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FINAL REPORT

Burton Parcel Investigation

Burton Parcel
Burton, Michigan

November 1997

O'BRIEN & GERE
ENGINEERS, INC.

5858.035

Final Report

Burton Parcel Investigation

Burton Parcel
Burton, Michigan

PRIVILEGED AND CONFIDENTIAL
Prepared at the Request of
Counsel and in Anticipation
of Litigation.

for Scott J. Adamowski, P.E.
Vice President

November 1997

O'BRIEN & GERE ENGINEERS, INC.

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Novi, Michigan 48375

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1. Introduction

The purpose of this investigation was to assess the presence of subsurface waste fill material at the three lots known as Burton Parcel located in Flint, Michigan. The location of the Site is shown on the Site Location Map, Figure 1. The Burton Parcel consists of three adjacent lots: Lot #10, the former Taystee Bread lot, and the outbound storage trailer lot as shown on the Site Plan included as Figure 2. The Site is located southeast of the intersection of Hemphill Road and South Saginaw Street in Township 7 North, Range 7 East, Section 30 in Genesee County, Burton, Michigan.

1.1. Investigatory background

Phase I, II, III, and IV investigations were performed at the Site by Goldberg, Zoino and Associates (GZA). The Phase I and Phase II investigations were performed from September 1987 through November 1987 and the Phase III and Phase IV investigations were performed from February 1988 through May 1988. The following discussion summarizes each of the investigations:

Phase I Thirteen vadose zone monitoring locations (V-177 through V-189) were sampled. Soil samples were collected from each location at a depth of 6 ft below grade (fbg) and screened for the presence of organic vapors using a PID and/or FID. Based on elevated readings with the PID, four locations were screened using a FID in an attempt to identify the compounds detected. The results of the FID screening indicated detections of compounds in some of the samples collected. In order to verify the field screening results, the bottom interval from three locations were submitted to an analytical laboratory for a gas chromatograph (GC) scan. Results from the GC scan indicated the presence of a variety of volatile organic compounds (VOCs) in the soil samples.

Additional investigation was performed as part of the Phase I investigation which included the installation of two deep soil borings (depths of 15 and 25 fbg) and one monitoring well. Soil samples collected from the deep soil borings were field screened using a PID and/or FID. Several of the soil samples screened indicated VOC readings above background and were collected at depths which correspond to the range in which waste fill materials were observed. Samples with elevated PID readings were screened using the FID. The results of the FID screening indicated the presence of VOCs in some of these samples.

The results of soil boring samples submitted for laboratory analysis indicated generally low concentrations of a variety of VOCs. Also, concentrations of selenium, zinc, and barium were detected in the soil samples. Groundwater samples collected from two of the borings were analyzed for VOCs at an analytical laboratory. The results of the analysis indicated VOCs were below method detection limits. GZA concluded that the range of compounds detected in the soil samples reflect the presence of paint, paint products, and possibly fuel oils within the waste fill material.

Phase II Two additional deep soil borings (depths of 15 and 30 fbg) and one monitoring well were installed as part of this phase of investigation. Soil samples collected from the deep soil borings were field screened using a PID and/or FID. Several of the soil samples screened indicated VOC levels above background levels and were collected at depths which correspond to the range in which waste fill materials were observed. Samples with elevated PID readings were screened using the FID. The results of the FID screening indicated the presence of compounds in some of these samples.

Soil samples from the monitoring well installed were analyzed for VOCs and metals. The analytical results indicated concentrations of several VOCs and detections of metals above background levels which include: barium, cadmium, copper, lead, selenium, and zinc. The analytical results of the ground water sample collected from the monitoring well did not indicate concentrations of VOCs above method detection limits, however, dissolved concentrations of barium and selenium were detected above the maximum contaminant level (MCL) drinking water standard. GZA again concluded the concentrations observed in the soil were the result of paint or paint products possibly mixed with fuel oils in the waste fill material.

Phase III and IV These phases of investigation were performed to assess the horizontal and vertical extent of elevated metals concentrations in soil, assess ground water quality and assess the extent of waste fill material at the Site. Five soil borings and three monitoring wells were installed and soil samples collected from the borings were submitted for analysis of five metals (barium, copper, lead, selenium, and zinc). The locations of the soil borings and monitoring wells are shown on Figure 3. These metals were in the highest concentrations for samples collected during the Phase I and II investigations. If total metals concentrations exceeded ten times the E.P. toxicity limit for that compound, the sample was analyzed using the E.P. toxicity procedure to assess the sample to respective hazardous waste criteria.

The results of the soil sampling indicated that total lead and total barium concentrations in most of the samples exceeded ten times the E.P. toxicity criteria. Of the samples submitted for the E.P. toxicity procedure, three of the samples indicated concentrations which exceed hazardous waste criteria for lead.

Results of the analytical data for ground water collected from the three monitoring wells installed indicated dissolved lead below the MCL, however, in two of the three wells dissolved barium was higher than the MCL.

2. Field investigation

Results from previous investigations performed at the Site indicate concentrations of VOCs and metals in soil and metals in ground water exceed the Michigan Department of Environmental Quality (MDEQ) Generic Residential criteria. These exceedances are from samples collected in the subsurface waste fill material observed at the Site. Based on the potential sale of the property, General Motors (GM) elected to perform a Site investigation to further assess the extent of subsurface waste fill material and the potential associated impact to soil and ground water and to confirm the presence of a clay unit beneath the Site. The MDEQ was notified by facsimile of the notice of on-site work activity form on August 14, 1997. The field investigation was performed from August 20 through 26, 1997. The following sections discuss the methods employed for this investigation.

2.1. Soil boring installation

The investigation consisted of the installation of twenty-seven shallow soil borings. The locations of the soil borings are shown on Figure 3. The soil borings were installed in accordance with O'Brien & Gere Technical Policies and Procedures and included using a 4.25 inch hollow stem auger with a truck-mounted drill rig to obtain representative samples. Soil samples were collected and screened continuously in 2 ft intervals from the ground surface into native soil beyond potential subsurface waste fill material. Soil was screened for the presence of organic vapors using a PID. Soil samples were collected using a splitspoon sampling device 2 ft in length, which was driven into the undisturbed soil ahead of the augers. Soil samples were installed in accordance with ASTM method D-1586 and described in accordance with the Unified Soil Classification System (USCS). Soil boring logs describing the subsurface materials are included as Appendix A.

Upon retrieving the sample from the splitspoon, a portion of the sample was placed in a sealed plastic bag and screened for the presence of organic vapors with a PID. Based on PID screening and visual observations, one soil sample for laboratory analysis was collected from each of the shallow soil borings. The soil samples were analyzed for the presence of benzene, ethylbenzene, toluene, xylenes (BTEX), methyl-tert butyl ether (MTBE), and methylene chloride by EPA Method 8020 and lead by EPA Method 6010. Soil samples selected for laboratory analysis were labeled, placed on ice, and shipped under chain-of-custody documentation to O'Brien & Gere Laboratories, Inc. of Syracuse, New York.

Attempts to collect ground water samples in the shallow borings were made at eleven boring locations where conditions appeared favorable. However, based on subsurface conditions, a ground water sample was collected from three soil borings (OBG SB-12, OBG SB-14, and OBG SB-16). Upon encountering the ground water table, the augers were pulled back and water was allowed to flow into the hole. A disposable polyethylene bailer attached to a length of polyethylene rope was then lowered through the augers for collection of the ground water sample. The ground water samples were labeled, placed in laboratory supplied containers, packed in a cooler with ice and shipped to O'Brien & Gere Laboratories, Inc. under chain-of-custody documentation. A trip blank supplied by the laboratory accompanied each shipment of ground water samples and was analyzed for BTEX to evaluate potential contamination of samples during transport.

Upon completing the borings to their terminal depths, the augers were removed and the open hole was backfilled with the soil cuttings generated at that location. Drilling and sampling equipment was decontaminated between boring locations using high pressure steam cleaning. Splitspoon samplers were decontaminated between samples with an alconox wash and potable water rinse. Decontamination fluids were discharged to the ground surface in the area of soil boring installation.

2.2. Clay unit confirmation soil borings

To confirm the presence of a clay confining unit beneath the Site, two deep soil borings were installed. One of the deep soil borings was installed to a depth of 53 fbg and the remaining boring was installed to a depth of 26 fbg. Splitspoon samples were collected continuously in 5 ft intervals until the

clay unit was encountered and at least one 2 ft splitspoon was collected upon encountering the clay unit to confirm its presence. The locations of the deep soil borings are shown on Figure 3.

Soil cuttings generated from these activities were backfilled into the open hole, however, the cuttings did not evenly fill the diameter of the hole and the remainder of the open hole was backfilled with hydrated bentonite chips. The remaining soil cuttings and waste fill material at other locations left over were placed in 55 gal steel DOT-approved drums, labeled and staged in the former Taystee Bread building. A composite sample of the soil cuttings/waste fill material was collected from the drums and analyzed for Toxicity Characterization Leaching Procedure (TCLP) VOCs, TCLP semivolatile organic compounds (SVOCs), and TCLP Michigan (10) metals. The analytical results for this sample indicated the material was nonhazardous.

Decontamination of equipment was performed as previously discussed and fluids were discharged to the ground surface at the boring location.

2.3. Geologic conditions

2.3.1. Regional geology

Glacial till deposits in Genesee County are approximately 100 to 200 ft thick in the eastern section of the county and 50 to 100 ft thick in the western section. The drift is predominantly clay/till with isolated lenses of sand and/or gravel.

Based on water well records, a confining unit exists in the area. A review of water well records indicates the confining unit is a blue/grey clay and generally exists at 12 to 135 fbg with thicknesses ranging from 30 ft to 150 ft.

Stratigraphically, the area is part of the Michigan Basin, which is a relatively shallow, intracratonic structure that includes the Lower Peninsula, part of the Upper Peninsula, and parts of Wisconsin, Illinois, Indiana, Ohio, and Ontario. The topography of the bedrock surface in Genesee County ranges from 600 to 700 ft above mean sea level (MSL).

The predominant underlying bedrock in Genesee County is the Saginaw Formation. The Saginaw Formation has a maximum thickness of 765 ft, as reported from well logs collected in the Michigan Basin (MDEQ 1978). In Genesee County the Saginaw Formation is thickest (100 to 200 ft) in the northwestern part of the county. The formation thins and finally pinches out in the east and southeastern parts of the county. The Saginaw Formation is generally composed of interbedded sandstones, shales, limestone, and coal.

Underlying the Saginaw are the Michigan Formation and the Marshall Sandstone. The Michigan Formation is the underlying bedrock in eastern Genesee County in areas where the Saginaw Formation has thinned out. The Michigan Formation is composed of beds of anhydride and gypsum, gray to dark gray and greenish-gray shale, limestone, dolomite, and sandstone. A sand unit of the Michigan Formation, called the Michigan "Stray Sandstone" is reported to be a potential source for large quantities of natural gas. The Michigan Formation is approximately 50 to 200 ft thick in Genesee County. The Marshall Sandstone underlies the Michigan Formation and consists of sandstone and siltstone with some zones exhibiting red coloration. The Michigan Formation thins out south of Genesee County and is replaced by Marshall Sandstone as the uppermost bedrock formation underlying the glacial drift. The Marshall Sandstone is the major water-bearing unit.

2.3.2. Site geology

Discussion of the Site geology is limited to the uppermost 53 ft of unconsolidated material observed during soil boring installation. Overburden materials consist of intermixed soils and waste fill material. In general, the Site is covered by asphalt parking areas and a building. Subsurface materials encountered during drilling activities include silt, sand, clay, and waste fill material in various amounts across the Site. A east-west (A-A') and (B-B') geologic cross section which depicts the relationship of subsurface materials in the outbound storage trailer lot and Lot #10 is included as Figures 4 and 5, respectively.

Fill material which consisted of glass, fabric, concrete, carpet, rubber, vinyl, degraded asphalt, wood block, fencing, and cardboard was observed in the borings and was mixed with soil material. Approximate thicknesses of waste fill material are identified in Table 2-1 along with the depth below grade. A figure depicting the approximate horizontal extent of subsurface waste fill material observed is included as Figure 6.

Table 2-1. *Waste fill depths.*

Soil Boring Location	Depth Waste Fill Encountered (fbg)	Approximate Thickness of Waste Fill (ft)	Terminal Depth of Boring (ft)
OBG SB-1	1-2, 6-14	8-9	20
OBG SB-2	7-20	13	22
OBG SB-3	9.5-19.5	10	22
OBG SB-4	0.5-12	11.5	16
OBG SB-7	2-5	3	16
OBG SB-8	0.5-11	10.5	14
OBG SB-9	0.5-6	5.5	14
OBG SB-13	0.5-4	3.5	14
OBG SB-14	0.5-6	5.5	14
OBG SB-22	0.5-3	2.5	14
OBG SB-23	3.5-8	4.5	16
OBG SB-24	0.5-2	1.5	14
OBG SB-1D	19.5-21	1.5	53
OBG SB-2D	4.5-6	1.5	26

Source: O'Brien & Gere Engineers, Inc.

3. Analytical results

The soil analytical results indicate concentrations of VOCs specifically, ethylbenzene and xylenes above the method detection limit and the MDEQ Generic Residential 20 times drinking water values, however these results are below the MDEQ Generic Commercial Subcategory IV Cleanup criteria. The locations in which ethylbenzene was detected above mdls and MDEQ Generic Residential 20 times drinking water values are OBG SB-2, OBG SB-7 and OBG SB-23. These samples were collected from the waste fill material within the outbound storage trailer lot. The location in which xylenes were detected above mdls and MDEQ Generic Residential 20 times drinking water values is OBG SB-23. This sample was also collected from the waste fill material within the outbound storage trailer lot.

Analytical results also indicate lead was detected in four (OBG SB- 2, OBG SB- 4, OBG SB-7 and OBG SB-8) of the twenty-seven samples above the MDEQ Generic Commercial Subcategory IV Cleanup criteria. These samples were collected from the waste fill material within the outbound storage trailer lot. Soil analytical results are summarized in Table 1 and the laboratory data sheets are included in Appendix B.

The ground water analytical results indicate concentrations of VOCs below method detection limits for the three samples collected. The results also indicated concentrations of total lead and total arsenic above the MDEQ Generic Commercial Health Based Drinking Water value. Ground water analytical results are summarized in Table 2 and the laboratory data sheets are included in Appendix C.

4. Conclusions

The extent of subsurface waste fill material at the Site has been assessed. The extent of the material appears to be horizontally limited to the outbound trailer storage lot and Lot #10 and may extend to the east of both lots. The subsurface waste fill material was observed during drilling activities from .5 to 19.5 fbg with a thickness ranging from 1.5 ft at OBG SB-24 and 13.5 ft at OBG SB-2. The waste fill material consisted of glass, fabric, concrete, carpet, rubber, vinyl, degraded asphalt, wood block, fencing, and cardboard. During demolition of the building on the former Taystee Bread lot, work crews should be aware of potentially encountering subsurface waste fill materials along the southern side of the building.

Analytical results for the soil samples collected indicate concentrations of VOCs below MDEQ Generic Commercial Subcategory IV Cleanup criteria. Lead was detected in four of the samples from the outbound storage trailer lot above the MDEQ Generic Commercial Subcategory IV Cleanup criteria.

Analytical results for the ground water samples collected indicate concentrations of VOCs below method detection limits for the three samples collected. The results also indicated concentrations of total lead and total arsenic above the MDEQ Generic Commercial Health Based Drinking Water value.

A clay unit was identified during the installation of two deep soil borings at the Site. At a soil boring installed in the outbound storage trailer lot the clay unit was identified at a depth of 50.5 fbg and in Lot #10 at a depth of 14 fbg. The observed clay unit is consistent with local water well records and information from investigations in the area.

TABLES

Table 1

BURTON PARCEL
Burton, Michigan
Soil Analytical Results

Location	SB-1 (10-12')	SB-2 (6-8')	SB-3 (6-8')	SB-4 (2-4')	SB-5 (6-8')	SB-6 (8-10')	SB-7 (8-10')	SB-8 (4-6')	SB-9 (4-6')	SB-10 (6-8')	MDEQ Generic Commercial Subcategory IV (ppb:ug/kg)
Analytical Parameter	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Benzene	<400	<310	<290	<280	<1.	<320	<310	<280	<7.	<1.	2.4E+06
Ethylbenzene	<400	1900	<290	<280	<1.	550	1700	370	<7.	<1.	2.0E+08
Toluene	<400	<310	<290	<280	<1.	<320	<310	<280	<7.	<1.	4.6E+08
Xylenes	<1200	<920	<860	<840	<3.	3400	2300	2100	<22.	<3.	1.0E+9 (G)
Methylene Chloride	<400	<310	<290	<280	<1.	<320	<310	<280	<7.	<1.	9.2E+06
Lead	78000	1100000	100000	3900000	6000	17000	1100000	810000	20000	5000	4.0E+5 (L)

Location	SB-11 (6-8')	SB-12 (8-10')	SB-13 (6-8')	SB-14 (2-4')	SB-15 (4-6')	SB-16 (0-2')	SB-17 (4-6')	SB-18 (6-8')	SB-19 (2-4')	SB-20 (4-6')	MDEQ Generic Commercial Subcategory IV (ppb:ug/kg)
Analytical Parameter	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Benzene	<1.	<1.	<1.	<1.	<270.	<290	<290	<1.	<1.	<1.	2.4E+06
Ethylbenzene	<1.	<1.	<1.	<1.	<270.	<290	<290	<1.	<1.	<1.	2.0E+08
Toluene	<1.	<1.	<1.	<1.	<270.	<290	<290	<1.	<1.	<1.	4.6E+08
Xylenes	<4.	<4.	<4.	<3.	<810.	<860	<870	<3.	<3.	<3.	1.0E+9 (G)
Methylene Chloride	<1.	<1.	<1.	<1.	<270.	<290	<290	<1.	<1.	<1.	9.2E+06
Lead	2000	3000	1000	9000	4000	290000	4000	3000	1000	4000	4.0E+5 (L)

Location	SB-21 (6-8')	SB-22 (2-4')	SB-23 (4-6')	SB-24 (6-8')	SB-25 (4-6')	SB-26 (6-8')	SB-27 (2-4')	MDEQ Generic Commercial Subcategory IV (ppb:ug/kg)
Analytical Parameter	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Benzene	<300	<1.	<3100	<1.	<1.	<1.	<1.	2.4E+06
Ethylbenzene	<300	<1.	49000	<1.	<1.	<1.	<1.	2.0E+08
Toluene	<300	<1.	<3100	<1.	<1.	<1.	<1.	4.6E+08
Xylenes	<900	<3.	35000	<3.	<4.	<3.	<3.	1.0E+9 (G)
Methylene Chloride	<300	<1.	<3100	<1.	<1.	<1.	<1.	9.2E+06
Lead	6000	3000	110000	4000	8000	3000	6000	4.0E+5 (L)

Notes:

1) Samples collected by O'Brien & Gere Engineers, Inc., Novi, MI and analyzed by O'Brien & Gere Laboratories, Inc. of Syracuse, NY.
2) Samples collected on August 20 through August 26, 1997.
3) Benzene, Ethylbenzene, Toluene, Xylenes, Methylene Chloride analyzed using analytical method 8260 and lead using analytical method 6010.
4) MDEQ General Commercial Subcategory IV cleanup criteria listed in ERD Operational Memorandum #14, Revision 2 dated June 6, 1995.
5) (G) denotes criteria exceeds 100% in soil, hence it is reduced to 100%
6) (L) denotes criteria developed using the U.S. EPA Integrated Uptake Biokinetic Model for children.
7) Red type denotes exceedence of MDEQ cleanup criteria.

Table 2

BURTON PARCEL
Burton, Michigan

Groundwater Analytical Results

ALL RCS/IND DWC

Location / Analytical Parameter	SB-12 (8-10') ug/L	SB-14 (2-4') ug/l	SB-16 (0-2') ug/l	MDEQ Generic Commercial Health Based Drinking Water Value (ppb:ug/l)
Benzene	<1	<1	<1	5 (C)
Ethylbenzene	<1	<1	<1	700 (C)
Toluene	<1	<1	<1	1000 (C)
280 Xylenes	<3	<3	<3	10,000 (C)
Tetrachloroethylene	<1	<1	<1	5 (C)
1, 2 - Dichloroethane	<1	<1	<1	5 (C)
50 Total Arsenic	29	63	56	50 (A, C)
4 Total Lead	26	26	20	4 (A, L)
Total Zinc	150	80	150	6900 (A)

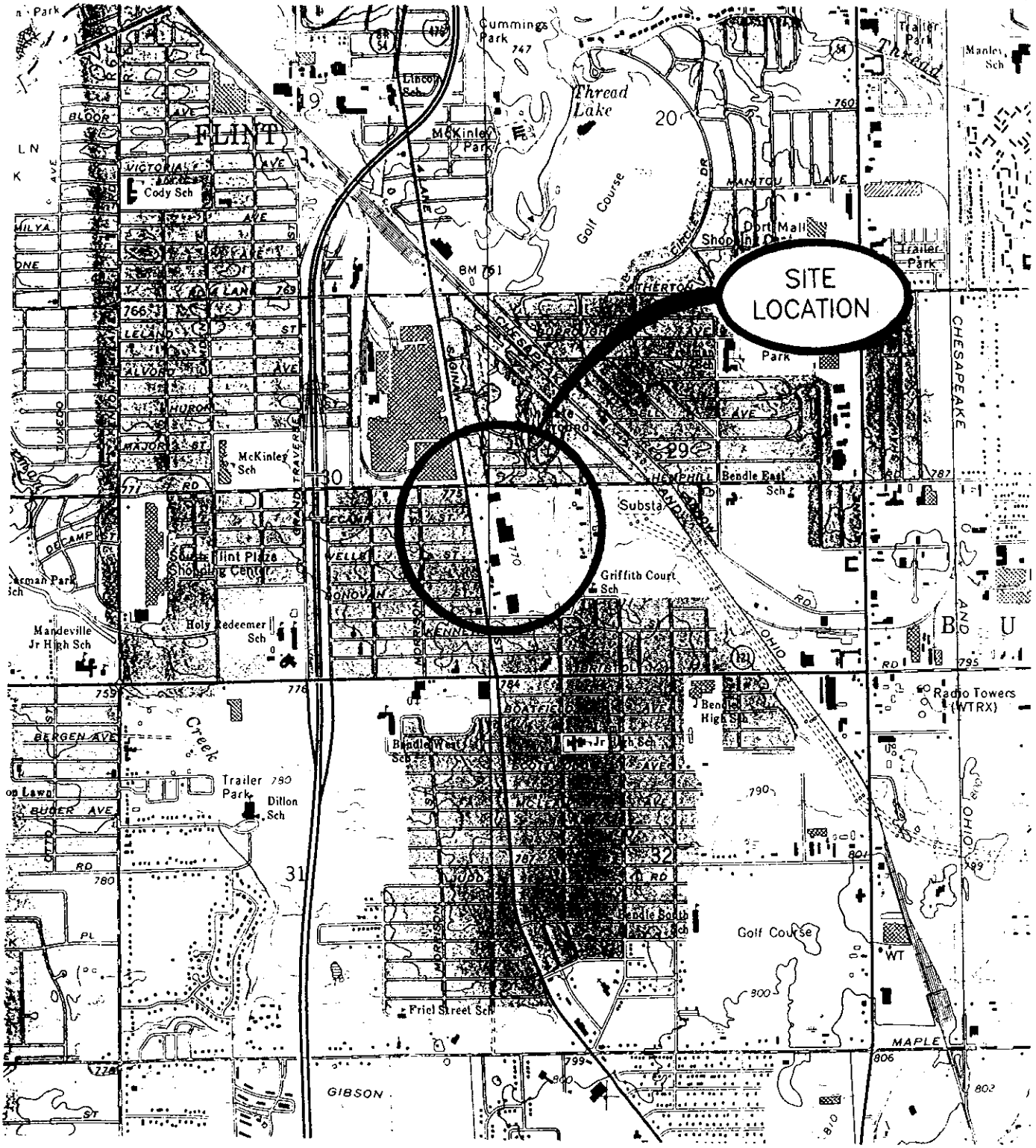
2400/K000

Notes:

1) Samples collected by O'Brien & Gere Engineers, Inc., Novi, MI and analyzed by O'Brien & Gere Laboratories, Inc. of Syracuse, NY.
2) Samples collected on August 20 through August 26, 1997.
3) Benzene, Ethylbenzene, Toluene, Xylenes, Tetrachloroethylene and 1,2 - Dichloroethane analyzed by method 8260, Arsenic, Lead, and Zinc were analyzed using analytical method 6000/7000.
4) (A) denotes background, as defined in Rule 701(c), may be substituted if higher than the cleanup criteria.
5) (C) denotes State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976 used as the default.
6) (L) denotes criteria developed using the U.S. EPA Integrated Uptake Biokinetic Model for children.
7) Red type indicates exceedance of MDEQ criteria.

FIGURES

FIGURE 1



MICHIGAN

QUADRANGLE LOCATION

FLINT SOUTH, MICH.

N4252.5—W8337.5/7.5

1969

PHOTOREVISED 1975

AMS 4269 I NW-SERIES V862

FILE NO. 5858-035

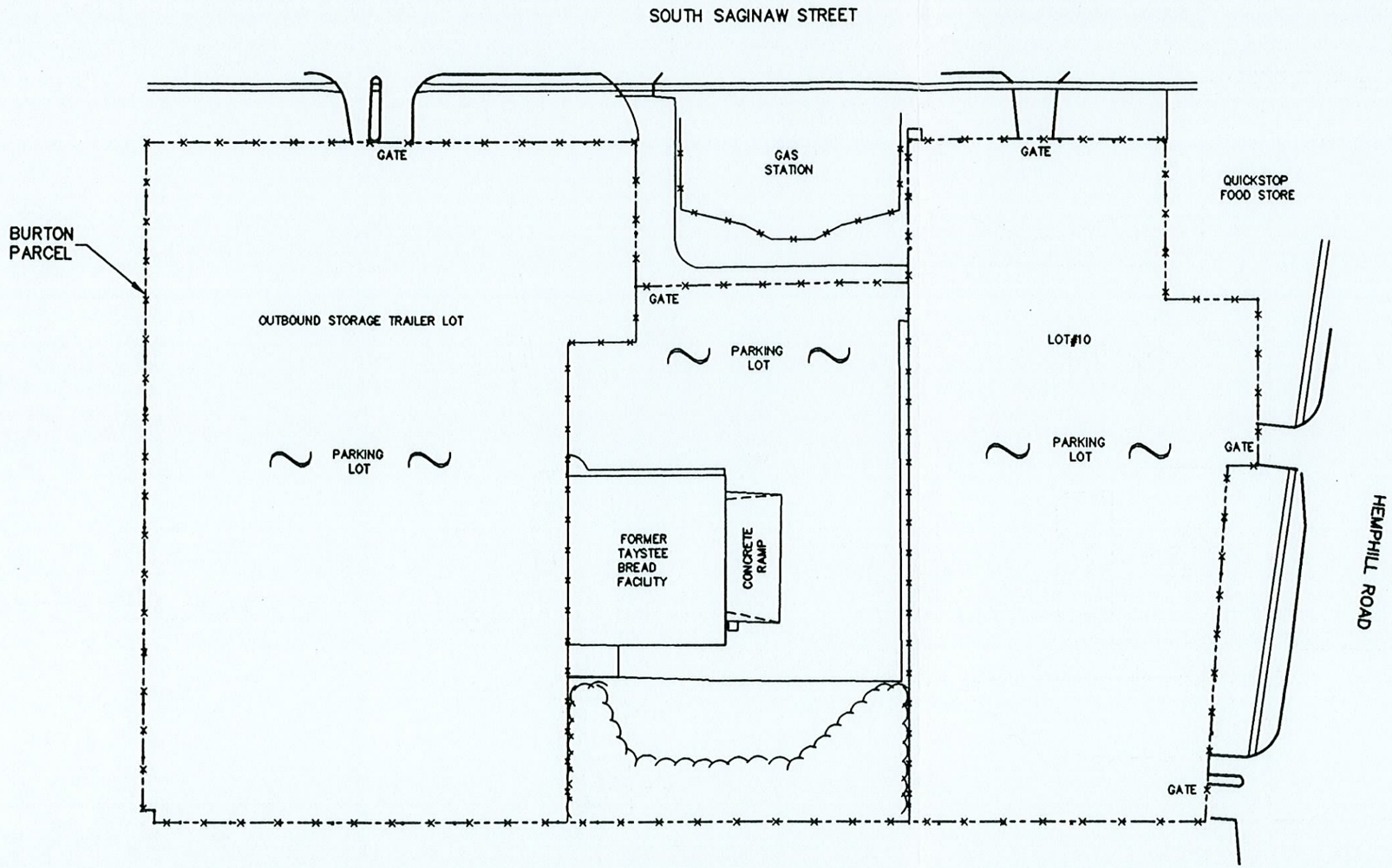
GENERAL MOTORS CORPORATION
BURTON PARCEL
BURTON, MICHIGAN
SITE LOCATION MAP

0 1000 2000 3000 4000

SCALE IN FEET

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 2



LEGEND

FENCELINE

FENCELINE/ PROPERTY LINE

PRIVILEGED AND CONFIDENTIAL
Prepared at the Request of Counsel and in Anticipation of Litigation.

BURTON PARCEL
BURTON, MICHIGAN

SITE PLAN

100 0 100
APPROXIMATE SCALE IN FEET

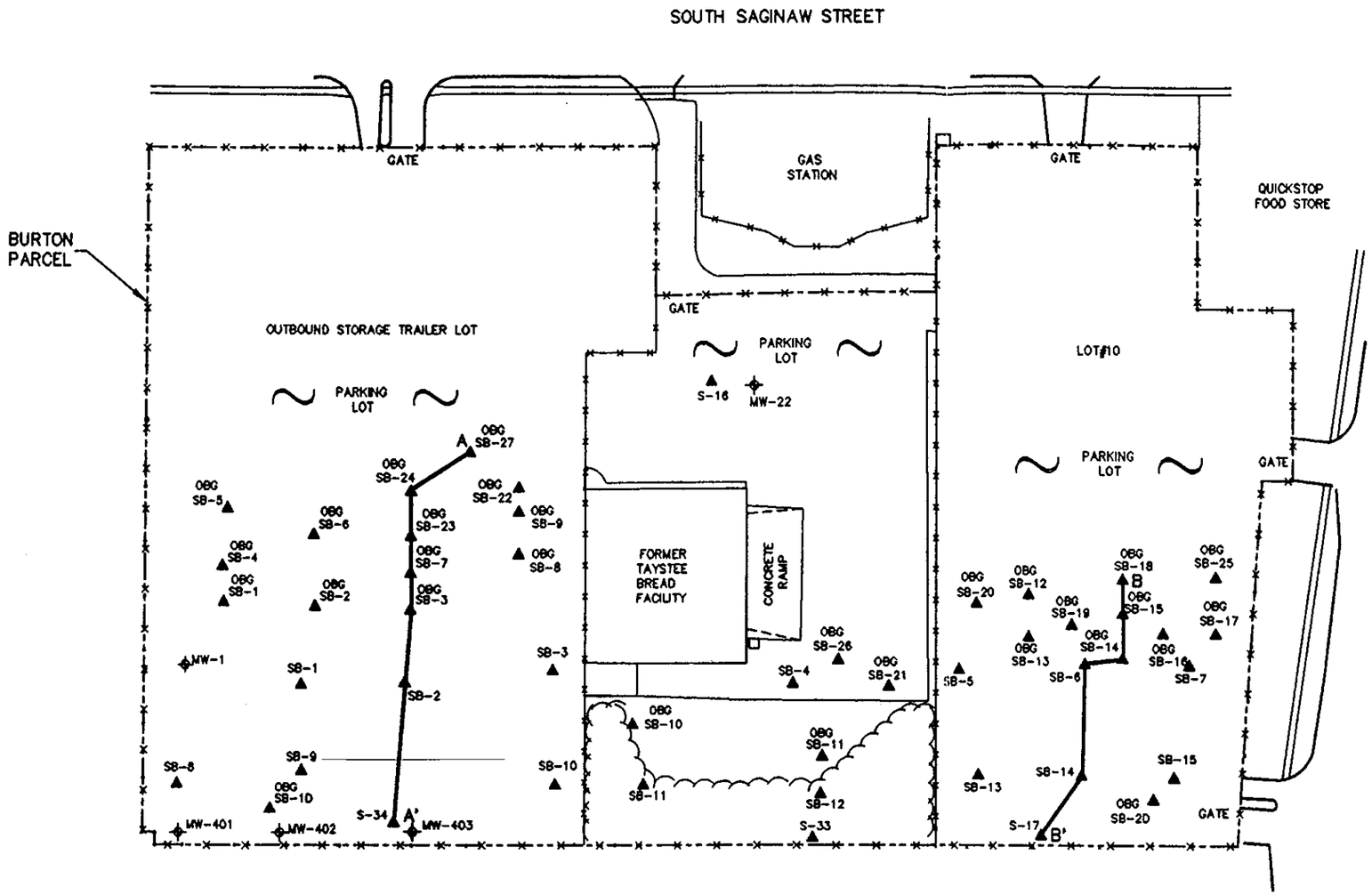
FILE # 5858-035-002

O'BRIEN & GERE ENGINEERS, INC.

DWG PATH:I:\NOV\PROJECTS\5858035\DWG\002

PLOT DATE:9-11-97

FIGURE 3



NOTE: SOIL BORINGS SB-1 THROUGH SB-15, S-16, S-17, AND S-33 AND MONITORING WELLS INSTALLED PREVIOUSLY BY GZA.

SOIL BORINGS OBG SB-1 THROUGH OBG SB-27, OBG SB-1D AND OBG SB-2D INSTALLED BY O'BRIEN & GERE ENGINEERS, INC. FROM AUGUST 20 THROUGH 26, 1997.

MONITORING WELLS MW-1 AND MW-22 WERE NOT OBSERVED DURING FIELD ACTIVITIES.

LEGEND

- FENCELINE \ PROPERTY LINE
- FENCELINE
- MW-401 — MONITORING WELL
- SB-25 — SOIL BORING LOCATION
- A – A' — GEOLOGIC CROSS SECTION LINE
- B – B' — GEOLOGIC CROSS SECTION LINE

PRIVILEGED AND CONFIDENTIAL
Prepared at the Request of Counsel and in Anticipation of Litigation.

BURTON PARCEL
BURTON, MICHIGAN

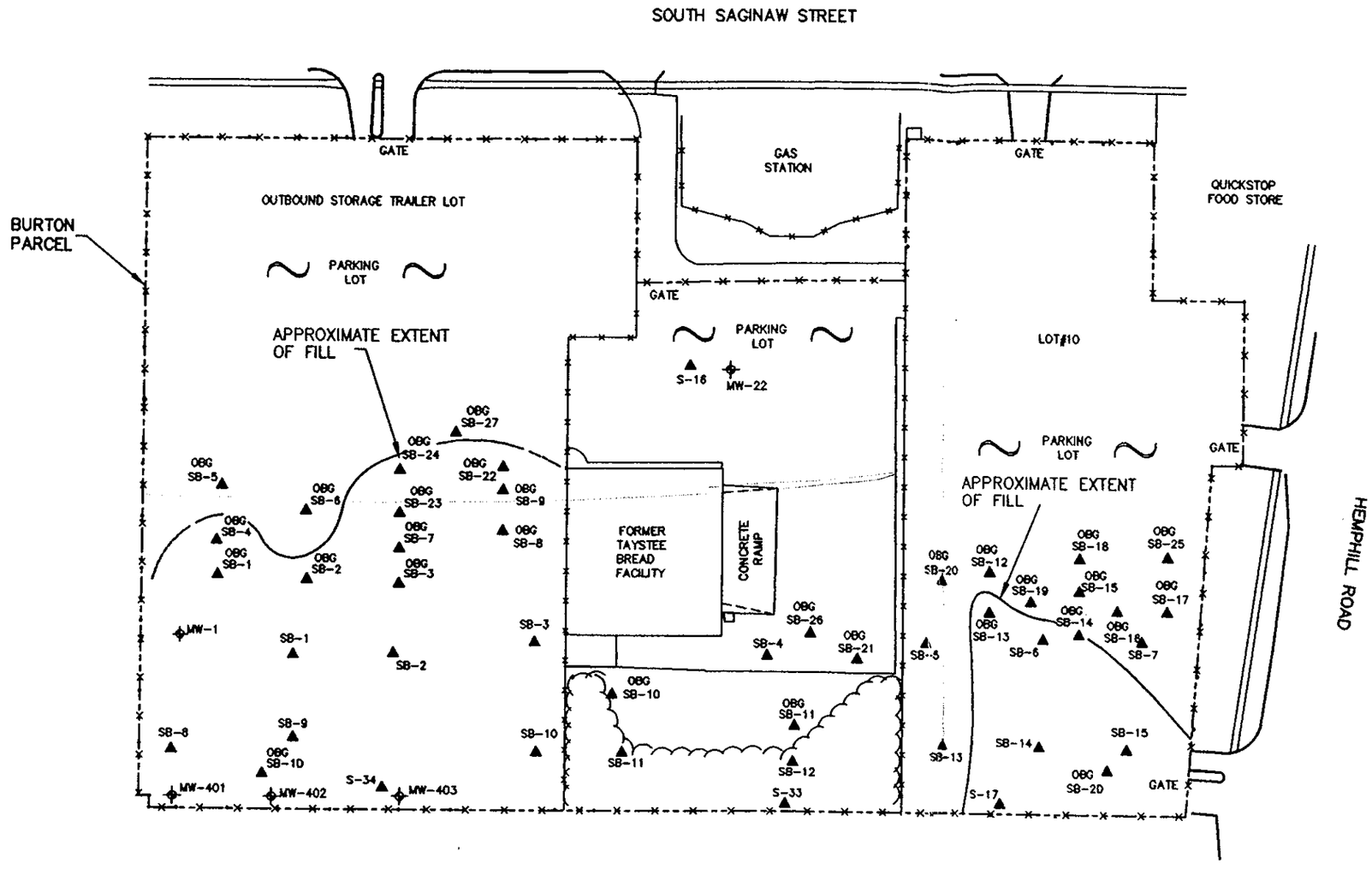
SOIL BORING LOCATION PLAN

100 0 100
APPROXIMATE SCALE IN FEET

FILE # 5858-035-005

O'BRIEN & GERE

FIGURE 6



NOTE: SOIL BORINGS SB-1 THROUGH SB-15, S-16, S-17, AND S-33 AND MONITORING WELLS INSTALLED PREVIOUSLY BY GZA.

SOIL BORINGS OBG SB-1 THROUGH OBG SB-27, OBG SB-1D AND OBG SB-2D INSTALLED BY O'BRIEN & GERE ENGINEERS, INC. FROM AUGUST 20 THROUGH 26, 1997.

MONITORING WELLS MW-1 AND MW-22 WERE NOT OBSERVED DURING FIELD ACTIVITIES.

LEGEND

- SB-25 — SOIL BORING LOCATION
- FENCELINE/PROPERTY LINE
- FENCELINE
- MW-401 — MONITORING WELL

PRIVILEGED AND CONFIDENTIAL
Prepared at the Request of Counsel and in Anticipation of Litigation.

BURTON PARCEL
BURTON, MICHIGAN

APPROXIMATE EXTENT OF FILL

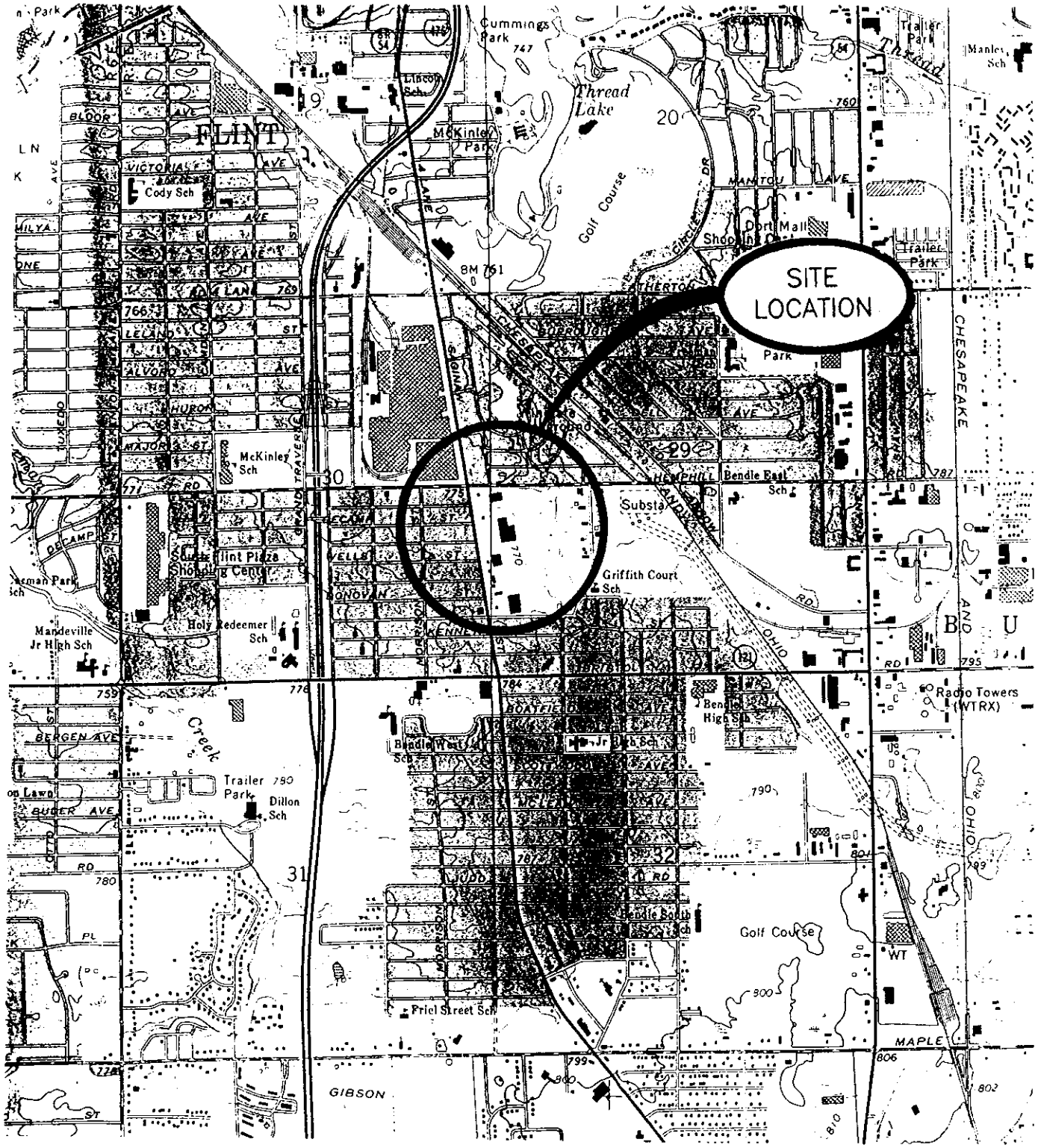
100 0 100
APPROXIMATE SCALE IN FEET

FILE # 5858-035-006

O'BRIEN & GERE

FIGURES

FIGURE 1



MICHIGAN

QUADRANGLE LOCATION

FLINT SOUTH, MICH.

N4252.5—W8337.5/7.5

1969

PHOTOREVISED 1975

AMS 4269 I NW—SERIES V862

FILE NO. 5858-035

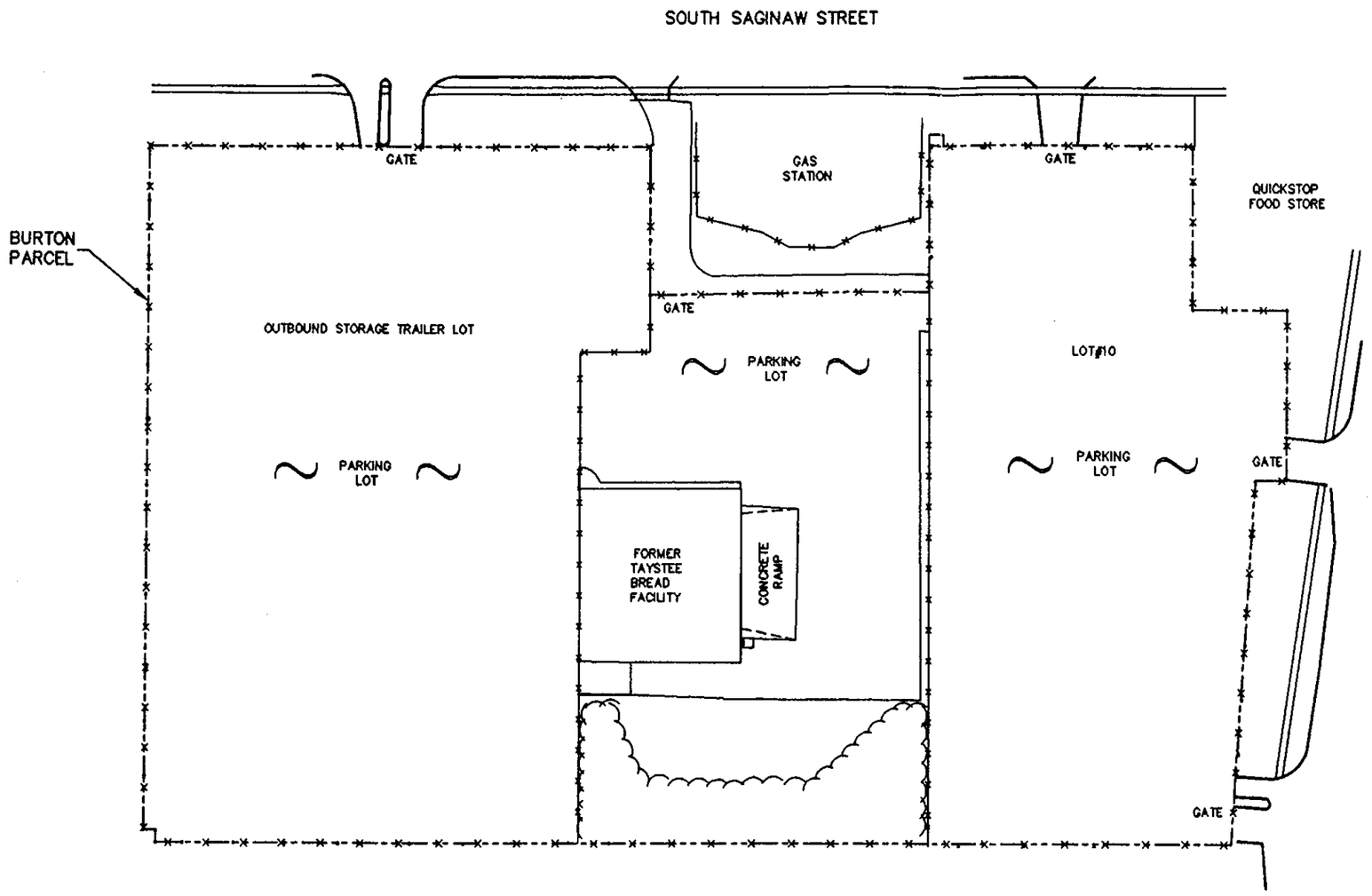
GENERAL MOTORS CORPORATION
BURTON PARCEL
BURTON, MICHIGAN
SITE LOCATION MAP

0 1000 2000 3000 4000

SCALE IN FEET

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 2



LEGEND

FENCELINE

FENCELINE/ PROPERTY LINE

PRIVILEGED AND CONFIDENTIAL
Prepared at the Request of Counsel and in Anticipation of Litigation.

BURTON PARCEL
BURTON, MICHIGAN

SITE PLAN

100 0 100

APPROXIMATE SCALE IN FEET

FILE # 5858-035-002

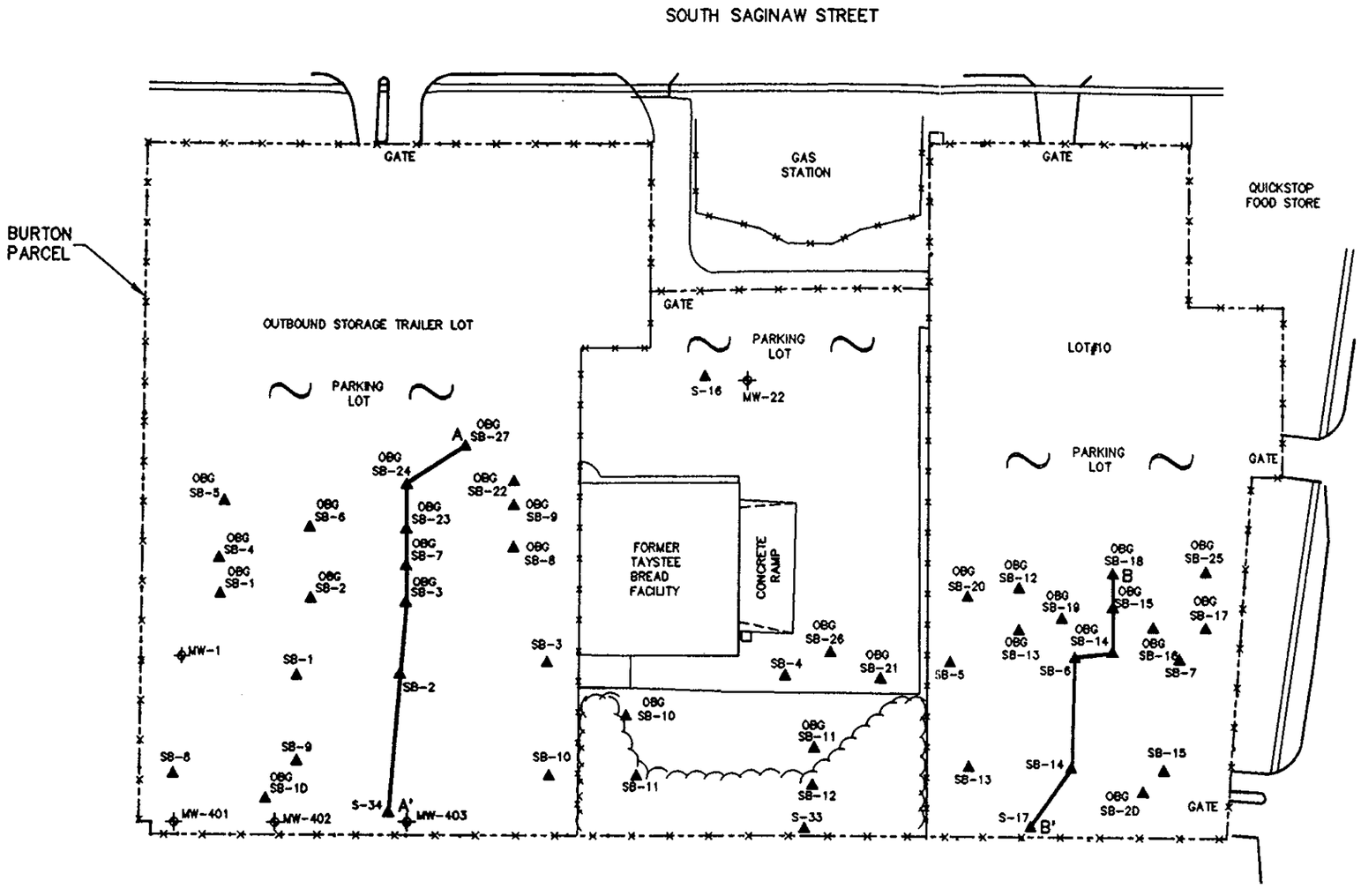
O'BRIEN & GERE

DWG PATH=I:\NOM\PROJECTS\5858035\DWG\002

PLOT DATE:9-11-97

DWG PATH: I:\MOV\PROJECTS\5858035\DWG\00

FIGURE 3



NOTE: SOIL BORINGS SB-1 THROUGH SB-15, S-16, S-17, AND S-33 AND MONITORING WELLS INSTALLED PREVIOUSLY BY GZA.

SOIL BORINGS OBG SB-1 THROUGH OBG SB-27, OBG SB-1D AND OBG SB-2D INSTALLED BY O'BRIEN & GERE ENGINEERS, INC. FROM AUGUST 20 THROUGH 26, 1997.

MONITORING WELLS MW-1 AND MW-22 WERE NOT OBSERVED DURING FIELD ACTIVITIES.

LEGEND

- FENCELINE \ PROPERTY LINE
- FENCELINE
- MW-401 — MONITORING WELL
- SB-25 — SOIL BORING LOCATION
- A – A' — GEOLOGIC CROSS SECTION LINE
- B – B' — GEOLOGIC CROSS SECTION LINE

PRIVILEGED AND CONFIDENTIAL
Prepared at the Request of Counsel and in Anticipation of Litigation.

BURTON PARCEL
BURTON, MICHIGAN

SOIL BORING LOCATION PLAN

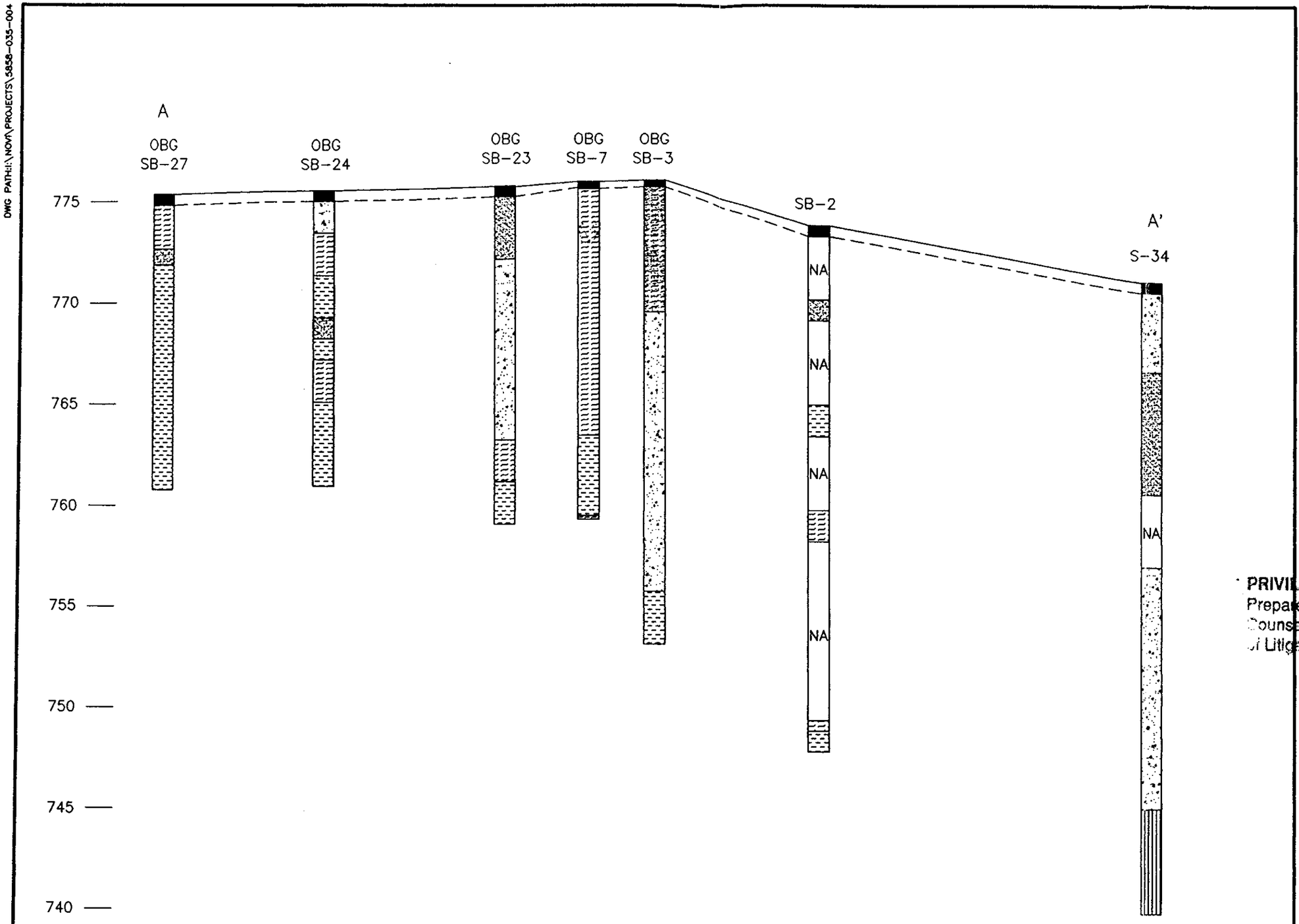
100 0 100
APPROXIMATE SCALE IN FEET

FILE # 5858-035-005

O'BRIEN & GERE

PLOT DATE: 10-10-97

FIGURE 4



NOTE: SB-2 AND S-34 INSTALLED BY GZA IN FEBRUARY 1988.

LEGEND

- ASPHALT
- SILTY SAND\ SILT AND SAND
- FILL
- SILT
- CLAY
- SAND
- PEAT
- NA — INFORMATION NOT AVAILABLE

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BURTON PARCEL
BURTON, MICHIGAN

GEOLOGIC CROSS SECTION A – A'

30 0 3
HORIZONTAL SCALE IN FEET
4 0 4
VERTICAL SCALE IN FEET

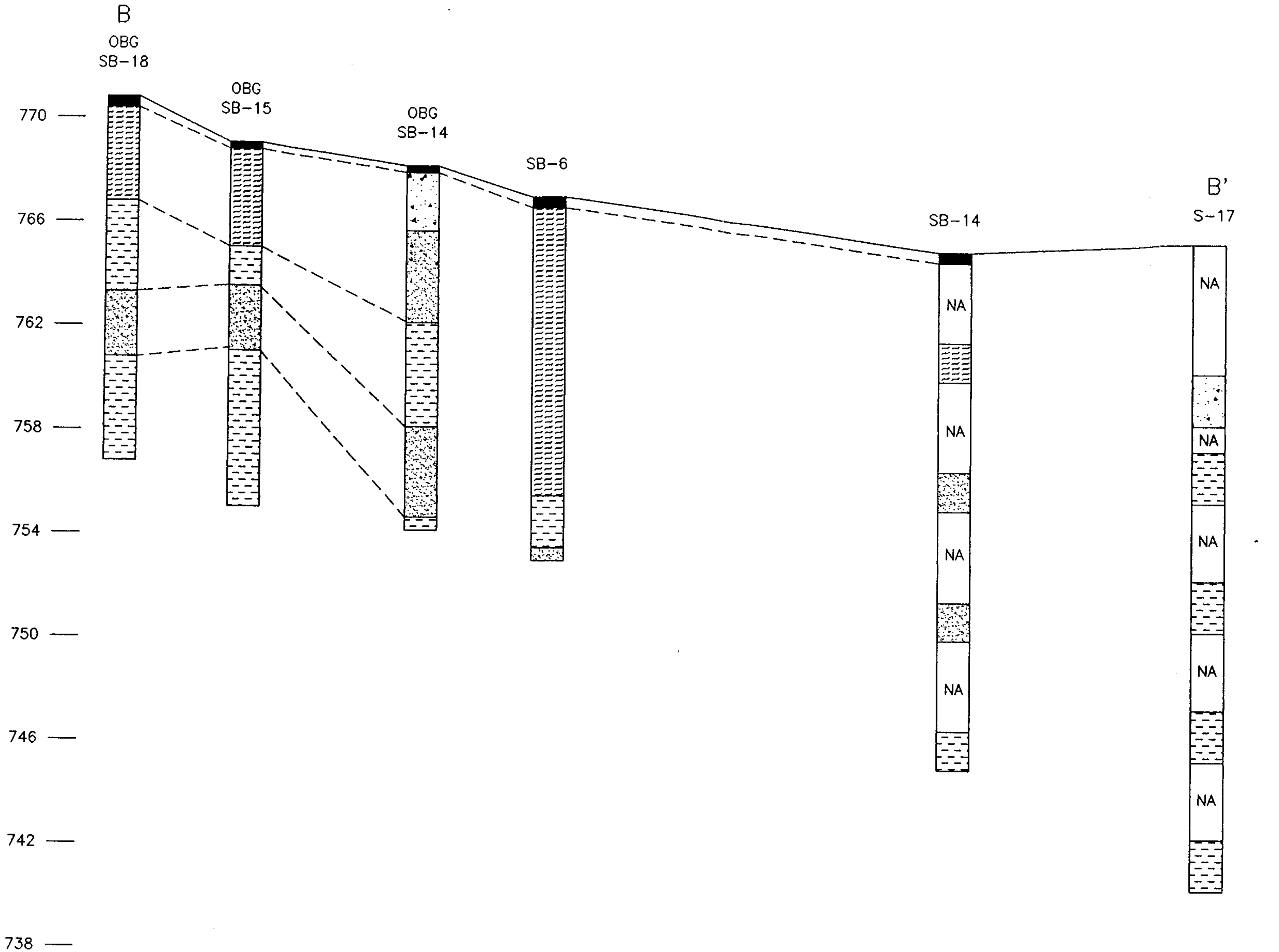
5858-035-004

O'BRIEN & GERE

DWG PATH=I:\NOVA\PROJECTS\5858-035-004
PLOT DATE:9-12-97

DWG PATH:I:\NOVI\PROJECTS\5858-035-00

FIGURE 5



NOTE: SB-6, SB-14 AND S-17 INSTALLED BY GZA IN FEBRUARY 1988.

LEGEND

ASPHALT

FILL

SILT

CLAY

SAND

NA INFORMATION NOT AVAILABLE

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BURTON PARCEL
BURTON, MICHIGAN

GEOLOGIC CROSS SECTION B – B'

20 0 20
HORIZONTAL SCALE IN FEET

4 0 4
VERTICAL SCALE IN FEET

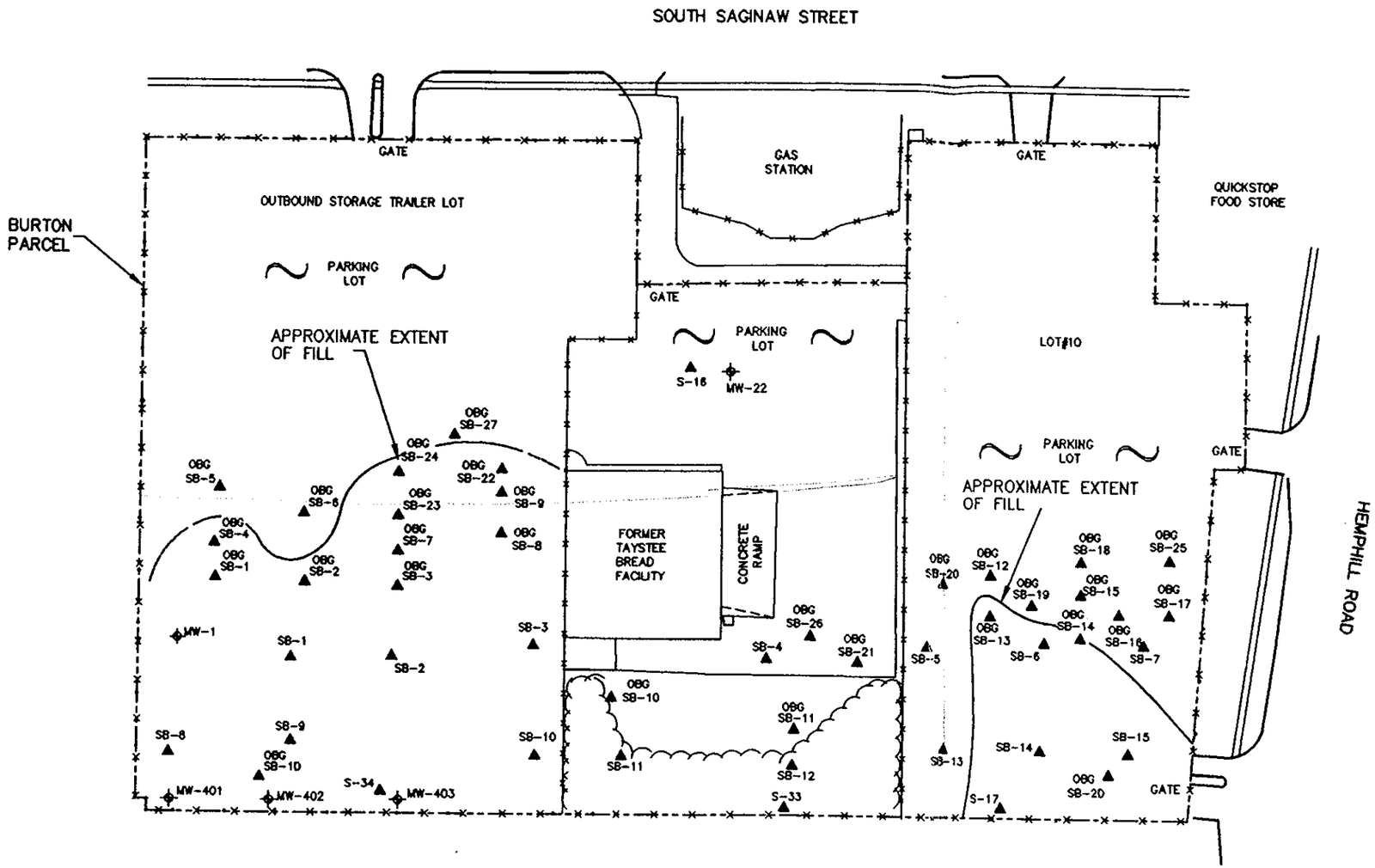
5858-035-003

O'BRIEN & GERE ENGINEERS, INC.

PLOT DATE:9-12-97

DWG PATH=I:\NOVI\PROJECTS\5858035\DWG\00

FIGURE 6



NOTE: SOIL BORINGS SB-1 THROUGH SB-15, S-16, S-17, AND S-33 AND MONITORING WELLS INSTALLED PREVIOUSLY BY GZA.

SOIL BORINGS OBG SB-1 THROUGH OBG SB-27, OBG SB-1D AND OBG SB-2D INSTALLED BY O'BRIEN & GERE ENGINEERS, INC. FROM AUGUST 20 THROUGH 26, 1997.

MONITORING WELLS MW-1 AND MW-22 WERE NOT OBSERVED DURING FIELD ACTIVITIES.

LEGEND

- ▲ S8-25 — SOIL BORING LOCATION
- FENCELINE \ PROPERTY LINE
- FENCELINE
- MW-401 — MONITORING WELL

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BURTON PARCEL
BURTON, MICHIGAN

APPROXIMATE EXTENT OF FILL

100 0 100
APPROXIMATE SCALE IN FEET

FILE # 5858-035-006

O'BRIEN & GERE

PLOT DATE:10-10-97

APPENDICES

APPENDIX A

Soil Boring Logs

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-1 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Burton, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 50 ft north of southern fenceline and 400 east of western fencline
GROUND ELEVATION:
DATES: STARTED: 8/20/97 ENDED: 8/20/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	14	asphalt		2.1	
			7			Moderate yellowish brown, damp PEASTONE and medium SAND fill	4"		
			7			Medium grey, damp, SILT, little fine sand, wood pieces @ 1 fbg, slight oil odor	10"		
			8						
	2	2'-4'	6	24"/18"	12	Medium grey, damp SILT, some fine sand, slight oil odor		30.2	
			6						
			6						
			6						
	3	4'-6'	4	24"/24"	11	Medium grey, damp SILT, little clay, no odor		28	
			5						
5			6						
			8						
	4	6'-8'	4	24"/24"	8	Clayey fill material- asphalt, slag, rubber pieces	6'	64	
			4						
			4						
			4						
	5	8'-10'	2	24"/4"	6	Fill material- gravel and slag		58.0	
			3						
			3						
			3						
10	6	10-12'	3	24"/24"	4	Dark grey, damp to moist SILT and fine SAND, clay @11.5', strong petroleum odor, pieces of asphalt		440.0	*
			3						
			1						
			2						
	7	12-14'	3	24"/6"	7	Fill material- wood pieces/slag, petroleum odor		5.8	
			3						
15			4						
			4						
	8	14-16'	4	24"/NR	6	No recovery		na	
			3						
			3						
			3						
	9	16-18'	3	24"/NR	6	No recovery		na	
			3						
			3						
			3						
	10	18-20'	3	24"/24"	4	Medium grey, damp fine SAND and CLAY, no odor	18'	0.4	
			2						
			2						
			3						
						EOB @ 20 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-1 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-2
		SHEET 1 OF 1

CLIENT	GROUND WATER			FILE No.: 5858.035
GM	DATE	DEPTH	ELEVATION	Drilling Method: Hollow Stem Auger
PROJECT LOCATION	NA	NA	NA	Sampler Type: 2" dia. Stainless Steel Splitspoon
Burton Parcel, Burton, MI				Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 160 ft north of southern fenceline and 410 ft east of western fencline
GROUND ELEVATION:
DATES: STARTED: 8/20/97 ENDED: 8/20/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS
0	1	0'-2'		18"/18"	14	asphalt		1.2	
			3			Moderate yellowish brown, damp SILT and SAND, little clay, no odor	4"		
			3						
			4						
	2	2'-4'	5	24"/24"	12	Moderate yellowish brown, damp CLAY, intermixed SILT and SAND, lens		0.4	
			9						
			11						
			12						
	3	4'-6'	6	24"/24"	11			1.2	
			9						
5			11						
			12						
	4	6'-8'	4	24"/24"	8	Moderate yellowish brown, damp CLAY, intermixed SILT and SAND, lens		62	*
			4						
			3			Black stained damp CLAY, little silt, petroleum odor, little fill	7'		
			4						
	5	8'-10'	3	24"/18"	6	Black stained damp CLAY, little silt, petroleum odor, little fill		24.0	
			4						
			4						
			5						
10	6	10-12'	3	24"/24"	4	Black stained damp CLAY, little silt, petroleum odor, little fill, also rubber pieces, strong methane odors from augers		4.0	
			3						
			4						
			3						
	7	12-14'	2	24"/12"	7			1.2	
			1						
15			1			Dark grey, damp to moist silty CLAY, tip-4" wet silt, petroleum odor, metal pieces			
			2						
	8	14-16'	6	24"/NR	6	No recovery		na	
			8						
			10						
			10						
	9	16-18'	5	24"/NR	6	No recovery, degraded rubber in tip		na	
			8						
			7						
			7						
	10	18-20'	3	24"/12"	4			15.0	
			2						
			2			Medium gray moist soft CLAY, little silt, rubber and wood pieces observed			
			2						
20	11	20-22'	5	24"/24"	8	Moderate yellowish brown, damp CLAY, little silt, no fill, no odor		1.0	
			4						
			4						
			5						
						EOB @ 22 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-2 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-3 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 160 feet south of block warehouse and 410 east of western fenceline
GROUND ELEVATION:
DATES: STARTED 8/20/97 ENDED: 8/21/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	REMARKS*
0	1	0'-2'		18"/18"	10	asphalt		0.2	
			4			Moderate yellowish brown damp SILT and fine sand, no odor	4"		
			6						
			8						
	2	2'-4'	4	24"/24"	16	Moderate yellowish brown damp SILT, SAND, CLAY intermixed lens		1	
			7						
			9						
			10						
	3	4'-6'	4	24"/24"	11	Medium gray damp silty SAND, little clay		1	
			5			Medium gray damp silty SAND, little clay			
5			6						
			10						
	4	6'-8'	4	24"/24"	10	Black stained damp CLAY, some silt, petroleum odor	6'3"	19	*
			5						
			5						
			6						
	5	8'-10'	4	24"/6"	8			1.0	
			4						
			4						
			5			Black stained damp CLAY, some silt, petroleum odor, wood piece			
10	6	10'-12'	3	24"/24"	6	Black stained damp CLAY, some silt, petroleum odor, wet silt seam 4", blue plastic piece		1.0	
			3						
			3						
			3						
	7	12'-14'	2	24"/24"	6			2.5	
			2						
15			4						
			5						
	8	14'-16'	8	24"/24"	14	Black stained damp CLAY, some silt, petroleum odor, wood and rubber pieces		1	
			8						
			6						
			5			Medium to light gray, damp CLAY, some silt			
	9	16'-18'	17	24"/24"	22	Fill- wood, stained black, solvent odor	16'	11.0	
			18						
			4						
			5						
	10	18'-20'	3	24"/6"	4			0.8	
			2						
			2						
			2			Dark grey damp soft CLAY, little silt, sand, solvent odor	19'6"		
20		20-22'	1	24"/24"	3	Medium grey damp soft CLAY, little silt, appears native		0.2	
			1						
			2						
			2						
						EOB @ 22 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-3 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-4 SHEET 1 OF 1

CLIENT	GROUND WATER			
GM	DATE	DEPTH	ELEVATION	FILE No.: 5858.035
PROJECT LOCATION	NA	NA	NA	Drilling Method: Hollow Stem Auger
Burton Parcel, Flint, MI				Sampler Type: 2" dia. Stainless Steel Splitspoon
				Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 50 feet north of southern fenceline and 340 east of western fenceline
GROUND ELEVATION:
DATES: STARTED: 8/21/97 ENDED: 8/21/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	14	asphalt		4.4	
			7			Moderate yellowish brown, damp CLAY, some silt, piece of glass	4"		
			7						
			7						
	2	2'-4'	4	24"/24"	7	Moderate yellowish brown, damp CLAY, some silt, piece of slag, solvent odor		22.0	*
			4						
			3						
			3						
	3	4'-6'	4	24"/24"	9	Moderate yellowish brown, damp CLAY, some silt, pieces of wood, glass and concrete		4.2	
			3						
5			6						
			12						
	4	6'-8'	4	24"/12"	6			0.0	
			3						
			3			Moderate yellowish brown, damp CLAY, some silt, pieces of vinyl			
			20						
	5	8'-10'	17	24"/NR"	8	No recovery		NA	
			5						
			3						
			1						
10	6	10'-12'	5	24"/6"	10			12.4	
			5						
			5			Black stained rubber, wood and vinyl, oil odor	11'6"		
			1						
	7	12'-14'	2	24"/24"	7	Medium grayish brown damp soft CLAY and SILT	12'	0.0	
			4						
			3						
			3						
	8	14'-16'	4	24"/24"	9	Medium grayish brown damp soft CLAY and SILT		5.0	
			5						
15			4			Medium gray, damp to moist, fine SAND, petroleum odor	15'4"		
			5						
						EOB @ 16 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-4 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-5 SHEET 1 OF 1

CLIENT	GROUND WATER			
GM	DATE	DEPTH	ELEVATION	FILE No.: 5858.035
PROJECT LOCATION	NA	NA	NA	Drilling Method: Hollow Stem Auger
Burton Parcel, Flint, MI				Sampler Type: 2" dia. Stainless Steel Splitspoon
				Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 84 feet north of southern fenceline and 300 east of western fencline
GROUND ELEVATION:
DATES: STARTED: 8/21/97 ENDED: 8/21/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/NR"	7	asphalt		NA	
			3			No recovery	4"		
			4						
			4						
	2	2'-4'	3	24"/NR"	10	No recovery		NA	
			6						
			4						
			4						
	3	4'-6'	3	24"/12"	10			0.0	
			4						
5			6			Moderate yellowish brown, damp CLAY	5'		
			7			Moderate yellowish brown dark, silty fine SAND	5'6"		
	4	6'-8'	3	24"/24"	8	Moderate yellowish brown, damp CLAY, little silt	6'	0.0	*
			3						
			5						
			6						
	5	8'-10'	2	24"/24"	7	Moderate yellowish brown, damp CLAY, little silt		0.0	
			3						
			4			Moderate yellowish brown, damp coarse SAND, little fine gravel, trace silt	9'		
			5			Moderate yellowish brown damp CLAY, little silt	9'8"		
10	6	10'-12'	4	24"/24"	12			0.0	
			6			Moderate yellowish brown, damp to moist, fine SAND and SILT, fine to medium gravel at bottom of unit			
			6						
			6			Moderate yellowish brown damp CLAY, little silt	11'10"		
	7	12'-14'	7	24"/24"	19	Medium gray damp CLAY, little silt		0.0	
			8						
			11						
			13						
						EOB @ 14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-5 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-6 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 162 feet north of southern fenceline and 336 east of western fencline
GROUND ELEVATION:
DATES: STARTED: 8 21.97 ENDED: 8/21/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	REMKS
0	1	0'-2'		18"/NR"	7	asphalt		1.0	
			3			Moderate yellowish brown, damp SILT, some fine sand	5"		
			4						
			5						
	2	2'-4'	3	24"/NR"	8	Moderate yellowish brown, damp SILT, some fine sand		1.0	
			4						
			4						
			4						
	3	4'-6'	3	24"/12"	5	Moderate yellowish brown, damp SILT, some fine sand		1.2	
			3						
5			2						
			2						
	4	6'-8'	2	24"/24"	3	Dark gray, damp SILT, some fine sand, solvent odor		13.6	
			2						
			1						
			1						
	5	8'-10'	2	24"/24"	3	Dark gray-black SILT, some clay, solvent odor		17.4	*
			2						
			1						
			1						
10	6	10'-12'	1	24"/24"	2			15.4	
			1						
			1						
			1			Dark gray damp CLAY, some silt, soft	11'6"		
	7	12'-14'	2	24"/24"	5	Dark gray damp CLAY, some silt, soft		11.2	
			2						
			3			Medium gray, damp fine SAND, some silt	13'6"		
			4						
						EOB @ 14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-6 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-7 SHEET 1 OF 1
CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE DEPTH ELEVATION NA NA NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"
O'BRIEN & GERE GEOLOGIST: Tony Finch BORING CO.: Carlo Environmental Technologies, Inc FOREMAN: Don Bond	BORING LOCATION: southern lot-approximately 159 feet south of warehouse and 57 feet west of potentail fill area GROUND ELEVATION: DATES STARTED: 8/21/97 ENDED: 8/21/97	

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	10	asphalt		4.6	
			2			Moderate yellowish brown, damp SILT, little fine sand	4"		
			4						
			6						
	2	2'-4'	4	24"/24"	6	Dark gray, damp SILT, little fine sand, wood pieces, solvent odor		16.2	
			3						
			3						
			3						
	3	4'-6'	1	24"/12"	3			5.6	
			1						
5			2			Dark gray, damp SILT, little fine sand, solvent odor			
			2						
	4	6'-8'	2	24"/24"	5	Dark yellowish brown, damp SILT, little clay, solvent odor		14.8	
			3						
			2						
			3						
	5	8'-10'	2	24"/12"	4			42.2	*
			2						
			2			Dark yellowish brown, damp SILT, little clay, solvent odor			
			1						
10	6	10'-12'	2	24"/6"	3			3.6	
			2						
			1			Dark yellowish brown, damp SILT, little clay, solvent odor			
			1						
	7	12'-14'	2	24"/24"	4	Moderate yellowish brown-gray, damp soft CLAY, trace silt, appears to be native	12'	0	
			2						
			2						
			3						
	8	14'-16'	3	24"/24"	12	Moderate yellowish brown-gray, damp soft CLAY, trace silt, appears to be native		0	
			3						
15			9						
			12			Moderate yellowish brown, moist SILT, some fine sand	15'10"		
						EOB @ 16 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-7 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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Prepared at the Request of
Counsel and in Anticipation
of Litigation.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-8 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 76 feet south of warehouse and 99 feet southeast of southwest corner of warehouse
GROUND ELEVATION:
DATES: STARTED: 8/21/97 ENDED: 8/21/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	REMKS*
0	1	0'-2'		18"/6"	11	asphalt		2.0	
			4			Moderate yellowish brown, damp medium SAND, little silt, piece of glass	4"		
			7						
			8						
	2	2'-4'	4	24"/24"	11	Debris - cardboard, strong solvent odor	2'	6.2	
			6						
			5						
			7						
	3	4'-6'	4	24"/6"	13			7.8	*
			8						
5			5			Wood, solvent odor			
			9						
	4	6'-8'	6	18"/6"	18			6.2	
			12						
			50			Wood, cardboard, vinyl, solvent odor			
	5	8'-10'	57	24"/12"	52			4.0	
			46						
			6			Cardboard, metal pieces			
			12						
10	6	10'-12'	7	24"/18"	6	Cardboard, metal pieces		0.8	
			3						
			3			Olive, damp CLAY, little silt	11'		
			4						
	7	12'-14'	5	24"/24"	8	Dark yellowish brown-gray, damp silty CLAY, trace sand		0.2	
			3						
			5						
			5						
						EOB @ 14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-8 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-9 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 76 feet south of southwest corner of warehouse
GROUND ELEVATION:
DATES: STARTED: 8/21/97 ENDED: 8/21/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	8	asphalt		1.6	
			5			Moderate yellowish brown, damp silty CLAY, slag, piece of rubber	4"		
			3						
			3						
	2	2'-4'	4	24"/18"	9	Moderate yellowish brown, damp silty CLAY, glass and brick pieces		0.8	
			5						
			4						
			2						
	3	4'-6'	1	24"/24"	3	Moderate yellowish brown, damp silty CLAY, rubber pieces, screws		3.6	*
			2						
5			1						
			3						
	4	6'-8'	1	24"/24"	4	Moderate yellowish brown, damp CLAY, some silt		0.2	
			2						
			2						
			3						
	5	8'-10'	2	24"/24"	8	Moderate yellowish brown, damp CLAY, some silt		0.2	
			3						
			5			Moderate yellowish brown, damp SAND, little silt	9'		
			7						
10	6	10'-12'	3	24"/24"	7	Moderate yellowish brown, damp CLAY, little - trace silt	10'	0.2	
			3						
			4						
			4						
	7	12'-14'	3	24"/24"	8			0.2	
			4						
			4						
			5						
						EOB @ 14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-9 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-10 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia Stainless Steel Splitspoon Hammer: 140 lbs Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc
FOREMAN: Don Bond

BORING LOCATION: east wooded area - approximately 96 feet from far northeast corner of warehouse and 22 feet from northeast corner of 1 story frame
GROUND ELEVATION:
DATES: STARTED: 8/22/97 ENDED: 8/22/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		24"/24"	5	vegatation at surface - orangish/rust, damp medium SAND, trace silt		0.2	
			2						
			3						
			2						
			2						
	2	2'-4'	2	24"/24"	6	orangish/rust, damp medium SAND, trace silt		0.0	
			3						
			3						
			3						
	3	4'-6'	2	24"/24"	4	orangish/rust, damp medium SAND, trace silt		0.0	
			3						
5			1						
			1						
	4	6'-8'	3	24"/24"	12	Moderate yellowish brown, damp CLAY, little silt	6'	0.0	*
			6						
			6			Moderate yellowish brown, damp medium SAND, trace silt	7'4"		
			8			Moderate yellowish brown, damp CLAY, little silt	7'8"		
	5	8'-10'	3	24"/24"	10	Moderate yellowish brown, damp CLAY, little silt, little sand		0.0	
			4						
			6						
			7						
10	6	10'-12'	3	24"/24"	7	Moderate yellowish brown, damp CLAY, little silt, little sand		0.0	
			3						
			4						
			5						
	7	12'-14'	3	24"/24"	8	Moderate yellowish brown, moist medium SAND, trace silt	12'	0.0	
			4						
			4						
			9						
						EOB @ 14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-10 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-11 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: eastern wooded area - approximately 96 feet northeast of northeast corner warehouse
GROUND ELEVATION:
DATES: STARTED: 8/22/97 ENDED: 8/22/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		12"/6"	77	Vegatation at surface - Moderate yellowish brown SILT and SAND		0.0	
			27						
			50						
	2	2'-4'	3	24"/24"	6	Moderate yellowish brown, damp medium SAND, little silt		0.0	
			3						
			3						
			4						
	3	4'-6'	3	24"/24"	6	Moderate yellowish brown, damp medium SAND, little silt		0.0	*
			3						
5			3						
			3						
	4	6'-8'	2	24"/24"	4	Moderate yellowish brown, moist medium SAND, little silt		0.0	
			2						
			2						
			3						
	5	8'-10'	2	24"/24"	6	Moderate yellowish brown moist SILT, some sand	8'	0.0	
			3						
			3						
			3			Moderate yellowish brown-gray, damp CLAY, little silt	9'6"		
10	6	10'-12'	2	24"/24"	5	Moderate yellowish brown-gray, damp CLAY, little silt		0.0	
			2						
			3						
			3						
	7	12'-14'	2	24"/24"	5	Moderate yellowish brown, moist medium SAND, trace silt	12'	0.0	
			2						
			3						
			3						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-11 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-12 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 185 feet west of eastern fenceline and 68 feet north of fenceline that is north of warehouse
GROUND ELEVATION:
DATES: STARTED: 8/22/97 ENDED: 8/22/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	5	asphalt		0.2	
			2			Moderate yellowish brown, damp medium SAND, little silt	3"		
			3						
			4						
	2	2'-4'	3	24"/24"	10	Moderate yellowish brown, damp CLAY, little silt	2'	0.2	
			4						
			6						
			7						
	3	4'-6'	4	24"/24"	12	Moderate yellowish brown, damp CLAY, little silt		0.2	
			6						
5			6						
			7						
	4	6'-8'	2	24"/24"	10	Medium gray, damp CLAY, trace silt		0.0	
			4						
			6						
			8						
	5	8'-10'	3	24"/24"	10	Medium gray, damp CLAY, trace silt		0.2	*
			4						
			6			Medium gray, moist fine gravel and medium SAND, little clay	9'4"		
			9			Medium gray, damp CLAY, trace silt	9'8"		
10	6	10'-12'	3	24"/24"	7			0.2	
			3						
			4						
			5						
	7	12'-14'	2	24"/24"	6			0.2	
			3						
			3						
			4						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-12 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-13 SHEET 1 OF 1

CLIENT	GROUND WATER			FILE No.: 5858.035
GM	DATE	DEPTH	ELEVATION	Drilling Method: Hollow Stem Auger
PROJECT LOCATION	NA	NA	NA	Sampler Type: 2" dia. Stainless Steel Splitspoon
Burton Parcel, Flint, MI				Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 155 feet west of eastern fenceline and 68 feet north of fenceline that is north of warehouse
GROUND ELEVATION:
DATES: STARTED: 8/22/97 ENDED: 8/22/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	5	asphalt		0.2	
			6			Dark yellowish brown, damp medium SAND, trace silt, piece of concrete, no odor	3"		
			7						
			9						
	2	2'-4'	6	24"/24"	10	Dark yellowish brown, damp medium SAND, trace silt, piece of black plastic observed, no odor		0.2	
			6						
			8						
			9						
	3	4'-6'	3	24"/24"	12	Moderate yellowish brown, damp CLAY, trace silt, moist silt seam 5'4"-5'6", no odor	4'	0.2	
			4						
5			7						
			9						
	4	6'-8'	4	24"/24"	10	Moderate yellowish brown, damp CLAY, trace silt		0.2	*
			4						
			7			Medium gray, moist fine SAND, little silt	7'6"		
			8						
	5	8'-10'	1	24"/24"	10	Medium gray, moist fine SAND, little silt		0.2	
			2						
			2			Medium gray, damp CLAY and SILT	9'2"		
			3						
10	6	10'-12'	3	24"/24"	7	Medium gray, damp CLAY and SILT, some silt seams		0.2	
			2						
			3						
			3						
	7	12'-14'	3	24"/24"	6			0.2	
			4						
			5						
			6						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-13 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-14 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bood

BORING LOCATION: northern lot - approximately 135 feet west of eastern fenceline and 140 feet north of fenceline that is north of warehouse
GROUND ELEVATION:
DATES: STARTED: 8/22/97 ENDED: 8/22/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		n/a	n/a	asphalt		NA	
			n/a			Augered through concrete debris	3"		
			n/a						
			n/a						
			n/a						
	2	2'-4'	5	24"/18"	10	Dark gray, damp silty fine SAND, pieces of wood, slight oil odor	2'6"	2.2	*
			4						
			4						
			4						
	3	4'-6'	5	24"/24"	12			1.4	
			4						
5			4						
			5						
	4	6'-8'	4	24"/24"	10	Moderate yellowish brown, damp CLAY, some silt, no odor, some moist silt seams	6'	1	
			3						
			4						
			4						
	5	8'-10'	4	24"/24"	10			0.6	
			5						
			6						
			9						
10	6	10'-12'	4	24"/24"	7	Moderate yellowish brown, wet medium SAND, little silt	10'	1.2	
			6						
			7						
			10						
	7	12'-14'	4	24"/24"	6	Moderate yellowish brown, wet medium SAND, little silt		0.8	
			5						
			7			Medium gray, damp CLAY, trace silt	13'6"		
			8						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-14 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-15 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 168 feet west of eastern fenceline and 140 feet north of fenceline that is north of warehouse
GROUND ELEVATION:
DATES: STARTED: 8/22/97 ENDED: 8/22/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	5	asphalt		1.0	
			2			Dark Gray, damp SILT, little fine sand	3"		
			3						
			3						
	2	2'-4'	2	24"/24"	8			19.6	
			3						
			5						
			5						
	3	4'-6'	3	24"/24"	7	Moderate yellowish brown, damp CLAY, slight petro odor	4'	49.0	*
			3						
5			4			Moderate gray, moist fine SAND, trace silt	5'6"		
			5						
	4	6'-8'	3	24"/24"	48			3.2	
			3						
			45						
			n/a						
	5	8'-10'	3	24"/24"	11	Moderate gray, damp CLAY, trace silt	8'	0.4	
			6						
			5						
			4						
10	6	10'-12'	3	24"/24"	8			0.2	
			5						
			3						
			3						
	7	12'-14'	3	24"/24"	10	Moderate gray, damp CLAY, trace silt, some silt seams		0.2	
			4						
			6						
			7						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-15 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-16 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Burton, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No 5858 035 Drilling Method Hollow Stem Auger Sampler Type 2" dia Stainless Steel Splitspoon Hammer 140 lbs Fall 30"

O'BRIEN & GERE GEOLOGIST Tony Finch
BORING CO. Carlo Environmental Technologies, Inc
FOREMAN Don Bond

BORING LOCATION northern lot - approximately 66 feet south of the north fenceline and 69 feet southeast of the light on the north wall
GROUND ELEVATION
DATES STARTED 8 25 97 ENDED 8 25 97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	5	asphalt		8.4	*
			2			Dark gray, damp SILT, little sand	4"		
			3						
			5						
	2	2'-4'	2	24"/24"	6	Black stained SILT, some clay, trace of sand		7.2	
			3						
			3						
			5						
	3	4'-6'	1	24"/12"	3			2.8	
			2						
5			1			Dark gray, damp SILT, some clay			
			1						
	4	6'-8'	2	24"/24"	6	Olive moderate yellowish brown, damp SILT and CLAY, trace sand		0.4	
			3						
			3						
			3						
	5	8'-10'	1	24"/24"	4	Olive moderate yellowish brown, damp SILT and CLAY, grades to wet medium sand at 9'		0.6	
			2						
			2						
			2						
10	6	10'-12'	2	24"/24"	6	Moderate gray, damp CLAY, trace of silt and sand	10'	0.2	
			3						
			3			Moderate gray, damp CLAY, trace of silt and sand			
			4			Moderate gray, damp soft silty CLAY	11'8"		
	7	12'-14'	1	24"/2"	5			0.6	
			1						
			4						
			4						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-16 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-17 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 30 feet south of the north fenceline and 36 feet southeast of the light on the north wall
GROUND ELEVATION:
DATES: STARTED: 8/25/97 ENDED: 8 25 97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	REMKS*
0	1	0'-2'		18"/18"	7	asphalt		0.2	
			2			Moderate yellowish brown, damp SILT and SAND	4"		
			5						
			6						
	2	2'-4'	3	24"/24"	5	Moderate yellowish brown, damp SILT and SAND, petroleum odor		5.2	
			3						
			2						
			3						
	3	4'-6'	2	24"/24"	5			42	*
			2						
5			3						
			3						
	4	6'-8'	2	24"/24"	7	Moderate yellowish brown, damp SILT and SAND, clayey		14.8	
			2						
			5			Moderate yellowish brown, moist medium SAND, trace silt	7'2"		
			8						
	5	8'-10'	2	24"/24"	8	Dark yellowish brown, damp SILT, trace sand	8'	1.4	
			3						
			5						
			7						
10	6	10'-12'	3	24"/24"	11	Medium gray, damp CLAY, trace silt	10'	0.8	
			5						
			6			Medium gray, damp, fine SAND, little silt	11'4"		
			8						
	7	12'-14'	3	24"/24"	10	Medium gray, damp CLAY, trace silt	12'	0.6	
			5						
			5						
			7						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-17 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-18 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE: NA DEPTH: NA ELEVATION: NA	FILE No.: 5858 035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 132 feet south of the north fenceline and 140 feet north of the fenceline that is north of warehouse
GROUND ELEVATION:
DATES STARTED: 8/25/97 ENDED: 8/25/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	6	asphalt		0.8	
			2			Moderate yellowish brown, dry SILT, trace sand	5"		
			4						
			6						
	2	2'-4'	3	24"/24"	8	Moderate yellowish brown, dry SILT, trace sand, little clay		0.6	
			3						
			5						
			5						
	3	4'-6'	1	24"/24"	8	Moderate yellowish brown, damp CLAY, little silt, sand seam 3"	4'	0.4	
			3						
5			5						
			6						
	4	6'-8'	2	24"/24"	12	Moderate yellowish brown, damp CLAY, little silt		0.6	*
			6						
			6			Moderate yellowish brown, moist medium SAND, little silt	7'6"		
			9						
	5	8'-10'	3	24"/24"	6	Moderate yellowish brown, moist medium SAND, little silt, clay lens		0.6	
			3						
			3						
			3						
10	6	10'-12'	1	24"/24"	8	Medium gray, damp CLAY, trace silt	10'	0.8	
			3						
			5						
			6						
	7	12'-14'	2	24"/24"	6	Medium gray, damp CLAY, moist silt lens		0.6	
			3						
			3						
			6						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-18 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-19 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 162 feet west of the east fenceline and 102 feet north of the broken bituminous surface
GROUND ELEVATION:
DATES: STARTED: 8/25/97 ENDED: 8/25/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	6	asphalt		12.4	
			3			Moderate yellowish brown, damp CLAY, some silt	4"		
			3						
			4						
	2	2'-4'	4	24"/24"	12	Moderate yellowish brown, damp CLAY, some silt		15.0	*
			4						
			8			Moderate yellowish brown, damp medium SAND, little silt	3'6"		
			7						
	3	4'-6'	1	24"/24"	6	Moderate yellowish brown, damp medium SAND, little silt, trace fine gravel		1.0	
			3						
5			3						
			4						
	4	6'-8'	2	24"/24"	11	Medium brown, moist medium-coarse SAND, trace silt	6'	0.8	
			4						
			7						
			8						
	5	8'-10'	2	24"/24"	9	Medium brown, moist medium-coarse SAND, trace silt		0.4	
			4						
			5						
			5			Medium brown, damp CLAY, trace silt	9'		
10	6	10'-12'	2	24"/24"	4	Medium brown, damp CLAY, trace silt		0.4	
			2						
			2						
			3						
	7	12'-14'	3	24"/24"	7			0.4	
			3						
			4						
			5						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-19 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-20 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch BORING CO.: Carlo Environmental Technologies, Inc. FOREMAN: Don Bond	BORING LOCATION: northern lot - approximately 177 feet west of the east fenceline and 30 feet north of the fenceline that is north of warehouse GROUND ELEVATION: DATES: STARTED 8/25/97 ENDED: 8/25/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	6	asphalt		0.8	
			3			Moderate yellowish brown, damp SILT, little sand	4"		
			3						
			4						
	2	2'-4'	3	24"/24"	7	Moderate yellowish brown, damp SILT, little sand		2.4	
			3						
			4						
			5						
	3	4'-6'	2	24"/24"	10	Moderate yellowish brown, damp SILT, little sand		2.6	*
			4						
5			6			Moderate yellowish brown, damp to moist SAND, trace silt	5'6"		
			7						
	4	6'-8'	2	24"/24"	11	Moderate yellowish brown, damp to moist SAND, trace silt		0.2	
			5						
			6			Medium brown, damp SILT, little clay	7'		
			7						
	5	8'-10'	3	24"/24"	7	Mediun-dark gray, damp SILT, little clay		1.8	
			3						
			4						
			5						
10	6	10'-12'	3	24"/24"	7	Mediun-dark gray, damp SILT, little clay		0.6	
			3						
			4			Moderate yellowish brown, moist-wet, medium SAND, little silt	11'		
			5						
	7	12'-14'	3	24"/24"	9			0.6	
			4						
			5						
			6						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-20 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-21 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: broken bituminous surface - approximately 129 feet from the northeast corner of warehouse and 26 feet from the street light
GROUND ELEVATION:
DATES: STARTED: 8/25/97 ENDED: 8/25/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		24"/24"	8	Moderate yellowish brown, damp medium SAND, little silt		4.0	
			4						
			3						
			5						
			7						
	2	2'-4'	4	24"/24"	9	Medium gray, some SILT, petroleum odor	2'	19.2	
			5						
			4						
			7						
	3	4'-6'	3	24"/24"	9	Medium gray, damp SILT, little clay		18.0	
			4						
5			5						
			6						
	4	6'-8'	3	24"/24"	17	Medium gray, damp SILT, some clay		30.0	*
			7						
			10						
			12						
	5	8'-10'	3	24"/24"	7	Medium gray, damp CLAY, trace silt	8'	0.2	
			3						
			4						
			7						
10	6	10'-12'	2	24"/24"	7	Medium gray, damp CLAY, trace silt		0.0	
			3						
			4						
			6						
	7	12'-14'	3	24"/24"	9			0.0	
			4						
			5						
			7						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-21 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-22 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 76 feet south of lot fenceline and 78 feet southeast of southwest corner warehouse
GROUND ELEVATION:
DATES: STARTED: 8/25 97 ENDED: 8/25/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	3	asphalt		1.4	
			1			Moderate yellowish brown-black, damp SILT, pieces of glass, wood, porcelain	6"		
			2						
			2						
	2	2'-4'	2	24"/12"	3			1.4	*
			1						
			2			Medium brown-medium gray, damp SILT, trace clay, no debris			
			2						
	3	4'-6'	3	24"/24"	9	Moderate yellowish brown, damp CLAY, some silt, 3" sand lens	4'	1.2	
			4						
5			5						
			7						
	4	6'-8'	3	24"/24"	12	Olive, moderate yellowish brown, damp CLAY, some silt, 3" sand lens		0.0	
			5						
			7			Medium gray, damp SILT, little clay	7'6"		
			7						
	5	8'-10'	2	24"/24"	8	Medium gray, damp CLAY, little silt	8'	0.2	
			3						
			5						
			7						
10	6	10'-12'	1	24"/24"	4	Medium gray, damp CLAY, little silt		0.2	
			2						
			2						
			3						
	7	12'-14'		24"/				0.2	
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-22 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-23 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Burton, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 159 feet south of warehouse and 111 feet east of light post, BM = ?
GROUND ELEVATION:
DATES: STARTED: 8/25/97 ENDED: 8/25/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	REMARKS
0	1	0'-2'		18" 18"	9	asphalt		0.8	
			4			Moderate yellowish brown, damp medium SAND, trace silt	6"		
			5						
			7						
	2	2'-4'	5	24"/6"	8			3.8	
			4						
			4			Debris - glass, paper, cardboard, solvent odor	3'6"		
			14						
	3	4'-6'	7	18"/12"	60			26	
			10						
5			50			Rubber, carpet, cardboard - burnt odor			
	4	6'-8'	12	24"/12"	15	Carpet, cardboard		2.2	
			8						
			7						
			8						
	5	8'-10'	6	24"/NR"	9	No recovery		NA	
			5						
			4						
			4						
10	6	10'-12'	6	24"/NR"	12	No recovery		NA	
			6						
			6						
			8						
	7	12'-14'	5	24"/24"	13	Moderate yellowish brown, damp SILT, little sand, little clay	12'	0.0	
			6						
15			7						
			6						
	8	14'-16'	2	24"/24"	7	Moderate yellowish brown, damp CLAY, trace silt	14'	0.0	
			3						
			4			Moderate yellowish brown, damp CLAY, trace silt			
			6						
						EOB @ 16 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.

Subsequent to soil sampling activities OBG SB-23 was backfilled with the soil cuttings and capped with quickrete.

"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-24 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 159 feet south of wall and 78 feet east of light post. BM=3
GROUND ELEVATION:
DATES: STARTED: 8/26/97 ENDED: 8/26/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS[A]
0	1	0'-2'		18"/18"	5	asphalt		1.0	
			2			Pieces of asphalt and glass	6"		
			3						
			2						
	2	2'-4'	2	24"/18"	7	Moderate yellowish brown, damp SILT, little sand	2'	1.4	
			3						
			4						
			3						
	3	4'-6'	2	24"/24"	6	Grades to medium gray, damp CLAY, some silt	4'	0.6	
			3						
5			3						
			5						
	4	6'-8'	2	24"/24"	10	Moderate yellowish brown, damp medium SAND, trace silt	6'	0.4	*
			4						
			6			Moderate yellowish brown, damp CLAY, some silt	7'		
			5						
	5	8'-10'	46	24"/24"	14	Medium gray, wet SILT, trace sand	8'	0.2	
			5						
			9						
10	6	10'-12'	3	24"/24"	8	Moderate yellowish brown-medium gray, damp CLAY, trace silt	10'	0.2	
			4						
			4						
			4						
	7	12'-14'	4	24"/24"	10	Moderate yellowish brown-medium gray, damp CLAY, trace silt		0.2	
			5						
			5						
			6						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-24 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-25 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: northern lot - approximately 27 feet south of the north fenceline
GROUND ELEVATION:
DATES: STARTED: 8/26/97 ENDED: 8/26/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18":18"	6	asphalt		0.4	
			3			Dark brown, damp SILT, little clay	6"		
			3						
			3						
	2	2'-4'	2	24"/24"	5	Moderate yellowish brown, damp SILT, some clay		0.4	
			2						
			3						
			3						
	3	4'-6'	2	24"/24"	5	Moderate yellowish brown, damp CLAY, little silt	4'	0.4	*
			2						
5			3						
			4						
	4	6'-8'	3	24"/24"	12	Moderate yellowish brown, damp fine SAND, trace silt	6'	0.6	
			6						
			6						
			7			Moderate yellowish brown, damp CLAY, trace silt	7'10"		
	5	8'-10'	3	24"/24"	15	Medium gray, damp CLAY, trace silt		0.2	
			5						
			10			Grayish brown, wet fine SAND, little silt	9'		
			4						
10	6	10'-12'	3	24"/12"	9			0.2	
			4						
			5			Medium gray, damp CLAY, trace silt	11'		
			7						
	7	12'-14'	3	24"/24"	8	Medium gray, damp CLAY, trace silt		0.2	
			4						
			4						
			6						
						EOB@14 fbg			

NOTES:

PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-25 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-26 SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: broken bituminous surface - approximately 99 feet north of the northeast corner of warehouse and 33 feet south of the street light
GROUND ELEVATION:
DATES: STARTED: 8/26/97 ENDED: 8/26/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		24" 24"	14	asphalt		0.4	
			9			Light yellowish brown, damp SILT, little sand	6"		
			9						
			5						
			8						
	2	2'-4'	2	24"/24"	7	Moderate yellowish brown, damp SILT, trace fine sand		0.2	
			3						
			4						
			4						
	3	4'-6'	2	24"/24"	9	Moderate yellowish brown, damp SILT, trace sand, 2" sand seam		0.4	*
			4						
5			5						
			5						
	4	6'-8'	3	24"/24"	9	Moderate yellowish brown, damp SILT, trace sand		0.4	
			4						
			5			Moderate yellowish brown, wet medium SAND, little silt	7'		
			7						
	5	8'-10'	5	24"/24"	13	Medium gray, damp CLAY, little silt	8'	0.4	
			6						
			7						
			9						
10	6	10'-12'	2	24"/24"	6	Medium gray, damp CLAY, little silt		0.2	
			3						
			3						
			5						
	7	12'-14'	3	24"/24"	9			0.4	
			4						
			5						
			7						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-26 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-27 SHEET 1 OF 1
CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE DEPTH ELEVATION NA NA NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 117 feet south of fenceline along southern warehouse and 64 feet northeast of light post, BM#3
GROUND ELEVATION:
DATES: STARTED: 8/26/97 ENDED: 8 26 97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
0	1	0'-2'		18"/18"	2	asphalt		0.8	
			1			Moderate yellowish brown, damp SILT, little sand	6"		
			1						
			1						
			1						
	2	2'-4'	3	24"/24"	10	Moderate yellowish brown, damp SILT, little sand		0.4	*
			5						
			5			Light-moderate yellowish brown, damp medium SAND, trace silt	3'		
			8						
	3	4'-6'	3	24"/24"	4	Moderate yellowish brown-medium gray, damp CLAY, trace silt	4'	0.2	
			2						
5			2						
			5						
	4	6'-8'	4	24"/24"	10	Moderate yellowish brown-medium gray, damp CLAY, trace silt		0.2	
			5						
			5						
			7						
	5	8'-10'	4	24"/24"	11	Sand lens at 8'8" = 4" thick		0.2	
			5						
			6						
			6						
10	6	10'-12'	3	24"/24"	9			0.2	
			4						
			5						
			4						
	7	12'-14'	4	24"/	9			0.2	
			4						
			5						
			6						
						EOB@14 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-27 was backfilled with the soil cuttings and capped with quickrete.
"*" indicates top of 24" discrete soil sample interval collected for laboratory analysis.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-1D SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Burton, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer: 140 lbs. Fall: 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot-approximately 96 feet north of southern fenceline and 28 feet west of eastern fenceline
GROUND ELEVATION:
DATES: STARTED: 8/26/97 ENDED: 8/26/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	REMARKS
5	1	4'-6'	12	24"/24"	12	Asphalt, dark gray, damp SILT, some clay, piece of concrete, petroleum odor		1.2	
			9						
			3						
			4						
10	2	9-11'	5	24"/24"	21	Medium gray, damp SILT, trace clay		0.8	
			9						
			12						
			16						
15	3	14-16'	1	24"/24"	2	Dark gray-black, wet SILT, little fine sand, slight solvent odor		2.4	
			1						
			1						
			1						
20	4	19-21'	3	24"/6"	3			50.2	
			1						
			2			Black, wet SILT, little fine gravel, pieces of wood, strong solvent odor			
			5						
25	5	24-26'	26	24"/4"	22			16.4	
			13			Black, wet fine GRAVEL, some medium-coarse sand	25'8"		
			9						
			4						
30	6	29-31'	2	24"/12"	2			18.6	
			1			Dark brown, wet organic fiberous PEAT	30'		
			1						
			1						
35	7	34-36'	2	24"/24"	6	Dark brown, moist organic fiberous PEAT		6.4	
			3						
			3						
			4						
40	8	39-41'	1	24"/24"	4	Dark brown, moist organic fiberous PEAT		5.6	
			2						
			2						
			2						
45	9	44-46'	1	24"/24"	2	Dark gray-black, damp MARL, trace shells	44'	0.8	
			1						
			1						
			1						
50	10	49-51'	1	24"/6"	2			0.8	
			1			Light gray, damp CLAY, some sand, trace silt	50'6"		
			1						
			1						
	11	51-53'	5	24"/24"	11	Medium gray, damp CLAY, trace sand, trace silt		0.4	
			6						
			5						
			5						
						EOB @ 53 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-1D was backfilled with the soil cuttings and capped with quickrete.

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O'BRIEN & GERE ENGINEERS, INC.	SOIL BORING LOG	LOG NUMBER: OBG SB-2D SHEET 1 OF 1

CLIENT GM PROJECT LOCATION Burton Parcel, Flint, MI	GROUND WATER DATE / DEPTH / ELEVATION NA / NA / NA	FILE No.: 5858.035 Drilling Method: Hollow Stem Auger Sampler Type: 2" dia. Stainless Steel Splitspoon Hammer 140 lbs Fall 30"

O'BRIEN & GERE GEOLOGIST: Tony Finch
BORING CO.: Carlo Environmental Technologies, Inc.
FOREMAN: Don Bond

BORING LOCATION: southern lot - approximately 42 feet west of eastern fenceline and 75 feet south of the northern fenceline
GROUND ELEVATION:
DATES: STARTED: 8/26/97 ENDED: 8/26/97

DEPTH	SAMPLE No.	SAMPLE DEPTH	BLOWS /6"	PENETRATION/ RECOVERY	"N" VALUE	SAMPLE DESCRIPTION	STRATUM CHANGE DEPTH	PID	RMKS*
5	1	4'-6'	3	24"/6"	6			3.8	
			3			Black, damp SILT, pieces of plastic, glass			
			3						
			3						
10	2	9-11'	1	24"/24"	5	Medium gray, damp CLAY, some silt	9'	1	
			2			Medium-dark gray, moist medium SAND, some silt	9'6"		
			3						
			4						
15	3	14-16'	1	24"/24"	4	Medium gray, damp CLAY, trace silt	14'	0.8	
			2						
			2						
			2						
20	4	19-21'	2	24"/24"	9	Medium gray, damp CLAY, trace silt		0.6	
			4						
			5						
			6						
25	5	24-26'	1	24"/6"	5			0.2	
			2						
			3			Medium gray, wet coarse SAND and fine GRAVEL	25'6"		
			3			Medium gray, damp CLAY, trace silt	25'8"		
						EOB @ 26 fbg			

NOTES:
PID (HNU P101) readings shown in parts per million.
Subsequent to soil sampling activities OBG SB-2D was backfilled with the soil cuttings and capped with quickrete.

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APPENDIX B

Soil Analytical Data Sheets

O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8725
Samp. Description: OBG SB-8 (4-6')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 89.7
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	810.	6010A	08/26/97	08/27/97	082697S1	1	

Notes:

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J-Estimated value

Authorized: Monika Santucci
Date: September 9,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8726
Samp. Description: OBG SB-9 (4-6')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 68.8
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	20.	6010A	08/26/97	08/27/97	082697S1	1	

Notes:

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Authorized: Monika Santucci
Date: September 9,1997 Monika Santucci

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O'Brien & Gere Laboratories,Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8723
Samp. Description: OBG SB-6 (8-10')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 78.0
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	17.	6010A	08/26/97	08/27/97	082697S1	1	

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8724
Samp. Description: OBG SB-7 (8-10')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 79.5
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	1100.	6010A	08/26/97	08/27/97	082697S1	1	

Notes:

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Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8721
Samp. Description: OBG SB-4 (2-4')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 88.9
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	3900.	6010A	08/26/97	08/27/97	082697S1	1	

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Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8722
Samp. Description: OBG SB-5 (6-8')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 89.4
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	6.	6010A	08/26/97	08/27/97	082697S1	1	

Notes:

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Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8719
Samp. Description: OBG SB-2 (6-8')
Units: mg/Kg Dry weight

Collected: 08/20/97
Received: 08/22/97

Matrix: Solid
%Solids: 81.4
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	1100.	6010A	08/26/97	08/27/97	082697S1	1	

Notes:

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8720
Samp. Description: OBG SB-3 (6-8')
Units: mg/Kg Dry weight

Collected: 08/21/97
Received: 08/22/97

Matrix: Solid
%Solids: 87.6
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	100.	6010A	08/26/97	08/27/97	082697S1	1	

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8726
Samp. Description: OBG SB-9 (4-6')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 68.8
Sample size: 1 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<7.	1		
Dichloromethane	<7.	1		
Ethylbenzene	<7.	1		
Toluene	<7.	1		
Xylenes (total)	<22.	1		
Bromochloromethane (surrogate)	71.%	1	56-116	
1,4-Difluorobenzene (surrogate)	67.%	1	59-122	
Trifluorotoluene (surrogate)	68.%	1	55-126	

Notes:

Fuel pattern was present

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Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

O'Brien & Gere Laboratories,Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8718
Samp. Description: OBG SB-1 (10-12')
Units: mg/Kg Dry weight

Collected: 08/20/97
Received: 08/22/97

Matrix: Solid
%Solids: 62.9
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	78.	6010A	08/26/97	08/27/97	082697S1	1	

Notes:

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Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8724
Samp. Description: OBG SB-7 (8-10')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 79.5
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<310.	1		
Dichloromethane	<310.	1		
Ethylbenzene	1700.	1		
Toluene	<310.	1		
Xylenes (total)	2300.	1		
Bromochloromethane (surrogate)	77.%	1	56-116	
1,4-Difluorobenzene (surrogate)	86.%	1	59-122	
Trifluorotoluene (surrogate)	88.%	1	55-126	

Notes:

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Date: September 5,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8725
Samp. Description: OBG SB-8 (4-6')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 89.7
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<280.	1		
Dichloromethane	<280.	1		
Ethylbenzene	370.	1		
Toluene	<280.	1		
Xylenes (total)	2100.	1		
Bromochloromethane (surrogate)	83.%	1	56-116	
1,4-Difluorobenzene (surrogate)	84.%	1	59-122	
Trifluorotoluene (surrogate)	84.%	1	55-126	

Notes:

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8722
Samp. Description: OBG SB-5 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 89.4
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	76.%	1	56-116	
1,4-Difluorobenzene (surrogate)	76.%	1	59-122	
Trifluorotoluene (surrogate)	77.%	1	55-126	

Notes:

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Date: September 5,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8723
Samp. Description: OBG SB-6 (8-10')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 78.0
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<320.	1		
Dichloromethane	<320.	1		
Ethylbenzene	550.	1		
Toluene	<320.	1		
Xylenes (total)	3400.	1		
Bromochloromethane (surrogate)	85.%	1	56-116	
1,4-Difluorobenzene (surrogate)	88.%	1	59-122	
Trifluorotoluene (surrogate)	89.%	1	55-126	

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Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8720
Samp. Description: OBG SB-3 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 87.6
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<290.	1		
Dichloromethane	<290.	1		
Ethylbenzene	<290.	1		
Toluene	<290.	1		
Xylenes (total)	<860.	1		
Bromochloromethane (surrogate)	75.%	1	56-116	
1,4-Difluorobenzene (surrogate)	88.%	1	59-122	
Trifluorotoluene (surrogate)	88.%	1	55-126	

Notes:

Fuel pattern was present

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8721
Samp. Description: OBG SB-4 (2-4')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/21/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 88.9
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<280.	1		
Dichloromethane	<280.	1		
Ethylbenzene	<280.	1		
Toluene	<280.	1		
Xylenes (total)	<840.	1		
Bromochloromethane (surrogate)	86.%	1	56-116	
1,4-Difluorobenzene (surrogate)	87.%	1	59-122	
Trifluorotoluene (surrogate)	88.%	1	55-126	

Notes:

Fuel pattern was present

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Date: September 5, 1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8718
Samp. Description: OBG SB-1 (10-12')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/20/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 62.9
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<400.	1		
Dichloromethane	<400.	1		
Ethylbenzene	<400.	1		
Toluene	<400.	1		
Xylenes (total)	<1200.	1		
Bromochloromethane (surrogate)	80.%	1	56-116	
1,4-Difluorobenzene (surrogate)	95.%	1	59-122	
Trifluorotoluene (surrogate)	96.%	1	55-126	

Notes:

Fuel pattern was present

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F8719
Samp. Description: OBG SB-2 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 250 Instrument: 9001

Collected: 08/20/97
Received: 08/22/97
Prepared: 09/03/97
Analyzed: 09/03/97

Matrix: Solid
QC Batch: 090397S1
%Solids: 81.4
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<310.	1		
Dichloromethane	<310.	1		
Ethylbenzene	1900.	1		
Toluene	<310.	1		
Xylenes (total)	<920.	1		
Bromochloromethane (surrogate)	80.%	1	56-116	
1,4-Difluorobenzene (surrogate)	92.%	1	59-122	
Trifluorotoluene (surrogate)	93.%	1	55-126	

Notes:

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- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 3,1997 Monika Santucci

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Job No. 5858.035
Sheet 1 of 1

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Address: 39830 Grand River Ave Ste B-2
Phone: (248)426-8870

CHAIN OF CUSTODY

5061

CLIENT: GM
LOCATION: Burton Parcel Flint, MI

COLLECTED BY: AJ Finch
(Signature)

Item	SAMPLE DESCRIPTION	Depth	Time	Pres (Y, N)	Matrix[1]	Type[2]	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-1 (10-12')	—	1050	N	Soil	G	2-4oz.	BTEX + MTBE + Naphthalene Chlorides 8015/8021 LEAD 6010
2	OBG SB-2 (6-8')	—	1320	N	Soil	G	2-4oz.	↓ ↓
3								
4								
5								
6								
7								
8								
9								
10								

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Prepared at the Request of Counsel and in Anticipation of Litigation.

[1] Matrix = water, wastewater, air, sludge, sediment, etc.
[2] Type = grab, composite

Relinquished by: / of:	Date	Time	Received by: / of:	Date	Time
Anthony Jotl O'Brien + Gere	8/20/97	1600			
Relinquished by: / of:			Received by: / of:		
Use this space if shipped via courier. Relinquished by: / of: O'Brien & Gere	8/20/97	1600	Courier Name: Airborne. Attach courier receipt to COC.		
Relinquished by: / of:			Received by: B Powling of OBG Tulsa	8/22/97	09:30

Samples packed on ice. Airborne # 7293199045 Cooler temp 7°C.
Samples anticipated to be impacted.
+ Samples collected 5/20/97 per containers BJP

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Prepared at the Request of Counsel and in Anticipation of Litigation.

Job No. 5858.035
Sheet 1 of 1

Office: Novi, MI
Address: 39830 Grand River Ave Ste B-2
Phone: (248) 426-8970

CHAIN OF CUSTODY

5061

CLIENT: GM
LOCATION: BURTON PARCEL

COLLECTED BY: (Signature) AJ Finch

Item	SAMPLE DESCRIPTION	Depth	Time	Pres (Y, N)	Matrix[1]	Type[2]	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-3	6-8'	925	N	Soil	G	2-40z.	BTEX + METHYLENE CHLORIDE 8240/8020 +
2	OBG SB-4	2-4'	1020					LEAD 6010
3	OBG SB-5	6-8'	1110					
4	OBG SB-6	8-10'	1150					
5	OBG SB-7	8-10'	1340					
6	OBG SB-8	4-6'	1415					
7	OBG SB-9	4-6'	1510	↓	↓	↓	↓	↓
8								
9								
10								

[1] Matrix = water, wastewater, air, sludge, sediment, etc.

[2] Type = grab, composite

	Date	Time		Date	Time
Relinquished by: [signature] of: O'BRIEN + GERE	8/21/97	1700	Received by: _____ of:		
Relinquished by: _____ of:			Received by: _____ of:		
Use this space if shipped via courier. Relinquished by: [signature] of: O'BRIEN + GERE	8/21/97	1700	Courier Name: AIRBORNE Attach courier receipt to COC		
Relinquished by: _____ of:			Received by: R. Bowling of: O'BRIEN Labs	8/22/97	09:30

SAMPLES PACKED ON ICE. AIRBORNE # 7293198846 Cooler Temp 4°C

* SAMPLES ANTICIPATED TO BE IMPACTED.

! Samples collected 8/21/97 per containers BTP

O'BRIEN & GERE
LABORATORIES, INC.

SUBJECT	SHEET	BY	DATE	JOB NO.
GM - Flint, MI - Burton Parcel		BPP	8/22/97	6009.004.517

CNHA72

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FOR SHIPMENTS WITHIN U.S. ONLY

PLEASE TYPE OR PRINT

EXP X (Letter - 150 lbs)
NAS (Letter - 5 lbs)
SDS (Letter - 150 lbs)

729 319 8846
729 319 8846

AIRBORNE EXPRESS.

Preprint Format No. | Origin | Aircraft Number 729319884 6

Method of Payment: [X] Bill Sender; [ ] Bill Receiver; [ ] Bill 3rd Party; [ ] Paid in Advance

Assumed sender unless otherwise noted

Billing Reference will appear on invoice: 58534035

NO. OF PACKAGES: 1 | WEIGHT (LBS.) | CHECK IF: [ ] LETTER EXPRESS [ ] EXP. PACK

Special Instructions: [ ] SAT [ ] HAA [ ] LAB

FROM

TONY FINCH

TO

* 729319884 6 *

001 (01/97) S-05
PACKAGE LABEL

O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9081
Samp. Description: OBG SB-10 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/22/97
Received: 08/27/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 89.8
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	81.%	1	56-116	
1,4-Difluorobenzene (surrogate)	81.%	1	59-122	
Trifluorotoluene (surrogate)	80.%	1	55-126	

Notes:

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- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

5000 Brittonfield Parkway / Suite 300, Box 4942 / Syracuse, NY 13221 / (315) 437-0200

O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9082
Samp. Description: OBG SB-11 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/22/97
Received: 08/27/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 85.0
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<4.	1		
Bromochloromethane (surrogate)	77.%	1	56-116	
1,4-Difluorobenzene (surrogate)	77.%	1	59-122	
Trifluorotoluene (surrogate)	77.%	1	55-126	

Notes:

- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

5000 Brittonfield Parkway / Suite 300, Box 4942 / Syracuse, NY 13221 / (315) 437-0200

O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9083
Samp. Description: OBG SB-12 (8-10')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/22/97
Received: 08/27/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 85.0
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<4.	1		
Bromochloromethane (surrogate)	70.%	1	56-116	
1,4-Difluorobenzene (surrogate)	64.%	1	59-122	
Trifluorotoluene (surrogate)	64.%	1	55-126	

Notes:

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9084
Samp. Description: OBG SB-13 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/22/97
Received: 08/27/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 80.6
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<4.	1		
Bromochloromethane (surrogate)	82.%	1	56-116	
1,4-Difluorobenzene (surrogate)	81.%	1	59-122	
Trifluorotoluene (surrogate)	79.%	1	55-126	

Notes:

- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

O'Brien & Gere Laboratories,Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9085
Samp. Description: OBG SB-14 (2-4')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/22/97
Received: 08/27/97
Prepared:
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S1
%Solids: 87.2
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	70.%	1	56-116	
1,4-Difluorobenzene (surrogate)	70.%	1	59-122	
Trifluorotoluene (surrogate)	71.%	1	55-126	

Notes:

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9086
Samp. Description: OBG SB-15 (4-6')
Primary column: Y
Units: ug/Kg Dry weight
Column: RTX502.2 105m x 0.53mmI.D.
Dilution: 250 Instrument: Tracor540#4

Collected: 08/22/97
Received: 08/27/97
Prepared: 09/03/97
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090397S4
%Solids: 92.1
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<270.	1		
Dichloromethane	<270.	1		
Ethylbenzene	<270.	1		
Toluene	<270.	1		
Xylenes (total)	<810.	1		
Bromochloromethane (surrogate)	90.%	1	56-116	
1,4-Difluorobenzene (surrogate)	98.%	1	59-122	
Trifluorotoluene (surrogate)	91.%	1	55-126	

Notes:

Fuel pattern was present

- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9087
Samp. Description: OBG SB-16 (0-2')
Primary column: Y
Units: ug/Kg Dry weight
Column: RTX502.2 105m x 0.53mmI.D.
Dilution: 250 Instrument: Tracor540#4

Collected: 08/25/97
Received: 08/27/97
Prepared: 09/04/97
Analyzed: 09/05/97

Matrix: Solid
QC Batch: 090497S4
%Solids: 87.0
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<290.	1		
Dichloromethane	<290.	1		
Ethylbenzene	<290.	1		
Toluene	<290.	1		
Xylenes (total)	<860.	1		
Bromochloromethane (surrogate)	89.%	1	56-116	
1,4-Difluorobenzene (surrogate)	89.%	1	59-122	
Trifluorotoluene (surrogate)	86.%	1	55-126	

Notes:

Fuel pattern was present

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Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9088
Samp. Description: OBG SB-17 (4-6')
Primary column: Y
Units: ug/Kg Dry weight
Column: RTX502.2 105m x 0.53mmI.D.
Dilution: 250 Instrument: Tracor540#4

Collected: 08/25/97
Received: 08/27/97
Prepared: 09/03/97
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S4
%Solids: 86.4
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<290.	1		
Dichloromethane	<290.	1		
Ethylbenzene	<290.	1		
Toluene	<290.	1		
Xylenes (total)	<870.	1		
Bromochloromethane (surrogate)	98.%	1	56-116	
1,4-Difluorobenzene (surrogate)	102.%	1	59-122	
Trifluorotoluene (surrogate)	98.%	1	55-126	

Notes:

Fuel pattern was present

- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9089
Samp. Description: OBG SB-18 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/25/97
Received: 08/27/97
Prepared:
Analyzed: 09/05/97

Matrix: Solid
QC Batch: 090597S1
%Solids: 86.8
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	84.%	1	56-116	
1,4-Difluorobenzene (surrogate)	79.%	1	59-122	
Trifluorotoluene (surrogate)	82.%	1	55-126	

Notes:

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Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9090
Samp. Description: OBG SB-19 (2-4')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/25/97
Received: 08/27/97
Prepared:
Analyzed: 09/05/97

Matrix: Solid
QC Batch: 090597S1
%Solids: 90.5
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	81.%	1	56-116	
1,4-Difluorobenzene (surrogate)	79.%	1	59-122	
Trifluorotoluene (surrogate)	79.%	1	55-126	

Notes:

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Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

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O'Brien & Gere Laboratories,Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9091
Samp. Description: OBG SB-20 (4-6')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/25/97
Received: 08/27/97
Prepared:
Analyzed: 09/05/97

Matrix: Solid
QC Batch: 090597S1
%Solids: 94.4
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	86.%	1	56-116	
1,4-Difluorobenzene (surrogate)	79.%	1	59-122	
Trifluorotoluene (surrogate)	79.%	1	55-126	

Notes:

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- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9092
Samp. Description: OBG SB-21 (6-8')
Primary column: Y
Units: ug/Kg Dry weight
Column: RTX502.2 105m x 0.53mmI.D.
Dilution: 250 Instrument: Tracor540#4

Collected: 08/25/97
Received: 08/27/97
Prepared: 09/03/97
Analyzed: 09/04/97

Matrix: Solid
QC Batch: 090497S4
%Solids: 83.4
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<300.	1		
Dichloromethane	<300.	1		
Ethylbenzene	<300.	1		
Toluene	<300.	1		
Xylenes (total)	<900.	1		
Bromochloromethane (surrogate)	98.%	1	56-116	
1,4-Difluorobenzene (surrogate)	101.%	1	59-122	
Trifluorotoluene (surrogate)	102.%	1	55-126	

Notes:

Fuel pattern was present

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Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9093
Samp. Description: OBG SB-22 (2-4')
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/25/97
Received: 08/27/97
Prepared:
Analyzed: 09/05/97

Matrix: Solid
QC Batch: 090597S1
%Solids: 91.3
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	75.%	1	56-116	
1,4-Difluorobenzene (surrogate)	74.%	1	59-122	
Trifluorotoluene (surrogate)	74.%	1	55-126	

Notes:

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- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997

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O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9094
Samp. Description: OBG SB-23 (4-6')
Primary column: Y
Units: ug/Kg Dry weight
Column: RTX502.2 105m x 0.53mmI.D.
Dilution: 2500 Instrument: Tracor540#4

Collected: 08/25/97
Received: 08/27/97
Prepared: 09/03/97
Analyzed: 09/05/97

Matrix: Solid
QC Batch: 090597S4
%Solids: 81.3
Sample size: 4 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<3100.	1		
Dichloromethane	<3100.	1		
Ethylbenzene	49000.	1		
Toluene	<3100.	1		
Xylenes (total)	35000.	1		
Bromochloromethane (surrogate)	91.%	1	56-116	
1,4-Difluorobenzene (surrogate)	92.%	1	59-122	
Trifluorotoluene (surrogate)	94.%	1	55-126	

Notes:

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- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9081
Samp. Description: OBG SB-10 (6-8')
Units: mg/Kg Dry weight

Collected: 08/22/97
Received: 08/27/97

Matrix: Solid
%Solids: 89.8
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	5.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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of Litigation.

J-Estimated value

Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

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O'Brien & Gere Laboratories,Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9082
Samp. Description: OBG SB-11 (6-8')
Units: mg/Kg Dry weight

Collected: 08/22/97
Received: 08/27/97

Matrix: Solid
%Solids: 85.0
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	2.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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of Litigation.

J-Estimated value

Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9083
Samp. Description: OBG SB-12 (8-10')
Units: mg/Kg Dry weight

Collected: 08/22/97
Received: 08/27/97

Matrix: Solid
%Solids: 85.0
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	3.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9084
Samp. Description: OBG SB-13 (6-8')
Units: mg/Kg Dry weight

Collected: 08/22/97
Received: 08/27/97

Matrix: Solid
%Solids: 80.6
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	1.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9085
Samp. Description: OBG SB-14 (2-4')
Units: mg/Kg Dry weight

Collected: 08/22/97
Received: 08/27/97

Matrix: Solid
%Solids: 87.2
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	9.	6010A	09/03/97	09/04/97	090397S1	1	

Notes:

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Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

5000 Brittonfield Parkway / Suite 300, Box 4942 / Syracuse, NY 13221 / (315) 437-0200

O'Brien & Gere Laboratories,Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9086
Samp. Description: OBG SB-15 (4-6')
Units: mg/Kg Dry weight

Collected: 08/22/97
Received: 08/27/97

Matrix: Solid
%Solids: 92.1
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	4.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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Authorized: Monika Santucci
Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9087
Samp. Description: OBG SB-16 (0-2')
Units: mg/Kg Dry weight

Collected: 08/25/97
Received: 08/27/97

Matrix: Solid
%Solids: 87.0
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	290.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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J-Estimated value

Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

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Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9088
Samp. Description: OBG SB-17 (4-6')
Units: mg/Kg Dry weight

Collected: 08/25/97
Received: 08/27/97

Matrix: Solid
%Solids: 86.4
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	4.	6010A	09/03/97	09/04/97	09039751	1	

Notes:

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Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9089
Samp. Description: OBG SB-18 (6-8')
Units: mg/Kg Dry weight

Collected: 08/25/97
Received: 08/27/97

Matrix: Solid
%Solids: 86.8
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	3.	6010A	09/03/97	09/04/97	090397S1	1	

Notes:

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Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9090
Samp. Description: OBG SB-19 (2-4')
Units: mg/Kg Dry weight

Collected: 08/25/97
Received: 08/27/97

Matrix: Solid
%Solids: 90.5
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	1.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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Date: September 8,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9091
Samp. Description: OBG SB-20 (4-6')
Units: mg/Kg Dry weight

Collected: 08/25/97
Received: 08/27/97

Matrix: Solid
%Solids: 94.4
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	4.	6010A	09/03/97	09/04/97	090397S1	1	

Notes:

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Authorized: Monika Santucci
Date: September 8, 1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Method: 8010/8020

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9120
Samp. Description: OBG SB-27 2-4'
Primary column: Y
Units: ug/Kg Dry weight
Column: DB-VRX 75m X .45mm ID
Dilution: 1 Instrument: 9001

Collected: 08/26/97
Received: 08/28/97
Prepared:
Analyzed: 09/08/97

Matrix: Solid
QC Batch: 090897S1
%Solids: 89.1
Sample size: 5 g

Number of analytes: 8

Parameter	Result	Col	Surrog Limits	Notes
Benzene	<1.	1		
Dichloromethane	<1.	1		
Ethylbenzene	<1.	1		
Toluene	<1.	1		
Xylenes (total)	<3.	1		
Bromochloromethane (surrogate)	72.%	1	56-116	
1,4-Difluorobenzene (surrogate)	81.%	1	59-122	
Trifluorotoluene (surrogate)	81.%	1	55-126	

Notes:

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- Outside control limits J-Estimated value

Authorized: Monika Santucci
Date: September 9,1997 Monika Santucci

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9117
Samp. Description: OBG SB-24 4-6'
Units: mg/Kg Dry weight

Collected: 08/26/97
Received: 08/28/97

Matrix: Solid
%Solids: 87.2
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	4.	6010A	09/03/97	09/04/97	090397S1	1	

Notes:

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Authorized: Monika Santucci
Date: September 12, 1997 Monika Santucci

O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9118
Samp. Description: OBG SB-25 4-6'
Units: mg/Kg Dry weight

Collected: 08/26/97
Received: 08/28/97

Matrix: Solid
%Solids: 85.0
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	8.	6010A	09/03/97	09/04/97	09039781	1	

Notes:

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[illegible] in Anticipation

J-Estimated value

Authorized: Monika Santucci
Date: September 12,1997 Monika Santucci

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O'Brien & Gere Laboratories,Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9119
Samp. Description: OBG SB-26 6-8'
Units: mg/Kg Dry weight

Collected: 08/26/97
Received: 08/28/97

Matrix: Solid
%Solids: 88.9
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	3.	6010A	09/03/97	09/04/97	090397S1	1	

Notes:

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O'Brien & Gere Laboratories, Inc.

Analytical Results Trace Metals

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9120
Samp. Description: OBG SB-27 2-4'
Units: mg/Kg Dry weight

Collected: 08/26/97
Received: 08/28/97

Matrix: Solid
%Solids: 89.1
Number of analytes: 1

Parameter	Result	Method	Prepared	Analyzed	QC Batch	Dilut.	Note
Lead	6.	6010A	09/03/97	09/04/97	090397S1	1	

Notes:

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O'Brien & Gere Laboratories,Inc.

Analytical Results Wet Chemistry

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9117
Samp. Description: OBG SB-24 4-6'

Collected: 08/26/97
Received: 08/28/97 11:00

Matrix: Solid

Parameter	Result Units	Method	Prepared Analyzed	QC Batch	Note
% Total Solids	87.2 %	2540-G	09/02/97	090297S12	

Notes:

Sample: F9118
Samp. Description: OBG SB-25 4-6'

Collected: 08/26/97
Received: 08/28/97 11:00

Matrix: Solid

Parameter	Result Units	Method	Prepared Analyzed	QC Batch	Note
% Total Solids	85.0 %	2540-G	09/02/97	090297S12	

Notes:

Sample: F9119
Samp. Description: OBG SB-26 6-8'

Collected: 08/26/97
Received: 08/28/97 11:00

Matrix: Solid

Parameter	Result Units	Method	Prepared Analyzed	QC Batch	Note
% Total Solids	88.9 %	2540-G	09/02/97	090297S12	

Notes:

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J-Estimated value

Authorized: Monika Santucci
Date: September 11,1997 Monika Santucci

O'Brien & Gere Laboratories,Inc.

Analytical Results Wet Chemistry

Client: General Motors Corporation
Project: Flint, MI
Proj. Desc: Burton Parcel

Job No.: 6009.004.517
Certification NY No.: 10155R

Sample: F9120
Samp. Description: OBG SB-27 2-4'

Collected: 08/26/97
Received: 08/28/97 11:00

Matrix: Solid

Parameter	Result	Units	Method	Prepared	Analyzed	QC Batch	Note
% Total Solids	89.1	%	2540-G		09/02/97	090297S12	

Notes:

Sample: F9121
Samp. Description: Soil Cuttings

Collected: 08/26/97
Received: 08/28/97 11:00

Matrix: Solid

Parameter	Result	Units	Method	Prepared	Analyzed	QC Batch	Note
Flashpoint	>60.	deg. C	EPA 1010		09/09/97	09099781	
Reactive cyanide	<.25	mg/Kg Orig. wt.	EPA 9010A	09/05/97	09/11/97	090597S11	
Reactive sulfide	<5.0	mg/Kg Orig. wt.	EPA 9030		09/05/97	090597S11	
pH	7.5	STD units	EPA 9045C		09/02/97	090297S11	17

Notes:
17: pH analyzed outside recommended 15 minute holding time.

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Authorized: Monika Santucci
Date: September 11,1997 Monika Santucci

Job No. 5858.035

Office: NOVI, MI
Address: 39830 Grand River Ave
Phone: 248 426-8970

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Sheet 1 of 1

CHAIN OF CUSTODY

CLIENT: GM
LOCATION: BURTON PARCEL

COLLECTED BY: (Signature) AJ Finelli

Item	SAMPLE DESCRIPTION	Depth	Time	Pres (Y, N)	Matrix[1]	Type[2]	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-24	6-8'	900	N	Soil	G	2-4oz.	BTEX + METHYLENE CHLORIDE 8011/8020 LEAD 6010
2	OBG SB-25	4-6'	1325	↓	↓	↓	↓	↓
3	OBG SB-26	6-8'	1435					
4	OBG SB-27	2-4'	1515	↓	↓	↓	↓	↓
5	Soil Cuttings	—	—	N	Soil	C	5-4oz.	WASTE CHARAC. + TCLP
6								
7	TCLP: VOA, SV, Metals + TCLP Zn							
8	Tony Jenich on 8/27/97 for the							
9	soil cuttings samples.						(NS)	
10	TCLP Metals plus TCLP Zinc, TCLP Cu							

[1] Matrix = water, wastewater, air, sludge, sediment, etc.

[2] Type = grab, composite

Relinquished by: / of:	Date	Time	Received by: / of:	Date	Time
O'Brien + Gere	8/27/97	910			
Relinquished by: / of:			Received by: / of:		
Use this space if shipped by courier: Relinquished by: / of: O'Brien + Gere	8/27/97	910	Courier Name: Airborne Attach courier receipt to COC		
Relinquished by: / of:			Received by: / of: OBG Lab	8/28/97	11:00

SAMPLES PACKED ON ICE. AIRBORNE # 729 3199244
Date of collection was taken from sample containers
Cooler temperature - 9°C
Sample OBG SB-24 sample label has depth at 4-6'

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Job No. 5858.035
Sheet 1 of 1

Office: Novi, MI
Address: 24830 Grand River Ave Ste B-2
Phone: (248) 426-8870

CHAIN OF CUSTODY

CLIENT: GM
LOCATION: Burton Parcel Flint, MI

COLLECTED BY: (Signature) AJ Finch

Item	SAMPLE DESCRIPTION	Depth	Time	Pres. (Y, N)	Matrix[1]	Type[2]	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-1 (10-12')	-	1050	N	Soil	G	2 - 4oz.	BTEX + Naphthalene Chloride Lead 6010
2	OBG SB-2 (6-8')	-	1320	N	Soil	G	2 - 4oz.	↓ ↓
3								
4								
5								
6								
7								
8								
9								
10								

[1] Matrix = water, wastewater, air, sludge, sediment, etc.
[2] Type = grab, composite

	Date	Time		Date	Time
Relinquished by: [signature] of: O'Brien + Gere	8/20/97	1600	Received by: _____ of:		
Relinquished by: _____ of:			Received by: _____ of:		
Use this space if shipped via courier. Relinquished by: [signature] of: O'Brien + Gere	8/21/97	1600	Courier Name: Airborne Attach courier receipt to COC:		
Relinquished by: _____ of:			Received by: _____ of:		

Samples packed on ice. Airborne # 7293199045
* Samples anticipated to be impacted.

Job No. 5858.035

Sheet 1 of 1

Office: Novi, MI
Address: 39830 Grand River Ave Ste B-2
Phone: (248) 426-8970

CHAIN OF CUSTODY

CLIENT: GM
LOCATION: Buxton Parcel

COLLECTED BY: (Signature) AJ Finch

Item No.	SAMPLE DESCRIPTION	Depth	Time	Preserv. (Y, N)	Matrix*	Type**	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-3	6-8'	925	N	SO	G	2	BTEX + METHYLENE CHLORIDE by 8260
2	OBG SB-4	2-4'	1020					LEAD 6010
3	OBG SB-5	6-8'	1110					
4	OBG SB-6	8-10'	1150					
5	OBG SB-7	8-10'	1310					
6	OBG SB-8	4-6'	1415					
7	OBG SB-9	4-6'	1510	↓	↓	↓	↓	↓
8								
9								
10								

*Matrix: water, wastewater, air, sludge, solid, soil, etc.
**Type: G = grab, C = composite

Relinquished by: / of:	Date	Time	Received by: / of:	Date	Time
Relinquished by: / of:	Date	Time	Received by: / of:	Date	Time
Use this space if courier is used for Relinquished by: / of:	Date	Time	Courier Name: Attach courier receipt to COC	Date	Time
Relinquished by: / of:	Date	Time	Received by: / of:	Date	Time

SAMPLES PACKED ON ICE. AIRBORNE # 729 3198846

*Samples anticipated to be impacted.

Job No. 5858.035

Sheet 1 of 2

Office: Novi, MI

Address: 39830 Grand River Avenue

Phone: (248) 426-8970

...d in Anticipation ...stigation

CHAIN OF CUSTODY

CLIENT: GM
LOCATION: BURTON PARCEL

COLLECTED BY: (Signature) AJ FINCH

Item	SAMPLE DESCRIPTION	DATE	Depth	Time	Pres (Y, N)	Matrix[1]	Type[2]	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-10	8/22	6-8'	850	N	Soil	G	2-4oz	BTEX + MTBE + Naphthalene + Other 8260B + TCLP 8260B
2	OBG SB-11		6-8'	950					
3	OBG SB-12		8-10'	1080					
4	OBG SB-13		6-8'	1055					
5	OBG SB-14		2-4'	1330					
6	OBG SB-15	↓	4-6'	1425					
7	OBG SB-16	8/25	0-2'	950					
8	OBG SB-17		4-6'	1020					
9	OBG SB-18		6-8'	1110					
10	OBG SB-19	↓	2-4'	1220	↓	↓	↓	↓	↓

[1] Matrix = water, wastewater, air, sludge, sediment, etc.

[2] Type = grab, composite

	Date	Time		Date	Time
Relinquished by: [signature]	8/25	1810	Received by:		
cc: O'Brien + Gere			cc:		
Relinquished by:			Received by:		
cc:			cc:		
Use this space if shipped via courier Relinquished by: [signature]			Courier Name: Airborne		
cc: O'Brien + Gere	8/26	1810	Attach courier receipt to COC		
Relinquished by:			Received by:		
cc:			cc:		

Samples packed on ice - Airborne # 1061935810

Job No. 5858.035

Sheet 2 of 2

Office: ______________________

Address: ______________________

Phone: ______________________

CHAIN OF CUSTODY

CLIENT: GM
LOCATION: Buerton Parcel

COLLECTED BY: (Signature) AJ Finch

Item	SAMPLE DESCRIPTION		Depth	Time	Pres. (Y/N)	Matrix[1]	Type[2]	No. of Containers	ANALYSIS REQUESTED
1	0BG SB-20	1/25	4-6'	1310	N	Soil	G	2-4oz	BTEX & METHYLENE CHLORIDE [illegible] & LEAD 6010
2	0BG SB-21		6-8'	1410	↓	↓	↓	↓	↓
3	0BG SB-22		2-4'	1510	↓	↓	↓	↓	↓
4	0BG SB-23		4-6'	1610	↓	↓	↓	↓	↓
5	0BG SB-12	[illegible]			Y	AQ	G	3	[illegible] TETRACHLOROETHENE [illegible] 8021/8020
6	0BG SB-14				↓	↓	↓	↓	LEAD, ZINC, ARSENIC 6010
7	0BG SB-10	1/25			↓	↓	↓	↓	↓
8	[illegible] BMV								
9									
10									

1 Matrix: soil, water, wastewater, air, sludge, sediment, etc.

2 Type: grab, composite

Relinquished by: [illegible] of: [illegible]	Date	Time	Received by: of:	Date	Time
Relinquished by: of:	Date	Time	Received by: of:	Date	Time
Use this space if shipped by courier. Relinquished by: [illegible] of: [illegible]	Date	Time	Courier Name: [illegible] Attach courier receipt to COC	Date	Time
Relinquished by: of:	Date	Time	Received by: of:	Date	Time

Job No. 5958.035

Sheet 1 of 1

Office: NOVI, MI

Address: 39830 Grand River Ave

Phone: 248 426-8970

CHAIN OF CUSTODY

CLIENT: GM
LOCATION: BURTON PARCEL

COLLECTED BY: (Signature) AJ Finch

Item	SAMPLE DESCRIPTION	Depth	Time	Pres (Y, N)	Matrix*	Type†	No. of Containers	ANALYSIS REQUESTED
1	OBG SB-24	6-8'	900	N	Soil	G	2-4oz.	BTEX + Naphthalene ONLY 8020 LEAD 6010
2	OBG SB-25	1-6'	1325	↓	↓	↓	↓	↓
3	OBG SB-26	6-8'	1435	↓	↓	↓	↓	↓
4	OBG SB-27	2-4'	1515	↓	↓	↓	↓	↓
5	Soil Cuttings-WA	—	—	N	Soil	G	5-4oz.	WASTE CHARAC. TCLP
6								
7								
8								
9								
10								

* Matrix = water, wastewater, air, sludge, sediment, etc.
† Type = grab, composite

	Date	Time		Date	Time
Relinquished by: AJ Finch of: O'Brien + Gere	8/21/14	910	Received by: of:		
Relinquished by: of:	Date	Time	Received by: of:	Date	Time
Use this space if shipped via courier Relinquished by: of: O'Brien + Gere	8/21/14	910	Courier Name: Airborne Attach courier receipt to COC	Date	Time
Relinquished by: of:	Date	Time	Received by: of:	Date	Time

SAMPLES PACKED ON ICE. AIRBORNE # 729 3199244

APPENDIX C

Ground Water Analytical Data Sheets