SITE INVESTIGATION REPORT AND REMEDIAL ALTERNATIVES REPORT

FOR

BROWNFIELDS INVESTIGATION MARKET BASKET PROPERTY GENEVA, NEW YORK

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ACRONYMS/ABBREVIATIONS

NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
CAS	Columbia Analytical Services
EPS	Environmental Products & Services
SI	Site Investigation
IRM	Interim Remedial Measure
RI	Remedial Investigation
FS	Feasibility Study
ASP	Analytical Services Protocol
TCL	Target Compound List
TAL	Target Analyte List
UG/KG	Micrograms per Kilogram, or parts per billion
PPB	Parts per Billion
MG/KG	Milligram per Kilogram, or parts per million
PPM	Parts per Million
VOC	Volatile Organic Compound
SVOC	Semivolatile Compound
PCB	Polychlorinated Biphenyl
BTEX	Benzene/Toluene/Ethylbenzene/Xylene
MEK	Methyl Ethyl Ketone
K	Hydraulic Conductivity
J	Laboratory Qualifier indicating estimated value detected below laboratory Quantification Limit

EXECUTIVE SUMMARY

Passero Associates, P.C. and Larsen Engineers completed the Site Investigation (SI) phase of the New York State Department of Environmental Conservation (NYSDEC) Brownfields Investigation of the Market Basket Parcel (Site) in the City of Geneva, New York pursuant to the Contract (Change Order) signed by the City of Geneva on November 30, 1998. *The work was performed in accordance with the NYSDEC-approved Workplan, Field Sampling Plan, Health & Safety Plan, and Quality Assurance Project Plan, dated July 1997.*

All work was completed in conformance with the New York State Department of Environmental Conservation (DEC), Division of Environmental Remediation, Municipal Assistance Environmental Restoration Projects "Brownfield Program" Procedures Handbook. This report follows the format suggested in Appendix 1 of the Brownfield Program "Procedures Handbook".

The Market Basket Site consists of two dilapidated buildings on the north and south sides of Gates Avenue in a primary industrial area north of downtown Geneva. The initial phase of fieldwork consisted of a passive soil gas investigation conducted in October 1998 (Section 2.6.1). The soil gas investigation was followed by drilling and sampling seventeen soil borings; eight of the soil borings were converted into groundwater monitoring wells. Two rounds of groundwater samples were collected for laboratory analysis in April 1999 and June 1999.

Interim Remedial Measures (IRMs) consisting of the removal of one 8000-gallon tank and two smaller tanks was performed; an additional source area to be remediated was identified where black oily sludge and groundwater sheen were encountered around pipes at the northeast corner of the southern Market Basket building.

The passive soil gas study and subsequent groundwater samples indicate a sub-slab source area of chlorinated compounds under the building on the south side of Gates Avenue. The dilapidated condition of the buildings has prevented sub-slab sampling to date.

An Interim Remedial Measure is recommended at the northeast corner of the southern Market Basket building. As discussed in Section 2.10.3, black sludge encountered in a trenching operation has SVOC present at levels above NYSDEC STARS Memo #1 Guidance Values. The nearby groundwater sample collected from MW-5 did not indicate any petroleum contamination in groundwater. The black sludge and surrounding soils should be characterized and removed for off-site disposal. Clean up of this area should be performed in conformance with STARS Memo #1.

EXECUTIVE SUMMARY (cont.)

The Market Basket buildings are in dilapidated condition, and present health & safety hazards to anyone who enters these structures. We recommend that the Market Basket buildings be demolished. After demolition has been completed, a sub-surface soil investigation should be conducted in the building footprints. Pockets of contaminated sub-slab soils will be identified and remediated after demolition, if applicable. Contaminated soils can be treated on site, or disposed off site. Remedial Alternatives will be selected, based on the volume of contaminated soils identified that require disposal or treatment on site.

1.0 INTRODUCTION

1.1 Purpose of Report

The purpose of this report is to present the results of the New York State Department of Environmental Conservation (NYSDEC) Brownfields Site Investigation (SI) of the Market Basket Site in the City of Geneva, New York.

1.2 Site Background

1.2.1 Description

The Market Basket Site is located at the corner of Gates Avenue and Lehigh Street in the City of Geneva, New York (Figure 1, Regional Map). The 2.6-acre parcel is located in a New York State Economic Development Zone within a primary industrial area north of downtown Geneva. The site consists of two buildings in poor condition, on the north and south sides of Gates Avenue, bounded by Lehigh Street to the west.

1.2.2 Site History

Geneva Historic Society

The information that Geneva Historic Society provided specific to the Market Basket site references the Sanborn Maps and City Directory as discussed below. They indicate that The Geneva Cutlery Company occupied the southern Market Basket parcel, and the subject parcel on the north side of Gates Avenue was undeveloped at that time. In 1931, Market Basket Corp. purchased the old Geneva Glass Co. property, which occupied the site at that time. The Corporation moved its headquarters to the Gates Avenue site in April 1955, a year before operations were halted in 1956. The site was sold at public auction in April 1962, and the transfer to William Yalden was made in September of that year. He reportedly planned to open a gelatin & frozen foods plant, but there is no evidence that he ever did. In the 1965 Geneva City Directory, there is a listing for Great Eastern Company, a storage warehouse. This disappears from the directories after that until 1975, when Old Town tool rental appears. Yalden was murdered in 1986, and had been operating Old Town Rentals. He also rented out space for paint booths for do-it-yourself auto body repair (Appendix 10).

Sanborn Fire Insurance Maps

The 1915 Sanborn Fire Insurance Map (Appendix 12) indicates that the portion of the subject site located on the south side of Gates Avenue was a portion of the "Geneva Cutlery Company" (manufacturer of

straight edge shaving razors organized in 1900). The western portion of the present day building was used as "offices & sales rooms"; the eastern portion of the building was not yet present.

The 1925 Sanborn Map indicates the "Market Basket Corporation grocery warehouse" on the north side of Gates Avenue. The portion of the subject site located on the south side of Gates Avenue was part of the Geneva Cutlery Company. The western portion of the building was used for sales and office space, and the eastern portion of the building was used for "polishing & assembling".

The 1968 Sanborn Map indicates that the subject building on the south side of Gates Avenue was a portion of "Sterns Nursery, Inc., packaging & receiving department". The subject building on the north side of Gates Avenue was noted as a warehouse, "formerly Seneca Storage". A "gas tank" was indicated at the northwest corner of the east wing of the warehouse; the northwest wing of the building was a "private garage" with concrete floor.

City Directory

In the 1965 Geneva City Directory, Great Eastern Company (storage warehouse) was listed at 43 Jackson Street. There is no further listing until 1975, indicating that the subject buildings were vacant. In 1975, Old Town Tool Rental was listed at 43 Jackson Street. Old Town Tool Rentals reportedly rented out space for paint booths for auto body repairs until 1986. The majority of the facility has been vacant since 1965.

The property was abandoned in 1988, and has been vacant for approximately 12 years.

Historic Aerial Photos

Aerial photographs from the period 1968 through 1995 were reviewed at the Ontario County Department of Planning. The Market Basket buildings were present throughout this period, in the same configuration that they were encountered during this Site Investigation. The former H.B. Fuller site, adjacent to the east, and the abutting commercial building to the south are visible throughout the period of these photos. There is no evidence at the scale of the 1968 aerial photo of the "gas tank" noted at the northeast corner of Market Basket in the 1968 Sanborn Map.

1.2.3 Previous Investigations

In February 1997, the City of Geneva Engineering Department inspected the site and noted "approximately twenty 55-gallon drums and dozens of five-gallon cans of unknown origin or contents found in the building and on the grounds. The drums and cans were in poor condition with evidence of leakage. The building was also found to have significantly damaged and friable suspect asbestos containing pipe insulation".

In 1987, the Geneva Fire Department noted that "the building was in a deplorable condition and a very definite fire hazard...the structural integrity of portions of the building pose a genuine threat to the lives of firefighters; with holes in the floors and collapsing ceilings and roof supports".

2.0 STUDY AREA INVESTIGATION

2.1 Surface Features

The Market Basket buildings occupy the north and south sides of Gates Avenue; an open courtyard and former loading dock area are present at the north side of the site. To the south, the AXS Furniture, Inc. building abuts the south side of the southern Market Basket building. The local topography generally slopes east to southeast across the Market Basket site.

2.2 Contaminant Source Investigations

A passive soil gas study was conducted during the preliminary phase of fieldwork to identify potential source areas to investigate during the subsequent drilling phase of the site investigation (Figure 2). A gas tank noted on the 1968 Sanborn Map was removed as an interim remedial measure, and soils were handled in conformance with DEC STARS Memo #1. An additional fuel oil tank was removed from the south side of Gates Avenue. Unidentified pipes were investigated relative to potential tanks or soil contamination at several locations on the south side of Gates Avenue.

2.3 Meteorological Investigations

Information relative to prevailing wind directions in the Geneva area was provided by Robert Seem of the Cornell University New York State Agricultural Experiment Station. Data for the year 1978 indicate that on a month by month basis, the prevailing wind direction in Geneva was from the west-northwest quadrant. The historic documents relative to Market Basket do not indicate potential concern relative to airborne releases from the site.

2.4 Surface Water and Sediment Investigations

Surface water and sediments are not present on the Market Basket site, and were not investigated as part of this SI.

2.5 Geological Investigations

As previously mapped, the overburden geology at the site consists of lacustrine deposits, which were deposited in proglacial lakes and extend to a depth of greater than 15 feet below ground level. The deposits include laminated clays and silts, with thickness of up to 50 meters (Surficial Geologic Map of New York, Finger Lakes Sheet 1986).

To obtain site-specific geological information and analytical data, a drilling program was conducted in February, 1999. Seventeen soil borings were drilled and sampled to depths of fifteen feet (Figure 3, Monitoring Well/Borehole Location Map).

Soil borings were drilled and sampled with a truck-mounted drill rig. Hollow-stem augering with continuous 2-inch diameter split-spoon soil sampling was conducted by American Auger & Ditching Co., Inc. under the supervision of Peter S. Morton, C.P.G. Boreholes BH1 to BH5 were sampled continuously to a depth of 14 feet; BH7 and BH8 were sampled on 3-foot intervals to a depth of 15 feet; BH9 to BH18 were sampled to depths ranging from 6 feet to 9 feet below grade. Borehole logs are included in Appendix 2.

2.6 Soil and Vadose Zone Investigations

In conformance with the DEC Brownfield Program "Procedures Handbook", soil conditions were characterized in the unsaturated zone above groundwater ("vadose zone"). As discussed below, an initial vadose zone soil gas investigation was conducted to identify potential areas of concern, and to aid in selecting sample locations for the subsequent drilling program.

2.6.1 Passive Soil Gas Investigation

In October 1998, a passive soil gas investigation was conducted to screen the site for vadose zone organic vapors, and identify specific areas for further investigation. As indicated on Figure 2, the sample points were located at sub-slab locations inside accessible portions of the building. Points were also installed around the perimeter of the buildings to investigate potential plume migration in groundwater. Nineteen Emflux sorbent cartridges were placed in the ground, including two sub-slab locations in the building on the south side of Gates Avenue and collected three days later (Figure 2, Appendix 3). The

samples were shipped to Maryland Spectral Services, Inc. on 10/28/98 for analysis on 10/29/99.

2.6.2 Drilling Program

In the subsequent drilling phase of the SI, 15 vadose zone soil samples were collected and submitted to Columbia Analytical Services (CAS) for analysis in conformance with NYSDEC Analytical Services Protocol (ASP) methodology with Category B deliverable package analyses for Target Compound List (TCL) volatile organic compounds (VOC) and TCL semi-volatile organic compounds (SVOC), and Target Analyte List (TAL) inorganics.

2.7 Groundwater Investigations

During the week of February 15-22, 1999, eight groundwater monitoring wells were installed on the Market Basket site. The wells were developed by hand-bailing and low-flow pumping in April 1999, and groundwater samples were collected on April 28, 1999 and June 29, 1999. In the first round of samples collected in April, analysis for Target Compound List (TCL) volatile organic compounds (VOC) and TCL semi-volatile organic compounds (SVOC), and Target Analyte List (TAL) inorganics were performed in conformance with NYSDEC Analytical Services Protocol (ASP) methodology with Category B deliverable package.

Based on the April sample results, with DEC approval, the second round of groundwater analyses were performed by non-ASP methodologies for volatile analysis and inorganic analysis only.

2.8 Human Populations Surveys

Information supplied by the City of Geneva indicates that the City has a population of almost 15,000 people. A Human Populations Survey is generally conducted as part of the Detailed Analysis of Alternatives portion of the Risk Assessment. Passero Associates, Larsen Engineers, NYSDEC, and NYSDOH had a meeting on June 21, 1999, to discuss the results of the first round of soil and groundwater sampling. It was agreed upon at that meeting that, based on the prevalence of samples with no compounds detected in any of the analyses ("non detects"), that a quantitative Risk Assessment was not warranted. Based on the above, a Human Population Survey was not submitted as part of this SI/RA project.

2.9 Ecological Investigations

The Market Basket Site is located in a primarily industrial area. Adjacent properties consist of commercial buildings to the east, southeast, and south, with residential neighborhoods to the west and north. The two subject

buildings, and concrete courtyard north of the northern building, cover the Market Basket Site; there are no surface waters or wetlands on site. The potential for ecological transport off site is primarily through groundwater. As discussed relative to a Human Population Survey, because of the prevalence of "non detects" in the first round of analytical data, an Ecological Investigation was not completed to quantify the Risk Assessment portion of the project.

2.10 Interim Remedial Measures

2.10.1 8000-gallon Tank Removal

April 1999

On April 20, 1999, an 8000-gallon underground storage tank, located at the northeast corner of the Market Basket building on the north side of Gates Avenue was removed from its in-ground location and transported off site by Environmental Products & Services (EPS). The tank had been previously exposed and cleaned in place by EPS. Upon arrival at the site on April 20, it was discovered that the tank had rolled approximately 180 degrees in the pit, submerging the man-way opening in the pit water. Before attempting to remove the tank, two "lifting eyes" were welded onto the tank. Cables were attached to the "eyes" and, using a crane, the tank was lifted above the pit. Water in the tank was allowed to drain back into the pit before moving it City of Geneva Fire Chief Ralph DeBolt witnessed the tank removal.

After allowing the tank to drain over the pit, it was lifted and placed on the concrete pad adjacent to the excavation, where more of the water was allowed to drain onto the ground. Water coming out of the tank did not appear to have any product sheen. While draining in this location, PID readings from the man-way were requested by the fire chief. The readings on the PID meter peaked at approximately 29 ppm. The fire chief indicated no concerns, and the tank was loaded and removed for off-site disposal. PID readings of ambient air in the pit were also measured; readings around the excavation peaked at approximately 0.2 ppm.

Confirmatory tank pit soil and groundwater samples were collected. Soil samples were also collected from each of two separate piles of staged soil removed from the tank pit excavation. These piles were referred to as the North Pile and the South Pile. Representative soil samples were collected from each of the three excavation walls of the open pit (north, east and west walls). DEC witnessed and concurred with the sample collection activities. During the sampling of the north wall, one of the pipes coming out of the wall was moved and product spilled into the pit. Attempts were made to collect a water

sample from the pit before the product sheen spread to the sampling location.

All samples were transported to Columbia Analytical Services laboratories for volatile and semi-volatile organics in accordance with DEC STARS Memo #1.

April STARS Data

No STARS compounds were detected in the confirmatory samples collected from the north wall, east wall, and west wall of the tank pit (Appendix 4); a concrete wall prevented sample collection from the south wall of the pit.

The soil sample collected from the northern pile of staged soil, and the water sample collected from the pit had STARS Method 8021 parameters detected at concentrations greater than STARS Guidance Values.

STAGED SOIL, NORTH PILE – STARS VOC

COMPOUND DETECTED	CONCENTRATION (ug/kg) (ppb)	GUIDANCE VALUE (ppb)
sec-Butylbenzene	1600	100
n-Butylbenzene	6600	100
Isopropylbenzene	860	100
p-Isopropyltoluene	1400	100
Naphthalene	500	200
n-Propylbenzene	2300	100
Toluene	210	100
1,2,4-Trimethylbenzene	8200	100
1,3,5- Trimethylbenzene	7100	100
o-Xylene	1900	100
m,p-Xylene	3600	100

8000-GALLON TANK PIT – WATER SAMPLE

COMPOUND DETECTED	CONCENTRATION (ppb)	GUIDANCE VALUE (ppb)
sec-Butylbenzene	2.6	5
n-Butylbenzene	23	5
Ethylbenzene	16	5
Isopropylbenzene	6.5	5
p-Isopropyltoluene	3.6	5
Naphthalene	2.0	10
n-Propylbenzene	11	5
Toluene	4.6	5
1,2,4-Trimethylbenzene	51	5
1,3,5-Trimethylbenzene	55	5
o-Xylene	16	5
m,p-Xylene	34	5

Subsequent to the STARS sampling described above, the City of Geneva had safety concerns relative to the open pit, and the Department of Public Works backfilled the pit. Some of the north pile of contaminated staged soil was apparently backfilled, along with additional soil previously determined to be contaminated, staged on the north portion of the Market Basket site by the City of Geneva.

June 1999

On June 7, 1999, the tank pit was re-excavated, and samples were screened and sampled in conformance with the STARS Memo. The soils that had been backfilled were excavated and screened for organic vapors with a PID meter.

At an approximate depth of eight feet, a small pocket of discolored (grey) soil was encountered in the northeast corner of the excavation. A fuel odor was noted, and a peak value of 170 ppm was measured in the PID headspace screening. Approximately 10 yards of soil was determined to be contaminated by odor and elevated PID readings; the contaminated soil was staged on, and covered with polyethylene in conformance with the STARS Memo.

With the exception of the minor quantity of soil determined to be contaminated as described above, the remainder of the excavated soil exhibited no staining, odors, or elevated PID readings. The City required that the pit be backfilled upon completion. To avoid the cost of transporting clean fill soils from off site, these soils were re-used as backfill. Prior to backfilling the excavation, the pit and backfill soils were sampled in conformance with the STARS Memo, and the hole was lined with polyethylene. Analytical results are included in Appendix 5.

June STARS Data

No STARS compounds were detected in the north wall of the pit and pit bottom samples (Appendix 5). In cases where the laboratory Method Detection Limit is greater than the STARS Guidance Value, the STARS Memo indicates when "the Guidance Value or standard is below the detection limit, achieving the detection limit will be considered acceptable for meeting the Guidance Value or standard". STARS compounds detected in the remainder of the samples are presented below:

TANK PIT – SOUTH WALL

STARS 8021 VOCs – Non Detect

STARS 8270 SVOCs

COMPOUND	CONCENTRATION (ppb)	STARS GUIDANCE (ppb)
Fluoranthene	590	1000
Phenanthrene	470	1000

TANK PIT – EAST WALL

STARS 8021 VOCs

COMPOUND	CONCENTRATION (ppb)	STARS GUIDANCE (ppb)
n-Butylbenzene	1.8	100
1,3,5-Trimethylbenzene	2.2	100

STARS 8270 SVOCs – Non Detect

TANK PIT – WEST WALL

STARS 8021 VOCs

COMPOUND	CONCENTRATION (ppb)	STARS GUIDANCE (ppb)
n-Butylbenzene	4.2	100
n-Propylbenzene	1.4	100
1,3,5-Trimethylbenzene	4.3	100
o-Xylene	3.0	100

STARS 8270 SVOCs

COMPOUNDS	CONCENTRATION (ppb)	STARS GUIDANCE (ppb)
Benzo(a)anthracene	440	0.04
Benzo(a)pyrene	440	0.04
Benzo(b)fluoranthene	450	0.04
Benzo(k)fluoranthene	410	0.04
Chrysene	430	0.04
Fluoranthene	950	1000
Phenanthrene	570	1000
Pyrene	700	1000

BACKFILL SOILS

STARS 8021 VOCs

COMPOUNDS	CONCENTRATION (ppb)	STARS GUIDANCE (ppb)
sec-Butylbenzene	1.8	100
n-Butylbenzene	6.3	100
Naphthalene	18	200
n-Propylbenzene	1.9	100
1,2,4-Trimethylbenzene	3.0	100
1,3,5-Trimethylbenzene	3.9	100

STARS 8270 SVOCs

COMPOUNDS	CONCENTRATION (ppb)	STARS GUIDANCE (ppb)
Fluoranthene	670	1000
Pyrene	590	1000

Although instrument detection limits for many of the Method 8270 semi-volatile compounds are greater than STARS Memo Guidance Values, the "non-detects" are acceptable per STARS Memo provisions.

Discussion

As indicated above, several SVOC compounds were detected from the tank pit west wall at concentrations greater than the STARS Memo #1 Guidance Values. However, the concentrations of these compounds are below acceptable values presented in DEC Spills Unit Guidance for Spill Inactivation where clean closure has not been demonstrated. Monitoring well MW-2 installed adjacent to, and down-gradient from the tank pit, revealed several petroleum parameters at concentrations greater than STARS Memo #1 Guidance Values:

April 1999

Compound	Concentration (ppb)	STARS MEMO Guidance Value (ppb)
Ethylbenzene	11	5
o-xylene	65	5
CM+pl-Xylene	21	5

June 1999

Compound	Concentration (ppb)	STARS MEMO Guidance Value (ppb)
1,2,4 Trimethylbenzene	11	5

MW-4 is located on the east side of the Market Basket building down-gradient from MW-2 and the former tank pit. No STARS compounds were detected in groundwater sampled from MW-4 in either the April 1999 or the June 1999 sampling events.

Based on the isolated soils with SVOCs in excess of STARS memo Guidance Values, and the "non-detects" of any STARS compounds in

MW-4, the former tank and trace residual contamination, does not appear to warrant further investigation or remediation.

2.10.2 Additional Tanks

On October 15, 1998, EPS excavated pipes at the southeast corner of the southern Market Basket building and north of the building near monitoring well MW3, and on October 19,1998, two additional tanks were removed:

EPS removed a 500-gallon water-filled tank from the southeast corner of the building; four 55-gallon drums of water/sludge were removed prior to pressure-washing this tank. No evidence of stained soils, elevated PID readings, or evidence of soil contamination was noted when this tank was removed. As such, no samples were taken from the tank pit for laboratory analysis.

EPS removed an approximately 290-gallon riveted heavy steel tank from north of the building near the MW3 location. A minor sheen was noted on water in the tank, and discolored soils were noted when the tank was removed. No STARS 8021/8270 compounds were detected in soil samples from nearby Boreholes BH-16, BH-17, and BH-18 drilled in February 1999 (Figure 1, Section 4.2). No STARS 8021/8270 compounds were detected in the groundwater sample collected from MW-3 in April 1999 (Section 4.3).

An NYSDEC Petroleum Bulk Storage (PBS) Application was completed for City of Geneva submission to the Region 8 Bulk Storage Unit, to register and close the three tanks in compliance with 6NYCRR Part 612, 613 PBS regulations (Appendix 11).

2.10.3 Trenching

On October 15, pipes at the northeast corner of the building on the south side of Gates Avenue were investigated by trenching. Shallow water in a wood trench was encountered; an oily sheen was noted on the water, and surrounding soils are a black sludge.

The sludge and trench water were sampled for laboratory analysis (Appendix 6):

SLUDGE

	Compound Name	Concentration (UG/KG)	STARS GUIDANCE
VOCs	Acetone	12J	
	2-Butanone	4J	
	Trichloroethene	4J	
	Unknown Hydrocarbon TICs	**12000J**	
SVOCs	Phenanthrene	**2200J**	1000
	Pyrene	**4700J**	1000
	Benzo(a)Anthracene	**1800J**	0.04
	Chrysene	**4200J**	0.04
	Bis(2-Ethylhexy)Phthalate	**3000J**	
	SVOC TICs	**597000J**	

DISCUSSION

The data are all estimated quantities, as noted by the Laboratory "J" qualifier. "J" indicates that the reported value is an estimated value that falls between the laboratory instrument Method Detection Limit (MDL) and Practical Quantification Limit (PQL). Because of the sludge composition of the sample, CAS ran a sample pre-screen and identified high levels of contaminants. The high contaminant concentration necessitated running the samples with a higher MDL, and the PQL is also higher for this sample. As indicated above, the estimated concentration values of several of the SVOCs are orders of magnitude greater than STARS Memo Guidance Values. The analytical data, provided to NYSDEC under separate cover, indicate that four isomers of trimethyl Naphthalene were detected in concentrations ranging from 19,000 to 40,000 ppb, and unknown TICs were detected in concentrations as high as 72,000 ppb. The STARS limit for any contaminant is 10,000 ppb.

TRENCH WATER

No VOCs or SVOCs were detected in the trench water sample collected for analysis on April 20, 1999.

STATUS

No remediation has been performed at the trench area to date. As part of the future remedial work, the black sludge and surrounding soils should be characterized and removed for off-site disposal. **Clean up of this area should be performed in conformance with STARS Memo #1.**

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

3.1 Geology

Soils beneath the Market Basket site have been previously mapped as proglacial lacustrine silts and clays (Surficial Geologic Map of New York, Finger Lakes Sheet, 1986). Soils encountered during this investigation are comprised primarily of fine-grained sands with varying amounts of silt and clay; consistent with the lacustrine deposits previously described (Soil Boring Logs, Appendix 2).

3.2 Hydrogeology

3.2.1 Monitoring Wells

During the February 1999 drilling program, eight monitoring wells were installed (Figure 3). Because of the similarity of the fine sandy soils with varying amounts of silt encountered across the site, all of the wells were installed with similar completion specifications (Appendix 2). Drilling was performed by hollow-stem augering to depths of fifteen feet, and a 2-inch-diameter PVC monitoring well, screened from fifteen feet to five feet, was installed at all well locations (Appendix 7).

3.2.2 Groundwater Contours

The adjacent property to the east of Market Basket is the former H.B. Fuller Company; a July 1996 Phase II Site Assessment was conducted for H.B. Fuller by Leggette, Brashears & Graham, Inc. Water Levels were measured from the Market Basket site, in conjunction with water levels from the former H.B. Fuller monitoring wells on June 29, 30 1999. The measured depths to water and City of Geneva survey data for well elevations, were used to calculate the groundwater contours beneath the Market Basket site (Appendix 8). Depth to groundwater was measured prior to sampling in all of the Market Basket wells on June 29, 1999; groundwater depths were also measured in the wells at the adjacent former H.B. Fuller Site on June 29. As indicated on the contour map, the groundwater flow direction beneath the Market Basket Site is primarily to the east. An approximate gradient of 0.02 foot per foot from MW-1 at the northwest corner of the Market Basket Site to MW-106 at the southeast corner of the H.B.Fuller Site is calculated based on the June 29 groundwater levels.

3.2.3 Hydraulic Conductivity

METHODOLOGY

Hydraulic conductivity testing of the uppermost water bearing zone was performed in MW-6 and MW-7 by performing slug tests during the second round of groundwater sampling on June 29, 1999. Prior to performing the actual slug tests, an appropriate method for calculating hydraulic conductivity (K) values had to be selected. Based upon several known characteristics of the screened water bearing zone (unconfined, partially penetrating wells, water levels in the screens) and the planned method of slug testing, the Bouwer Rice method of calculating hydraulic conductivity values was selected.

Prior to performing the slug tests, the depths to water level and the bottom of each well were measured from the top of the PVC well casing; the wells tested were of similar construction and depth. Slug tests were performed using the rising head test. Since the water levels were in the screens of the wells being tested, the rising head method was most appropriate. This method is performed by quickly removing a volume of water or solid slug from the well and measuring the rise/recovery of the lowered water level over time.

FIELD PROCEDURE

As stated above, the slug-test method utilized was a rising-head test, requiring a volume of water be quickly removed from the well casing, and the subsequent rise of the lowered water level measured and recorded over time. During these slug tests a bailer was lowered into each tested well, and the water level was allowed to return to static. Once the water level in the well returned to static, the bailer full of water (approximately 1 liter) was quickly removed; the subsequent water levels were measured as the water level recovered over time. Water levels were measured using a Solinst water level indicator equipped with an audible alarm. Depths to water were measured at timed intervals and recorded in the field book. In most cases, the water levels in the tested wells were measured until approximately 90% of the original static water level had returned. Field measurements collected during the slug testing are included as Appendix 9.

The Bouwer/Rice method was used to calculate the hydraulic conductivities (K values) for wells MW-6 and MW-7.
The calculated K values are:

- MW6: 4.8×10^{-4} cm/sec
- MW7: 2.0×10^{-4} cm/sec

3.3 GROUNDWATER FLOW VELOCITIES

Flow velocities within the water bearing zone were calculated from an approximate average horizontal gradient of the water level surface across the site (2.5%); an estimate of the actual formation porosity (40%); and the average K value from the two wells tested (7.6×10^{-6} cm/sec). Groundwater flow velocity at the Market Basket site is approximately 4.87×10^{-1} ft/yr.

The calculation is as follows:

Flow Velocity = K (horizontal gradient) / porosity.

4.0 Nature and Extent of Contamination

The results of the STARS sampling for the 8000-gallon tank are discussed in Section 2.10.1, and the trench results are discussed in Section 2.10.3. Analytical results from the passive soil gas investigation, borehole soils, and two rounds of groundwater samples are presented below:

4.1 Passive Soil Gas

The Emflux data are categorized as Total Aliphatic Hydrocarbons, Total Benzene/Toluene/Ethylbenzene/Xylenes (BTEX), and Total chlorinated solvents. As indicated on Figure 2, a potential source area of aliphatic hydrocarbons was identified near the fuel oil tank south of Gates Avenue (Point 16), and chlorinated solvents are indicated near Points 10 (SE corner of courtyard by loading docks) and Point 19 (inside east side, south building).

4.2 Borehole Soils

During the week of February 15-22, 1999, seventeen soil borings were drilled and sampled at the Market Basket site (Figure 3). *BH-2/MW-2 was located at the down gradient side of 8,00 gallon tank pit. BH-3/MW-3 and BH-16, BH-17, and BH–18 were drilled around the area where a tank was removed on the south side of Gates Avenue. BH-5/MW-5 and BH-12, BH-13, and BH-14*

were drilled around the trench area where oily sludge was encountered, as discussed in Section 2.10.3.

One soil sample was collected from each of the fifteen on-site borings and shipped to Columbia Analytical Services for VOC, SVOC, and inorganic analyses. The Data Usability Summary Report (DUSR) prepared by Dr. Kenneth Applin, previously submitted, "indicates that all data are usable". The soil results are discussed below, and tabulated following the discussion:

Low levels of acetone were detected in all 15 soil samples, and 2-Butanone was detected in 14 of the samples, indicating that these compounds were probably laboratory induced, and not representative of soil conditions on site. The only other volatile compounds detected were trace amounts of benzene, toluene, and trichloroethylene (TCE) in BH-15 and BH-16, at soil concentrations of less than 10 ppb.

BH-15 was sampled in the area of the loading docks in the southwest corner of the courtyard north of the northern Market Basket building (Figure 3). In addition to trace levels of benzene and toluene, 72 ug/kg of acetone was detected in BH-15 soils. As indicated in the Conclusions section of this report, we recommend demolition of the Market Basket buildings. After demolition, we propose additional drilling and sampling in the footprints of the buildings. The BH-15 area of the courtyard would be targeted for further characterization in the subsequent phase of drilling, to determine the significance of the VOC identified in BH-15 during this SI.

As discussed in Section 2.5, the overburden soils in the area consist of lacustrine deposits, deposited in proglacial lakes and extending to depths of greater than 15 feet below ground level. Bedrock beneath the site and in areas to the north, from which the glacial sediments were derived, consist of the Middle Devonian Onondaga Limestone; Akron Dolostone; dolostones and shales of the Bertie Formation; and shales, dolostones, gypsum and salts of the Camillus and Syracuse Formations. The metal levels detected in Market Basket soil samples are probably indicative of metal levels in these rocks. There is no historic documentation indicating metal releases from historic use of the Market Basket buildings.

All of the analytical results for soils are tabulated in the following pages 18 to 24:

Borehole Soil Data

BH1	Compound Name	Concentration (UG/KG)	
VOCs	Acetone 2-Butanone	9J 20J	
SVOCs	ND		
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	2,780	33,000
	Calcium	41,600	130 - 35,000
	Chromium	3.4	1.5 - 40
	Copper	6.9	1 – 50
	Iron	7,560	2,000 – 550,000
	Lead	4.0	---
	Magnesium	253	100 – 5,000
	Zinc	29.7	9 – 50
	Total Cyanide	ND	--

BH2	Compound Name	Concentration (UG/KG)	
VOCs	Acetone 2-Butanone	6J 9J	
SVOCs	Compound Bis(2-Ethylhexy)Phthalate	43J	
PCBs	---	ND	
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	5,430	33,000
	Calcium	59,000	130 – 35,000
	Chromium	6.6	1.5 - 40
	Copper	8.4	1 – 50
	Iron	11,600	2,000 – 550,000
	Lead	6.1	---
	Magnesium	20,900	100 – 5,000
	Manganese	410	50 – 5,000
	Nickel	9.7	0.5 – 25
	Potassium	1,340	8,500 or 43,000
	Vanadium	17.1	1 – 300
	Zinc	30.0	9 –50
	Total Cyanide	ND	---

BH3	Compound Name	Concentration (UG/KG)	
VOCs	Acetone 2-Butanone	7J 7J	
SVOCs	ND		
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	9,010	33,000
	Barium	62.9	15 – 600
	Calcium	70,800	130 – 35,000
	Chromium	11.5	1.5 – 40
	Copper	11.7	1 – 50
	Iron	16,600	2,000 – 550,000
	Lead	10.0	
	Magnesium	25,500	100 – 5,000
	Manganese	439	50 – 5,000
	Nickel	14.9	0.5 – 25
	Potassium	2,070	8,500 or 43,000
	Selenium	1.5	NA
	Vanadium	23.3	1 – 300
	Zinc	39.9	9 –50
	Total Cyanide	ND	

BH4	Compound Name	Concentration (UG/KG)	
VOCs	Acetone 2-Butanone	5J 3J	
SVOCs	NB		
	Analyte	**Concentration MG/KG)**	**Eastern U.S. Backgroun**
Inorganic	Aluminum	3,000	33,000
	Calcium	50,000	130 – 35,000
	Chromium	3.7	1.5 – 40
	Iron	8540	2,000 – 550,000
	Lead	4.5	---
	Magnesium	19,800	100 – 5,000
	Manganese	275	50 – 5,000
	Zinc	17.6	9 -50
	Total Cyanide	ND	

BH5	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	6J	
SVOCs	Fluoranthene	480	
	Pyrene	740	
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	22,800	33,000
	Arsenic	3.3	3 –12
	Barium	138	15 – 600
	Beryllium	1.1	---
	Calcium	4,000	130 – 35,000
	Chromium	28.6	1.5 – 40
	Copper	29.5	1 – 50
	Iron	30,900	2,000 – 35,000
	Lead	14.3	---
	Magnesium	5,960	100 – 5,000
	Manganese	337	50 – 5,000
	Nickel	27.3	0.5 – 25
	Potassium	2,480	8,500 or 43,000
	Vanadium	41.7	1 – 300
	Zinc	68.8	9 – 50
	Total Cyanide	ND	

BH6	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	10J	
	2-Butanone	4J	
SVOCs	ND		
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	10,800	33,000
	Arsenic	6.4	3 –12
	Barium	83.4	15 – 600
	Calcium	27,800	130 – 35,000
	Chromium	46.9	1.5 – 40
	Copper	609	1 – 50
	Iron	24,200	2,000 – 550,000
	Lead	325	---
	Magnesium	9,140	100 – 5,000
	Manganese	506	50 – 5,000
	Nickel	35.5	0.5 – 25
	Potassium	2,210	8,500 or 43,000
	Selenium	1.6	NA
	Vanadium	29.5	1 – 300
	Zinc	352	9 –50
	Total Cyanide	ND	

Geneva Market Basket Soil Data

BH9	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	4J	
	2-Butanone	6J	
SVOCs	ND		
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	7,850	33,000
	Barium	53.8	15 – 600
	Calcium	68,200	130 – 35,000
	Chromium	11.7	1.5 – 40
	Copper	11.4	1 – 50
	Iron	15,300	2,000 – 550,000
	Lead	7.2	---
	Magnesium	22,900	100 – 5,000
	Manganese	507	50 – 5,000
	Nickel	14.6	0.5 – 25
	Potassium	1,740	8,500 or 43,000
	Vanadium	21.7	1 – 300
	Zinc	37.0	9 – 50
	Total Cyanide	ND	

BH11	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	27J	
	2-Butanone	10J	
SVOCs	Fluoranthene	47J	
	Pyrene	42J	
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	9,660	33,000
	Arsenic	2.9	3 –12
	Barium	69.2	15 – 600
	Calcium	3,080	130 – 35,000
	Chromium	13.1	1.5 – 40
	Copper	13.1	1 – 50
	Iron	16,900	2,000 – 550,000
	Lead	11.2	---
	Magnesium	2,850	100 – 5,000
	Manganese	205	50 – 5,000
	Nickel	15.5	0.5 – 25
	Potassium	1,240	8,500 or 43,000
	Vanadium	21.6	1 – 300
	Zinc	43.8	9 – 50
	Total Cyanide	ND	

BH12	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	25J	
	2-Butanone	12J	
SVOCs	ND		
	Analyte	Concentration (MG/KG)	Eastern U.S. Background
Inorganic	Aluminum	8,090	33,000
	Calcium	2,210	130 – 35,000
	Chromium	8.7	1.5 – 40
	Iron	10,200	2,000 – 550,000
	Lead	6.5	---
	Magnesium	1,700	100 – 5,000
	Vanadium	15.3	1 – 300
	Zinc	34.1	9 – 50
	Total Cyanide	ND	

BH13	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	26	
	2-Butanone	17	
SVOCs	ND		
	Analyte	Concentration (MG/KG)	Eastern U.S. Background
Inorganic	Aluminum	10,800	33,000
	Arsenic	7.3	3 – 12
	Barium	68.3	15 – 600
	Calcium	14,000	130 – 35,000
	Chromium	22.2	1.5 – 40
	Copper	34.7	1 – 50
	Iron	33,700	2,000 – 550,000
	Lead	21.3	---
	Magnesium	7,950	100 – 5,000
	Manganese	632	50 – 5,000
	Nickel	22.0	0.5 – 25
	Potassium	1,380	8,500 or 43,000
	Sodium	1,470	---
	Vanadium	25.8	1 – 300
	Zinc	594	9 – 50
	Total Cyanide	ND	

BH14	Compound Name	Concentration (UG/UK)	
VOCs	Acetone 2-Butanone	18 4J	
SVOCs	ND		
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum Calcium Chromium Iron Lead Magnesium Manganese Zinc Total Cyanide	2,820 29,700 6.1 7,710 3.8 16,200 372 27.0 ND	33,000 130 – 35,000 1.5 – 40 2,000 – 550,000 --- 100 – 5,000 50 – 5,000 9 – 50

BH15	Compound Name	Concentration (UG/UK)	
VOCs	Acetone 2-Butanone Benzene Toluene	72 8J 6J 5J	
SVOCs	ND		
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum Calcium Chromium Copper Iron Lead Magnesium Manganese Potassium Vanadium Zinc Total Cyanide	5,230 43,200 7.2 10.5 11,100 5.5 18,000 378 1,230 15.8 33.7 ND	33,000 130 – 35,000 1.5 – 40 1 – 50 2,000 – 550,000 --- 100 – 5,000 50 – 5,000 8,500 or 43,000 1 – 300 9 – 50

BH16	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	5J	
	2-Butanone	3J	
	Trichloroethene	2J	
SVOCs	Di-n-Butylphthalate	47J	
	Bis(2-Ethylhexy)Phthalate	48J	
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	4,210	33,000
	Calcium	56,500	130 – 35,000
	Chromium	6.4	1.5 – 40
	Copper	8.2	1 – 50
	Iron	9,020	2,000 – 550,000
	Lead	4.9	---
	Magnesium	17,000	100 – 5,000
	Manganese	361	50 – 5,000
	Vanadium	12.0	1 – 300
	Zinc	28.1	9 – 50
	Total Cyanide	ND	

BH17	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	4J	
	2-Butanone	2J	
SVOCs	Di-n-Butylphthalate	44J	
	Analyte	**Concentration (MG/KG)**	**Eastern U.S. Background**
Inorganic	Aluminum	2,370	33,000
	Calcium	42,400	130 – 35,000
	Chromium	3.5	1.5 – 40
	Copper	6.0	1 – 50
	Iron	7,470	2,000 – 550,000
	Lead	4.1	---
	Magnesium	16,900	100 – 5,000
	Manganese	278	50 – 5,000
	Zinc	26.7	9 – 50
	Total Cyanide	ND	

BH18	Compound Name	Concentration (UG/KG)	
VOCs	Acetone	7J	
	2-Butanone	5J	
SVOCs	Di-n-Butylphthalate	59J	
	Bis(2-Ethylhexyl)Phthalate	52J	
	Analyte	**Concentration (MG/KG)**	
Inorganic	Aluminum	54,600	33,000
	Calcium	61,100	130 – 35,000
	Chromium	8.2	1.5 – 40
	Copper	9.7	1 – 50
	Iron	11,900	2,000 – 550,000
	Lead	6.3	---
	Magnesium	20,700	100 – 5,000
	Manganese	383	50 – 5,000
	Nickel	10.8	0.5 – 25
	Vanadium	15.2	1 – 300
	Zinc	34.7	9 – 50
	Total Cyanide	ND	

4.3 Groundwater

The first round of groundwater samples were collected on April 29, 1999 and submitted to CAS for VOC, SVOC, and Inorganic analyses. The second round of groundwater samples was collected and submitted to CAS on June 30, 1999. With NYSDEC approval, second round samples were analyzed for VOCs and Inorganics only.

Levels of aluminum were detected in 5 of the wells in concentrations as high as 2580 ug/L. As discussed in Section 4.2, overburden sediments in the area were derived from mid-Paleozoic bedrock including shales of the Bertie, Camillus, and Syracuse Formations. Major constituents of shale are clay minerals. A study has shown that clays older than the Upper Paleozoic consist for the most part of only illite and chlorite (Berner, "Principles of Chemical Sedimentology", McGraw Hill, 1971). Illite clays are 3-layer aluminosilicates (R.C. Selley, "An Introduction to Sedimentology", 1976). The illite content of the overburden clays, derived from mid-Paleozoic shales in regional bedrock, is a possible source of aluminum detected in the groundwater samples.

Trace amounts of trans- and cis–1,2-Dichloroethylene were detected in MW-5, MW-6, and MW-7 in the April 1999 sampling event. As tabulated below, the June sample results from MW-7 indicate the presence of cis-1,2-Dichloroethylene, trichloroethylene (TCE), and vinyl chloride at concentrations five to six times greater than the NYSDEC Groundwater Standards. Analytical results for both rounds of groundwater sampling are tabulated in the following pages 26 to 30:

APRIL 1999

MW-1	Compound Name	Concentration (UG/L)
VOCs	ND	
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Aluminum	1,150
	Calcium	156,000
	Iron	2,330
	Magnesium	43,100
	Manganese	331
	Sodium	96,600

JUNE 30, 1999

MW-1	Compound Name	Concentration (UG/L)
VOCs:	Carbon Disulfide	12
Inorganic	Aluminum	4.6
	Barium	0.0837
	Calcium	158
	Copper	0.0735
	Iron	7.62
	Lead	0.0162
	Magnesium	44.1
	Manganese	1.26
	Sodium	64.4
	Zinc	0.112

APRIL 1999

MW-2	Compound Name	Concentration (UG/L)
VOCs	Toluene	4J
	Ethylbenzene	11
	o-Xylene	6J
	(m+p)Xylene	21
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Aluminum	2,580
	Calcium	99,100
	Iron	4,220
	Lead	3.6
	Magnesium	27,300
	Manganese	213
	Sodium	28,800

JUNE 30, 1999

MW-2	Compound Name	Concentration (UG/L)
VOCs:	Carbon Disulfide	20
	1,2,4-Trimethyl Benzene	11
	m,p-Xylene	5.3
Inorganic	Aluminum	2.47
	Barium	0.0620
	Calcium	99.0
	Copper	0.0279
	Iron	5.16
	Lead	0.00652
	Magnesium	28.0
	Manganese	0.269
	Sodium	32.9
	Zinc	0.0509

APRIL 1999

MW-3	Compound Name	Concentration (UG/L)
VOCs	ND	
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Calcium	93,400
	Iron	443
	Magnesium	41,100
	Manganese	45.6
	Mercury	0.41
	Sodium	32,400

JUNE 30, 1999

Collapse of the northwest corner of the southern Market Basket building buried MW3 under rubble, preventing access to MW3 in June 1999.

APRIL 1999

MW-4	Compound Name	Concentration (UG/L)
VOCs	Acetone	3J
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Calcium	90,000
	Iron	126
	Magnesium	23,000
	Manganese	19.9
	Sodium	19,100

JUNE 30, 1999

MW-4	Compound Name	Concentration (UG/L)
VOCs:	Carbon Disulfide	16
Inorganic	Aluminum	3.63
	Barium	0.0831
	Calcium	96.7
	Copper	0.0222
	Iron	6.48
	Lead	0.00688
	Magnesium	24.0
	Manganese	0.117
	Sodium	4.53
	Potassium	23.4
	Zinc	0.0435

APRIL 1999

MW-5	Compound Name	Concentration (UG/L)
VOCs	1,2-Dichloroethene (total)	2J
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Calcium	64,400
	Iron	399
	Magnesium	11,900
	Manganese	2,700
	Sodium	5,840

JUNE 30 1999

MW-5	Compound Name	Concentration (UG/L)
VOCs:	TCE	12
Inorganic	Aluminum	1.14
	Barium	0.0782
	Calcium	90.6
	Iron	2.57
	Lead	0.00538
	Magnesium	24.0
	Manganese	1.79
	Sodium	33.4
	Zinc	0.0333

APRIL 1999

MW-6	Compound Name	Concentration (UG/L)
VOCs	1,2-Dichloroethene (total)	12J
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Aluminum	1,470
	Calcium	143,000
	Iron	3,160
	Magnesium	28,300
	Manganese	1,660
	Sodium	177,000

JUNE 30, 1999

MW-6	Compound Name	Concentration (UG/L)
VOCs:	cis-1,2-Dichloroethene	9.0
	trans-1,2-Dichloroethene	5.2
Inorganic	Aluminum	28.0
	Barium	0.298
	Calcium	249
	Chromium	0.0381
	Copper	0.0654
	Iron	48.3
	Lead	0.0275
	Magnesium	67.2
	Manganese	2.89
	Potassium	9.04
	Selenium	0.00965
	Sodium	244
	Vanadium	0.0649
	Zinc	0.141

APRIL 1999

MW-7	Compound Name	Concentration (UG/L)
VOCs	1,2-Dichloroethene (total)	4J
	Trichloroethene	3J
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Aluminum	1,290
	Barium	239
	Calcium	154,000
	Iron	1,940
	Lead	5.2
	Magnesium	70,000
	Manganese	1,630
	Mercury	0.28
	Potassium	5,400
	Sodium	120,000
	Zinc	25.0

JUNE 30, 1999

MW-7	Compound Name	Concentration (UG/L)	NYSDEC Groundwater Standard
VOCs:	cis-1,2-Dichloroethene	29	5
	Trichloroethylene	23	5
	Vinyl chloride	30	5
Inorganic		Aluminum	76.1
		Arsenic	0.0445
		Barium	0.744
		Calcium	454.00
		Chromium	0.114
		Copper	.292
		Iron	127.0
		Lead	0.427
		Magnesium	182.0
		Manganese	4.15
		Mercury	0.000818
		Nickel	0.329
		Potassium	19.0
		Sodium	313.0
		Vanadium	0.173
		Zinc	0.718

APRIL 1999

MW-8	Compound Name	Concentration (UG/L)
VOCs	ND	
SVOCs	ND	
	Analyte	Concentration (UG/L)
Inorganic	Aluminum	1480
	Calcium	146000
	Iron	2170
	Magnesium	42800
	Manganese	83.3
	Sodium	108000

JUNE 30, 1999

MW8	Compound Name	Concentration (UG/L)
VOCs:	Non Detect	
Inorganic	Aluminum	4.98
	Barium	0.101
	Calcium	147.0
	Chromium	0.0166
	Iron	7.39
	Magnesium	39.6
	Manganese	0.171
	Potassium	3.02
	Sodium	100.0
	Zinc	0.0319

4.4 Discussion

The soil borehole data do not identify any zones of contaminated soil warranting future remediation. Groundwater samples from MW-2, near the former 8,000-gallon tank exhibit VOC levels at or near STARS Guidance levels. No STARS compounds were detected in MW-4, down gradient from the former tank pit.

MW-5, MW-6, and MW-7 show low levels of chlorinated VOC contamination. The highest levels of these compounds were detected in the MW-7 sample collected in June 1999. **The groundwater contour map indicates a source area of chlorinated volatile organic compounds beneath the concrete slab of the Market Basket building.**

5.0 Contaminant Fate and Transport

5.1 Potential Routes of Migration:

Characterization of Exposure Setting:
This Brownfield site in Geneva, N.Y. has unique Industrial – Commercial setting as seen on the location maps. The City of Geneva has its primary access from the north side via Route 14, which connects to NYS Thruway Rt.90 on the north side. Significant railroad lines exist to serve the area along route 14 and the shoreline along West Side of Seneca Lake. The main traffic was in the easterly direction to transport material toward Seneca County along the north end of the lake. This rail road line wrapped around the Geneva Foundry on south westerly side and connects to the Industrial commercial area off Gates Ave. on north side. The Market Basket property is located in this complex and includes two large structures located on North and South side of Gates Ave.

There are no residences located adjacent to these buildings. Some residential properties are located across the railroad and on West Side of Route 14, which have not been affected by the contamination at this site.

This area is part of the old City of Geneva and served by water mains, sanitary sewers, and storm sewers, which are maintained by the City. The availability of public water supply eliminates the need for ground water and therefore, no drinking water wells are known to exist at this time.

Most of the land area was developed many years ago and is either paved or contains stable vegetative ground cover, grass area and mature trees to serve as barriers to soil erosion or transport of surface soil particles into surface runoff or air. The primary air quality impact is anticipated from the auto and truck traffic along Route 14 and local City streets.

5.2 Contaminant Persistence

The site investigation has not identified any such contaminant of concern.

5.3 Contaminant migration – Assessment of Human exposure Pathways

This section describes the types of human exposures that could result in added health risks to persons at or around the site.

An exposure pathway is how an individual may come into contact with a contaminant.

The exposure pathway has five basic elements as follows:

1) source of contamination;
2) environmental media and transport mechanisms;
3) point of exposure;
4) route of exposure; and
5) receptor population.

These elements of an exposure pathway may be based on past, present or future events.
Completed pathways, which are known to or may exist at the Market Basket site, include:

- Ingestion of on-site soils in unpaved areas;
- Direct contact with on-site soils in unpaved areas;
- Inhalation of dust from the site;
- Potential direct contact with groundwater;
- Potential inhalation of VOC's from contaminated groundwater and soils.

The two Market Basket buildings occupy the majority of the site. As indicated by both rounds of groundwater sampling, the chlorinated compounds detected in MW-5, MW-6, and MW-7 is indicative of a source of chlorinated compounds beneath the slab of the southern building. Although it appears to be limited in quantity and extent, the chlorinated compounds detected in groundwater in MW-7 indicate that contamination has migrated off site. It was not safe to conduct interior sub-slab sampling due to the poor condition of the structures.

One additional area of contamination is identified at the trenching location at the northeast corner of the southern building. The non-detects of any STARS Memo petroleum parameters in nearby MW-5 indicate that the elevated levels of SVOC detected in the trench sludge is a surficial contaminant that has not impacted groundwater. An interim remedial measure (IRM) of excavating the trench sludge for off-site disposal appears to be warranted (discussed in Section 2.10.3).

The western portion of the Market Basket collapsed under the snow during the winter of 1999, preventing work inside. Therefore, demolition of the old buildings would remove unsafe structures and provide access to the construction equipment to remove concrete floors etc.

It is expected that this property will be developed for Commercial / Industrial use. Since the construction of such a facility would require large paved parking areas, landscaping, berms, etc., the remediation plan should include using soils exhibiting low levels of contamination as fill under the paved parking lots, to reduce overall project cost. Based on actual testing of soils under the concrete slabs, some chemical additives may be recommended to biodegrade the petroleum compounds, to prevent migration to groundwater. These measures also mitigate the known and potential future exposure pathways, by minimizing or immobilizing the contaminants.

6.0 Baseline Risk Assessment

6.1 Public Health Evaluation

There are no identified environmental resources within 1/ 4 mile of this site, and there are no known environmental exposure pathways for off site migration. The site is abandoned, and residences located to the east are at least 0.1 mile from any identified subsurface contaminant. Due to very low level of risk and very small population adjacent to this site, the need for conducting a baseline risk assessment is not evident for this site. There is more risk to human health from the potential of building falling on any children or unauthorized people entering these buildings.

6.2 Environmental Assessment

There are some residential properties on Gates Ave., Central St., Buffalo St. and Hogarth Street, which are served by public water and sewer facilities, and therefore, not exposed to any contaminants contained in soil or ground water.

The Contaminated soils are under the paved area and immediately adjacent to the existing building. Two areas were found to have some contamination caused by petroleum compounds. These include an area near leaky fuel storage tank on front of the building along gates Ave. and backside of the

building located on North side of Gates Ave. The soils are currently not exposed and do not represent any potential for off site migration of contaminants. There are no significant environmental resources i.e., creeks, wetlands, and habitats located on-site or adjacent to this property. Ground water flow is in southeasterly direction but none of the sample outside the buildings indicates any significant values of contaminants.

Seneca Lake is located to the southeast of Market Basket. As discussed in Sections 4.2 and 4.3, analytical data generated during this SI do not indicate contaminant migration from Market Basket to Seneca Lake.

7.0 Summary and Conclusions

7.1 Nature and extent of Contamination

The analytical data from the borehole soils do not indicate contaminated soils warranting soil remediation (Section 4.2). Groundwater data from MW-5, MW-6, and MW-7 indicate a possible source of chlorinated solvent contamination beneath the slab of the Market Basket building on the south side of Gates Avenue (Section 4.3). The groundwater contour map indicates that the off-site, abutting building to the south is also a possible source of the chlorinated plume in groundwater. The contamination detected in MW-7 indicates limited off-site migration.

In addition, 597,000 ppb of tentatively identified semivolatile petroleum compounds (TICs) were detected in the trench sludge sample collected at the northeast corner of the southern building. The analytical data, provided to NYSDEC under separate cover, indicate that four isomers of trimethyl Naphthalene were detected in concentrations ranging from 19,000 to 40,000 ppb, and unknown TICs were detected in concentrations as high as 72,000 ppb. The NYSDEC STARS limit of any contaminant 10,000 ppb.

7.2 Conclusions

The chlorinated compounds detected in monitoring wells MW-5, MW-6, and MW-7 indicate a chlorinated source beneath the concrete slab of the east side of the southern Market Basket building. Groundwater is the media identified to be impacted by these contaminants of concern (COC) to date. Unsafe conditions of the dilapidated building have prevented sub-slab investigation for a source area of contaminated soils. Considering the groundwater flow direction to the east (Appendix 8), and location of residential properties to the east, it would be beneficial to remove the source of contamination to prevent any future possibility of contaminant transport to the residential areas.

Recommended Remedial Alternatives

As discussed above and in Section 2.10.3, an IRM of sludge/soil removal is recommended at the northeast corner of the southern building. Contaminated soils and sludge should be removed in conformance with NYSDEC STARS Memo #1.

The Market Basket buildings are in dilapidated condition, and present health & safety hazards to anyone who enters these structures. We recommend that the Market Basket buildings be demolished. After demolition has been completed, a sub-surface soil investigation should be conducted in the building footprints. Pockets of contaminated sub-slab soils will be identified and remediated after demolition, if applicable. Contaminated soils can be treated on site, or disposed off site. Remedial Alternatives will be selected, based on the volume of contaminated soils identified that require disposal or treatment on site.

REMEDIAL ALTERNATIVES REPORT

FOR

BROWNFIELDS INVESTIGATION
MARKET BASKET PROPERTY
CITY OF GENEVA, NEW YORK

Submitted By:

Passero Associates, P.C.
100 Liberty Pole Way
Rochester, NY 14604

and

Larsen Engineers
700 W. Metro Park
Rochester, NY 14623

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1.0 INTRODUCTION

1.1 Purpose and Organization of Report

The purpose of this report is to present the results of the Remedial Alternatives portion of the New York State Department of Environmental Conservation (NYSDEC) Brownfields Site Investigation (SI) of the Market Basket Site in the City of Geneva, New York, pursuant to the Contract (Change Order), signed by the City of Geneva on November 30, 1998.

1.2 Background Information

1.2.1 Site Description – Refer to Section 1.2.1 in SIR

1.2.2 Site History - Refer to Section 1.2.2 in SIR

1.2.3 Nature and Extent of Contamination - Refer to Section 4.0 in SIR

1.2.4 Contaminant Fate and Transport - Refer to Section 5.0 in SIR

1.2.5 Baseline Risk Assessment - Refer to Section 6.0 in SIR

2.0 IDENTIFICATION AND DEVELOPMENT OF ALTERNATIVES

2.1 Introduction

The two Market Basket buildings occupy the majority of the Market Basket site. The buildings are abandoned and in dilapidated condition; they are <u>not</u> currently in a usable condition. Development of remediadial alternatives is based on consideration of the City's Master Plan for beneficial use of this property, while keeping the needs of the neighborhood in mind. Future use of this property directly impacts the strategy for clean up.

The dilapidated nature of the Market Basket buildings has prevented characterization of sub-surface conditions. Sub-slab conditions should be characterized after demolition, in order to fully evaluate remedial alternatives.

Passero/Larsen contacted several local contractors to provide an *estimate only* for the cost to demolish the Market Basket buildings. Based on a measured 67,000-square-foot area of the footprint of the two Market Basket buildings, the cost to demolish the buildings and remove the debris as construction/demolition debris (C/D) *is estimated* to be approximately $500,000.00. Demolition prices will be competitively selected in a bid process, if demolition is authorized by NYSDEC as part of this Brownfields Restoration Project.

The cost to remove all of the presumed asbestos-containing materials (PACM) will be in addition to the estimated cost of demolition. Based on quantities of PACM provided by City of Geneva NYSDOL-certified asbestos inspector Thom Rafferty, the estimated cost to handle all of PACM prior to, and during demolition is in the $12,000 to $15,000 range. This estimate was based on the assumption that, because of the deteriorated condition of the roof, a NYSDOL variance can be obtained to treat presumed asbestos-containing roof materials as C/D debris.

The actual prices for demolition and asbestos abatement will be finalized in the bid process for contractor selection.

2.2 Remedial Action Objectives

This site contains primarily aliphatic hydrocarbon, BTEX, and chlorinated compounds, which are located close to the building perimeter, or underneath the concrete slabs of the buildings. The SI data indicate that a source of chlorinated compounds may be present under the slab of the southern Market Basket building. In addition, SVOC contamination is identified in the trench sludge at the northeast corner of the southern Market Basket building.

The ultimate goal of site remediation is to attain contaminant levels that allow for redevelopment of the Market Basket site for beneficial reuse. Redevelopment of the property will provide jobs for the City, and result in overall enhancement of property values and growth within the community.

The remedial process is composed of some, or all of the following ingredients:

a. Source removal or containment. The goals of site remediation are to either reach contaminant values below detection limits, or achieve complete sealing of the contamination source to block the potential pathway to human exposure.

b. Protection of the adjacent properties from negative environmental impacts from the Market Basket site.

c. Elimination of hazardous and unsafe conditions created by the dilapidated condition of the abandoned buildings

2.3 General Response Actions

Based on the analytical results of the soil and groundwater samples, the primary area of contamination identified to date is the chlorinated plume in groundwater in MW-5, MW-6, and MW-7 at the southeast corner of the site (Section 4.3). The source area of contamination is not identified, but appears to be under the slab of the southern building. To investigate the source of the chlorinated plume in groundwater, sub-slab sampling is recommended in the footprints of both buildings after demolition. If contaminated soils are identified beneath the slabs, source removal by excavation for off-site disposal may be proposed. Remedial alternatives including off-site disposal, treatment-in-place, or capping may be proposed based on the sub-slab soil conditions.

2.4 Development of Alternatives

The source of the chlorinated groundwater plume has not been identified. The groundwater contours indicate that groundwater is flowing to the east. The chlorinated compounds detected in MW-5, in conjunction with no chlorinated compounds detected in borehole 5 soils, indicates that the probable source of contamination is beneath the building slab. Passive Soil Gas point 19 is also indicative of chlorinated compounds present beneath the slab at the east side of the southern building. Demolition of the buildings is necessary before the site can be completely characterized for remedial alternative selection. The condition of the buildings also requires demolition of the Market Basket before the site can be re-developed for future use. Sub-slab soils should be characterized before development of remedial alternatives.

Demolition will allow for excavation or in-situ treatment and/or containment of contaminated soils. The following remedial alternatives can be considered for meeting the objectives:

a. Alternative 1 -Excavation and removal of contaminated soils and ground water near the source area.

b. Alternative 2 - Capping of the contaminated area and construction of perimeter slurry walls to intersect the groundwater plume.

c. Alternative 3 - In- situ treatment of contaminated soils and groundwater

3.0 DETAILED ANALYSIS OF ALTERNATIVES

3.1 Introduction

Factors used for evaluation and analysis of remedial alternatives are cost, completion time, acceptability by local residents, and degree of protection achieved.

3.2 Individual Analysis of Alternatives

All of the Remedial Alternatives discussed below will require demolition of the Market Building, followed by sub-slab soil characterization. Based on these results, the remedial alternatives can be analyzed based on cost and effectiveness. As previously discussed, a demolition cost of approximately $550,000 will be incurred before sub-slab characterization can occur.

The relatively clean groundwater conditions identified across the site are not indicative of a large volume of contaminated soils. A small pocket of soils contaminated with chlorinated compounds may be responsible for the limited plume identified in MW-5, MW-6, and MW-7. If soils are identified that contain the chlorinated compounds detected in groundwater at the southeast corner of the Market Basket (TCE, 1,2-DCE), the soils must be handled as hazardous waste in conformance with NYSDEC TAGM 3028 "Contained-In" Criteria. As such, DEC will make the final determination in selecting cleanup levels. If soils are recommended for off-site disposal, Waste Management's landfill at Model City is the closest landfill permitted to accept hazardous waste. A price to excavate contaminated soils at Market Basket for transportation and disposal at Model City Landfill is estimated to be in the $140.00 to $160.00 per ton range.

Based on the condition of sub-slab soils, and extent of contamination, the following Remedial Alternatives will be analyzed:

3.2.1 Alternative 1 -Excavation and removal of contaminated soils and ground water near the source area.

3.2.1.1 Description – Based on sub-slab contamination, the entire volume of contaminated soils will be removed until DEC-approved cleanup levels are attained.

3.2.1.2 Assessment – Source removal offers the quickest completion time. Proper removal and off-site disposal will assure local residents that the source material is no longer present on the site, and that remaining soils and subsurface conditions are clean. As with the other remedial options discussed for soils,

the price will be based on the volume of contaminated soil that will require disposal off site.

3.2.2 Alternative 2 - Capping of selected areas to prevent contact with contaminated soils, and also to prevent contaminant transport to groundwater.

3.2.2.1 Description – Areas exhibiting soil contamination would be capped with a geomembrane to prevent direct contact with contaminated soils, and to prevent contaminant migration to groundwater.

3.2.2.2 Assessment – Proper containment by capping is intended to assure the local residents that the source material is sealed, and that chances for exposure to contaminated soils have been minimized. As above, the price would be based on the areas selected for capping after sub-slab characterization.

3.2.3 Alternative 3 - In- situ treatment of contaminated soils

3.2.3.1 Description - Contaminated soils will be treated with bioremediation if in situ treatment is selected. A biocell would be created by excavating soils and inoculating them with bacteria. Bacteria would be selected that have been bred to utilize organic compounds as a food source; bacteria would also be added to chelate metals, if applicable. Placing the inoculated soils back into a lined excavation would create a biocell. Any contaminated groundwater collected in the pit would be collected and transported to the Geneva wastewater treatment plant.

3.2.3.2 Assessment – The cost to bioremediate soils is estimated to be approximately 20.00 per cubic yard, and the volume of soils requiring treatment will determine the final price.

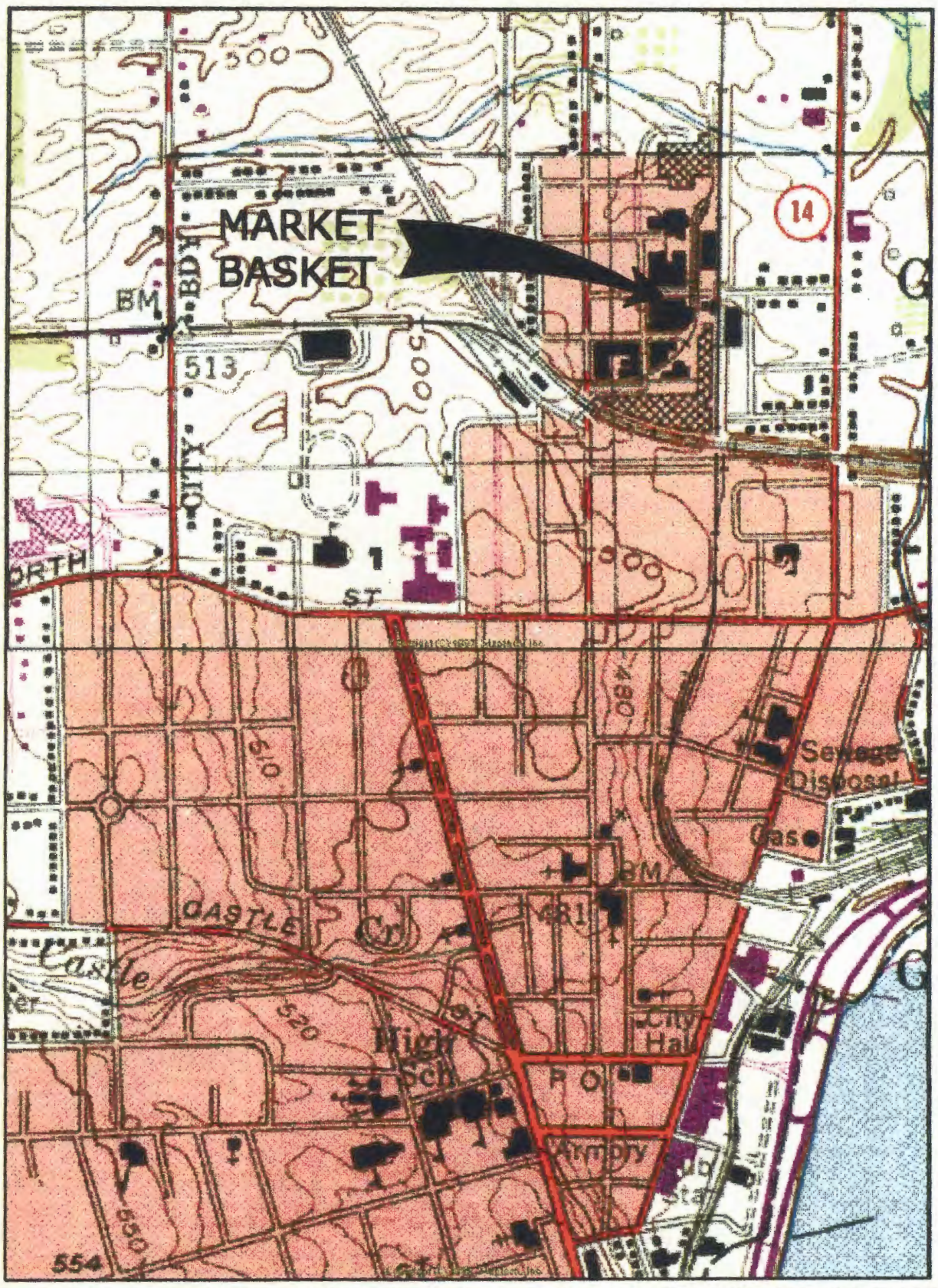
3.3 Comparative Analysis

NYSDEC and NYSDOH will have input into the final selection of remedial methods to be utilized. Factors such as completion time, effectiveness, and acceptance by the public become a factor in final selection.

It is evident that source removal offers the quickest response at a reasonable cost, and also provides the greatest assurance that future migration of contaminants will not occur. Removal of the contaminated source material offers the best option to eliminate public concern relative to future environmental impact relative to the site.

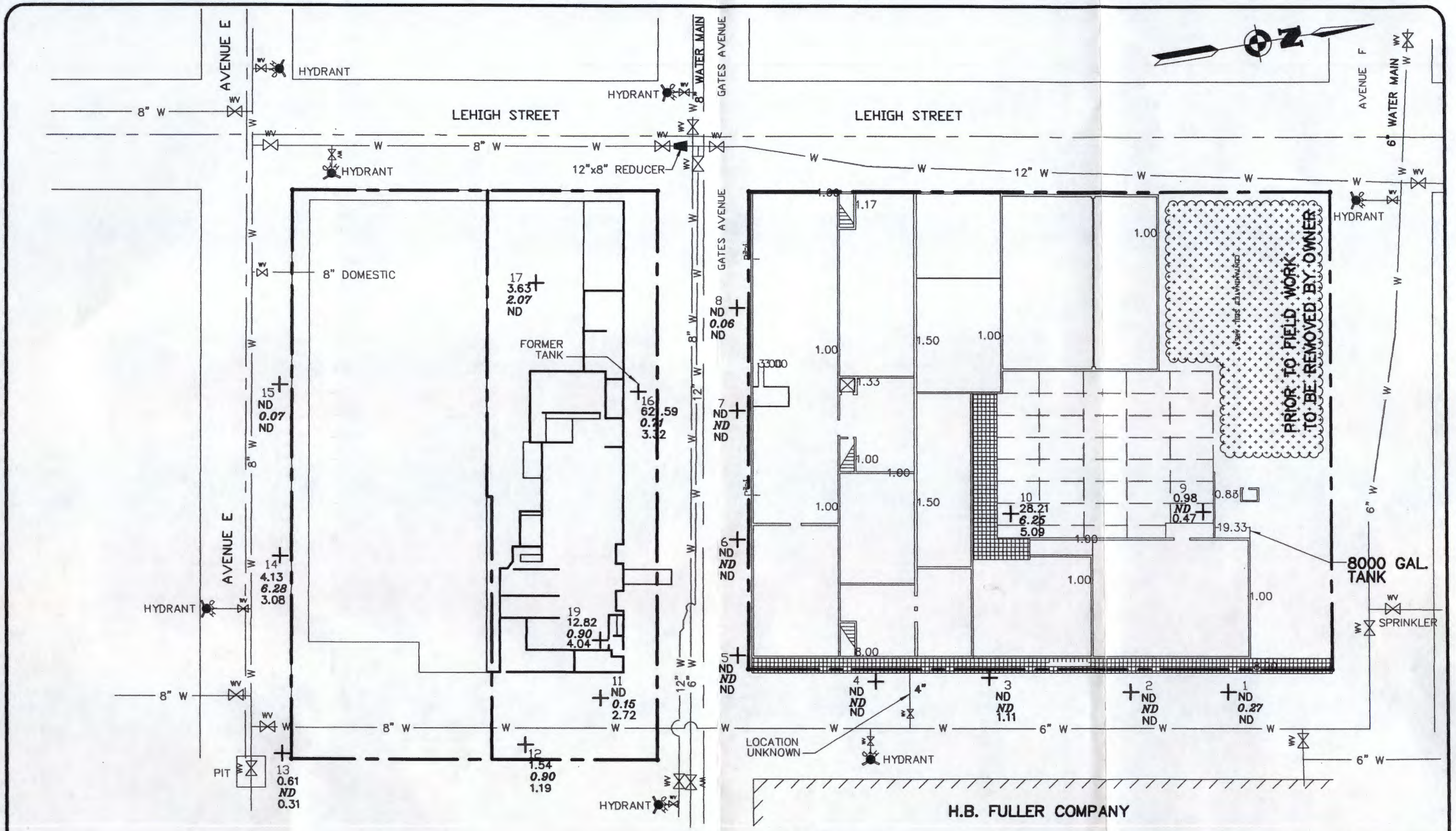
After review of the Remedial Alternatives discussed above, we recommend that the City implement the selected Remedial Alternative with the financial assistance of NYSDEC under the Brownfield Grants Program. The Market Basket site can be redeveloped for use by the City after remedial goals have been attained.

FIGURES



PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

PROJECT	MARKET BASKET CITY OF GENEVA, ONTARIO COUNTY, NEW YORK
DRAWING	LOCATION MAP
CLIENT	CITY OF GENEVA 47 CASTLE STREET GENEVA, N.Y. 14456
Partner in Charge	G.W.P.
Project Manager	A.K.
Drawn by	M.L.A.
PROJECT NO.	97119.06
DRAWING NO.	FIGURE 1
SCALE	NTS
DATE	11/9/98



EXPLANATION

+ TOTAL ALIPHATIC HYDRO CARBON (ng/L)

TOTAL BTEX

TOTAL CHLORINATED COMPOUNDS

PASSERO ASSOCIATES, P.C.
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100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

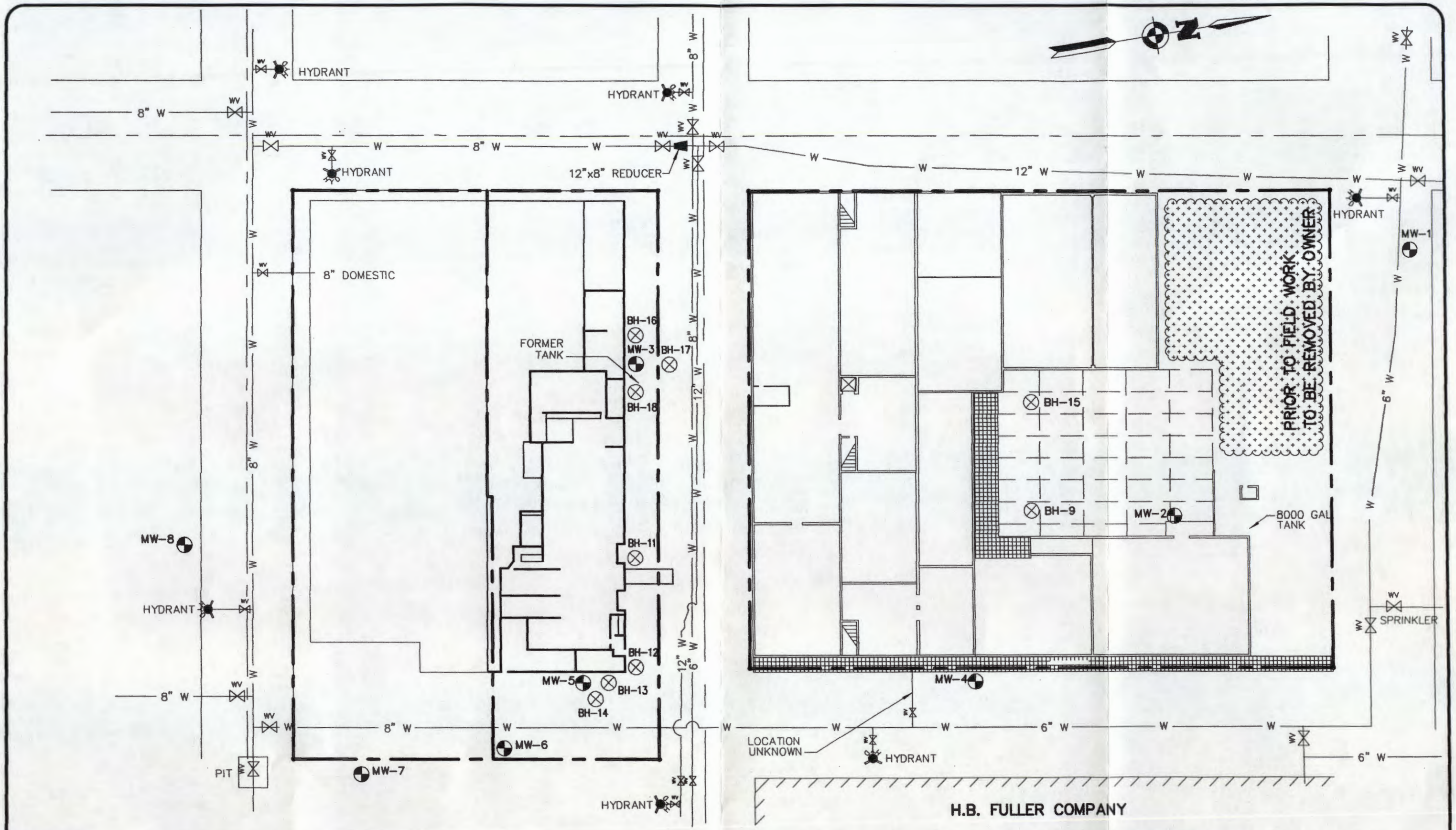
PROJECT: MARKET BASKET SITE
CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

DRAWING: PASSIVE SOIL GAS – RESULTS

CLIENT: CITY OF GENEVA
47 CASTLE STREET
GENEVA, N.Y. 14456

Partner in Charge	G.W.P.
Project Manager	A.K.
Drawn by	M.L.A.

PROJECT NO. 97119.06
DRAWING NO. FIGURE 2
SCALE 1"=50'
DATE 11/9/98



EXPLANATION

LOCATIONS:

- MW — MONITORING WELL
- BH — BORE HOLE

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

PROJECT: MARKET BASKET SITE
CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

DRAWING: MONITORING WELL/BORE HOLE LOCATIONS

CLIENT: CITY OF GENEVA
47 CASTLE STREET
GENEVA, N.Y. 14456

Partner In Charge	G.W.P.
Project Manager	A.K.
Drawn by	M.L.A.

PROJECT NO.	97119.06
DRAWING NO.	FIGURE 3
SCALE	1"=50'
DATE	3/5/99

APPENDIX 1

PHOTOS

MARKET BASKET PARCEL

TRENCH SHOWING PIPING AND CONTAMINATION

TRENCH WITH CONTAMINATED SOIL

MARKET BASKET PARCEL

LOOKING WEST TOWARDS MARKET BASKET

GATES AVENUE WITH

MARKET BASKET BUILDINGS!

APPENDIX 2

BOREHOLE LOGS

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100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Market Basket	HOLE NO: BH-1
CLIENT Genesee	FILE NO:
CONTRACTOR American Auger + Ditching	SHEET NO: 1

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL	LOCATION:
DATE	TIME	WATER	CASING	HOLE	TYPE		HSA	SS	ELEVATION:
					SIZE ID		4 3/8 OD	2"	DATE START: 2-15-99
					HAMMER WT.				DRILLER: Bage
					HAMMER FALL				INSPECTOR: Morton

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth 0 - C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'-2'	25	8	7	8		8"		Headspace PID=0	gravel fill overlying f tight sandy clay + silt
2'-4'	12	15	21	25		12"		PID=0	dry gravelly fill, f clean washed SAND
4'-6'	8	21	30	40		18"		PID=0	wet-sat f SAND tan ← Sample BH1 - 4'-6'
6'-8'	10	24	12	13		18"		PID=0	sat clean tan M SAND
8'-10'	12	15	15	13		16"		PID=0	saturated clean tan m-f SAND
10'-12'	5	12	10	15		20"		PID=0	saturated f tan SAND
12'-14'	5	5	5	6		12"		PID=0	sat f tan SAND

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
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100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Geneva Market Basket									HOLE NO: BH2
CLIENT Geneva									FILE NO:
CONTRACTOR American Auger + Ditching									SHEET NO:
GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL	LOCATION:
DATE	TIME	WATER	CASING	HOLE	TYPE				ELEVATION:
2-16-99					SIZE ID				DATE START: 2-16-99
					HAMMER WT.				DRILLER: Baye
					HAMMER FALL				INSPECTOR: Morton

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'-	2'	5	6	14	7		23"		PID 3.5ppm	wet f SAND w/ some silt
2'-	4'	7	8	10	15		24"		PID 0	wet - sat f SAND w/ some silt
4'-	6'	6	6	9	10		20"		PID 1ppm	4'-5' sat blk f SAND, f tan SAND
6'-	8'	3	7	7	10		24"		PID 0	sat f tan SAND, grey color at bottom (no odor or PID)
8'-	10'	2	2	2	2		20"		0	sat f SAND w/ tr silt, clay
10'-	12'	8	8	12	7		22"		0	sat SILT w/ tr clay, sat SILT
12'-	14'	3	7	6	11		20"		0	sat grey SILT

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

TEST BORING REPORT

PROJECT Geneva Market Basket	HOLE NO: BH3
CLIENT Geneva	FILE NO: 97119
CONTRACTOR American Auger	SHEET NO:

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL	LOCATION:
DATE	TIME	WATER	CASING	HOLE	TYPE				ELEVATION:
2-17-99					SIZE ID				DATE START:
					HAMMER WT.				DRILLER:
					HAMMER FALL				INSPECTOR:

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	2'	6	3	8	6		12"		PID 0	≈ 6" surficial gravelly fill, tan wet SILT
2'	4'	13	7	9	10		16"		PID 0	wet - sat tan SILT w/tr clay
4'	6'	1	2	3	4		16"		0	sat tan SILT w/ tr clay
6'	8'	7	7	11	14		20"		0	SILT to 7', layer of clean f SAND from 7'-8'
8'	10'	2	2	2	1		22"		0	sat tan SILT changing to grey color at 9'
10'	12'	2	2	3	5		20"		0	sat tan/grey SILT
12'	14'	5	3	7	6		24"		0	• Sat grey SILT

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

BORETRI | LF-MISC

PASSERO ASSOCIATES, P.C.
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100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Market Basket	HOLE NO: BH4
CLIENT City of Geneva	FILE NO:
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-17-99
	DRILLER: Bragg
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth		BLOWS ON SAMPLER				SAMPLE				SOIL AND ROCK INFORMATION REMARKS
	C	0"/6"	6"/12"	12"/18"	18"/24"	N	REC.	NO.	DEPTH	
0'	2'	6	3	6	7		14"		PID 0.2	organic topsoil, wet gravel fill
2'	4'	15	24	11	8		12"		0.4	wet clean tan SILT
4'	6'	3	9	9	12		23"		0	wet-sat f tan ~~SAND~~ SILT w/ tr clay
6'	8'	10	15	12	9		24"		0	sat f SANDY SILT, SILT sat f tan silt
8'	10'	3	5	5	6		20"		0	18-11 sat tan SILT 11-12 sat gray SILT w/ tr clay
10'	12'	2	2	2	2					
12'	14'	2	4	3	4					sat gray SILT

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Geneva Market Basket	HOLE NO: BH 5
CLIENT City of Geneva	FILE NO: 97119.
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-17-99
	DRILLER: Baye
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	2'	3	3	5	4		6"		PID 0	wet gravel / c Sand fill
2'	4'	1	1	2	3		3"			same
4'	6'	3	4	5	7		24"			wet - saturated SILT w/ tr clay
6'	8'	10	15	12	10		20"			Same as above
8'	10'	5	7	12	10		22"			Same as above
10'	12'	2	2	2	2		16"			Same to 11, @ 11 grey plastic CLAY/SILT
12'	14'	3	2	1	2					SILT w/ CLAY

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

TEST BORING REPORT

PROJECT Geneva Market Basket	HOLE NO: BH6
CLIENT City of Geneva	FILE NO: 97119
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-18-99
	DRILLER: Baye
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	2'	9	5	5	8		8"			c sandy GRAVEL fill soil
2'	4'	5	5	3	3		16"		PID 1.4	wet - sat grey SILT w/ tr clay, f sand
4'	6'	2	2	3	3		24"		PID 0	sat SILT / CLAY
6'	8'	3	5	10	12		24"		0	tan - grey SILT w/ varying amounts of clay
8'	10'	12	15	18	11		20"		0	sat tan SILT/CLAY to 9', tan f SAND w/ some silt @ 9'
10'	12'	10	10	11	12		24"		0	tan f SAND w/some silt to 11', grey SILT w/ tr clay @ 11'
12'	14'	9	10	10	11		24"			grey SILT w/ tr clay

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

TEST BORING REPORT

PROJECT Geneva Market Basket	HOLE NO: BH7
CLIENT City of Geneva	FILE NO:
CONTRACTOR American Auger	SHEET NO:

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL	LOCATION:
DATE	TIME	WATER	CASING	HOLE	TYPE				ELEVATION:
					SIZE ID				DATE START: 2-18-99
					HAMMER WT.				DRILLER: Baye
					HAMMER FALL				INSPECTOR: Morton

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
3'	5'	1	1	1	1		14"		PID 0	wet fm SAND w/ fr gravel fill
8'	10'	3	6	5	7				0	wet-sat tan SILT
13'	15'	7	6	7	11				0	sat tan SILT w/ clay, sat tan SILT

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
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100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Geneva Market Basket	HOLE NO: BH8
CLIENT City of Geneva	FILE NO: 97/19
CONTRACTOR American Auger	SHEET NO:

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL	LOCATION:
DATE	TIME	WATER	CASING	HOLE	TYPE				ELEVATION:
					SIZE ID				DATE START:
					HAMMER WT.				DRILLER:
					HAMMER FALL				INSPECTOR:

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
3'	5'	3	6	9	8		18"		PID 1.5	wet-sat tan SILT
8'	10'	2	2	3	4				1.8	sat tan SILT w/ tr f sand, sat tan SILT w/ tr clay
13'	15'	5	6	6	4				0	sat tan SILT w/ tr f SAND

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Market Basket	HOLE NO: BH9
CLIENT City of Geneva	FILE NO: 97119
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-22-99
	DRILLER: Baye
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

O	C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	3'						18"		PID 0	wet-sat tan SILT
3'	6'								0	wet-sat tan SILT w/ tr clay

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Market Basket	HOLE NO: BH 11
CLIENT City of Geneva	FILE NO: 97119
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-22-99
	DRILLER: Baye
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

Depth O	Depth C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	3'								PID 0	wet - sat c sandy fill soil w/ tr gravel
3'	6'								0	

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER,N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Market Basket	HOLE NO: BH12-0'-6'
CLIENT city of Geneva	FILE NO: 97119
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-22-99
	DRILLER: Bay
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

O	C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	3'						6"		PID 0	gravel fill soil w/ mx frags
3'	6'								0	tan SILT
6'	9'								1.8	≈ 7.5' depth, black staining

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
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100 LIBERTY POLE WAY ROCHESTER, N.Y.
716-325-1000 14604

TEST BORING REPORT

PROJECT Market Basket	HOLE NO: B#13
CLIENT City of Geneva	FILE NO:
CONTRACTOR American Auger	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-22-99
	DRILLER:
	INSPECTOR:

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

O	C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	3'						8"		PID 0	gravelly sand fill, topsoil
3'	6'								0	wet-sat SILT w/ tr clay black staining ≈ 5'
6'	9'								0	sat SILT w/ tr clay

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y.
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TEST BORING REPORT

PROJECT Market Basket	HOLE NO: BH14
CLIENT ~~American Angle~~ City of Geneva	FILE NO: 97119
CONTRACTOR American Angle	SHEET NO:
	LOCATION:
	ELEVATION:
	DATE START: 2-22-99
	DRILLER: Baze
	INSPECTOR: Morton

GROUNDWATER		DEPTH TO				CASING	SAMPLER	CORE BARREL
DATE	TIME	WATER	CASING	HOLE	TYPE			
					SIZE ID			
					HAMMER WT.			
					HAMMER FALL			

SEASONAL AND CLIMATIC CHANGES MAY ALTER OBSERVED WATER LEVELS.

O	C	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	SAMPLE N	REC.	NO.	DEPTH	SOIL AND ROCK INFORMATION REMARKS
0'	3'						12"			dry gravel fill w/ tr frags
3'	6'						3"			gravel / tr frags
6'	9'									sat gray SILT w/ tr clay

N = NO. OF BLOWS TO DRIVE _____ SPOON _____ WITH _____ LB. WT. _____ EA. BLOW
C = NO. OF BLOWS TO DRIVE _____ CASING _____ WITH _____ LB. WT. _____ EA. BLOW

Market Basket - 2-26-99

BH15 1' thick concrete pad

0'-3' 18" recovery 6" gravel fill, moist tan SILT

3'-5' moist-sat tan SILT PID=0

BH16

0-2 gravel fill, dry-moist tan SILT

2-4 sat tan SILT, sat tan SILT w/ tr clay

4-6 sat tan SILT

6-8

BH17

0-2 dry-moist tan SILT

2-4 wet-sat tan SILT

4-6 sat tan SILT w/ tr clay

6-8 same

BH18

0-2 wet-sat tan SILT

2-4 moist-sat tan SILT, SILT w/ tr clay

4-6 sat tan SILT

6-8 sat tan SILT, SILT w/ tr clay

APPENDIX 3

PASSIVE SOIL GAS DATA

TARGET ENVIRONMENTAL SERVICES, INC.

Mobile Laboratories Direct Push Sampling
Soil-Gas Surveys Remediation Testing
Natural Attenuation

TARGET Report No. QS2985

EMFLUX® Passive, Non-Invasive Soil-Gas Survey

MARKET BASKET SITE
GENEVA, NY

Prepared for

Passero Associates, P.C.
100 Liberty Pole Way
Rochester, NY 14604

by

TARGET Environmental Services, Inc.
10555 Guilford Road
Suite 127
Jessup, MD 20794

November 3, 1998

Table 1

Soil-Gas Concentrations (ng/L)
Market Basket Site
Geneva, NY

SAMPLE LOCATION	Q.L.	MB-1	MB-2	MB-3	MB-4	MB-5	MB-6	MB-7
CONTAMINANTS								
Total Aliphatic Hydrocarbons	0.59	--	--	--	--	--	--	--
Benzene	0.07	--	--	--	--	--	--	--
Toluene	0.06	0.27	--	--	--	--	--	--
Ethylbenzene	0.06	--	--	--	--	--	--	--
Xylenes (total)	0.06	--	--	--	--	--	--	--
Total BTEX	0.06	0.27	--	--	--	--	--	--
1,2-Dichloroethene (cis)	0.10	--	--	--	--	--	--	--
Tetrachloroethene	0.07	--	--	0.93	--	--	--	--
1,1,1-Trichloroethane	0.08	--	--	0.09	--	--	--	--
Trichloroethene	0.07	--	--	0.09	--	--	--	--
1,2,4-Trimethylbenzene	0.06	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	0.07	--	--	--	--	--	--	--

NOTES:
1) "--" denotes absence of detections above the laboratory's reported quantitation level.

Table 1
(continued)
Soil-Gas Concentrations (ng/L)
Market Basket Site
Geneva, NY

SAMPLE LOCATION	Q.L.	MB-8	MB-9	MB-10	MB-11	MB-12	MB-13	MB-14
CONTAMINANTS								
Total Aliphatic Hydrocarbons	0.59	--	0.98	28.21	--	1.54	0.61	4.13
Benzene	0.07	--	--	0.27	0.08	--	--	--
Toluene	0.06	0.06	--	1.48	0.07	0.10	--	6.10
Ethylbenzene	0.06	--	--	0.50	--	0.14	--	--
Xylenes (total)	0.06	--	--	4.00	--	0.66	--	0.18
Total BTEX	0.06	0.06	--	6.25	0.15	0.90	--	6.28
1,2-Dichloroethene (cis)	0.10	--	--	--	--	--	--	1.82
Tetrachloroethene	0.07	--	0.47	--	0.42	--	--	0.30
1,1,1-Trichloroethane	0.08	--	--	--	--	--	--	--
Trichloroethene	0.07	--	--	--	2.30	0.13	0.31	0.96
1,2,4-Trimethylbenzene	0.06	--	--	2.80	--	0.63	--	--
1,3,5-Trimethylbenzene	0.07	--	--	2.29	--	0.43	--	--

NOTES:
1) "--" denotes absence of detections above the laboratory's reported quantitation level.

Table 1
(continued)
Soil-Gas Concentrations (ng/L)
Market Basket Site
Geneva, NY

SAMPLE LOCATION	Q.L.	MB-15	MB-16	MB-17	MB-19
CONTAMINANTS					
Total Aliphatic Hydrocarbons	0.59	--	621.59	3.63	12.82
Benzene	0.07	--	--	--	--
Toluene	0.06	0.07	0.57	1.99	0.54
Ethylbenzene	0.06	--	--	--	0.21
Xylenes (total)	0.06	--	0.14	0.08	0.15
Total BTEX	0.06	0.07	0.71	2.07	0.90
1,2-Dichloroethene (cis)	0.10	--	--	--	--
Tetrachloroethene	0.07	--	--	--	--
1,1,1-Trichloroethane	0.08	--	--	--	--
Trichloroethene	0.07	--	--	--	3.86
1,2,4-Trimethylbenzene	0.06	--	0.24	--	0.10
1,3,5-Trimethylbenzene	0.07	--	3.08	--	0.08

NOTES:
1) "--" denotes absence of detections above the laboratory's reported quantitation level.
2) Sample MB-18 was not returned to the laboratory for analysis (see Section 3).

APPENDIX 4

APRIL STARS DATA

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

RECEIVED

MAY 12 1999

PASSERO ASSOCIATES

May 6, 1999

Mr. Arpad Kolozsvary
Passero Associates, PC
100 Liberty Pole Way
Rochester, NY 14604

PROJECT:GENEVA BROWNFIELDS
Submission #:9904000319

Dear Mr. Kolozsvary

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice Jaeger
Project Chemist

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal.

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362

CASE NARRATIVE

COMPANY: Passero Associates
Geneva Brownfields
SUBMISSION #: 9904000319

Passero samples were collected on 04/20/99 and received at CAS on 04/21/99 in good condition at a cooler temperature of 5.0.

VOLATILE ORGANICS

Five soil samples and one water sample were analyzed for the STARS List of Volatiles by method 8021 from SW-846.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within limits except Chlorofluorobenzene for Tank Pit N. Sidewall and Tank Pit West Sidewall. The samples were repeated and again the surrogate was outside limits and has been flagged with an "*".

All samples were analyzed within required holding times.

The Laboratory Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Five soil samples and one water sample were analyzed for the STARS list of Semi-Volatiles by method 8270 from SW-846.

All Tuning criteria for DFTPP were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within QC limits.

All surrogate standard recoveries were within acceptance limits.

All samples were analyzed and extracted within required holding times.

The Laboratory blank associated with these samples was free of contamination.

No other analytical or QC problems were encountered.

Columbia Analytical Services Inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

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

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

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

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

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

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

- Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

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

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145	NJ ID # in Rochester:	73004
CT ID # in Rochester:	PH0556	RI ID # in Rochester:	158
MA ID # in Rochester:	M-NY032	NH ID # in Rochester:	294198-A
OH EPA # in Rochester:	VAP	AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT N. SIDEWALL

Date Sampled : 04/20/99 **Order #:** 286562 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 84.0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.2 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
O-XYLENE	2.0	2.4 U	UG/KG
M+P-XYLENE	2.0	2.4 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	57 *	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT N. SIDEWALL

Date Sampled : 04/20/99 **Order #:** 286562 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 84.0

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	390 U	UG/KG
ANTHRACENE	330	390 U	UG/KG
BENZO(A)ANTHRACENE	330	390 U	UG/KG
BENZO(A)PYRENE	330	390 U	UG/KG
BENZO(B)FLUORANTHENE	330	390 U	UG/KG
BENZO(G,H,I)PERYLENE	330	390 U	UG/KG
BENZO(K)FLUORANTHENE	330	390 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	390 U	UG/KG
CHRYSENE	330	390 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	390 U	UG/KG
FLUORANTHENE	330	390 U	UG/KG
FLUORENE	330	390 U	UG/KG
NAPHTHALENE	200	240 U	UG/KG
PHENANTHRENE	330	390 U	UG/KG
PYRENE	330	390 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	73	%
NITROBENZENE-d5	(23 - 120 %)	62	%
2-FLUOROBIPHENYL	(30 - 115 %)	77	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT S. SOIL PILE

Date Sampled : 04/20/99 **Order #:** 286564 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 87.3

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/04/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.1 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.1 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.1 U	UG/KG
N-BUTYLBENZENE	1.0	1.1 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.1 U	UG/KG
ETHYLBENZENE	1.0	1.1 U	UG/KG
ISOPROPYLBENZENE	1.0	1.1 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.1 U	UG/KG
NAPHTHALENE	1.0	1.1 U	UG/KG
N-PROPYLBENZENE	1.0	1.1 U	UG/KG
TOLUENE	1.0	1.1 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.1 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.1 U	UG/KG
O-XYLENE	2.0	2.3 U	UG/KG
M+P-XYLENE	2.0	2.3 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	61	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT S. SOIL PILE

Date Sampled : 04/20/99 **Order #:** 286564 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 87.3

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	380 U	UG/KG
ANTHRACENE	330	380 U	UG/KG
BENZO(A)ANTHRACENE	330	380 U	UG/KG
BENZO(A)PYRENE	330	380 U	UG/KG
BENZO(B)FLUORANTHENE	330	380 U	UG/KG
BENZO(G,H,I)PERYLENE	330	380 U	UG/KG
BENZO(K)FLUORANTHENE	330	380 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	380 U	UG/KG
CHRYSENE	330	380 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	380 U	UG/KG
FLUORANTHENE	330	380 U	UG/KG
FLUORENE	330	380 U	UG/KG
NAPHTHALENE	200	230 U	UG/KG
PHENANTHRENE	330	380 U	UG/KG
PYRENE	330	380 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	87	%
NITROBENZENE-d5	(23 - 120 %)	74	%
2-FLUOROBIPHENYL	(30 - 115 %)	84	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT N. SOIL PILE

Date Sampled : 04/20/99 **Order #:** 286565 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 86.2

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 125.00			Dry Weight
BENZENE	1.0	150 U	UG/KG
SEC-BUTYLBENZENE	1.0	1600	UG/KG
TERT-BUTYLBENZENE	1.0	150 U	UG/KG
N-BUTYLBENZENE	1.0	6600	UG/KG
METHYL-TERT-BUTYLETHER	1.0	150 U	UG/KG
ETHYLBENZENE	1.0	150 U	UG/KG
ISOPROPYLBENZENE	1.0	860	UG/KG
P-ISOPROPYLTOLUENE	1.0	1400	UG/KG
NAPHTHALENE	1.0	500	UG/KG
N-PROPYLBENZENE	1.0	2300	UG/KG
TOLUENE	1.0	210	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	8200	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	7100	UG/KG
O-XYLENE	2.0	1900	UG/KG
M+P-XYLENE	2.0	3600	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	83	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT N. SOIL PILE

Date Sampled : 04/20/99 **Order #:** 286565 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 86.2

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	380 U	UG/KG
ANTHRACENE	330	380 U	UG/KG
BENZO(A)ANTHRACENE	330	380 U	UG/KG
BENZO(A)PYRENE	330	380 U	UG/KG
BENZO(B)FLUORANTHENE	330	380 U	UG/KG
BENZO(G,H,I)PERYLENE	330	380 U	UG/KG
BENZO(K)FLUORANTHENE	330	380 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	380 U	UG/KG
CHRYSENE	330	380 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	380 U	UG/KG
FLUORANTHENE	330	380 U	UG/KG
FLUORENE	330	380 U	UG/KG
NAPHTHALENE	200	230 U	UG/KG
PHENANTHRENE	330	380 U	UG/KG
PYRENE	330	380 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	89	%
NITROBENZENE-d5	(23 - 120 %)	74	%
2-FLUOROBIPHENYL	(30 - 115 %)	84	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT W. SIDE WALL

Date Sampled : 04/20/99 **Order #:** 286566 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 84.5

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.2 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
O-XYLENE	2.0	2.4 U	UG/KG
M+P-XYLENE	2.0	2.4 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	51 *	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT W. SIDE WALL

Date Sampled : 04/20/99 **Order #:** 286566 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 84.5

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	390 U	UG/KG
ANTHRACENE	330	390 U	UG/KG
BENZO(A)ANTHRACENE	330	390 U	UG/KG
BENZO(A)PYRENE	330	390 U	UG/KG
BENZO(B)FLUORANTHENE	330	390 U	UG/KG
BENZO(G,H,I)PERYLENE	330	390 U	UG/KG
BENZO(K)FLUORANTHENE	330	390 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	390 U	UG/KG
CHRYSENE	330	390 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	390 U	UG/KG
FLUORANTHENE	330	390 U	UG/KG
FLUORENE	330	390 U	UG/KG
NAPHTHALENE	200	240 U	UG/KG
PHENANTHRENE	330	390 U	UG/KG
PYRENE	330	390 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	78	%
NITROBENZENE-d5	(23 - 120 %)	77	%
2-FLUOROBIPHENYL	(30 - 115 %)	85	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT E. SIDE WALL

Date Sampled : 04/20/99 **Order #:** 286567 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 82.2

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/04/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.2 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
O-XYLENE	2.0	2.4 U	UG/KG
M+P-XYLENE	2.0	2.4 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	82	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT E. SIDE WALL

Date Sampled : 04/20/99 **Order #:** 286567 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 04/21/99 **Submission #:** 9904000319 **Percent Solid:** 82.2

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	400 U	UG/KG
ANTHRACENE	330	400 U	UG/KG
BENZO(A)ANTHRACENE	330	400 U	UG/KG
BENZO(A)PYRENE	330	400 U	UG/KG
BENZO(B)FLUORANTHENE	330	400 U	UG/KG
BENZO(G,H,I)PERYLENE	330	400 U	UG/KG
BENZO(K)FLUORANTHENE	330	400 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	400 U	UG/KG
CHRYSENE	330	400 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	400 U	UG/KG
FLUORANTHENE	330	400 U	UG/KG
FLUORENE	330	400 U	UG/KG
NAPHTHALENE	200	240 U	UG/KG
PHENANTHRENE	330	400 U	UG/KG
PYRENE	330	400 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	77	%
NITROBENZENE-d5	(23 - 120 %)	72	%
2-FLUOROBIPHENYL	(30 - 115 %)	84	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATII
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT 8000 GAL TANK PIT

Date Sampled : 04/20/99 **Order #:** 286568 **Sample Matrix:** WATER
Date Received: 04/21/99 **Submission #:** 9904000319 **Analytical Run** 37616

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			
ACENAPHTHENE	5.0	5.0 U	UG/L
ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)PYRENE	5.0	5.0 U	UG/L
BENZO(B)FLUORANTHENE	5.0	5.0 U	UG/L
BENZO(G,H,I)PERYLENE	5.0	5.0 U	UG/L
BENZO(K)FLUORANTHENE	5.0	5.0 U	UG/L
INDENO(1,2,3-CD)PYRENE	5.0	5.0 U	UG/L
CHRYSENE	5.0	5.0 U	UG/L
DIBENZO(A,H)ANTHRACENE	5.0	5.0 U	UG/L
FLUORANTHENE	5.0	5.0 U	UG/L
FLUORENE	5.0	5.0 U	UG/L
NAPHTHALENE	5.0	5.0 U	UG/L
PHENANTHRENE	5.0	5.0 U	UG/L
PYRENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(33 - 141 %)	67	%
NITROBENZENE-d5	(35 - 114 %)	71	%
2-FLUOROBIPHENYL	(43 - 116 %)	81	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TANK PIT 8000 GAL TANK PIT

Date Sampled : 04/20/99 **Order #:** 286569 **Sample Matrix:** WATER
Date Received: 04/21/99 **Submission #:** 9904000319 **Analytical Run** 37804

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/04/99			
ANALYTICAL DILUTION: 1.00			
BENZENE	0.70	0.70 U	UG/L
SEC-BUTYLBENZENE	1.0	2.6	UG/L
TERT-BUTYLBENZENE	1.0	1.0 U	UG/L
N-BUTYLBENZENE	1.0	23	UG/L
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/L
ETHYLBENZENE	1.0	16	UG/L
ISOPROPYLBENZENE	1.0	6.5	UG/L
P-ISOPROPYLTOLUENE	1.0	3.6	UG/L
NAPHTHALENE	1.0	2.0	UG/L
N-PROPYLBENZENE	1.0	11	UG/L
TOLUENE	1.0	4.6	UG/L
1,2,4-TRIMETHYLBENZENE	1.0	51	UG/L
1,3,5-TRIMETHYLBENZENE	1.0	55	UG/L
O-XYLENE	2.0	16	UG/L
M+P-XYLENE	2.0	34	UG/L

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	99	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 289531 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.0 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.0 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.0 U	UG/KG
N-BUTYLBENZENE	1.0	1.0 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/KG
ETHYLBENZENE	1.0	1.0 U	UG/KG
ISOPROPYLBENZENE	1.0	1.0 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.0 U	UG/KG
NAPHTHALENE	1.0	1.0 U	UG/KG
N-PROPYLBENZENE	1.0	1.0 U	UG/KG
TOLUENE	1.0	1.0 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
O-XYLENE	2.0	2.0 U	UG/KG
M+P-XYLENE	2.0	2.0 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	77	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 289526 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 125.00			Dry Weight
BENZENE	1.0	130 U	UG/KG
SEC-BUTYLBENZENE	1.0	130 U	UG/KG
TERT-BUTYLBENZENE	1.0	130 U	UG/KG
N-BUTYLBENZENE	1.0	130 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	130 U	UG/KG
ETHYLBENZENE	1.0	130 U	UG/KG
ISOPROPYLBENZENE	1.0	130 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	130 U	UG/KG
NAPHTHALENE	1.0	130 U	UG/KG
N-PROPYLBENZENE	1.0	130 U	UG/KG
TOLUENE	1.0	130 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	130 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	130 U	UG/KG
O-XYLENE	2.0	250 U	UG/KG
M+P-XYLENE	2.0	250 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	110	%

GOLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 289862 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/04/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.0 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.0 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.0 U	UG/KG
N-BUTYLBENZENE	1.0	1.0 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/KG
ETHYLBENZENE	1.0	1.0 U	UG/KG
ISOPROPYLBENZENE	1.0	1.0 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.0 U	UG/KG
NAPHTHALENE	1.0	1.0 U	UG/KG
N-PROPYLBENZENE	1.0	1.0 U	UG/KG
TOLUENE	1.0	1.0 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
O-XYLENE	2.0	2.0 U	UG/KG
M+P-XYLENE	2.0	2.0 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	74	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 05/06/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 290038 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 37804

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/04/99			
ANALYTICAL DILUTION: 1.00			
BENZENE	0.70	0.70 U	UG/L
SEC-BUTYLBENZENE	1.0	1.0 U	UG/L
TERT-BUTYLBENZENE	1.0	1.0 U	UG/L
N-BUTYLBENZENE	1.0	1.0 U	UG/L
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/L
ETHYLBENZENE	1.0	1.0 U	UG/L
ISOPROPYLBENZENE	1.0	1.0 U	UG/L
P-ISOPROPYLTOLUENE	1.0	1.0 U	UG/L
NAPHTHALENE	1.0	1.0 U	UG/L
N-PROPYLBENZENE	1.0	1.0 U	UG/L
TOLUENE	1.0	1.0 U	UG/L
1,2,4-TRIMETHYLBENZENE	1.0	1.0 U	UG/L
1,3,5-TRIMETHYLBENZENE	1.0	1.0 U	UG/L
O-XYLENE	2.0	2.0 U	UG/L
M+P-XYLENE	2.0	2.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	95	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 05/06/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : Order #: 289308 Sample Matrix: SOIL/SEDIMENT
Date Received: Submission #: Percent Solid: 100

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/23/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	330 U	UG/KG
ANTHRACENE	330	330 U	UG/KG
BENZO(A)ANTHRACENE	330	330 U	UG/KG
BENZO(A)PYRENE	330	330 U	UG/KG
BENZO(B)FLUORANTHENE	330	330 U	UG/KG
BENZO(G,H,I)PERYLENE	330	330 U	UG/KG
BENZO(K)FLUORANTHENE	330	330 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	330 U	UG/KG
CHRYSENE	330	330 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	330 U	UG/KG
FLUORANTHENE	330	330 U	UG/KG
FLUORENE	330	330 U	UG/KG
NAPHTHALENE	200	200 U	UG/KG
PHENANTHRENE	330	330 U	UG/KG
PYRENE	330	330 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	82	%
NITROBENZENE-d5	(23 - 120 %)	74	%
2-FLUOROBIPHENYL	(30 - 115 %)	89	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATII
Reported: 05/06/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : Order #: 289037 Sample Matrix: WATER
Date Received: Submission #: Analytical Run 37616

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/28/99			
ANALYTICAL DILUTION: 1.00			
ACENAPHTHENE	5.0	5.0 U	UG/L
ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)PYRENE	5.0	5.0 U	UG/L
BENZO(B)FLUORANTHENE	5.0	5.0 U	UG/L
BENZO(G,H,I)PERYLENE	5.0	5.0 U	UG/L
BENZO(K)FLUORANTHENE	5.0	5.0 U	UG/L
INDENO(1,2,3-CD)PYRENE	5.0	5.0 U	UG/L
CHRYSENE	5.0	5.0 U	UG/L
DIBENZO(A,H)ANTHRACENE	5.0	5.0 U	UG/L
FLUORANTHENE	5.0	5.0 U	UG/L
FLUORENE	5.0	5.0 U	UG/L
NAPHTHALENE	5.0	5.0 U	UG/L
PHENANTHRENE	5.0	5.0 U	UG/L
PYRENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(33 - 141 %)	80	%
NITROBENZENE-d5	(35 - 114 %)	73	%
2-FLUOROBIPHENYL	(43 - 116 %)	85	%

Columbia Analytical Services INC.
An Employee-Owned Company
Mustard St., Suite 250, Rochester, NY 14609-69245
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 4/20/99 PAGE 1 OF 1

PROJECT NAME GENEVA BROWNFIELDS
PROJECT MANAGER/CONTACT ARPAD KOLOSZVARY
COMPANY/ADDRESS PASSERO ASSOCIATES
TEL (716) 325-1000 FAX ( )
SAMPLER'S SIGNATURE [signature]

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☒ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☒ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	PRESERVATION pH < 2.0	pH > 12	Other ICE
TANK PIT N. SIDEWALL	4/20/99	1237	286562	SOIL	2					X	X							X
TANK PIT S. SOIL PILE		1215	286564	SOIL	1						X							X
" " S. SOIL PILE		1215	↓	SOIL	1					X								X
" " N. SOIL PILE		1210	286565	SOIL	1					X								X
" " N. SOIL PILE		1210	↓	SOIL	1						X							X
" " W. SIDEWALL		1220	286566	SOIL	2					X	X							X
" " E SIDEWALL		1250	286567	SOIL	2					X	X							X
" " 8000 GAL TANK PIT		1320	286568	WATER	1						X							X
" " " " "	"	1335	286569	WATER	3					X							X	

RELINQUISHED BY:
Signature [signature]
Printed Name Glenn Combes
Firm
Date/Time

RECEIVED BY:
Signature [signature]
Printed Name Andy Toomey
Firm CAS
Date/Time 4/21/99 #01610

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature [signature]
Printed Name Brian Collins
Firm CAS
Date/Time 4/21/99 1610

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
X Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
X 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: client
Shipping #:
Temperature: 5.0°
Submission No: 4-319

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

ALL SAMPLES COLLECTED FROM 8000 GAL TANK PIT @ MARKET BASKET SITE

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Passero Submission Number 4-319

Cooler received on 4/21/99 and opened on 4/21/99 by DS

1. Were custody seals on outside of cooler? YES (NO)
   If yes, how many and where? hand delivered
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? (YES) NO
4. Did all bottles arrive in good condition (unbroken)? (YES) NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? (YES) NO
6. Did all bottle labels and tags agree with custody papers? (YES) NO
7. Were correct bottles used for the tests indicated? (YES) NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? (YES) NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J (CAS/R)
10. Temperature of cooler(s) upon receipt: 5.0 ____ ____ ____ ____

Is the temperature within 4 ± 2° C?:	Yes ☒	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 4/21/99 16:18

Thermometer ID: #139 Circle One: Temp Blank Sample Bottle (Cooler Temp.)

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: _____

I:\gcms\ca_docum\sop\discrep.doc.

APPENDIX 5

JUNE STARS DATA

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

June 28, 1999

RECEIVED
JUL - 1 1999
PASSERO ASSOCIATES

Mr. Arpad Kolozsvary
Passero Associates, PC
100 Liberty Pole Way
Rochester, NY 14604

PROJECT:GENEVA MARKET BASKET
Submission #:9906000098

Dear Mr. Kolozsvary

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice Jaeger
Project Chemist

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal. 6/28/99

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

CASE NARRATIVE

COMPANY: Passero Associates
Geneva Market Basket
SUBMISSION #: 9906000098

Passero samples were collected on 06/07/99 and received at CAS on 06/07/99 in good condition at a cooler temperature of 4.6 C.

VOLATILE ORGANICS

Six soil samples were analyzed for the STARS List of Volatiles by method 8021 from SW-846.

The initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within limits except Chlorofluorobenzene for Pit North Wall and Pit Bottom. The samples were repeated and again the surrogate was outside limits for Pit North Wall and has been flagged with an "*".

All samples were analyzed within required holding times except the confirmation sample for Pit Bottom.

The Laboratory Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Five soil samples were analyzed for the STARS list of Semi-Volatiles by method 8270 from SW-846.

All Tuning criteria for DFTPP were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within QC limits.

All surrogate standard recoveries were within acceptance limits.

All samples were analyzed and extracted within required holding times.

The Laboratory blank associated with these samples was free of contamination.

No other analytical or QC problems were encountered.

Columbia Analytical Services Inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

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

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

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

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

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

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

- Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

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

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145	NJ ID # in Rochester:	73004
CT ID # in Rochester:	PH0556	RI ID # in Rochester:	158
MA ID # in Rochester:	M-NY032	NH ID # in Rochester:	294198-A
OH EPA # in Rochester:	VAP	AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT NORTH WALL

Date Sampled : 06/07/99 **Order #:** 297863 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 87.8

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/18/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.1 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.1 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.1 U	UG/KG
N-BUTYLBENZENE	1.0	1.1 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.1 U	UG/KG
ETHYLBENZENE	1.0	1.1 U	UG/KG
ISOPROPYLBENZENE	1.0	1.1 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.1 U	UG/KG
NAPHTHALENE	1.0	1.1 U	UG/KG
N-PROPYLBENZENE	1.0	1.1 U	UG/KG
TOLUENE	1.0	1.1 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.1 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.1 U	UG/KG
O-XYLENE	2.0	2.3 U	UG/KG
M+P-XYLENE	2.0	2.3 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	54 *	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT NORTH WALL

Date Sampled : 06/07/99 **Order #:** 297863 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 87.8

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/10/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	380 U	UG/KG
ANTHRACENE	330	380 U	UG/KG
BENZO(A)ANTHRACENE	330	380 U	UG/KG
BENZO(A)PYRENE	330	380 U	UG/KG
BENZO(B)FLUORANTHENE	330	380 U	UG/KG
BENZO(G,H,I)PERYLENE	330	380 U	UG/KG
BENZO(K)FLUORANTHENE	330	380 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	380 U	UG/KG
CHRYSENE	330	380 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	380 U	UG/KG
FLUORANTHENE	330	380 U	UG/KG
FLUORENE	330	380 U	UG/KG
NAPHTHALENE	200	230 U	UG/KG
PHENANTHRENE	330	380 U	UG/KG
PYRENE	330	380 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	80	%
NITROBENZENE-d5	(23 - 120 %)	30	%
2-FLUOROBIPHENYL	(30 - 115 %)	58	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT SOUTH WALL

Date Sampled : 06/07/99 **Order #:** 297864 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 83.3

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/18/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.2 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
O-XYLENE	2.0	2.4 U	UG/KG
M+P-XYLENE	2.0	2.4 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	87	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT SOUTH WALL

Date Sampled : 06/07/99 **Order #:** 297864 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 83.3

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/10/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	400 U	UG/KG
ANTHRACENE	330	400 U	UG/KG
BENZO(A)ANTHRACENE	330	400 U	UG/KG
BENZO(A)PYRENE	330	400 U	UG/KG
BENZO(B)FLUORANTHENE	330	400 U	UG/KG
BENZO(G,H,I)PERYLENE	330	400 U	UG/KG
BENZO(K)FLUORANTHENE	330	400 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	400 U	UG/KG
CHRYSENE	330	400 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	400 U	UG/KG
FLUORANTHENE	330	590	UG/KG
FLUORENE	330	400 U	UG/KG
NAPHTHALENE	200	240 U	UG/KG
PHENANTHRENE	330	470	UG/KG
PYRENE	330	400 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	89	%
NITROBENZENE-d5	(23 - 120 %)	71	%
2-FLUOROBIPHENYL	(30 - 115 %)	79	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT EAST WALL

Date Sampled : 06/07/99 **Order #:** 297865 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 84.5

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/18/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.8	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	2.2	UG/KG
O-XYLENE	2.0	2.4 U	UG/KG
M+P-XYLENE	2.0	2.4 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	69	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT EAST WALL

Date Sampled : 06/07/99 **Order #:** 297865 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 84.5

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/10/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	390 U	UG/KG
ANTHRACENE	330	390 U	UG/KG
BENZO(A)ANTHRACENE	330	390 U	UG/KG
BENZO(A)PYRENE	330	390 U	UG/KG
BENZO(B)FLUORANTHENE	330	390 U	UG/KG
BENZO(G,H,I)PERYLENE	330	390 U	UG/KG
BENZO(K)FLUORANTHENE	330	390 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	390 U	UG/KG
CHRYSENE	330	390 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	390 U	UG/KG
FLUORANTHENE	330	390 U	UG/KG
FLUORENE	330	390 U	UG/KG
NAPHTHALENE	200	240 U	UG/KG
PHENANTHRENE	330	390 U	UG/KG
PYRENE	330	390 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	88	%
NITROBENZENE-d5	(23 - 120 %)	41	%
2-FLUOROBIPHENYL	(30 - 115 %)	59	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT WEST WALL

Date Sampled : 06/07/99 **Order #:** 297866 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 83.9

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/18/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	4.2	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.4	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	4.3	UG/KG
O-XYLENE	2.0	3.0	UG/KG
M+P-XYLENE	2.0	2.4 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	74	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT WEST WALL

Date Sampled : 06/07/99 **Order #:** 297866 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 83.9

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/10/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	390 U	UG/KG
ANTHRACENE	330	390 U	UG/KG
BENZO(A)ANTHRACENE	330	440	UG/KG
BENZO(A)PYRENE	330	440	UG/KG
BENZO(B)FLUORANTHENE	330	450	UG/KG
BENZO(G,H,I)PERYLENE	330	390 U	UG/KG
BENZO(K)FLUORANTHENE	330	410	UG/KG
INDENO(1,2,3-CD)PYRENE	330	390 U	UG/KG
CHRYSENE	330	430	UG/KG
DIBENZO(A,H)ANTHRACENE	330	390 U	UG/KG
FLUORANTHENE	330	950	UG/KG
FLUORENE	330	390 U	UG/KG
NAPHTHALENE	200	240 U	UG/KG
PHENANTHRENE	330	570	UG/KG
PYRENE	330	700	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	98	%
NITROBENZENE-d5	(23 - 120 %)	56	%
2-FLUOROBIPHENYL	(30 - 115 %)	75	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT BOTTOM

Date Sampled : 06/07/99 **Order #:** 297867 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 85.3

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/22/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.2 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
O-XYLENE	2.0	2.3 U	UG/KG
M+P-XYLENE	2.0	2.3 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	62	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT BOTTOM

Date Sampled : 06/07/99 **Order #:** 297867 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 85.3

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/18/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.2 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.2 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.2 U	UG/KG
N-BUTYLBENZENE	1.0	1.2 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.2 U	UG/KG
ETHYLBENZENE	1.0	1.2 U	UG/KG
ISOPROPYLBENZENE	1.0	1.2 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.2 U	UG/KG
NAPHTHALENE	1.0	1.2 U	UG/KG
N-PROPYLBENZENE	1.0	1.2 U	UG/KG
TOLUENE	1.0	1.2 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.2 U	UG/KG
O-XYLENE	2.0	2.3 U	UG/KG
M+P-XYLENE	2.0	2.3 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	35 *	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : PIT BOTTOM

Date Sampled : 06/07/99 **Order #:** 297867 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 85.3

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/11/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	390 U	UG/KG
ANTHRACENE	330	390 U	UG/KG
BENZO(A)ANTHRACENE	330	390 U	UG/KG
BENZO(A)PYRENE	330	390 U	UG/KG
BENZO(B)FLUORANTHENE	330	390 U	UG/KG
BENZO(G,H,I)PERYLENE	330	390 U	UG/KG
BENZO(K)FLUORANTHENE	330	390 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	390 U	UG/KG
CHRYSENE	330	390 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	390 U	UG/KG
FLUORANTHENE	330	390 U	UG/KG
FLUORENE	330	390 U	UG/KG
NAPHTHALENE	200	230 U	UG/KG
PHENANTHRENE	330	390 U	UG/KG
PYRENE	330	390 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	90	%
NITROBENZENE-d5	(23 - 120 %)	46	%
2-FLUOROBIPHENYL	(30 - 115 %)	67	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : STAGED SOIL

Date Sampled : 06/07/99 **Order #:** 297868 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 87.8

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/09/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.1 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.8	UG/KG
TERT-BUTYLBENZENE	1.0	1.1 U	UG/KG
N-BUTYLBENZENE	1.0	6.3	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.1 U	UG/KG
ETHYLBENZENE	1.0	1.1 U	UG/KG
ISOPROPYLBENZENE	1.0	1.1 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.1 U	UG/KG
NAPHTHALENE	1.0	18	UG/KG
N-PROPYLBENZENE	1.0	1.9	UG/KG
TOLUENE	1.0	1.1 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	3.0	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	3.9	UG/KG
O-XYLENE	2.0	2.3 U	UG/KG
M+P-XYLENE	2.0	2.3 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	69	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Passero Associates, PC
Project Reference: GENEVA MARKET BASKET
Client Sample ID : STAGED SOIL

Date Sampled : 06/07/99 **Order #:** 297868 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 06/07/99 **Submission #:** 9906000098 **Percent Solid:** 87.8

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/11/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	380 U	UG/KG
ANTHRACENE	330	380 U	UG/KG
BENZO(A)ANTHRACENE	330	380 U	UG/KG
BENZO(A)PYRENE	330	380 U	UG/KG
BENZO(B)FLUORANTHENE	330	380 U	UG/KG
BENZO(G,H,I)PERYLENE	330	380 U	UG/KG
BENZO(K)FLUORANTHENE	330	380 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	380 U	UG/KG
CHRYSENE	330	380 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	380 U	UG/KG
FLUORANTHENE	330	670	UG/KG
FLUORENE	330	380 U	UG/KG
NAPHTHALENE	200	230 U	UG/KG
PHENANTHRENE	330	380 U	UG/KG
PYRENE	330	590	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	123	%
NITROBENZENE-d5	(23 - 120 %)	95	%
2-FLUOROBIPHENYL	(30 - 115 %)	94	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 298466 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/09/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.0 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.0 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.0 U	UG/KG
N-BUTYLBENZENE	1.0	1.0 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/KG
ETHYLBENZENE	1.0	1.0 U	UG/KG
ISOPROPYLBENZENE	1.0	1.0 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.0 U	UG/KG
NAPHTHALENE	1.0	1.0 U	UG/KG
N-PROPYLBENZENE	1.0	1.0 U	UG/KG
TOLUENE	1.0	1.0 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
O-XYLENE	2.0	2.0 U	UG/KG
M+P-XYLENE	2.0	2.0 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	74	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 300907 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/18/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.0 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.0 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.0 U	UG/KG
N-BUTYLBENZENE	1.0	1.0 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/KG
ETHYLBENZENE	1.0	1.0 U	UG/KG
ISOPROPYLBENZENE	1.0	1.0 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.0 U	UG/KG
NAPHTHALENE	1.0	1.0 U	UG/KG
N-PROPYLBENZENE	1.0	1.0 U	UG/KG
TOLUENE	1.0	1.0 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
O-XYLENE	2.0	2.0 U	UG/KG
M+P-XYLENE	2.0	2.0 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	85	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8021B STARS LIST VOAS
Reported: 06/28/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 301622 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/22/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
BENZENE	1.0	1.0 U	UG/KG
SEC-BUTYLBENZENE	1.0	1.0 U	UG/KG
TERT-BUTYLBENZENE	1.0	1.0 U	UG/KG
N-BUTYLBENZENE	1.0	1.0 U	UG/KG
METHYL-TERT-BUTYLETHER	1.0	1.0 U	UG/KG
ETHYLBENZENE	1.0	1.0 U	UG/KG
ISOPROPYLBENZENE	1.0	1.0 U	UG/KG
P-ISOPROPYLTOLUENE	1.0	1.0 U	UG/KG
NAPHTHALENE	1.0	1.0 U	UG/KG
N-PROPYLBENZENE	1.0	1.0 U	UG/KG
TOLUENE	1.0	1.0 U	UG/KG
1,2,4-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
1,3,5-TRIMETHYLBENZENE	1.0	1.0 U	UG/KG
O-XYLENE	2.0	2.0 U	UG/KG
M+P-XYLENE	2.0	2.0 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
CHLOROFLUOROBENZENE	(60 - 140 %)	72	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C STARS LIST SEMIVOLATIL
Reported: 06/28/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 298451 **Sample Matrix:** SOIL/SEDIMENT
Date Received: **Submission #:** **Percent Solid:** 100

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 06/08/99			
DATE ANALYZED : 06/09/99			
ANALYTICAL DILUTION: 1.00			Dry Weight
ACENAPHTHENE	330	330 U	UG/KG
ANTHRACENE	330	330 U	UG/KG
BENZO(A)ANTHRACENE	330	330 U	UG/KG
BENZO(A)PYRENE	330	330 U	UG/KG
BENZO(B)FLUORANTHENE	330	330 U	UG/KG
BENZO(G,H,I)PERYLENE	330	330 U	UG/KG
BENZO(K)FLUORANTHENE	330	330 U	UG/KG
INDENO(1,2,3-CD)PYRENE	330	330 U	UG/KG
CHRYSENE	330	330 U	UG/KG
DIBENZO(A,H)ANTHRACENE	330	330 U	UG/KG
FLUORANTHENE	330	330 U	UG/KG
FLUORENE	330	330 U	UG/KG
NAPHTHALENE	200	200 U	UG/KG
PHENANTHRENE	330	330 U	UG/KG
PYRENE	330	330 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(18 - 137 %)	97	%
NITROBENZENE-d5	(23 - 120 %)	50	%
2-FLUOROBIPHENYL	(30 - 115 %)	52	%

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Passero Submission Number 6-98

Cooler received on 6/7/99 and opened on 6/7/99 by AS

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? hand delivered
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? YES NO
4. Did all bottles arrive in good condition (unbroken)? YES NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? YES NO
6. Did all bottle labels and tags agree with custody papers? YES NO
7. Were correct bottles used for the tests indicated? YES NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 4.6

Is the temperature within 4 ± 2° C?:	Yes ☒	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 6/7/99 13:52

Thermometer ID: #139 **Circle One:** Temp Blank Sample Bottle Cooler Temp.

Explain any discrepancies:

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4.

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION:

I:\arosso\qa_docum\sop\discrep.doc.

Columbia Analytical Services INC.
An Employee-Owned Company
Mustard St., Suite 250, Rochester, NY 14609-69245
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 6-7-99 PAGE 1 OF 1

PROJECT NAME Geneva Market Basket
PROJECT MANAGER/CONTACT Arpad Kolozsvary
COMPANY/ADDRESS Passero Associates
100 Liberty Pole Way Rochester 14604
TEL (716) 325-1000 FAX (716) 325-1691
SAMPLER'S SIGNATURE PSMorton

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☒ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☒ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	PRESERVATION pH < 2.0	pH > 12	Other
Pit North Wall	6/7/99		297863	Soil	2					X	X							
Pit South Wall	↓		64	↓	2					X	X							
Pit East Wall	↓		65	↓	2					X	X							
Pit West Wall	↓		66	↓	2					X	X							
Pit Bottom	↓		67	↓	2					X	X							
Staged Soil	↓		68	↓	1					X	X							

RELINQUISHED BY:
Signature Peter S. Morton
Printed Name Passero Assoc.
Firm
Date/Time

RECEIVED BY:
Signature Janice Berger
Printed Name
Firm CAS
Date/Time 6/7/99 @ 1350

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature Brian Collom
Printed Name Brian Collom
Firm CAS
Date/Time 6/7/99 1350

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
X Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
X 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 4.6
Submission No: 6-98

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

APPENDIX 6

TRENCH SAMPLES

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

May 19, 1999

RECEIVED
MAY 24 1999
PASSERO ASSOCIATES

Mr. Arpad Kolozsvary
Passero Associates, PC
100 Liberty Pole Way
Rochester, NY 14604

PROJECT:GENEVA BROWNFIELDS
Submission #:9904000334

Dear Mr. Kolozsvary

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice Jaeger
Project Chemist

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal. MMc 5/20/99

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362

Columbia Analytical Services Inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

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

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

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

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

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

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

- Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

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

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145	NJ ID # in Rochester:	73004
CT ID # in Rochester:	PH0556	RI ID # in Rochester:	158
MA ID # in Rochester:	M-NY032	NH ID # in Rochester:	294198-A
OH EPA # in Rochester:	VAP	AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

Reported: 05/19/99

Passero Associates, PC
Project Reference:GENEVA BROWNFIELDS
Client Sample ID :TRENCH MARKET BASKET

Date Sampled : 04/20/99 Order #: 286826 Sample Matrix: WATER
Date Received: 04/21/99 Submission #:9904000334

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
ALUMINUM	0.100	0.337	MG/L	05/07/99	1.0
ANTIMONY	0.0600	0.0600 U	MG/L	05/07/99	1.0
ARSENIC	0.0100	0.0100 U	MG/L	05/07/99	1.0
BARIUM	0.0200	0.0440	MG/L	05/07/99	1.0
BERYLLIUM	0.00500	0.00500 U	MG/L	05/07/99	1.0
CADMIUM	0.00500	0.00500 U	MG/L	05/07/99	1.0
CALCIUM	0.500	59.8	MG/L	05/07/99	1.0
CHROMIUM	0.0100	0.0100 U	MG/L	05/07/99	1.0
COBALT	0.0500	0.0500 U	MG/L	05/07/99	1.0
COPPER	0.0200	0.0537	MG/L	05/07/99	1.0
IRON	0.100	0.990	MG/L	05/07/99	1.0
LEAD	0.00500	0.0401	MG/L	05/10/99	1.0
MAGNESIUM	0.500	9.71	MG/L	05/07/99	1.0
MANGANESE	0.0100	0.0697	MG/L	05/07/99	1.0
MERCURY	0.000300	0.000300 U	MG/L	05/06/99	1.0
NICKEL	0.0400	0.0400 U	MG/L	05/07/99	1.0
POTASSIUM	2.00	4.20	MG/L	05/12/99	1.0
SELENIUM	0.00500	0.00500 U	MG/L	05/07/99	1.0
SILVER	0.0100	0.0100 U	MG/L	05/07/99	1.0
SODIUM	0.500	5.76	MG/L	05/07/99	1.0
THALLIUM	0.0100	0.0100 U	MG/L	05/07/99	1.0
VANADIUM	0.0500	0.0500 U	MG/L	05/07/99	1.0
ZINC	0.0200	0.0751	MG/L	05/12/99	1.0
WET CHEMISTRY					
TOTAL CYANIDE	0.0100	0.0100 U	MG/L	04/30/99	1.0

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 05/19/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TRENCH MARKET BASKET

Date Sampled : 04/20/99 **Order #:** 286826 **Sample Matrix:** WATER
Date Received: 04/21/99 **Submission #:** 9904000334 **Analytical Run** 38294

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	100	%
TOLUENE-D8	(88 - 110 %)	105	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	105	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 05/19/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TRENCH MARKET BASKET

Date Sampled : 04/20/99 **Order #:** 286826 **Sample Matrix:** WATER
Date Received: 04/21/99 **Submission #:** 9904000334 **Analytical Run** 37615

DATE EXTRACTED : 04/23/99
DATE ANALYZED : 04/30/99
ANALYTICAL DILUTION: 1.00

ANALYTE	PQL	RESULT	UNITS
ACENAPHTHENE	5.0	5.0 U	UG/L
ACENAPHTHYLENE	5.0	5.0 U	UG/L
ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)PYRENE	5.0	5.0 U	UG/L
BENZO(B)FLUORANTHENE	5.0	5.0 U	UG/L
BENZO(G,H,I)PERYLENE	5.0	5.0 U	UG/L
BENZO(K)FLUORANTHENE	5.0	5.0 U	UG/L
BENZYL ALCOHOL	5.0	5.0 U	UG/L
BUTYL BENZYL PHTHALATE	5.0	5.0 U	UG/L
DI-N-BUTYLPHTHALATE	5.0	5.0 U	UG/L
CARBAZOLE	5.0	5.0 U	UG/L
INDENO(1,2,3-CD)PYRENE	5.0	5.0 U	UG/L
4-CHLOROANILINE	5.0	5.0 U	UG/L
BIS(-2-CHLOROETHOXY)METHANE	5.0	5.0 U	UG/L
BIS(2-CHLOROETHYL)ETHER	5.0	5.0 U	UG/L
2-CHLORONAPHTHALENE	5.0	5.0 U	UG/L
2-CHLOROPHENOL	10	10 U	UG/L
2,2'-OXYBIS(1-CHLOROPROPANE)	5.0	5.0 U	UG/L
CHRYSENE	5.0	5.0 U	UG/L
DIBENZO(A,H)ANTHRACENE	5.0	5.0 U	UG/L
DIBENZOFURAN	5.0	5.0 U	UG/L
1,3-DICHLOROBENZENE	5.0	5.0 U	UG/L
1,2-DICHLOROBENZENE	5.0	5.0 U	UG/L
1,4-DICHLOROBENZENE	5.0	5.0 U	UG/L
3,3'-DICHLOROBENZIDINE	5.0	5.0 U	UG/L
2,4-DICHLOROPHENOL	10	10 U	UG/L
DIETHYLPHTHALATE	5.0	5.0 U	UG/L
DIMETHYL PHTHALATE	5.0	5.0 U	UG/L
2,4-DIMETHYLPHENOL	10	10 U	UG/L
2,4-DINITROPHENOL	20	20 U	UG/L
2,4-DINITROTOLUENE	5.0	5.0 U	UG/L
2,6-DINITROTOLUENE	5.0	5.0 U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	5.0	5.0 U	UG/L
FLUORANTHENE	5.0	5.0 U	UG/L
FLUORENE	5.0	5.0 U	UG/L
HEXACHLOROBENZENE	5.0	5.0 U	UG/L
HEXACHLOROBUTADIENE	5.0	5.0 U	UG/L
HEXACHLOROCYCLOPENTADIENE	5.0	5.0 U	UG/L
HEXACHLOROETHANE	5.0	5.0 U	UG/L
ISOPHORONE	5.0	5.0 U	UG/L
2-METHYLNAPHTHALENE	10	10 U	UG/L
4,6-DINITRO-2-METHYLPHENOL	20	20 U	UG/L

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 05/19/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TRENCH MARKET BASKET

Date Sampled : 04/20/99 **Order #:** 286826 **Sample Matrix:** WATER
Date Received: 04/21/99 **Submission #:** 9904000334 **Analytical Run** 37615

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/30/99			
ANALYTICAL DILUTION: 1.00			
4-CHLORO-3-METHYLPHENOL	10	10 U	UG/L
2-METHYLPHENOL	10	10 U	UG/L
4-METHYLPHENOL	10	10 U	UG/L
NAPHTHALENE	5.0	5.0 U	UG/L
2-NITROANILINE	5.0	5.0 U	UG/L
3-NITROANILINE	5.0	5.0 U	UG/L
4-NITROANILINE	5.0	5.0 U	UG/L
NITROBENZENE	5.0	5.0 U	UG/L
2-NITROPHENOL	10	10 U	UG/L
4-NITROPHENOL	20	20 U	UG/L
N-NITROSODIMETHYLAMINE	5.0	5.0 U	UG/L
N-NITROSODIPHENYLAMINE	5.0	5.0 U	UG/L
DI-N-OCTYL PHTHALATE	5.0	5.0 U	UG/L
PENTACHLOROPHENOL	20	20 U	UG/L
PHENANTHRENE	5.0	5.0 U	UG/L
PHENOL	10	10 U	UG/L
4-BROMOPHENYL-PHENYLETHER	5.0	5.0 U	UG/L
4-CHLOROPHENYL-PHENYLETHER	5.0	5.0 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	5.0	5.0 U	UG/L
PYRENE	5.0	5.0 U	UG/L
1,2,4-TRICHLOROBENZENE	5.0	5.0 U	UG/L
2,4,6-TRICHLOROPHENOL	10	10 U	UG/L
2,4,5-TRICHLOROPHENOL	10	10 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(33 - 141 %)	50	%
NITROBENZENE-d5	(35 - 114 %)	60	%
PHENOL-d6	(10 - 94 %)	32	%
2-FLUOROBIPHENYL	(43 - 116 %)	68	%
2-FLUOROPHENOL	(21 - 110 %)	36	%
2,4,6-TRIBROMOPHENOL	(10 - 123 %)	50	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8082 PCB'S
Reported: 05/19/99

Passero Associates, PC
Project Reference: GENEVA BROWNFIELDS
Client Sample ID : TRENCH MARKET BASKET

Date Sampled : 04/20/99 **Order #:** 286826 **Sample Matrix:** WATER
Date Received: 04/21/99 **Submission #:** 9904000334 **Analytical Run** 37383

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/22/99			
DATE ANALYZED : 04/23/99			
ANALYTICAL DILUTION: 1.00			
PCB 1016	0.50	0.50 U	UG/L
PCB 1221	0.50	0.50 U	UG/L
PCB 1232	0.50	0.50 U	UG/L
PCB 1242	0.50	0.50 U	UG/L
PCB 1248	0.50	0.50 U	UG/L
PCB 1254	0.50	0.50 U	UG/L
PCB 1260	0.50	0.50 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
DECACHLOROBIPHENYL	(30 - 150 %)	66	%
TETRACHLORO-META-XYLENE	(30 - 150 %)	82	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 05/19/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 293309 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 38294

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/03/99			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	94	%
TOLUENE-D8	(88 - 110 %)	102	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	105	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 05/19/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 289036 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 37615

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/28/99			
ANALYTICAL DILUTION: 1.00			
ACENAPHTHENE	5.0	5.0 U	UG/L
ACENAPHTHYLENE	5.0	5.0 U	UG/L
ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)ANTHRACENE	5.0	5.0 U	UG/L
BENZO(A)PYRENE	5.0	5.0 U	UG/L
BENZO(B)FLUORANTHENE	5.0	5.0 U	UG/L
BENZO(G,H,I)PERYLENE	5.0	5.0 U	UG/L
BENZO(K)FLUORANTHENE	5.0	5.0 U	UG/L
BENZYL ALCOHOL	5.0	5.0 U	UG/L
BUTYL BENZYL PHTHALATE	5.0	5.0 U	UG/L
DI-N-BUTYLPHTHALATE	5.0	5.0 U	UG/L
CARBAZOLE	5.0	5.0 U	UG/L
INDENO(1,2,3-CD)PYRENE	5.0	5.0 U	UG/L
4-CHLOROANILINE	5.0	5.0 U	UG/L
BIS(-2-CHLOROETHOXY)METHANE	5.0	5.0 U	UG/L
BIS(2-CHLOROETHYL)ETHER	5.0	5.0 U	UG/L
2-CHLORONAPHTHALENE	5.0	5.0 U	UG/L
2-CHLOROPHENOL	10	10 U	UG/L
2,2'-OXYBIS(1-CHLOROPROPANE)	5.0	5.0 U	UG/L
CHRYSENE	5.0	5.0 U	UG/L
DIBENZO(A,H)ANTHRACENE	5.0	5.0 U	UG/L
DIBENZOFURAN	5.0	5.0 U	UG/L
1,3-DICHLOROBENZENE	5.0	5.0 U	UG/L
1,2-DICHLOROBENZENE	5.0	5.0 U	UG/L
1,4-DICHLOROBENZENE	5.0	5.0 U	UG/L
3,3'-DICHLOROBENZIDINE	5.0	5.0 U	UG/L
2,4-DICHLOROPHENOL	10	10 U	UG/L
DIETHYLPHTHALATE	5.0	5.0 U	UG/L
DIMETHYL PHTHALATE	5.0	5.0 U	UG/L
2,4-DIMETHYLPHENOL	10	10 U	UG/L
2,4-DINITROPHENOL	20	20 U	UG/L
2,4-DINITROTOLUENE	5.0	5.0 U	UG/L
2,6-DINITROTOLUENE	5.0	5.0 U	UG/L
BIS(2-ETHYLHEXYL)PHTHALATE	5.0	5.0 U	UG/L
FLUORANTHENE	5.0	5.0 U	UG/L
FLUORENE	5.0	5.0 U	UG/L
HEXACHLOROBENZENE	5.0	5.0 U	UG/L
HEXACHLOROBUTADIENE	5.0	5.0 U	UG/L
HEXACHLOROCYCLOPENTADIENE	5.0	5.0 U	UG/L
HEXACHLOROETHANE	5.0	5.0 U	UG/L
ISOPHORONE	5.0	5.0 U	UG/L
2-METHYLNAPHTHALENE	10	10 U	UG/L
4,6-DINITRO-2-METHYLPHENOL	20	20 U	UG/L
4-CHLORO-3-METHYLPHENOL	10	10 U	UG/L

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 05/19/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 289036 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 37615

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/23/99			
DATE ANALYZED : 04/28/99			
ANALYTICAL DILUTION: 1.00			
2-METHYLPHENOL	10	10 U	UG/L
4-METHYLPHENOL	10	10 U	UG/L
NAPHTHALENE	5.0	5.0 U	UG/L
2-NITROANILINE	5.0	5.0 U	UG/L
3-NITROANILINE	5.0	5.0 U	UG/L
4-NITROANILINE	5.0	5.0 U	UG/L
NITROBENZENE	5.0	5.0 U	UG/L
2-NITROPHENOL	10	10 U	UG/L
4-NITROPHENOL	20	20 U	UG/L
N-NITROSODIMETHYLAMINE	5.0	5.0 U	UG/L
N-NITROSODIPHENYLAMINE	5.0	5.0 U	UG/L
DI-N-OCTYL PHTHALATE	5.0	5.0 U	UG/L
PENTACHLOROPHENOL	20	20 U	UG/L
PHENANTHRENE	5.0	5.0 U	UG/L
PHENOL	10	10 U	UG/L
4-BROMOPHENYL-PHENYLETHER	5.0	5.0 U	UG/L
4-CHLOROPHENYL-PHENYLETHER	5.0	5.0 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	5.0	5.0 U	UG/L
PYRENE	5.0	5.0 U	UG/L
1,2,4-TRICHLOROBENZENE	5.0	5.0 U	UG/L
2,4,6-TRICHLOROPHENOL	10	10 U	UG/L
2,4,5-TRICHLOROPHENOL	10	10 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
TERPHENYL-d14	(33 - 141 %)	80	%
NITROBENZENE-d5	(35 - 114 %)	73	%
PHENOL-d6	(10 - 94 %)	62	%
2-FLUOROBIPHENYL	(43 - 116 %)	85	%
2-FLUOROPHENOL	(21 - 110 %)	52	%
2,4,6-TRIBROMOPHENOL	(10 - 123 %)	45	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8082 PCB'S
Reported: 05/19/99

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 287236 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 37383

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 04/22/99			
DATE ANALYZED : 04/23/99			
ANALYTICAL DILUTION: 1.00			
PCB 1016	0.50	0.50 U	UG/L
PCB 1221	0.50	0.50 U	UG/L
PCB 1232	0.50	0.50 U	UG/L
PCB 1242	0.50	0.50 U	UG/L
PCB 1248	0.50	0.50 U	UG/L
PCB 1254	0.50	0.50 U	UG/L
PCB 1260	0.50	0.50 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
DECACHLOROBIPHENYL	(30 - 150 %)	68	%
TETRACHLORO-META-XYLENE	(30 - 150 %)	84	%

Columbia Analytical Services INC.
An Employee-Owned Company
Mustard St., Suite 250, Rochester, NY 14609-69245
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 4/20/99 PAGE 1 OF 1

PROJECT NAME Genera Brownfields
PROJECT MANAGER/CONTACT Arpad Koloszvary
COMPANY/ADDRESS Passero Associates
TEL (716) 325-1000 FAX ( )
SAMPLER'S SIGNATURE Glenn Combes

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☑ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☑ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☑ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☒ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	TCN							PRESERVATION pH < 2.0	pH > 12	Other (ICE)
Trench Mkt Bskt	4/20/99	14 35	286826	water	1				X																X
"		14 50			1				X																X
"		14 15			1				X																X
"		15 20			3	X																	X		
"		14 20			1		X																		X
"		14 30			1		X																		X
"		14 40			3	X																	X		
"		14 50			1		X																		X
"		15 00			2										X								X		
"		15 10			1												X							X	

1 sample as per Pete Morton Jnd 4/22/99

RELINQUISHED BY: Signature Glenn Combes; Printed Name Passero Assoc.; Firm; Date/Time 4/21/99

RECEIVED BY: Signature Cindy Toomey; Printed Name Cindy Toomey; Firm CAS; Date/Time 4/21/99 1610

RELINQUISHED BY: Signature; Printed Name; Firm; Date/Time

RECEIVED BY: Signature Brian Colton; Printed Name Brian Colton; Firm CAS; Date/Time 4/21/99 1610

RELINQUISHED BY: Signature; Printed Name; Firm; Date/Time

RECEIVED BY: Signature; Printed Name; Firm; Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
X Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
X 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 50
Submission No:

SPECIAL INSTRUCTIONS/COMMENTS:
METALS TAL METALS (ASP)
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List
Analyze samples by SW846 8260, 8270, 8082, 601/7000, 9012, as per Pete Morton Jnd 4/22/99
not ASP

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Passero Submission Number 4-334

Cooler received on 4/21/99 and opened on 4/21/99 by DS

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? hand delivered
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? YES NO
4. Did all bottles arrive in good condition (unbroken)? YES NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? YES NO
6. Did all bottle labels and tags agree with custody papers? YES NO
7. Were correct bottles used for the tests indicated? YES NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 5.0

Is the temperature within 4 ± 2° C?:	Yes ☒	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 4/21/99 16:18

Thermometer ID: #139 Circle One: Temp Blank Sample Bottle Cooler Temp.

Explain any discrepancies:

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH	✓				
2	HNO_3	✓				
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION:

\\ancp\qa_docum\sop\discrep.doc

Columbia Analytical Services inc.

A FULL SERVICE ENVIRONMENTAL LABORATORY

May 19, 1999

RECEIVED
MAY 24 1999
PASSERO ASSOCIATES

Mr. Arpad Kolozsvary
Passero Associates, PC
100 Liberty Pole Way
Rochester, NY 14604

PROJECT:GENEVA BROWNFIELDS
Submission #:9904000334

Dear Mr. Kolozsvary

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice Jaeger

Janice Jaeger
Project Chemist

Enc.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director prior to report submittal. MMc 5/20/99

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362

Columbia Analytical Services Inc.

Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

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

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

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range.

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

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

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

- Also used to qualify Organics QC data outside limits.

D - Spike diluted out.

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

X - As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester:	10145	NJ ID # in Rochester:	73004
CT ID # in Rochester:	PH0556	RI ID # in Rochester:	158
MA ID # in Rochester:	M-NY032	NH ID # in Rochester:	294198-A
OH EPA # in Rochester:	VAP	AIHA # in Rochester:	7889

COLUMBIA ANALYTICAL SERVICES

Reported: 05/19/99

Passero Associates, PC
Project Reference:GENEVA BROWNFIELDS
Client Sample ID :TRENCH MARKET BASKET

Date Sampled : 04/20/99 Order #: 286826 Sample Matrix: WATER
Date Received: 04/21/99 Submission #:9904000334

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
METALS					
ALUMINUM	0.100	0.337	MG/L	05/07/99	1.0
ANTIMONY	0.0600	0.0600 U	MG/L	05/07/99	1.0
ARSENIC	0.0100	0.0100 U	MG/L	05/07/99	1.0
BARIUM	0.0200	0.0440	MG/L	05/07/99	1.0
BERYLLIUM	0.00500	0.00500 U	MG/L	05/07/99	1.0
CADMIUM	0.00500	0.00500 U	MG/L	05/07/99	1.0
CALCIUM	0.500	59.8	MG/L	05/07/99	1.0
CHROMIUM	0.0100	0.0100 U	MG/L	05/07/99	1.0
COBALT	0.0500	0.0500 U	MG/L	05/07/99	1.0
COPPER	0.0200	0.0537	MG/L	05/07/99	1.0
IRON	0.100	0.990	MG/L	05/07/99	1.0
LEAD	0.00500	0.0401	MG/L	05/10/99	1.0
MAGNESIUM	0.500	9.71	MG/L	05/07/99	1.0
MANGANESE	0.0100	0.0697	MG/L	05/07/99	1.0
MERCURY	0.000300	0.000300 U	MG/L	05/06/99	1.0
NICKEL	0.0400	0.0400 U	MG/L	05/07/99	1.0
POTASSIUM	2.00	4.20	MG/L	05/12/99	1.0
SELENIUM	0.00500	0.00500 U	MG/L	05/07/99	1.0
SILVER	0.0100	0.0100 U	MG/L	05/07/99	1.0
SODIUM	0.500	5.76	MG/L	05/07/99	1.0
THALLIUM	0.0100	0.0100 U	MG/L	05/07/99	1.0
VANADIUM	0.0500	0.0500 U	MG/L	05/07/99	1.0
ZINC	0.0200	0.0751	MG/L	05/12/99	1.0
WET CHEMISTRY					
TOTAL CYANIDE	0.0100	0.0100 U	MG/L	04/30/99	1.0

Columbia Analytical Services INC
An Employee-Owned Company
Mustard St., Suite 250, Rochester, NY 14609-69245
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 4/20/99 PAGE 1 OF 1

PROJECT NAME Genera Brownfields
PROJECT MANAGER/CONTACT Arpad Kilczewny
COMPANY/ADDRESS Passero Associates
TEL (716) 325-1000 FAX ( )
SAMPLER'S SIGNATURE [signature]

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☑ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☑ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☑ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☒ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	TCN							PRESERVATION pH < 2.0	pH > 12	Other (ICE)
Trench Mkt Bslt	4/20/99	14 35	286826	water	1				X																	X
"		14 50			1				X																	X
"		14 15			1				X																	X
"		15 20			3	X																	X			
"		14 20			1		X																			X
"		14 30			1		X																			X
"		14 40			3	X																	X			
"		14 50			1		X																			X
"		15 00			2										X								X			
"		15 10			1												X								X	

1 sample as per Pete Morton 4/22/99

RELINQUISHED BY: Signature [signature] Printed Name Glenn Combes Firm Passero Assoc. Date/Time 4/21/99

RECEIVED BY: Signature Cindy Toomey Printed Name Cindy Toomey Firm CAS Date/Time 4/21/99 1610

RELINQUISHED BY: Signature Printed Name Firm Date/Time

RECEIVED BY: Signature Brian Collen Printed Name Brian Collen Firm CAS Date/Time 4/21/99 1610

RELINQUISHED BY: Signature Printed Name Firm Date/Time

RECEIVED BY: Signature Printed Name Firm Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
X Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
X 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: client
Shipping #:
Temperature: 5.0
Submission No:

SPECIAL INSTRUCTIONS/COMMENTS:
METALS TAL METALS (ASP)
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List
Analyze samples by SW846 8260, 8270, 8082, 601/7000, 9012, as per Pete Morton 4/22/99
not ASP

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Passero Submission Number 4-334

Cooler received on 4/21/99 and opened on 4/21/99 by DS

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? hand delivered
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? YES NO
4. Did all bottles arrive in good condition (unbroken)? YES NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? YES NO
6. Did all bottle labels and tags agree with custody papers? YES NO
7. Were correct bottles used for the tests indicated? YES NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 5.0

Is the temperature within 4 ± 2° C?:	Yes ☒	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 4/21/99 16:18

Thermometer ID: #139 Circle One: Temp Blank Sample Bottle Cooler Temp.

Explain any discrepancies:

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH	✓				
2	HNO_3	✓				
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION:

T:\ann10\qa_docum\sop\discrep.doc.

Columbia Analytical Services INC.
An Employee-Owned Company
Mustard St., Suite 250, Rochester, NY 14609-69245
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 4/20/99 PAGE 1 OF 1

PROJECT NAME Genera Brownfields
PROJECT MANAGER/CONTACT Arpad Koloszvary
COMPANY/ADDRESS Passero Associates
TEL (716) 325-1000 FAX ( )
SAMPLER'S SIGNATURE [signature]

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☑ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☑ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☑ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☑ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	TCN							PRESERVATION pH < 2.0	pH > 12	Other (ICE)
Trench Mkt Bslt	4/20/99	14 35		Water	1				X																	X
"		14 50			1				X																	X
"		14 15			1				X																	X
"		15 20			3	X																		X		
"		14 20			1		X																			X
"		14 30			1		X																			X
"		14 40			3	X																		X		
"		14 50			1		X																			X
"		15 00			2										X									X		
"		15 10			1												X								X	

RELINQUISHED BY:
Signature [signature]
Printed Name Glenn Combes
Firm Passero Assoc.
Date/Time 4/21/99

RECEIVED BY:
Signature [signature]
Printed Name Judy Toomey
Firm CAS
Date/Time 4/21/99 1610

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via:
Shipping #:
Temperature:
Submission No:

SPECIAL INSTRUCTIONS/COMMENTS:
METALS TAL METALS (ASP)
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

APPENDIX 7

WELL CONSTRUCTION DIAGRAM

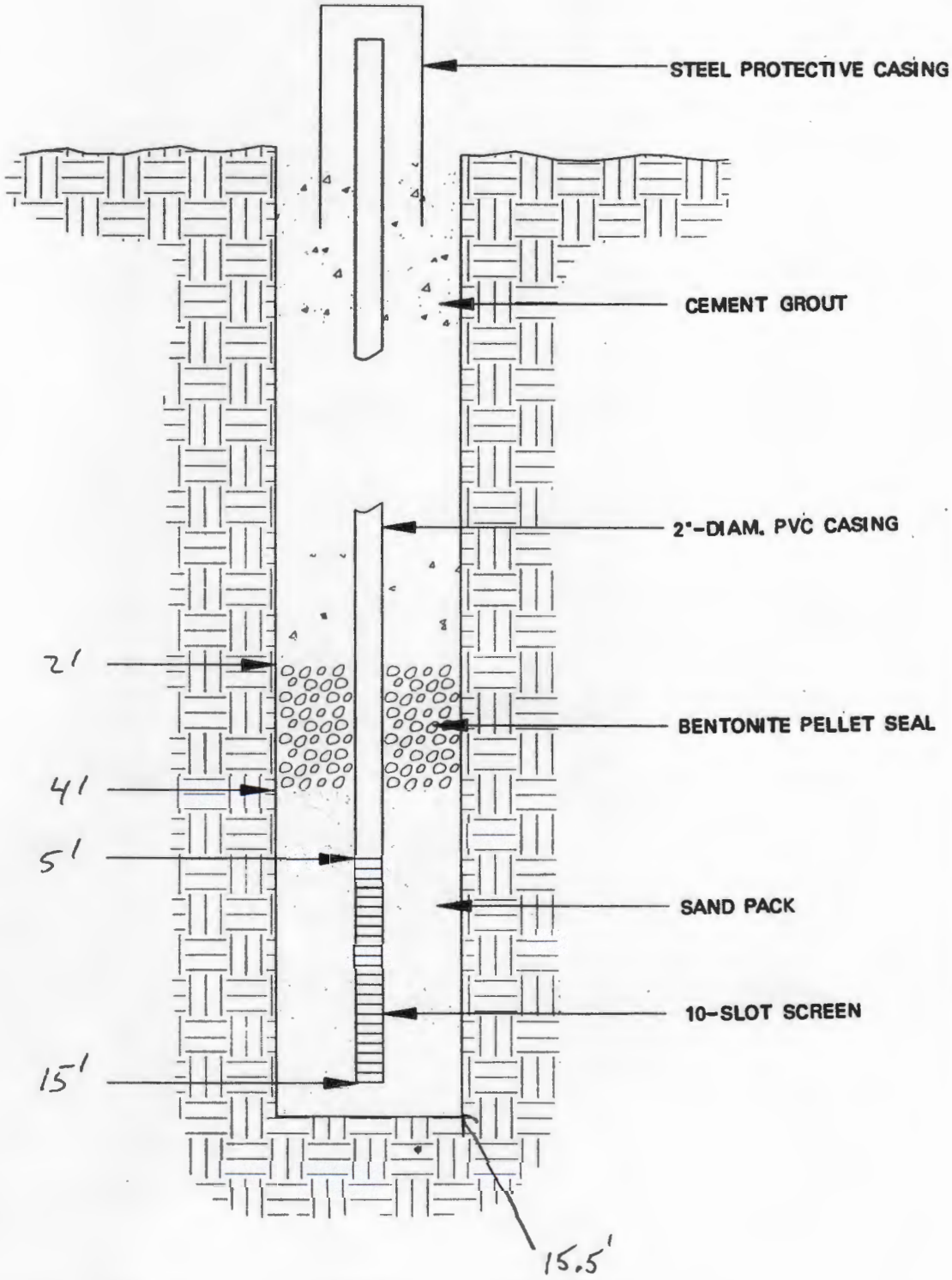
PASSERO ASSOCIATES, P.C.
ARCHITECTS–ENGINEERS–SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y.
716–325–1000 14604

PROJECT NAME Geneva Market Basket

PROJECT # 97119

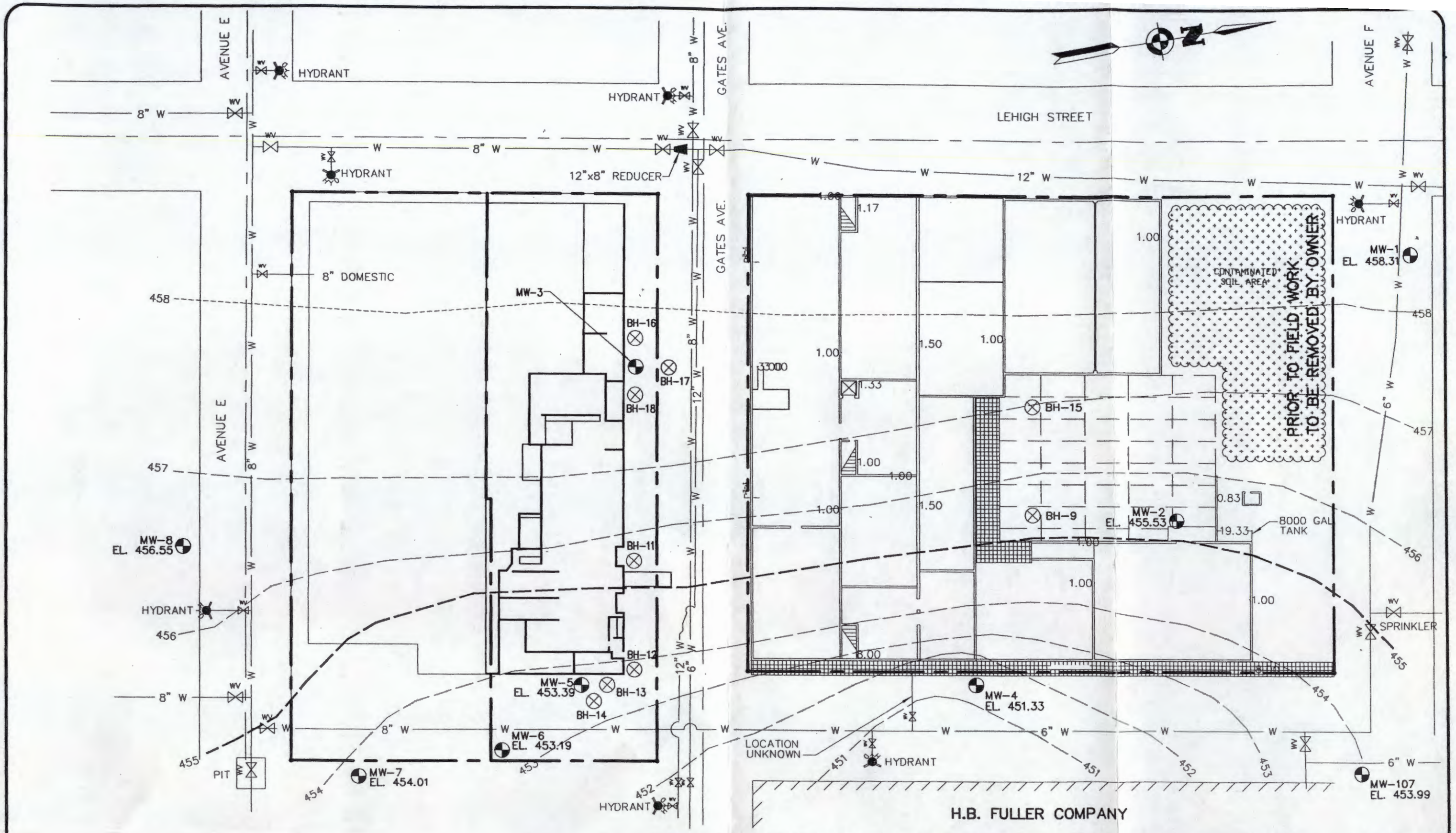
SCHEMATIC DIAGRAM MONITORING WELL # MW-1 to -8

2-16-99



APPENDIX 8

GROUNDWATER CONTOUR MAP



EXPLANATION

LOCATIONS:

- MW — MONITORING WELL
- BH — BORE HOLE
- EL. — WATER TABLE ELEVATION AS MEASURED JUNE 29, 30 1999

LOCATED AT SOUTHEAST CORNER OF BUILDING
MW-105
EL. 449.77

PASSERO ASSOCIATES, P.C.
ARCHITECTS-ENGINEERS-SURVEYORS
100 LIBERTY POLE WAY ROCHESTER, N.Y. 14604
716-325-1000

PROJECT: MARKET BASKET SITE
CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

DRAWING: GROUND WATER CONTOUR MAP

CLIENT: CITY OF GENEVA
47 CASTLE STREET
GENEVA, N.Y. 14456

Partner In Charge	G.W.P.
Project Manager	A.K.
Drawn by	M.L.A.

PROJECT NO. 97119.06
DRAWING NO. 1 of 1
SCALE 1"=50'
DATE AUG.,2000

APPENDIX 9

SLUG TEST DATA

SLUG TEST DATA; Geneva Brownfields

Market Basket

MW-7 WELL DIAM. = 2"

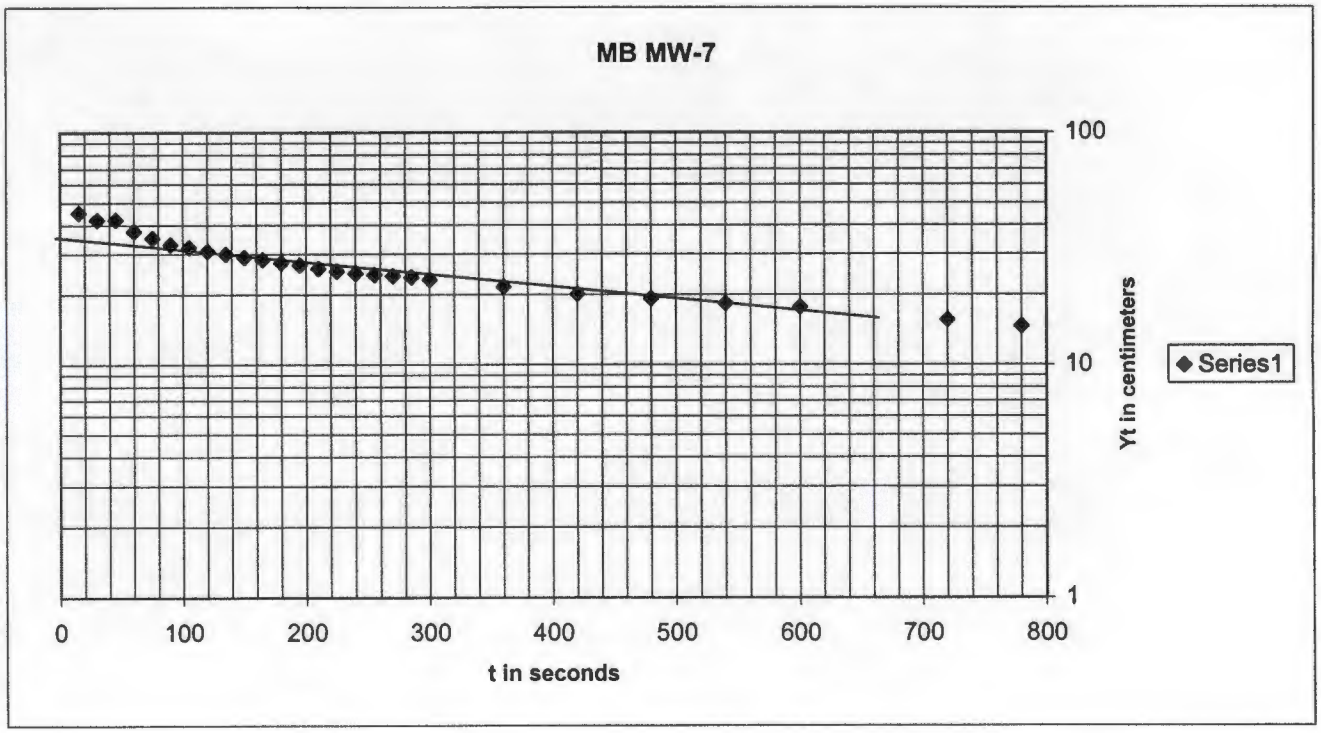
STATIC = 11.97

WELL BOTTOM = 17.15

SLUG REMOVED = 0.2 GALLONS OR 1 LITER

WETTED SCREEN LENGTH (cm) = 157.8864

DEPTH TO WATER	ELAPSED TIME (sec)	DRAWDOWN ft.	DRAWDOWN cm
11.97	0		
13.45	15	1.48	45.1104
13.35	30	1.38	42.0624
13.35	45	1.38	42.0624
13.2	60	1.23	37.4904
13.12	75	1.15	35.052
13.05	90	1.08	32.9184
13.02	105	1.05	32.004
12.98	120	1.01	30.7848
12.95	135	0.98	29.8704
12.92	150	0.95	28.956
12.9	165	0.93	28.3464
12.87	180	0.9	27.432
12.85	195	0.88	26.8224
12.82	210	0.85	25.908
12.8	225	0.83	25.2984
12.78	240	0.81	24.6888
12.77	255	0.8	24.384
12.76	270	0.79	24.0792
12.75	285	0.78	23.7744



SLUG TEST DATA; Geneva Brownfields

Market Basket

MW-6 WELL DIAM. = 2"

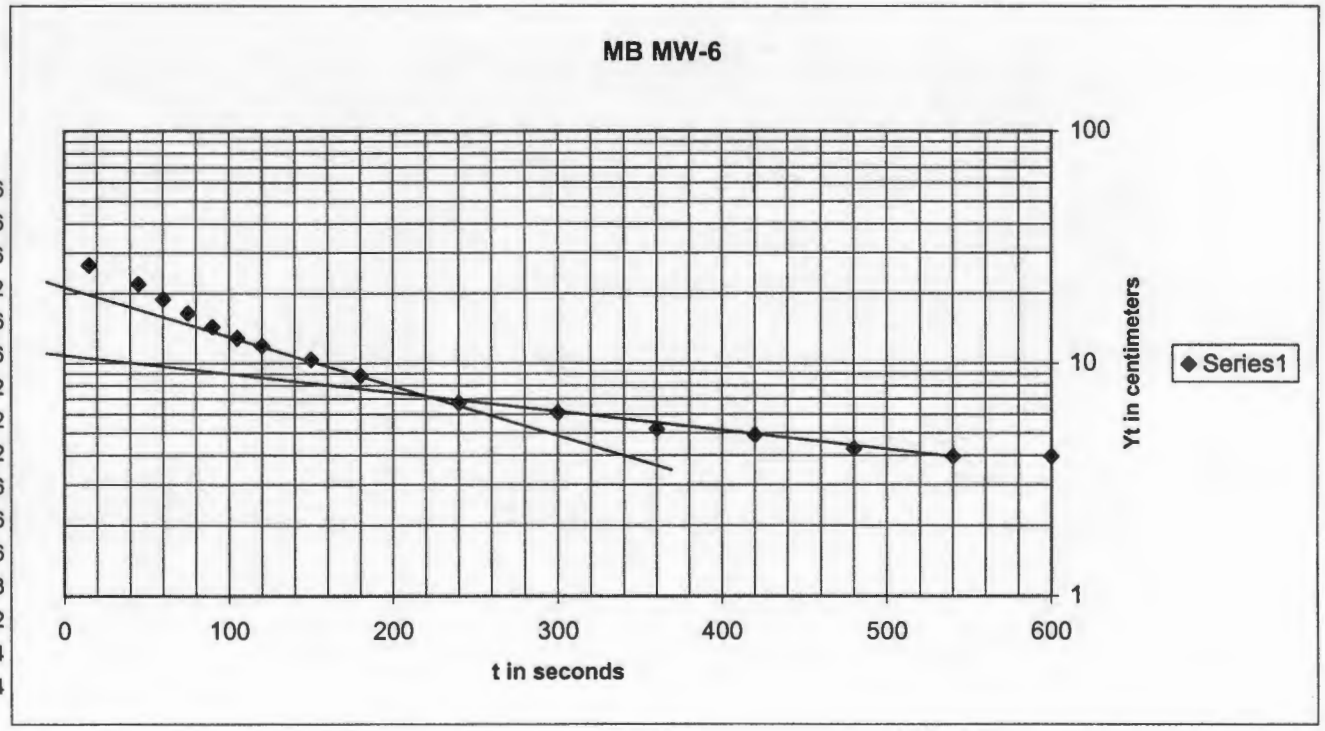
STATIC = 7.73

WELL BOTTOM = 17.15

SLUG REMOVED = 0.2 GALLONS OR 1 LITER

WETTED SCREEN LENGTH (cm) = 287.12

DEPTH TO WATER	ELAPSED TIME (sec)		DRAWDOWN ft.	DRAWDOWN cm
7.73	0	0		
8.6	15	0.87	0.87	26.5176
8.45	45	0.72	0.72	21.9456
8.35	60	0.62	0.62	18.8976
8.27	75	0.54	0.54	16.4592
8.2	90	0.47	0.47	14.3256
8.15	105	0.42	0.42	12.8016
8.12	120	0.39	0.39	11.8872
8.07	150	0.34	0.34	10.3632
8.02	180	0.29	0.29	8.8392
7.95	240	0.22	0.22	6.7056
7.93	300	0.2	0.2	6.096
7.9	360	0.17	0.17	5.1816
7.89	420	0.16	0.16	4.8768
7.87	480	0.14	0.14	4.2672
7.86	540	0.13	0.13	3.9624
7.86	600	0.13	0.13	3.9624



APPENDIX 10

GENEVA HISTORIC SOCIETY

Geneva Historical Society

Industrial Pursuits:
The History of Manufacturing in Geneva, New York

Linda Norris
Riverhill

July, 1997

This report is made possible with the support of a grant from the New York State Council on the Arts

AUG-07-97 THU 04:16 PM P.16

GENEVA HISTORICAL SOCIETY
543 South Main Street, Geneva, New York 14456-3194
Phone (315) 789-5151 Fax (315) 789-0314

prepared February 19, 1997

Geneva Foundry Site History

A Geneva Foundry booklet notes its beginnings on the present site in 1868, as the Catchpole Boiler Works. This refers to the Catchpole Works on Exchange Street. The present site was actually residential until between 1884 and 1890 when a small "Pattern and Experiment Shop" is shown in the same building once occupied by a Methodist School. (Sanborn Insurance Maps 1884 and 1890). By 1897, a foundry has been added and the business identified as Catchpole & Co. The site enlarged gradually , and became the Geneva Foundry Corp. when purchased in 1921 by William J. Brennan, Sr. The foundry was destroyed by fire in the early 1940's and replaced with the present masonry and steel structure covering over 80,000 square feet (*The Geneva Foundry Corporation*, booklet) This enlarged facility expanded into areas once occupied by the Ontario Coal Co. and the Beard Coal Co. to the west of the former complex. The Ontario site formerly had a grain elevator. The industrial development of the site was influenced by the construction of the Syracuse & Rochester Railroad in 1841, which borders the site. This RR became part of the New York Central system. For a detailed description of the Geneva Foundry operation, see enclosed photocopy of promotional booklet.

Market Basket Corp. Site

In 1892, the Buffalo Extension of the Lehigh Valley Railroad was completed. This was the catalyst for the industrial development of the northern end of town. This area was parceled out and marketed by the Torrey Park Land Co. in 1891. When Geneva became a city in 1897, the corporate limits of the city were extended to the north to encompass this area. The 1915 Sanborn insurance map shows the Geneva Cutlery Co *(organized in 1900) occupying the block bordered by Lehigh, Gates, Ontario and Avenue E. Nothing is shown for the block to the north, and the Geneva Glass Plant** (established 1909) is to the north of that. By 1925, Market Basket Corp. buildings occupy half of the block on the Gates Avenue side. In May of 1931, Market Basket Corp. announced the purchase of the old Geneva Glass Co. property at Avenue F and Lehigh Streets. The Corporation moved its headquarters to the Gates site in April of 1955, a year before operations were halted in 1956. The site was sold at public auction in April of 1962, and the transfer to William Yalden was made in September of that year. He reportedly planned to open a gelatin & frozen foods plant, but there is no evidence that he ever did. In the 1965 Geneva City Directory, there is a listing for Great Eastern Co., a storage warehouse. This disappears from the directories after that until 1975, when Old Town tool rental appears. Yalden was murdered in 1985-6, and had been operating Old Town Rentals. He also rented out space for paint booths for do-it-your-self auto body repair.

*manufacturer of straight edge shaving razors
**manufacturer of glass bottles

APPENDIX 11

PBS APPLICATION

93-19-1 (1/97)—q

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION

PETROLEUM BULK STORAGE APPLICATION

Pursuant to the Petroleum Bulk Storage Law,
Article 17, Title 10 of ECL; 6 NYCRR 612-614 and 6 NYCRR, Subpart 360-14
(Continued on the Reverse Side—Please Be Sure to Complete Section B)

NYSDEC
6274 East Avon-Lima Road
Avon, NY 14414
Telephone 716-226-2466

Please Type or Print Clearly and Complete All Items

SECTION A—See Instructions on Cover Sheet

PBS NUMBER

Indicate other existing DEC Numbers, if any, for this facility:

CBS Number

SPDES Number

TRANSACTION TYPE (Check all that apply)
NOTE: Transaction Types 1, 2 and 5 may require a fee.

1 ☐ Initial/ New Facility
2 ☐ Change of Ownership
3 ☐ Substantial Tank Modification
4 ☐ Information Correction
5 ☐ Renewal

Geographical Locator for this Facility: (If known)

LATITUDE: 4 2 5 2 5 0 N
DEG MIN SEC

LONGITUDE: 7 6 5 8 4 5 W
DEG MIN SEC

FACILITY

FACILITY NAME: Market Basket

LOCATION (Not P.O. Boxes): Gates Avenue

LOCATION (Continued):

CITY/TOWN/VILLAGE: Geneva | STATE: NY | ZIP CODE: 14456

COUNTY: Ontario | TOWNSHIP OR CITY:

NAME OF OPERATOR AT FACILITY: N/A | FACILITY TELEPHONE NUMBER: ( ) N/A

EMERGENCY CONTACT NAME: N/A | EMERGENCY TELEPHONE NO.: ( ) N/A

OWNER

OWNER NAME: City of Geneva

ADDRESS (Street and/or PO Box): 47 Castle Street

CITY: Geneva | STATE: NY | ZIP CODE: 14456

FEDERAL TAX ID NUMBER: | OWNER TELEPHONE NUMBER: (315) 789-3101

TYPE OF OWNER (Check only one)
1 ☐ Private Resident 2 ☐ State Government 3 ☒ Local Government
4 ☐ Federal Government 5 ☐ Corporate/Commercial

CORRESPONDENCE

ATTENTION: Mr. Gordon P. Eddington

NAME OF COMPANY: City of Geneva

ADDRESS: 47 Castle Street

ADDRESS:

CITY/STATE/ZIP CODE: Geneva NY 14456

TELEPHONE NUMBER: (315) 789-3101

TYPE OF PETROLEUM FACILITY:
(Check all that apply)

A. ☐ Storage Terminal/Petroleum Distributor
B. ☐ Retail Gasoline Sales
C. ☐ Other Retail Sales
D. ☐ Manufacturing
E. ☐ Utility
F. ☐ Trucking/Transportation
G. ☐ Apartment Building
H. ☐ School
I. ☐ Farm
J. ☐ Private Residence
K. ☐ Airline (Air Taxi)
L. ☒ Other (Specify Below)
Brownfields Site, abandoned market goods warehouse.

I hereby certify under penalty of perjury that the information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NAME OF OWNER OR AUTHORIZED REPRESENTATIVE: Mr. Gordon P. Eddington | AMOUNT ENCLOSED: $ 250.00

TITLE: Interim Director of Public Works

SIGNATURE | DATE

OFFICIAL USE ONLY

Page _____ of _____

Date Received: ___/___/___

Date Processed: ___/___/___

Amount Received $ _____

Reviewed By: _____

PBS NUMBER:

Tank Information for Petroleum Bulk Storage Facility
SECTION B—See Instructions on Cover Sheet

Page _____ of _____

Action	Tank Number	Tank Location	Status	Installation or Permanent Closure Date (MO)	(YR)	Capacity (Gallons)	Product Stored	Tank Type	Tank Internal Protection	Tank External Protection	Piping Location	Piping Type	Piping Internal Protection	Piping External Protection	Secondary Containment	Leak Detection	Spill/ Overfill Prevention	Dispenser	Last Test Date (Underground Tanks) (MO)	(YR)
1/3	001	4	3	0 4	9 9	8,000	1	1	0	0	2	1	0	0	0	0	0	1	N/A	
1/3	002	4	3	1 0	9 8	500	9	1	0	0	2	1	0	0	0	0	0	1	N/A	
1/3	003	4	3	1 0	9 8	290	9	1	0	0	2	1	0	0	0	0	0	1	N/A	

KEY FOR SECTION B

ACTION
1. Initial Listing
2. Add Tank
3. Close/Remove Tank
4. Information Correction
5. Recondition/Repair/ Reline Tank

TANK LOCATION
1. Aboveground
2. Aboveground on saddles, legs, stilts, rack, or cradle
3. Aboveground: 10% or more below ground
4. Underground
5. Underground, vaulted, with access

STATUS
1. In-service
2. Temporarily out-of-service
3. Closed—Removed
4. Closed—In Place
5. Tank Converted to Non-Regulated Use

PRODUCT STORED
0. Empty
1. Leaded Gasoline
2. Unleaded Gasoline
3. Nos. 1, 2, or 4 Fuel Oil
4. Nos. 5 or 6 Fuel Oil
5. Kerosene
6. Diesel
A. Lube Oil
B. ~~Lube Oil Used~~ Used Oil(fuel)
C. Used Oil
9. Other*

*Unknown

TANK TYPE
1. Steel/Carbon Steel
2. Stainless Steel Alloy
3. Concrete
4. Fiberglass Coated Steel
5. Fiberglass Reinforced Plastic (FRP)
6. Equivalent Technology
9. Other*

PIPING TYPE
0. None
1. Steel/Iron
2. Galvanized Steel
3. Fiberglass (FRP)
4. Copper
9. Other*

INTERNAL PROTECTION: Tank/Piping
0. None
1. Epoxy Liner
2. Rubber Liner
3. Fiberglass Liner (FRP)
4. Glass Liner
9. Other*

EXTERNAL PROTECTION: Tank/Piping
0. None
1. Painted/Asphalt Coating
2. Sacrifical Anode
3. Impressed Current
4. Fiberglass
5. Jacketed
6. Wrapped (Piping)
9. Other*

* If other, please list on separate sheet including Tank Number

PIPING LOCATION
0. None
1. Aboveground
2. Underground
3. Aboveground/ Underground Combination

SECONDARY CONTAINMENT
0. None
1. Vault
2. Double-Walled Tank
3. Excavation Liner
4. Cut-off Walls
5. Impervious Underlayment
6. Earthen Dike
7. Prefabricated Steel Dike
8. Concrete Dike
A. Synthetic Liner
B. Natural Liner
9. Other*

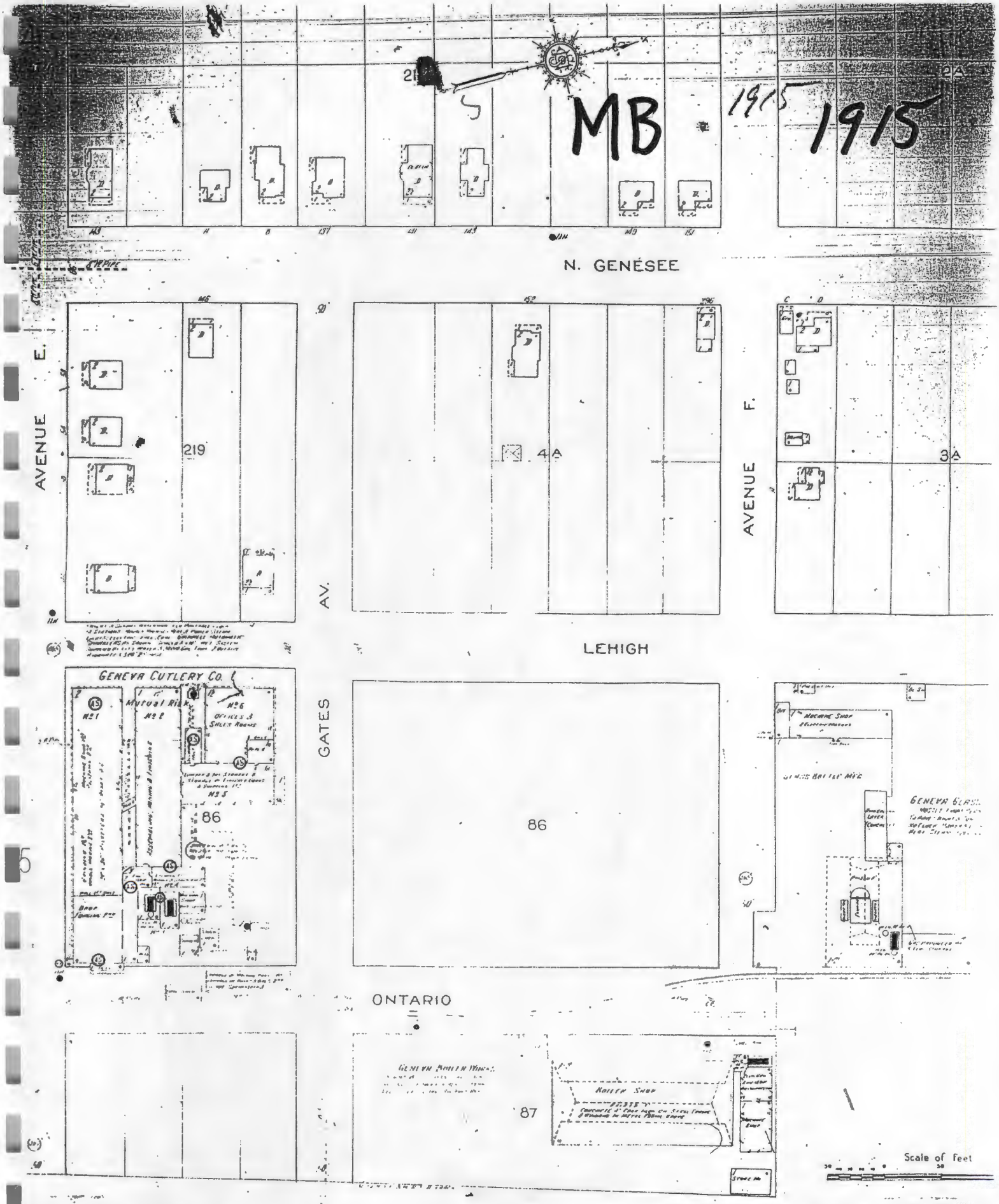
LEAK DETECTION
0. None
1. Interstitial Monitoring
2. Vapor Well
3. Groundwater Well
4. In-Tank System
5. Concrete Pad w/channels
6. Double Bottom
9. Other*

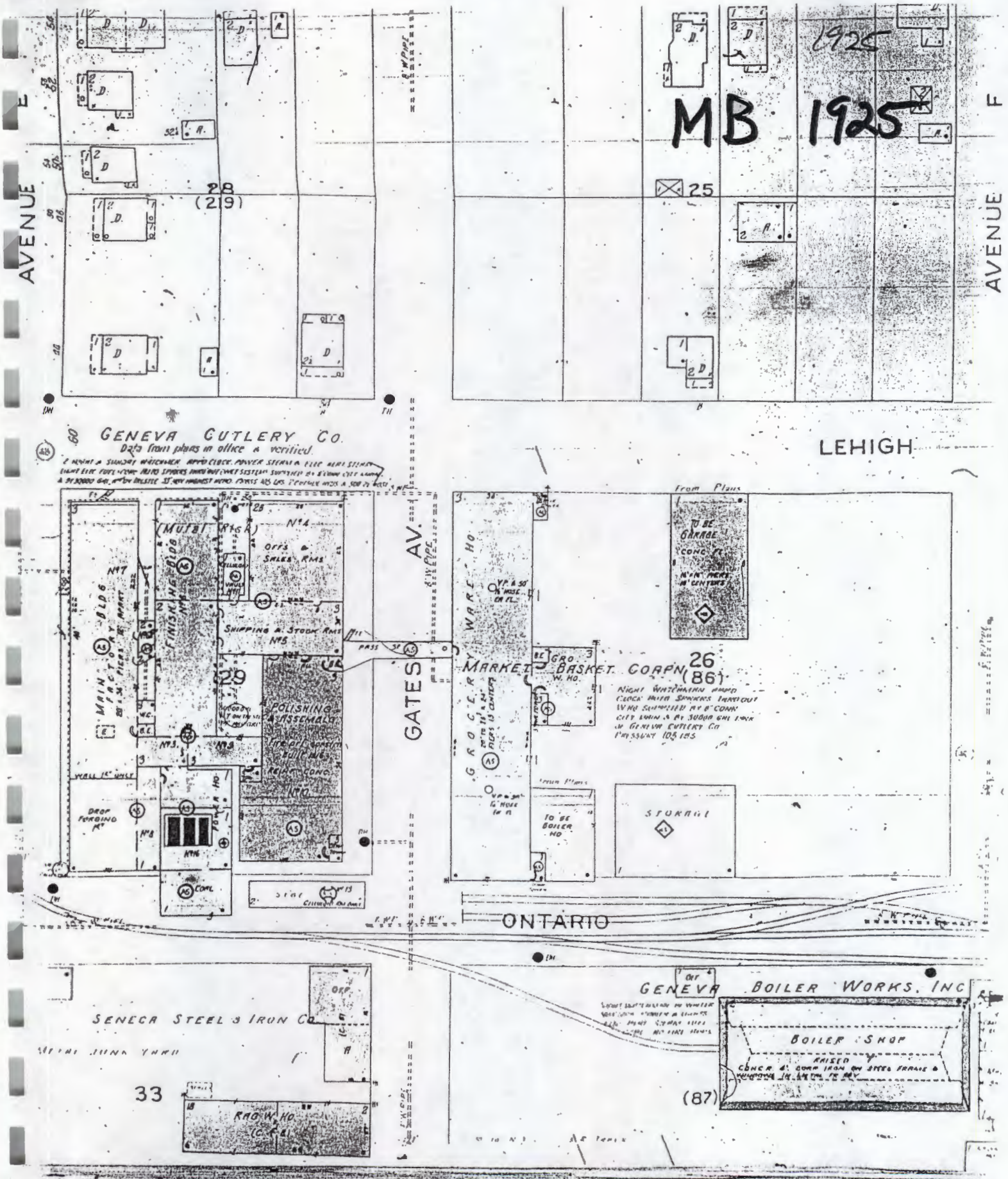
SPILL/OVERFILL PREVENTION
0. None
1. Float Vent Valve
2. High Level Alarm
3. Automatic Shut-off
4. Product Level Gauge
5. Catch Basin
6. Vent Whistle
9. Other*

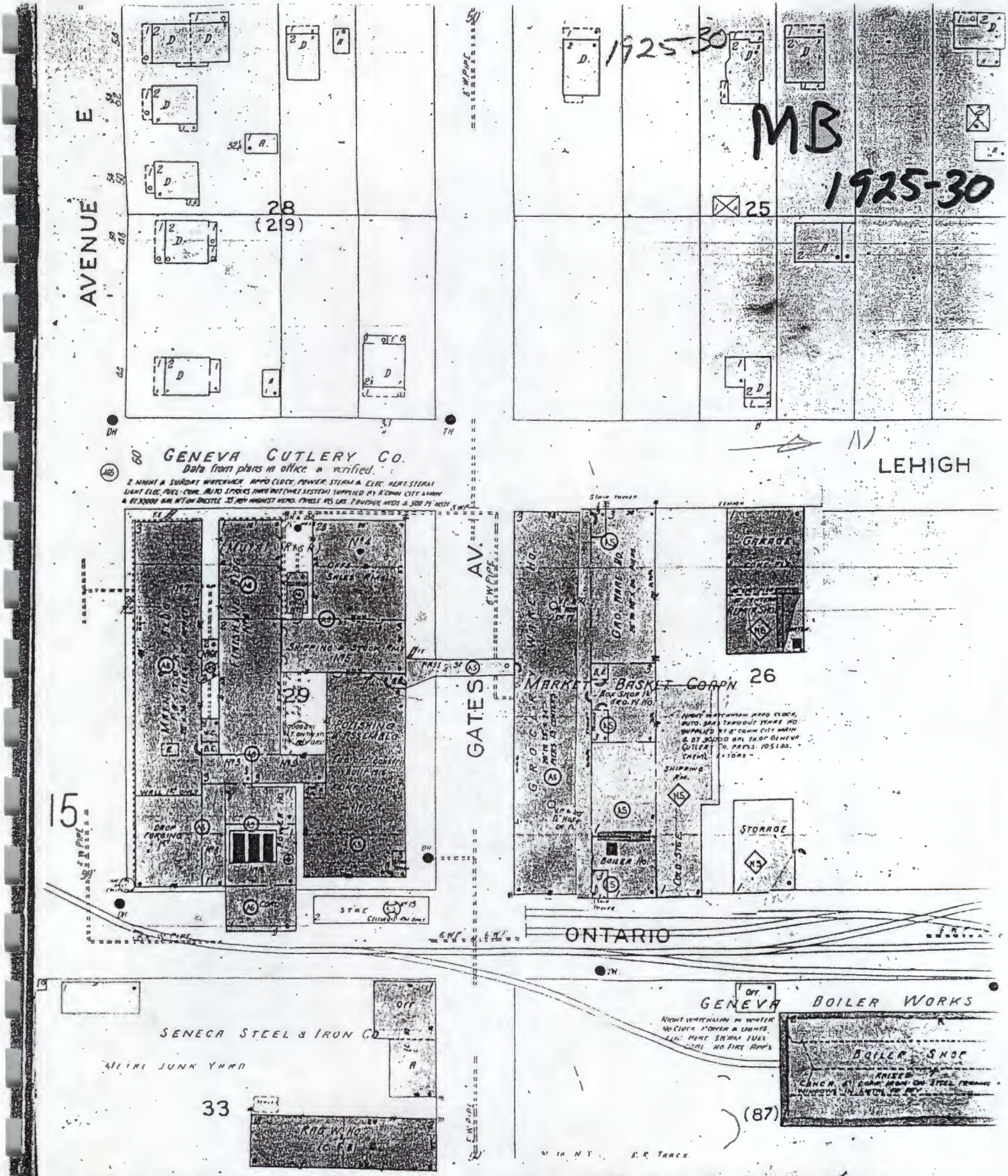
DISPENSER
1. Submersible
2. Suction
3. Gravity

APPENDIX 12

SANBORN MAPS


MB
1915
1915
N. GENESEE
AVENUE E.
AVENUE F.
AV.
LEHIGH
GATES
ONTARIO
219
4A
3A
86
87
GENEVA CUTLERY CO.
Mutual Rifle
No 1
No 2
No 3
No 6
Offices & Sales Rooms
Machine Shop
Roller Mfg
Roller Shop
Scale of Feet


1925
MB 1925
AVENUE E
AVENUE F
28
(219)
25
GENEVA CUTLERY CO.
Data from plans in office & verified.
LEHIGH
GATES AV.
MAIN FACTORY BLDG
FINISHING BLDG
SHIPPING & STOCK RMS
POLISHING & ASSEMBLY
GROCERY WAREHO.
MARKET BASKET CORPN.
26
(86)
TO BE GARAGE
STORAGE
TO BE BOILER HO
ONTARIO
SENECA STEEL & IRON CO
33
RAD. WHO.
GENEVA BOILER WORKS, INC
BOILER SHOP
(87)


1925-30
MB
1925-30
AVENUE E
28
(219)
25
GENEVA CUTLERY CO.
Data from plans in office & verified.
LEHIGH
GATES AV.
29
26
MARKET & BASKET CORP'N
15
ONTARIO
SENECA STEEL & IRON CO
33
GENEVA BOILER WORKS
BOILER SHOP
(87)

updated to 68

MB

updated to 68

AVENUE E

GENESEE

28 (219)

25

STERNS NURSERY INC.
PACKAGING & SHIPPING DEPT.

NO WATCHMAN-POWER: ELEC. & GAS MTRS.

OFF. & STG.

W. HO.

29

GATES AV.

WARE HO.

PRIV. GARAGE

FORMERLY SENECA STORAGE W. HO. CO.

ALL VAC. & OP.

WOOD POSTS

15

ONTARIO

AMERICAN CAN CO.
GENEVA MACH. SHOP
ASSOC. RISK

33

30

N. HO.

MAGNETIC COM
ELECTRONIC E
FACT. BLD

RECEIVG &
NONCOMB. 13