainage system to channel the groundwater away from the pipes. The shallow groundwater increases the potential release. Certain chemicals, such as benzene are highly soluble and may migrate with the groundwater.

Transport of creek sediment with stream flow will tend to decrease the concentrations over time, but this possibility is reduced by the continued loading from the storm sewer outfalls. Potential human exposure may occur in two scenarios:

- Recreational activities. Exposure will occur during swimming, wading or other recreation use of the creeks. Access is temporarily limited along Black and Bergholtz Creeks because of fencing along the banks down to the 93rd Street School grounds. While the general effect of fences is to reduce exposure, they can be breached, and therefore, are neither an effective nor a permanent remedy pursuant to CERCLA. Access to Cayuga Creek is open but the sediment here had the lowest concentrations. During recreational activities, water may be ingested or absorbed through the skin. The exposure factors and their uncertainty is much the same as discussed in the section on sewer surcharging. Ingestion of dried sediment along the creek banks is a potential additional exposure route.
- Potential migration to residential yards. A high rainfall rate and/or a high stage of the Niagara River could produce flooding of the creeks into local residential yards. The qualitative nature of the human exposure potential is much the same as discussed above for surcharged sewer sediments.

Correspondence (February 22, 1984) by the NYSDOH (Attachment I) states, "It is clear that the presence of Love Canal associated chemicals, especially dioxin, in the sewers and creeks does pose a direct threat to children playing in the creeks, and persons exposed to biota downstream subject to exposure to chemicals being washed down to them."

- The potential exists for contamination of the drinking water supply taken from the Niagara River through creek sediment transport and suspension of the 102nd Street outfall sediment.

The no-action alternative was thus eliminated based upon the existence of hazardous chemicals (especially dioxin) within the study area waterways and fish populations and the potential that exists for continued exposure to the local community.

6.10.3 SEWER REMEDIAL EVALUATION

The remedial options that are available for storm and sanitary sewers in surrounding areas are identical. Based on the sampling results, contamination exists at levels within the sewer sediments that warrant cleanup. The same sampling effort, however, indicated that the bedding material surrounding the sewers was quite clean and no remediation would be necessary for these areas. A positive note was that the sewers, barring minor defects, were structurally sound. As a result various alternatives were developed.

- o No-action - While the no-action alternative for the sewer system has been rejected, portions of these lines were found relatively clean and would require no or minimal remediation.
- o Monitoring - One option that exists is to periodically sample the sewers in lieu of a physical remediation measure. This may not be cost-effective in light of the high cost of analysis and the potential that a future cleanup may be required.
- o Abandonment in Place - While this would be a detriment to future rehabitation efforts, cutting off or plugging the sewer lines and abandoning the system is a viable alternative. However, contaminant migration via exfiltration would remain a future threat. The structural integrity of lines is a major factor in evaluating the usefulness of the current system.
- o Television Inspection or Similar Methods - Physical inspection of the sewers as a diagnostic tool should be performed in conjunction with any remediation. Defects such as offset joints, root intrusion, broken or collapse pipe and leaky connnections can be identified.

- Sewer Cleaning - Numerous methods exist to remove accumulated sediment from existing sewer lines. Power rodding, hydraulic scouring and flushing, bucket dredging, suction cleaning with pumps or vacuums, chemical treatment or combinations of these are available.
- Sewer Repair - Depending on the remedial option selected, sewer repair via grouting or pipe relining may be required to deter ground water infiltration and/or sewer exfiltration.
- Removal and Replacement - The actual excavation of portions of the sewers to remove contaminated pipe and bedding material followed by disposal is a possibility. This option is necessary when the degradation of the sewers and/or the degree of bedding contamination is sufficiently high to preclude current or future service via these facilities.

The above alternatives were evaluated to arrive at a selected alternative. Certain assumptions were applied, many being derived from information accumulated during the sampling effort, these included;

- The potential for sewer use to continue is high;
- The physical, structural condition of the sewers is good;
- The bedding material is basically uncontaminated;
- The degree of contamination found in the sewers is significant;
- The level of contaminants, though found in sediment (no standard exists), are high enough to present risk and, therefore, warrant concern;
- The creeks will continue to be the repository for this material if conditions remain unchecked;
- Options selected would be consistent with remedial efforts at the 102nd Street Landfill to the degree feasible at this time.

The following recommendations were drawn from the evaluation:

6.10.3.1 NORTH

All of the storm sewers (see Figure 11) should be cleaned utilizing a hydraulic flushing technique since this method would provide the most complete cleanup option. Of most concern are areas down gradient of Love Canal connection points located at 97th and 99th Streets. Also cleaned will be storm sewer tributary lines that may have been subject to surcharging and the 1,400 foot portion of Black Creek which is enclosed in corrugated metal pipes. All sanitary sewers (see Figure 12) will be cleaned.

6.10.3.2 SOUTH

All of the storm sewers (see Figure 13) in this area will be hydraulically cleaned. Of greatest significance are those lying down gradient of Love Canal connection points, i.e., 97th and 99th Streets and Wheatfield Avenue as well as tributaries to these areas. All sanitary sewers (see Figure 14) will be cleaned. Television inspection is recommended in three distinct locations to verify the presence of unknown connections and/or the existence and nature of structural pipe damage.

Of special concern is the relationship of this system to the 102nd Street Landfill. The Malcolm Pirnie report recommends cleaning of the storm sewers up to the landfill property line.

6.10.3.3 WEST

The storm sewers (see Figure 15) recommended to be hydraulically cleaned are those which have been contaminated due to overflow bypassing from the main intercepting sewer which collects all the wastewater flows from EDA. This bypassing occurs at Lift Stations No. 1, 4 and 5 and at 93rd Street and Colvin Boulevard. The majority of sanitary sewers (see Figure 16) will be cleaned and some television inspection will also be necessary. It should be noted that a

Figure 11

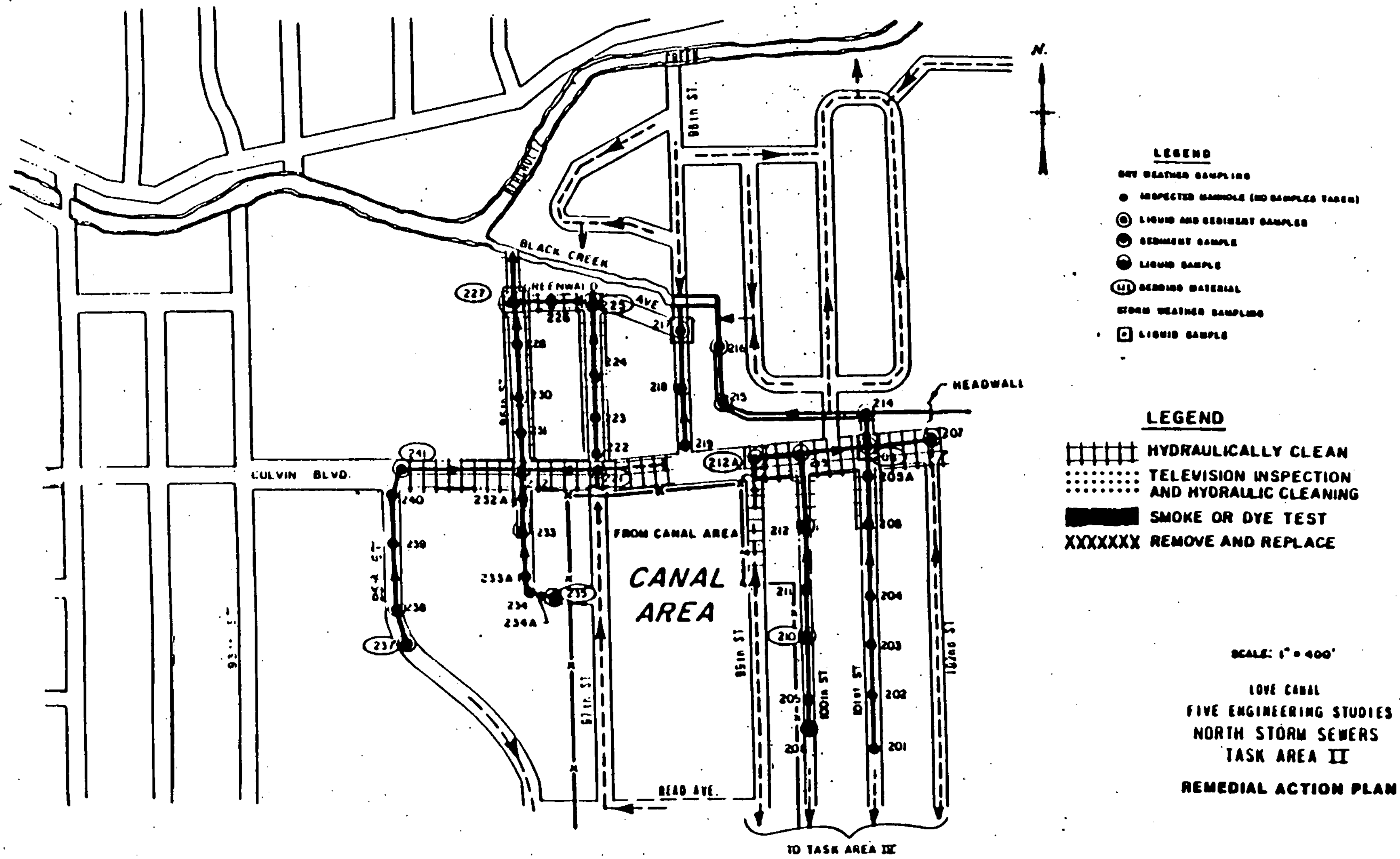

N.
LEGEND
HYDRAULICALLY CLEAN
TELEVISION INSPECTION AND HYDRAULIC CLEANING
SMOKE OR DYE TEST
XXXXXXX REMOVE AND REPLACE
HEADWALL
BLACK CREEK
CULVIN BLVD.
FROM CANAL AREA
CANAL AREA
READ AVE.
TO TASK AREA III
LOVE CANAL
FIVE ENGINEERING STUDIES
NORTH STORM SEWERS
TASK AREA II
REMEDIAL ACTION PLAN

Figure 12

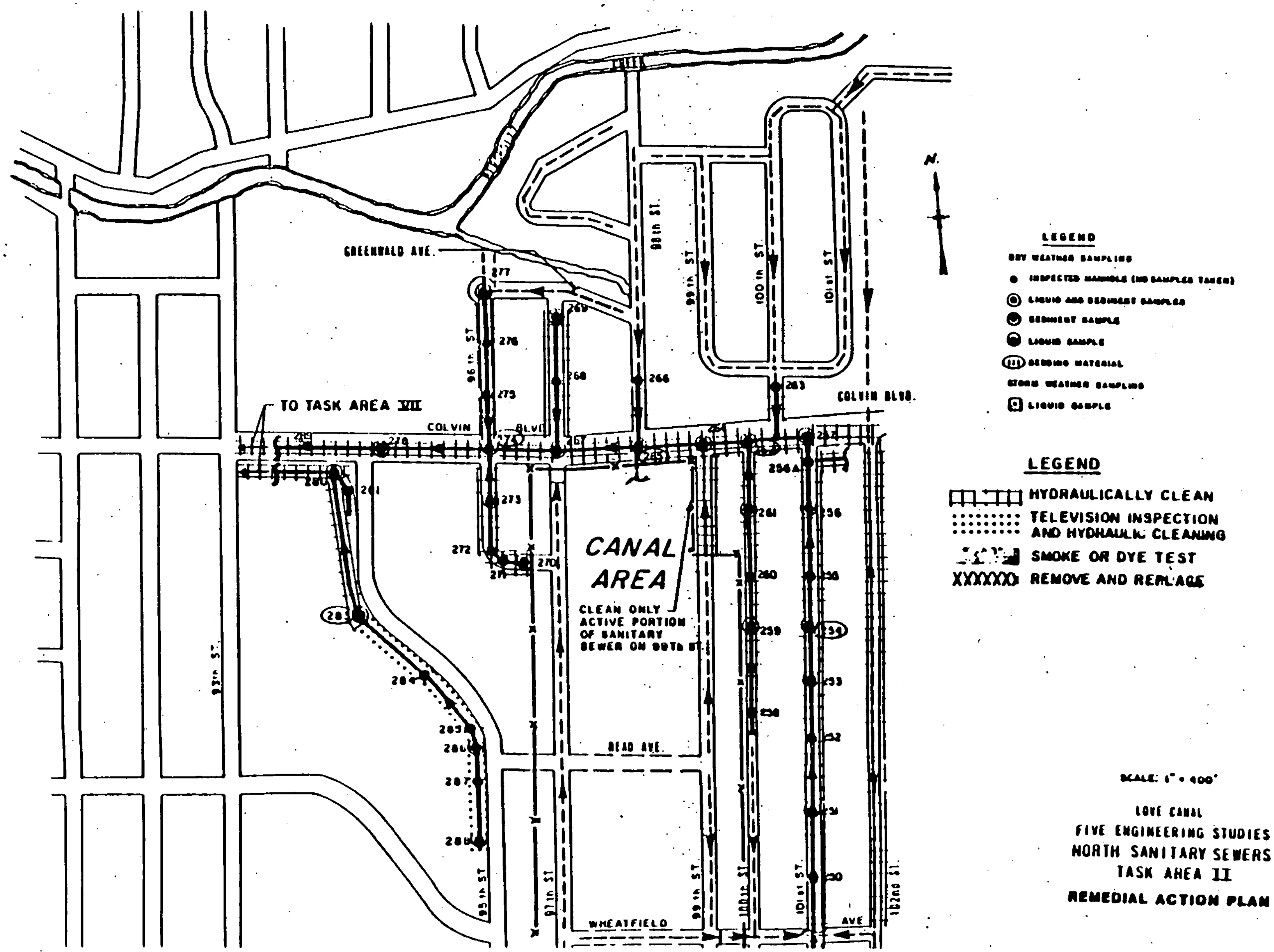
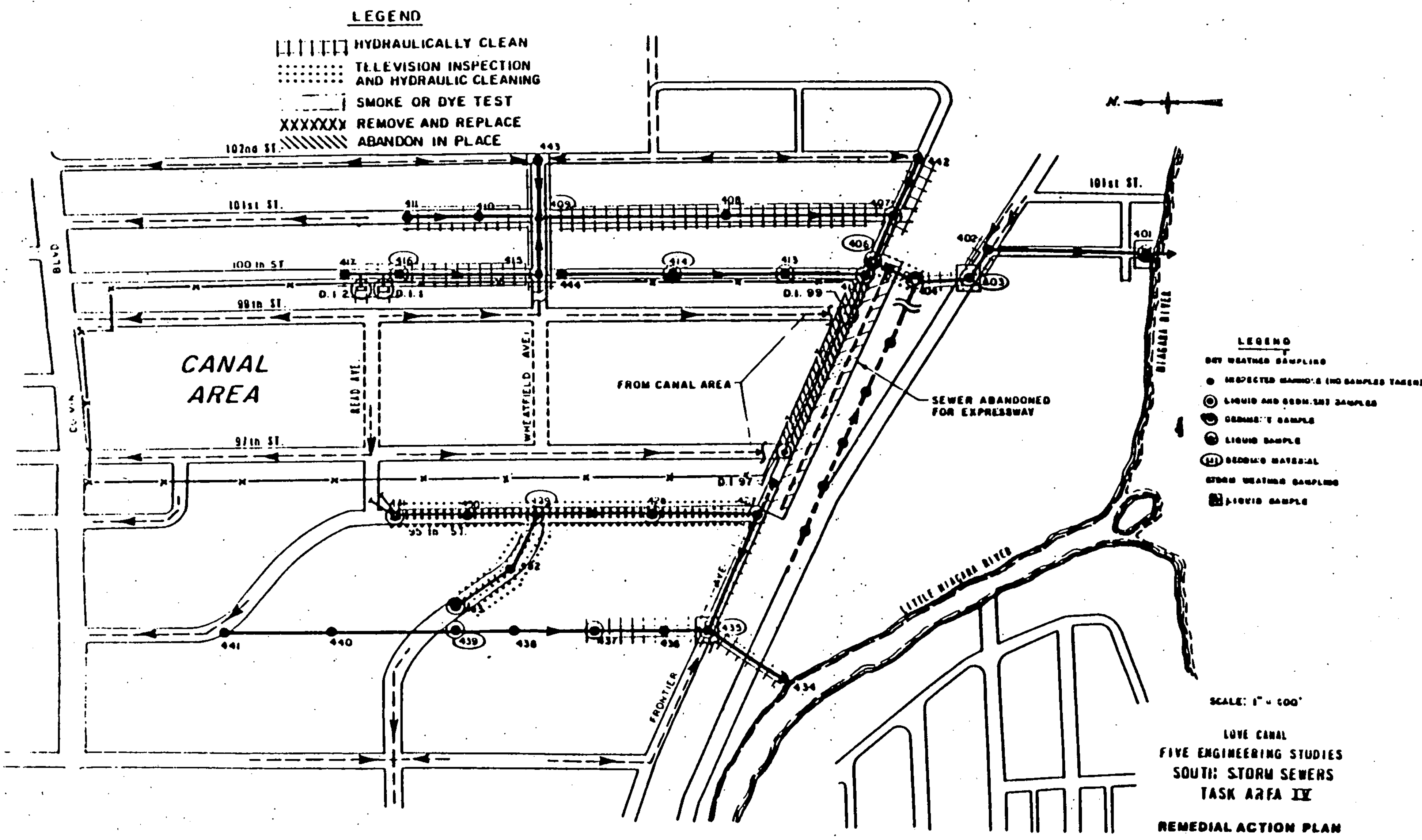
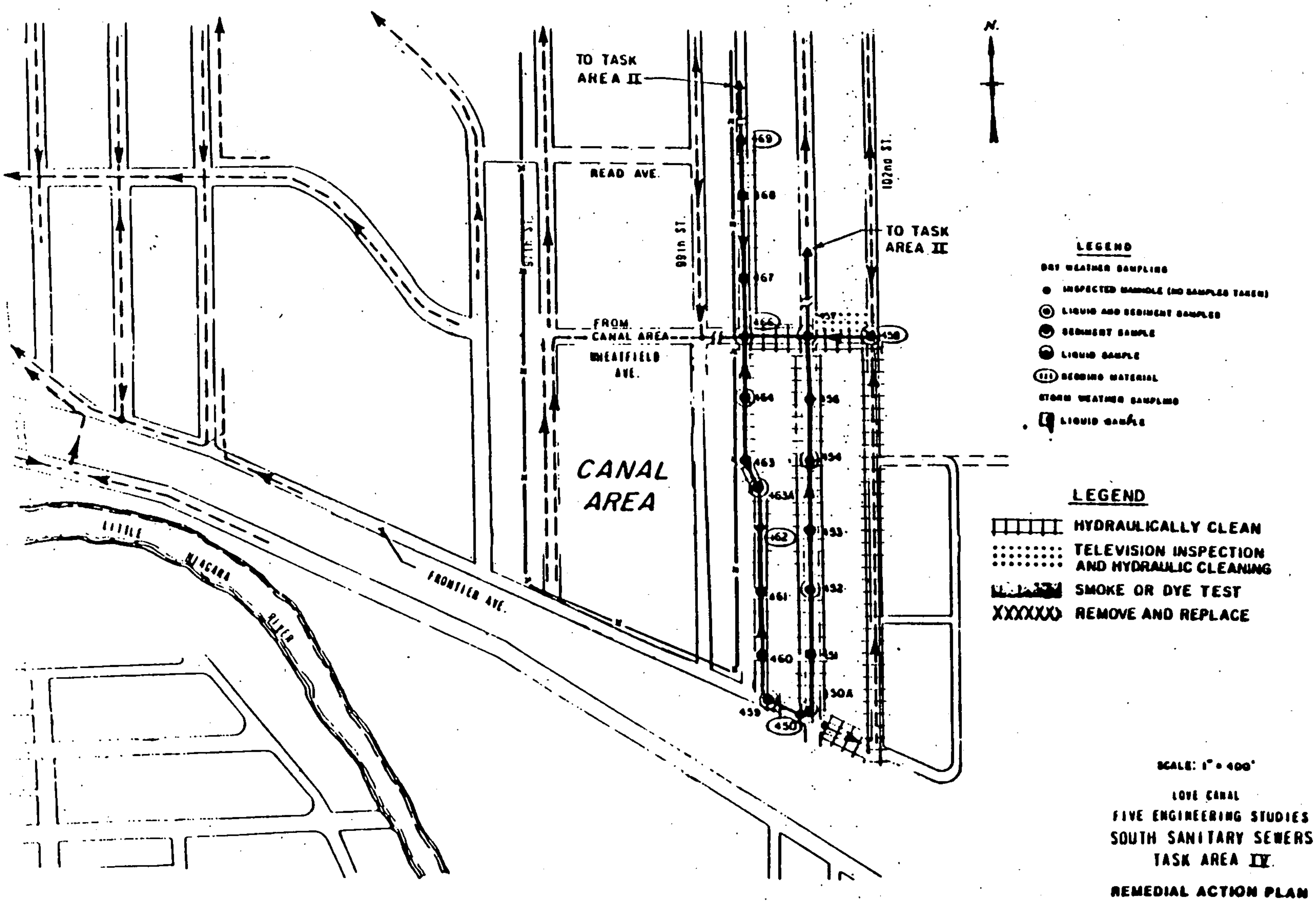

GREENWALD AVE.
98th ST.
99th ST.
100th ST.
101st ST.
N.
LEGEND
TO TASK AREA VII
COLVIN BLVD.
COLVIN BLVD.
96th ST.
CANAL AREA
CLEAN ONLY ACTIVE PORTION OF SANITARY SEWER ON 99th ST.
93rd ST.
READ AVE.
95th ST
97th ST
99th ST
100th ST
101st ST.
102nd ST.
WHEATFIELD AVE
LEGEND
HYDRAULICALLY CLEAN
TELEVISION INSPECTION AND HYDRAULIC CLEANING
SMOKE OR DYE TEST
XXXXXX REMOVE AND REPLACE
SCALE: 1" = 400'
LOVE CANAL
FIVE ENGINEERING STUDIES
NORTH SANITARY SEWERS
TASK AREA II
REMEDIAL ACTION PLAN

Figure 13



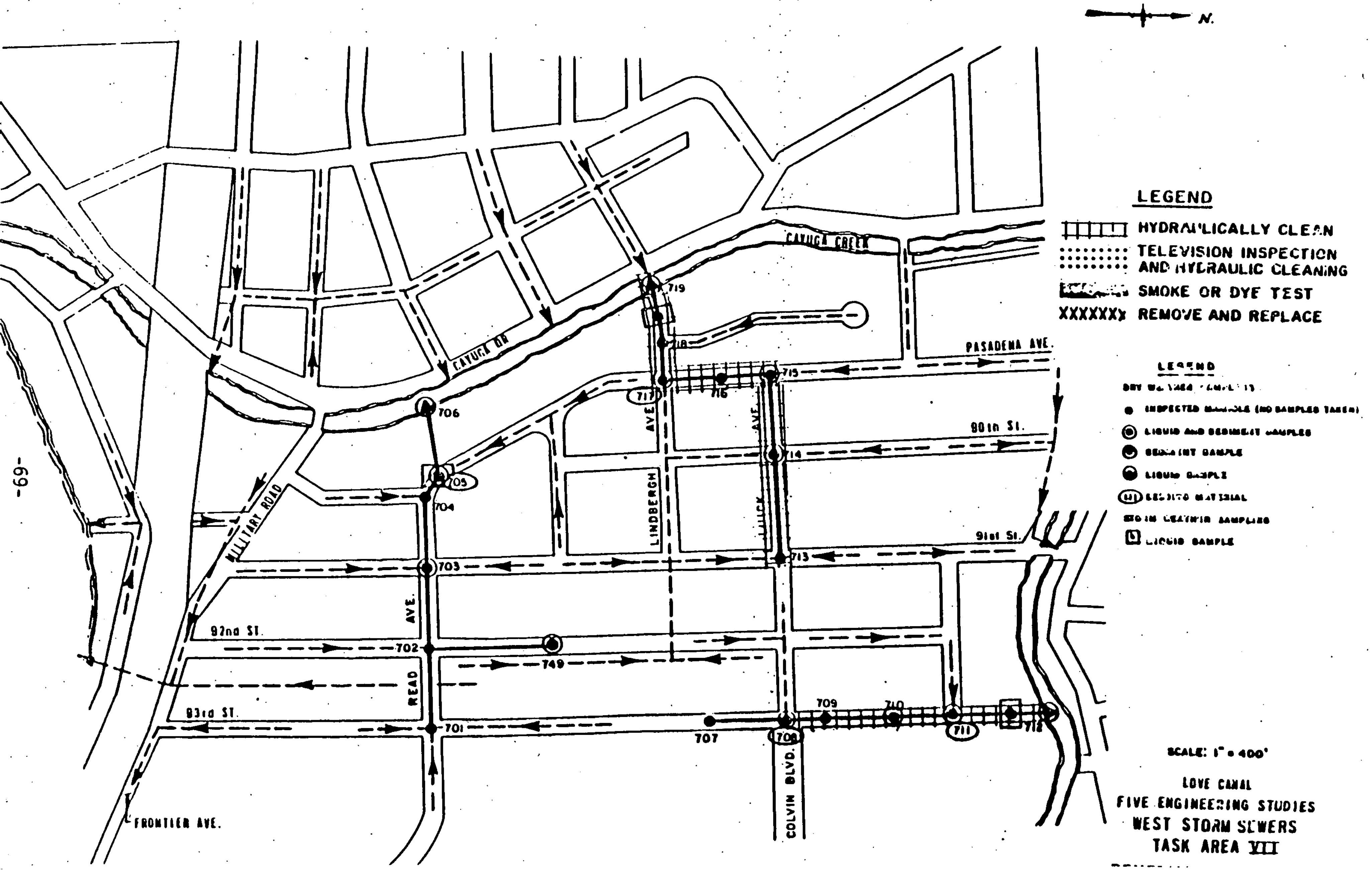
LEGEND
HYDRAULICALLY CLEAN
TELEVISION INSPECTION AND HYDRAULIC CLEANING
SMOKE OR DYE TEST
REMOVE AND REPLACE
ABANDON IN PLACE
102nd ST.
101st ST.
100 th ST
99th ST.
97th ST.
95 th ST.
CANAL AREA
READ AVE.
WHEATFIELD AVE.
COLVIN BLVD
FROM CANAL AREA
SEWER ABANDONED FOR EXPRESSWAY
FRONTIER AVE.
LITTLE NIAGARA RIVER
NIAGARA RIVER
N.
D.I. 2
D.I. 1
D.I. 99
D.I. 97
LEGEND
DRY WEATHER SAMPLING
LIQUID SAMPLE
STORM WEATHER SAMPLING
SCALE: 1" = 200'
LOVE CANAL
FIVE ENGINEERING STUDIES
SOUTH STORM SEWERS
TASK AREA IV
REMEDIAL ACTION PLAN

Figure 14



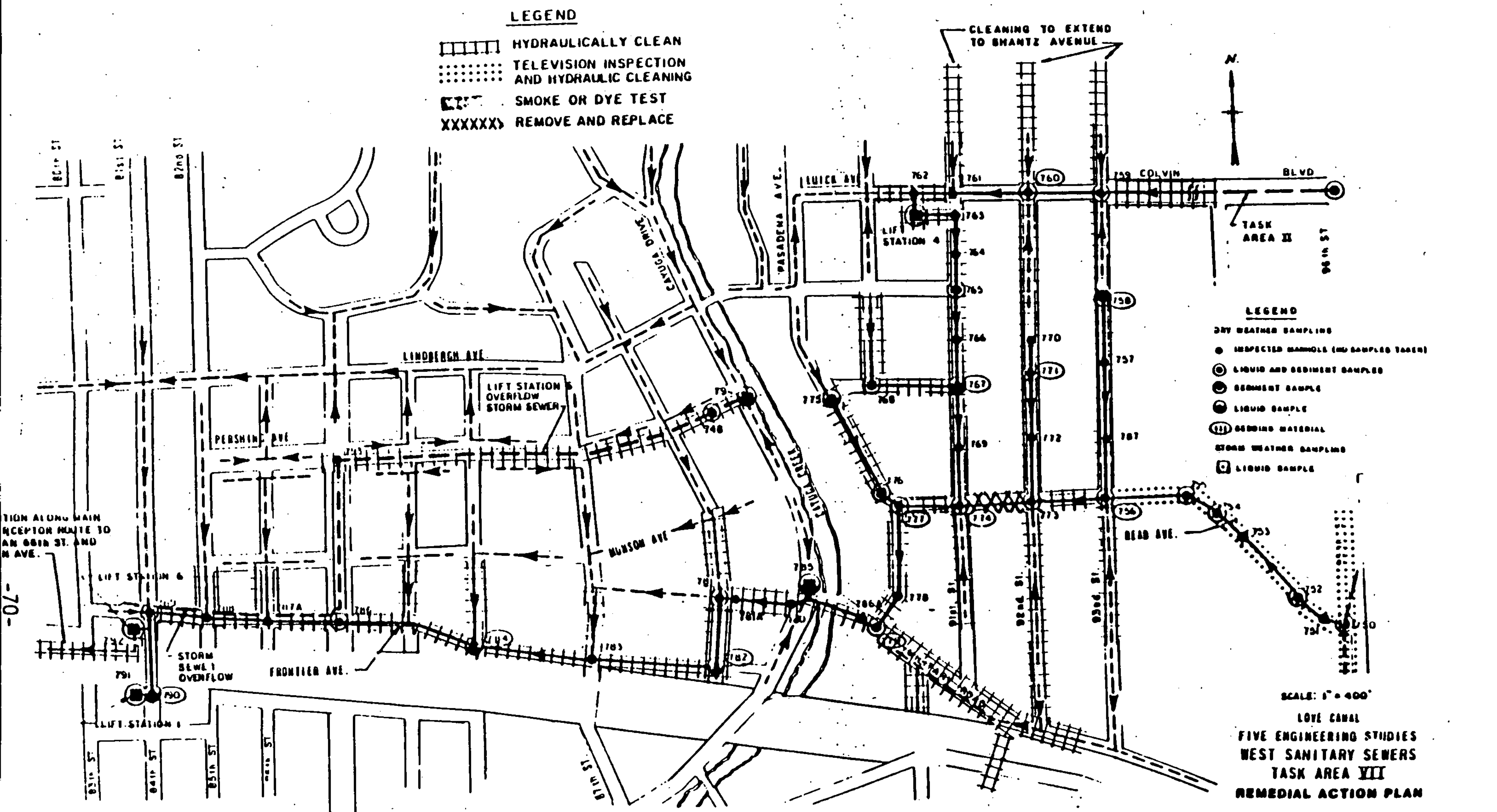
N.
TO TASK AREA II
TO TASK AREA II
READ AVE.
99th ST.
102nd ST.
FROM CANAL AREA
WHEATFIELD AVE.
CANAL AREA
FRONTIER AVE.
LITTLE NIAGARA RIVER
469
468
467
466
464
463
463A
462
461
460
459
450
456
454
453
452
451
450A
458
LEGEND
LEGEND
HYDRAULICALLY CLEAN
TELEVISION INSPECTION AND HYDRAULIC CLEANING
SMOKE OR DYE TEST
REMOVE AND REPLACE
SCALE: 1" = 400'
LOVE CANAL
FIVE ENGINEERING STUDIES
SOUTH SANITARY SEWERS
TASK AREA IV.
REMEDIAL ACTION PLAN

Figure 15



N.
LEGEND
HYDRAULICALLY CLEAN
TELEVISION INSPECTION AND HYDRAULIC CLEANING
SMOKE OR DYE TEST
XXXXXXX REMOVE AND REPLACE
CAYUGA CREEK
CAYUGA DR
PASADENA AVE.
90th ST.
91st ST.
92nd ST.
93rd ST.
MILITARY ROAD
LINDBERGH AVE.
READ AVE.
COLVIN BLVD.
FRONTIER AVE.
701
702
703
704
705
706
707
708
709
710
711
713
714
715
716
717
718
719
749
SCALE: 1" = 400'
LOVE CANAL
FIVE ENGINEERING STUDIES
WEST STORM SEWERS
TASK AREA VII

Figure 16


LEGEND
HYDRAULICALLY CLEAN
TELEVISION INSPECTION AND HYDRAULIC CLEANING
SMOKE OR DYE TEST
XXXXXX REMOVE AND REPLACE
CLEANING TO EXTEND TO SHANTZ AVENUE
N
COLVIN BLVD
TASK AREA II
LIFT STATION 4
LINDBERGH AVE
LIFT STATION 5 OVERFLOW STORM SEWER
PERSHING AVE
MUNSON AVE
CAYUGA DRIVE
PASADENA AVE.
READ AVE.
FRONTIER AVE.
STORM SEWER OVERFLOW
LIFT STATION 6
LIFT STATION 1
91st ST.
92nd ST.
93rd ST.
96th ST
81st ST
82nd ST
84th ST
85th ST
87th ST
LEGEND
DRY WEATHER SAMPLING
INSPECTED MANHOLE (NO SAMPLES TAKEN)
LIQUID AND SEDIMENT SAMPLES
SEDIMENT SAMPLE
LIQUID SAMPLE
BEDDING MATERIAL
STORM WEATHER SAMPLING
LIQUID SAMPLE
SCALE: 1" = 400'
LOVE CANAL
FIVE ENGINEERING STUDIES
WEST SANITARY SEWERS
TASK AREA VII
REMEDIAL ACTION PLAN

portion of the sewers recommended for cleaning are located outside the boundaries of the EDA.

Malcolm Pirnie had recommended that the segment of the main interceptor sanitary sewer from Lift Station No. 6 to the intersection of 66th Street and John Avenue be sampled for Love Canal related contaminants. CH_2M Hill, in their 1985 report, stated that due to the high probability that contamination will be found and remediation will be necessary, it appears to be more cost-effective to forego the costs of additional sampling ($34,000) and proceed with the cleaning of this sewer segment (Approximate cost $67,000). However, recent field investigations by the NYSDEC have shown that very little, if any, sediments are present in these downstream sections of sewer because the flows in these sewers are high enough to prevent sediment from settling out. NYSDEC will further investigate these sewers and if any sediments are found, the sediments will be sampled to see if they are contaminated.

6.10.4 BLACK AND BERGHOLTZ CREEKS REMEDIATION EVALUATION

The contamination assessment identified specific portions of Black and Bergholtz Creeks requiring remedial action. Cayuga Creek has been recommended for further sampling. The remedial alternatives assessed were included within the following major categories:

- No Action
- Restrict access
- Stabilization in-situ
- Removal and Disposal
- Combinations of the above

One major assumption applied was that any contaminated storm sewer or sanitary sewer overflows discharging to the creeks would be cleaned prior to implementing any creek remediation. Common to all alternatives would be the development of a detailed monitoring program to access the effectiveness of any option selected.

No Action - Beyond periodic sampling no remedial action in the creeks would involve leaving the sediment intact, therefore, this option is unacceptable for reasons explained above.

Restrict Access - This activity can be accomplished in numerous ways such as increasing public awareness, posting signs and erecting fences or a combination of these. The effectiveness of this option alone is considered very low. This is envisioned as a temporary measure.

In-Situ Stabilization - This involves the securing of contaminated sediments in place to minimize or prevent further contaminant migration. Options viable for this scenario would be the placement of small stones or filter fabric on the sediment, piping the creeks, and, treatment in place.

Removal and Disposal - Two major methods for creek sediment removal are hydraulic dredging and mechanical excavation. Various on-site and off-site disposal options exist which involve new (unproven) technologies. Transport to a secure landfill as well as interim storage at Love Canal are viable options.

The detailed evaluation included consideration of the following factors:

- Rehabilitation of the area is being evaluated and cannot be ruled out.
- There is presently an apparent stable population in the EDA.
- Creeks form the border of the EDA; therefore, there is a population that will always exist adjacent to the creeks.
- Dioxin has been found in the creeks at levels significantly higher than the one ppb CDC "action level" used at other sites. No standards currently exist for chemicals within sediment and, therefore, the impacts on the human population are unknown. Fish sampled in the study

areas contain significant levels of dioxin, levels that exceed by over three times the FDA advisory levels.

Based on the above, the conclusion has been reached that the length of Bergholtz Creek from about 150 feet upstream of the confluence of Black Creek to the confluence of Cayuga Creek and the stretch of Black Creek from the 98th Street culverts to the confluence of Bergholtz Creek should be dredged. Of major concern is the dioxin that has been found in the sediment.

Sampling has indicated that the potential exists that Love Canal-related contaminants might have been discharged (or may be discharged in the future) to Cayuga Creek and ultimately the Niagara River. It is being recommended that Bergholtz Creek be cleaned to its confluence with Cayuga Creek, and that a sediment trap be placed there to deter the backflow of sediment. It has been assessed that Bergholtz Creek is just one point source of contamination, specifically dioxin, that may be entering Cayuga Creek. Additional sampling of Cayuga will determine a strategy for the remediation for this creek.

Black Creek must be mechanically excavated, because of engineering constraints associated with hydraulic dredging. The decision to go with either hydraulic dredging or mechanical excavation for remediating Bergholtz Creek will be finalized during the design phase. Both options have comparable capital costs. The selection will be dependent on technical considerations. If it is determined that the banks of Bergholtz Creek need to be cleaned, mechanical excavation can only be used since this method will adequately clean these sloped areas. Based upon settling tests that are planned during design to determine the filtering and dewatering characteristics of this clayey sediment, hydraulic dredging may be ruled out due to the high water content of the waste that will be generated.

A significant issue associated with the removal of the contaminated sediment and debris from Black and Bergholtz Creeks is the disposition of these materials. At this time, no final decision has been reached regarding the disposition of these materials. The alternative that currently appears most promising is storage at the Love Canal Site until a facility is available for treatment (destruction) of the chemical contaminants (see Section 6.10.6).

6.10.5 102ND STREET OUTFALL REMEDIAL EVALUATION

Based on the contamination assessment performed by Malcolm Pirnie, an "action zone" map has been established which identified the areas of relatively high and medium contamination levels. Alternatives considered for alleviating the problem associated with contaminated sediments in this zone include:

- No action
- Temporary in-situ stabilization followed by removal and disposal or long-term stabilization
- Long-term in-situ stabilization
- Immediate removal and storage/disposal

A premise for the alternative evaluation was that the identified action zone lies adjacent to the 102nd Street Landfill site, which is currently being investigated in a separate CERCLA action. Since the contribution attributed to the 102nd Street Landfill site and the subsequent permanent, long-term remedial actions have not been established, the alternative selected here must be flexible to conform with effectiveness of the berm in containing all of the contaminant flow from the outfall. Also unknown is the percentage of contaminant that would overflow the berm considering the temporary nature of this structure. The discharge flow rate from the outfall must be determined and considered. The answers to these questions are necessary to adequately design the berm.

Conceptually, however, this action provides for the mitigation of the sediment migration that is of the most concern.

If the rate of progress in the remedial progams under investigation by Occidental Chemical Corporation and Olin Corporation is satisfactory, and if the remedial program for the 102nd Street Landfill provides for remediation of the contaminated sediments in the Niagara River, then this task will be deleted from the Love Canal Superfund program.

6.10.6 STORAGE/DISPOSAL OF CONTAMINATED MATERIALS

The sediment which is proposed to be removed from the creeks and sewers is known to contain dioxin and therefore is subject to stringent disposal procedures. Approximately 16,000 cubic yards of sediment would be removed from the proposed cleaning of Bergholtz and Black Creeks and the sewers (280 cubic yards). The volume would increase to approximately 21,000 cubic yards if the creek banks are determined to require excavation. Removal to a secure landfill was considered, but no facilities were willing and/or able to take the wastes. Incineration was also considered but did not seem to be a viable alternative for the immediate future. However, these options may become more feasible and may prove to be the ultimate source of disposal.

Because the sediments can be removed more rapidly than they can be treated or disposed of, and because all treatment or disposal methods require preparation of the sediments (dewatering, sizing, etc.) all sediments must be stored. An interim secure storage facility meeting all technical requirements of RCRA appears to be the most promising alternative. The wastes will be stored until such time as one of the above means of disposal/destruction becomes available or until another method becomes technically feasible.

Construction of the storage facility could take place during the 1986 construction season with creek cleaning to follow and be complete in 1987.

Since the sewer cleaning will take place in the fall of 1985 a dewatering facility similar to the one used for dewatering sediments during the first sewer cleaning operation at Love Canal is planned. The facility would have a double liner, leachate and leak detection systems, and would dewater from below. It would allow the sewer sediments to be removed during the fall of 1985, placed in a dewatering facility and eventually relocated to the interim storage facility upon its completion in 1986.

The type of storage facility, either earthen berm or concrete vault, will be determined during the design phase. The location of the facility must also be determined. Several places inside the Love Canal fence line are suitable. The potential locations for a concrete storage facility are restricted. The facility cannot be located over the capped areas of former residences within the fenced portion of Love Canal because of uncertain settlement problems. Also it is not desirable to place a concrete structure on the cap covering the canal proper because of uncertain settlement and potential slippage caused by the HDPE liner in the cap. The concrete storage facility can be located on the roadbed of 97th or 99th Street in the Canal area. An earthen berm facility would most likely be located in the southern portion of the Love Canal fenced area.

It should be noted that space requirements for the two types of facilities (concrete vs. earthern) are very different. The concrete facility would measure approximatley, 100 feet wide, 200 feet long, and 20-25 feet high, if placed on the road bed within the fence area at Love Canal proper. An earthern bermed facility used for hydraulically dredged sediments would measure approximatley 260 feet wide by 1250 feet long by 12 feet high. If used for mechanically excavated sediments an earthern berm facility could measure 260 feet wide by 400 feet long by 12 feet high.

A major factor influencing the selection of the type of facility will be the method which is finally chosen for dredging the creek sediments. Both options have comparable capital costs, therefore the selection will be based on technical considerations.

The increased surface area provided by the earthen berm facility (vs. the concrete vault design) is compatible with the dewatering and storage of sediment should they be hydraulically dredged. The greater surface suitable for efficient dewatering from below. If the facility is used to dewater hydraulically dredged sediments it may be a year or more before it could be closed.

Because of its lesser surface area a concrete vault would probable not be able to adequately dewater hydraulically dredged sediments. In the case where creek sediments where mechanically excavated, both the earthen berm and concrete facilities would be suitable for interim storage of the sediment.

6.10.7 CONSTRUCTION OF A PERMANENT ADMINISTRATION BUILDING

The existing on-site leachate treatment plant was completed in December 1979. During the 5+ years of plant operation, experience indicates that additional space is needed at the plant. Of major concern is the need for more space for storage of clean and contaminated equipment, materials, and supplies, and the need for additional facilities for personnel decontamination procedures.

Various options were evaluated. Rejected immediately were options that located an administration building off-site utilizing existing uninhabited structures, since the chance for off-site contamination would increase and security procedures would be more complex. On-site alternatives were evaluated that looked at the construction of additions to the existing facilities, erection of a new permanent building, or the placement of temporary (trailers) facilities.

Since it is assumed that these facilities would be required for an indeterminate period of time and that a well constructed facility would be more cost-effective than a lesser quality building that would require more frequent repair and/or replacement, the option to utilize temporary structures was dropped from consideration. In addition, a permanent facility would be in keeping with the long-term commitments made by the State of New York to maintain, indefinitely, the integrity of the Love Canal remedial work.

The new building will be constructed apart from the existing leachate treatment facility. The possibility of adding space to the existing leachate treatment facility is not an acceptable alternative for the following reasons:

- o There is no room adjacent to the existing facility. To the north of the plant is a parking lot/driveway which provides access to the carbon transfer platform behind the plant. To the east of the carbon transfer pad is the leachate collection drain. To the south are the sludge storage tanks and space dedicated to a proposed pilot scale plasma arc unit for use in the destruction of leachate treatment plant sludges. To the west is 97th Street.
- o By separating the two buildings, the chance of contamination of the proposed facilities is reduced. Despite all efforts and care in keeping the existing facility clean, there is a continuing potential for workers to carry contaminants on their person from the process room to the shower/toilet facilities and office.
- o Soils to the east of 97th Street are generally found to be chemically contaminated. The excavation of soils adjacent to the existing facility required to construct a foundation for an addition would likely result in the generation of contaminated soil requiring special handling and

disposal. It appears possible to avoid the problem of contaminated soils by building on the west side of 97th Street.

The NYSDEC has prepared plans and specifications for a permanent structure across from the existing leachate treatment facility (see Figures 17 and 18) that will include:

- o Approximately 140 square feet of floor space for a locker room to store work clothes, work shoes, hard hats, etc., worn in the treatment plant and during maintenance activities on-site.
- o Approximately 168 square feet of floor space for a clean shower/toilet area.
- o Approximately 140 square feet of floor space for a clean locker room to store clean clothing.
- o Approximately 465 square feet of floor space for an office. Space is also provided within the office for a lunch room.
- o Approximately 462 square feet of floor space for equipment storage and work space.
- o Approximately 704 square feet of floor space to serve to as a garage and workshop to house site dedication vehicles and equipment.
- o Approximately 210 square feet of floor space for utilities.
- o Approximately 222 square feet of floor space for a laboratory.

6.10.8 CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

This section compares the recommended action with the technical requirements established by other environmental laws (reference the proposed policy on CERCLA compliance with other environmental statues published in 50 FR 5928-32, February 12, 1985).

The recommended action, i.e., the cleaning of Love Canal sewers and creeks, have been reviewed for consistency with the technical requirements of the RCRA.

Figure 17

Architectural Rendering - Administration Building

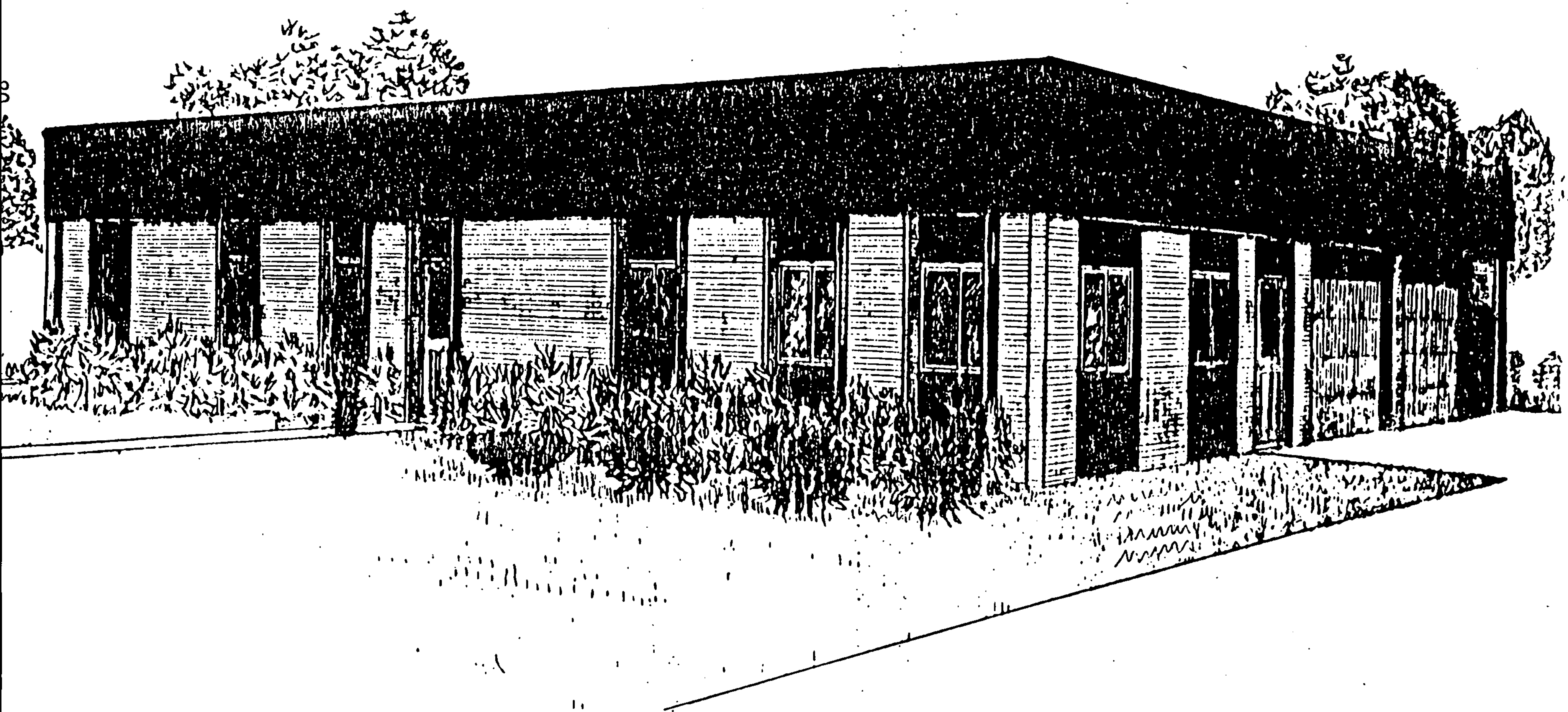
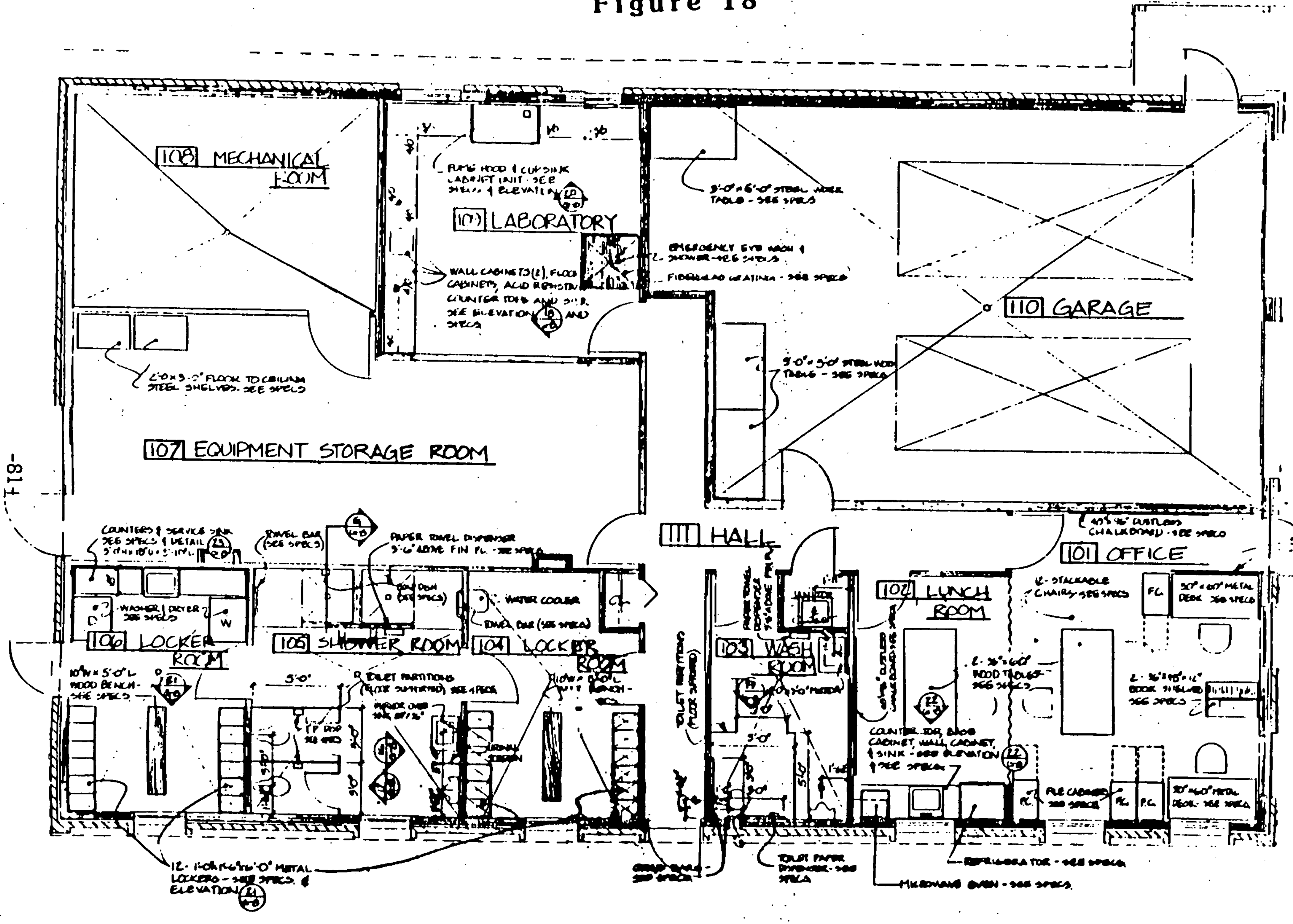


Figure 18



108 MECHANICAL ROOM
107 LABORATORY
110 GARAGE
107 EQUIPMENT STORAGE ROOM
111 HALL
101 OFFICE
102 LUNCH ROOM
103 WASH ROOM
104 LOCKER ROOM
105 SHOWER ROOM
106 LOCKER ROOM
WATER COOLER
ROOM FINISH PLAN

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The remediation of the sewers and creeks will result in the collection of large amounts of contaminated material, complicated by the fact that it contains dioxin.

Currently, no RCRA permitted disposal facilities will accept the dioxin contaminated wastes, and at this time, there are no commercial incineration facilities for dioxin contaminated wastes. Therefore, this material will be placed in secure interim storage at the Love Canal site within the fenced in area. The interim storage facility will be consistent with the technical requirements of RCRA for the storage of dioxin contaminated wastes.

The facility will either be an earthen berm or a concrete vault. Design of the earthen bermed facility would include the following:

- o Installation of a synthetic membrane liner, e.g. high density polyethylene (HDPE) on the bottom of the facility to percent migration of wastes out of the facility. A compatability test using actual creek and sewer sediment leachate will be performed during detailed design to determine if HDPE is suitable for use as a liner for the storage facility.
- o Installation of both leak detection and leachate collection systems separated by a synthetic membrane liner. Sand will be utilized as the initial layer of the leachate collection system to facilitate sediment dewatering. A particle size distribution analysis of the sediment will be performed as part of the detailed design in order to properly size the sand and prevent blinding of the filter fabric and the leachate collection system.
- o Placement of a synthetic membrane liner along the inside and outside faces of the berms.

- o Placement of drainage fabric along the inside face of the berm underneath the synthetic membrane liner to facilitate leak detection.
- o Cap construction identical to the recently installed synthetic membrane liner system.

It is also possible for the contaminated material to be stored in a concrete facility. The concrete facility would also be constructed in a manner which is consistent with RCRA guidelines for storage of dioxin-contaminated wastes. Appropriate materials would be placed below the contaminated material to drain moisture out of the containment and keep groundwater from it. An impervious synthetic liner protected by layers of geotextile fabric on each side would be placed above the prepared base. Above this liner there would be a leak detection system. While this system should collect very little liquid, any liquid it did collect would be drained by gravity to a leak detection sump and pumped to the leachate treatment system.

A drainage collection system would be installed above the leak detection system and the concrete floor and would be covered with a layer of geotextile fabric. Collected leachate would also be sent to the leachate treatment system.

The concrete interim containment facility, when closed, would be covered with an impermeable cover to minimize water percolation, promote drainage, minimize erosion, accommodate settling, and minimize maintenance.

It should be noted that the storage facility location and design decided upon may impact possible plans for interim storage of sediments from possible future remediation of Cayuga Creek or the 102nd Street outfall.

The creek sediments will be placed directly into the facility while the sewer sediments would be dewatered and placed in the facility upon the completion of its construction. The sewer sediment dewatering facility itself will also be consistent with technical requirements of RCRA. The dewatering facility will be similar to the one originally used at the first sewer cleaning operation at Love Canal.

The approximately 650 drums containing hazardous waste presently at Love Canal will also be temporarily stored in accordance with technical requirements set forth in RCRA. Drums from 93rd Street School and used carbon from the Leachate Treatment Plant will also be stored at the Love Canal site in accordance with these requirements. The facility to store these drums will be within the fence area at the Love Canal and will be roofed. The drums will be placed on wooden pallets and underlain by a concrete pad. There will be walkways (two feet minimum) between drums to allow easy inspection. The drums may be moved to the larger interim storage facility when it is constructed in 1986.

The wastes will be stored until such time as on-site or off-site RCRA permitted incineration facilities are available or until a RCRA permitted land-fill facility is willing to accept the waste. If the wastes are incinerated, the residue or ash will be disposed of at a RCRA permitted facility or retained on-site until the ash is delisted by EPA.

The remediation of the sewers and creeks will incur some temporary adverse environmental impacts. Table 6.10.8 (1) presents both short and long term impacts associated with the remedial alternatives. Work plans will address and incorporate measures to minimize possible effects of remedial activities.

6.10.9 RECOMMENDED ALTERNATIVES

The underlying goal of the remedial program at Love Canal has been to provide an environment as free of contamination as practically possible, within cost-effective guidelines. Actions that were selected for design and eventual implementation reflect activities necessary to protect the public and the environ-

Table 6.10.8(1)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
1. Sewers			
a. No action	None	None	Continued sediment migration to creeks and sewage treatment facility. Continued potential public exposure to contaminants. See Chapter 3.
b. Hydraulically clean and repair.	1. Run blower and plug sewer section.	Public contact minimized.	Potential for small amount of material to remain; minimized by TV inspection
	2. Set up cleaning jet at downstream, collection manhole.	Notice to residents of activity startup.	
	3. Perform cleaning operation (cleaning jet propels itself upstream and is then reeled back to collection manhole	Immediate cleanup if backup reported in house.	
		Backflow to cleaned sewer. Immediate cleanup if backup segments blocked.	
	4. Manually or mechanically remove large debris (using shovels and buckets).	Sewer demand decreased by performing action during dry season.	
	5. Use suction equipment (submersible pump and vacuum nozzle or vacuum truck) to remove sediments.	Volatiles inside house minimized by opening windows.	
	6. Transport sediment/water to treatment/disposal facility.	Dust emissions minimal because of sediment water content.	
	7. Remove plugs from cleaned sewer section.	Machinery noise during daylight work hours.	
	8. Decon blower, jet cleaning equipment and truck, and tank truck.	Truck Traffic to dewatering facility.	
	9. Collect and treat decon wash water.	Potential for discharge of cleaning water minimized by sewer plugs.	
	10. TV inspection of cleaned segment.		
2. 102nd Street Outfall			
a. No action.	None.	None.	Continued sediment migration. Continued aquatic life exposure. Continued potential public exposure to sediments and contaminated fish. (See Chapter 3.)

Source : Love Canal Sewer and Creek, Remedial Alternatives, Evaluation

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
b. Mitigate backflow * to sewer by repair to tidal gate.	1. Remove rocks and debris from in front of headwall.	One day of activity.	Mitigates potential backflow from outfall to storm sewer.
	2. Mobilize backhoe and portable generator to top of headwall.	Small disturbance of outfall sediment because any actions are at outfall.	Continued sediment migration in river.
	3. Lower tidal gate into position on face of headwall.	Negligible public exposure.	Continued aquatic life exposure.
	4. Bolt tidal gate flange to headwall.	Machinery noise at outfall during daylight work hours.	Continued potential public exposure to to sediments and contaminated fish. (See Chapter 3).
c. Immediate Stabilization*			
1) Construct stone berm with timber sheeting.	1. Inspect intended berm location for large debris and remove debris as necessary (drill several borings along alignment).	Little or no worker or equipment contact with sediment, unless when driving wall, debris or rocks are hit. Then the wall will be pulled out, repositioned (or obstacle will be moved), and replaced. Some worker contact possible while repositioning sheeting.	Berm/sheeting will need to be maintained to insure continued effectiveness.
	2. Beginning at shore line, use front end loader and bulldozer to transport and place stone.		
	3. Use barge mounted pile driver to place timber sheeting (second barge may be necessary to guide sheeting).	Sediments disturbed and possibly entrained during construction.	
2) Construct steel pile wall.	1. Inspect wall location for debris, remove debris as necessary.	See 2(c)1, except sediment disturbance lessened.	See 2(c)1.
	2. Use barge-mounted drill rig to drill borings along wall alignment to determine depth of river bed and identify locations of any buried debris.		
	3. Use barge-mounted pile driver to construct wall starting at shoreline (2nd barge will need to be used to guide sheet piling).		

* Work may be deferred pending implementation of 102nd Street Site Remedial Program

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
d. Long-term remediation			
1) In-place containment (with 2(c)1 or 2.	1. Construct stone berm or wall (See 2(c) 1 or 2 above).	See 2(c)1.	See 2(c)1.
	2. Dewater, backfill contained area and cap it.	Haul trucks with fill.	None.
2) 2(c) 1 or 2 followed by removal using land based equipment	1. Construct stone berm or wall (See 2(c) 1 or 2 above).	Potential for splashing workers as sediments are transferred from clamshell to truck.	None.
	2. Remove rip-rap along shore line and build berms or mud mats as necessary.	Biota will be lost.	Biota community expected to reappear.
	3. Use shore-based drag line or clamshell on crawler crane to excavate sediments.	Truck traffic to dewatering facility.	
	4. Load excavated sediments into truck and transport sediments to dewatering/disposal facility.		
	5. Excavate stone berm placing stone in trucks--transport to disposal facility. Rebuild shore rip-rap to depth of excavation.		
	6. Decon dragline/clamshell, trucks, and/or other equipment.		
3. Black Creek			
a. No action.	None.	None.	Continued sediment migration. Continued potential public exposure. (See Chapter 3)

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
b. Mechanically excavate	1. Construct access road along creek bank, clear, and grub. 2. Construct berms up and downstream and dewater between using pumps. 3. Use backhoe to excavate sediments and place them in a watertight truck. 4. Transport sediments to dewatering/disposal facilities. 5. Remove earth berms and dispose of at hazardous waste facility. 6. Decon excavating equipment and truck, etc.	Public contact minimized o Restricted access during activities. o Volatile emissions negligible because no volatiles detected in sediment. o Dust emissions minimal - Wet state of sediment - Cleanup of spills on banks o Sediment transport will be in leakproof trucks operating over short distance. Temporary haul roads. Machinery noise during daytime work hours. Creek biota will be lost.	Potential for small fraction of contaminated sediment to remain. Creek biota community expected to renew.
c. Construct tidal gate or sediment trap at confluence conjunction with 3.b. above.	1. Excavate approximately 18 inches in Black Creek (at confluence with Bergholtz Creek). 2. Mix and pour concrete to form tidal gate/sediment trap. 3. Continue with steps 6 and 7 above.	Negligible addition to 3.b.	Prevents backflow of Bergholtz Creek sediments to Black Creek if two creeks not cleaned concurrently or are cleaned by different methods.
4. Bergholtz Creek & Beyond			
a. No action.	None.	None.	Continued sediment migration. Continued aquatic life exposure. Continued potential public exposure to sediment and contaminated fish. See Chapter 3.
b. Mechanically excavate.	1. Construct temporary berm at mouth of Black Creek to use as stream crossing. 2. Follow steps 1-6 under 3.b. above, except use frontend loader and clamshells.	See 3.b. Numerous trips (more than 1,400) by haul truck to deposit sediments. Would block some streets at times. Noise and possible dust emissions.	Potential for small residential fraction of contaminated sediment to remain.

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
c. Hydraulically excavate.	1. Construct temporary berm at mouth of Black Creek to use as stream crossing.	Potential contact reduced because of closed transport in pipes.	Creek biota community expected to renew.
	2. Construct berms up and down-stream and dewater between.	Potential pipeline leaks minimized by double walls.	Potential residual contamination; banks cannot be remedied using hydraulic dredge.
	3. Construct access road, clear, and grub.	Volatile emissions minimal because no volatiles detected in sediments. (91st Street and Colvin Boulevard)	Dewatering facility may be open for year(s) to allow sediments to dewater and stabilize.
	4. Manually remove large debris; reflood.	Bridges required where pipe crosses road.	
	5. Use mud cat to dredge sediments.	Machinery noise during work hours.	
	6. Dewater and inspect; reflood and redredge if necessary.		
	7. Remove earth berms and dispose of at hazardous waste facility.	Creek biota will be lost.	
	8. Transport sediment to disposal facility.	Pipelines (two; each is one mile long) must be in place throughout; pumps will run continually. Haul trucks will carry debris through streets.	
	9. Dewater dredge spoils and treat filtrate.		
	10. Decon mud cat, truck, dewatering pump, piping, etc.		
6. <u>Sediment Dewatering</u>			
a. Mechanically dewater.	1. Transport sediment in water tight truck or pipe sediment to dewatering facility.	Sediment compression may emit volatiles. Minimal dust emission because sediment still wet and is dropped into covered container.	Action is an intermediate stage of remedial action. Sediments are removed to Interim Storage (See #7). No long term impacts from action.
	2. Feed sediment onto vacuum filter and air press.		
	3. Remove filter cake and transport to disposal facility.		

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
	4. Transport and treat filtrate, at LCTF, release to sewer system and NEWTP.		
b. Use interim storage	1. Construct temporary system for sewer sediment dewatering.	Splashing from hydraulically dredged sediments. Emissions possible.	Hydraulically dredged sediments may not solidify for over a year; cannot cap facility until then.
	2. Construct interim storage facility (48,000 cubic yards capacity for hydraulic dredge water recirculation) with major design modifications for hydraulic dredged sediments.		
	3. Pipe water/sediments by pipeline (3,000,000 gallons) or haul sediments to facility (1,400 truck trips).		Continual feed (3,000,000 gallons) to Love Canal leachate treatment facility from hydraulically dredged sediments.
	4. Collect liquid drained into underdrain/leachate collection system or taken off top. Recycle to creek in hydraulic dredging. Treat and dispose of water eventually.		Temporary feed (600,000 gallons) to Love Canal leachate treatment facility from mechanically excavated sediments; cap facility immediately.
	5. Choose disposal/treatment option from 8.		
7. Interim Storage			
a. Construct an earthen bermed facility.	1. Excavate soils and construct berms. If facility is to be within the cap, cut hole in existing HDPE liner.	Placement of material in the the facility could result in the release of contaminated materials that must be contained. Machinery would be involved, causing noise and dust. Haul trucks would bring material into area. Essentially same impacts as activities associated with capping Love Canal.	Aesthetics; if hydraulic dredging used, facility may not be capped for over a year. Operation/maintenance needed for as long as 30 years. Can be capped immediately if mechanically excavated sediments disposed of.
	2. Fine grade base and install bottom liner. If facility is in cap, weld bottom liner to existing liner.		
	3. Compact clay layer and install leak detection system. Compact additional clay.		
	4. Fine grade and install second synthetic liner.		

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
	5. Place granular material and piping for leachate collection system.		
	6. Deposit sediments and decon all contacted equipment.		
	7. Construct cover including installation of a synthetic liner. (May be some delay in covering if facility is used for dewatering).		
	8. Topsoil and seed cover.		
b. Construct a concrete structure (Times Beach vault)	1. Excavate soils and install synthetic membrane.	See 7a.	See 7a. Aesthetic impact different than 7a. since vault would be taller, but Only one-fifth as long. Vault can be capped sooner than 7a.
	2. Place drainage gravel and geotextile layers.		
	3. Pour 8" reinforced concrete and coat with polymeric asphalt.		
	4. Place drainage gravel and geotextiles to act as leachate collection system.		
	5. Similarly construct concrete sidewalls.		
	6. Follow steps 6-8 in 7.a., except no delay in covering.		
8. Offsite Disposal			
	1. Open storage facility, remove sediment.	Opening of storage facility and removal of sediments could generate dust, release volatiles. Will take several openings to remove material. Many trucks required to make 1,500 mile trip; possible accidents/incidents. Treatment/disposal should have no more than "normal" impacts at disposal sites.	Facility must be maintained or demolished once empty.

Table 6.10.8(1) (cont'd)

Table 1-6
IMPACTS ASSOCIATED WITH
LOVE CANAL REMEDIAL ALTERNATIVES
(Continued)

Alternative	Steps in Operation	IMPACTS: Remedial Action Phase	IMPACTS: Long-Term
	2. Load sediment on truck. 3. Transport to site & unload. 4. Treat or dispose. 5. Decon all equipment.		
9. <u>Incineration</u>			
a. Construct facility onsite.	1. Construct incinerator. 2. Open storage facility. 3. Transport dewatered sediment to incinerator. 4. Incinerate sediment. 5. Transport ash to secure landfill for disposal. 6. Decon equipment.	If operated within the regulations, emissions and incinerator operations should not pose a risk thresy to workers or residents. Materials must be prepared (ground up, dried). Handling and transport of sediment will release dust, volatiles, and will generate noise. Incinerator will generate noise, ash, and steam. Must have building to house it. Transport of ashcould result in spills. May require additional area to accommodate all of equipment. Cooling water must be treated.	Several years to build; at least one year of operation necessary; storage facility would essentially remain open entire period. Landfilling of residual may necessitate construction of new facility at Love Canal, or transport to offsite facility (See 8).
b. Use mobile incinerator	Same as 9.a. except step 6 would involve demobilization of incinerator equipment.	See 9.a.	Same as 9.a., except incinerator would be onsite from 1 to 29 years and mobilization would be much shorter.

ment from the hazardous situation that exists. The sewers should be cleaned and the contaminated creek sediments dredged as previously described.

There will be on-site interim storage of the contaminated sediment at the Love Canal site. To assure that this waste will remain secure on-site until ultimate disposal, the interim storage facilities will be constructed in accordance with the technical requirements of RCRA.

The construction of a permanent administration building will provide adequate and safe working conditions for site employees and will be consistent with the State's long-term commitment at the Canal.

6.10.9.1 COST

Table 6.10.9.1 (1) shows the costs associated with the feasible alternatives for remedial action as estimated by CH2M Hill. These costs are order of magnitude estimates and are expected to be accurate within a range of +50 and -30 percent.

The NYSDEC will continue as remedial lead agency on the project. Therefore, costs for NYSDEC's administration management activities have also been estimated. Under CERCLA, the site has been classified as a 90 percent Federal and 10 percent State cost-sharing site.

6.10.9.2 SCHEDULE

Commence Construction of the sewer sediment dewatering facility	Fall 85
Commence Sewer Cleaning Work	Fall 85
Commence Sampling of Cayuga Creek and the banks of Bergholtz and Black Creeks	Fall 85
Commence Construction of interim storage facility	Summer 1986
Creeks cleaned	Fall 1986 - Summer 1987
93rd Street School investigations	Spring 86
Commence Construction Administration building	Fall 85
Commence Construction Drum storage facility	Fall 85

Table 6.10.9.1(1)

Table 1-7

SUMMARY OF ESTIMATED COSTS FOR FEASIBLE ALTERNATIVES

Alternative	Total Present Worth ($)[1]
Sewer Remediation and Repair	
1. No Action	--
2. Cleaning	1,348,000
3. Abandon in-place and replace with new line	7,080,000
102nd Street Outfall Remediation *	
1. Immediate Stabilization	
- No Action	--
- Filter Fabric and Stone	207,000
- Berm with Timber Sheeting	509,000
- Steel Pile Wall	636,000
2. Long Term Remediation	
- No Action Subsequent to Berm or Wall	--
- In-Place Containment	598,000
- Removal Using Shore Based Equipment	350,000
Creek Remediation	
1. No Action	--
2. Hydraulic Dredging of Bergholtz Creek	
- 1983 EID limits only	700,000
- 1983 EID limits plus 1st incremental reach	798,000
- Above Plus 2nd Incremental Reach (PROBABLE AREA)	1,026,000
3. Mechanical Excavation--Land-Based Clamshell	
- 1983 EID limits	165,000
- 1983 EID limits plus 1st incremental reach	225,000
4. Mechanical Excavation--Tracked Front End Loader (and Clamshell as needed)	
- 1983 EID limits	184,000
- 1983 EID limits plus 1st incremental reach	248,000
- Above, Plus 2nd Incremental Reach (PROBABLE AREA)	1,178,000
- Black Creek only (PROBABLE AREA)	120,000
5. Additional Sampling Bergholtz and Cayuga Creeks and Banks	169,000
6. Fence Downstream Section of Bergholtz and Cayuga Creeks	161,000

Source: Love Canal Sewer and Creek, Remedial Alternatives, Evaluation and Risk Assessment, EPA 138.2105.0, Volume I, March 1985.

*Work may be deferred pending implementation of 102nd Street site Remedial Program.

Table 6.10.9.1(1) (cont'd)

On-Site Storage

1. Above-Cap, Earthern Berm	
- Mechanical Excavation/5,000 cy	803,000
- Hydraulic Dredging/5,000 cy	829,000
- Hydraulic Dredging; 21,000 cy (Probable Volume)	1,131,000
- Hydraulic Dredging/135,000 cy	4,924,000

Alternative	Total Present Worth ($)[1]
2. Concrete Vault	
- Minimum Volume, 5,000 cy	509,000
- Probable Volume, 21,000 cy	1,135,350
- Maximum Volume, 135,000 cy	7,298,000
Transport of Sediment, Dewatering and Leachate Water Treatment	
1. Sewer Sediments Dewatering/Love Canal Leachate Treatment Plant	
- Mechanical Dewatering	391,000
- Clarification/Filtration/Mechanical Dewatering	683,000
- Temporary Steel Walls/Passive Dewatering	280,000
2. Transport and Dewatering of Mechanically Excavated or Hydraulically Dredged Creek Sediments Costs Are Contained in Creek Remediationand Interim Storage Costs.	12,900,000-18,060,000
Off-Site Incineration	
1. Rollins: 5,000 cy	7,900,000-9,400,000
2. Rollins: 21,000 cy	18,000,000-31,500,000
3. Rollins: 135,000 cy	206,900,000-247,400,000
On-Site Incineration	
1. EPA Mobile Incinerator: 5,000 cy	4,800,000-7,100,000
2. EPA Mobile Incinerator: 21,000 cy	15,600,000-42,000,000
3. EPA Mobile Incinerator: 135,000 cy	86,300,000-147,500,000
4. Huber AER: 5,000 cy	6,700,000-8,100,000
5. Huber AER: 21,000 cy	12,900,000-18,060,000
6. Huber AER: 135,000 cy	111,200,000-148,300,000
7. ENSCO Mobile Incinerator: 5,000 cy	5,400,000
8. ENSCO Mobile Incinerator: 21,000 cy	16,800,000
9. ENSCO Mobile Incinerator: 135,000 cy	91,300,000

[1] In 1984 dollars.

6.11.0 ADDITIONAL PHASE III REMEDIAL ACTIVITIES PLANNED FOR THE LOVE CANAL SITE

As previously discussed, additional remedial work (Phase III) is planned for the Love Canal area. This Section provides a brief description of each of the planned activities, a rough estimate of the cost, and a brief discussion of the factors which may affect the timely initiation and completion of the work.

Plans and specifications for all future work will be publicly presented and available for public inspection. Consideration will be given to all comments received in the finalization of plans.

6.11.1 TASK: PERIMETER SURVEY/IMPLEMENTATION OF THE LONG-TERM MONITORING PROGRAM

It is planned that the NYSDEC will initiate a "Perimeter Survey" and begin the implementation of the permanent long-term monitoring system for the Love Canal site in the fall of 1985. This task consists of the following elements of work which are intended to meet the objectives described below:

a. A number of shallow groundwater monitoring wells will be installed at locations surrounding and near the perimeter of the Love Canal Site (the green chain link fence). Water samples will be collected from these wells and analyzed to determine if the near surface groundwater system has been significantly contaminated by past migration from the Love Canal Site. If significant contamination attributable to Love Canal is found in any wells, then additional wells located at greater distance from the Love Canal will be installed until the areal extent of significant contamination in the shallow groundwater system is established by a series of monitoring wells completely encircling the site.

b. Once the extent of significant contaminant migration is determined in the shallow groundwater system, soil samples will be collected in the vicinity of these "perimeter" wells. These samples will be collected and analyzed to determine if soils which people might come into contact with are significantly contaminated with chemicals attributable to the Love Canal Site. If soils are found to be significantly contaminated with chemicals attributable to Love Canal, additional soil samples will be taken at greater distances from the site until the areal extent of significant surficial and near surface soil contamination is determined.

It is the intent of the NYSDEC to use the information collected pursuant to the perimeter survey (steps a and b) to determine the extent of significant contaminant migration away from the Love Canal Site via the shallow groundwater system and surface runoff. These wells would be periodically resampled to confirm that contaminants are not migrating further from the site via the shallow groundwater system. It is the NYSDEC's intent that this program would provide information sufficient to define the limits of an area where certain uses of the where certain uses of the land should be restricted. Such restrictions might include bans on or limitations on depths of excavations, bans or restrictions on use of the area for residential purposes, etc.

c. A number of wells will be installed directly into the Love Canal Site in order to monitor liquid elevations within the waste. The purposes of these wells are to better monitor the effectiveness of the leachate collection system to remove mobile liquids from the interior of the landfill. A number of wells will also be installed near the Love Canal site and completed at depths within the bedrock underlying the site to better evaluate if or what potential exists for the contamination of the bedrock groundwater system. The information obtained from these monitoring wells will also provide insight into the need and the feasibility of additional efforts to dewater the actual landfill.

d. At a number of locations a series of closely spaced wells will be installed at several different depths within the overburden. These wells will be installed relatively close to the barrier drain. Water elevations taken in these wells will better define the control the leachate collection system has on the shallow groundwater system. Water samples will also be collected from these wells periodically to monitor the effect the drain has on the chemical quality of the shallow groundwater system as time passes.

The estimated cost of this work is approximately $2 million for the first year. Costs for subsequent years will be dependent on the number and types of chemical analyses which must be performed. The number and types of chemical analyses which must be performed will be better known after the first year's data are evaluated.

The factors which might affect the scheduling of this work are:

a. Procurement of a contract for the services required to carry out the perimeter survey and implement the long-term monitoring program. At this time the NYSDEC intends to extend its existing contract with the E.C. Jordan Company to perform this work. E.C. Jordan Company has already collected and analyzed a series of soil samples from around the Love Canal Site and is now (March 1985) finalizing a report presenting the design of a long-term groundwater monitoring program for the Love Canal Site.

b. Finalization of detailed protocols, plans and specifications for the installation of wells, collection and analysis of samples, and health and safety plans.

6.11.2 TASK: SEWER CLEANING

It is planned that the NYSDEC will procure a contractor to clean the storm and sanitary sewers which drained from the Love Canal Site or might have been contaminated by drainage from the Love Canal Site. This work is scheduled to begin in the fall of 1985. This task consists of the following elements of work:

a. Contaminated sediments will be removed from the storm and sanitary sewers by hydraulically cleaning the sewers. If necessary, large accumulations of sediment and debris will be removed mechanically and then the sewers will be hydraulically cleaned.

b. The sewers will be inspected by remote television cameras to ensure that contaminated sediments are removed.

c. Sediment and debris removed from the sewers will be dewatered and indefinitely stored at the Love Canal Site until the final method of disposal is determined. The estimated cost of this work is approximately $2.4 million.

The factors which might affect the scheduling of this work are:

a. Approval by USEPA of the NYSDEC's application for Federal funding pursuant to CERCLA.

b. Development of final contract and bidding documents describing the sewer cleaning; including health and safety plans.

c. Timely procurement of a contract with a responsive, responsible contractor to perform this work.

6.11.3 TASK: ADMINISTRATION BUILDING

It is planned that the NYSDEC will begin construction of a new building to supplement facilities provided in the Love Canal leachate treatment plant. The new building will be located immediately west of the leachate treatment plant and will be approximately 40 feet by 70 feet in size. The new building will provide the following necessary facilities:

a. Additional office and storage space;

b. Improve personal hygiene facilities for added worker comfort and safety; and

c. A small laboratory to perform some chemical analyses needed to monitor plant operations.

The estimated cost for the construction of the new administration is approximately $500,000.

The factors which might affect the scheduling of this work are:

a. Approval by USEPA of the NYSDEC's application for Federal funding pursuant to CERCLA;

b. Development of final plans and specifications for the building; and

c. Procurement of a contract with a responsive, responsible contractor for construction of the building.

6.11.4 TASK: REMOVAL OF CONTAMINATED SEDIMENTS FROM BLACK AND BERGHOLTZ CREEKS

It is planned that contaminated sediments be removed from Black and Bergholtz Creeks. This work is currently planned for commencement in late summer 1986.

Removal of the contaminated sediments from Black and Bergholtz Creeks involves the following major elements of work:

a. Collection and analysis of additional sediment samples to better define the areal extent of the contaminated sediments.

b. Removal of the contamination sediments from the creeks by hydraulic or mechanical dredging techniques.

c. Dewatering of the contaminated sediments and proper preparation for disposal.

The estimated cost of this work is unknown at this time. The costs are dependent upon the amount of the extent of contamination in and possible adjacent to the creeks and the means of disposal selected. The factors which affect the scheduling of this work are:

a. Approval by USEPA of the NYSDEC's application for Federal funding pursuant to CERCLA. The existing funding request should enable the extent of the problem to be better defined and a means of sediment disposal identified.

b. Development of final plans and specifications for the work including an acceptable health/safety contingency plan.

c. Procurement of contractual services necessary to carry out the work.

6.12 TASK: PLASMA ARC

The NYSDEC entered into a contract with Pyrolysis Systems, Inc. (PSI) of Welland, Ontario, Canada, requiring PSI to design, construct, test, and demonstrate the full scale operation of plasma arc technology for the destruction of liquid hazardous wastes sludges at the Love Canal site.

Plasma arc technology involves passing compressed air through an electric arc, thus creating a high temperature plasma or ionized gas stream. This plasma reaches temperatures in excess of 10,000°C. The liquid hazardous waste sludge is injected into this high temperature plasma and the chemical constituents of the waste are subsequently reduced to the atomic state. The particulate carbon and acid gas resulting from the destruction of the wastes are removed in a conventional scrubber. The principal component of the scrubbed gas is hydrogen which is subsequently flared in a stack.

The plasma arc unit is expected to be used at Love Canal for the purpose of destroying the chemical sludge which is separated from the leachate and currently stored on site. The plasma arc unit is expected to have capacity to destroy the existing inventory of sludge.

A major portion of the effort in the plasma arc project involves obtaining the necessary permits. In order to ensure that the health and safety of the surrounding community is protected, permits must be obtained from both the EPA and the NYSDEC before operation can commence at the Love Canal Site. These permits require an extensive health and safety plan and integral fail-safe system as well as trial burns to demonstrate that the by-products of the waste destruction do not themselves pose a hazard. In addition, the project must also satisfy the requirements of the State Environmental Quality Review Act (SEQR) and an environmental impact statement must be prepared.

The estimated cost of developing this technology to the point where it is permitted and ready to be used at the Love Canal Site is over $2,000,000. The factors which affect the conduct of this work are:

a. Obtaining the necessary funding to complete the project;

b. Development of acceptable contractual arrangements to complete the work;

c. Satisfactory completion of all testing to demonstrate that the plasma arc technology works properly;

d. Preparation and approvals of various permit applications including conduct of public hearings; and

e. Preparation and approval of an Environmental Impact Statement.

6.13.0 CITIZEN PARTICIPATION AT LOVE CANAL

Citizen participation at Love Canal is a dynamic, evolving program. The technical situation as well as the social, political and psychological situation have changed since the NYSDEC's first involvement and they will continue to change as the remedial program continues. The NYSDEC is constantly reviewing and evaluating all of the varying factors related to the Love Canal program and tailoring citizen participation to fit.

The overall design of the Love Canal Citizen Participation program is intended to develop an informed "public" and provide opportunity for the "public" to become an active participant in the decision-making process. A situation as complex as Love Canal affects a wide range of people (homeowners, state, federal and local government representatives environmental groups, previous residents, etc.), and the development of an implementable solution requires the input and the effective acceptance of all of them. In the interest of finding and carrying out the best social, political, economic, and environmental solution to the Love Canal situation, the NYSDEC is committed to a comprehensive citizen participation program.

The cornerstone of the NYSDEC's citizen participation program at Love Canal is an "on-site" public information office. The office, located within the Love Canal Emergency Declaration Area (EDA) at 9820 Colvin Boulevard, is open to the public 9:00 a.m. to 5:00 p.m., five days a week. In addition, it is frequently open additional hours and days to accommodate the schedules and special interests of anyone interested in taking advantage of the office's services.

The office's full time staff includes a professional citizen participation specialist and a stenographer. Both are very knowledgeable about the Love Canal situation and provide assistance in finding specific information or interpreting difficult to understand documents or program aspects. One of the major goals of the citizen participation program is the promotion of effective two-way communication between all of the involved and affected interests. The office and its staff work toward accomplishing this by facilitating the transfer of information and attitudes not only from the public to the government but from the government to the public and between all the various groups and interests as well. The office serves as a document depository for Love Canal reports, information and correspondence and the numerous "publics" are encouraged to review, discuss and comment on them.

While the public information office is the focal point of the citizen participation program, it doesn't constitute the NYSDEC's whole effort. NYSDEC uses a variety of methods and techniques to fit the need of the affected interests and accomplish the program's goal of developing an informed "public" that is truly an effective and valuable component of the Love Canal decision-making process. Included are: 1.) publication of a newsletter; 2.) meetings between individuals and government officials; 3.) small group discussion sessions; 4.) public information meetings; 5.) telephone communication; 6.) drop-in visits to the Public Information Office; 7.) "at-home" visits and discussions; 8.) mailings of pertinent documents, meeting notifications, etc. 9.) briefings with local government officials, the press and special interest groups; 10.) development and distribution of responsiveness summaries, fact sheets, information documents and executive summaries; 11.) maintenance of a toll free "800" telephone; 12.) discussion opportunity sessions; 13.) news releases; and 14.) responses to letters. A more detailed description of each of these techniques follow.

6.13.1 NEWSLETTER

The Newsletter (Love Canal Update) is published periodically to inform the interested "publics" of planned and ongoing remedial work activities and projects at the Love Canal. Program problems are presented and alternatives reviewed. Lists of available documents and meeting notices are included in each newsletter. Each issue also includes telephone numbers and addresses for information on Love Canal and other hazardous waste sites.

The purpose of the newsletter is to promote and develop public understanding of the issues involved, to present information on the progress and results of the remedial actions, and to encourage involvement in the decision-making process.

6.13.2 MEETINGS BETWEEN INDIVIDUALS AND GOVERNMENT OFFICIALS

Government officials meet with individuals on a one-on-one basis to provide an opportunity for the individual to discuss his/her specific concerns. This allows for a detailed discussion that leads to a more complete understanding. It lets the discussion focus on very personal or individual concerns that might never surface at larger meetings. Working on problems together in this format also does a lot for improving the relationship between the various parties which, in turn, aids considerably in future discussions and problem-solving situation.

6.13.3 SMALL GROUP DISCUSSIONS

NYSDEC officials meet with various special interest groups to provide more detailed information on various aspects of the Love Canal Superfund program and other hazardous waste activities. These small group discussions promote the interchange of quite detailed information. They also allow for a better understanding and the particular interest group for each other's concerns and viewpoints.

6.13.4 PUBLIC INFORMATION MEETINGS

Large public information meetings are held to provide updates and presentations on large amounts of information to a fairly large number of people at once.

Public information meetings provide the public with an opportunity to express their concerns to government officials. It also provides an educational opportunity for all interested parties to hear the various concerns of other groups and individuals.

6.13.5 TELEPHONE CONTACTS

Telephone contact is used extensively for many purposes. It provides a quick method for immediate notification of available documents, test results, program changes, upcoming meetings, comment period dead-lines, etc. It also serves as a method of receiving and discussing concerns and questions from interested groups and individuals.

6.13.6 DROP-IN VISITS

The Public Information Office is open daily to interested individuals and groups. Visitors are welcome to "drop in" for information on the history and major events that developed as a result of the Love Canal. Local residents and concerned interest groups also visit the office regularly to stay informed on the most recent developments and to discuss issues of concern.

6.13.7 AT-HOME VISITS

To communicate with those individuals unable or reluctant to "drop in" at the Public Information Office, at-home visits are often arranged. These visits allow for a personalized discussion of concerns and activities that most directly influence or concern the specific individuals.

6.13.8 MAILINGS

Mailings are used for the release of information and for meeting notifications. A comprehensive mailing list has been developed to include a large number (600-700) and wide variety of people including Love Canal homeowners, special interest groups, media representatives, government officials, and concerned and interested citizens.

6.13.9 BRIEFINGS

Press briefings are often held to accommodate media deadlines and to provide the press with a specific question-and-answer period. Local elected officials and special interest groups are also briefed on major findings, proposed activities, and other particularly significant program aspects.

6.13.10 RESPONSIVENESS SUMMARIES, FACT SHEETS, INFORMATION DOCUMENTS, EXECUTIVE Summaries

Responsiveness summaries are public documents written to document government responses to input and comment. It allows those that make comments or are interested in impact of input on the decision-making process. The responsiveness summary also serves as a review method for the agency to verify for themselves that all pertinent comments have been addressed. Comments and input included in a responsiveness summary may come from internal sources, as well as external, and may be reviewed very informally or during more formalized means--like specifically identified comment periods.

Fact sheets and information documents are developed for specific program aspects. They are used for handouts at meetings or included in mailings. Executive summaries are written for major documents. They highlight the major aspects of the total document and allow for a general understanding of the document's contents in a much shorter and more easily read format.

6.13.11 TOLL FREE TELEPHONE

A toll free "800" telephone number is maintained in the DEC central office. This serves as a backup for the Love Canal Information Office and provides a direct link to the central office for interested publics in the Love Canal area at no cost.

6.13.12 DISCUSSION OPPORTUNITY SESSIONS

These sessions are designated periods (usually both afternoon and evening) where representatives of government agencies and/or their consultants make themselves available for individuals to stop by and discuss a specifically designated program aspect. This technique allows for individuals' schedules to be accommodated and still provides sufficient opportunity to speak directly with experts in particular program areas.

6.13.13 NEWS RELEASES

Periodically, there are specified program information, documents available, or meetings to announce that are brought to public attention through the distribution of news releases to the media. Newspaper, television and radio spots, and articles generated reach a great number of people. Media representatives often respond to news releases with follow-up calls to acquire more detailed information.

6.13.14 RESPONSES TO LETTERS

The NYSDEC receives numerous letters from interested and concerned "publics." These letters raise concerns and question various aspects of the Love Canal program. Each letter receives a written response from the NYSDEC if appropriate, or is forwarded to the appropriate source most capable of responding. This exchange of correspondecе provides an opportunity for on-going, quite detailed communication.

6.13.15 CITIZEN PARTICIPATION PROGRAM SUMMARY

The aforementioned methods constitute the majority of the specific techniques that the NYSDEC uses in its citizen participation program; however, there is a great deal of less formalized activity that works in concert with these techniques to accomplish the citizen participation program goals.

The citizen participation program at Love Canal encourages public involvement in the decision-making process so that the full range of individual and community concerns are considered in determining the most appropriate course of action. At the core of the citizen participation program is the encouragement and promotion of effective "two-way" communication between various "publics" and the government agencies responsible for the Love Canal remedial program. Providing up-to-date accurate information fostering the exchange of both facts and feelings, and developing an atmosphere and opportunity for useful and effective input from all interested and involved parties summarize the NYSDEC's citizen participation program at Love Canal.

ATTACHMENT I

STATE OF NEW YORK
DEPARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH

CORNING TOWER • THE GOVERNOR NELSON A. ROCKEFELLER EMPIRE STATE PLAZA • ALBANY, N.Y. 12237

DAVID AXELROD, M.D.
Commissioner

LINDA A. RANDOLPH, M.D., M.P.H.
Director

WILLIAM F. LEAVY
Executive Deputy Director

February 22, 1984

Norman H. Nosenchuck, P.E.
Director
Division of Solid and Hazardous Waste
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-0001

Dear Mr. Nosenchuck:

Re: Malcolm Pirnie Report: "Site Investigation and Remedial Action Alternatives - Love Canal

You asked if the subject report provides sufficient information for us to make an assessment of public health risk; whether we will make such an assessment that may be useful in determining the appropriateness of the remedial programs proposed for streams and sewers in the area; and how much time we would need to do the job.

The assessment of potential public health risk was made by the US Department of Health and Human Services when they declared the EDA to be habitable subject to clean up of contaminated sewers and their drainage tracts (see attached). The Malcolm Pirnie investigation was directed at locating the contaminated areas of the sewers and their drainage tracts - the areas where cleaning was needed and these areas are identified in their report.

The Health and Human Services report did not make a "numerical risk-assessment" to estimate the increased morbidity and mortality that would result if the sewers and creeks were not cleaned. However, the report is direct and unambiguous in making the clean-up of the sewers and creeks a condition of habitation. It is clear that the presence of Love Canal associated chemicals, especially dioxin, in the sewers and creeks does pose a direct threat to children playing in the creeks, persons using yards subject to flooding from the creeks, and persons exposed to biota downstream subject to exposure to chemicals being washed down to them.

Sincerely,

Robert H. Huffaker

Robert H. Huffaker, DVM, MPH
Associate Director
Office of Public Health

Attachment

Attachment II

City of Niagara Falls
Department of Utilities

WASTEWATER DISCHARGE PERMIT

Permit No. 16

In accordance with all terms and conditions of Chapter 250 of the City of Niagara Falls Municipal Code; Sewer Use Ordinance, as adopted by City Council on July 25, 1983; et seq. and also with all applicable provisions of Federal and State law or regulation;

Permission is Hereby Granted To: LOVE CANAL TREATMENT SYSTEM - NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

located at: 97th Street

classified by SIC No(s): ____________

for the contribution of wastewater into the City of Niagara Falls Publicly-Owned Treatment Works (POTW).

Effective this 1ST day of MARCH, 1985
To expire this 28TH day of FEBRUARY, 1990

Robert E [illegible]

Director of Utilities

WASTEWATER DISCHARGE PERMIT REQUIREMENTS FOR:	ACTION REQUIRED	REQUIRED DATE OF SUBMISSION
A. Discharges to the City Sewer System		
1. Identification of all discharges to the City Sewer System on a current plant sewer map certified by a New York State licensed professional engineer.	None	Previously Submitted
2. Identification of each contributing waste stream to each discharge to the City Sewer System clearly marked on, or referenced to, a current plant sewer map certified by a New York State licensed professional engineer.	None	Previously Submitted
3. Elimination of all uncontaminated discharges to the City Sewer System.	NA	
All uncontaminated flows should be clearly identified on a current sewer map certified by a New York State licensed professional engineer.	None	Previously Submitted
4. Identification of control manhole or monitoring location for each uncontaminated discharge diverted to storm or Diversion sewer.	NA	
5. Consolidation of all contaminated discharges through no more than two monitoring stations. Each additional monitoring station requires approval by the Director and will be surcharged accordingly.	Not Required	
6. Establishment of a control manhole that is continuously and immediately accessible for each discharge to the City Sewer System.	Now available	
7. ~~Identification of, and reduction or elimination of, on-site excessive infiltration/inflow, certified by a New York State licensed professional engineer.~~		

B. Wastewater Discharge Management Practices	ACTION REQUIRED	REQUIRED DATE OF SUBMISSION
1. ~~Detailed compliance schedule for attainment of wastewater discharge permit limits.~~		
2. Schedule for optimization of existing pretreatment facilities.	Not Required	
3. Submission of plan for equalization, scheduling or improved process control of semi-continuous, batch or slug discharges.	Not Required	
4. Identification of responsible person(s) (day-to-day and in emergencies).	List up-date	3-31-85
5. Submission of inspection, maintenance and testing schedules and outline of attendant recordkeeping requirements for all pretreatment and monitoring facilities. Identification of a contact person responsible for maintaining in-plant inspection, maintenance and testing records for all process and pretreatment facilities.	None	Previously Submitted
6. Submission of an outline of housekeeping, construction and demolition procedures including truck, and equipment washing and washwater collection, pretreatment, and discharge to City sewer(s).	None	Previously Submitted

C. Spill Prevention Control And Countermeasures**	ACTION REQUIRED	REQUIRED DATE OF SUBMISSION
1. A facility which has experienced one or more spill events within twelve months prior to the effective date of this Permit should submit a written description of each spill, corrective action taken and plans for preventing recurrences.	Report Submittal	3-31-85
2. Where a reasonable potential for equipment failure exists (such as tank overflow, rupture, or leakage), a statement identifying the equipment and contents, including a prediction of the direction and rate of flow, and total quantity which could be discharged from the facility as a result of each major type of failure will be submitted.		
3. Installation of appropriate containment and/or diversionary structures or equipment to prevent a spill from reaching the City sewer system.		
4. When it is determined that the installation of the aforementioned structures or equipment to prevent spills from reaching the City sewer system is not practicable then the SIU should clearly demonstrate such impracticability.	None	Satisfactory Submission Received
5. Each SIU shall provide a spill contingency plan including a definition of the authorities, responsibilities and duties of all persons which could be involved in an accidental discharge; establishment of notification procedures for the purposes of early detection and timely notification of City Wastewater Treatment Plant personnel; a current list of names, telephone numbers and addresses of the responsible persons and alternates on call; an estimate of the equipment, materials and supplies which would be required to remove the discharge; and provisions for well-defined and specific actions to be taken after discovery of an accidental discharge.		

	ACTION REQUIRED	REQUIRED DATE OF SUBMISSION
6. A written committment for a responsible party of manpower, equipment and materials required to expeditiously control and remove any harmful quantity discharged.	Statement Submitted	3-31-85

** This section applies to all compounds limited by the City's SPDES Permit and all prohibited wastewater discharges (See Section 250.5.1-A of Sewer Use Ordinance).

D. <u>Supplementary Agreements:</u>

1. Discharges shall not exceed 100,000 gallons per day.
2. See attachment

2. Supplemental Agreement

RIGHTS OF ENTRY AND AUTHORITY OF INDUSTRIAL MONITORING INSPECTORS

The City's Right of Entry is established by the Sewer Use Ordinance. However, the City agrees that its employees will:

1. Present valid identification cards on request.
2. Sign in as required.
3. Abide by SIU's general safety rules including wearing hard hats, safety shoes and safety glasses with side shields.
4. Be accompanied by escort provided by SIU.
5. Abide by SIU's rules regarding photography on the premises.
6. Notify in advance.

Billing Agreements

For billing purposes Flow will be determined by dividing the total of integrator readings each month by the number of days in that month. Suspended Solids and Soluble Organic Carbon will be exempt from charge.

Revised May 7, 1985 RGA

Permit No. 16 for Love Canal Treatment System/NYSDEC

Discharge Point: Treatment System Effluent

Located at: 97th St

MONITORING REQUIREMENTS

Parameter	Monitoring Requirements
Flow	1
Total Suspended Solids	1
Soluble Organic Carbon	1
Volatile Priority Pollutants	2
Acid Priority Pollutants	2
Base/Neutral Priority Pollutants	2
Total Phenols	2
Monochlorotoluenes	2
Monochlorobenzotrifluoride	2

General Monitoring Requirements:

1. Determination of quantities shall be based upon analyses of the effluent during each discharge. Volume of each discharge must be reported.
2. Grab samples of effluent for each sample type, all from a single discharge, once per quarter.

Permit No. 16 for LOVE CANAL TREATMENT SYSTEM /NYSDEC

Permit Limits for sum of discharges from: Treatment System Effluent

Wastewater Discharge Limits:

Parameter	Quarterly Average Load (lbs/day)	Maximum Daily Load (lbs/day)	Maximum Dail Conc. (ug/l)
Flow (MGD)		0.075	
Total Suspended Solids	6.25	16	170 mg/l
Soluble Organic Carbon	50	75	820 mg/l

General Wastewater Discharge Permit Conditions

1. Flow monitoring should be performed concurrently with any Wastewater Discharge Permit sampling and should be reported at the same time as analytical results. If it is not feasible to perform flow monitoring, an estimate of flow (and the means by which it was established) should be submitted with the analytical results.

2. All sampling for billing and pretreatment compliance purposes shall be coordinated through the Chief of Monitoring and Enforcement.

3. All analyses must be performed by a laboratory using analytical methods and quality control provisions approved by the City Chief Chemist prior to the sampling. The laboratory must obtain those detection limits specified on the User's Initial Wastewater Discharge Permit unless otherwise authorized by the City Chief Chemist prior to the sampling.

4. An estimate of relative production levels for wastewater contributing processes at the time of any pretreatment compliance sampling shall be submitted upon request of the Director of Utilities.

5. All samples shall be handled in accordance with EPA-approved methods. Chain of custody records shall be submitted with all sampling results.

6. Any discharge in excess of the loads or concentrations specified in this permit, may be considered a non-compliance event and subject to penalty or fines as outlined in Section 250.9 of the City's Sewer Use Ordinance.

7. Sampling frequency for any permitted compounds may be increased; but a minimum of five per quarter for flow, total suspended solids (TSS) and soluble organic carbon (SOC), and once per quarter for substances of concern is required. If the permitee monitors more frequently than required under this permit, all results of this monitoring must be reported.

Attachment III

Division of Solid and Hazardous Waste
New York State Department of Environmental Conservation
Albany, New York 12233

LOVE CANAL MONITORING REPORT

APRIL 1, 1984 - OCTOBER 31, 1984

During this period, risers were put on 40 wells, outside the fence, to facilitate sampling and obtaining groundwater elevations in the winter. A map showing the location of these wells is in Figure 2. All of these wells were sampled to determine the extent of contamination from Love Canal. A summary of the results is enclosed in Table 2 along with the United States Environmental Protection Agency's (USEPA) results from the same wells, four (4) years ago.

Nine (9) wells were sampled on March 28, 1984 and four wells were sampled on April 6, 1984. A summary of these results are enclosed in Table 2.

An Interim Groundwater Monitoring Program was established in August as a guideline for sampling and groundwater (elevation) monitoring until E.C. Jordan submits its recommendations for a long-term groundwater monitoring program. A copy of the interim program is in Attachment A.

The groundwater elevations on the 40 wells (with risers) outside the fence and all the wells inside the fence have been monitored on a monthly basis since August. This ongoing monitoring is to determine the effect of the barrier drain on the local water table.

As a part of the Interim Groundwater Monitoring Program, 24 wells inside the fence were sampled on September 17 and 18, 1984. These samples were sent to the New York State Department of Health (NYSDOH).

On August 8, 1984, some of the wells inside the fence were resurveyed by Mr. Robert Senior and Mr. Stephen Barlow. Several of the wells showed elevations differing from the previous survey by approximately one (1) foot. This would explain the anomalies that show up in in cross-sectional views for elevation of both the New York State Department of Environmental Conservation (NYSDEC) wells and the piezometers. The Attorney General's Office was surveying the wells outside the fence at this time and finished surveying the wells inside the fence. At this time, the Attorney General's survey data is not available.

Groundwater Monitoring USEPA Monitoring Wells

Overburden Wells - The monitoring data is presented in Table 1. Plots of this data are presented in Attachment C. Figures 1 and 2 are maps depicting the locations of the monitoring wells, on-site and off-site (with risers). When appraising the data from the wells, it should be kept in mind that they were screened over a large interval. Had they been screened at specific intervals, covering individual soil layers, they would give a truer picture of the flow patterns in the area.

The plots from this data, when they do show a distinctive flow pattern, show a flow away from the cap. Looking at the cross-section map of the NYSDEC piezometers, it looks like ths trend starts from 97th out on the west side of the cap and probably does the same from the 99th out on the east side of cap.

Bedrock Wells - The monitoring data is presented in Table 1. The plots are in Attachment D. The bedrock aquifer system shows only a small gradient over the area. The flow pattern is from west to east.

NYSDEC Monitoring Wells - The values obtained from the groundwater monitoring are in Table 1. Plots of the data are in Attachment F. Figure 1 shows the locations of these wells. The plots show a consistent drawing down of the water surface in the vicinity of the barrier drain. The effect west of 97th Street fluctuaties from a flow towards the cap to a flow away from the cap.

Piezometers - The nested piezometers were constructed to monitor different substrata for water quality and water elevations. The data taken during this time period and plots of the data presented in Table 1 are displayed in Attachment B. From the plots, three observations can be made. First, the plots show that there is a lower head potential (water elevation) for those wells which are screened for lower horizons. Secondy, the amount of water elevation depression is greatest near the barrier drain. Third, the nested wells furtherest from the canal exhibit heads at approximately the same elevation except for the B Level wells. These wells, constructed in the nondesiccated silty clay soil layer, show a draw down west on 97th Street. This could be from a local sewer line. The drawing down of the water table near the barrier drain is in agreement with the data gathered from the NYSDEC wells.

Because the barrier drain is working and dewatering the aquifer, the effects upon the groundwater regimes are greatest in the vicinity of the drain, and least further away.

Water Quality Sampling - At the time of this writing, analytical results from the 40 wells outside the fence, the nine (9) wells sampled March 28 and four (4) wells sampled April 6 have been received.

Included in Table 2 are copies of results from the same 40 wells outside the fence, the 13 wells inside the fence, and from analyses performed for the USEPA. A table of comparison of these results is included with Table 3.

This table lists only compounds that have shown up at or above detection limit and list only the wells that have results from both NYSDEC and USEPA.

This table of comparison is broken into three (3) groups of chemicals.

I. Pesticides

II. Metals

III. Volatiles, Base/Neutrals and Acid Extractables.

Group I show fluctuations of decreasing in some wells and increasing in others. It is difficult to say if they are attributed to the Love Canal Site since pesticides are so widely used.

Group II shows an increase in most cases. Again with the metals, it is hard to attribute to Love Canal some of the metals may be attributed to degredation of the well casing.

The third group which is most directly attributable to Love Canal shows concentrations either decreasing or remaining the same in all cases except one. That was the presence of Methylene Chloride at 42 ug/l in Well Number 5211.

The map included in Table 3 shows wells with any organic pollutants detected from USEPA with red circles around them. The wells in blue are those that show any organic pollutants now. The only wells shown on this map are the 40 with risers outside the fence.

TABLE 1

LOVE CANAL MONITORING DATA
GROUNDWATER ELEVATIONS
APRIL 1, 1984 - OCTOBER 31, 1984

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

SAMPLING DATE

	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
1091	.0	.0	.0	568.28	.0	566.65	.0	565.92	.0	566.64
1092	.0	.0	.0	570.47	.0	570.63	.0	570.48	.0	570.55
1093	.0	.0	.0	.0	.0	571.84	.0	570.80	.0	571.02
1094	.0	.0	.0	570.61	.0	571.24	.0	571.16	.0	571.39
1095	.0	.0	.0	571.43	.0	571.25	.0	571.21	.0	571.54
1097	.0	.0	.0	570.41	.0	572.84	.0	571.13	.0	570.05
1098	.0	.0	.0	570.61	.0	570.67	.0	570.54	.0	570.54
1099	.0	.0	.0	569.62	.0	569.66	.0	572.09	.0	570.76
1101	.0	.0	.0	568.93	.0	569.00	.0	568.92	.0	568.95
1101A	.0	.0	.0	567.67	.0	568.33	.0	568.14	.0	568.71
1102	.0	.0	.0	569.88	.0	570.26	.0	570.10	.0	570.32
1102A	.0	.0	.0	568.66	.0	568.48	.0	569.20	.0	569.51
1103	.0	.0	.0	569.30	.0	569.72	.0	569.39	.0	569.95
1103A	.0	.0	.0	574.53	.0	570.86	.0	570.70	.0	570.99
1104	.0	.0	.0	571.19	.0	571.25	.0	571.43	.0	571.85
1104A	.0	.0	.0	572.03	.0	572.14	.0	572.10	.0	572.70
1105	.0	.0	.0	570.89	.0	570.70	.0	571.20	.0	571.54
1105A	.0	.0	.0	573.09	.0	571.53	.0	572.02	.0	572.64
1107	.0	.0	.0	571.09	.0	572.96	.0	568.12	.0	569.89
1107A	.0	.0	.0	570.45	.0	571.05	.0	571.24	.0	570.75
1108	.0	.0	.0	570.16	.0	570.66	.0	571.00	.0	571.52
1108A	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
1109	.0	.0	.0	568.70	.0	568.25	.0	571.44	.0	568.91
1109A	.0	.0	.0	570.53	.0	570.18	.0	570.93	.0	570.78
1111	.0	.0	.0	569.02	.0	569.39	.0	569.23	.0	569.29
1112	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
1113	.0	.0	.0	570.73	.0	574.67	.0	570.94	.0	571.28
1114	.0	.0	.0	571.41	.0	571.61	.0	571.62	.0	572.12
1115	.0	.0	.0	571.23	.0	570.81	.0	571.47	.0	572.08
1117	.0	.0	.0	571.08	.0	571.75	.0	570.71	.0	570.45
1118	.0	.0	.0	570.62	.0	570.46	.0	571.72	.0	571.09
1119	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
1160A	.0	.0	.0	565.53	.0	565.52	.0	565.53	.0	570.55
1160C	.0	.0	.0	572.36	.0	569.76	.0	570.83	.0	567.85
1161A	.0	.0	.0	566.44	.0	566.46	.0	565.45	.0	567.17
1161B	.0	.0	.0	568.59	.0	568.82	.0	568.89	.0	570.50
1161C	.0	.0	.0	570.63	.0	570.90	.0	575.38	.0	571.45
1161D	.0	.0	.0	573.66	.0	572.71	.0	571.08	.0	571.23
1162A	.0	.0	.0	569.13	.0	568.65	.0	568.52	.0	570.59

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

SAMPLING DATE

	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
1091	.0	.0	.0	568.28	.0	566.65	.0	565.92	.0	566.64
1092	.0	.0	.0	570.47	.0	570.63	.0	570.48	.0	570.59
1093	.0	.0	.0	.0	.0	571.84	.0	570.80	.0	571.02
1094	.0	.0	.0	570.61	.0	571.24	.0	571.16	.0	571.39
1095	.0	.0	.0	571.43	.0	571.25	.0	571.21	.0	571.54
1097	.0	.0	.0	570.41	.0	572.84	.0	571.13	.0	570.09
1098	.0	.0	.0	570.61	.0	570.67	.0	570.54	.0	570.54
1099	.0	.0	.0	569.62	.0	569.66	.0	572.09	.0	570.76
1101	.0	.0	.0	568.93	.0	569.00	.0	568.92	.0	568.95
1101A	.0	.0	.0	567.67	.0	568.33	.0	568.14	.0	568.71
1102	.0	.0	.0	569.88	.0	570.26	.0	570.10	.0	570.32
1102A	.0	.0	.0	568.56	.0	569.48	.0	569.20	.0	569.91
1103	.0	.0	.0	569.30	.0	569.72	.0	569.39	.0	569.95
1103A	.0	.0	.0	574.33	.0	570.86	.0	570.70	.0	570.99
1104	.0	.0	.0	571.19	.0	571.25	.0	571.43	.0	571.85
1104A	.0	.0	.0	572.03	.0	572.14	.0	572.10	.0	572.70
1105	.0	.0	.0	570.89	.0	570.70	.0	571.20	.0	571.54
1105A	.0	.0	.0	573.09	.0	571.53	.0	572.02	.0	572.64
1107	.0	.0	.0	571.09	.0	572.96	.0	568.12	.0	569.89
1107A	.0	.0	.0	570.45	.0	571.05	.0	571.24	.0	570.75
1108	.0	.0	.0	570.16	.0	570.66	.0	571.00	.0	571.52
1108A	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
1109	.0	.0	.0	568.70	.0	568.25	.0	571.44	.0	568.91
1109A	.0	.0	.0	570.53	.0	570.18	.0	570.93	.0	570.78
1111	.0	.0	.0	569.02	.0	569.39	.0	569.23	.0	569.29
1112	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
1113	.0	.0	.0	570.73	.0	574.67	.0	570.94	.0	571.28
1114	.0	.0	.0	571.41	.0	571.61	.0	571.62	.0	572.12
1115	.0	.0	.0	571.23	.0	570.81	.0	571.47	.0	572.08
1117	.0	.0	.0	571.08	.0	571.75	.0	570.71	.0	570.45
1118	.0	.0	.0	570.62	.0	570.46	.0	571.72	.0	571.09
1119	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
1160A	.0	.0	.0	565.33	.0	565.52	.0	565.53	.0	570.55
1160C	.0	.0	.0	572.36	.0	569.76	.0	570.83	.0	567.85
1161A	.0	.0	.0	566.44	.0	566.46	.0	565.45	.0	567.17
1161B	.0	.0	.0	568.59	.0	568.82	.0	569.89	.0	570.50
1161C	.0	.0	.0	570.63	.0	570.90	.0	575.38	.0	571.45
1161D	.0	.0	.0	573.66	.0	572.71	.0	571.08	.0	571.23
1162A	.0	.0	.0	569.13	.0	569.65	.0	569.52	.0	570.59

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

	SAMPLING DATE									
	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
1162C	.0	.0	.0	571.96	.0	571.71	.0	571.77	.0	568.28
1162D	.0	.0	.0	572.15	.0	571.96	.0	572.20	.0	572.09
1163A	.0	.0	.0	573.66	.0	573.60	.0	573.15	.0	572.40 572.98
1163B	.0	.0	.0	571.18	.0	571.39	.0	571.64	.0	572.95 ~~573.07~~
1163C	.0	.0	.0	571.95	.0	572.11	.0	572.22	.0	573.07 ~~572.74~~
1163D	.0	.0	.0	572.26	.0	572.27	.0	572.21	.0	572.74 ~~572.46~~
1165A	.0	.0	.0	572.11	.0	571.10	.0	572.25	.0	573.51
1165B	.0	.0	.0	572.71	.0	572.44	.0	572.65	.0	573.23
1165C	.0	.0	.0	572.49	.0	572.11	.0	572.08	.0	572.11
1165D	.0	.0	.0	572.57	.0	571.93	.0	572.38	.0	571.55
1167A	.0	.0	.0	570.32	.0	571.76	.0	571.77	.0	571.63
1167B	.0	.0	.0	569.57	.0	569.13	.0	569.21	.0	569.35
1167C	.0	.0	.0	572.82	.0	571.50	.0	571.94	.0	570.96
1167D	.0	.0	.0	571.23	.0	571.54	.0	572.03	.0	570.74
3101	.0	.0	.0	573.09	.0	573.01	.0	572.99	573.30	.0
3103	.0	.0	.0	570.76	.0	570.79	.0	570.56	570.38	.0
3105	.0	.0	.0	.0	.0	563.60	.0	568.47	569.55	.0
3111	.0	569.16	.0	568.05	566.58	.0	.0	566.61	565.99	.0
3112	.0	570.37	.0	569.43	569.60	.0	.0	569.49	569.44	.0
3113	.0	570.63	.0	567.90	569.19	.0	.0	569.36	569.24	.0
3121	.0	567.29	.0	.0	.0	.0	.0	.0	.0	.0
3122	.0	566.94	.0	565.64	.0	.0	564.05	564.27	563.61	.0
3123	.0	571.49	.0	570.94	.0	.0	566.68	570.50	570.41	.0
3131	.0	566.23	.0	.0	.0	.0	.0	.0	.0	.0
3132	.0	567.69	.0	.0	.0	.0	.0	.0	.0	.0
3133	.0	567.68	.0	566.66	.0	.0	562.21	565.59	565.19	.0
3142	.0	.0	566.41	.0	.0	.0	.0	.0	.0	.0
3143	.0	.0	568.05	.0	.0	.0	.0	.0	.0	.0
3145	.0	.0	571.40	.0	.0	.0	.0	.0	.0	.0
3151	.0	.0	567.59	.0	.0	.0	570.40	570.96	570.47	.0
3153	.0	.0	569.47	.0	.0	.0	.0	.0	.0	.0
3161	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3162	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3163	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3166	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3201	.0	.0	.0	564.26	.0	563.93	.0	562.83	562.08	.0
3203	.0	.0	.0	564.75	.0	563.74	.0	563.89	563.18	.0
3205	.0	.0	.0	564.79	.0	563.50	.0	563.73	562.93	.0
3211	.0	566.21	.0	.0	.0	.0	.0	.0	.0	.0

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

SAMPLING DATE

	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
3212	.0	567.13	.0	.0	.0	.0	.0	.0	.0	.0
3213	.0	565.49	.0	564.96	563.59	.0	.0	563.81	562.81	.0
3222	.0	566.18	.0	565.09	.0	.0	563.99	564.20	563.39	.0
3223	.0	566.16	.0	564.90	.0	.0	563.75	564.01	563.28	.0
3231	.0	565.75	.0	.0	.0	.0	.0	.0	.0	.0
3232	.0	566.15	.0	.0	.0	.0	.0	.0	.0	.0
3233	.0	566.00	.0	564.96	.0	.0	564.17	564.30	563.57	.0
3243	.0	.0	567.46	.0	.0	.0	.0	.0	.0	.0
3245	.0	.0	566.09	.0	.0	.0	.0	.0	.0	.0
3251	.0	.0	563.01	.0	.0	.0	563.85	564.06	563.33	.0
3252	.0	.0	6.40	.0	.0	.0	.0	.0	.0	.0
3255	.0	.0	566.60	.0	.0	.0	.0	.0	.0	.0
3261	.0	.0	566.54	.0	.0	.0	.0	.0	.0	.0
3262	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3263	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3264	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3265	.0	.0	566.19	.0	.0	.0	.0	.0	.0	.0
4102	.0	.0	.0	569.68	.0	568.79	.0	570.40	569.59	.0
4103	.0	.0	.0	571.30	.0	571.23	.0	570.84	571.15	.0
4105	.0	.0	.0	570.54	.0	569.82	.0	572.42	571.46	.0
4106	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4107	.0	.0	.0	572.10	.0	571.18	.0	571.63	571.64	.0
4108	.0	.0	.0	569.38	.0	568.80	.0	566.03	569.76	.0
4111	.0	.0	.0	570.17	.0	570.25	.0	571.00	570.17	.0
4115	.0	.0	569.28	.0	.0	.0	.0	.0	.0	.0
4121	.0	.0	.0	569.04	.0	.0	569.34	571.48	571.45	.0
4132	571.14	.0	.0	.0	.0	.0	.0	.0	.0	.0
4133	571.20	.0	.0	.0	.0	.0	.0	.0	.0	.0
4134	.0	.0	.0	567.98	.0	.0	567.08	566.35	565.62	.0
4135	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4141	.0		.0	.0	.0	.0	.0	.0	.0	.0
4151	569.36	.0	.0	.0	.0	.0	.0	.0	.0	.0
4152	566.04	.0	.0	.0	.0	.0	.0	.0	.0	.0
4155	568.16	.0	.0	.0	.0	.0	.0	.0	.0	.0
4161	.0	.0	570.50	.0	.0	.0	.0	.0	.0	.0
4162	570.60	.0	.0	.0	.0	.0	.0	.0	.0	.0
4163	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4204	.0	.0	.0	564.85	.0	563.42	.0	563.60	562.85	.0
4205	.0	.0	.0	564.65	.0	563.33	.0	563.46	[illegible]	.0

NEW YORK STATE
'EPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

SAMPLING DATE

	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
4206	.0	.0	.0	564.65	.0	563.36	.0	563.63	562.86	.0
4207	.0	.0	.0	563.68	.0	562.45	.0	562.62	561.81	.0
4211	.0	.0	.0	564.67	.0	563.50	.0	563.74	562.93	.0
4215	.0	.0	566.17	564.98	.0	.0	563.60	563.88	563.18	.0
4221	.0	.0	.0	564.71	.0	.0	563.20	564.85	562.53	.0
4231	568.15	.0	.0	.0	.0	.0	.0	.0	.0	.0
4232	566.53	.0	.0	.0	.0	.0	.0	.0	.0	.0
4233	566.59	.0	.0	.0	.0	.0	.0	.0	.0	.0
4235	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4241	568.75	564.28	.0	.0	.0	.0	.0	.0	.0	.0
4252	566.11	.0	.0	.0	.0	.0	.0	.0	.0	.0
4253	566.40	.0	.0	.0	.0	.0	.0	.0	.0	.0
4254	566.55	.0	.0	.0	.0	.0	.0	.0	.0	.0
4255	567.76	.0	.0	.0	.0	.0	.0	.0	.0	.0
4261	.0	.0	566.54	.0	.0	.0	.0	.0	.0	.0
4262	572.09	.0	.0	.0	.0	.0	.0	.0	.0	.0
4263	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5101	.0	.0	.0	568.99	.0	569.46	.0	569.41	.0	571.59
5102	.0	.0	.0	575.55	.0	569.96	.0	564.52	.0	566.10
5103	.0	.0	.0	572.59	.0	572.17	.0	572.03	.0	571.69
5104	.0	.0	.0	571.61	.0	571.94	.0	572.44	.0	573.20
5105	.0	.0	.0	569.85	.0	569.50	.0	571.33	.0	570.04
5111	.0	570.32	.0	569.28	568.56	.0	.0	568.39	567.97	.0
5112	.0	571.31	.0	568.72	.0	.0	567.12	568.37	568.11	.0
5113	.0	571.08	.0	.0	.0	.0	.0	.0	.0	.0
5114	.0	571.13	.0	569.43	.0	.0	562.82	569.41	569.19	.0
5121	.0	569.54	.0	564.30	.0	.0	.0	.0	.0	.0
5122	.0	570.17	.0	569.71	569.32	.0	.0	569.87	569.92	.0
5123	.0	569.95	.0	.0	564.24	.0	.0	567.70	567.17	.0
5124	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5201	.0	.0	.0	564.88	.0	563.35	.0	563.58	.0	562.76
5202	.0	.0	.0	565.00	.0	563.65	.0	563.77	.0	563.04
5204	.0	.0	.0	565.12	.0	563.93	.0	564.17	.0	563.30
5205	.0	.0	.0	565.13	.0	564.60	.0	567.58	.0	564.16
5211	.0	566.52	.0	564.99	563.64	.0	.0	563.70	562.44	.0
5212	.0	555.90	.0	565.74	.0	.0	554.11	552.40	563.22	.0
5213	.0	565.80	.0	565.03	564.60	.0	.0	564.78	564.08	.0
5214	.0	565.94	.0	565.12	.0	.0	564.62	564.75	564.12	.0
5221	.0	555.78	.0	561.34	.0	.0	.0	.0	.0	.0

NEW YORK STATE
EPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

SAMPLING DATE

	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
5222	.0	566.66	.0	565.20	563.83	.0	.0	563.59	562.86	.0
5223	.0	566.97	.0	.0	564.56	.0	.0	564.67	564.02	.0
5224	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5231	.0	.0	566.14	.0	.0	.0	.0	.0	.0	.0
5241	.0	.0	565.96	.0	.0	.0	.0	.0	.0	.0
6101	.0	.0	.0	571.63	.0	571.12	.0	570.96	571.42	.0
6102	.0	.0	.0	569.49	.0	563.80	.0	567.58	570.02	.0
6103	.0	.0	.0	570.78	.0	570.29	.0	570.53	570.19	.0
6109	.0	.0	.0	569.70	.0	569.13	.0	[illegible]	568.97	.0
6111	.0	.0	.0	567.97	.0	.0	567.83	568.24	567.98	.0
6112	.0	.0	.0	569.57	.0	.0	569.43	571.02	569.95	.0
6113	.0	.0	.0	.0	.0	.0	569.28	571.89	570.75	.0
6114	.0	.0	.0	.0	.0	.0	569.15	570.26	570.60	.0
6121	.0	.0	.0	564.34	.0	.0	.0	.0	.0	.0
6122	.0	.0	.0	.0	.0	.0	568.60	569.96	568.19	.0
6133	569.54	.0	.0	.0	.0	.0	.0	.0	.0	.0
6134		.0	.0	.0	.0	.0	.0	.0	.0	.0
6141	.0	569.12	.0	568.90	568.82	.0	.0	569.24	569.05	.0
6142	.0	.0	.0	564.85	.0	.0	.0	.0	.0	.0
6143	.0	564.88	.0	.0	.0	.0	.0	.0	.0	.0
6144	.0	571.59	.0	.0	.0	.0	.0	.0	.0	.0
6146	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6201	.0	.0	.0	564.41	.0	563.19	.0	563.42	562.52	.0
6203	.0	.0	.0	564.83	.0	563.45	.0	563.51	562.73	.0
6207	.0	.0	.0	564.83	.0	563.80	.0	563.83	563.77	.0
6209	.0	.0	.0	564.77	.0	564.05	.0	563.98	565.29	.0
6211	.0	.0	.0	564.79	.0	.0	563.11	563.31	562.47	.0
6212	.0	.0	.0	564.83	.0	.0	563.13	563.43	562.52	.0
6213	.0	.0	.0	.0	.0	.0	565.49	556.69	562.31	.0
6214	.0	.0	.0	.0	.0	.0	561.44	562.81	562.44	.0
6221	.0	.0	.0	561.47	.0	.0	.0	.0	.0	.0
6222	.0	.0	.0	.0	.0	.0	564.09	564.10	563.42	.0
6233	567.81	.0	.0	.0	.0	.0	.0	.0	.0	.0
6234	568.44	.0	.0	.0	.0	.0	.0	.0	.0	.0
6241	.0	566.19	.0	565.05	564.13	.0	.0	564.24	563.46	.0
6242	.0	.0	.0	560.88	.0	.0	.0	.0	.0	.0
6243	.0	565.90	.0	.0	.0	.0	.0	.0	.0	.0
6244	.0	565.93	.0	.0	.0	.0	.0	.0	.0	.0
6245	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LOVE CANAL WATER LEVEL MONITORING DATA

	SAMPLING DATE									
	840612	840613	840614	840801	840829	840830	840831	840919	841011	841012
WELLNUMBER	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)	ELEV (FEET)
6246	567.10	.0	.0	.0	.0	.0	.0	.0	.0	.0

FIGURE 1

MONITORING WELLS (ON-SITE)
AT LOVE CANAL

FIGURE B.1

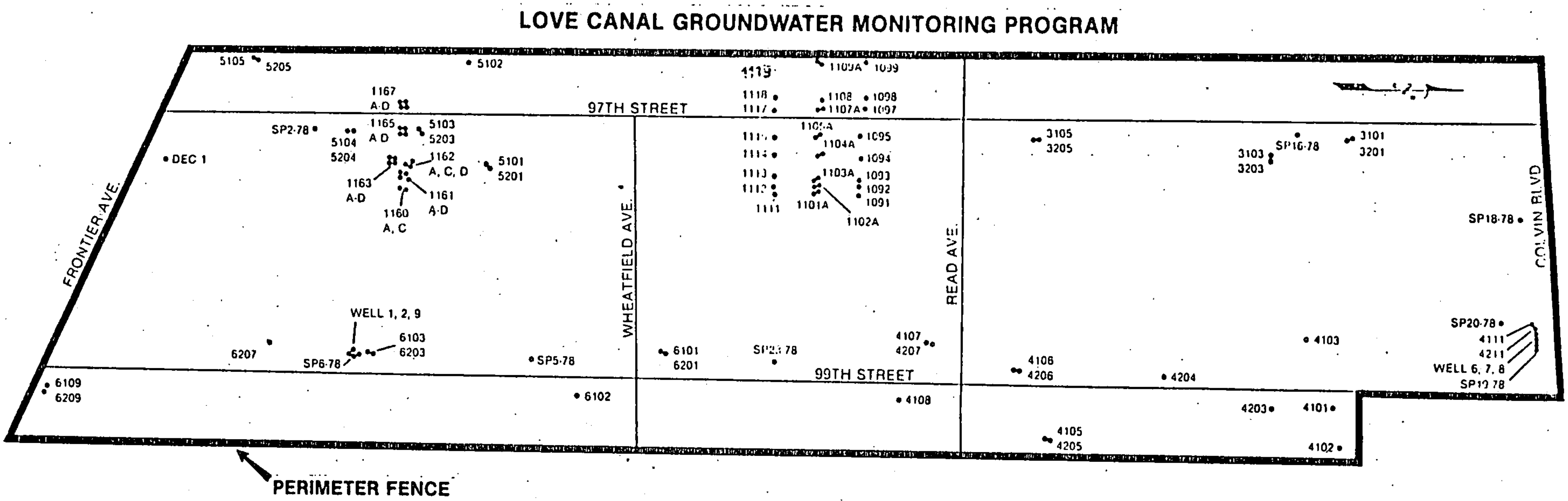
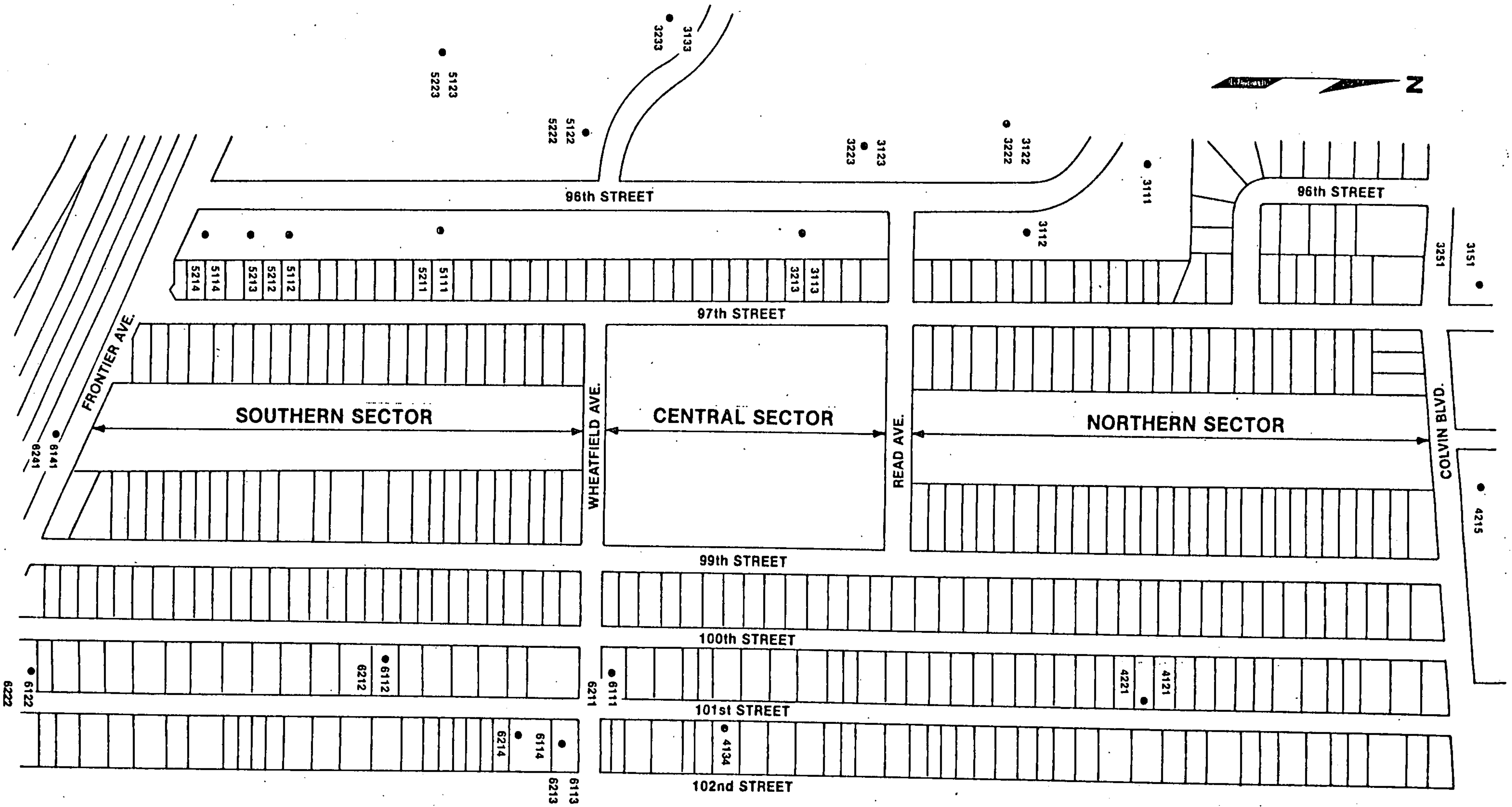

LOVE CANAL GROUNDWATER MONITORING PROGRAM
97TH STREET
99TH STREET
FRONTIER AVE.
WHEATFIELD AVE.
READ AVE.
PERIMETER FENCE
DEC 1
SP2-78
SP5-78
SP6-78
SP18-78
SP20-78
WELL 1, 2, 9
WELL 6, 7, 8
5105
5205
5102
1167
A-D
1165
5103
5203
5104
5204
5101
5201
1162
A, C, D
1163
1161
1160
A, C
6103
6203
6207
6109
6209
6102
6101
6201
1109A
1108
1098
1107A
1097
1095
1104A
1094
1103A
1093
1092
1091
1101A
1102A
4107
4207
4108
3105
3205
3103
3203
3101
3201
4103
4111
4211
4106
4206
4204
4203
4101
4105
4205
4102

FIGURE 2

MONITORING WELLS OFF-SITE
(WITH RISERS) AT LOVE CANAL

LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

Table 2

Analytical Results of Monitoring Wells at Love Canal

sampled
July 11th, 1984

DATA SUMMARY

Versar INC.

Sample #:	3111
RR84 002 001	

METALS RESULTS

DATE: 8-21-84

PROJECT #: 857-42

LAB #: 4920

PARAMETER	ICP DETECTION LIMIT (μg/l)	SAMPLE CONCENTRATION (μg/l)	PARAMETER	FURNACE DETECTION LIMIT (μg/l)	SAMPLE CONCENTRATION (μg/l)
Ag	3.	< 3.	As	10.	16.
Be	1.	1.5	Hg *	0.2	<0.2
Cd	10.	< 10.	Se	10.	<10.
Cr	4.	84.	Sb	10.	<10.
Cu	2.	190.	Tl	10.	<10.
Ni	15.	198.			
Pb	50.	212.			
Zn	3.	224.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 3112
RR784 002 002

METALS RESULTS

DATE: 8-21-85
PROJECT #: 857-42
LAB #: 4921

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	< 3.	As	10.	12.
Be	1.	1.7	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	78.	Sb	10.	<10.
Cu	2.	82.	Tl	10.	<10.
Ni	15.	124.			
Pb	50.	329.			
Zn	3.	279.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 3113
RR84 002 003

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4922

PARAMETER	ICP DETECTION LIMIT (μg/l)	SAMPLE CONCENTRATION (μg/l)	PARAMETER	FURNACE DETECTION LIMIT (ug/l)	SAMPLE CONCENTRATION (ug/l)
Ag	3.	< 3.	As	10.	11.
Be	1.	1.4	Hg *	0.2	0.21
Cd	10.	11.	Se	10.	<10.
Cr	4.	52.	Sb	10.	<10.
Cu	2.	85.	Tl	10.	<10.
Ni	15.	126.			
Pb	50.	260.			
Zn	3.	310.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 3613
RR84 002 004

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4923

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	< 3.	As	10.	12.
Be	1.	1.8	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	9.9	Sb	10.	<10.
Cu	2.	26.	Tl	10.	<10.
Ni	15.	21.			
Pb	50.	239.			
Zn	3.	127.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 5111
RR84 002 005

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4924

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	<3.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	6.4	Sb	10.	<10.
Cu	2.	26.	Tl	10.	<10.
Ni	15.	35.			
Pb	50.	107.			
Zn	3.	209.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 5211
RR84 002 006

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4925

PARAMETER	ICP DETECTION LIMIT # (μg/l)	SAMPLE CONCENTRATION (μg/l)	PARAMETER	FURNACE DETECTION LIMIT (μg/l)	SAMPLE CONCENTRATION (μg/l)
Ag	6.	<6.	As	10.	21.
Be	2.	2.6	Hg *	0.2	<0.2
Cd	20.	<20.	Se	10.	<10.
Cr	8.	22.	Sb	10	<10.
Cu	4.	52.	Tl	10.	<10.
Ni	30.	162.			
Pb	100.	472.			
Zn	6.	495.			

COMMENTS:

*Hg by CVAA

#Detection limit changed due to sample dilution.

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 5113
RR84 002 007

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4926

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	<3.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	21.	Sb	10	<10.
Cu	2.	45.	Tl	10.	<10.
Ni	15.	68.			
Pb	50.	198.			
Zn	3.	198.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 5213
RR 84 002 008

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4927

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	<3.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	9.5	Sb	10.	<10.
Cu	2.	32.	Tl	10.	<10.
Ni	15.	20.			
Pb	50.	568.			
Zn	3.	171.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 51 51
RR84 002 009

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4928

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	< 3.	As	10.	<10.
Be	1.	< 1.	Hg *	0.2	<0.2
Cd	10.	< 10.	Se	10.	<10.
Cr	4.	22.	Sb	10.	<10.
Cu	2.	20.	Tl	10.	<10.
Ni	15.	66.			
Pb	50.	242.			
Zn	3.	121.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 5221
RR84 002 010

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4929

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	<3.	As	10.	<10.
Be	1.	1.4	Hg *	.02	0.21
Cd	10.	26.	Se	10.	<10.
Cr	4.	9.8	Sb	10.	<10.
Cu	2.	24.	Tl	10.	<10.
Ni	15.	17.			
Pb	50.	170.			
Zn	3.	112.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 5/22
RR84 002 011

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4930

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	< 3.
Be	1.	< 1.
Cd	10.	21.
Cr	4.	5.4
Cu	2.	25.
Ni	15.	35.
Pb	50.	82.
Zn	3.	33.

PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
As	10.	<10.
Hg *	0.2	<0.2
Se	10.	<10.
Sb	10.	<10.
Tl	10.	<10.

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: [illegible]
RR84 002 012

METALS RESULTS

DATE: 8-21-84
PROJECT #: 857-42
LAB #: 4931

PARAMETER	ICP DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)	PARAMETER	FURNACE DETECTION LIMIT (µg/l)	SAMPLE CONCENTRATION (µg/l)
Ag	3.	< 3.	As	10.	13.
Be	1.	1.3	Hg *	0.2	<0.2
Cd	10.	27.	Se	10.	<10.
Cr	4.	6.2	Sb	10.	<10.
Cu	2.	18.	Tl	10.	<10.
Ni	15.	32.			
Pb	50.	338.			
Zn	3.	136.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

857.002-42

BNA DATA SUMMARY

FIELD#		BNA COMPOUNDS DETECTED
RR-84-002-001	3111	ND
RR-84-002-002	3112	ND
RR-84-002-003	3113	ND
RR-84-002-004	3213	ND
RR-84-002-005	5111	ND
RR-84-002-006	5211	ND
RR-84-002-007	5113	ND
RR-84-002-008	5213	ND
RR-84-002-009	5121	ND
RR-84-002-010	5221	ND
RR-84-002-011	5122	ND
RR-84-002-012	5222	ND

ND= NONE DETECTED

857.002-42

VOA SUMMARY

FIELD#		VOA COMPOUNDS DETECTED
RR-84-002-001	3111	ND
RR-84-002-002	3112	ND
RR-84-002-003	3113	ND
RR-84-002-004	3213	ND
RR-84-002-005	5111	ND
RR-84-002-006	5211	Methylene Chloride 42 ppb
RR-84-002-007	5113	ND
RR-84-002-008	5213	ND
RR-84-002-009	5121	ND
RR-84-002-010	5221	ND
RR-84-002-011	5122	ND
RR-84-002-012	5222	ND

ND=NONE DETECTED

Versar INC.

Pesticide Data Summary *

857.2-42

Matrix: WATER

Units: µg/L

	RR84002001	RR84002002	RR84002003	RR84002004	RR84002005	RR84002006	RR84002007	RR84002008	RR84002009	RR84002010	RR84002011	RR84002012				
A-BHC	0.15	0.28														
LINDANE	0.74										0.56	0.53				
B-BHC																
HEPTACHLOR																
D-BHC		2.0														
ALDRIN																
HEPT.EPOX	1.1			0.09												
AENDOSULFAN																
DIELDRIN																
pp'DDE																
ENDRIN																
ENDOSULFAN																
pp'DDD																
DDT																
ENDRIN ALD.																
ENDOSULFATE																

FOOTNOTE: * A major unidentified (Non priority-pollutant) peak was found in the 6% fraction for samples in 857.42.

QC SUMMARY

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case NO. 851.2-42
LOW LEVEL X
WATER X
QC REPORT NO. 851.2-42

CONTRACTOR VERSAR INC.
MED. LEVEL

CONTRACT NO. C00066
HIGH LEVEL
OTHER (Specify)

|-------Volatile -------||-------------------Semi-Volatile---------------------------||Pesticide|--|Dioxin|

	No.	D_8 Toluene (86-119)	BFB (85-121)	D_4-1,2-Dichloro-ethane (77-120)	D_5-Nitro-benzene (41-120)	2-Fluoro-biphenyl (44-119)	D_{14}-p-Terphenyl (33-128)	D_5-Phenol (15-96)	2-Fluoro-phenol (23-107)	2,4,6-Tribromo-phenol (20-106)	Dibutyl-Chloren-date (67-114)**	1,2,3,4-TCDD (23-148)
	RB	102/88	120/94	103/94	80	74	87	90	89	93		
	RR84-002-001	111	nn	98	78	65	14	71	67	85		
	RR84-002-002	100	nn	99	74	80	96	85	78	87		
	RR84-002-003	103	nn	102	59	70	80	71	70	62		
DUPLICATE	RR84-002-003				74	94	108	86	82	92		
MATRIX SPIKE	RR84-002-003				56	90	131*	86	88	101		
	RR84-002-004	100	nn	102	90	80	71	73	67	69		
	RR84-002-005	101	nn	99	91	82	121	82	76	95		
	RR84-002-006	101	*128	*122	92	84	67	93	83	67		
	RR84-002-007	109	m135	*127	75	80	81	57	49	77		
	RR84-002-008	98	94	90	64	65	55	81	81	123*		
	RR84-002-009	106	*131	*125	82	93	78	82	19	112*		
	RR84-002-010	104	*133	*123	87	88	58	86	85	116*		
	RR84-002-011	109	*137	*135	80	81	92	86	84	115*		
	RR84-002-0[illegible]	92	94	92	93	88	31*	76	86	40		
[illegible] Dup	RR84-002-[illegible]	*76	96	*74								
[illegible] Spike	RR84-002-[illegible]	*64	*76	*62								

* Asterisked values are outside of QC limits.
** Advisory Limit

Comments:
Surrogate Spike Concentration Changed from 100ppb to 50ppb during analysis of Batch 42 for VOA's.

Volatiles: ___ out of ___; outside of QC limits
Semi-Volatiles: 5 out of 84; outside of QC limits
Pesticides: ___ out of ___; outside of QC limits
Dioxin: ___ out of ___; outside of QC limits

Limits Revis 2/83
4/84

MATRIX SPIKE DUPLICATE/RECOVERY

CASE NO. 857.2-42
LOW LEVEL X
WATER X
QC REPORT NO. 857.2-42

CONTRACTOR VERSAR
MED. LEVEL
SOIL/SED.

CONTRACT NO. C000661
HIGH LEVEL
OTHER (Specify)
UNITS (Circle) ug/kg ug/L

FRACTION	COMPOUND	CONC. SPIKE ADDED	CONC. MS	% REC.	CONC. MSD	% REC	RPD	QC RECOVERY LIMITS* RPD	WATER	SOIL	COMMENTS
VOA	1,1-Dichloroethylene	25	26	107				<15%	61-145	59-177	
	Trichloroethylene	25	27	108				<15%	71-120	62-137	
RR84-002-012	Chlorobenzene	25	26	104				<15%	75-130	60-133	
	Toluene	25	19	76				<15%	76-125	59-139	
	Benzene	25	20	80				<15%	76-127	66-142	
B/N	1,2,4-Trichlorobenzene	100	56	56				<50%	39-98	38-107	
	Acenaphthene	100	74	74				<50%	46-118	31-137	
	2,4-Dinitrotoluene	100	38	38				<50%	24-96	28-89	
RR84-002-003	Di-N-Butylphthalate	100	26	26				<50%	11-117	29-135	
	Pyrene	100	54	54				<50%	26-127	35-142	
	N-Nitrosodi-N-Propylamine	100	74	74				<50%	41-116	41-126	
	1,4-Dichlorobenzene	100	60	60				<50%	36-97	28-104	
ACID	Pentachlorophenol	200	116	58				<40%	9-103	17-109	
	Phenol	100	67	67				<40%	12-89	26-90	
	2-Chlorophenol	100	67	67				<40%	27-123	25-102	
RR84-002-003	P-Chlor-M-Cresol	100	69	69				<40%	23-97	26-103	
	4-Nitrophenol	200	65	33				<40%	10-80	11-114	
PEST	Lindane	5	5.5	110	5.5	110	<1	<40%	56-123	46-127	
	Heptachlor	5	3.8	76	3.3	66	14	<40%	40-131	35-130	
	Aldrin	5	3.6	72	2.8	56	25	<40%	40-120	34-132	
RR84-002-004	Dieldrin	5	4.5	70	4.2	84	6	<40%	52-126	31-134	
	Endrin	5	4.1	82	4.2	84	2	<40%	56-121	42-139	
	P,P-DDT	5	4.8	96	2.6	52	57*	<40%	38-127	23-134	

*Asterisked values are outside QC limits.

RPD: VOAs ___ out of ___; outside QC limits
B/N ___ out of ___; outside QC limits
ACID ___ out of ___; outside QC limits
PEST 1 out of 6; outside QC limits

RECOVERY: VOAs 0 out of 5; outside of QC limits
B/N 0 out of 7; outside of QC limits
ACID 0 out of 5; outside of QC limits
PEST 0 out of 6; outside of QC limits

*Advisory Limits
Rev. 2/83

/21/84

Versar INC.

Jack Ryan
Room 317
Bureau of Water Research
NYS Dept. Environmental Conservation
50 Wolf Road
Albany, New York 12233-0001

RECEIVED
OCT 24 1984
BUREAU OF WATER RESEARCH
DIVISION OF WATER

Reference: Versar Report Number 857-45

Jack:

Please find enclosed our report for sample numbers:

RR84-002-13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24

Received from S. Barlow on 7/13/84.

Should you have any questions concerning these data please contact me at your earliest convenience and refer to the above report number.

Sincerely,

Robert Maxfield
Program Manager
Applied Chemistry Division

Versar INC.

METALS DATA

Versar INC.

Sample #: 6141
RR84 002 13

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5117

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	10.	Se	10.	<10.
Cr	4.	8.5	Sb	10.	<10.
Cu	20.	23.	Tl	10.	<10.
Ni	20.	29.			
Pb	50.	302.			
Zn	10.	135.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #:	6241
RR84 002 14	

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5118

units = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.
Be	1.	<1.
Cd	10.	11.
Cr	4.	5.3
Cu	20.	<20.
Ni	20.	<20.
Pb	50.	184.
Zn	10.	79.

PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
As	10.	<10.
Hg *	0.2	<0.2
Se	10.	<10.
Sb	10.	<10.
Tl	10.	<10.

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 6112
RR84 002 15

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5119

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	28.	Sb	10.	<10.
Cu	20.	58.	Tl	10.	<10.
Ni	20.	58.			
Pb	50.	122.			
Zn	10.	120.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 6212
RR84 002 16

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5120

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	6.7	Sb	10.	<10.
Cu	20.	22.	Tl	10.	<10.
Ni	20.	<20.			
Pb	50.	52.			
Zn	10.	65.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar Inc.

Sample #: 6111
RR84 002 17

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5121

UNITS= ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	20.	<20.	As	10.	56.
Be	2.	2.2	Hg *	0.2	0.21
Cd	20.	<20.	Se	10.	<10.
Cr	8.	236.	Sb	10.	<10.
Cu	40.	304.	Tl	10.	<10.
Ni	40.	304.			
Pb	100.	696.			
Zn	20.	348.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 6211
RR84 002 18

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5122

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10	<10.
Cr	4.	<4.	Sb	10.	<10.
Cu	20.	<20	Tl	10.	<10.
Ni	20.	<20			
Pb	50.	91.			
Zn	10.	80.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar Inc.

Sample #: 6122
RR84 002 19

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5123

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	14.	Sb	10.	<10.
Cu	20.	<20.	Tl	10.	<10.
Ni	20.	23.			
Pb	50.	206.			
Zn	10.	109.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 6222
RR84 002 20

METALS RESULTS

DATE: 8-31-84
PROJECT #: 857-45
LAB #: 5124

UNITS = ug/L

ICP PARAMETER	DETECTION LIMIT	SAMPLE CONCENTRATION	FURNACE PARAMETER	DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	6.9	Sb	10.	<10.
Cu	20.	21.	Tl	10.	<10.
Ni	20.	<20.			
Pb	50.	78.			
Zn	10.	56.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 4134
RR84 002 21

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5125

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	21.	Sb	10.	<10.
Cu	20.	<20.	Tl	10.	<10.
Ni	20.	49.			
Pb	50.	142.			
Zn	10.	122.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 4121
RR84 002 22

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5126

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1	<1.	Hg *	0.2	0.46
Cd	10.	13.	Se	10.	<10.
Cr	4.	182.	Sb	10.	<10.
Cu	20.	130.	Tl	10.	<10.
Ni	20.	207.			
Pb	50.	265.			
Zn	10.	145.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 4921
RR84 002 23

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5127

UNITS = ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	<4.	Sb	10.	<10.
Cu	20.	28.	Tl	10.	<10.
Ni	20.	<20.			
Pb	50.	67.			
Zn	10.	64.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

Versar INC.

Sample #: 4215
RR 84 002 24

METALS RESULTS

DATE: 8-30-84
PROJECT #: 857-45
LAB #: 5128

UNITS=ug/L

PARAMETER	ICP DETECTION LIMIT	SAMPLE CONCENTRATION	PARAMETER	FURNACE DETECTION LIMIT	SAMPLE CONCENTRATION
Ag	10.	<10.	As	10.	<10.
Be	1.	<1.	Hg *	0.2	<0.2
Cd	10.	<10.	Se	10.	<10.
Cr	4.	4.2	Sb	10.	<10.
Cu	20.	<20.	Tl	10.	<10
Ni	20.	<20.			
Pb	50.	<50.			
Zn	10.	144.			

COMMENTS:

*Hg by CVAA

Procedures in accordance with:
Test Methods for Evaluating
Solid Wastes, SW-846, 2nd Edition,
USEPA, Washington, D.C. 1982

Robert Maxfield, Lab Manager

METALS QUALITY ASSURANCE

EPISODE: —

FURNACE

DATE: 8-30-84

LAB: VERSAR, INC.

BATCH: 857-45

(ug/L)

		As	Hg	Se	Sb	Tl		
REFERENCE STANDARD SOURCE: EPA	FOUND	27.	4.8	19.	90.	45.		
	TRUE	27.	4.35	18.	97.5	50.4		
	REL. % ERR.	0.	10.	5.	-8.	-11.		
CALB. BLANK	RESULTS	<10.	<0.2	<10.	<10.	<10.		
REG. BLANK 1	RESULTS	<10.	<0.2	<10.	<10.	<10.		
REG. BLANK 2	RESULTS							
INST. CALB. VERIFICATION SOURCE: VERSAR	FOUND	104.	5.2	90.	70.	90.		
	TRUE	100.	5.0	100.	70.	100.		
	REL. % ERR.	4.	4.	-10.	0.	-10.		
6112 DUPLICATE SAMPLE NO. RR84 002 21 RR84 00215 for Hg	SAMPLE RESULT	<10.	<0.2	<10.		<10.		
	DUPLICATE RESULT	<10.	<0.2	<10.		<10.		
	RPD %	–	–	–		–		
6212 DUPLICATE SAMPLE NO. RR84 002 16	SAMPLE RESULT				<10.			
	DUPLICATE RESULT				<10.			
	RPD %				–			
4121 SPIKE 1 SAMPLE NO. RR84 002 21 RR84 002 18	SAMPLE RESULT	<10.	<0.2	<10.		<10.		
	SPIKE RESULT	105.	1.7	90.		97.		
	SPIKE ADDED	100.	2.0	100.		100.		
	% RECOVERY	105.	85.	90.		97.		
6212 SPIKE 2 SAMPLE NO. RR84 002 16	SAMPLE RESULT				<10.			
	SPIKE RESULT				176.			
	SPIKE ADDED				200.			
	% RECOVERY				88.			

METALS QUALITY ASSURANCE

ICP

EPISODE: —

DATE: 8-30-84

LAB: VERSAR, INC.

BATCH: 857-45

(ug/L)

		Ag	Be	Cd	Cr	Cu	Ni	Pb
REFERENCE STANDARD SOURCE: EPA	FOUND	32.	243.	37.	306.	345.	203.	436.
	TRUE	34.	235.	43.	311.	339.	207.	480.
	REL. % ERR.	-6.	3.	-14.	-2.	2.	-2.	-9.
CALB. BLANK	RESULTS	<3.	<1.	<10.	<4.	<20.	<20.	<50.
REG. BLANK 1	RESULTS	<3.	<1.	<10.	<4.	<20.	<20.	<50.
REG. BLANK 2	RESULTS							
INST. CALB. VERIFICATION SOURCE: EPA	FOUND	35.	239.	41.	305.	390.	211.	449.
	TRUE	34.	235.	43.	311.	339.	207.	480.
	REL. % ERR.	3.	2.	-5.	-2.	<1.	2.	-6.
6212 DUPLICATE 1 SAMPLE NO. RR84 002 16	SAMPLE RESULT	<10.	<1.	<10.	6.7	22.	<20.	52.
	DUPLICATE RESULT	<10.	<1.	<10.	8.6	24.	<20.	97.
	RPD %	—	—	—	25.	9.	—	59.
DUPLICATE 2 SAMPLE NO.	SAMPLE RESULT							
	DUPLICATE RESULT							
	RPD %							
6212 SPIKE 1 RR84 002 16 SAMPLE NO.	SAMPLE RESULT	<10.	<1.	<10	6.7	22.	<20	52.
	SPIKE RESULT	167.	186.	174.	184.	204.	182.	415
	SPIKE ADDED	200.	200.	200.	200.	200.	200.	400.
	% RECOVERY	84.	93.	87.	89.	91.	91.	91.
SPIKE 2 SAMPLE NO.	SAMPLE RESULT							
	SPIKE RESULT							
	SPIKE ADDED							
	% RECOVERY							

METALS QUALITY ASSURANCE

ICP

EPISODE: -

LAB: VERSAR, INC.

DATE: 8-30-84

BATCH: 857-45

			Zn						
REFERENCE STANDARD SOURCE: EPA	FOUND		410.						
	TRUE		418.						
	REL. % ERR.		-2.						
CALB. BLANK	RESULTS		<10.						
REG. BLANK 1	RESULTS		<10.						
REG. BLANK 2	RESULTS								
INST. CALB. VERIFICATION SOURCE: EPA	FOUND		416.						
	TRUE		418.						
	REL. % ERR.		<1.						
6212	DUPLICATE 1 SAMPLE NO. RR8400216	SAMPLE RESULT	65.						
		DUPLICATE RESULT	61.						
		RPD %	6.						
	DUPLICATE 2 SAMPLE NO.	SAMPLE RESULT							
		DUPLICATE RESULT							
		RPD %							
6212	SPIKE 1 SAMPLE NO. RR8400216	SAMPLE RESULT	65.						
		SPIKE RESULT	236.						
		SPIKE ADDED	200.						
		% RECOVERY	86.						
	SPIKE 2 SAMPLE NO.	SAMPLE RESULT							
		SPIKE RESULT							
		SPIKE ADDED							
		% RECOVERY							

Versar INC.

GC/MS DATA

Versar inc.

COMMENTS ON 857-45
GC/MS DATA

A number of the pesticide chromatograms contained large peaks which ~~did~~ not correspond well to any of the priority pollutant pesticides. The large peaks had a very characteristic pattern which was similar to another group of samples we analyzed recently for you (Batch 857-42). Along with the large peaks, some of the chromatograms contained some peaks which had retention times similar to the retention times of certain priority pollutant pesticides, usually lindane, alpha and beta NBC, and heptachlor. The retention time for lindane was usually shifted earlier than the corresponding peak in the standards, while the retention times for all of the other compounds were usually shifted later than the standards. Because of the shifting retention times, we are not convinced that these pesticides are truly in the samples. Thus, we have listed their concentrations as tentative identifications in the report.

We can deduce some information about the large peaks with the characteristic pattern which were in these samples and the earlier samples from Batch 42. In the pesticide cleanup process, the sample is divided into three fractions based on the polarity of the compounds. The large peaks always appeared in the least polar fraction. The other compounds eluting in this fraction include PCB's, DDT, the BHC isomers, chlordane, heptachlor, toxaphene, and others. These are all quite nonpolar compounds. The compounds appeared to be less volatile than DDE. The compounds are also capable of responding on an electron capture detector, so they must contain some electron capturing group, such as halogens, sulfur, nitrogen, or double bonded oxygen. The compounds had very assymetrical peak shapes, which is usually characteristic of compounds which are either thermally unstable, highly reactive, or polar. Thus, we suspect that the compounds are rather nonpolar compounds containing electron capturing groups, less volatile (lower vapor pressure) than DDE, and that they may be either thermally unstable or reactive.

Versar INC.

The following GC/MS information is provided in this report:

I. DATA SUMMARY

II. QUALITY CONTROL SUMMARY

III. SAMPLE DATA
1. Results
2. Chromatogram
3. Spectra

IV. STANDARDS DATA
1. Standards Chromatograms
2. Initial Calibration Curve Form
3. Calibration Curve Check Form

V. QUALITY CONTROL DATA
1. Calibration/System Performance Check
2. Reagent Blanks
3. Duplicate Samples
4. Matrix Spike Samples

VI. SAMPLE PREPARATION DATA
1. GC/MS Injection Logsheets
2. Extraction Forms/Notebook Pages

Versar INC.

DATA SUMMARY

Versar INC.

BNA DATA SUMMARY

FIELD NUMBER	PRIORITY POLLUTANT BNA Compounds Detected
RR84-002-13 6141	None detected
RR84-002-14 6241	None detected
RR84-002-15 6112	None detected
RR84-002-16 6212	None detected
RR84-002-17 6111	None detected
RR84-002-18 6211	None detected
RR84-002-19 6122	None detected
RR84-002-20 6222	None detected
RR84-002-21 4134	None detected
RR84-002-22 4121	None detected
RR84-002-23 4221	None detected
RR84-002-24 4215	None detected

Versar inc.

HSL VOA DATA SUMMARY

FIELD NUMBER	PRIORITY POLLUTANT VOA's Detected
RR84-002-13 6141	None detected
RR84-002-14 6241	None detected
RR84-002-15 6112	None detected
RR84-002-16 6212	None detected
RR84-002-17 6111	None detected
RR84-002-18 6211	None detected
RR84-002-19 6122	None detected
RR84-002-20 6222	None detected
RR84-002-21 4134	None detected
RR84-002-22 4121	None detected
RR84-002-23 4221	70 ppb methylene chloride
RR84-002-24 4215	None detected
RR84-002-23 Duplicate 4221	70 ppb methylene chloride

Versar INC.

Pesticide Data Summary

857.2-45

Matrix: Water

Units: ug/L

	RR84-002-13 6141	RR84-002-14 6241	RR84-002-15 ★6112	RR84-002-16 6212	RR84-002-17 ★6111	RR84-002-18 6211	RR84-002-19 6122	RR84-002-20 ★6222	RR84-002-21 ★4134	RR84-002-22 ★4121	RR84-002-23 4221	RR84-002-24 4215				
A-BHC	ND	ND	0.69	ND	39	ND	ND	0.56	0.64	19	ND	ND				
LINDANE			2.0		2.4			0.36	0.49	6.5						
B-BHC			13		9.3			2.1	11	18						
HEPTACHLOR			0.58		17			ND	32	50						
D-BHC			ND		ND			2.8	ND	ND						
ALDRIN			2.1					ND	0.89							
HEPT.EPOX			ND						ND							
AENDOSULFAN																
DIELDRIN																
pp'DDE																
ENDRIN																
ENDOSULFAN																
pp'DDD																
DDT																
ENDRIN ALD.																
ENDOSULFATE																

★ these concentrations and identification are only tentative, see text for more detail information

Versar INC.

QA SUMMARY

MATRIX SPIKE DUPLICATE/RECOVERY

CASE NO. 857.2-45
LOW LEVEL X
WATER X
QC REPORT NO. 857.2-45

CONTRACTOR VERSAR
MED. LEVEL
SOIL/SED.

CONTRACT NO. C000661
HIGH LEVEL
OTHER (Specify)
UNITS (Circle) ug/kg ug/L

FRACTION	COMPOUND	CONC. SPIKE ADDED	CONC. MS	% REC.	CONC. MSD	% REC	RPD	QC %RECOVERY LIMITS* RPD	WATER	SOIL	COMMENTS
4221 VOA # RR84-002-23	1,1-Dichloroethylene	25	22	88	24	96	9	<15%	61-145	59-177	
	Trichloroethylene	25	22	88	24	96	9	<15%	71-120	62-137	
	Chlorobenzene	25	23	92	25	100	8	<15%	75-130	60-133	
	Toluene	25	24	96	25	100	4	<15%	76-125	59-139	
	Benzene	25	21	84	24	96	13	<15%	76-127	66-142	
4221 B/N # RR84-002-23	1,2,4-Trichlorobenzene	100	61	61	57	57	7	<50%	39- 98	38-107	
	Acenaphthene	100	87	87	83	83	5	<50%	46-118	31-137	
	2,4-Dinitrotoluene	100	96	96	93	93	3	<50%	24- 96	28- 89	
	Di-N-Butylphthalate	100	17	17	18	18	6	<50%	11-117	29-135	
	Pyrene	100	103	103	97	97	6	<50%	26-127	35-142	
	N-Nitrosodi-N-Propylamine	100	77	77	67	67	14	<50%	41-116	41-126	
	1,4-Dichlorobenzene	100	65	65	53	53	20	<50%	36- 97	28-104	
4221 ACID # RR84-002-23	Pentachlorophenol	200	172	86	181	91	6	<40%	9-103	17-109	
	Phenol	100	62	62	62	62	0	<40%	12- 89	26- 90	
	2-Chlorophenol	100	55	55	58	58	5	<40%	27-123	25-102	
	P-Chlor-M-Cresol	100	74	74	74	74	0	<40%	23- 97	26-103	
	4-Nitrophenol	200	192	96	204	102	6	<40%	10- 80	11-114	
6141 PEST # RR84-002-13	Lindane	5	4.9	98	NA	NA	NA	<40%	56-123	46-127	
	Heptachlor	5	3.7	74				<40%	40-131	35-130	
	Aldrin	5	8.3	166				<40%	40-120	34-132	
	Dieldrin	5	4.3	86				<40%	52-126	31-134	
	Endrin	5	4.3	86				<40%	56-121	42-139	
	P,P-DDT	5	2.0	40				<40%	38-127	23-134	

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case NO. 857.2-45
LOW LEVEL X
WATER X
QC REPORT NO. 857.2-45

CONTRACTOR VERSAR INC.
MED. LEVEL

CONTRACT NO. C000661
HIGH LEVEL
OTHER (Specify)

[--------Volatile --------][--------------------Semi-Volatile-----------------------------][Pesticide]--

	No.	D_8 Toluene	BFB	D_4-1,2-Dichloro-ethane	D_5-Nitro-benzene	2-Fluoro-biphenyl	D_{14}-p-Ter-phenyl	D_5-Phenol	2-Fluoro-phenol	2,4,6-Tribromo-phenol	Dibutyl-Chloren-date
6141	RR84-002-13	86	94	86	57	55	76	67	73	81	45
6241	RR84-002-14	100	96	90	84	72	59	78	77	96	64
6112	RR84-002-15	80	100	84	66	69	105	65	63	92	88
6212	RR84-002-16	78	102	80	69	64	52	76	74	99	64
6111	RR84-002-17	96	102	86	65	65	65	77	76	89	24
6211	RR84-002-18	94	104	80	81	78	68	80	80	99	76
6122	RR84-002-19	90	94	76	63	64	114	76	83	94	72
6222	RR84-002-20	90	92	72	94	88	96	83	85	100	68
4134	RR84-002-21	90	108	86	72	79	41	68	78	99	72
4121	RR84-002-22	98	106	134	58	67	79	65	66	88	52
4221	RR84-002-23	88	112	83	71	60	94	67	63	84	40
MATRIX SPIKE	RR84-002-23	96	94	80	72	69	65	49	45	79	NA
MATRIX SPIKE DUPLICATE	RR84-002-23	90	96	82	70	69	68	53	48	85	NA
4215	RR84-002-24	84	106	83	67	60	70	73	68	103	40
	RB	98	106	90	90	66	85	76	72	90	77
Duplicate	RR84-002-13										55
Matrix Spk	RR84-002-13										66

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43585 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFL8R113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #3222
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO
50 WOLF RD., ROOM 417
ALBANY, N.Y. 12233

SUBMITTED BY:BARLOW

0823 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 3222 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43585 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	< 10. MCG/L
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3222 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43585 SAMPLE RECEIVED:84/06/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T64809	2,4-DINITROTOLUENE	< 10. MCG/L
T64609	DIETHYLPHTHALATE	< 10. MCG/L
T65209	FLUORENE	< 10. MCG/L
T68409	4-CHLOROPHENYL PHENYL ETHER	NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L
T48809	HEXACHLOROBENZENE	< 10. MCG/L
T66109	PHENANTHRENE	< 10. MCG/L
T63209	ANTHRACENE	< 10. MCG/L
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L
T68009	FLUOROANTHENE	< 10. MCG/L
T66209	PYRENE	< 10. MCG/L
T63809	BENZIDINE	< 200. MCG/L
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L
T64209	CHRYSENE	< 30. MCG/L
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L
T65009	DIOCTYLPHTHALATE	< 30. MCG/L
T63409	BENZO(B)FLUORANTHENE	NA
T63509	BENZO(K)FLUORANTHENE	NA
T63609	BENZO(A)PYRENE	< 30. MCG/L
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L
T15709	HCH,ALPHA	< 10. MCG/L
T15809	HCH,BETA	< 10. MCG/L
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L
T16009	HCH,DELTA	< 10. MCG/L
T08009	HEPTACHLOR	< 10. MCG/L
T07709	ALDRIN	< 10. MCG/L
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L
T43309	ENDOSULFAN I	< 10. MCG/L
T14809	DDE -PARA, PARA	< 10. MCG/L
T08509	DIELDRIN	< 10. MCG/L
T08409	ENDRIN	< 10. MCG/L
T14909	DDD -PARA, PARA	< 10. MCG/L
T43409	ENDOSULFAN II	< 10. MCG/L
T67409	ENDRIN ALDEHYDE	< 10. MCG/L
T67309	ENDOSULFAN SULFATE	< 10. MCG/L
T14709	DDT -PARA, PARA	< 10. MCG/L

**** END OF REPORT ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43586 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #3251
REPORTING LAB: IOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:00 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
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ALBANY,N.Y. 12233

0829 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 3251 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43586 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:00 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	< 10. MCG/L
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

0830 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3251 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43586 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:00 DATE PRINTED:84/10/16

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

0834 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43586 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #3233
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T35609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T65209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

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0835 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 3233 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43588 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/16

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	< 10. MCG/L
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 (3233) RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43586 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/16

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

0438 NEW YORK STATE DEPARTMENT OF HEALTH

WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43573 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLCOB03 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #6114
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/22

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

COPIES SENT TO: CD(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
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0439 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 6114 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43573 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/22

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1.0 MCG/L
T70309	META-XYLENE	< 1.0 MCG/L
T51409	ORTHO-XYLENE	< 1.0 MCG/L
T85309	CUMENE	< 1.0 MCG/L
T85409	STYRENE	< 1.0 MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1.0 MCG/L
T51109	N-PROPYLBENZENE	< 1.0 MCG/L
T85609	TERT-BUTYLBENZENE	< 1.0 MCG/L
T85709	O/P-CHLOROTOLUENE	< 1.0 MCG/L
T51209	BROMOBENZENE	< 1.0 MCG/L
T50509	META-CHLOROTOLUENE	< 1.0 MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1.0 MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1.0 MCG/L
T86009	P-CYMENE	< 1.0 MCG/L
T86109	CYCLOPROPYLBENZENE	< 1.0 MCG/L
T86209	SEC-BUTYLBENZENE	< 1.0 MCG/L
T86309	N-BUTYLBENZENE	< 1.0 MCG/L
T86409	2,3-BENZOFURAN	< 1.0 MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5.0 MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5.0 MCG/L
T65609	NAPHTHALENE	< 5.0 MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5.0 MCG/L
T67109	PHENOL	< 10.0 MCG/L
T66409	2-CHLOROPHENOL	< 10.0 MCG/L
T66809	2-NITROPHENOL	< 10.0 MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10.0 MCG/L
T66509	2,4-DICHLOROPHENOL	< 10.0 MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10.0 MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10.0 MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10.0 MCG/L
T66709	2,4-DINITROPHENOL	< 10.0 MCG/L
T66909	4-NITROPHENOL	< 10.0 MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10.0 MCG/L
T67009	PENTACHLOROPHENOL	< 10.0 MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10.0 MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10.0 MCG/L
T65309	HEXACHLOROETHANE	< 10.0 MCG/L
T65709	NITROBENZENE	< 10.0 MCG/L
T65509	ISOPHORONE	< 10.0 MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10.0 MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10.0 MCG/L
T64109	2-CHLORONAPHTHALENE	< 10.0 MCG/L
T64909	2,6-DINITROTOLUENE	< 10.0 MCG/L
T63109	ACENAPHTHYLENE	< 10.0 MCG/L
T64709	DIMETHYLPHTHALATE	< 10.0 MCG/L
T63009	ACENAPHTHENE	< 10.0 MCG/L

**** CONTINUED ON NEXT PAGE ****

0440 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 6114 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43573 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/22

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER	-	NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	43. MCG/L	NC
T08309	HEPTACHLOR EPOXIDE	23. MCG/L	NC
T43309	ENDOSULFAN I	15. MCG/L	NC
T14809	DDE -PARA, PARA	11. MCG/L	NC
T08509	DIELDRIN	23. MCG/L	NC
T08409	ENDRIN	11. MCG/L	NC
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

0444 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43574 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLC0803 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #5114
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/ : DATE PRINTED:84/10/22

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
50 WOLF RD.,ROOM 417
ALBANY,N.Y. 12233

0445 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 5114 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43574 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/ : DATE PRINTED:84/10/22

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

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0446 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 5114 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43574 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/ : DATE PRINTED:84/10/22

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T65109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	52. MCG/L	NC
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	11. MCG/L	NC
T08009	HEPTACHLOR	13. MCG/L	NC
T07709	ALDRIN	49. MCG/L	NC
T08309	HEPTACHLOR EPOXIDE	30. MCG/L	NC
T43309	ENDOSULFAN I	13. MCG/L	NC
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	14. MCG/L	NC
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

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0459 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43575 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLC0803 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #3123
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 12:00 DATE PRINTED:84/10/18

PARAMETER		RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T35609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
50 WOLF RD., ROOM 417
ALBANY,N.Y. 12233

 3123 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43575 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/23 12:00 DATE PRINTED:84/10/18

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49509	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T65909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3123 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43575 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:00 DATE PRINTED:84/10/18

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 200. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	19. MCG/L	NC
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43576 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #6213
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/18

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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0466 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 6213 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43576 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/18

	PARAMETER	RESULT	
T70409	PARA-XYLENE	< 1. MCG/L	
T70309	META-XYLENE	< 1. MCG/L	
T51409	ORTHO-XYLENE	< 1. MCG/L	
T85309	CUMENE	< 1. MCG/L	
T85409	STYRENE	< 1. MCG/L	
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L	
T51109	N-PROPYLBENZENE	< 1. MCG/L	
T85609	TERT-BUTYLBENZENE	< 1. MCG/L	
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L	
T51209	BROMOBENZENE	< 1. MCG/L	
T50509	META-CHLOROTOLUENE	< 1. MCG/L	
T65809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	
T86009	P-CYMENE	< 1. MCG/L	
T85109	CYCLOPROPYLBENZENE	< 1. MCG/L	
T86209	SEC-BUTYLBENZENE	< 1. MCG/L	
T86309	N-BUTYLBENZENE	< 1. MCG/L	
T86409	2,3-BENZOFURAN	< 1. MCG/L	
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L	
T65609	NAPHTHALENE	< 5. MCG/L	
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	
T67109	PHENOL	< 10. MCG/L	
T66409	2-CHLOROPHENOL	< 10. MCG/L	
T66809	2-NITROPHENOL	< 10. MCG/L	
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L	
T65509	2,4-DICHLOROPHENOL	< 10. MCG/L	
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L	
T66709	2,4-DINITROPHENOL	< 10. MCG/L	
T66909	4-NITROPHENOL	< 10. MCG/L	
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L	
T67009	PENTACHLOROPHENOL	< 10. MCG/L	
T85009	BENZOIC ACID		NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER		NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L	
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
T65309	HEXACHLOROETHANE	< 10. MCG/L	
T65709	NITROBENZENE	< 10. MCG/L	
T65509	ISOPHORONE	< 10. MCG/L	
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L	
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 6213 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43576 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 14:30 DATE PRINTED:84/10/18

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T65009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T56109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65909	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

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CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43589 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID: DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: FIELD BLANK-LOVE CANAL MONITORING WELL SAMPLES
DESCRIPTION:WITH SAMPLE #43573 TO 43588
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: VOL2:EPA METHOD 503.1 & F.R.METHOD 601
SAMPLE TYPE: 297:FIELD BLANK
TIME OF SAMPLING: 84/08/21 : DATE PRINTED:84/09/17

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 field blank RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43589 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: FIELD BLANK-LOVE CANAL MONITORING WELL SAMPLES
TIME OF SAMPLING: 84/08/21 : DATE PRINTED:84/09/17

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L

**** END OF REPORT ****

0347 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43580 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #5212
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/26

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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0348 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 5212 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43580 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/26

	PARAMETER	RESULT	
T70409	PARA-XYLENE	< 1. MCG/L	
T70309	META-XYLENE	< 1. MCG/L	
T51409	ORTHO-XYLENE	< 1. MCG/L	
T85309	CUMENE	< 1. MCG/L	
T85409	STYRENE	< 1. MCG/L	
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L	
T51109	N-PROPYLBENZENE	< 1. MCG/L	
T85609	TERT-BUTYLBENZENE	< 1. MCG/L	
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L	
T51209	BROMOBENZENE	< 1. MCG/L	
T50509	META-CHLOROTOLUENE	< 1. MCG/L	
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	
T86009	P-CYMENE	< 1. MCG/L	
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L	
T86209	SEC-BUTYLBENZENE	< 1. MCG/L	
T86309	N-BUTYLBENZENE	< 1. MCG/L	
T86409	2,3-BENZOFURAN	< 1. MCG/L	
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L	
T65609	NAPHTHALENE	< 5. MCG/L	
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	
T67109	PHENOL	< 10. MCG/L	
T66409	2-CHLOROPHENOL	< 10. MCG/L	
T66809	2-NITROPHENOL	< 10. MCG/L	
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L	
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L	
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L	
T66709	2,4-DINITROPHENOL	< 10. MCG/L	
T66909	4-NITROPHENOL	< 10. MCG/L	
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L	
T67009	PENTACHLOROPHENOL	< 10. MCG/L	
T85009	BENZOIC ACID		NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER		NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L	
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
T65309	HEXACHLOROETHANE	< 10. MCG/L	
T65709	NITROBENZENE	< 10. MCG/L	
T65509	ISOPHORONE	< 10. MCG/L	
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L	
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 5212 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43580 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/26

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION — FINAL REPORT

SAMPLE ID: 43577 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLC0803 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #6113
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 14:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
50 WOLF RD.,ROOM 417
ALBANY,N.Y. 12233

0376 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 6113 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43577 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 14:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T70409	PARA-XYLENE	< 1. MCG/L	
T70309	META-XYLENE	< 1. MCG/L	
T51409	ORTHO-XYLENE	< 1. MCG/L	
T85309	CUMENE	< 1. MCG/L	
T85409	STYRENE	< 1. MCG/L	
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L	
T51109	N-PROPYLBENZENE	< 1. MCG/L	
T85609	TERT-BUTYLBENZENE	< 1. MCG/L	
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L	
T51209	BROMOBENZENE	< 1. MCG/L	
T50509	META-CHLOROTOLUENE	< 1. MCG/L	
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	
T86009	P-CYMENE	< 1. MCG/L	
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L	
T86209	SEC-BUTYLBENZENE	< 1. MCG/L	
T86309	N-BUTYLBENZENE	< 1. MCG/L	
T86409	2,3-BENZOFURAN	< 1. MCG/L	
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L	
T65609	NAPHTHALENE	< 5. MCG/L	
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	
T67109	PHENOL	< 10. MCG/L	
T66409	2-CHLOROPHENOL	< 10. MCG/L	
T66809	2-NITROPHENOL	< 10. MCG/L	
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L	
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L	
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L	
T66709	2,4-DINITROPHENOL	< 10. MCG/L	
T66909	4-NITROPHENOL	< 10. MCG/L	
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L	
T67009	PENTACHLOROPHENOL	< 10. MCG/L	
T85009	BENZOIC ACID		NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER		NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L	
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
T65309	HEXACHLOROETHANE	< 10. MCG/L	
T65709	NITROBENZENE	< 10. MCG/L	
T65509	ISOPHORONE	< 10. MCG/L	
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L	
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 6113 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43577 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 14:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T15009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION — FINAL REPORT

SAMPLE ID: 43578 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #3223
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 12:08 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
50 WOLF RD.,ROOM 417
ALBANY,N.Y. 12233

0382 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 3223 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43578 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:08 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T70409	PARA-XYLENE	< 1. MCG/L	
T70309	META-XYLENE	< 1. MCG/L	
T51409	ORTHO-XYLENE	< 1. MCG/L	
T85309	CUMENE	< 1. MCG/L	
T85409	STYRENE	< 1. MCG/L	
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L	
T51109	N-PROPYLBENZENE	< 1. MCG/L	
T85609	TERT-BUTYLBENZENE	< 1. MCG/L	
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L	
T51209	BROMOBENZENE	< 1. MCG/L	
T50509	META-CHLOROTOLUENE	< 1. MCG/L	
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	
T86009	P-CYMENE	< 1. MCG/L	
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L	
T86209	SEC-BUTYLBENZENE	< 1. MCG/L	
T86309	N-BUTYLBENZENE	< 1. MCG/L	
T86409	2,3-BENZOFURAN	< 1. MCG/L	
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L	
T65609	NAPHTHALENE	< 5. MCG/L	
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	
T67109	PHENOL	< 10. MCG/L	
T66409	2-CHLOROPHENOL	< 10. MCG/L	
T66809	2-NITROPHENOL	< 10. MCG/L	
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L	
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L	
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L	
T66709	2,4-DINITROPHENOL	< 10. MCG/L	
T66909	4-NITROPHENOL	< 10. MCG/L	
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L	
T67009	PENTACHLOROPHENOL	< 10. MCG/L	
T85009	BENZOIC ACID		NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER		NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L	
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
T65309	HEXACHLOROETHANE	< 10. MCG/L	
T65709	NITROBENZENE	< 10. MCG/L	
T65509	ISOPHORONE	< 10. MCG/L	
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L	
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 3223 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43578 SAMPLE RECEIVED: 84/08/29/09
POLITICAL SUBDIVISION: NIAGARA FALLS C. COUNTY: NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:08 DATE PRINTED: 84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 3223 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43578 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:08 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3223 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43578 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:08 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

0390 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43579 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLCOB03 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #3133
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
50 WOLF RD., ROOM 417
ALBANY, N.Y. 12233

0391 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 3133 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43579 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3133 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43579 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43581 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #6214
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	4. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	8. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATIO SUBMITTED BY:BARLOW
50 WOLF RD.,ROOM 417
ALBANY,N.Y. 12233

0397 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 6214 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43581 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 6214 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43581 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:00 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T15009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION — FINAL REPORT

SAMPLE ID: 43582 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLC0803 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #3122
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

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MR. S. BRASWELL
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SUBMITTED BY:BARLOW

0400 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 3122 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43582 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T70409	PARA-XYLENE	< 1. MCG/L	
T70309	META-XYLENE	< 1. MCG/L	
T51409	ORTHO-XYLENE	< 1. MCG/L	
T85309	CUMENE	< 1. MCG/L	
T85409	STYRENE	< 1. MCG/L	
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L	
T51109	N-PROPYLBENZENE	< 1. MCG/L	
T85609	TERT-BUTYLBENZENE	< 1. MCG/L	
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L	
T51209	BROMOBENZENE	< 1. MCG/L	
T50509	META-CHLOROTOLUENE	< 1. MCG/L	
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	
T86009	P-CYMENE	< 1. MCG/L	
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L	
T86209	SEC-BUTYLBENZENE	< 1. MCG/L	
T86309	N-BUTYLBENZENE	< 1. MCG/L	
T86409	2,3-BENZOFURAN	< 1. MCG/L	
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L	
T65609	NAPHTHALENE	< 5. MCG/L	
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	
T67109	PHENOL	34. MCG/L	NC
T66409	2-CHLOROPHENOL	< 10. MCG/L	
T66809	2-NITROPHENOL	< 10. MCG/L	
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L	
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L	
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L	
T66709	2,4-DINITROPHENOL	< 10. MCG/L	
T66909	4-NITROPHENOL	< 10. MCG/L	
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L	
T67009	PENTACHLOROPHENOL	< 10. MCG/L	
T85009	BENZOIC ACID		NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER		NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L	
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
T65309	HEXACHLOROETHANE	< 10. MCG/L	
T65709	NITROBENZENE	< 10. MCG/L	
T65509	ISOPHORONE	< 10. MCG/L	
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L	
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 3122 RESULTS OF EXAMINATION - FINAL REPORT

SAMPLE ID: 43582 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T15009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION - FINAL REPORT

SAMPLE ID: 43583 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLC0803 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #5112
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
BUREAU OF SOLID WASTES
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0406

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 5112 RESULTS OF EXAMINATION - FINAL REPORT

SAMPLE ID: 43583 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T66409	2-CHLOROPHENOL	< 10. MCG/L
T66809	2-NITROPHENOL	< 10. MCG/L
T65609	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L
T64909	2,6-DINITROTOLUENE	< 10. MCG/L
T63109	ACENAPHTHYLENE	< 10. MCG/L
T64709	DIMETHYLPHTHALATE	< 10. MCG/L
T63009	ACENAPHTHENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 5/12 RESULTS OF EXAMINATION _ FINAL REPORT

SAMPLE ID: 43583 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	17. MCG/L	NC
T14709	DDT -PARA, PARA	17. MCG/L	NC

**** END OF REPORT ****

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1

RESULTS OF EXAMINATION

FINAL REPORT

SAMPLE ID: 43584 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLBR113 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
DESCRIPTION:WELL #5214
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 16:00 DATE PRINTED:84/10/25

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61809	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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SUBMITTED BY:BARLOW

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 5214 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43584 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 16:00 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T70409	PARA-XYLENE	< 1. MCG/L	
T70309	META-XYLENE	< 1. MCG/L	
T51409	ORTHO-XYLENE	< 1. MCG/L	
T85309	CUMENE	< 1. MCG/L	
T85409	STYRENE	< 1. MCG/L	
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L	
T51109	N-PROPYLBENZENE	< 1. MCG/L	
T85609	TERT-BUTYLBENZENE	< 1. MCG/L	
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L	
T51209	BROMOBENZENE	< 1. MCG/L	
T50509	META-CHLOROTOLUENE	< 1. MCG/L	
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L	
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L	
T86009	P-CYMENE	< 1. MCG/L	
T85109	CYCLOPROPYLBENZENE	< 1. MCG/L	
T86209	SEC-BUTYLBENZENE	< 1. MCG/L	
T86309	N-BUTYLBENZENE	< 1. MCG/L	
T86409	2,3-BENZOFURAN	< 1. MCG/L	
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L	
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L	
T65609	NAPHTHALENE	< 5. MCG/L	
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L	
T67109	PHENOL	< 10. MCG/L	
T66409	2-CHLOROPHENOL	< 10. MCG/L	
T66809	2-NITROPHENOL	< 10. MCG/L	
T66609	2,4-DIMETHYLPHENOL	< 10. MCG/L	
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L	
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L	
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L	
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L	
T66709	2,4-DINITROPHENOL	< 10. MCG/L	
T66909	4-NITROPHENOL	< 10. MCG/L	
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L	
T67009	PENTACHLOROPHENOL	< 10. MCG/L	
T85009	BENZOIC ACID		NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER		NA
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L	
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L	
T65309	HEXACHLOROETHANE	< 10. MCG/L	
T65709	NITROBENZENE	< 10. MCG/L	
T65509	ISOPHORONE	< 10. MCG/L	
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L	
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L	
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 3 5214 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43584 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, BEDROCK MONITORING WELLS
TIME OF SAMPLING: 84/08/28 16:00 DATE PRINTED:84/10/25

	PARAMETER	RESULT	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUOROANTHENE	< 10. MCG/L	
T66209	PYRENE	< 10. MCG/L	
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T64509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T16009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	< 10. MCG/L	
T07709	ALDRIN	< 10. MCG/L	
T08309	HEPTACHLOR EPOXIDE	< 10. MCG/L	
T43309	ENDOSULFAN I	< 10. MCG/L	
T14809	DDE -PARA, PARA	< 10. MCG/L	
T08509	DIELDRIN	< 10. MCG/L	
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	< 10. MCG/L	
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	< 10. MCG/L	
T14709	DDT -PARA, PARA	< 10. MCG/L	

**** END OF REPORT ****

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 — RESULTS OF EXAMINATION — FINAL REPORT

SAMPLE ID: 841006156 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 550:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #3233
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:WOSW - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 12:30 DATE PRINTED:84/11/08

	PARAMETER	RESULT
01ZINC	ZINC	0.11 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10.0 MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5.0 MCG/L
06DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01PHENOL	PHENOLS	1. MCG/L
01CYANIDE	CYANIDES, HYDROLYZABLE	< 0.002 MG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
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SUBMITTED BY:BARLOW

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 841006157 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #3223
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:WQSH - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 12: DATE PRINTED:84/11/08

PARAMETER	RESULT
01ZINC ZINC	0.36 MG/L
02LEAD LEAD, TOTAL	< 0.1 MG/L
02BERYL BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER COPPER, TOTAL	< 0.05 MG/L
02NICKEL NICKEL, TOTAL	< 0.05 MG/L
02SILVER SILVER, TOTAL	< 0.02 MG/L
01MERCURY MERCURY	< 0.2 MCG/L
02CADMIUM CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM THALLIUM, TOTAL	< 1. MG/L
22ARSENIC ARSENIC, TOTAL	< 10.0 MCG/L
22SELENIUM SELENIUM, TOTAL	< 5.0 MCG/L
06DIGEST DIGESTION OF WATER FOR TOTAL METALS	DONE
01CYANIDE CYANIDES, HYDROLYZABLE	< 0.002 MG/L
01PHENOL PHENOLS	4. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

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SUBMITTED BY:BARLOW

0513

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 84100615? SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #3222
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: TO-010:W05N - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/11/08

PARAMETER		RESULT
01ZINC	ZINC	0.09 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10.0 MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5.0 MCG/L
06DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01CYANIDE	CYANIDES, HYDROLIZABLE	< 0.002 MG/L
01PHENOL	PHENOLS	1. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
BUREAU OF SOLID WASTES
N.Y.S.DEPT. OF ENVIRONMENTAL CONSERVATION
50 WOLF RD.,ROOM 417
ALBANY,N.Y. 12233

SUBMITTED BY:BARLOW

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

FINAL REPORT

SAMPLE ID: 841006159 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #3251
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:WDSN - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11: DATE PRINTED:84/11/08

PARAMETER		RESULT
01ZINC	ZINC	0.17 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10.0 MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5.0 MCG/L
06DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01CYANIDE	CYANIDES, HYDROLYZABLE	< 0.002 MG/L
01PHENOL	PHENOLS	2. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
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ALBANY,N.Y. 12233

SUBMITTED BY:HARLOW

0517 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 841006160 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLIP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #5112
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:NOSH - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/11/08

	PARAMETER	RESULT
01ZINC	ZINC	0.19 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10.0 MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5.0 MCG/L
05DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01CYANIDE	CYANIDES, HYDROLYZABLE	< 0.002 MG/L
01PHENOL	PHENOLS	< 1. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(1)

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0203 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43587 SAMPLE RECEIVED:84/08/29/09
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLCOB03 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
DESCRIPTION:WELL #3151
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP:F.R.METHODS 625,601 AND EPA METH 503.1
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:00 DATE PRINTED:84/11/06

SAMPLE EXTRACT EXAMINED FOR HYDROCARBONS. LUBRICATING OIL PRESENT WHICH ELUTES IN THE SAME REGION AS PRIORITY POLLUTANT PESTICIDES. DR.A.RICHARDS 1NOV84.

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T61309	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROMETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T36609	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51809	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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0204 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43587 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:00 DATE PRINTED:84/11/06

	PARAMETER	RESULT
T34409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L
T70409	PARA-XYLENE	< 1. MCG/L
T70309	META-XYLENE	< 1. MCG/L
T51409	ORTHO-XYLENE	< 1. MCG/L
T85309	CUMENE	< 1. MCG/L
T85409	STYRENE	< 1. MCG/L
T85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
T51109	N-PROPYLBENZENE	< 1. MCG/L
T85609	TERT-BUTYLBENZENE	< 1. MCG/L
T85709	O/P-CHLOROTOLUENE	< 1. MCG/L
T51209	BROMOBENZENE	< 1. MCG/L
T50509	META-CHLOROTOLUENE	< 1. MCG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
T86009	P-CYMENE	< 1. MCG/L
T86109	CYCLOPROPYLBENZENE	< 1. MCG/L
T86209	SEC-BUTYLBENZENE	< 1. MCG/L
T86309	N-BUTYLBENZENE	< 1. MCG/L
T86409	2,3-BENZOFURAN	< 1. MCG/L
T52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
T65609	NAPHTHALENE	< 5. MCG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L
T67109	PHENOL	< 10. MCG/L
T65409	2-CHLOROPHENOL	< 10. MCG/L
T56809	2-NITROPHENOL	< 10. MCG/L
T65509	2,4-DIMETHYLPHENOL	< 10. MCG/L
T66509	2,4-DICHLOROPHENOL	< 10. MCG/L
T66309	4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
T67209	2,4,6-TRICHLOROPHENOL	< 10. MCG/L
T49609	2,4,5-TRICHLOROPHENOL	< 10. MCG/L
T66709	2,4-DINITROPHENOL	< 10. MCG/L
T66909	4-NITROPHENOL	< 10. MCG/L
T68509	2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
T67009	PENTACHLOROPHENOL	< 10. MCG/L
T85009	BENZOIC ACID	NA
T68109	BIS(2-CHLOROISOPROPYL)ETHER	< 10. MCG/L
T63909	BIS(2-CHLOROETHYL)ETHER	< 10. MCG/L
T65909	N-NITROSODI-N-PROPYLAMINE	< 10. MCG/L
T65309	HEXACHLOROETHANE	< 10. MCG/L
T65709	NITROBENZENE	< 10. MCG/L
T65509	ISOPHORONE	< 10. MCG/L
T68609	BIS(2-CHLOROETHOXY)METHANE	< 10. MCG/L
T49209	HEXACHLOROCYCLOPENTADIENE (C-56)	< 10. MCG/L
T64109	2-CHLORONAPHTHALENE	< 10. MCG/L

**** CONTINUED ON NEXT PAGE ****

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION   FINAL REPORT

SAMPLE ID: 43587   SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C.   COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:00   DATE PRINTED:84/11/06

	PARAMETER	RESULT	
T64909	2,6-DINITROTOLUENE	< 10. MCG/L	
T63109	ACENAPHTHYLENE	< 10. MCG/L	
T64709	DIMETHYLPHTHALATE	< 10. MCG/L	
T63009	ACENAPHTHENE	< 10. MCG/L	
T64809	2,4-DINITROTOLUENE	< 10. MCG/L	
T64609	DIETHYLPHTHALATE	< 10. MCG/L	
T65209	FLUORENE	< 10. MCG/L	
T68409	4-CHLOROPHENYL PHENYL ETHER		NA
T66009	N-NITROSODIPHENYLAMINE	< 10. MCG/L	
T65109	1,2-DIPHENYLHYDRAZINE	< 10. MCG/L	
T68309	4-BROMOPHENYL PHENYL ETHER	< 10. MCG/L	
T48809	HEXACHLOROBENZENE	< 10. MCG/L	
T66109	PHENANTHRENE	< 10. MCG/L	
T63209	ANTHRACENE	< 10. MCG/L	
T64409	DI-N-BUTYLPHTHALATE	< 10. MCG/L	
T68009	FLUORANTHENE	23. MCG/L	NC
T66209	PYRENE	31. MCG/L	NC
T63809	BENZIDINE	< 200. MCG/L	
T64009	BUTYL BENZYL PHTHALATE	< 30. MCG/L	
T63309	BENZO(A)ANTHRACENE	< 30. MCG/L	
T61509	3,3'-DICHLOROBENZIDINE	< 30. MCG/L	
T64209	CHRYSENE	< 30. MCG/L	
T67909	BIS(2-ETHYLHEXYL)PHTHALATE	< 30. MCG/L	
T65009	DIOCTYLPHTHALATE	< 30. MCG/L	
T63409	BENZO(B)FLUORANTHENE		NA
T63509	BENZO(K)FLUORANTHENE		NA
T63609	BENZO(A)PYRENE	< 30. MCG/L	
T65409	INDENO(1,2,3-CD)PYRENE	< 30. MCG/L	
T64309	DIBENZO(A,H)ANTHRACENE	< 30. MCG/L	
T63709	BENZO(GHI)PERYLENE	< 30. MCG/L	
T15709	HCH,ALPHA	< 10. MCG/L	
T15809	HCH,BETA	< 10. MCG/L	
T35609	HCH,GAMMA (LINDANE)	< 10. MCG/L	
T15009	HCH,DELTA	< 10. MCG/L	
T08009	HEPTACHLOR	13. MCG/L	NC
T07709	ALDRIN	84. MCG/L	NC
T08309	HEPTACHLOR EPOXIDE	54. MCG/L	NC
T43309	ENDOSULFAN I	48. MCG/L	NC
T14809	DDE -PARA, PARA	29. MCG/L	NC
T08509	DIELDRIN	63. MCG/L	NC
T08409	ENDRIN	< 10. MCG/L	
T14909	DDD -PARA, PARA	10. MCG/L	NC
T43409	ENDOSULFAN II	< 10. MCG/L	
T67409	ENDRIN ALDEHYDE	< 10. MCG/L	
T67309	ENDOSULFAN SULFATE	15. MCG/L	NC
T14709	DDT -PARA, PARA	15. MCG/L	NC
MS-CONFIRM	MASS SPEC CONFIRMATION		NA
T65809	N-NITROSODIMETHYLAMINE		NA

**** CONTINUED ON NEXT PAGE ****

0205

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 4 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 43587 SAMPLE RECEIVED:84/08/29/09
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LOCATION: NIAGARA FALLS, LOVE CANAL, OVERBURDEN MONITORING WELLS
TIME OF SAMPLING: 84/08/28 11:00 DATE PRINTED:84/11/06

	PARAMETER	RESULT	
I07310	GASOLINE		ND
I07410	KEROSENE	< 0.1 MCL/L	
I07610	FUEL OIL	< 0.1 MCL/L	
I07510	OIL, LUBRICATING	PRESENT	

**** END OF REPORT ****

0448

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 841006162 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #5114
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:WQSN - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/12/07

	PARAMETER	RESULT
01ZINC	ZINC	0.26 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10. MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5. MCG/L
06DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01CYANIDE	CYANIDES, HYDROLYZABLE	< 0.002 MG/L
01PHENOL	PHENOLS	4. MCG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
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SUBMITTED BY:BARLOW

0450 NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 841006163 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #5212
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:WQSN - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 15:30 DATE PRINTED:84/12/07

	PARAMETER	RESULT
01ZINC	ZINC	0.13 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10. MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5. MCG/L
06DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01PHENOL	PHENOLS	16. MCG/L
01CYANIDE	CYANIDES, HYDROLYZABLE	< 0.002 MG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
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WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 841006164 SAMPLE RECEIVED:84/08/29/11
PROGRAM: 650:DEC SOLID WASTES
SOURCE ID:NFLTP111 DRAINAGE BASIN:01 GAZETTEER CODE:3102
POLITICAL SUBDIVISION:NIAGARA FALLS C. COUNTY:NIAGARA
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: NIAGARA FALLS,LOVE CANAL,LEACHATE-TREATMENT PLANT
DESCRIPTION:WELL #3122
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - ALBANY
TEST PATTERN: 10-010:WQSN - NPDES PRIORITY POLLUTANT METALS
SAMPLE TYPE: 250:GROUND WATER
TIME OF SAMPLING: 84/08/28 11:30 DATE PRINTED:84/12/07

	PARAMETER	RESULT
01ZINC	ZINC	0.73 MG/L
02LEAD	LEAD, TOTAL	< 0.1 MG/L
02BERYL	BERYLLIUM, TOTAL	< 0.02 MG/L
02COPPER	COPPER, TOTAL	< 0.05 MG/L
02NICKEL	NICKEL, TOTAL	< 0.05 MG/L
02SILVER	SILVER, TOTAL	< 0.02 MG/L
01MERCURY	MERCURY	< 0.2 MCG/L
02CADMIUM	CADMIUM, TOTAL	< 0.02 MG/L
02ANTIMONY	ANTIMONY, TOTAL	< 1. MG/L
02CHROMIUM	CHROMIUM, TOTAL	< 0.1 MG/L
02THALLIUM	THALLIUM, TOTAL	< 1. MG/L
22ARSENIC	ARSENIC, TOTAL	< 10. MCG/L
22SELENIUM	SELENIUM, TOTAL	< 5. MCG/L
06DIGEST	DIGESTION OF WATER FOR TOTAL METALS	DONE
01PHENOL	PHENOLS	100. MCG/L
01CYANIDE	CYANIDES, HYDROLYZABLE	< 0.002 MG/L

**** END OF REPORT ****

COPIES SENT TO: CO(2), RO(0), LPHE(0), FED(0), INFO-P(0), INFO-L(0)

MR. S. BRASWELL
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50 WOLF RD.,ROOM 417
ALBANY,N.Y. 12233

Versar INC.

857.2 - NEW YORK

QC SUMMARY
PESTICIDE ANALYSIS BATCH 21

SURROGATE RECOVERY

	Sample Number	Percent Recovery
	RB (Reagent Blank)	85%
4204	R-999-20	89%
4105	R-999-21	17%
4205	R-999-22	40%
4102	R-999-23	50%
4205	R-999-22 (DUP)	55%
[illegible]05	R-999-22 (MS)	37%

MATRIX SPIKE RECOVERY (Sample No. R-999-22 MS)

Compound	Percent Recovery
ə-BHC (Lindane)	57%
Heptachlor	68%
Aldrin	66%
Dieldrin	83%
Endrin	84%
pp-DDT	53%

Versar INC.

sampled
March 28, 1984

DATA SUMMARY

Section I

000004

6850 VERSAR CENTER • P.O. BOX 1549 • SPRINGFIELD, VIRGINIA 22151 • TELEPHONE: (703) 750-3000 • TELEX: 901125

Versar INC.

Versar Project 857.2-16 & 20
NYS Contract No. C000661

DATA SUMMARY

	Sample	Compounds Detected	Concentration ug/L
6109	R-999-1	PCB 1260	2.23
5209	R-999-2	acetone	250
5209	R-999-2 (VOA dup.) ONLY	acetone	270
5103	R-999-4	toluene	1
		bis(2-ethylhexyl)phthalate	27
5103	R-999-4 (BNA dup.) ONLY	bis(2-ethylhexyl)phthalate	56
5102	R-999-5	bis(2-ethylhexyl)phthalate	16
5101	R-999-6	bis(2-ethylhexyl)phthalate	34
5201	R-999-7	bis (2-ethylhexyl)phthalate	10
4108	R-999-8	bis(2-ethylhexyl)phthalate	15
606	R-999-10	bis(2-ethylhexyl)phthalate	15
4	R-999-12	δ-BHC	0.03
	Reagent Blank	none detected	ND
5201	R-999-7 (Pest. dup.) ONLY	none detected	ND

000005

Versar INC.

QUALITY CONTROL SUMMARY

Section II

000006

Versar INC.

Project 857.2-16 & 20
NYS Contract No. C000661

Q.C. SUMMARY

Matrix Spike Recoveries

Compound	% Recovery	EPA Recommended Limits
1,1 dichloroethane	82	61-145
benzene	73	76-127
trichloroethene	71	71-120
toluene	80	76-125
chlorobenzene	79	75-130
1,2,4-trichlorobenzene	70	39-98
acenaphthene	91	46-118
2,4-dinitrotoluene	108	24-96
di-n-butylphthalate	141	11-117
pyrene	105	26-127
N-nitrosodi-N-propylamine	72	41-116
1,4-dichlorobenzene	75	36-97
pentachlorophenol	86	9-103
phenol	41	12-89
2-chlorophenol	88	27-123
P-chloro-M-cresol	79	23-97
4-nitrophenol	55	10-80
lindane	75	56-123
heptachlor	84	40-131
aldrin	95	40-120
dieldrin	114	52-126
endrin	109	56-121
p,p'-DDT	97	38-127

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WATER SURROGATE PERCENT RECOVERY SUMMARY

Case NO. 857.2 -16 & 20 CONTRACTOR VERSAR INC. CONTRACT NO. C 000661
LOW LEVEL X MED. LEVEL HIGH LEVEL
WATER X OTHER (Specify)
QC REPORT NO. 857.2-16,20

[--------Volatile--------][--------------------Semi-Volatile--------------------][Pesticide]--

% Recovery

Sample No.	D_8 Toluene	BFB	D_4-1,2-Dichloro-ethane	D_5-Nitro-benzene	2-Fluoro-biphenyl	D_{14}-p-Ter-phenyl	D_5-Phenol	2-Fluoro-phenol	2,4,6-Tribromo-phenol	Dibutyl-Chloren-date	
R-999-1	110	100	97	58	76	128	36	46	79	62	
R-999-2	103	97	97	68	76	132	32	54	87	87	
R-999-4	104	96	94	80	88	114	26	42	70	67	
R-999-5	102	95	96	82	88	127	30	43	65	60	
R-999-6	100	95	93	82	87	124	29	46	82	84	
R-999-7	99	88	94	81	47	125	32	50	74	65	
R-999-8	98	89	95	88	91	123	31	48	77	65	
R-999-10	108	96	92	93	81	106	33	56	68	93	
R-999-12	101	92	93	91	85	148	32	56	63	88	
RB	114	109	95	33	46	81	41	37	36	59	
Duplicate	99	90	95	87	94	121	29	46	82	66	
Matrix Spk	99	89	95	71	82	122	32	38	82	97	

Comments:

Limits Rev1 : 12/83
1/3/21/84

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 512

*** SITE DATA ***

SAMPLING AREA 03 STATION 512 COORDS 401053 E 1121805 N

*** SAMPLE DATA ***

SAMPLE-ID W20666 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB
WELL ID 006B DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1100.000 UG/L		SAMPLE VOL. 100

*** SAMPLE DATA ***

SAMPLE-ID W20779 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB
WELL ID 006B DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB PJBL QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W20802 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/18/80 START TIME 1230 CONTRACTOR JRB
WELL ID 006B DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB PJBL QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
1,1-DICHLOROETHENE	75-35-4	V03	TRACE		
CHLOROFORM	67-66-3	V11	TRACE		
BENZENE	71-43-2	V22	TRACE		
TOLUENE	108-88-3	V34	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W20804 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/18/80 START TIME 1215 CONTRACTOR JRB
WELL ID 006A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5123

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB PJBL QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
1,1-DICHLOROETHENE	75-35-4	V03	TRACE		
BENZENE	71-43-2	V22	TRACE		
1,1,2,2-TETRACHLOROETHANE	79-34-5	V28	TRACE		
TOLUENE	108-88-3	V34	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20807   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 09/18/80   START TIME 1230   CONTRACTOR JRB
WELL ID 006B   DEPTH 37.80 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD 625CW   SPECIFIC METHOD   ANALYSIS LAB PJBL   QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
4-CHLOROPHENOL	106-48-9	A03	TRACE		
NAPHTHALENE	91-20-3	B14	TRACE		
ANTHRACENE	120-12-7	B33	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20811   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 09/23/80   START TIME 1215   CONTRACTOR JRB
WELL ID 006A   DEPTH 21.50 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5123

*** ANALYSIS RESULTS ***

METHOD 606W   SPECIFIC METHOD   ANALYSIS LAB PJBL   QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20812   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 09/23/80   START TIME 1215   CONTRACTOR JRB
WELL ID 006A   DEPTH 21.50 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5123

*** ANALYSIS RESULTS ***

METHOD 625CW   SPECIFIC METHOD   ANALYSIS LAB PJBL   QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
NAPHTHALENE	91-20-3	B14	TRACE		
ANTHRACENE	120-12-7	B33	TRACE		
ACIDS	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20885   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 09/23/80   START TIME 1215   CONTRACTOR JRB
WELL ID 006A   DEPTH 21.50 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5123

*** ANALYSIS RESULTS ***

METHOD ANION   SPECIFIC METHOD 34020   ANALYSIS LAB ERCO   QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	920.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21300 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/29/80 START TIME 1130 CONTRACTOR JRB
WELL ID 006B DEPTH 37.80 FEET COMPOSITE SAMPLE WATER TEMP 0

5223

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	11.000 UG/L		
ZINC	7440-66-6	I14	75.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21335 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 0905 CONTRACTOR JRB
WELL ID 006A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5123

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	3.000 UG/L		
COPPER	7440-50-8	I07	8.000 UG/L		
ZINC	7440-66-6	I14	14.000 UG/L		

****
*** SITE DATA ***
****

SAMPLING AREA 06 STATION 018   COORDS 402658 E 1123503 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21803 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB
WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0
4111

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21804 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB
WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0
4111

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT				
BASE/NEUTRALS	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21805 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB
WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0
4111

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21807 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/14/80 START TIME 1210 CONTRACTOR JRB
WELL ID 051A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0
4111

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1100.000 UG/L		
NITRATE	0- 0-0	I16	3010.000 UG/L		

*** * R A W   D A T A   L I S T I N G * ***

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   10   042

*** SITE DATA ***

SAMPLING AREA 10 STATION 042   COORDS 402178 E 1120885 N

*** SAMPLE DATA ***

SAMPLE-ID W25717 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB
WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/41

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25718 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB
WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/41

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT					
BASE/NEUTRALS	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25719 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB
WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/41

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 900.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25720 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB
WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/41

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	10.000 UG/L		
CADMIUM	7440-43-9	I05	10.000 UG/L		
LEAD	7439-92-1	I08	61.000 UG/L		
ZINC	7440-66-6	I14	48.000 UG/L		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82

*** SAMPLE DATA ***

SAMPLE-ID W25721 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0915 CONTRACTOR JRB
WELL ID 056A DEPTH 9.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1500.000 UG/L		
NITRATE	0- 0-0	I16	1900.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W25722 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB
WELL ID 056B DEPTH 9.80 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25724 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB
WELL ID 056B DEPTH 9.80 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 600.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25725 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 0930 CONTRACTOR JRB
WELL ID 056B DEPTH 9.80 FEET COMPOSITE SAMPLE WATER TEMP 0

6241

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	16.000 UG/L		
CADMIUM	7440-43-9	I05	27.000 UG/L		
ZINC	7440-66-6	I14	18.000 UG/L		

****R A W   D A T A   L I S T I N G****

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   09   019

****
*** SITE DATA ***
****

SAMPLING AREA 09 STATION 019   COORDS 402996 E 1122098 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25658 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB
WELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

6113

*** ANALYSIS RESULTS ***

METHOD 625CW   SPECIFIC METHOD   ANALYSIS LAB CMTL   QUAN SIZE 960.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT				
BASE/NEUTRALS	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25659 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB
WELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

6113

*** ANALYSIS RESULTS ***

METHOD 608W   SPECIFIC METHOD   ANALYSIS LAB CMTL   QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25660 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB
WELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

6113

*** ANALYSIS RESULTS ***

METHOD ICPW   SPECIFIC METHOD   ANALYSIS LAB ERCO   QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	30.000 UG/L		
CADMIUM	7440-43-9	I05	7.000 UG/L		
CHROMIUM	7440-47-3	I06	18.000 UG/L		
COPPER	7440-50-8	I07	12.000 UG/L		
LEAD	7439-92-1	I08	71.000 UG/L		
NICKEL	7440- 2-0	I09	74.000 UG/L		
MERCURY	7439-97-6	I10	0.200 UG/L		
ZINC	7440-66-6	I14	100.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25661 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/15/80 START TIME 1630 CONTRACTOR JRB
WELL ID 110A DEPTH 4.70 FEET COMPOSITE SAMPLE WATER TEMP 0

6113

*** ANALYSIS RESULTS ***

METHOD ANION   SPECIFIC METHOD 34020   ANALYSIS LAB ERCO   QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	2000.000 UG/L		
NITRATE	0- 0-0	I16	1550.000 UG/L		

R A W   D A T A   L I S T I N G
THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   02   041

****
*** SITE DATA ***
****

SAMPLING AREA 02 STATION 041   COORDS 401082 E 1123052 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25203   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/02/80   START TIME 0900   CONTRACTOR JRB
WELL ID 031B   DEPTH 6.30 FEET   COMPOSITE SAMPLE   WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 624W   SPECIFIC METHOD   ANALYSIS LAB CMTL   QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	11.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25205   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/02/80   START TIME 0912   CONTRACTOR JRB
WELL ID 031B   DEPTH 6.30 FEET   COMPOSITE SAMPLE   WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 608W   SPECIFIC METHOD   ANALYSIS LAB CMTL   QUAN SIZE 740.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25206   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/02/80   START TIME 0910   CONTRACTOR JRB
WELL ID 031B   DEPTH 6.30 FEET   COMPOSITE SAMPLE   WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD ANION   SPECIFIC METHOD 34020   ANALYSIS LAB ERCO   QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	600.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25207   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/02/80   START TIME 0934   CONTRACTOR JRB
WELL ID 031B   DEPTH 6.30 FEET   COMPOSITE SAMPLE   WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD ICPW   SPECIFIC METHOD   ANALYSIS LAB ERCO   QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	7.000 UG/L		
COPPER	7440-50-8	I07	7.000 UG/L		
ZINC	7440-66-6	I14	75.000 UG/L		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   02   041

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25208 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0930 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML
COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT
VOLATILES BELOW DETECTION LIMIT

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25210 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0952 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.9 ML
COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT
PESTICIDES BELOW DETECTION LIMIT

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25211 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0935 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	740.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25212 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0905 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	17.000 UG/L		
ZINC	7440-66-6	I14	32.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25213 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0942 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	13.330 UG/L		C

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 041

*** SAMPLE DATA ***

SAMPLE-ID W25214 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0940 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	0.050 UG/L		
GAMMA-BHC	58-89-9	P03	0.012 UG/L		
DELTA-BHC	319-86-8	P04	0.018 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W25215 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0946 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
2,4-DICHLOROTOLUENE	95-73-8	B27	TRACE		
PHENANTHRENE	85- 1-8	B32	TRACE		
CHRYSENE	218- 1-9	B40	TRACE		

ACIDS BELOW DETECTION LIMIT

*** SAMPLE DATA ***

SAMPLE-ID W25216 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0947 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 50.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	27.000 UG/L		
MERCURY	7439-97-6	I10	TRACE		
ZINC	7440-66-6	I14	100.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W25217 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 0950 CONTRACTOR JRB
WELL ID 031B DEPTH 6.30 FEET COMPOSITE SAMPLE WATER TEMP 0

3222

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB EMSC QUAN SIZE 125.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	870.000 UG/L		SAMPLEDISTILLED
NITRATE	0- 0-0	I16	TRACE		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 041

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25471 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/08/80 START TIME 0945 CONTRACTOR JRB
WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP 0

3/22

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25472 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/08/80 START TIME 0950 CONTRACTOR JRB
WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP 0

3/22

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	5.000 UG/L		
BASE/NEUTRALS BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25473 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/08/80 START TIME 0955 CONTRACTOR JRB
WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP 0

3/22

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		
DDE	72-55-9	P10	TRACE		
DDD	72-54-8	P15	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25474 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/08/80 START TIME 0952 CONTRACTOR JRB
WELL ID 031A DEPTH 11.90 FEET COMPOSITE SAMPLE WATER TEMP 0

3/22

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	130.000 UG/L		
BERYLLIUM	7440-41-7	I04	0.800 UG/L		
CADMIUM	7440-43-9	I05	16.000 UG/L		
CHROMIUM	7440-47-3	I06	47.000 UG/L		
COPPER	7440-50-8	I07	68.000 UG/L		
LEAD	7439-92-1	I08	350.000 UG/L		
NICKEL	7440- 2-0	I09	110.000 UG/L		
ZINC	7440-66-6	I14	580.000 UG/L		

*** SITE DATA ***

SAMPLING AREA 02 STATION 043   COORDS 401285 E 1122801 N

*** SAMPLE DATA ***

SAMPLE-ID W25270 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1330 CONTRACTOR JRB
WELL ID 034A DEPTH 23.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3/23

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25272 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1339 CONTRACTOR JRB
WELL ID 034A DEPTH 23.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3/23

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	F01	TRACE		
GAMMA-BHC	58-89-9	F03	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		
ALDRIN	309- 0-2	P06	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W25273 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1335 CONTRACTOR JRB
WELL ID 034A DEPTH 23.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3/23

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	26.000 UG/L		
CHROMIUM	7440-47-3	I06	17.000 UG/L 9.9		
COPPER	7440-50-8	I07	34.000 UG/L 26		
LEAD	7439-92-1	I08	150.000 UG/L 259		
NICKEL	7440- 2-0	I09	52.000 UG/L 21		
ZINC	7440-66-6	I14	240.000 UG/L 127		

*** SAMPLE DATA ***

SAMPLE-ID W25276 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1332 CONTRACTOR JRB
WELL ID 034A DEPTH 23.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3/23

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	AC5	8.000 UG/L		
PHENANTHRENE	85- 1-8	B32	TRACE		

*** SITE DATA ***

SAMPLING AREA 03 STATION 518
COORDS 401699 E 1121277 N

*** SAMPLE DATA ***

SAMPLE-ID W20863 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1020 CONTRACTOR JRB
WELL ID 039A DEPTH 26.10 FEET COMPOSITE SAMPLE WATER TEMP 0

5114

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1000.000 UG/L		
NITRATE	0- 0-0	I16	300.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W20865 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	7.000 UG/L		

BASE/NEUTRALS BELOW DETECTION LIMIT

*** SAMPLE DATA ***

SAMPLE-ID W20866 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
GAMMA-BHC	58-89-9	P03	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W20886 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	610.000 UG/L		
NITRATE	0- 0-0	I16	240.000 UG/L		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 518

*** SAMPLE DATA ***

SAMPLE-ID W20888 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 0393 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB EMSC QUAN SIZE 125.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	750.000 UG/L		SAMPLE DISTILLED
NITRATE	0- 0-0	I16	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W20890 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 0398 DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 999.9 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W20891 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 0393 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 999.9 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT					
BASE/NEUTRALS	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W20892 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 0393 DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB EMSC QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	12.350 UG/L		
BROMODICHLOROMETHANE	75-27-4	V17	TRACE		
DIBROMOCHLOROMETHANE	124-48-1	V25	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W20916 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1020 CONTRACTOR JRB
WELL ID 039A DEPTH 26.10 FEET COMPOSITE SAMPLE WATER TEMP 0

5114

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

*** SAMPLE DATA ***

SAMPLE-ID W20917 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 0930 CONTRACTOR JRB
WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	4.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21341 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 1120 CONTRACTOR JRB
WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	180.000 UG/L		
CHROMIUM	7440-47-3	I06	21.000 UG/L		
COPPER	7440-50-8	I07	59.000 UG/L		
ZINC	7440-66-6	I14	40.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21342 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 1120 CONTRACTOR JRB
WELL ID 039B DEPTH 44.50 FEET COMPOSITE SAMPLE WATER TEMP 0

5214

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	160.000 UG/L		
CHROMIUM	7440-47-3	I06	15.000 UG/L		
COPPER	7440-50-8	I07	56.000 UG/L		
ZINC	7440-66-6	I14	15.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21344   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 09/27/80   START TIME 1115   CONTRACTOR JRB
WELL ID 039A   DEPTH 26.10 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5114

*** ANALYSIS RESULTS ***

METHOD ICPW   SPECIFIC METHOD   ANALYSIS LAB ERCO   QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	7.000 UG/L		
CADMIUM	7440-43-9	I05	5.000 UG/L		
CHROMIUM	7440-47-3	I06	9.000 UG/L		
COPPER	7440-50-8	I07	6.000 UG/L		
LEAD	7439-92-1	I08	67.000 UG/L		
ZINC	7440-66-6	I14	52.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21377   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/01/80   START TIME 0920   CONTRACTOR JRB
WELL ID 039A   DEPTH 26.10 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5114

*** ANALYSIS RESULTS ***

METHOD 608W   SPECIFIC METHOD   ANALYSIS LAB ACEE   QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21378   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/01/80   START TIME 0920   CONTRACTOR JRB
WELL ID 039A   DEPTH 26.10 FEET   COMPOSITE SAMPLE   WATER TEMP 0

5114

*** ANALYSIS RESULTS ***

METHOD 625CW   SPECIFIC METHOD   ANALYSIS LAB ACEE   QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT				
BASE/NEUTRALS	BELOW DETECTION LIMIT				

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 524

*** SITE DATA ***

SAMPLING AREA 03 STATION 524 COORDS 401681 E 1121448 N

*** SAMPLE DATA ***

SAMPLE-ID W20900 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1245 CONTRACTOR JRB
WELL ID 049A DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP 0

5112

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	103-95-2	A05	8.000 UG/L		
BASE/NEUTRALS BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W20901 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB
WELL ID 049B DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

5212

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	5.000 UG/L		
BASE/NEUTRALS BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W20902 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB
WELL ID 049B DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

5212

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W20920 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB
WELL ID 049B DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

5212

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	6.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W20973 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1300 CONTRACTOR JRB
WELL ID 049B DEPTH 39.70 FEET COMPOSITE SAMPLE WATER TEMP 0

5212

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	670.000 UG/L		
NITRATE	0- 0-0	I16	580.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21384 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 0940 CONTRACTOR JRB
WELL ID 049A DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP 0

5112

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	150.000 UG/L		
CADMIUM	7440-43-9	I05	6.000 UG/L		
CHROMIUM	7440-47-3	I06	9.000 UG/L		
COPPER	7440-50-8	I07	8.000 UG/L		
NICKEL	7440- 2-0	I09	25.000 UG/L		
SELENIUM	7782-49-2	I11	4.000 UG/L		
ZINC	7440-66-6	I14	24.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21385 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 0940 CONTRACTOR JRB
WELL ID 049A DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP 0

5112

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1600.000 UG/L		SAMPLE VOL.100ML
NITRATE	0- 0-0	I16	100.000 UG/L		SAMPLE VOL.10ML

*** SAMPLE DATA ***

SAMPLE-ID W21387 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 0945 CONTRACTOR JRB
WELL ID 049A DEPTH 21.40 FEET COMPOSITE SAMPLE WATER TEMP 0

5112

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES BELOW DETECTION LIMIT					

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 526

*** SITE DATA ***

SAMPLING AREA 03 STATION 526 COORDS 400520 E 1122860 N

*** SAMPLE DATA ***

SAMPLE-ID W25290 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1440 CONTRACTOR JRB
WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BENZENE	71-43-2	V22	8.000 UG/L		
O-XYLENE	95-47-6	V30	18.000 UG/L		
M-XYLENE	108-38-3	V31	18.000 UG/L		
TOLUENE	108-88-3	V34	37.000 UG/L		
ETHYL BENZENE	100-41-4	V39	7.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W25291 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1448 CONTRACTOR JRB
WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACENAPHTYLENE	208-96-8	B19	TRACE		
PHENANTHRENE	85- 1-8	B32	TRACE		
ACIDS	BELOW DETECTION LIMIT				

*** SAMPLE DATA ***

SAMPLE-ID W25292 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/02/80 START TIME 1450 CONTRACTOR JRB
WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
BETA-BHC	319-85-7	P02	TRACE		
GAMMA-BHC	58-89-9	P03	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		
ALDRIN	309- 0-2	P06	TRACE		
DDT	50-29-3	P17	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25293 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1445 CONTRACTOR JRB
WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	25.000 UG/L		
CHROMIUM	7440-47-3	I06	24.000 UG/L		
COPPER	7440-50-8	I07	27.000 UG/L		
LEAD	7439-92-1	I08	220.000 UG/L		
NICKEL	7440- 2-0	I09	39.000 UG/L		
ZINC	7440-66-6	I14	200.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25294 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1447 CONTRACTOR JRB
WELL ID 032A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3133

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	910.000 UG/L		
NITRATE	0- 0-0	I16	1900.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20015 MEDIUM H2O SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0720 CONTRACTOR GEOME
WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 0.3 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20016 MEDIUM H2O SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0720 CONTRACTOR GEOME
WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 0.3 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION	BELOW DETECTION LIMIT				

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   04   508

****
*** SITE DATA ***
****

SAMPLING AREA 04 STATION 508

COORDS 401840 E 1124260 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25327 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1644 CONTRACTOR JRB
WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3151

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410. ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ANTIMONY	7440-36-0	I01	240.000 UG/L		
BARIUM	7440-39-3	I03	420.000 UG/L		
CADMIUM	7440-43-9	I05	6.000 UG/L		
CHROMIUM	7440-47-3	I06	36.000 UG/L		
NICKEL	7440- 2-0	I09	86.000 UG/L		
THALLIUM	7440-28-0	I13	62.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25328 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1645 CONTRACTOR JRB
WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3151

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 100.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	930.000 US/L		VOL=10CML

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25330 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1642 CONTRACTOR JRB
WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3151

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB GSNO QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	TRACE		
2,4-DICHLOROPHENOL	120-83-2	A07	TRACE		
DIETHYLPHTHALATE	84-66-2	B28	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25331 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1647 CONTRACTOR JRB
WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3151

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB GSLA QUAN SIZE 999.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	0.012 UG/L		
BETA-BHC	319-85-7	P02	0.010 UG/L		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 04 508

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25334 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/03/80 START TIME 1640 CONTRACTOR JRB
WELL ID 090A DEPTH 22.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3151

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB GSNO QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BENZENE	71-43-2	V22	TRACE		
P-XYLENE	106-42-3	V32	TRACE		
TETRACHLOROETHENE	127-18-4	V33	TRACE		
ETHYL BENZENE	100-41-4	V39	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20032 MEDIUM H2O SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0730 CONTRACTOR GEOME
WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 0.3 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20033 MEDIUM H2O SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0730 CONTRACTOR GEOME
WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 0.3 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20034 MEDIUM H2O SOURCE STORM SAMPLE DATE 08/10/80 START TIME 0740 CONTRACTOR GEOME
WELL ID 000 DEPTH 10.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 0.3 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
RADIATION BELOW DETECTION LIMIT					

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 08. . 020

*** SITE DATA ***

SAMPLING AREA 08 STATION 020 COORDS 402837 E 1120865 N

*** SAMPLE DATA ***

SAMPLE-ID W25678 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/22

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 930.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT					
BASE/NEUTRALS	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25679 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/22

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 830.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W25680 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/22

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	45.000 UG/L		
CADMIUM	7440-43-9	I05	44.000 UG/L		
CHROMIUM	7440-47-3	I06	23.000 UG/L		
COPPER	7440-50-8	I07	16.000 UG/L		
LEAD	7439-92-1	I08	91.000 UG/L		
NICKEL	7440- 2-0	I09	30.000 UG/L		
ZINC	7440-66-6	I14	44.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W25681 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103A DEPTH 10.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6/22

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1400.000 UG/L		
NITRATE	0- 0-0	I16	2215.000 UG/L		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 .08 020

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25682 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103B DEPTH 9.40 FEET COMPOSITE SAMPLE WATER TEMP 0

6222

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25683 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103B DEPTH 9.40 FEET COMPOSITE SAMPLE WATER TEMP 0

6222

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
DI-N-OCTYLPHTHALATE		117-84-0	841	16.000 UG/L		
ACIDS	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25684 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103B DEPTH 9.40 FEET COMPOSITE SAMPLE WATER TEMP 0

6222

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 930.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25685 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/15/80 START TIME 1730 CONTRACTOR JRB
WELL ID 103B DEPTH 9.40 FEET COMPOSITE SAMPLE WATER TEMP 0

6222

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	36.000 UG/L		
CADMIUM	7440-43-9	I05	7.000 UG/L		
COPPER	7440-50-8	I07	7.000 UG/L		
ZINC	7440-66-6	I14	37.000 UG/L		

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 039

*** SAMPLE DATA ***

SAMPLE-ID W20808 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/18/80 START TIME 1130 CONTRACTOR JRB
WELL ID 0293 DEPTH 36.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3211

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB PJBL QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
2-CHLOROPHENOL	95-57-8	A01	42.000 UG/L		SEE J41-0516
3-CHLOROPHENOL	108-43-0	A02	33.000 UG/L		
PHENOL	108-95-2	A05	33.000 UG/L		SEE J41-0516
2,4-DIMETHYLPHENOL	105-67-9	A06	53.000 UG/L		
2,4-DICHLOROPHENOL	120-83-2	A07	30.000 UG/L		SEE J41-0516
1,4-DICHLOROBENZENE	106-46-7	B02	TRACE		
1,3-DICHLOROBENZENE	541-73-1	B03	15.000 UG/L		
1,2-DICHLOROBENZENE	95-50-1	B04	15.000 UG/L		
NAPHTHALENE	91-20-3	B14	TRACE		
BIS(2-CHLOROETHOXY)METHANE	111-91-1	B15	14.000 UG/L		
ACENAPHTHENE	83-32-9	B20	22.000 UG/L		
N-NITROSODIPHENYLAMINE	86-30-6	B29	14.000 UG/L		
ANTHRACENE	120-12-7	B33	9.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W20809 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/18/80 START TIME 1130 CONTRACTOR JRB
WELL ID 0293 DEPTH 36.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3211

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB PJBL QUAN SIZE 999.9 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT					

*** SAMPLE DATA ***

SAMPLE-ID W21235 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB
WELL ID 029A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3111

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	2.000 UG/L		
BROMODICHLOROMETHANE	75-27-4	V17	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W21236 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB
WELL ID 029A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3111

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT					
BASE/NEUTRALS	BELOW DETECTION LIMIT					

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 039

*** SAMPLE DATA ***

SAMPLE-ID W21285 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/29/80 START TIME 1220 CONTRACTOR JRB
WELL ID 029B DEPTH 36.50 FEET COMPOSITE SAMPLE WATER TEMP 0

3211

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	46.000 UG/L		
CADMIUM	7440-43-9	I05	5.000 UG/L		
ZINC	7440-66-6	I14	27.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21303 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB
WELL ID 029A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3111

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	42.000 UG/L		
CHROMIUM	7440-47-3	I06	87.000 UG/L	94	
COPPER	7440-50-8	I07	40.000 UG/L	190	
LEAD	7439-92-1	I08	80.000 UG/L	212	
NICKEL	7440- 2-0	I09	130.000 UG/L	198	
ZINC	7440-66-6	I14	66.000 UG/L	224	

*** SAMPLE DATA ***

SAMPLE-ID W21304 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/24/80 START TIME 1630 CONTRACTOR JRB
WELL ID 029A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3111

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1500.000 UG/L		
NITRATE	0- 0-0	I16	2600.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21364 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1540 CONTRACTOR JRB
WELL ID 029A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3111

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
BETA-BHC	319-85-7	P02	TRACE		
GAMMA-BHC	58-89-9	P03	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		

****
*** SITE DATA ***
****

SAMPLING AREA 02 STATION 040   COORDS 401594 E 1123205 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21338 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1145 CONTRACTOR JRB
WELL ID 030A DEPTH 25.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
BETA-BHC	319-85-7	P02	TRACE		
GAMMA-BHC	58-89-9	P03	TRACE		
DELTA-BHC	319-86-8	P04	2.000 UG/L		
DIELDRIN	60-57-1	P13	TRACE		
DDT	50-29-3	P17	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25083 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1140 CONTRACTOR JRB
WELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
1,1,1-TRICHLOROETHANE	71-55-6	V14	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25084 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1142 CONTRACTOR JRB
WELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT					
BASE/NEUTRALS	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25085 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1144 CONTRACTOR JRB
WELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1200.000 UG/L		SAMPLE VOL.100ML
NITRATE	0- 0-0	I16	200.000 UG/L		SAMPLE VOL.10ML

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 040

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25086 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1143 CONTRACTOR JRB
WELL ID 030A DEPTH 19.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3112

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	FC	CONCENTRATION	REPORTED CONC	COMMENT
ANTIMONY	7440-36-0	I01	190.000 UG/L	<10	
ARSENIC	7440-38-2	I02	2.000 UG/L	12	
BARIUM	7440-39-3	I03	43.000 UG/L		
CADMIUM	7440-43-9	I05	2.000 UG/L	<10	
CHROMIUM	7440-47-3	I06	28.000 UG/L	78	
COPPER	7440-50-8	I07	10.000 UG/L	82	
LEAD	7439-92-1	I08	48.000 UG/L	329	
NICKEL	7440- 2-0	I09	64.000 UG/L	124	
SELENIUM	7782-49-2	I11	10.000 UG/L	<10	
THALLIUM	7440-28-0	I13	52.000 UG/L	<10	
ZINC	7440-66-6	I14	84.000 UG/L	279	

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 02 044

****
*** SITE DATA ***
****

SAMPLING AREA 02 STATION 044 COORDS 401648 E 1122585 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21372 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1027 CONTRACTOR JRB
WELL ID 035A DEPTH 22.00 FEET GRAB SAMPLE WATER TEMP 0

3113

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
BETA-BHC	319-85-7	P02	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21373 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1022 CONTRACTOR JRB
WELL ID 035A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3113

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT				
BASE/NEUTRALS	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21374 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1020 CONTRACTOR JRB
WELL ID 035A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3113

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21375 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 1025 CONTRACTOR JRB
WELL ID 035A DEPTH 22.00 FEET COMPOSITE SAMPLE WATER TEMP 0

3113

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	810.000 UG/L		SAMPLE VOL.100ML
NITRATE	0- 0-0	I16	200.000 UG/L		SAMPLE VOL.10ML

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   02   044

****

*** SAMPLE DATA ***

****

SAMPLE-ID W21376   MEDIUM H2O   SOURCE GRH2O   SAMPLE DATE 10/01/80   START TIME 1024   CONTRACTOR JRB
WELL ID .035A   DEPTH   22.00 FEET   COMPOSITE SAMPLE   WATER TEMP   0

3113

*** ANALYSIS RESULTS ***

METHOD AASFW   SPECIFIC METHOD 20410   ANALYSIS LAB PJBL   QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ANTIMONY	7440-36-0	I01	280.000 UG/L	<10	
ARSENIC	7440-38-2	I02	5.000 UG/L	11	
BARIUM	7440-39-3	I03	570.000 UG/L		
CADMIUM	7440-43-9	I05	8.000 UG/L	11	
CHROMIUM	7440-47-3	I06	30.000 UG/L	52	
COPPER	7440-50-8	I07	12.000 UG/L	85	
LEAD	7439-92-1	I08	24.000 UG/L	260	
NICKEL	7440- 2-0	I09	160.000 UG/L	126	
SILVER	7440-22-4	I12	6.000 UG/L	<3	
THALLIUM	7440-28-0	I13	76.000 UG/L	<10	
ZINC	7440-66-6	I14	220.000 UG/L	310	

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 515

*** SITE DATA ***

SAMPLING AREA 03 STATION 515 COORDS 401390 E 1122128 N

*** SAMPLE DATA ***

SAMPLE-ID W25280 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1520 CONTRACTOR JRB
WELL ID 036A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5122

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

*** SAMPLE DATA ***

SAMPLE-ID W25281 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1527 CONTRACTOR JRB
WELL ID 036A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5122

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
GAMMA-BHC	58-89-9	P03	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		
DDE	72-55-9	P10	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W25282 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1522 CONTRACTOR JRB
WELL ID 036A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5122

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENANTHRENE	85- 1-8	B32	TRACE		
ACIDS	BELOW DETECTION LIMIT				

*** SAMPLE DATA ***

SAMPLE-ID W25283 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1528 CONTRACTOR JRB
WELL ID 036A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1100.000 UG/L		
NITRATE	0- 0-0	I16	2200.000 UG/L		

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   03   515

****
*** SAMPLE DATA ***
****

SAMPLE-ID W25264 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/02/80 START TIME 1525 CONTRACTOR JRB
WELL ID 036A DEPTH 20.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5/22

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	17.000 UG/L		
CADMIUM	7440-43-9	I05	8.000 UG/L		
CHROMIUM	7440-47-3	I06	22.000 UG/L		
COPPER	7440-50-8	I07	23.000 UG/L		
LEAD	7439-92-1	I08	110.000 UG/L		
NICKEL	7440- 2-0	I09	46.000 UG/L		
ZINC	7440-66-6	I14	75.000 UG/L		

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   06   011

****
*** SITE DATA ***
****

SAMPLING AREA 06 STATION 011

COORDS 402739 E 1122217 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21579 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1020 CONTRACTOR JRB
WELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21580 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1028 CONTRACTOR JRB
WELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 160.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
DI-N-OCTYLPHTHALATE		117-84-0	B41	48.000 UG/L		
ACIDS	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21581 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1028 CONTRACTOR JRB
WELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 940.0 ML

COMPOUND		CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT					

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21582 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1027 CONTRACTOR JRB
WELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ARSENIC	7440-38-2	I02	19.000 UG/L		
BARIUM	7440-39-3	I03	150.000 UG/L		
CADMIUM	7440-43-9	I05	2.000 UG/L		
CHROMIUM	7440-47-3	I06	180.000 UG/L		
COPPER	7440-50-8	I07	95.000 UG/L		
LEAD	7439-92-1	I08	290.000 UG/L		
NICKEL	7440- 2-0	I09	190.000 UG/L		
ZINC	7440-66-6	I14	260.000 UG/L		

****RAW DATA LISTING****

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 06 011

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21583 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1028 CONTRACTOR JRB
WELL ID 066A DEPTH 15.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6111

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1300.000 UG/L		VOL 200
NITRATE	0- 0-0	I16	200.000 UG/L		VOL 25

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21584 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1035 CONTRACTOR JRB
WELL ID 066B DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

6211

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21585 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1038 CONTRACTOR JRB
WELL ID 066B DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

6211

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 940.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT				
BASE/NEUTRALS	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21586 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1045 CONTRACTOR JRB
WELL ID 066B DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

6211

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21587 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1039 CONTRACTOR JRB
WELL ID 066B DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

6211

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ANTIMONY	7440-36-0	I01	60.000 UG/L		

6211

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 06 011

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	44.000 UG/L		
CHROMIUM	7440-47-3	I06	16.000 UG/L		
COPPER	7440-50-8	I07	12.000 UG/L		
LEAD	7439-92-1	I08	60.000 UG/L		
NICKEL	7440- 2-0	I09	37.000 UG/L		
SILVER	7440-22-4	I12	8.000 UG/L		
ZINC	7440-66-6	I14	41.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21588 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1041 CONTRACTOR JRB
WELL ID 066B DEPTH 13.50 FEET COMPOSITE SAMPLE WATER TEMP 0

6211

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1200.000 UG/L		VOL.200
NITRATE	0- 0-0	I16	100.000 UG/L		VOL 25

****
*** SAMPLE DATA ***
****

SAMPLE-ID S40754 MEDIUM SOIL SOURCE HOME SAMPLE DATE 10/03/80 START TIME 0830 CONTRACTOR GEOME
WELL ID 000 DEPTH 6.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 334.0 GRAM

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
K-STABLE POTASSIUM	0- 0-0	R01	0.011 GM/GM		
RADIUM-226	0- 0-0	R04	0.563 PC/GM		

****
*** SAMPLE DATA ***
****

SAMPLE-ID S40755 MEDIUM SOIL SOURCE HOME SAMPLE DATE 10/03/80 START TIME 0830 CONTRACTOR GEOME
WELL ID 000 DEPTH 6.00 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD RAD SPECIFIC METHOD GAMMA ANALYSIS LAB EMSV QUAN SIZE 325.0 GRAM

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
K-STABLE POTASSIUM	0- 0-0	R01	0.010 GM/GM		
RADIUM-226	0- 0-0	R04	0.412 PC/GM		

****
*** SAMPLE DATA ***
****

SAMPLE-ID S45073 MEDIUM SOIL SOURCE HOME SAMPLE DATE 10/03/80 START TIME 0830 CONTRACTOR GEOME
WELL ID 000 DEPTH 6.00 FEET GRAB SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD 624PS SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 10.0 GRAM

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 07 020

****
*** SITE DATA ***
****

SAMPLING AREA 07 STATION 020 COORDS 402935 E 1122487 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21354 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1426 CONTRACTOR JRB
WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

4134

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21358 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1428 CONTRACTOR JRB
WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

4134

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ANTIMONY	7440-36-0	I01	210.000 UG/L		
ARSENIC	7440-38-2	I02	3.000 UG/L		
BARIUM	7440-39-3	I03	320.000 UG/L		
CADMIUM	7440-43-9	I05	2.000 UG/L		
CHROMIUM	7440-47-3	I06	74.000 UG/L		
COPPER	7440-50-8	I07	32.000 UG/L		
LEAD	7439-92-1	I08	120.000 UG/L		
NICKEL	7440- 2-0	I09	150.000 UG/L		
SELENIUM	7782-49-2	I11	6.000 UG/L		
THALLIUM	7440-28-0	I13	32.000 UG/L		
ZINC	7440-66-6	I14	100.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21359 MEDIUM H20 SOURCE GRH20 SAMPLE DATE 10/03/80 START TIME 1430 CONTRACTOR JRB
WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

4134

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB PJBL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1300.000 UG/L		SAMPLE VOL.100ML
NITRATE	0- 0-0	I16	200.000 UG/L		SAMPLE VOL.10ML

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   07   020

****

*** SAMPLE DATA ***

****

SAMPLE-ID W21360 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/03/80 START TIME 1433 CONTRACTOR JRB
WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

4134

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ALPHA-BHC	319-84-6	P01	TRACE		
BETA-BHC	319-85-7	P02	TRACE		
GAMMA-BHC	58-89-9	P03	TRACE		
HEPTACHLOR	76-44-8	P05	TRACE		
ALDRIN	309- 0-2	P06	TRACE		

****

*** SAMPLE DATA ***

****

SAMPLE-ID W21361 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/03/80 START TIME 1428 CONTRACTOR JRB
WELL ID 020A DEPTH 21.50 FEET COMPOSITE SAMPLE WATER TEMP 0

4134

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACENAPHTYLENE	208-96-8	B19	TRACE		
FLUORENE	86-73-7	B23	TRACE		
PHENANTHRENE	85- 1-8	B32	2.000 UG/L		

ACIDS BELOW DETECTION LIMIT

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 516

*** SITE DATA ***

SAMPLING AREA 03 STATION 516 COORDS 401652 E 1121825 N

*** SAMPLE DATA ***

SAMPLE-ID W20873 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1400 CONTRACTOR JRB
WELL ID 037B DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	820.000 UG/L		
NITRATE	0- 0-0	I16	670.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W20877 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1356 CONTRACTOR JRB
WELL ID 037B DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

5211

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
CHLOROFORM	67-66-3	V11	7.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W20904 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1400 CONTRACTOR JRB
WELL ID 037B DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

5211

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
GAMMA-BHC	58-89-9	P03	TRACE		

*** SAMPLE DATA ***

SAMPLE-ID W20905 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1400 CONTRACTOR JRB
WELL ID 037B DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

5211

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	14.000 UG/L		

BASE/NEUTRALS BELOW DETECTION LIMIT

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   03   516

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20906 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1420 CONTRACTOR JRB
WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5/11

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BETA-BHC	319-85-7	P02	TRACE		
GAMMA-BHC	58-89-9	P03	TRACE		
ALDRIN	309- 0-2	P06	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20907 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1414 CONTRACTOR JRB
WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5/11

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	4.000 UG/L		

BASE/NEUTRALS BELOW DETECTION LIMIT

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20971 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1416 CONTRACTOR JRB
WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5/11

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	760.000 UG/L		
NITRATE	0- 0-0	I16	270.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21230 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/26/80 START TIME 0900 CONTRACTOR JRB
WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5/11

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND CAS PC CONCENTRATION REPORTED CONC COMMENT

VOLATILES BELOW DETECTION LIMIT

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 516

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21340 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 1050 CONTRACTOR JRB
WELL ID 037A DEPTH 24.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5111

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	3.000 UG/L		
ZINC	7440-66-6	I14	7.000 UG/L	207	

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21346 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 1055 CONTRACTOR JRB
WELL ID 037B DEPTH 24.20 FEET COMPOSITE SAMPLE WATER TEMP 0

5211

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	14.000 UG/L		
COPPER	7440-50-8	I07	9.000 UG/L	52	
ZINC	7440-66-6	I14	27.000 UG/L	495	

* * R A W   D A T A   L I S T I N G * *

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   03   525

****
*** SITE DATA ***
****

SAMPLING AREA 03 STATION 525   COORDS 401669 E 1121261 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20868 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1200 CONTRACTOR JRB
WELL ID 050B DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 1.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	9.000 UG/L		
PHENANTHRENE	85- 1-8	B32	TRACE		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20870 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1200 CONTRACTOR JRB
WELL ID 050B DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	1370.000 UG/L		
NITRATE	0- 0-0	I16	220.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20871 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1230 CONTRACTOR JRB
WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5113

*** ANALYSIS RESULTS ***

METHOD ANION SPECIFIC METHOD 34020 ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
FLUORIDE	0- 0-0	I15	3100.000 UG/L		
NITRATE	0- 0-0	I16	970.000 UG/L		

****
*** SAMPLE DATA ***
****

SAMPLE-ID W20872 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1230 CONTRACTOR JRB
WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5113

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PHENOL	108-95-2	A05	12.000 UG/L		

BASE/NEUTRALS BELOW DETECTION LIMIT

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 525

*** SAMPLE DATA ***

SAMPLE-ID W20921 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1200 CONTRACTOR JRB
WELL ID 050B DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

*** SAMPLE DATA ***

SAMPLE-ID W20922 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/22/80 START TIME 1230 CONTRACTOR JRB
WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5113

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
1,2-DICHLOROETHANE	107- 6-2	V12	17.000 UG/L		

*** SAMPLE DATA ***

SAMPLE-ID W21337 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 1105 CONTRACTOR JRB
WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5113

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	12.000 UG/L		
CADMIUM	7440-43-9	I05	13.000 UG/L	<10	
CHROMIUM	7440-47-3	I06	26.000 UG/L	21	
COPPER	7440-50-8	I07	15.000 UG/L	45	
LEAD	7439-92-1	I08	53.000 UG/L	178	
NICKEL	7440- 2-0	I09	36.000 UG/L	68	
ZINC	7440-66-6	I14	70.000 UG/L	198	

*** SAMPLE DATA ***

SAMPLE-ID W21339 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 09/27/80 START TIME 1110 CONTRACTOR JRB
WELL ID 050B DEPTH 38.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5213

*** ANALYSIS RESULTS ***

METHOD ICPW SPECIFIC METHOD ANALYSIS LAB ERCO QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	5.000 UG/L		
ZINC	7440-66-6	I14	45.000 UG/L	171	

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82 03 525

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21366 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/01/80 START TIME 0930 CONTRACTOR JRB
WELL ID 050A DEPTH 28.00 FEET COMPOSITE SAMPLE WATER TEMP 0

5113

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB ACEE QUAN SIZE 999.9 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

RAW DATA LISTING

THIS REPORT IS BASED ON VALIDATED DATA ENTERED INTO THE SYSTEM THROUGH 02/17/82   08   011

****
*** SITE DATA ***
****

SAMPLING AREA 08 STATION 011

COORDS 402726 E 1121650 N

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21619 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1115 CONTRACTOR JRB
WELL ID 068A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6112

*** ANALYSIS RESULTS ***

METHOD 624W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 5.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
VOLATILES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21620 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1125 CONTRACTOR JRB
WELL ID 068A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6112

*** ANALYSIS RESULTS ***

METHOD 625CW SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 0.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
ACIDS	BELOW DETECTION LIMIT				
BASE/NEUTRALS	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21621 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1119 CONTRACTOR JRB
WELL ID 068A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6112

*** ANALYSIS RESULTS ***

METHOD 608W SPECIFIC METHOD ANALYSIS LAB CMTL QUAN SIZE 930.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
PESTICIDES	BELOW DETECTION LIMIT				

****
*** SAMPLE DATA ***
****

SAMPLE-ID W21622 MEDIUM H2O SOURCE GRH2O SAMPLE DATE 10/09/80 START TIME 1119 CONTRACTOR JRB
WELL ID 068A DEPTH 14.00 FEET COMPOSITE SAMPLE WATER TEMP 0

6112

*** ANALYSIS RESULTS ***

METHOD AASFW SPECIFIC METHOD 20410 ANALYSIS LAB PJBL QUAN SIZE 200.0 ML

COMPOUND	CAS	PC	CONCENTRATION	REPORTED CONC	COMMENT
BARIUM	7440-39-3	I03	65.000 UG/L		
CADMIUM	7440-43-9	I05	6.000 UG/L		
CHROMIUM	7440-47-3	I06	14.000 UG/L		
COPPER	7440-50-8	I07	14.000 UG/L		
LEAD	7439-92-1	I08	85.000 UG/L		
NICKEL	7440- 2-0	I09	33.000 UG/L		
ZINC	7440-66-6	I14	160.000 UG/L		

TABLE 3

Table and Map of Positive Analytical Results Before and After the Drainage System Installation

EXPLANATION FOR THE THREE CHARTS

1. The charts are a comparison of the United States Environmental Protection Agency (USEPA) results taken two to four years ago and recent New York State Department of Environmental Conservation (NYSDEC) results.

2. The only wells listed are ones outside the fence where there are old USEPA results and recent NYSDEC results.

3. The only compounds listed are ones that showed up positive either in previous or current testing.

4. The numbers on top represent recent NYSDEC results and the numbers on the bottom are the old USEPA results.

5. All units of concentration are ug/l.

Love Canal Groundwater Monitoring Program

Well I.D. Number

	3222	3122	3123	3133	5114	5214	5112	5212	3151	6113	6141	6241	3111	3112	3113	6112	5111	5211	5113	5213	6122	6222	6111	6211	4134	5122
A-BHC	<10 0.05	<10 trace	<10 trace	<10 trace					<10 0.012				0.15 trace	<.005 trace	<.005 trace	0.69 < DL						0.56 < DL	3.9 < DL		0.64 trace	<.005 trace
Lindane	<10 0.012		<10 trace	<10 trace		<10 trace							0.74 trace	<.005 trace		2.0 < DL	<.005 trace	<.005 trace				0.36 < DL	2.4 < DL		0.49 trace	0.56 trace
B-BHC				<10 trace					<10 0.010				<.005 trace	2.0 trace	<.005 trace	13 < DL	<.005 trace					2.1 < DL	9.3 < DL		11 trace	
Heptachlor		<10 trace	<10 trace	<10 trace	13 < DL										<.005 trace	0.58 < DL							17 < DL		32 trace	<.005 trace
D-BHC	<10 .018				11 < DL									<.005 2								2.8 < DL				
Aldrin			<10 trace	<10 trace	49 < DL											2.1 < DL	<.005 trace								0.89 trace	
Hept. Epox.					30 < DL								1.1 < DL													
Dieldrin					14 < DL									<.005 trace												
pp DDE		<10 trace																								<.005 trace
Endosulfan					13 < DL																					
DDT				<10 trace										<.01 trace												
DDD		<10 trace																								

(1) All concentrations in ug/l (ppb.)

(2) $\boxed{\begin{array}{c}<10\\0.05\end{array}}$ - DEC results / - USEPA results

(3) Trace means present in low levels, but not quantified

(4) <DL means below the detection limit of that compound

Love Canal Groundwater Monitoring Program

Well I.D. Number

Compound	3222	3122	3123	3133	5114	5214	5112	5212	3151	6113	6141	6241	3111	3112	3113	6112	5111	5211	5113	5213	6122	6222	6111	6211	4134	5122
Ag															<3 6									<3 8		
Be		<20 0.8											1.5 < DL	1.7 < DL	1.4 < DL			2.6 < DL					2.2 < DL			
Cd		<20 16			<20 5		<20 6		<20 6	<40 7	10 10	11 27		<10 2	11 8	<10 6			<10 13		<10 44	<10 7	< DL 2		<10 2	21 8
Cr		<100 47	<100 17	<100 24	<100 9	<100 21	<100 9		<100 36	<100 18	8.5 < DL	5.3 < DL	84 87	78 28	52 30	28 14	6.4 < DL	22 < DL	21 26	9.5 < DL	14 23	6.9 < DL	236 180	< 4 16	21 74	5.4 22
Cu	<50 7	<50 68	<50 34	<50 27	<50 6	<50 59	<50 8			<50 12	23 < DL		190 40	82 10	85 12	58 14	26 < DL	52 9	45 15	32 < DL	< 2 16	21 7	304 95	< 2 12	< 2 32	25 23
Ni		<50 110	<50 52	<50 39			<50 25		<50 86	110 74	29 < DL		198 130	124 64	126 160	58 33	35 < DL	162 < DL	68 36	20 < DL	23 30		304 190	<15 37	49 150	35 46
Pb		<100 350	<100 150	<100 220	<100 27					<100 71	302 61	184 < DL	212 80	329 48	260 24	122 85	107 < DL	472 < DL	198 53	568 < DL	206 91	78 < DL	696 290	91 60	142 120	82 110
Zn	90 75	730 580	140 240	180 200	260 52	90 40	180 24	130 <DL	2500 <DL	200 100	135 48	79 18	224 66	279 84	310 220	120 160	209 7	495 27	178 70	171 45	109 44	56 37	348 260	80 41	122 100	33 75
As													16 < DL	12 2	11 5			21 < DL					56 19		<10 3	
Hg	<0.2 trace									<0.2 0.2					.21 < DL								0.21 < DL			
Se							<5 4							<10 10											<10 6	
Sb									<1000 240					<10 190	<10 280									<10 60	<10 210	
Tl									<1000 62					<10 52	<10 76										<10 32	

(1) All concentrations in ug/l (ppb.)

(2) 14 - DEC results
<10 - USEPA results

(3) Trace means present in low levels, but not quanitfied

(4) <DL means below the detection limit of that compound

Love Canal Groundwater Monitoring Program

Well I.D. Number

	3222	3122	3123	3133	5114	5214	5112	5212	3151	6113	6141	6241	3111	3112	3113	6112	5111	5211	5113	5213	6122	6222	6111	6211	4134	5122
Benzene				< 1 8					< 1 trace																	
1,1,2,2-tetra-chloroethane																										
Toluene				< 1 37																						
Dibromo-chloro-methane						< 1 trace																				
O-Xylene				< 1 18																						
M-Xylene				< 1 18																						
Ethyl Benzene				< 1 7					< 1 trace																	
Diethyl-phthalate									<10 trace																	
P-Xylene									< 1 trace																	
Tetrachloroethane									< 1 trace																	
Methylene-chloride																		42 < DL								
Fluoroanthene									23 <DL																	
Pyrene									31 <DL																	
Endosulfan Sulfate									15 <DL																	

(1) All concentrations in ugl/l (ppb.)

(2) <1 - DEC results
8 - USEPA results

(3) Trace means present in low levels, but not quantified

(4) <DL means below the detection limit of that compound

ATTACHMENT A

INTERIM GROUNDWATER MONITORING PROGRAM
LOVE CANAL SITE

INTERIM GROUNDWATER MONITORING PROGRAM
LOVE CANAL SITE
NIAGARA FALLS, NEW YORK

The following maps show the concentrations of the major pollutants that have shown up in the wells inside the fence at Love Canal. Other pollutants have shown up but not in high enough concentrations or frequently enough to be a reliable indicator of Love Canal contamination. The results reflect data collected from June 17, 1981 through March 25, 1983. The individual compounds have been put on two maps each. One showing only overburden wells and the other showing only bedrock wells. The compounds included are:

Methylene Chloride
Bis (2-Et-Hexyl) phthlate
Chloroform
Trichloroethylene
1,2-Dichlorobenzene (O)
1,4-Dichlorobenzene (P)
Toluene
Chlorobenzene
1,2,4-Trichlorobenzene
2,4-Dichlorophenol
Tetrachloroethylene
Benzene
1,1,2,2-Tetrachloroethane

All but one of these compounds falls into two classes (volatiles and base neutrals). The remaining compound (2,4-Dichlorophenol) shows up in only one well (5101). The sandy loam and the desiccated silty clay layers of soil shows the largest amount of contamination. Wells located at this depth would probably show the first signs of a spread in the contamination. Well numbers 1160 (A and C), 1161C, 1163 (A and C), 4103 and 5101 have shown the largest concentration of contaminants. They would supply the most information for long term temperal trend analyses.

The bedrock wels have shown up clean except 4204, 4207, 5201, and 6207. Of these four, only 5201 has shown more than one different kind of contaminant. Well number 5201 is close to six of the seven most contaminated wells and near the leachate drainage system. This would probably be the best bedrock well to monitor to check on the downward migration of contaminants.

A monitoring program to meet the needs of early detection of a spread of contaminants along with long term analyses should consist of testing for volatiles and base/neutrals on the following schedule:

1st and 3rd Quarter	2nd and 4th Quarter
1160 (A and C), 1161C 4103, 4 bedrock wells (other than 5201) and 16 random overburden wells	1163 (A and C), 5101 5201, 3 bedrock wells other than 5201) and 17 random overburden wells

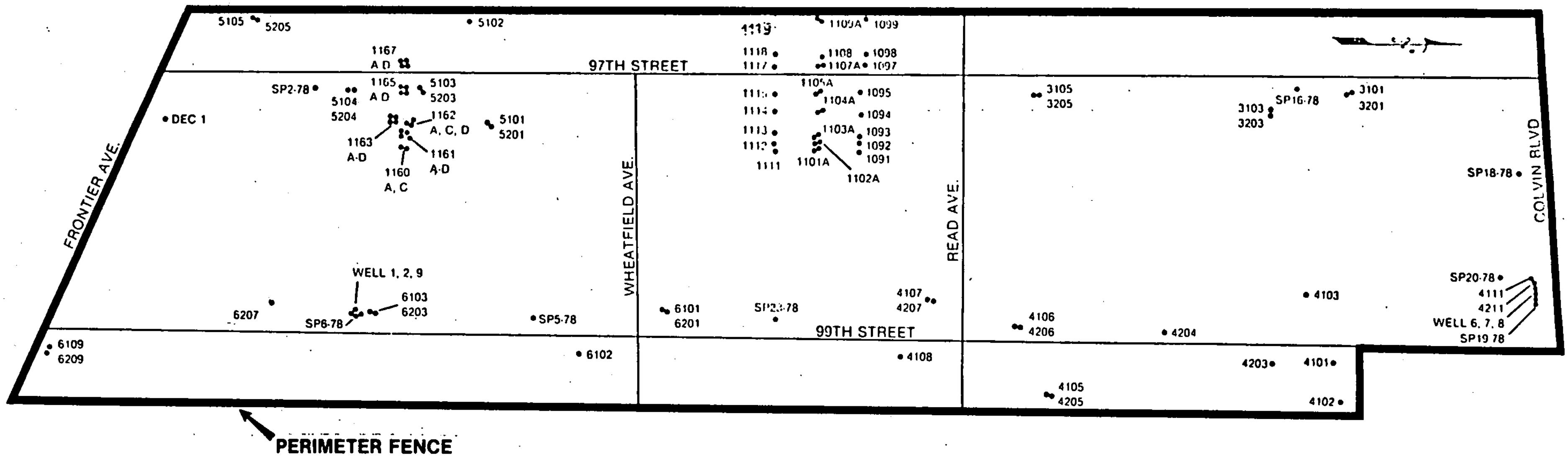
This schedule will result in water quality samples being taken at all the wells on-site (within the perimeter fence), during an 18 month period.

Twenty-four (24) off-site wells were sampled July 11 and 12, 1984. There are 16 wells, other than these 24, with risers that will also be sampled. When the results come back, any wells showing contamination will be resampled along with nearby wells. This will verify the results and check for the further spread of contamination.

Groundwater elevations of all the on-site wells and the 40 off-site wells (with risers) will be taken monthly.

FIGURE B.1

LOVE CANAL GROUNDWATER MONITORING PROGRAM



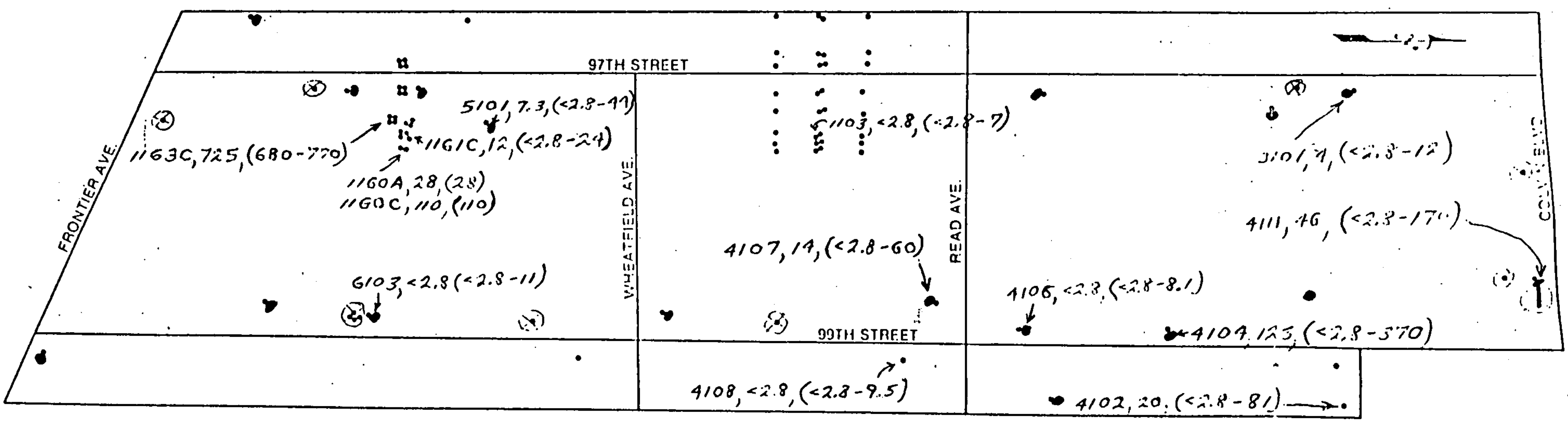
Methylene Chloride (ppb)
Overburden Wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

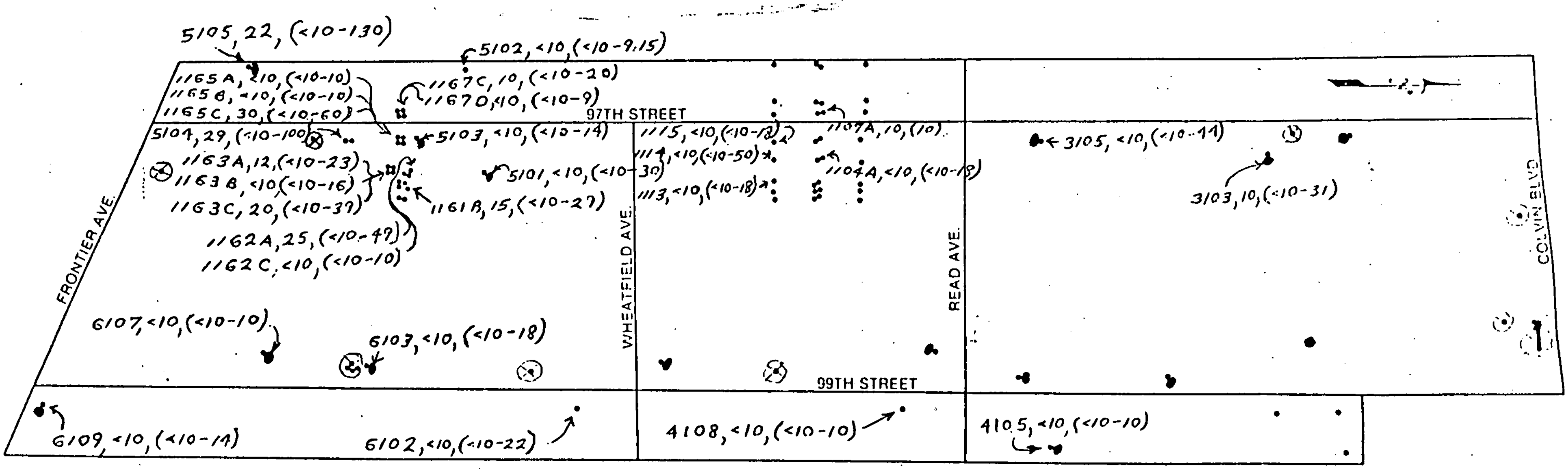
Bis (2-Et-Hexyl) phthlate (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil); silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

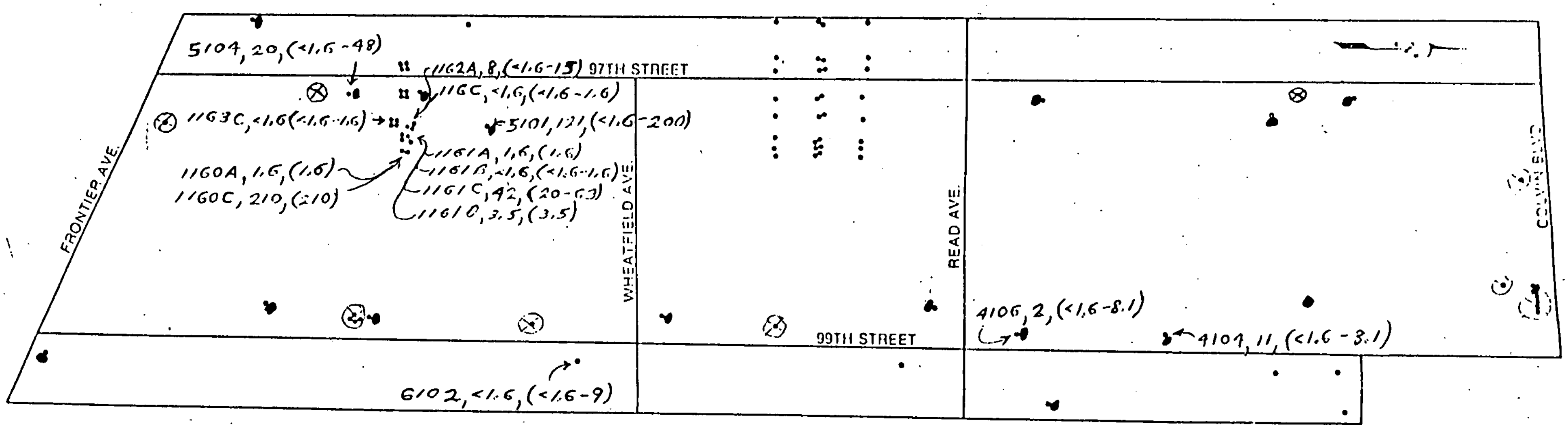
Chloroform (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

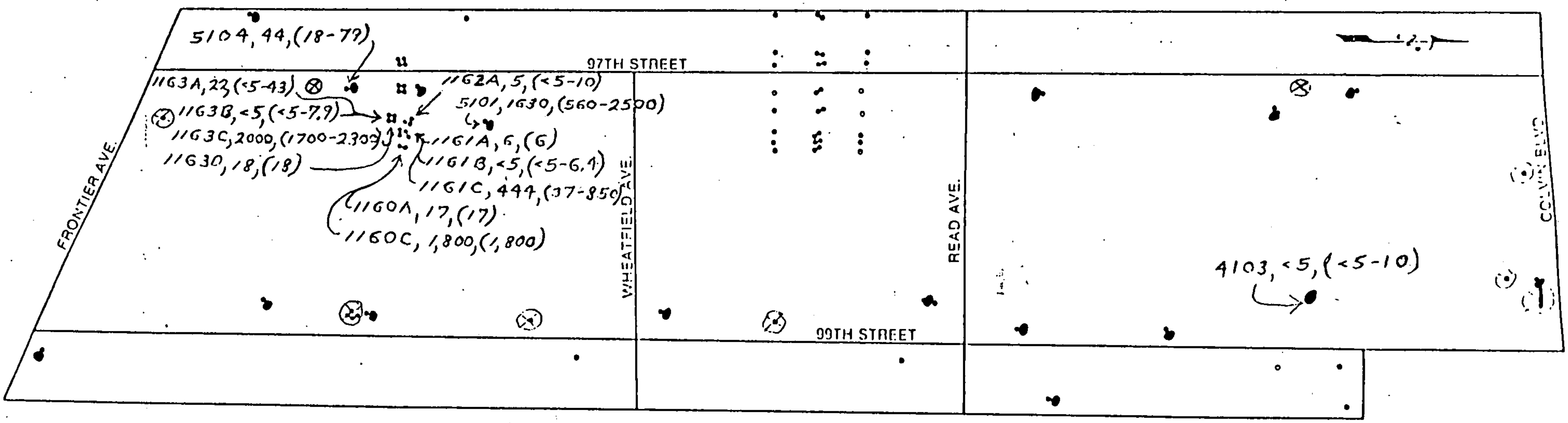
Trichloroethylene (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

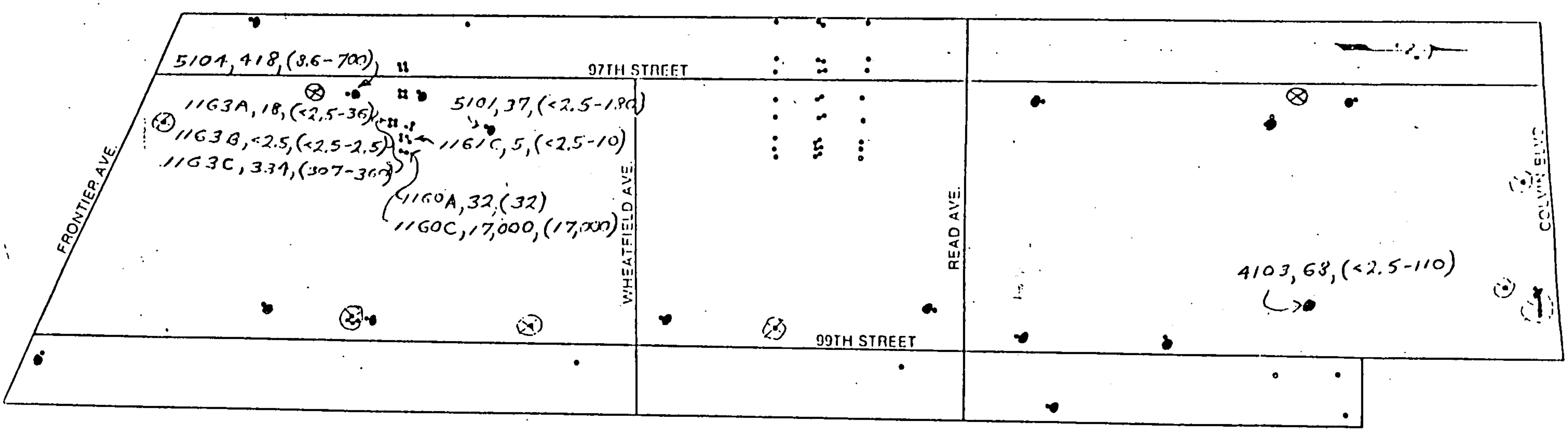
1,2-Dichlorobenzene (o) (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

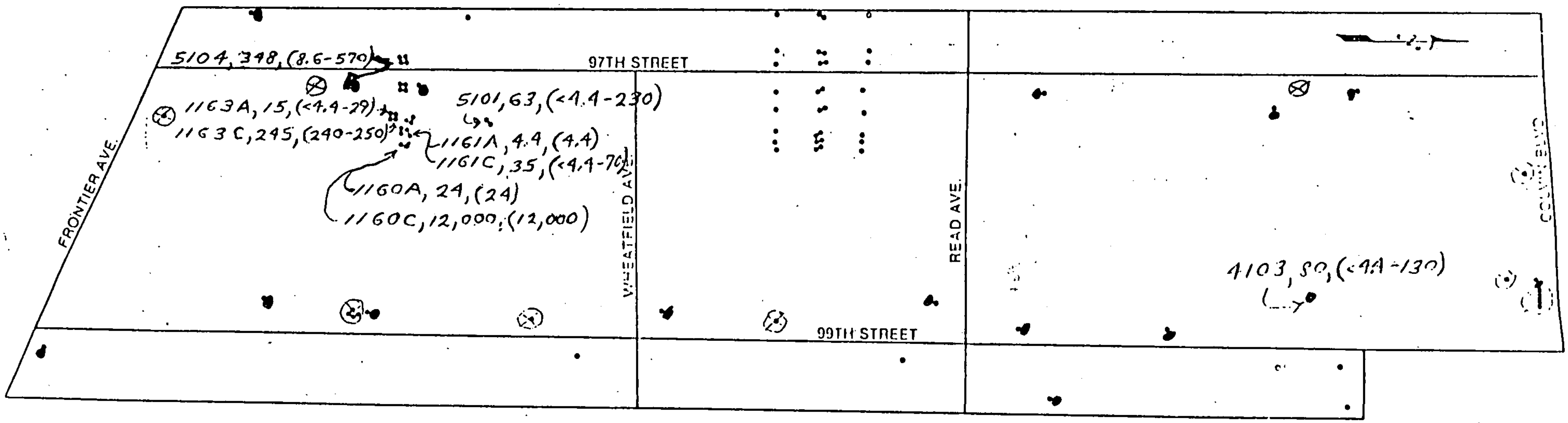
1,4-Dichlorobenzene (P) (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

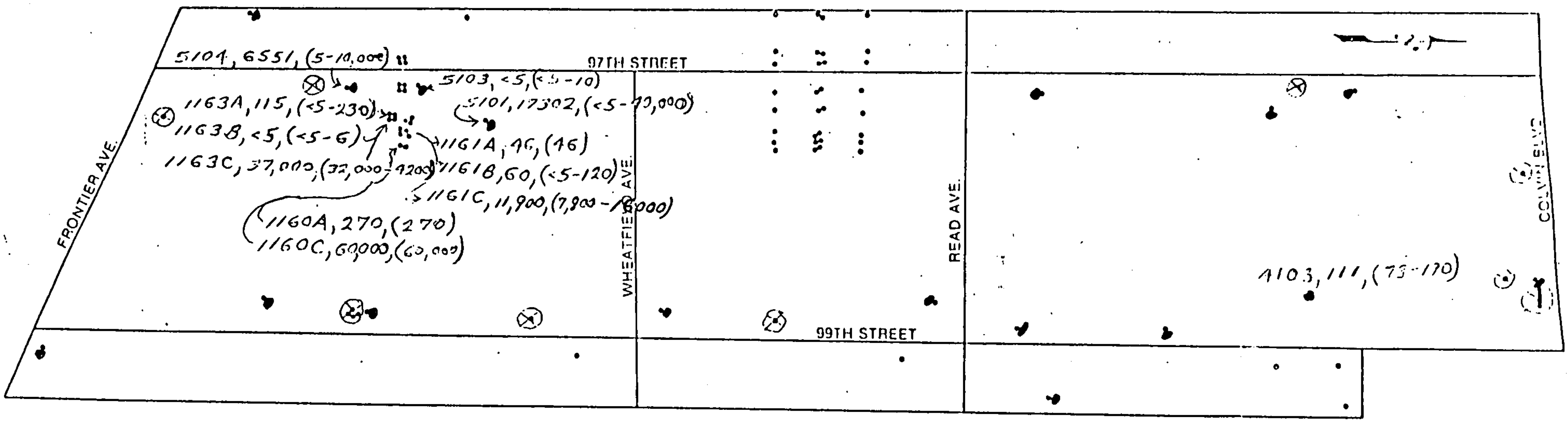
Tolue. - (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

0 - Indicates wells that were never sampled



NOT TO SCALE

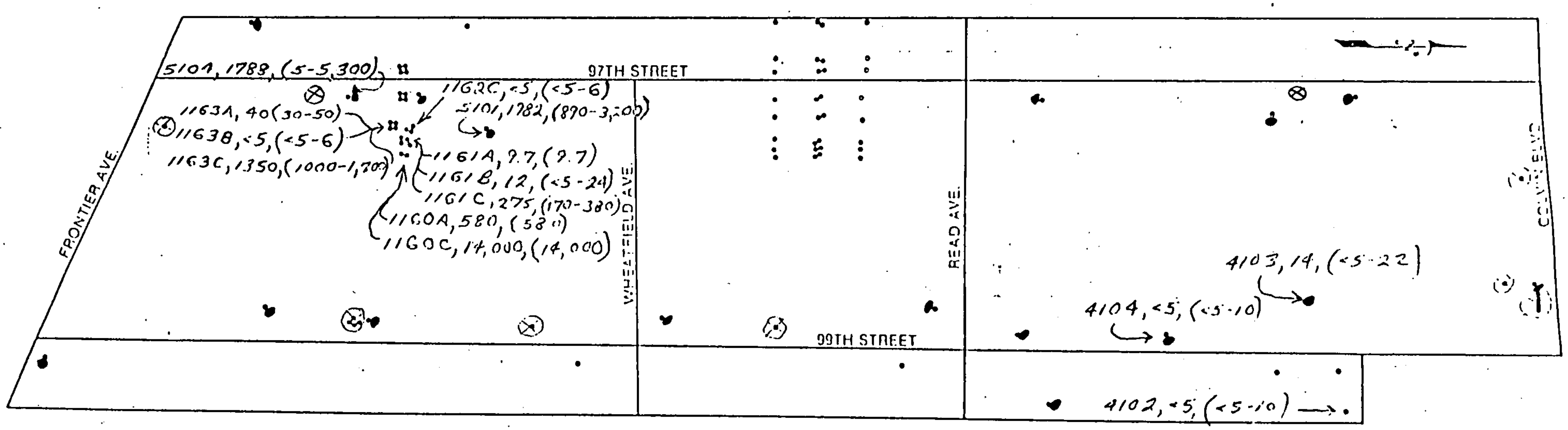
Chlorobenzene (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

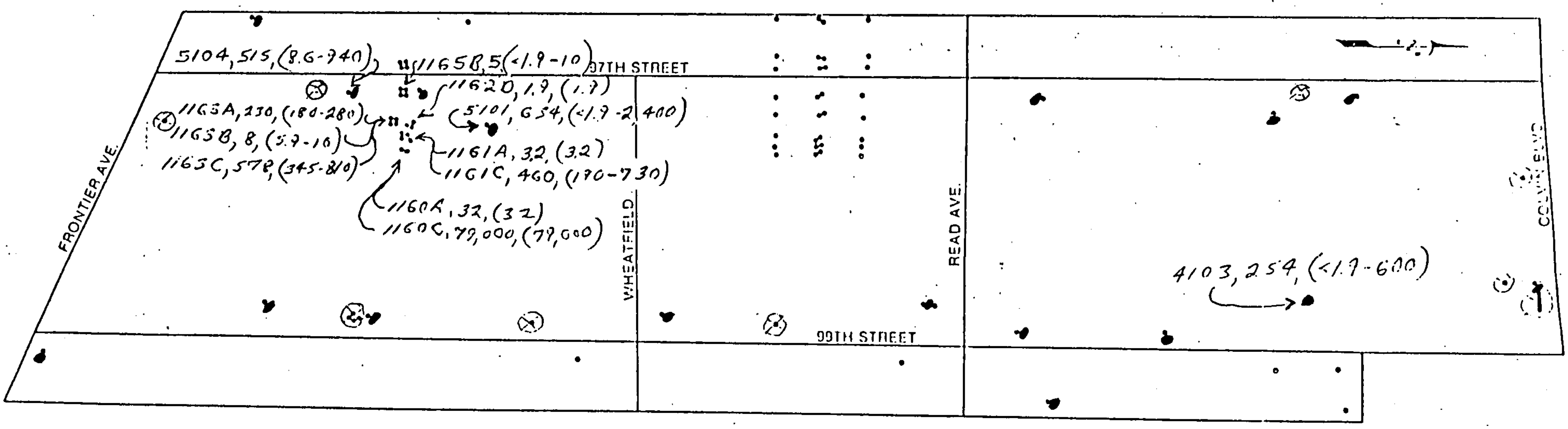
1,2,4-Trichlorobenzene (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

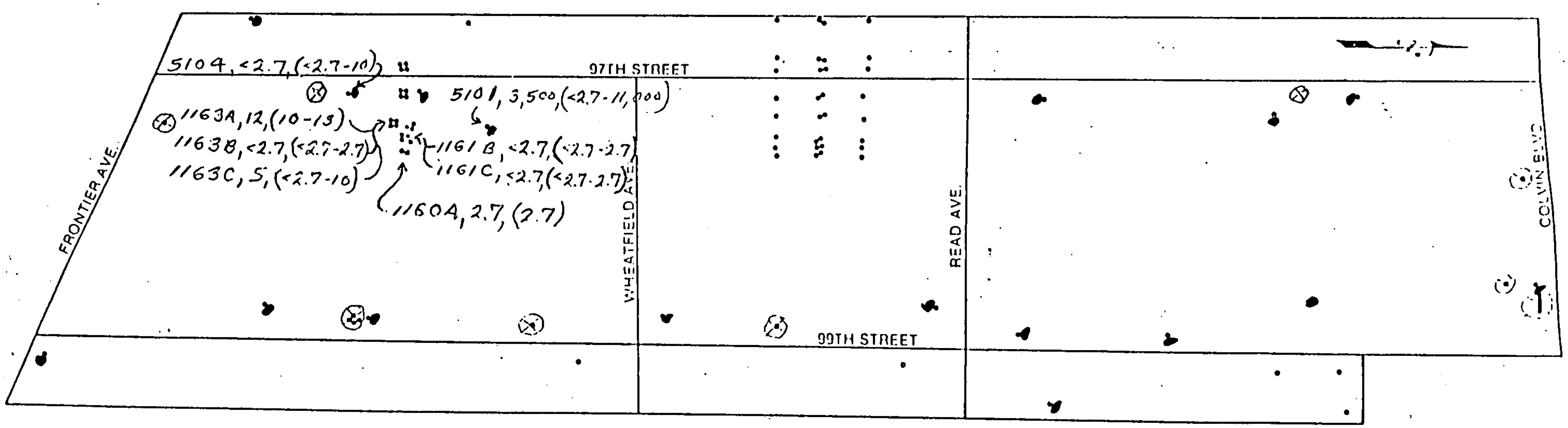
2,4 - Dichlorophenol (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

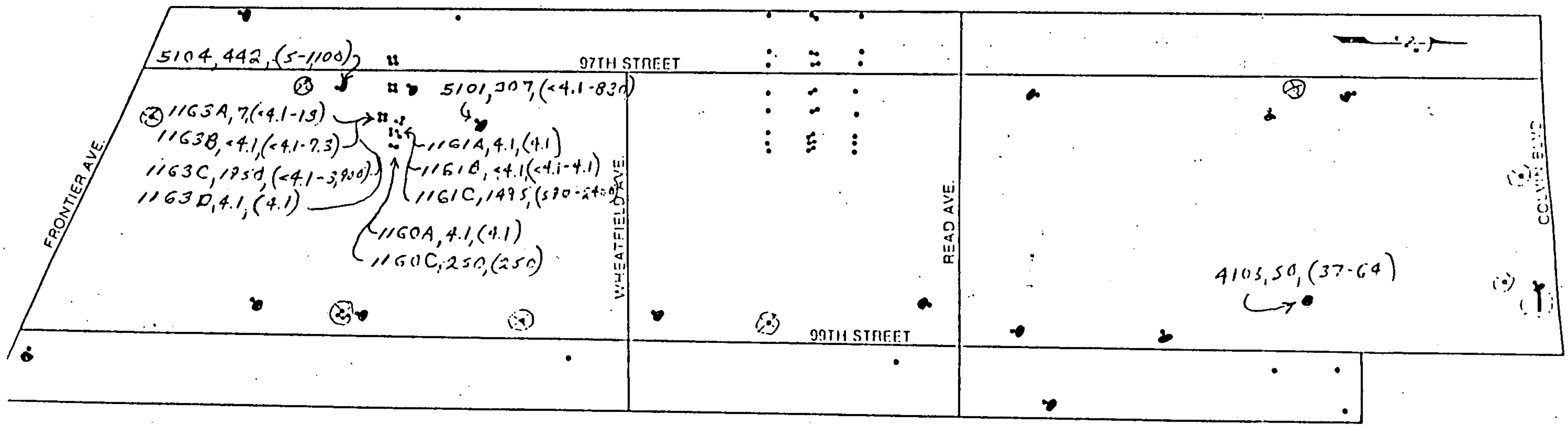
Tetrachloroethylene (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

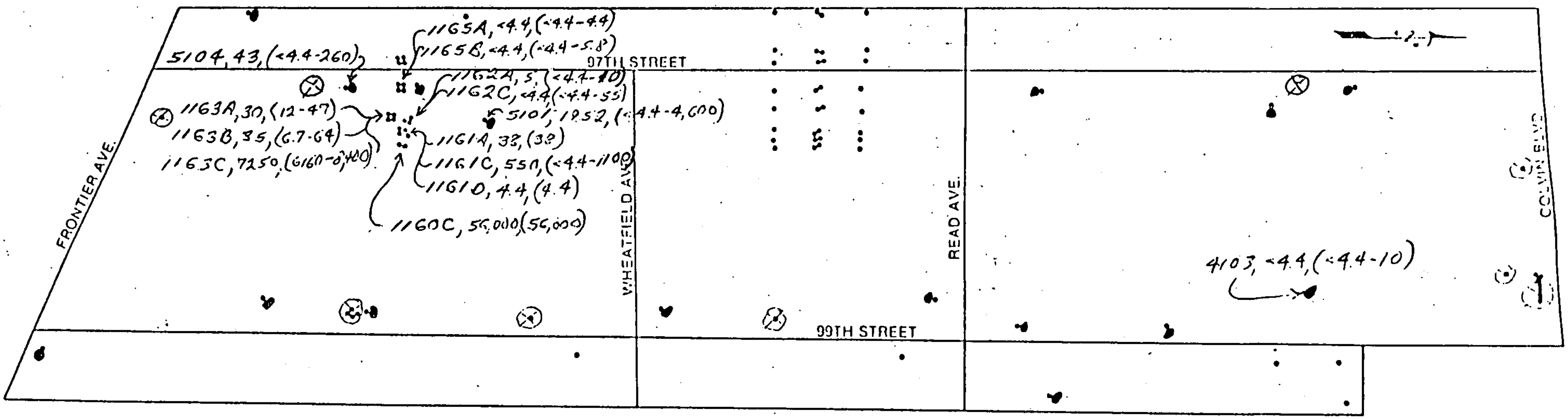
Benzen (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

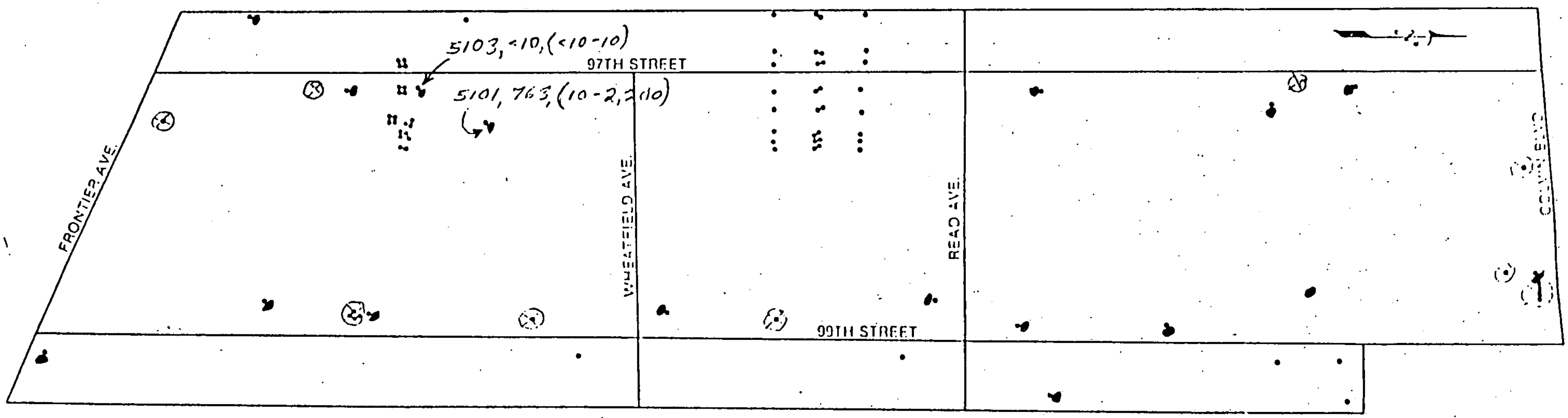
1,1,2,2-tetrachloroethylene (ppb)
overburden wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

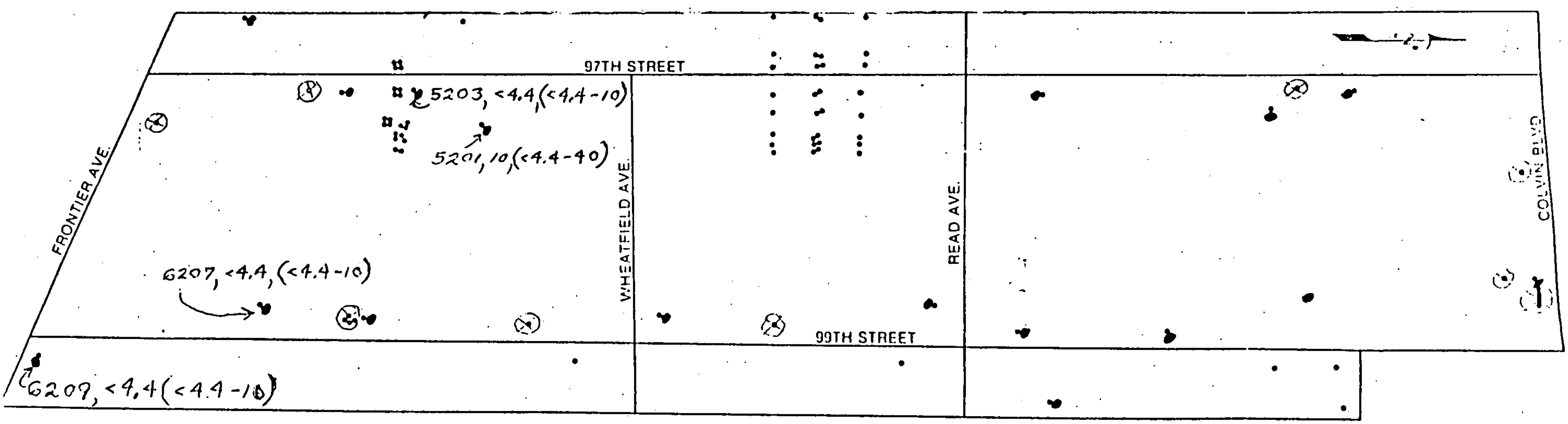
~ enzene (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

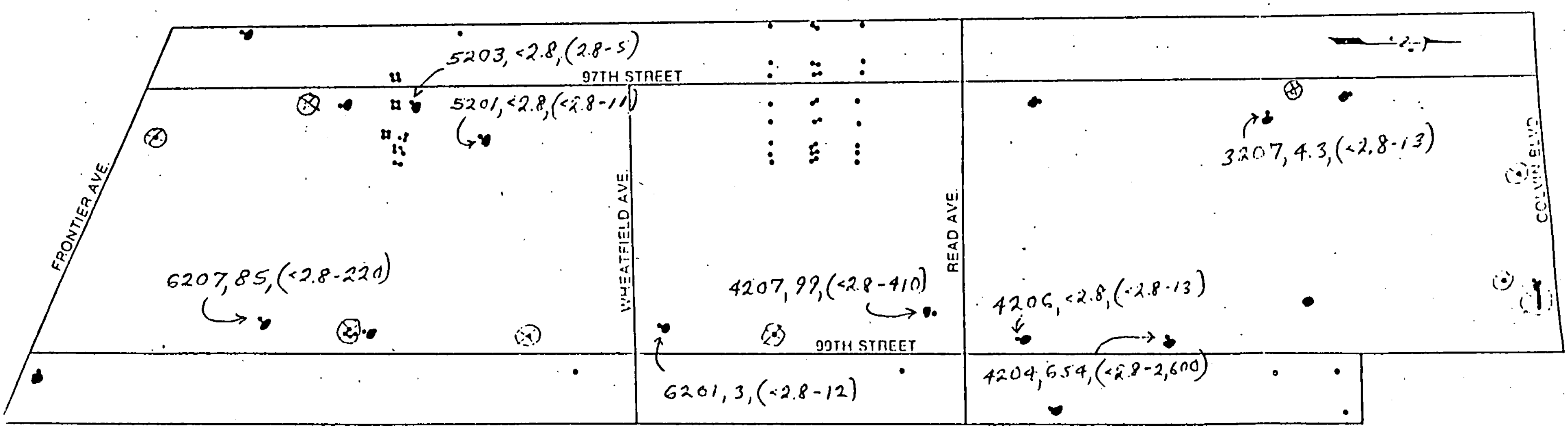
Methylene Chloride (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



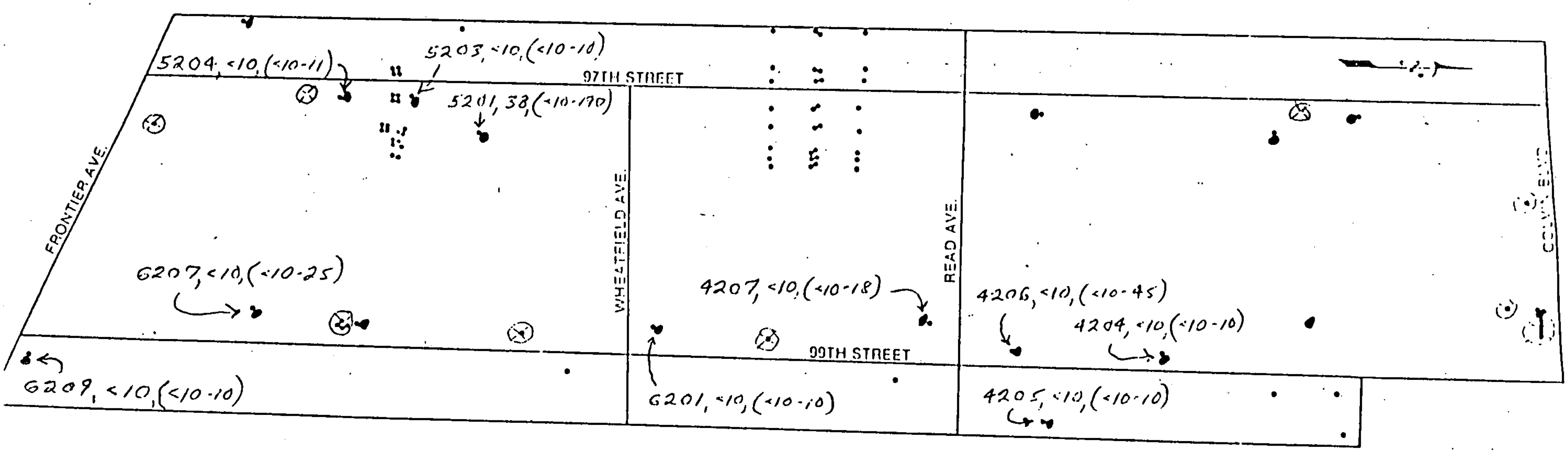
NOT TO SCALE

Bis (2-E. Hexyl) phthlate (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil
⊗ - Indicates wells that were never sampled



NOT TO SCALE

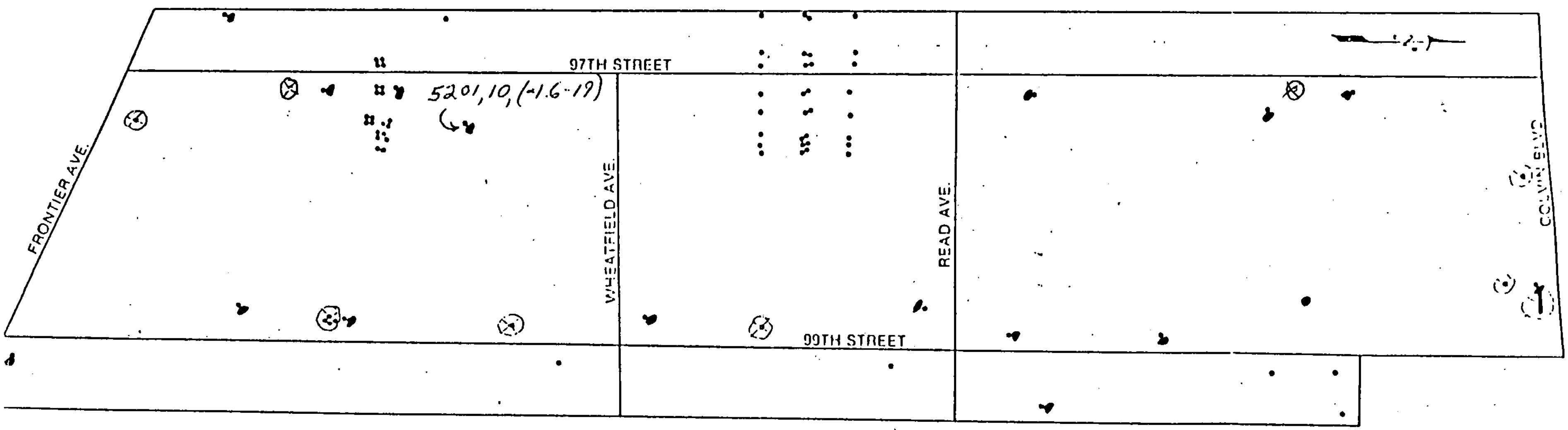
Chloroform (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

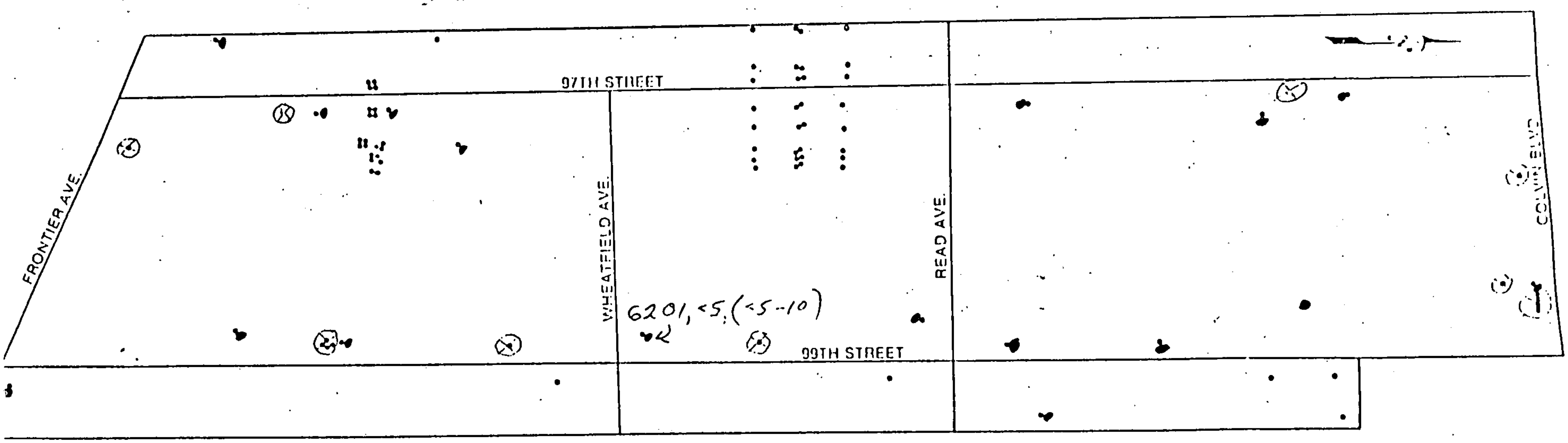
Trichloroethylene (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

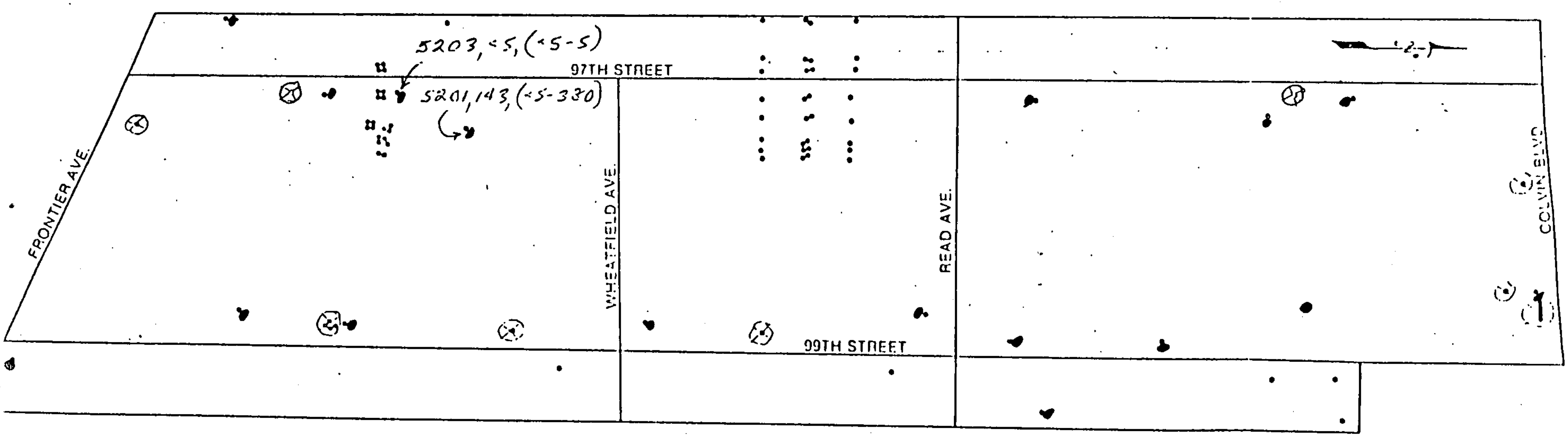
Toluene (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

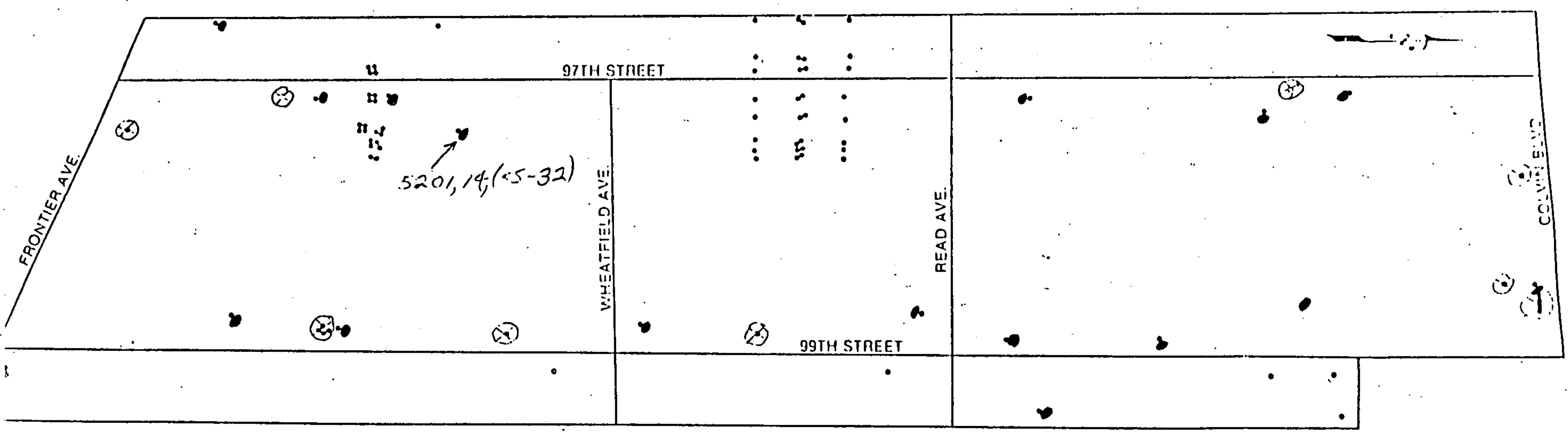
Chlorobenzene (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

0 - Indicates wells that were never sampled



NOT TO SCALE

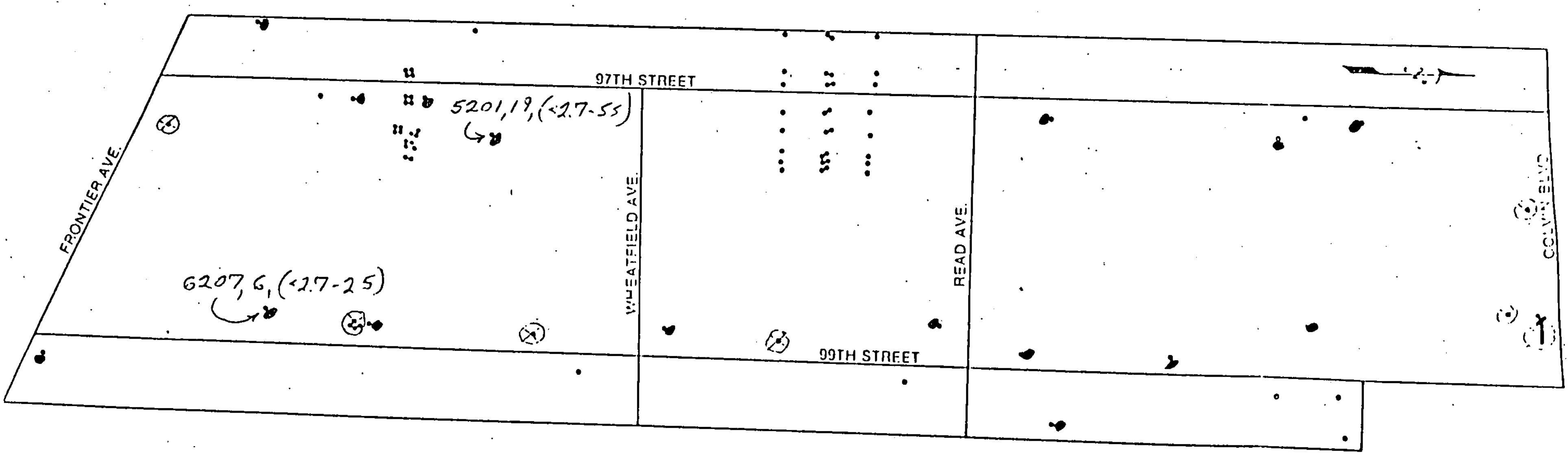
2,4-Dichlorophenol (ppb)
Bedrock wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

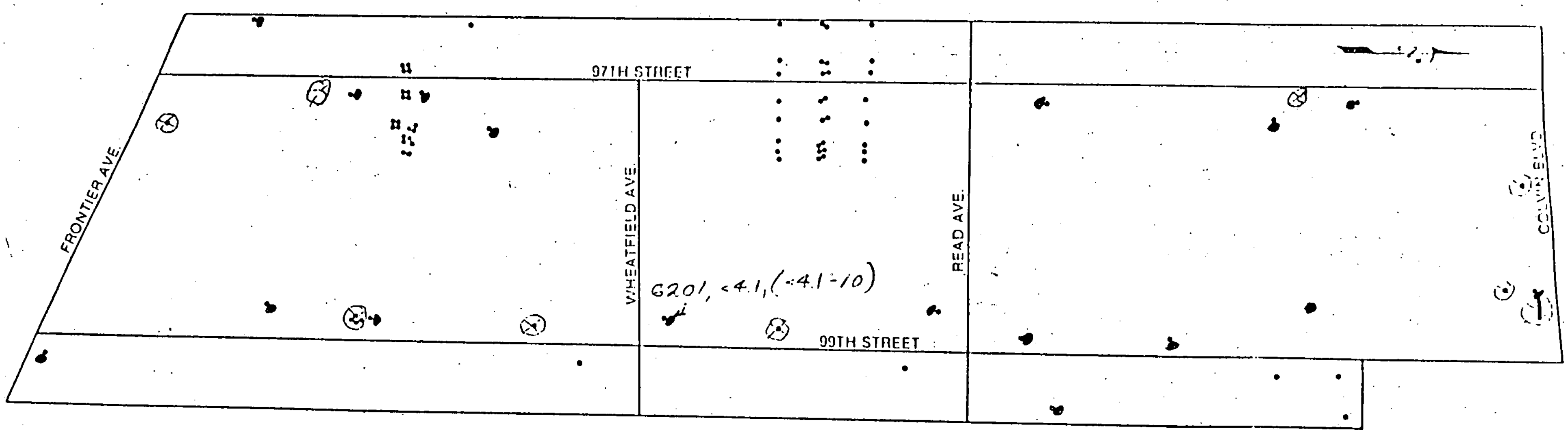
Tetrachloroethylene (ppb)
Bedrock Wells

KEY - well #, average concentration, (range of concentration)

Soil Layer for A, B, C and D Wells

A - gravelly loam, gravelly clay, loam till
B - nondesiccated silty clay
C - sandy loam, desiccated silty clay
D - silty clay loam (original topsoil), silty clay loam subsoil

⊗ - Indicates wells that were never sampled



NOT TO SCALE

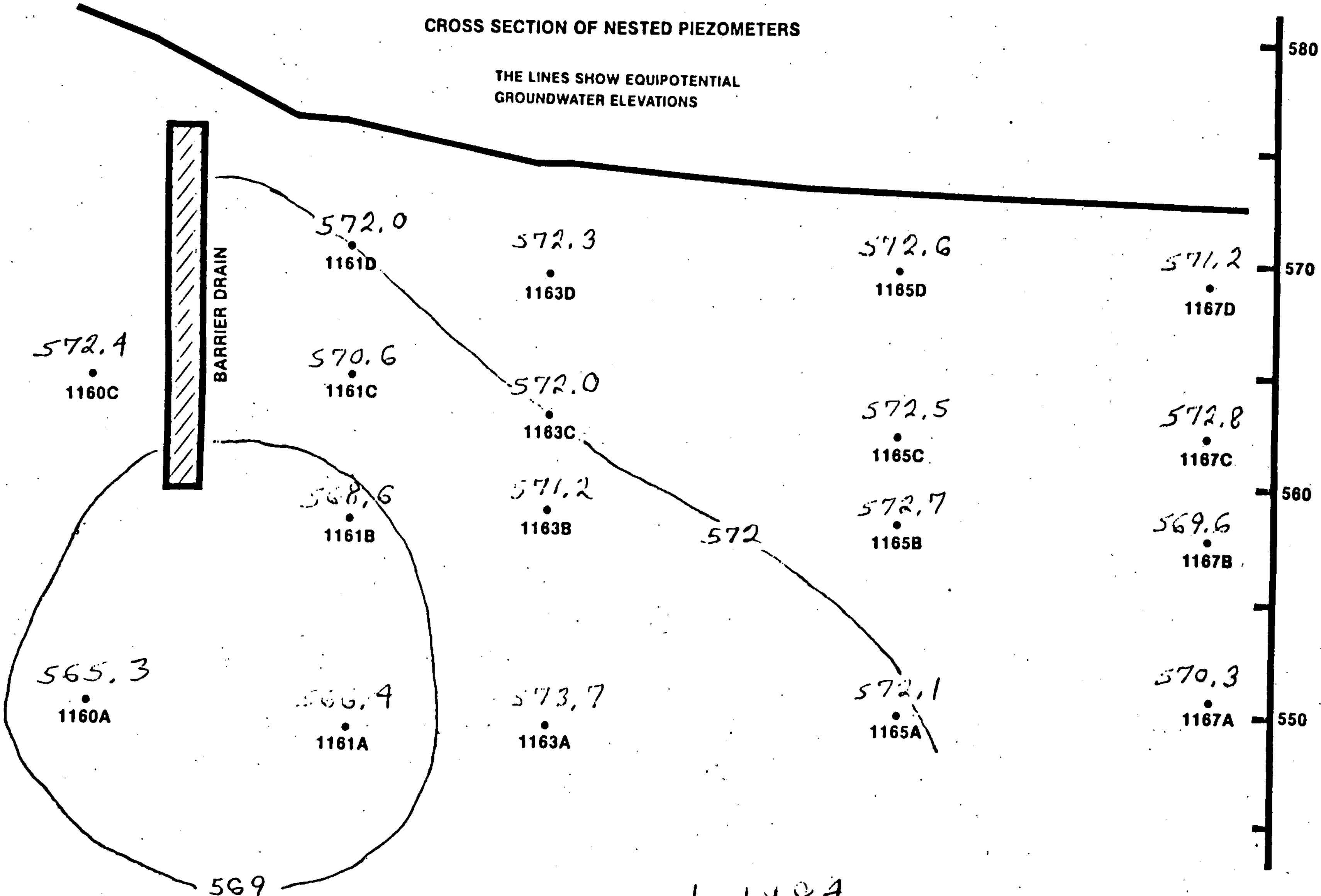
ATTACHMENT B

CROSS-SECTIONAL ELEVATION PLOTS
NESTED PIEZOMETERS

LOVE CANAL GROUNDWATER MONITORING PROGRAM

CROSS SECTION OF NESTED PIEZOMETERS

THE LINES SHOW EQUIPOTENTIAL
GROUNDWATER ELEVATIONS

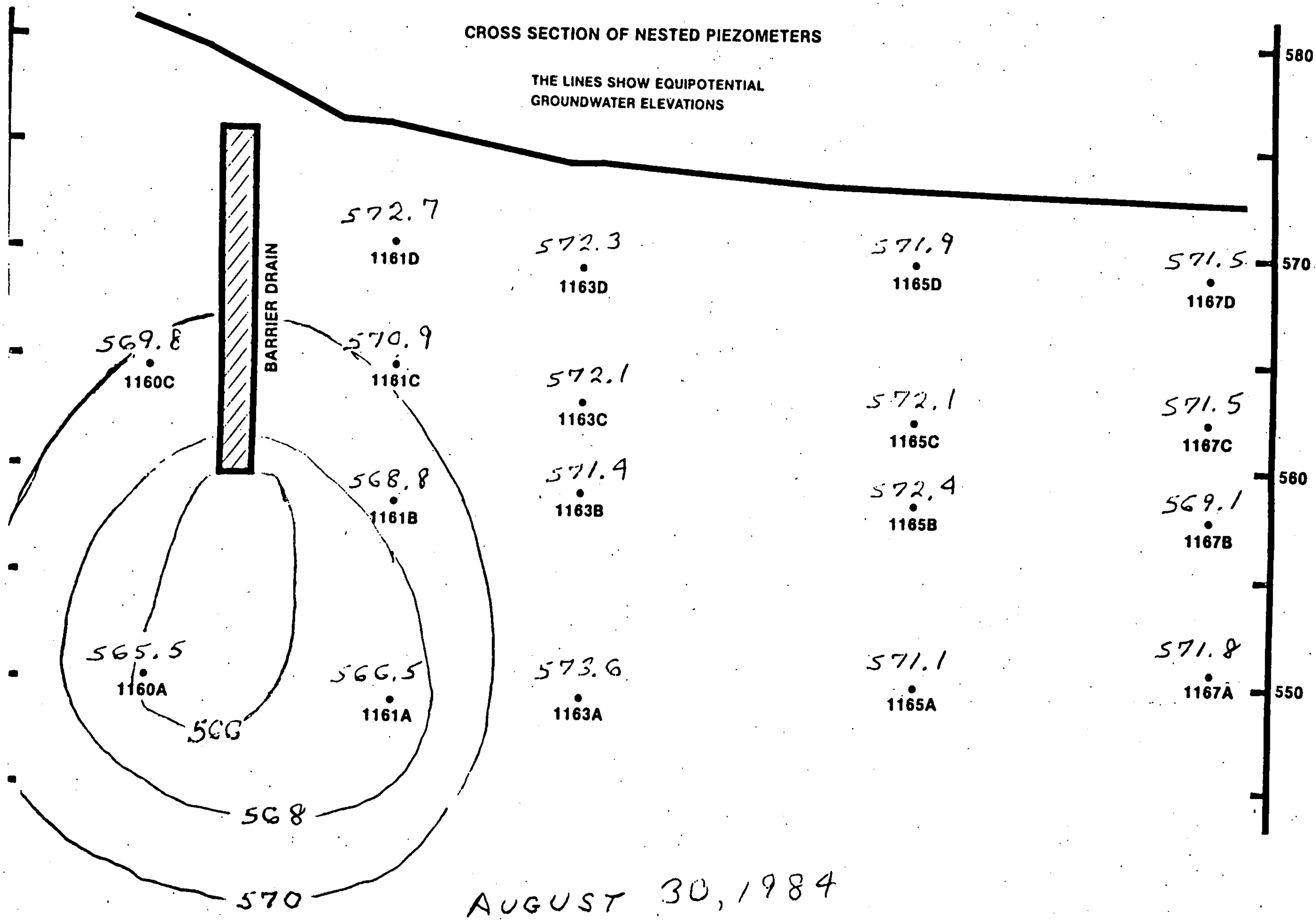


AUGUST 1, 1184

LOVE CANAL GROUNDWATER MONITORING PROGRAM

CROSS SECTION OF NESTED PIEZOMETERS

THE LINES SHOW EQUIPOTENTIAL
GROUNDWATER ELEVATIONS

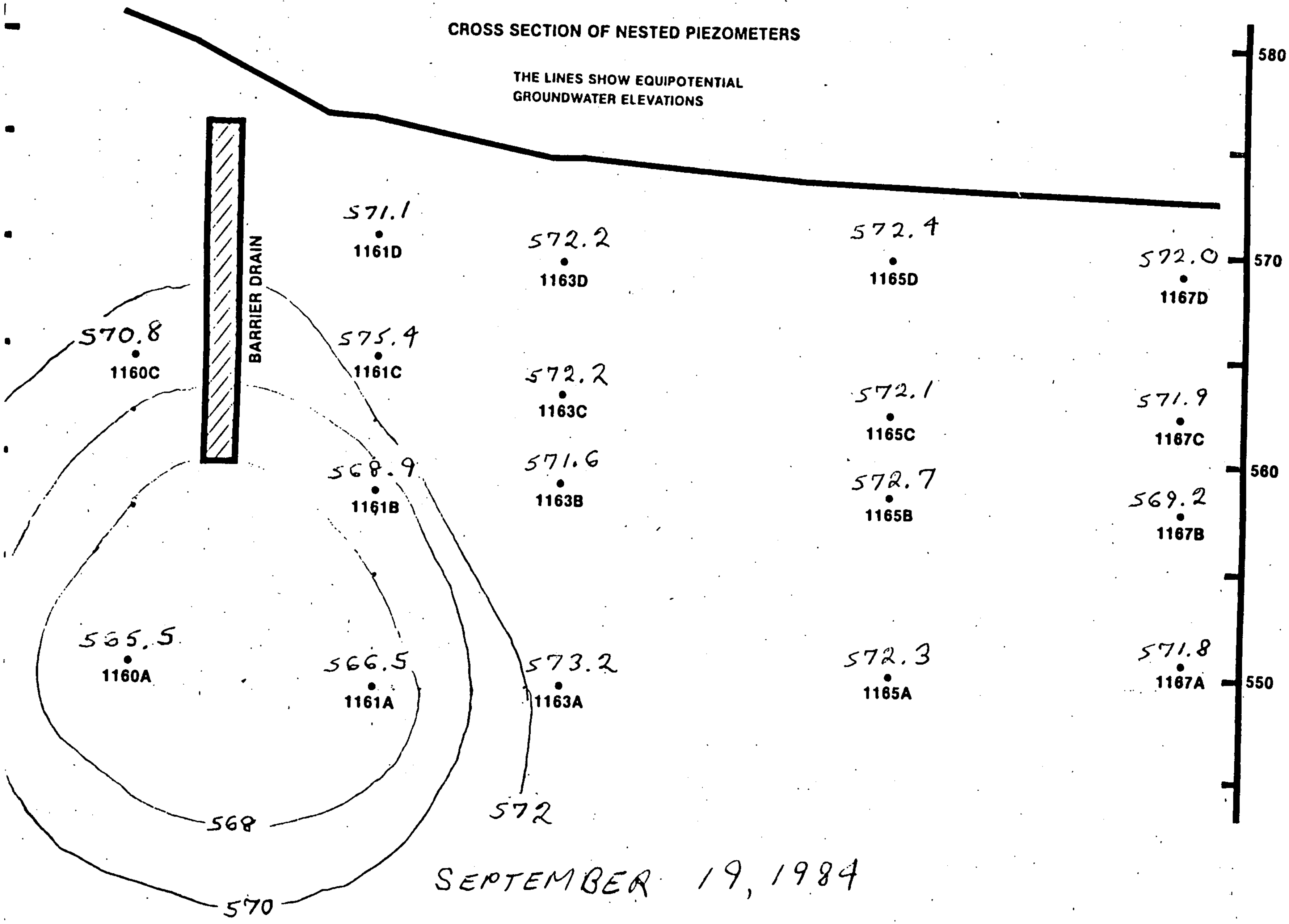


AUGUST 30, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM

CROSS SECTION OF NESTED PIEZOMETERS

THE LINES SHOW EQUIPOTENTIAL
GROUNDWATER ELEVATIONS

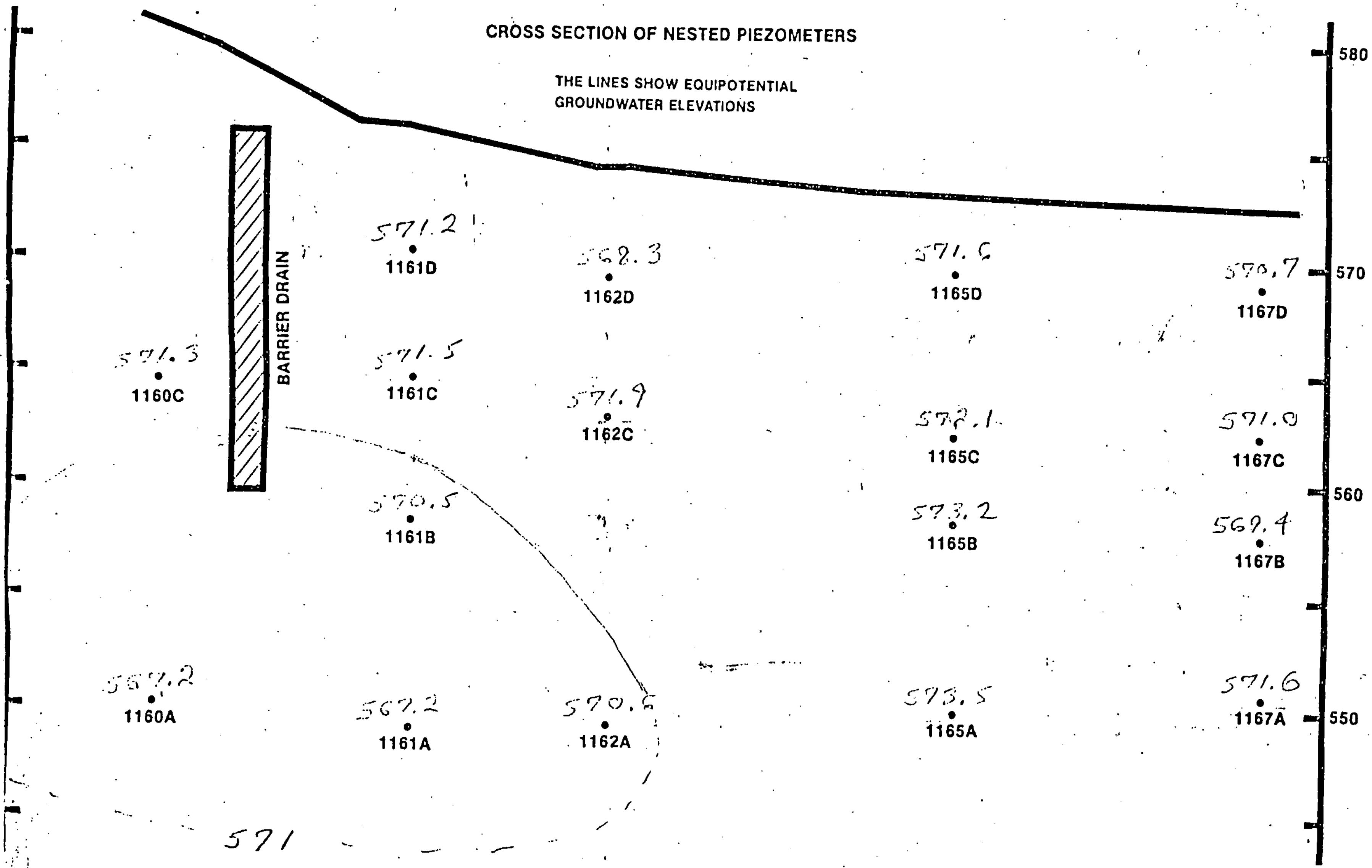


SEPTEMBER 19, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM

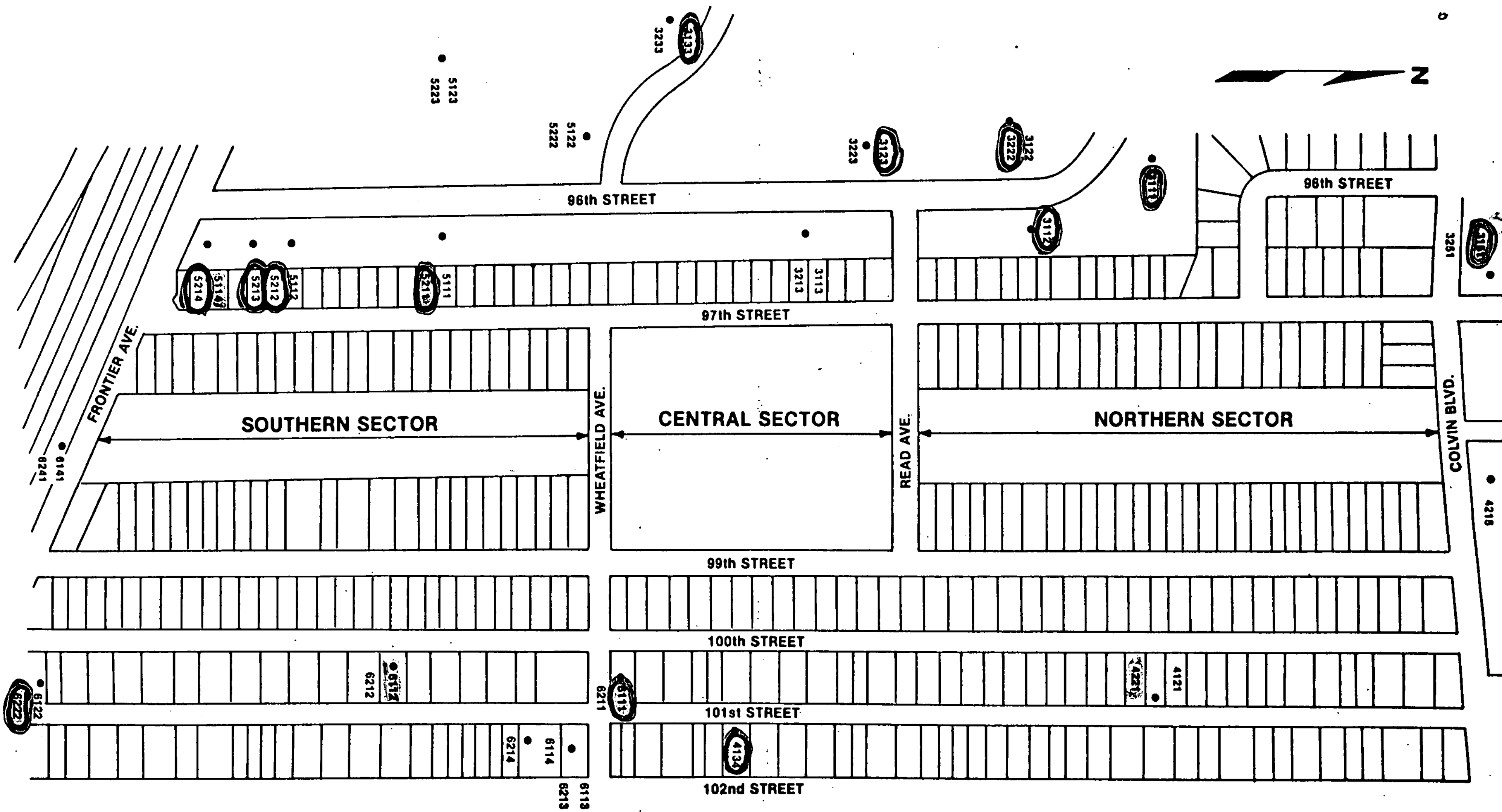
CROSS SECTION OF NESTED PIEZOMETERS

THE LINES SHOW EQUIPOTENTIAL
GROUNDWATER ELEVATIONS



OCTOBER 12, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM



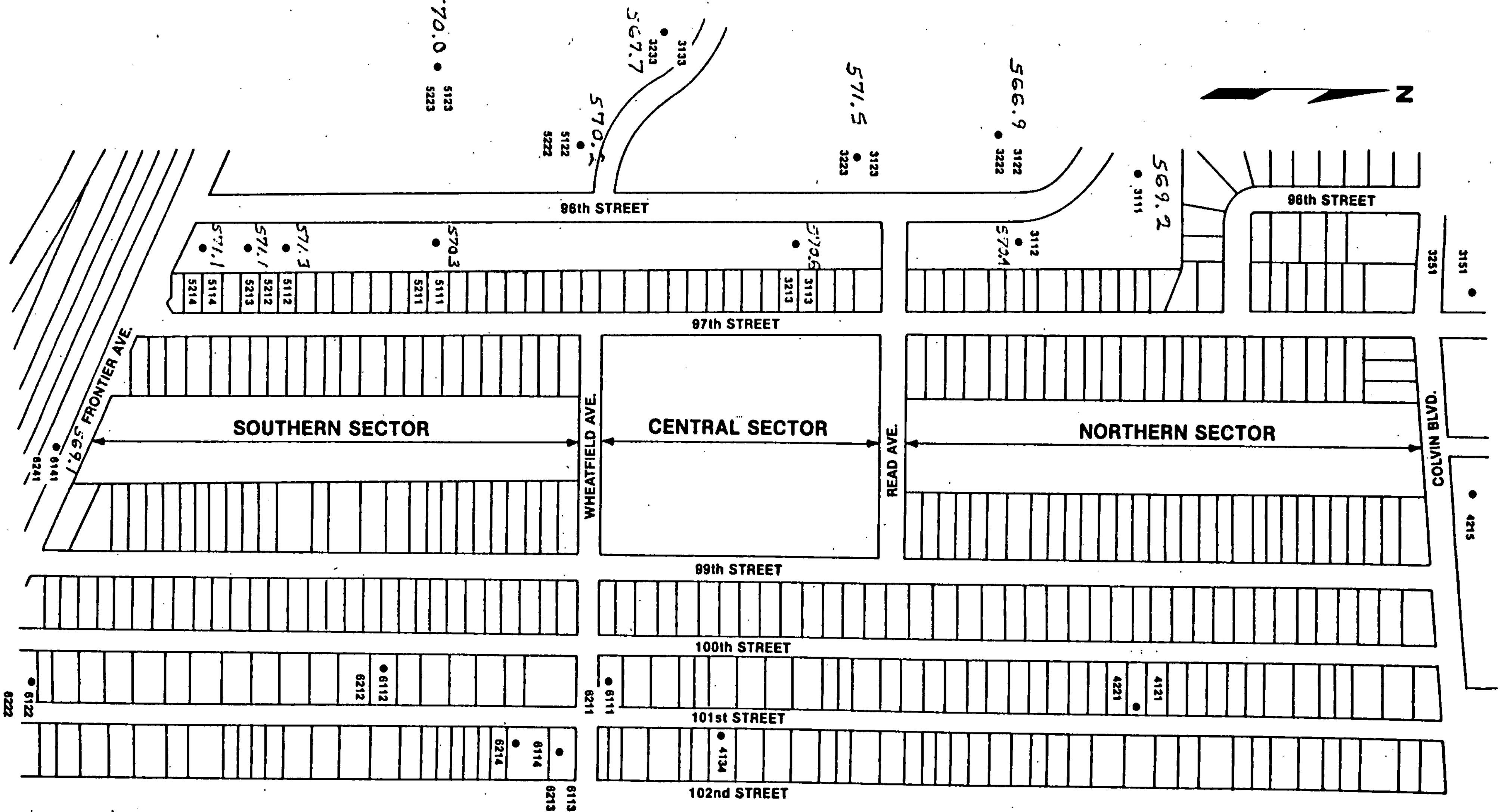
WELLS WITH RISERS (OUTSIDE THE FENCE)

WELLS OUTSIDE THE FENCE SAMPLED

Red circles show positive results for the United States Environmental Protection Agency sampling

Blue indicates positive results for the New York State Department of Environmental Conservation sampling

LOVE CANAL GROUNDWATER MONITORING PROGRAM

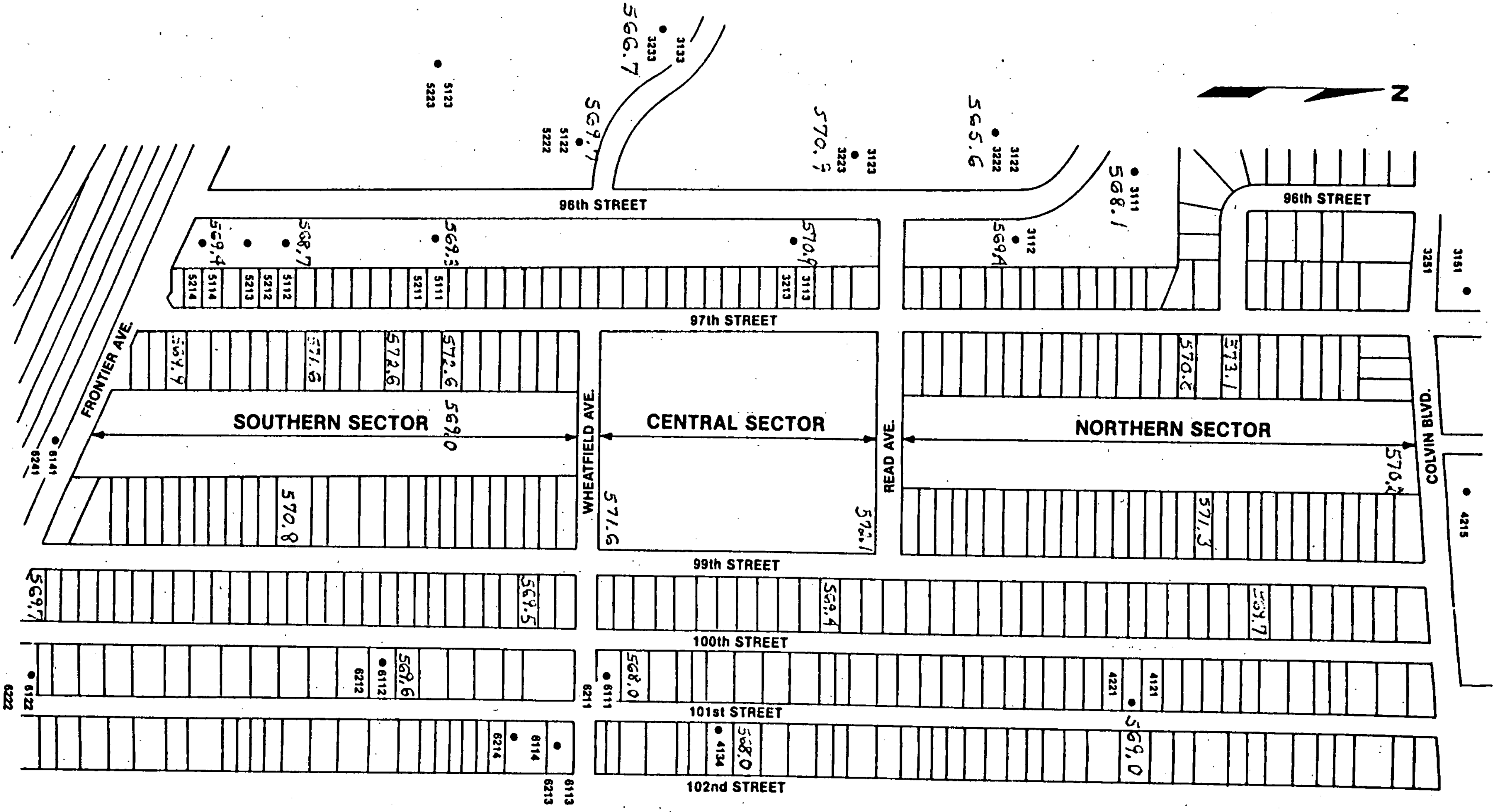


WELLS WITH RISERS (OUTSIDE THE FENCE)

OVERBURDEN AQUIFER

JUNE 13, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM

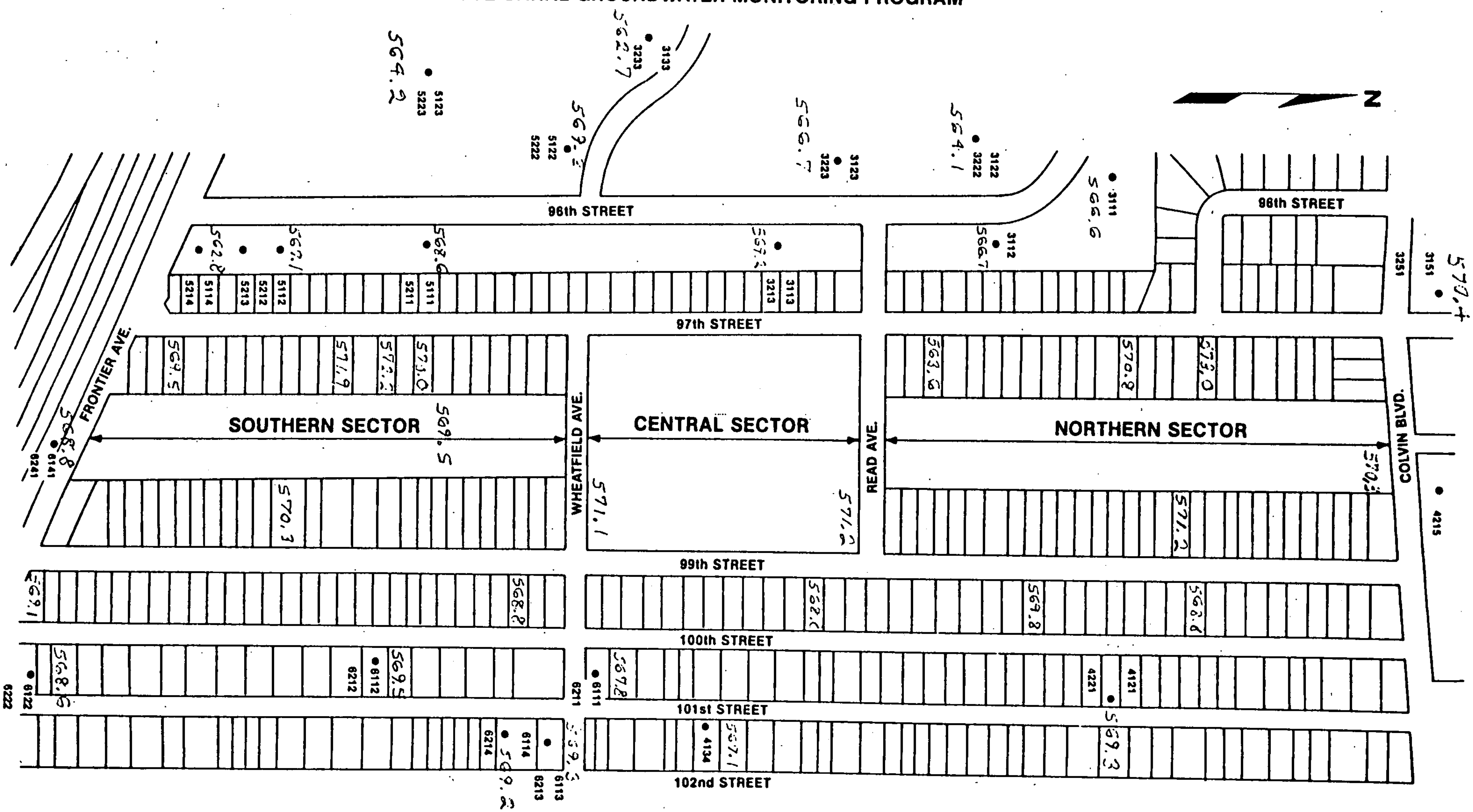


WELLS WITH RISERS (OUTSIDE THE FENCE)

OVERBURDEN AQUIFER

AUGUST 1, 1984

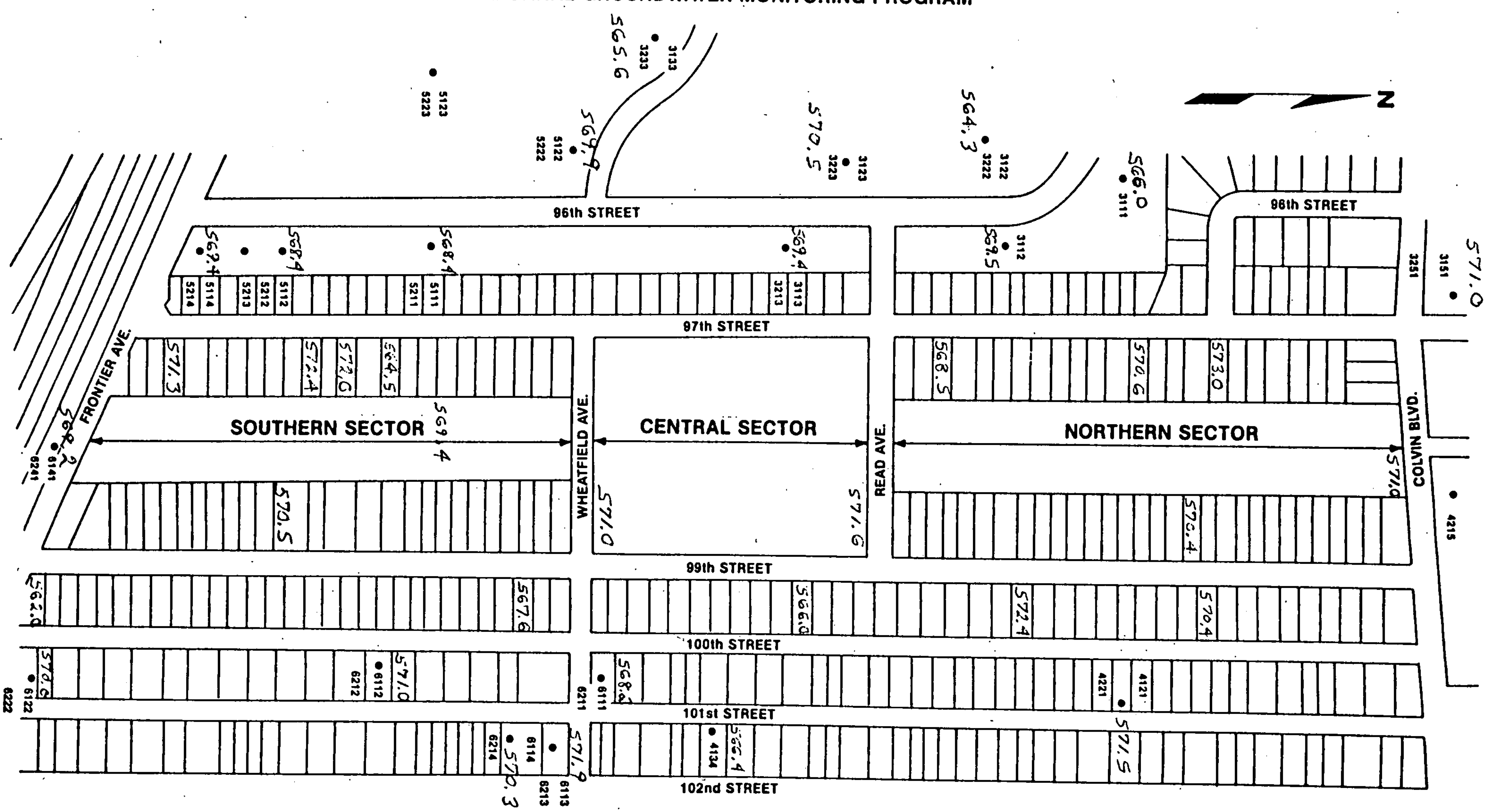
LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

OVERBURDEN AQUIFER
AUGUST 30, 1984

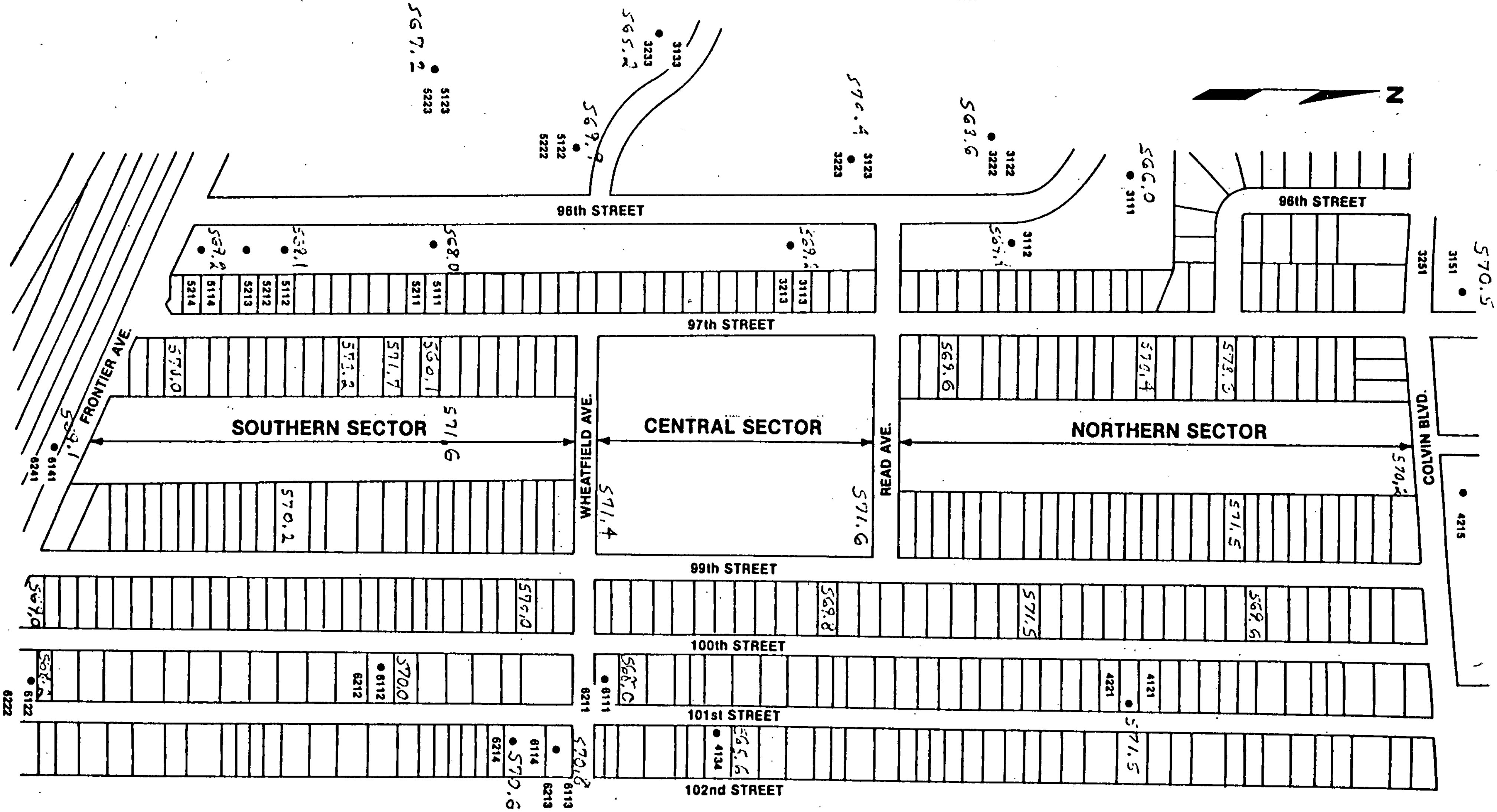
LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

OVERBURDEN AQUIFER
SEPTEMBER 19, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

OVERBURDEN AQUIFER

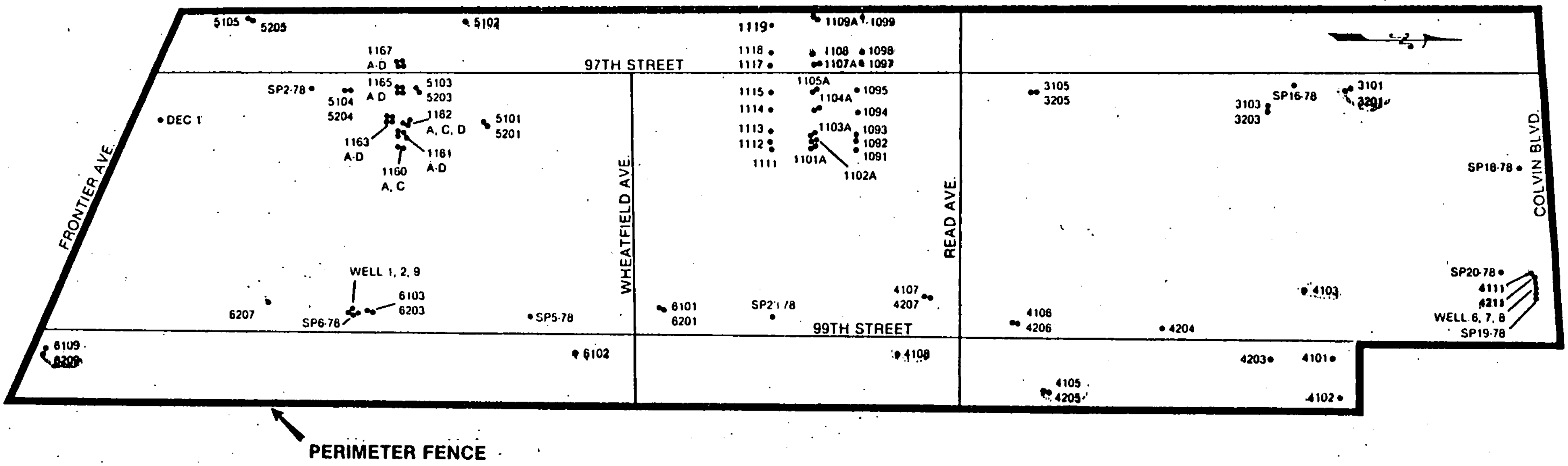
OCTOBER 12, 1984

ATTACHMENT D

ELEVATIONS AND FLOW PATTERNS
OF EPA BEDROCK WELLS

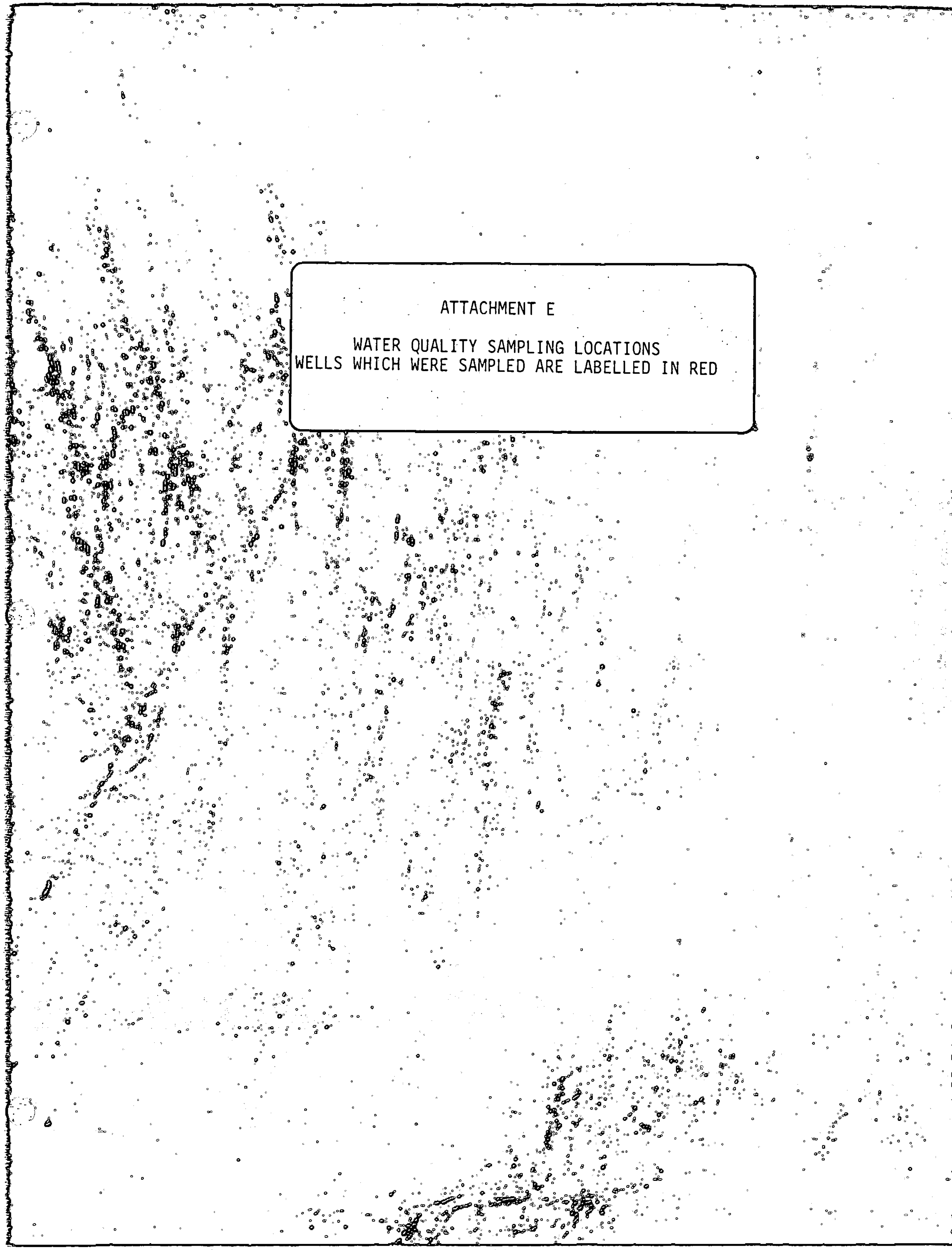
Figure 1.

LOVE CANAL GROUNDWATER MONITORING PROGRAM

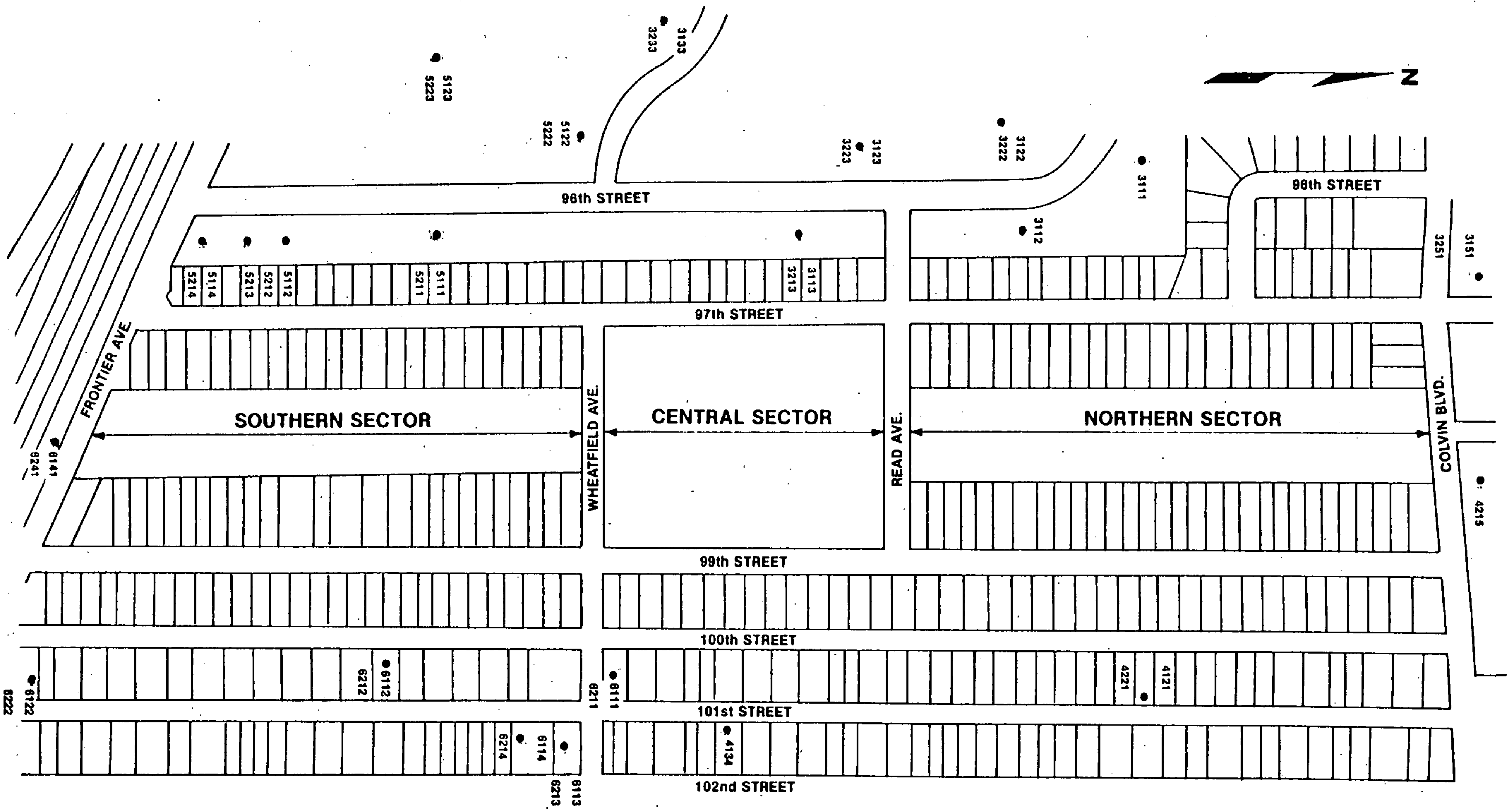


ATTACHMENT E

WATER QUALITY SAMPLING LOCATIONS
WELLS WHICH WERE SAMPLED ARE LABELLED IN RED



LOVE CANAL GROUNDWATER MONITORING PROGRAM

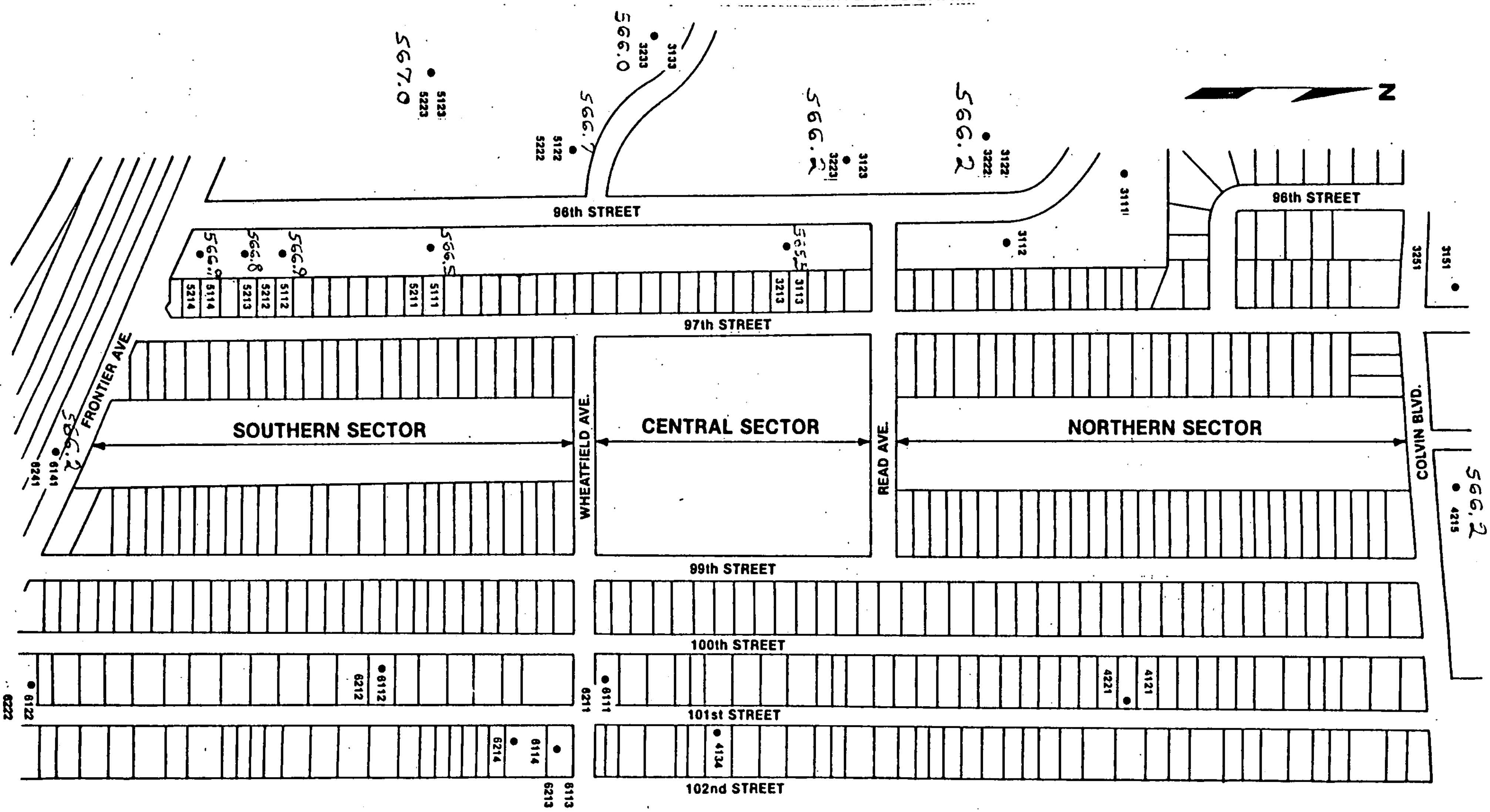


WELLS WITH RISERS (OUTSIDE THE FENCE)

ATTACHMENT F

CROSS-SECTIONAL ELEVATION PLOTS
DEC WELLS

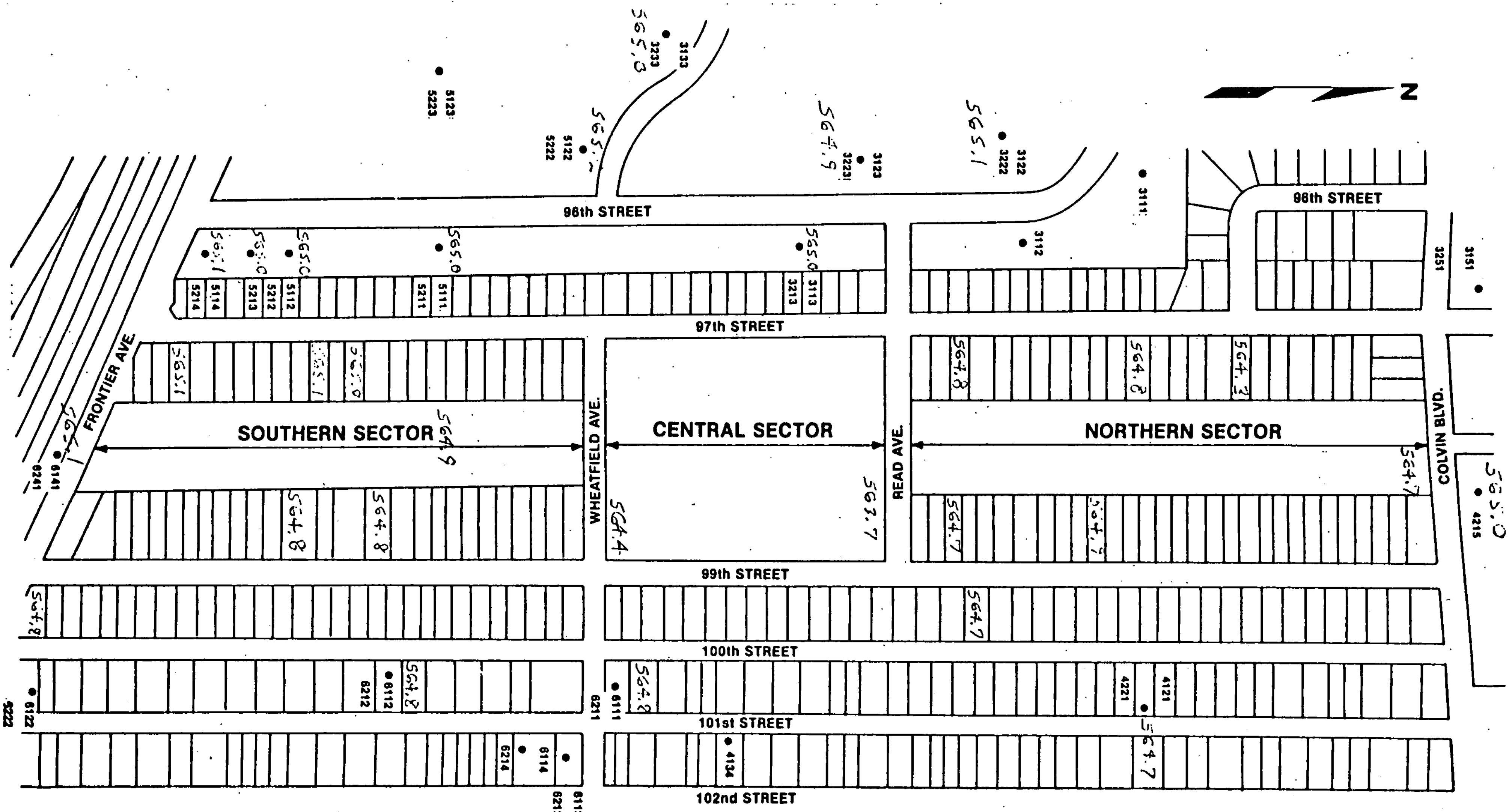
LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

BEDROCK AQUIFER
JUNE 13, 1984

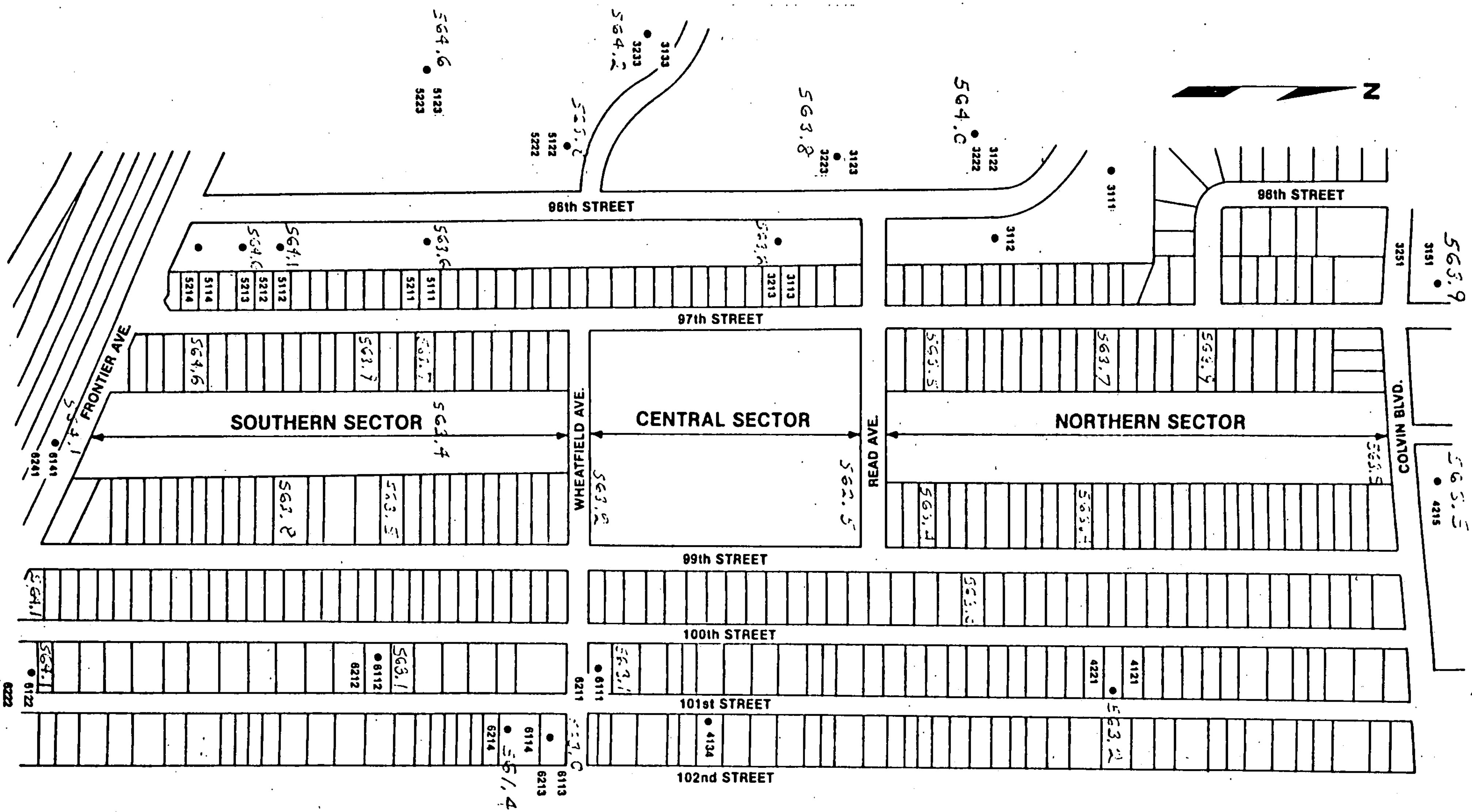
LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

BEDROCK AQUIFER
AUGUST 1, 1984

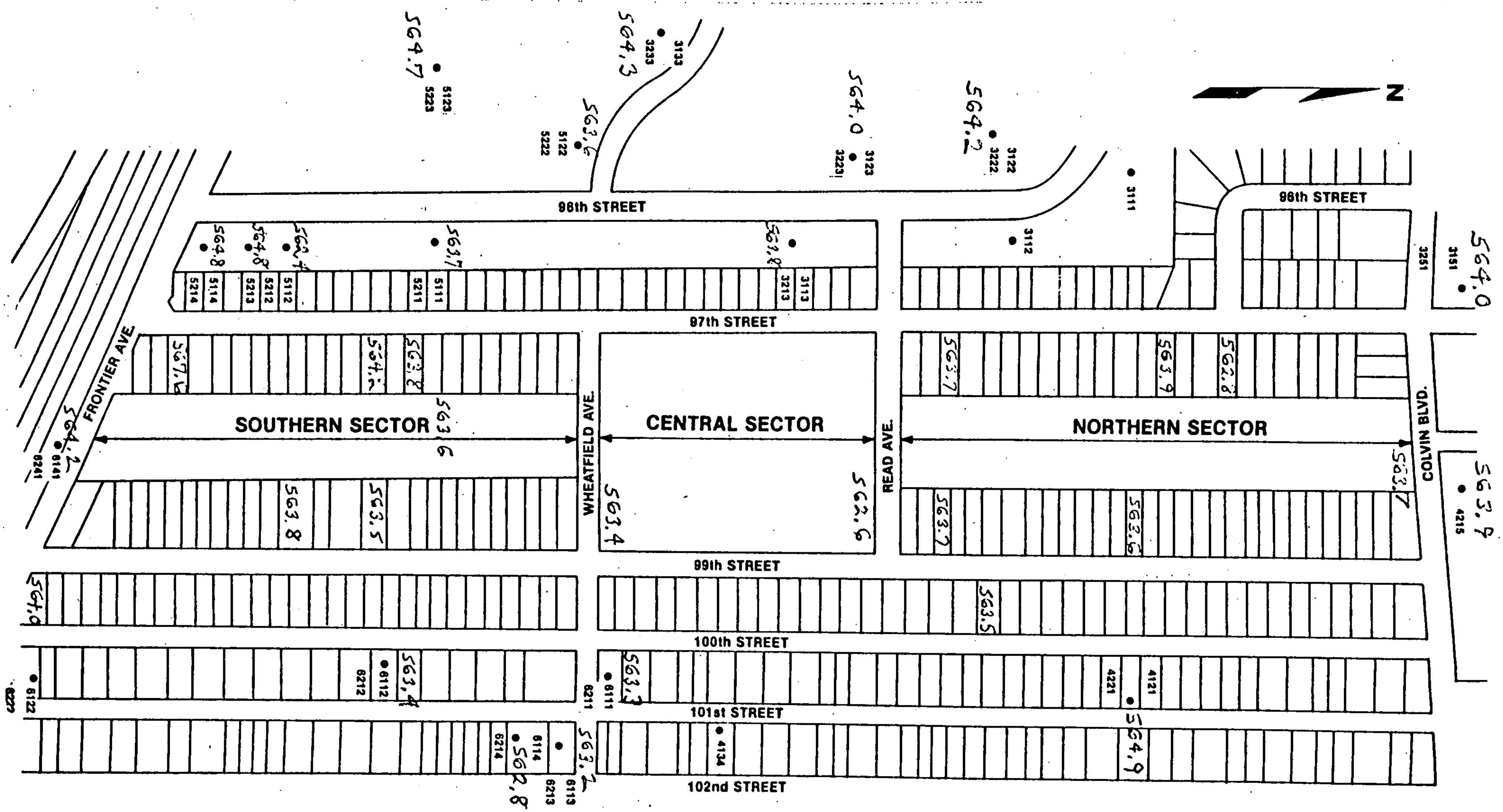
LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

BEDROCK AQUIFER
AUGUST 30, 1984

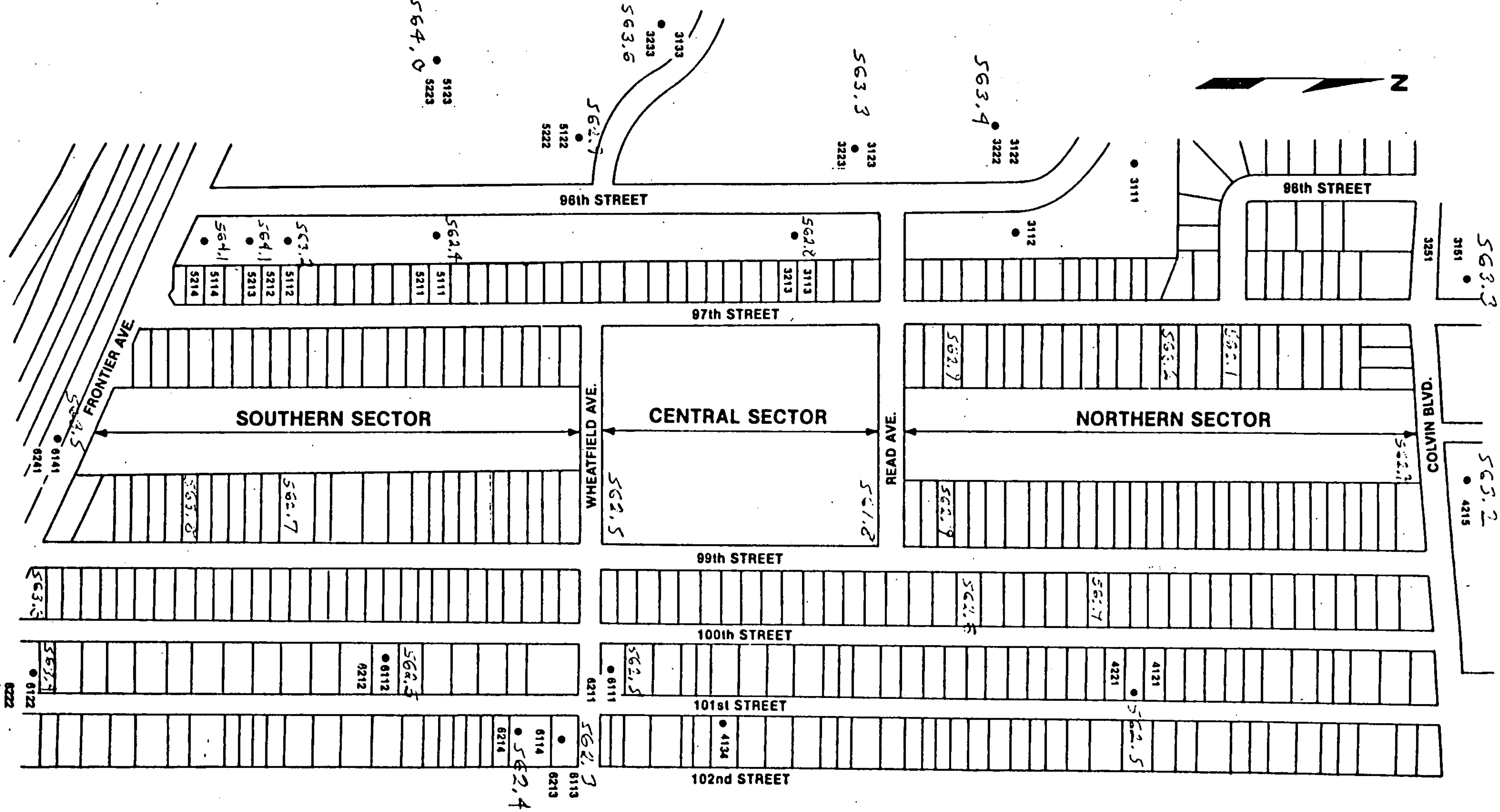
LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

BEDROCK AQUIFER
SEPTEMBER 19, 1984

LOVE CANAL GROUNDWATER MONITORING PROGRAM



WELLS WITH RISERS (OUTSIDE THE FENCE)

BEDROCK AQUIFER

OCTOBER 12, 1984

EXPLANATION FOR

CROSSECTIONAL WATER ELEVATION PLOTS

IN DEC WELLS

1(a) Row #10 corresponds to wells labeled 1101 through 1109 in Figure 1

(b) Row #9 corresponds to wells labeled 1091 through 1099 in Figure 1

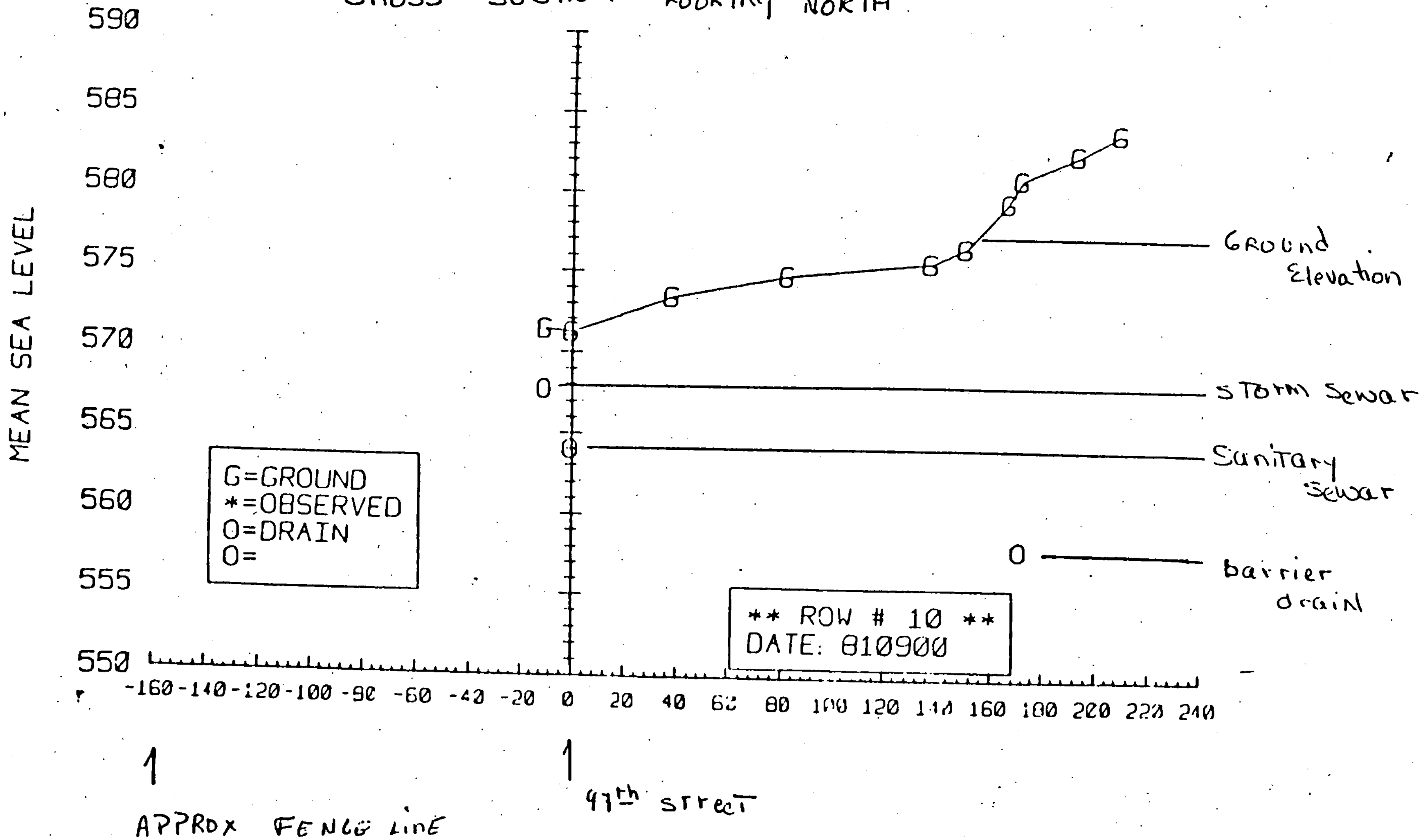
(c) Row #11 corresponds to wells labeled 1111 through 1119 in Figure 1

(d) On the cross-sectional plots, Well Nos. 1091 or 1101 or 1111 is on the right of the plots, and 1099 or 1109 or 1119 is on the left side of the plot.

-NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

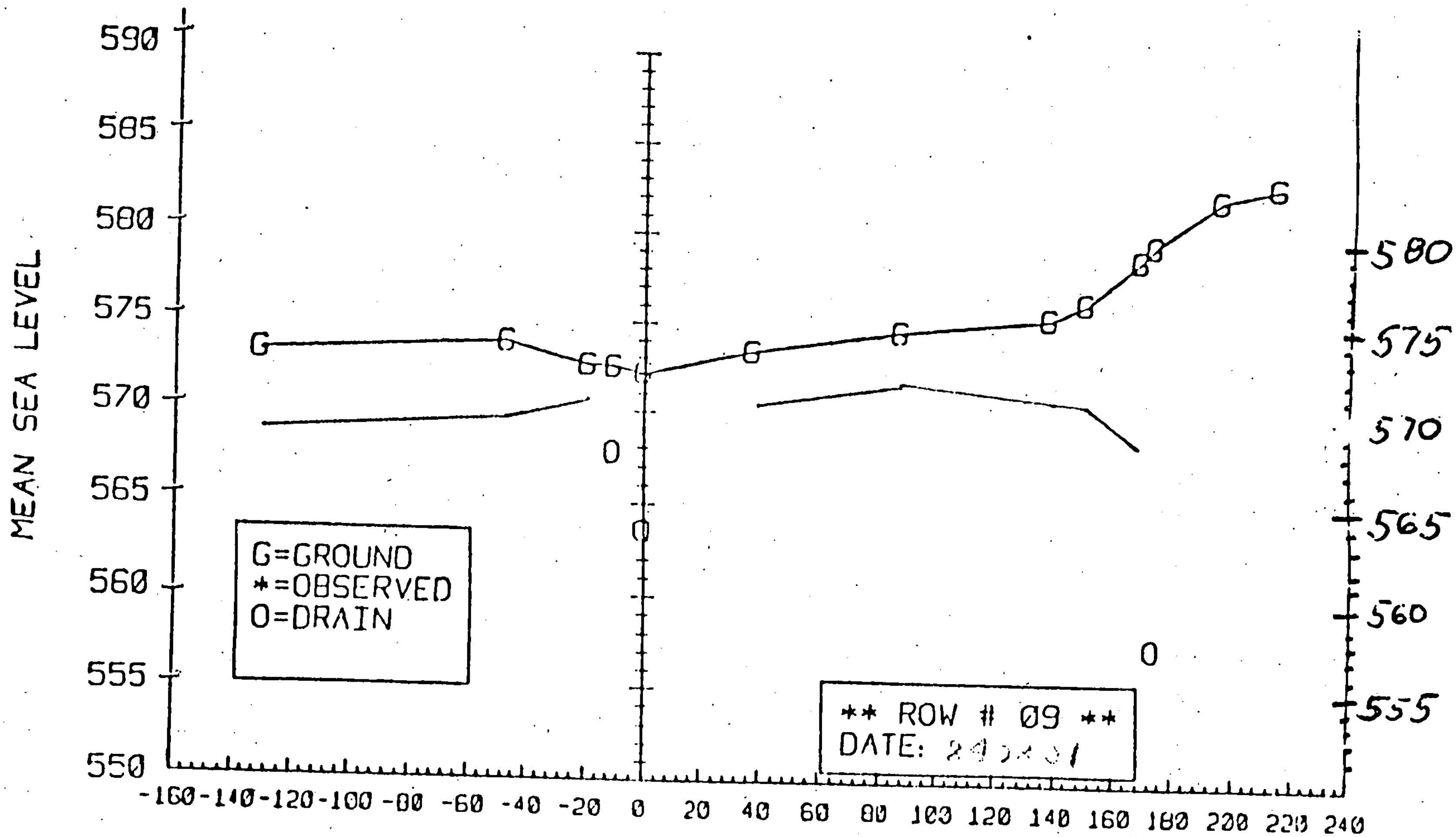
SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS

CROSS SECTION LOOKING NORTH



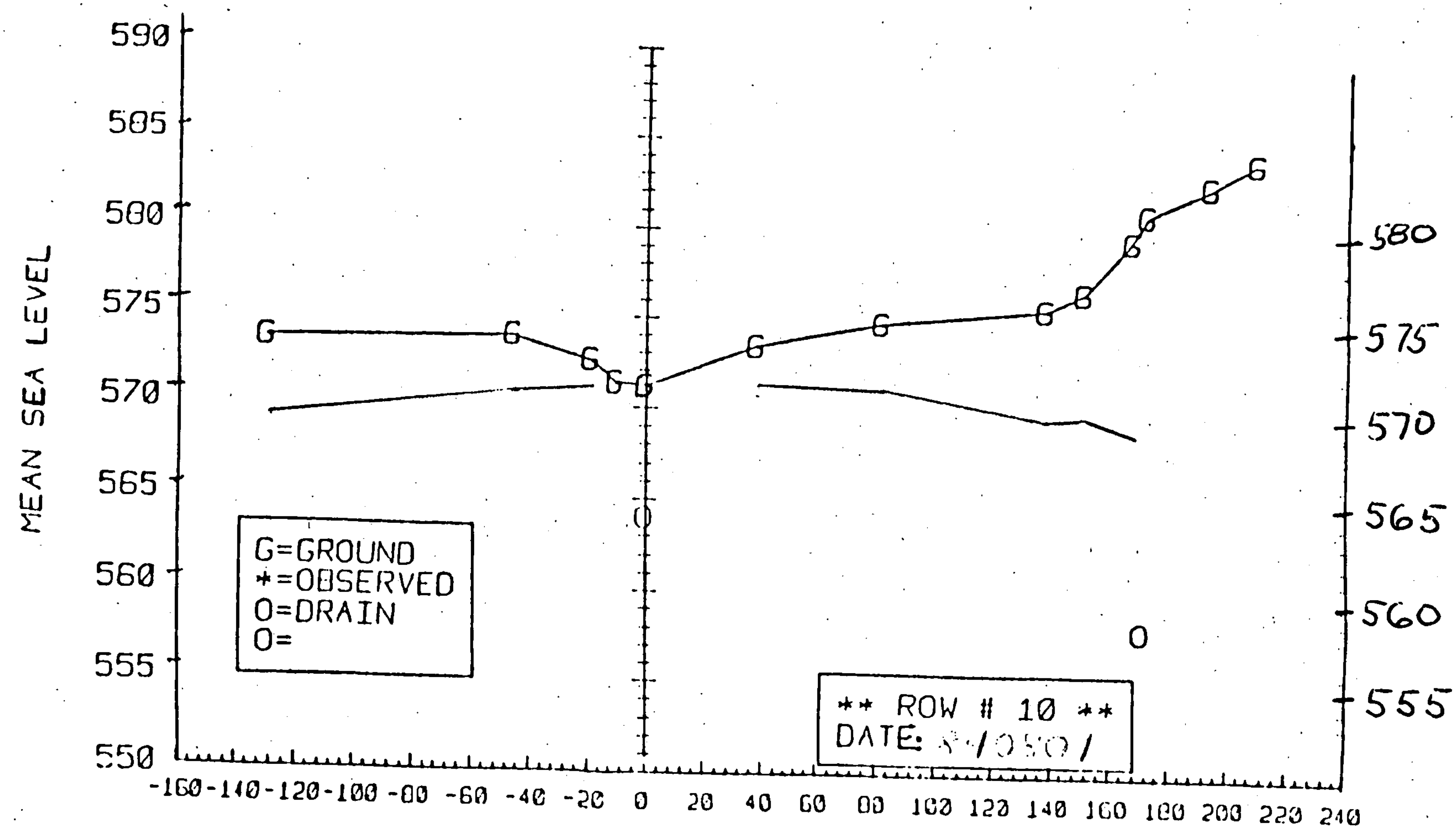
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



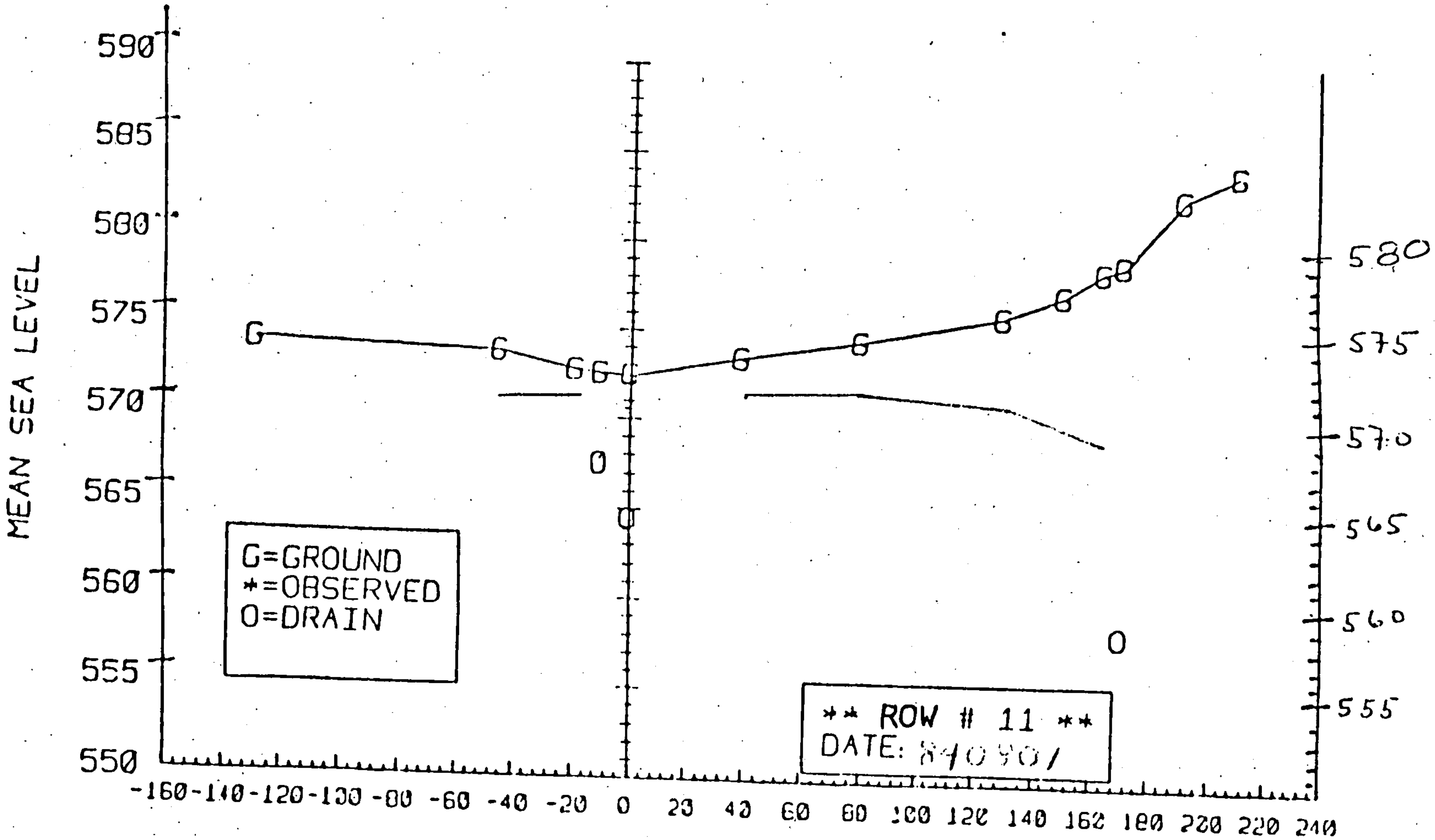
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



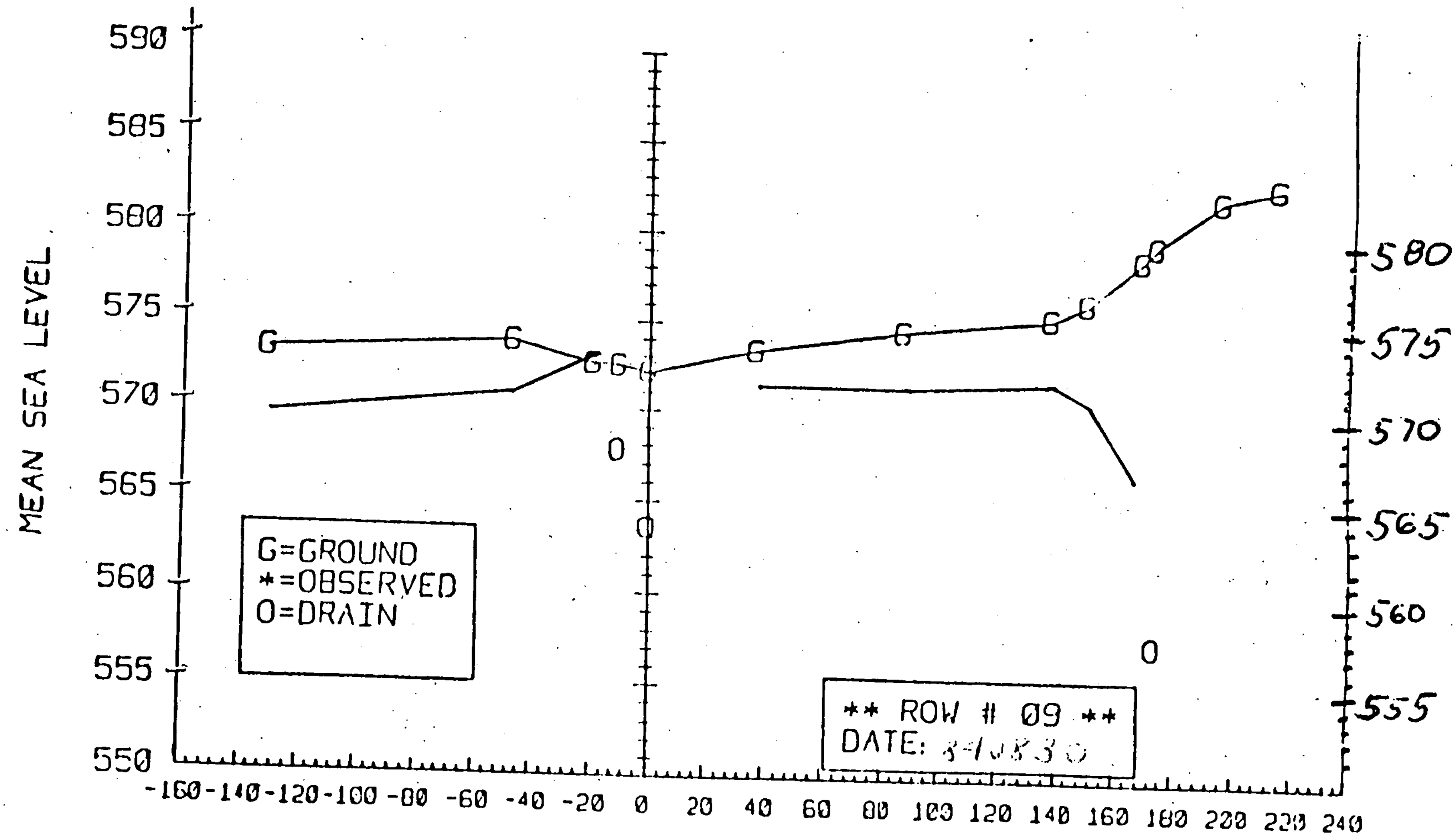
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



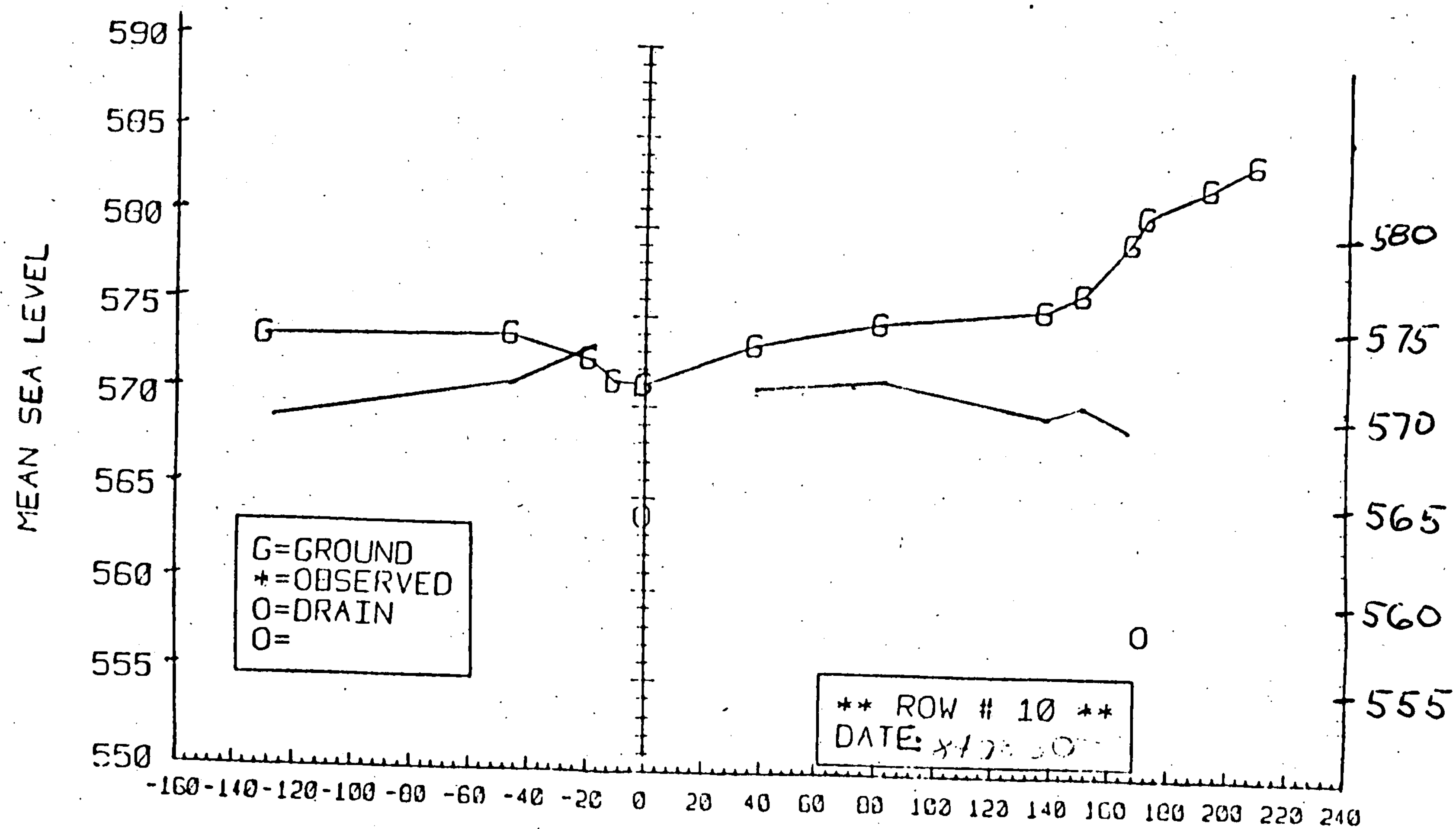
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



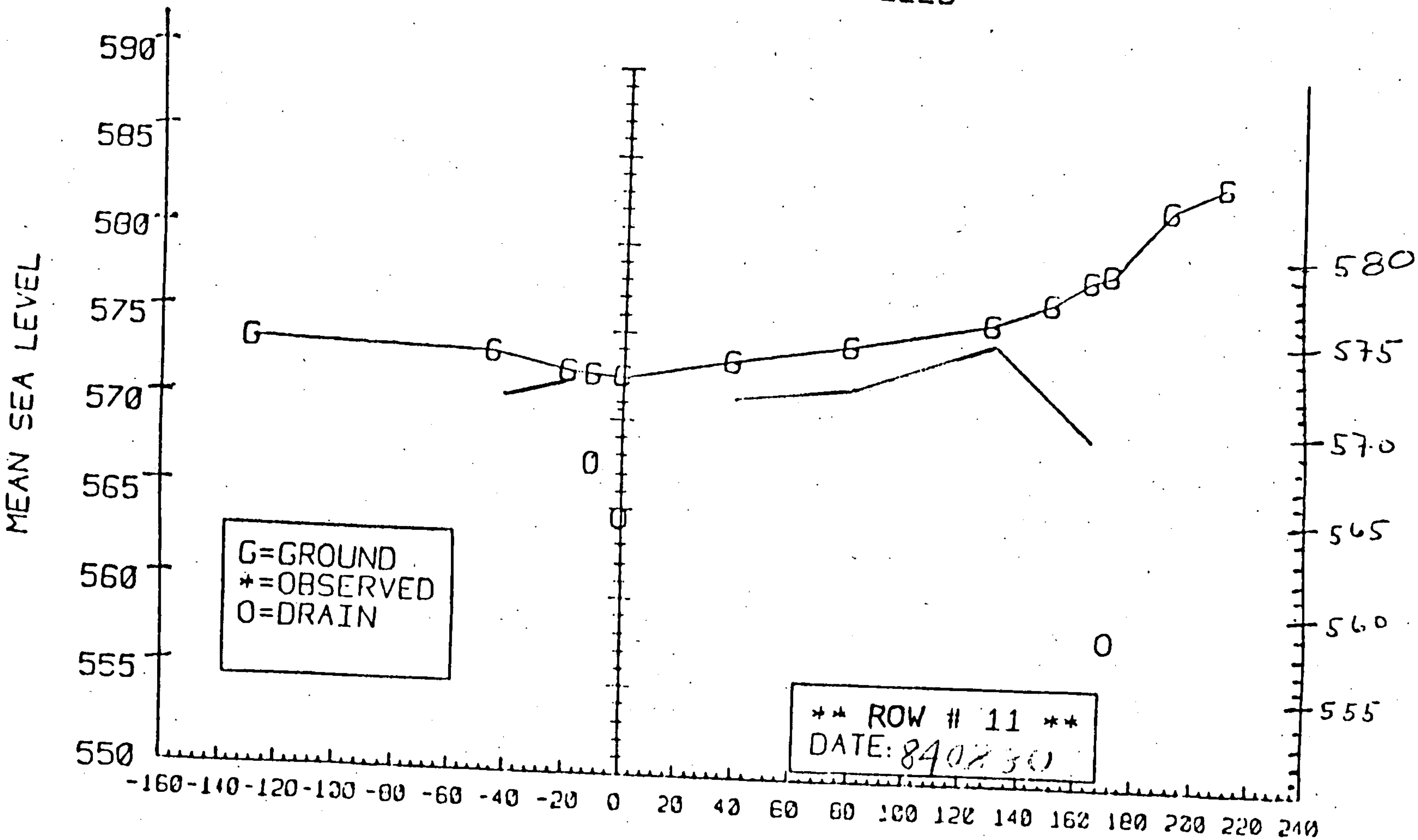
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



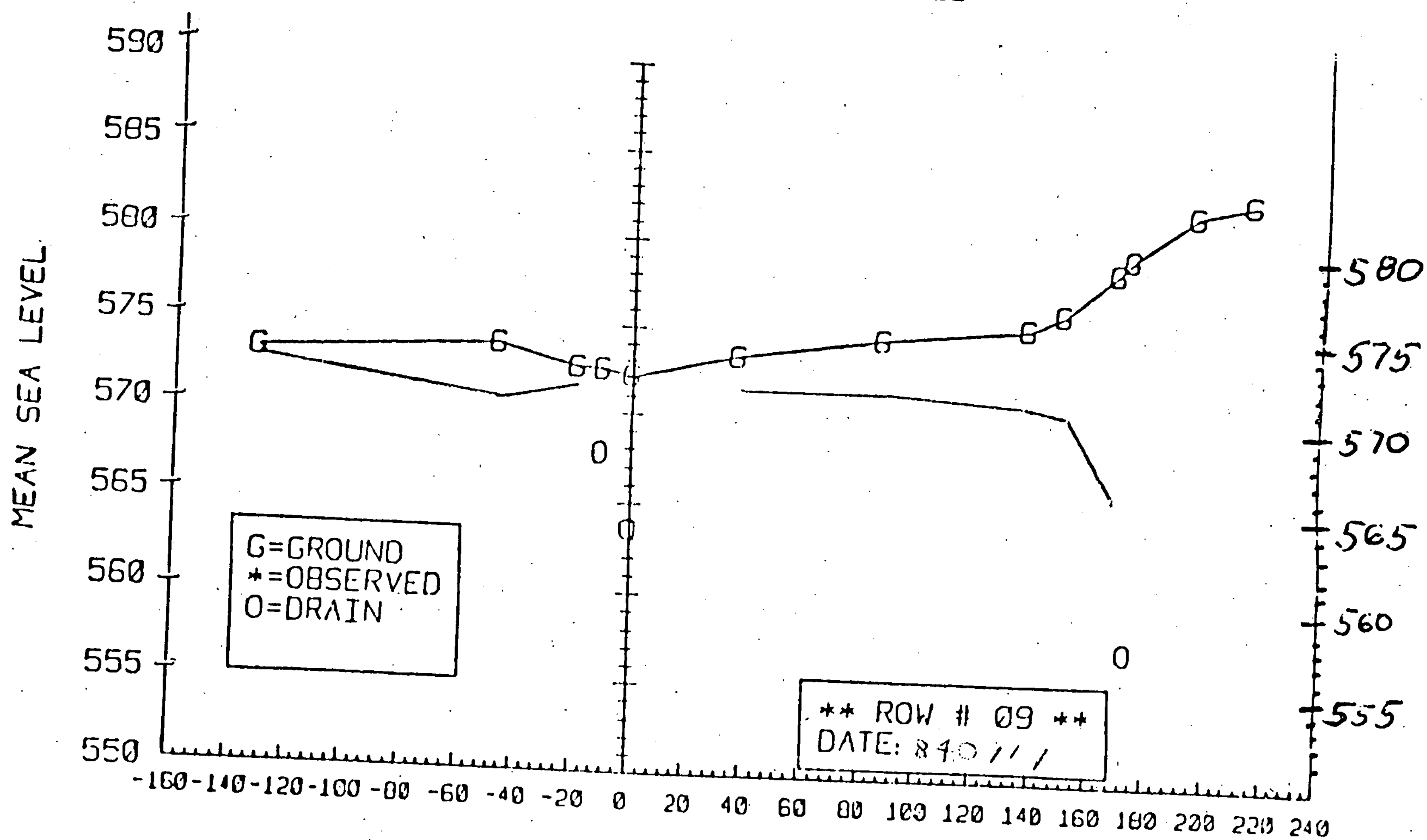
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



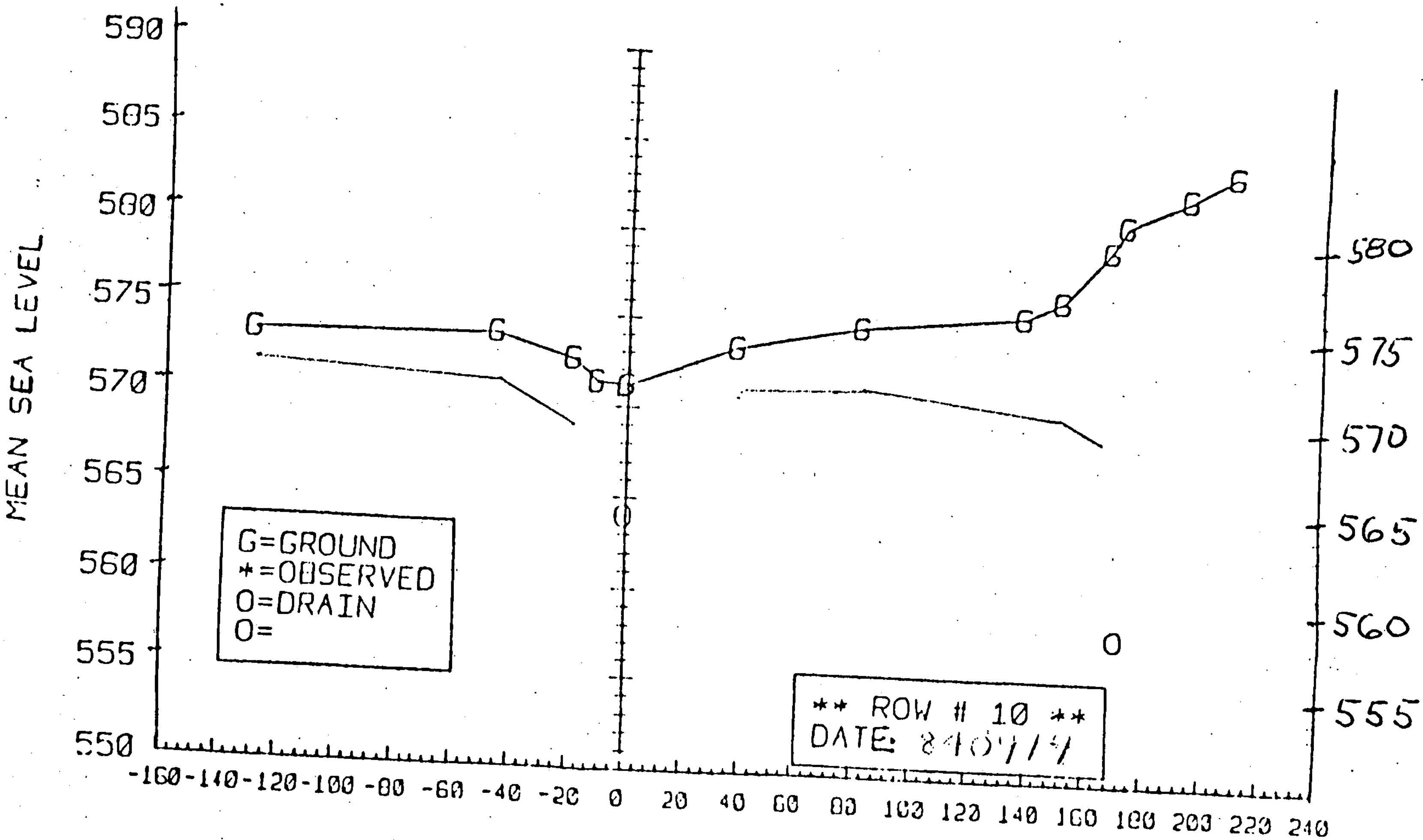
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



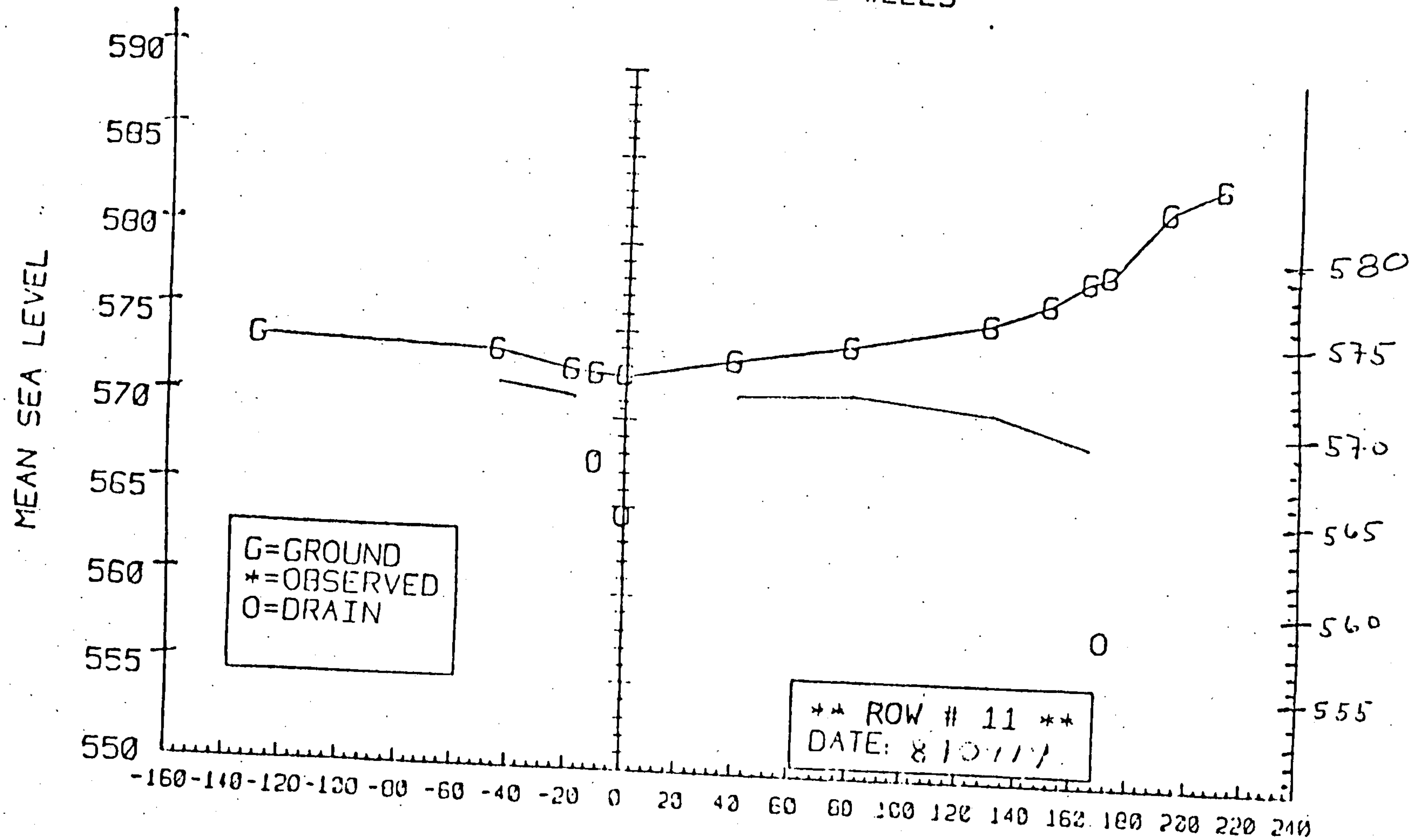
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



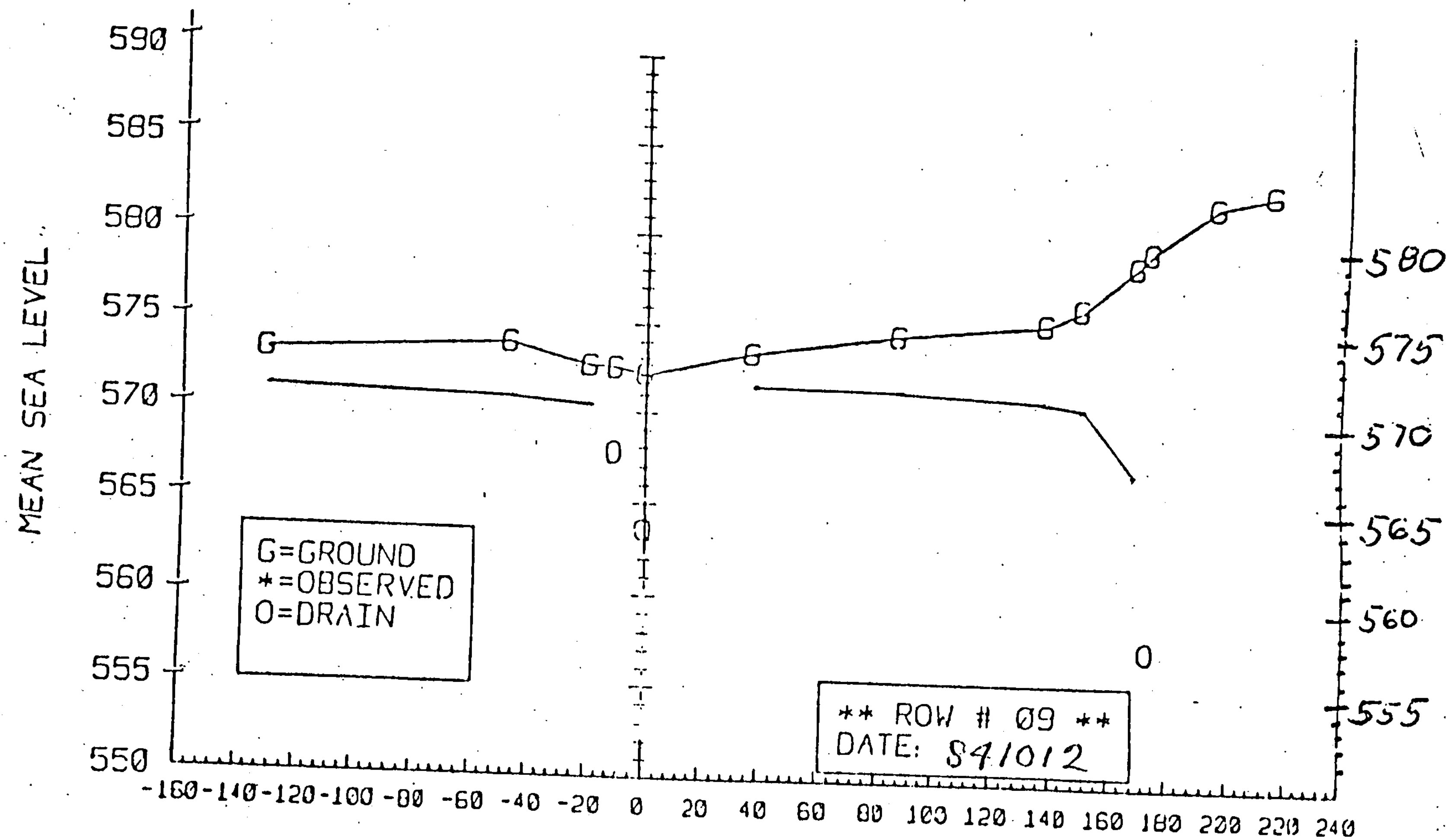
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



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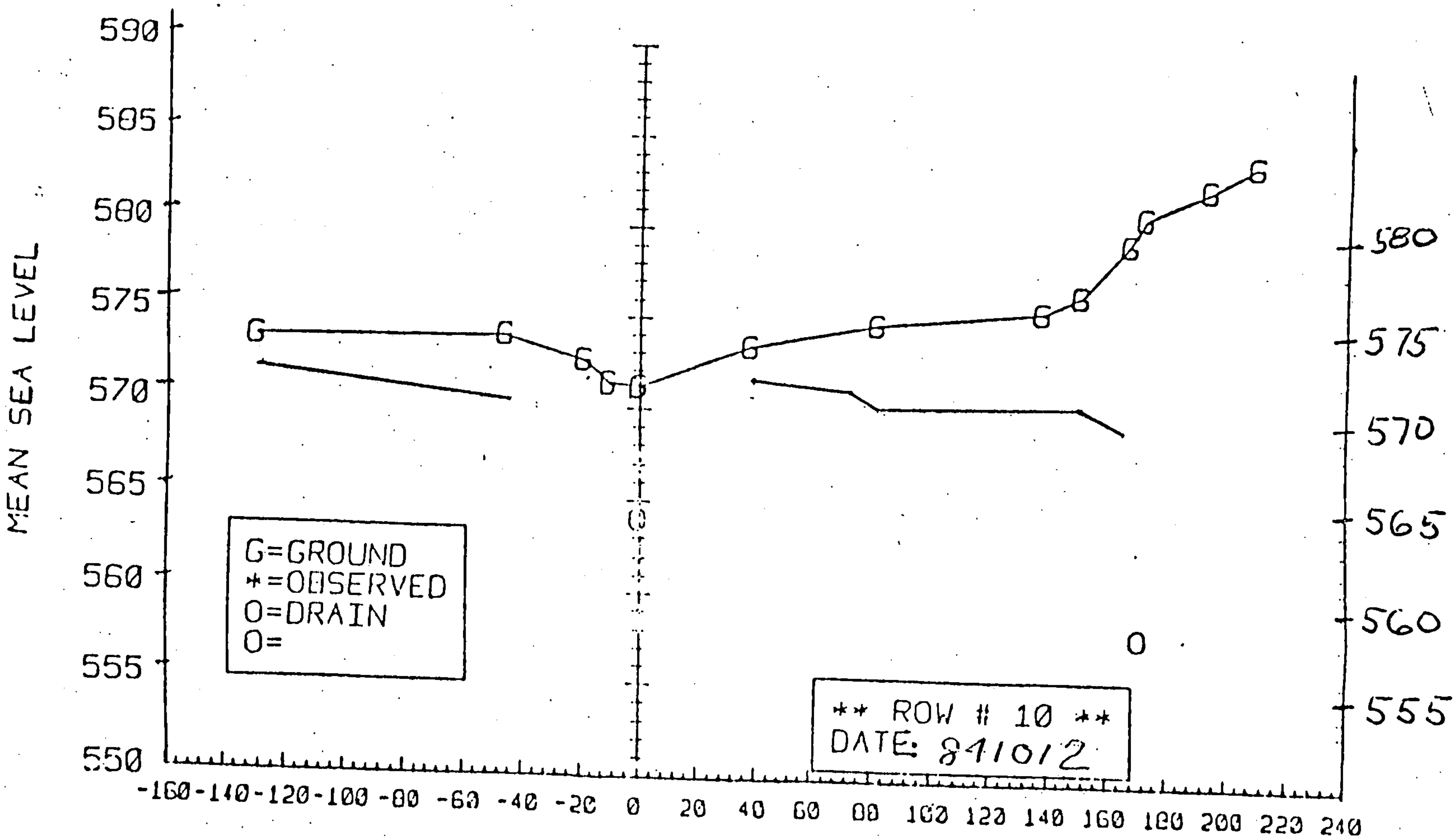
DIVISION OF SOLID WASTE

SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS



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SPECIAL PROJECTS UNIT
LOVE CANAL MONITORING WELLS