Additional Phase II Environmental Investigation Corrective Action Plan

180-182 EXCHANGE STREET
ROCHESTER, NEW YORK
NYSDEC SPILL NO.: 0070040

JULY 2000

Prepared for:
CITY OF ROCHESTER
DEPT. OF ENVIRONMENTAL SERVICES
DIVISION OF ENVIRONMENTAL QUALITY

Prepared by:
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July 6, 2000

Mr. Peter Miller
New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

RE: Additional Phase II Environmental Investigation
180-182 Exchange Street
Rochester, New York
NYSDEC Spill No.: 0070040

Dear Pete:

Pursuant to a contractual agreement between The Sear-Brown Group (Sear-Brown) and the City of Rochester, provided herein is a discussion of Additional Phase II Environmental Investigation activities that have been performed at 180-182 Exchange Street, Rochester, New York. Detailed drawings referenced within this document are provided in an accompanying package. The Corrective Action Plan (CAP) for the New York State Department of Environmental Conservation (NYSDEC) Spill No.: 0070040 is presented in Appendix A.

Background

The site is a 1.67 acre parcel improved with a quonset hut and a commercially-operated parking lot. Previous work at the site has included:

- A Phase I Environmental Site Assessment (ESA) conducted by Day Environmental, Inc. (Day) in September 1998, and

- Field work for a Phase II ESA completed by Sear-Brown in October 1998 with supplemental field work completed in November 1998. This field work was completed as part of the proposed acquisition of this Monroe County owned property by the City of Rochester and in order to address the conclusions and recommendations of the Phase I ESA. This work is summarized in a report entitled "Phase II Environmental Investigation Report", dated February 23, 1999, a copy of which was previously provided to the NYSDEC. This report indicated the concentrations of petroleum-related compounds were present in soils at the subject site above NYSDEC soil guidance values. The affected soils are located adjacent to the north of the Quonset hut, which is located near the eastern property line, and the Genesee River (Drawing ENV1). The following recommendations for additional investigations were made in this report:

    - It was recommended that additional subsurface investigation be performed to define the aerial extent of soil contamination in the vicinity of former borings B-4, B-5 and the Quonset hut.

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- Given the presence of affected soil extending down to the top of rock and the lack of groundwater observed in the overburden materials during the drilling program, it was recommended that four (4) bedrock groundwater monitoring wells be installed and sampled to evaluate the potential for groundwater impacts.

As a result of the findings, the property owner (Monroe County) forwarded a letter to the NYSDEC on March 31, 1999 along with a copy of Sear-Brown's Phase II report.

Based on the above recommendations, and in anticipation of the redevelopment of the most easterly portion of the site for a pedestrian trail, Sear-Brown completed additional Phase II Environmental Investigation activities. This report summarizes the methods and results of the field activities completed. A Corrective Action Plan (CAP) is provided in Appendix A to address the petroleum contamination.

Soil Borings

Ten soil borings (GP-101 to GP-110) were completed using a Geoprobe® to assess the areal extent of soil contamination in the vicinity of former borings B-4 and B-5 and the Quonset hut, located near the eastern property line and the Genesee River. Four (4) Geoprobe® soil borings were installed inside the Quonset hut and six (6) soil borings were installed north of the Quonset hut. Soil boring locations are illustrated on Drawing ENV1.

Continuous soil sampling were performed at each of the boring locations. The boreholes were drilled to refusal, approximately 12 to 14 feet below ground surface. Following their completion, the boreholes were backfilled with grout. Boring logs are presented in Appendix B.

Samples from the soil core intervals were screened with a calibrated HNu photoionization detector (PID) equipped with a 10.2 eV lamp for the presence of volatile organic vapors (Table 1). Samples were collected as follows: one portion was placed in a sealed container for headspace screening purposes and a second portion was placed in laboratory supplied jars, minimizing the potential loss of volatile organic vapors during handling of the samples. Based on PID readings, contamination was noted at four feet below ground surface (BGS) and continued to approximately 13 feet BGS (top of bedrock) in the vicinity of MW-2 (the installation of MW-2 is discussed in the following section), GP-101, GP-106, GP-107 and GP-110. See Drawings ENV2 through ENV4 for PID headspace reading contour plots for the 4-8, 8-12 and 12^{+} ft. BGS intervals, respectively.

After completion of the borehole and based on field observations (e.g. elevated PID headspace readings, visually stained soils, etc.), one soil sample from each borehole was selected for laboratory analysis. The soil samples were analyzed by Paradigm Environmental Services, Inc. (Paradigm) of Rochester, New York, a New York State Department of Health (NYSDOH) Environmental Laboratory

Accreditation Program (ELAP) analytical laboratory. A sample summary is presented in Table 2. The soil samples were analyzed for volatile organic compounds (VOCs) by EPA Methods 8260 or 8021A and/or for NYSDEC STARS list VOCs. In addition to the environmental laboratory analysis, three (3) soil samples were collected for geotechnical testing to include grain size analysis, moisture content and porosity (Appendix C).

Based on the previous evidence of impacts at this location, the soil cuttings and decontamination water were contained and stored on-site in secured 55-gallon drums.

Monitoring Well Installation

Sear-Brown installed four (4) groundwater monitoring wells (MW-1 through MW-4) that straddled the bedrock overburden interface to evaluate site groundwater quality. The borings were advanced with four and one quarter inch inside diameter hollow stem augers. Continuous split spoon samples were collected in three (3) of the four (4) well locations to auger refusal, which varied from 13.2 to 13.7 feet bgs. At MW-1, due to height clearance limitations within the Quonset hut, it was not possible to collect split spoon samples. The borings were completed using an HQ diamond-coring bit to core five feet into the bedrock. The groundwater monitoring wells were constructed with schedule-40 PVC with 0.10-inch slot well screens. Approximately five feet of screen was installed in bedrock and five feet of screen was installed in the overburden. Sand packs were placed using a one-inch tremmie pipe and consisted of fine sand extending six inches below and 24 inches above the well screens. The sand packs were capped with bentonite seals and the remaining annulus was grouted to the surface. The wells were completed with curb boxes. Boring logs and monitoring well diagrams are presented in Appendix B.

Soil and rock core samples were examined for physical indications of contamination such as staining, oils, fill material, etc. The split spoon soil samples were screened with a PID, and the results are summarized in Table 1. PID readings from soil samples collected from MW-2 were greater than 500 ppm-vapor while PID headspace readings in the other two wells were generally 1.0 ppm vapor or less. There were no visual impacts noted in the rock core samples.

Prior to sampling, the wells were developed to remove sediment left in the well during the installation process. Two methods of development were used to remove approximately ten (10) well volumes from each well. The first five (5) volumes were removed using a Watterra Hydrolift foot valve. Each of the wells went dry after two (2) to three (3) well volumes using this method. The remaining five (5) well volumes were removed using a peristaltic pump with dedicated low-density polyethylene (LDPE) tubing. The peristaltic pump was set to pump at such a rate that the wells did not go dry. The development water was containerized in a 55-gallon drum located on-site. The well development parameters and purge data are summarized in Tables 3 and 4.

One (1) groundwater sample was collected from each of the monitoring wells and forwarded to Paradigm for analysis following proper chain-of-custody protocol. A groundwater sample summary is provided in Table 5. The groundwater samples were analyzed for TCL and STARS list VOCs using EPA Methods 8260 and 8021. A trip blank was also analyzed for VOCs for QA/QC purposes. In addition, two (2) groundwater samples were submitted for general water quality parameters from MW-1 and MW-3.

Following well installation and using a relative datum, the tops of the well casings (reference) were surveyed by Sear-Brown to the nearest 1/100 ft., and depth to groundwater was measured to allow for an evaluation of local groundwater flow direction. As illustrated in Drawing ENV5 and based on water level information summarized in Table 6, groundwater flow appears to be in a west-southwesterly direction and away from the Genesee River.

Hydraulic Conductivity Testing

Slug tests performed on each of the wells were used to estimate the hydraulic conductivity of the screened intervals. Both rising and falling head tests were performed. Prior to beginning each test, the static water level in the well was measured. Then a three feet long by one and one half inch wide solid PVC "slug" was inserted into the water column to begin the falling head test. The response of the well to the "slug" was measured and recorded over time as the well returned to static. Once the well returned to approximately 90 % of the static level, the "slug" was removed, beginning the rising head test. Again, the well's response to the "slug" was measured over time as the water level in the well returned to the static level. Once the well returned to approximately 90% of the static level, the test was completed. The hydraulic conductivity of each well was calculated using the Hvorslev Solution for unconfined aquifers provided in the computer software data reduction package in AQTESOLV$_{tm}$.

As a supplement to the slug test results, permeability estimates for on-site soils were generated using the Hazen Method (based on grain size). This method provides an estimate of hydraulic conductivity based on the equation $K(cm/s)=[D10(mm)]^2$. A summary of slug test and Hazen Method permeability estimates are provided in Table 7. The rising head and falling head permeability tests ranged from 1.8×10^{-4} centimeters/second (cm/sec) (MW-1 falling head) to 1.3×10^{-3} cm/s (MW-3 rising head). The geometric means ranged from 2.4×10^{-4} cm/s (MW-4) to 9.3×10^{-4} cm/s (MW-3). A copy of the geotechnical laboratory results is presented in Appendix C.

Analytical Results

The detected analytical results from the current and previous soil sampling programs are summarized in Table 8 and are compared to applicable NYSDEC soil guidance values. A copy of the soil laboratory analytical results is presented in Appendix D. Gasoline-related VOCs (i.e. benzene, ethylbenzene, toluene, m,p-xylene and o-xylene) were detected in the soil samples from boreholes GP-101, GP-102,

GP-104, GP-106, GP-107 and GP-108. Drawing ENV6 presents a contour plot that illustrates the interpreted concentrations of total VOCs in soil based on the laboratory analytical results from both the current and previous Phase II investigations.

The detected analytical results from the groundwater sampling program are summarized in Table 9 and are compared to NYSDEC groundwater standards. A copy of the groundwater laboratory analytical results is presented in Appendix E. Groundwater samples from three (3) of the four (4) wells (MW-1, MW-2 and MW-4) contain similar gasoline-related VOCs as were detected in the soil samples. Drawing ENV7 presents a contour plot that illustrates the interpreted concentrations of total VOCs in groundwater based on the laboratory analytical results.

MW-2 had the highest concentration of total VOCs. MW-2 is located just north of the quonset hut and to the east of the concrete pad. Based on the soil boring and well data, the approximate extent of the soil and groundwater contamination has been delineated. The areal extent of the contamination is generally encompassed by GP-105, B-3, B-6, between MW-4 and GP-107, between GP-108 and B-5, east of GP-103, west of GP-104 and GP-102. The total petroleum hydrocarbon (TPH) analytical results characterized the contamination as "gasoline".

In addition to the contaminant-related laboratory analysis, two (2) groundwater samples from MW-1 and MW-3 were analyzed for groundwater quality parameters. Those analytical results are summarized in Table 10, and a copy of the laboratory report is included in Appendix E.

Test Pitting

Test pits were completed at the site on May 19, 2000. Seven (7) test pits were installed to investigate a series of magnetic anomalies found during an EM-61 geophysical survey of the site. The anomalies were labeled A-F during the geophysical survey and the same nomenclature was used during the test pit investigation. One additional test pit, not identified during the geophysical survey, was installed in the area of anomaly A at the request of Mr. Joe Biondolillo of the City of Rochester, and labeled A1. Mr. Biondolillo requested the additional test pit to further investigate the potential location of an underground storage tank which historical data places in the area of Anomaly A. Test pit locations are depicted on Drawing ENV1.

Bedrock Construction Enterprises, Inc. using a John Deer 410D rubber tire backhoe, excavated the test pits. A geologist from Sear-Brown logged all test pit soils on site (Appendix F). The soils were evaluated for physical geologic conditions and indications of odors, staining, oils and fill. In general, the soils consisted of fill materials including: brick, terra-cotta pipe, slate, iron bands, fencing, wood, concrete, slag and slag gravel, and sand and gravel. These fill materials were commonly layered or stratified. The test pits were completed to an average depth of six feet below ground surface. Bedrock and groundwater were not encountered during the completion of the test pits.

Soils from each of the test pits were screened for the presence of volatile organic vapors using a calibrated PID equipped with a 10.2 eV lamp. Elevated PID readings were not detected in the test pit soils. Soil samples collected from the test pits were not submitted for laboratory analysis.

No underground storage tanks were encountered during this test pit investigation. However, a large (11'x6'x6') concrete pad was identified in the area of test pit A1. There was no evidence of fill ports in the slab.

The anomalies identified as A and F were likely due to scrap iron pieces in the soil. The anomalies identified as B, C, and E are believed related to the presence of a slag/slag gravel layer in those areas. Additionally, a piece of iron pipe was observed in test pit B; however, this piece of pipe did not appear to be tank related. No obvious cause could be found for anomaly D. The area did, however, contain what appeared to be "clean" sand fill, which may have been due to a recent excavation.

Summary

Based on the findings of the soil borings, monitoring well installations, geophysical survey and test pit excavations, the limits of the petroleum contamination in both soil and groundwater have been estimated. The general limits of the soil contamination are shown on Drawing ENV-6, Total VOCs in Soil. The most elevated area of soil contamination is in the area of B-4 and MW-2. The general limits of the groundwater contamination are shown on Drawing ENV-7, Total VOCs in Groundwater. The area exhibiting the most significant groundwater contamination is consistent with the area exhibiting the most impacted soil (around B-4 and MW-2). Based on the analytical results it appears that the contaminants of concern at the site are gasoline related VOCs only.

Remedial Program

The information gathered during the Phase II Investigations has been used to develop a Corrective Action Plan (CAP) for the site. The CAP generally calls for the excavation, removal and off-site disposal of an estimated 400 to 500 tons of petroleum-contaminated soil to the extent existing utilities will allow. The soil excavation calculations and In conjunction, affected groundwater that accumulates in the excavation will be removed and properly disposed off-site. Oxygen releasing compound (ORC) will be applied to address residual contamination. Confirmatory soil sampling and a groundwater monitoring program is contemplated to verify that residual contamination does not exceed allowable levels for the applicable exposure pathways and receptors using the NYSDEC Petroleum Spill Site Inactivation (PSSI) procedures. A completion date of August 1, 2000 is needed for implementation of the CAP to facilitate construction of the proposed pedestrian trail by September 1, 2000. The proposed CAP is included in Appendix A.

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Should you have any questions or require further information, please contact me.

Sincerely,

Michael P. Storonsky
Senior Associate

Attachments: Drawings ENV1-ENV7
Tables 1-10
Appendix A - Corrective Action Plan
Appendix B - Boring Logs and Monitoring Well Diagrams
Appendix C - Geotechnical Laboratory Results
Appendix D - Soil Laboratory Analytical Results
Appendix E - Groundwater Laboratory Analytical Results
Appendix F - Test Pit Logs
Appendix G Soil Excavation Calculations and Historical Maps

cc: Joe Biondolillo w/attachments

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TABLE 1
Summary of PID Headspace Readings (ppm)
180-182 Exchange Boulevard
Rochester, NY

LOCATION	DEPTH (ft BGS)	PID READINGS		
		PEAK (ppm)	SUSTAINED (ppm)	BACKGROUND (ppm)
GP-101	0-4	0.4	0.4	0.3
	4-8	3.8	2.3	0.4
	8-12	210	209	0.4
	12-13.5	51.3	43.3	0.9
	Refusal @ 13.5			
GP-102	0-4	0.4	0.4	0.4
	4-8	0.5	0.5	0.4
	8-12	9.9	9.9	0.4
	12-14	0.7	0.7	0.6
	Refusal @ 14			
GP-103	0-4	0.8	0.8	0.8
	4-8	1.0	1.0	0.9
	8-12	1.1	1.1	0.6
	12-13.5	0.7	0.7	0.4
	Refusal @ 13.5			
GP-104	0-4	0.5	0.5	0.4
	4-8	4.3	4.0	0.4
	8-12	3.5	2.2	0.4
	Refusal @ 13.5			
GP-105	0-4	1.1	0.7	0.4
	4-8	3.6	2.0	0.5
	8-12	3.4	2.5	0.3
	12-13.5	1.9	1.3	0.4
	Refusal @ 13.5			
GP-106	0-4	0.4	0.4	0.4
	4-8	0.5	0.4	0.4
	8-12	0.6	0.5	0.4
	12-13	199	150	0.4
	Refusal @ 13			
GP-107	0-4	0.6	0.6	0.6
	4-8	7.8	4.4	0.5
	8-12	19.9	15.6	0.4
	12-13.5	106	94.5	0.3
	Refusal @ 13.5			

TABLE 1
Summary of PID Headspace Readings (ppm)
180-182 Exchange Boulevard
Rochester, NY

LOCATION	DEPTH (ft BGS)	PID READINGS PEAK (ppm)	SUSTAINED (ppm)	BACKGROUND (ppm)
GP-108	0-4	0.5	0.5	0.4
	4-8	0.5	0.5	0.4
	8-12	0.6	0.5	0.4
	12-13.5	1.8	1.8	0.4
	Refusal @ 13.5			
GP-109	0-4	0.4	0.4	0.4
	4-8	0.4	0.4	0.4
	8-12	0.4	0.4	0.4
	12-13	0.4	0.4	0.4
	Refusal @ 13			
GP-110	0-4	0.4	0.4	0.4
	4-8	0.5	0.4	0.4
	8-12	1.8	1.8	0.4
	12-13.5	24.5	13.0	0.4
	Refusal @ 13.5			
MW-2	4-6	0.8	0.8	0.7
	6-8	1.5	1.4	0.8
	8-10	341	196	0.8
	10-12	566	549	1.7
	12-13.5	510	399	2.5
	Refusal @ 13.5			
MW-3	4-6	0.8	0.8	0.7
	6-8	0.9	0.8	0.7
	8-10	0.8	0.8	0.7
	10-12	0.8	0.8	0.7
	12-13.4	1.0	1.0	0.7
	Refusal @ 13.4			
MW-4	6-8	0.8	0.8	0.7
	8-10	0.8	0.8	0.7
	10-12	0.9	0.8	0.7
	12-13.5	1.5	1.0	0.7
	Refusal @ 13.5			

Note: Due to the location of MW-1 within the Quonset Hut, split spoon activities were not possible

TABLE 2
Soil Sample Summary
180-182 Exchange Boulevard
Rochester, New York

Borehole Number	Sample Depth (bgs)	Sample Collection Date	Sample Collection Time	Analytical
B-4	13.0-14.0	10/17/99	1400	TCL VOC
B-5	13.0-14.0	10/17/99	1700	TCL VOC
GP-101	8.0-10.0	3/23/00	0940	TCL and STARS VOC
GP-102	8.0-12.0	3/23/00	1100	8021a VOC
GP-103	12.0-13.5	3/23/00	1015	8021a VOC
GP-104	4.0-8.0	3/23/00	1125	8021a VOC
GP-105	8.0-12.0	3/23/00	1200	8021a VOC
GP-106	12.0-13.0	3/23/00	1240	TCL and STARS VOC
GP-107	12.0-13.5	3/23/00	1425	8021a VOC
GP-108	12.0-13.5	3/23/00	1500	8021a VOC
GP-109	12.0-13.0	3/23/00	1545	8021a VOC
GP-110	12.0-13.5	3/23/00	1615	8021a VOC
MW-3	12.0-13.4	3/27/00	1000	STARS VOC

Analytical:
VOC by EPA Method 8021a
STARS VOC by EPA Method 8021
TCL VOC by EPA Method 8260

TABLE 3
Well Development Summary
108-182 Exchange Boulevard
Rochester, New York

Date	Well ID	Standing Well Volume (Gallons)	Volume Removed (Gallons)	Time	Temperature (Deg. C)	pH (su)	Conductivity (us/cm)	Turbidity (NTU)	Description
04/05/00	MW-1	0.94	1.00	0920	12.0	7.47	2434	200+	grey, cloudy
			2.00	0925	10.4	7.03	1855	200+	grey, cloudy
			3.00	0935	9.2	7.09	1742	200+	grey, cloudy
			dry @ 3.0						
			4.00	1015	8.7	7.30	1546	200+	grey, cloudy
			5.00	1018	8.0	7.36	1501	200+	grey, cloudy
			dry @ 5.0						
			6.00	1246	10.4	7.04	1535	<50	clear, colorless
			7.00	1249	10.7	7.12	1331	<50	clear, colorless
			8.00	1258	10.3	7.16	1283	<50	clear, colorless
			9.00	1307	10.4	7.16	1292	<50	clear, colorless
			10.00	1315	10.3	7.16	1293	<50	clear, colorless
04/05/00	MW-2	0.83	1.00	0940	8.1	7.06	1001	200+	grey,cloudy,sheen
			2.00	0943	8.0		967.4	200+	grey,cloudy,sheen
			dry @ 2.0						
			3.00	1025	8.0	7.15	1016	200+	grey,cloudy,sheen
			4.00	1028	7.9	7.10	979.6	200+	grey,cloudy,sheen
			dry @ 4.0						
			5.00	1330	10.5	7.10	1110	~150	cloudy,sheen
			6.00	1335	10.1	7.06	1067	~150	cloudy,sheen
			7.00	1334	9.6	7.16	1097	<50	clear,sheen
			8.00	1346	9.6	7.17	1105	<50	clear,sheen
			9.00	1350	9.9	7.16	1107	<50	clear,sheen
04/05/00	MW-3	1.20	1.20	0951	6.6	6.76	1387	200+	cloudy
			2.50	0954	6.5	6.92	1405	200+	cloudy
			3.75	0955	6.3	6.95	1420	200+	cloudy
			dry @ 3.75						
			5.00	1027	7.0	7.00	1404	200+	cloudy
			7.50	1037	6.2	7.16	1429	200+	cloudy
			8.75	1035	7.4	7.12	1468	200+	cloudy
			dry@8.75						
			10.00	1403	7.8	6.98	1420	~100	slightly cloudy
			11.25	1400	8.0	6.90	1460	~100	slightly cloudy
			12.50	1413	8.2	6.89	1513	~100	slightly cloudy
			13.75	1417	8.3	6.97	1574	~100	slightly cloudy
			15.00	1420	8.4	6.92	1562	~100	slightly cloudy
04/05/00	MW-4	0.54	0.60	1008	7.1	7.10	1300	200+	cloudy, gray
			1.20	1010	7.8	7.07	1300	200+	cloudy, gray
			dry @ 1.2						
			1.80	1040	7.7	7.10	1289	200+	cloudy, gray
			2.50	1045	8.2	7.20	1390	200+	cloudy, gray
			dry @ 2.5						
			3.10	1218	15.0	6.79	1328	<50	clear
			3.70	1221	11.2	6.89	1375	<50	clear
			4.30	1230	10.5	6.98	1453	<50	clear
			4.90	1235	10.3	6.98	1471	<50	clear
			5.50	1238	10.1	7.02	1492	<50	clear

Notes:
Deg. C. = Degrees Celsius
su = standard units
us/cm = microsecems per centimeters
mg/l = millagrams per liter
NTU = Neophelometric turbidity units

TABLE 4
Purge Data Summary
180-182 Exchange Boulevard
Rochester, New York

Date	Well ID	Standing Well Volume (Gallons)	Volume Removed (Gallons)	Time	Temperature (Deg. C)	pH (su)	Conductivity (us/cm)	Dissovled Oxygen (mg/l)	Turbidity (NTU)	Description
04/06/00	MW-1	0.77	0.80	0904	10.0	6.40	1360	7.13	nm	slightly cloudy, slight petro. odor
			1.50	0908	10.5	6.88	1246	5.39	nm	slightly cloudy, slight petro. odor
			2.50	0911	10.8	6.90	1265	6.18	nm	slightly cloudy, slight petro. odor
04/06/00	MW-2	0.80	1.00	0940	9.8	6.92	1144	5.35	nm	sheen, cloudy
			2.00	0944	10.2	6.95	1133	5.17	nm	sheen, cloudy
			3.00	0955	10.5	7.00	1140	5.15	nm	sheen, cloudy
04/06/00	MW-3	1.20	1.50	1016	8.9	6.56	1411	4.20	nm	slightly cloudy
			3.00	1022	9.3	6.92	1622	3.26	nm	clearing
			4.50	1030	9.9	6.93	1750	2.74	nm	clear
04/06/00	MW-4	0.52	0.60	1055	12.2	6.90	1412	3.99	nm	clear, colorless
			1.20	1102	12.0	9.64	1490	3.29	nm	clear, colorless
			1.80	1110	12.0	6.97	1505	3.35	nm	clear, colorless

Notes:
Deg. C. = Degrees Celsius
su = standard units
us/cm = microsecems per centimeters
mg/l = millagrams per liter
NTU = Neophelometric turbidity units
nm = not measured

TABLE 5
Groundwater Sample Summary
180-182 Exchange Boulevard
Rochester, New York

Well ID	Sample Collection Date	Sample Collection Time	Purge Method	Sample Method	Analytical
MW-1	4/6/00	0920	Peristaltic Pump	Peristaltic Pump/Teflon Bailer	VOC, TPH, wet chemistry
MW-2	4/6/00	1005	Peristaltic Pump	Peristaltic Pump/Teflon Bailer	VOC & TPH
MW-3	4/6/00	1035	Peristaltic Pump	Peristaltic Pump/Teflon Bailer	VOC & wet chemistry
MW-4	4/6/00	1120	Peristaltic Pump	Peristaltic Pump/Teflon Bailer	VOC

Analysis:
VOC EPA 8260 + DEC STARS 2x 40 ml
TPH NYSDOH 310-13 1x1 liter
wet chemistry (BOD,COD, Manganese, Nitrate, Sulfate, & Hardness) 1x1 liter

Notes:
All wells were sampled for all analytical parameters. Any parameters not submited for analysis are on hold at the laboratory for possible future analysis.

TABLE 6
Water Level Summary
180-182 Exchange Boulevard
Rochester, New York

Well ID	DATE	Top of Riser Elevation (Ft. AMSL)	Water Level (BTOR)	Water Level (Ft. AMSL)	Well Depth (BTOR)	Well Depth (AMSL)
MW-1	4/4/00	511.18	12.04	499.14	NM	NM
MW-1	4/5/00	511.18	12.03	499.15	17.95	493.23
MW-1	4/6/00	511.18	13.12	498.06	17.95	493.23
MW-2	4/4/00	511.11	11.54	499.57	16.65	494.46
MW-2	4/5/00	511.11	12.45	498.66	17.60	493.51
MW-2	4/6/00	511.11	12.54	498.57	17.60	493.51
MW-3	4/4/00	510.95	11.65	499.30	18.50	492.45
MW-3	4/5/00	510.95	10.90	500.05	18.45	492.50
MW-3	4/6/00	510.95	11.02	499.93	18.45	492.50
MW-4	4/4/00	510.81	13.52	497.29	17.50	493.31
MW-4	4/5/00	510.81	13.82	496.99	17.20	493.61
MW-4	4/6/00	510.81	13.92	496.89	17.20	493.61

Notes:
BTOR: Below Top of Riser.
AMSL: Above Mean Sea Level.

TABLE 7
Hydraulic Conductivity Data
180-182 Exchange Boulevard
Rochester, New York

Slug Test Data

Well ID	Rising Head Test (cm/s)	Falling Head Test (cm/s)	Geometric Mean (cm/s)
MW-1	4.3×10^{-4}	1.8×10^{-4}	2.8×10^{-4}
MW-2	7.2×10^{-4}	3.3×10^{-4}	4.9×10^{-4}
MW-3	1.3×10^{-3}	6.6×10^{-4}	9.3×10^{-4}
MW-4	2.2 E-4	2.6 E-4	2.4×10^{-4}

Notes:
Data analyzed using the Hvorslev Method (AQTESOLV)

PERMEABILITY ESTIMATES
FROM GRAIN-SIZE DISTRIBUTIONS

SAMPLE	D_{10} (mm)	K (cm/s)
GP103	0.0063	4.0 E-5
GP103	0.0045	2.0 E-5
GP109	0.0013	1.7 E-6

Data analyzed using the Hazen Method

TABLE 8
Summary of Detected Volatile Organic Compounds in Soil
180-182 Exchange Boulevard
Rochester, New York

Volatile Organic Compounds (ug/kg)														
Compound	**B-4 (13'-14')**	**B-5 (13'-14')**	**GP-101 (8'-10')**	**GP-102 (8'-12')**	**GP-103 (12'-13.5')**	**GP-104 (4'-8')**	**GP-105 (8'-12')**	**GP-106 (12'-13')**	**GP-107 (12'-13.5')**	**GP-108 (12'-13.5')**	**GP-109 (12'-13')**	**GP-110 (12'-13.5')**	**MW-3 (12'-13.4')**	**Guidance Value***
Benzene						123.9				**126.8**				14
Ethyl benzene	**201655**	**1581**	**21500**	**226.1**		**215.6**		**3120**	**2177.0**	56.3				100
Toluene	**199525**	**1156**	**15900**	41.9										100
m,p-Xylene	**818979**	**7335**	**87200**	**812.2**	11.0	**251.9**		**13300**	**7716.2**	**107.1**				100
o-Xylene	**351006**	**2494**	**36400**	**280.1**				**4350**	**2351.6**	38.0				100
Isopropylbenzene	NA	NA	**2510**				44.7		**662.8**	**309.6**		65.1		100
n-Propylbenzene	NA	NA	**8980**	44.6			80.0	**1790**	**2505.2**	**705.6**		**539.3**		100
1,3,5-Trimethylbenzene	NA	NA	**19800**	70.5		19.1		**4830**	**3158.0**	29.4				100
1,2,4-Trimethylbenzene	NA	NA	**66000**	**225.9**		50.0		**11900**	**12791.0E**	**319.1**		**1657.2**		100
sec-Butylbenzene	NA	NA	**1070**				24.9		**313.8**			**254.9**		100
p-Isopropyltoluene	NA	NA	**2540**											100
Naphthalene	NA	NA	**19700**						**2580.5**	**615.3**	15.3			200
4-Isopropyltoluene	NA	NA							**703.4**			**129.3**		100
n-Butylbenzene												**629.6**		100

Notes:
1. * = NYSDEC. December 1992. Petroleum Contaminated Soil Guidance Policy: STARS Memo #1. Bureau of Spill Prevention and Response.
2. **BOLD** = reported concentration is above Guidance Value
3. Blank space = concentration below detection limits
4. NA = Not Analyzed
5. ug/kg = micrograms per kilogram which is equivalent to parts per billion (ppb)

TABLE 9
Summary of Detected Concentrations in Groundwater
180-182 Exchange Boulevard
Rochester, New York

Detected Concentrations in Groundwater					
Compound	**MW-1**	**MW-2**	**MW-3**	**MW-4**	**Groundwater Standard***
Volatile Organic Compounds (ug/l)					
Benzene	**339**	**303**		**1.30**	1
Ethyl benzene		**1370**			5
Toluene	**46.5**	**5750**			5
m,p-Xylene	**70.9**	**4900**		**5.31**	5
o-Xylene	**356**	**2310**		**7.74**	5
1,3,5-Trimethylbenzene	**193**	**451**		**22.4**	5
1,2,4-Trimethylbezene	**199**	**1800**		**158**	5
p-Isopropyltoluene	**43.0**	**42.2**			5
Isopropylbenzene		**99.0**			5
n-Propylbenzene		**194**		3.30	5
Naphthalene		**302**			10 (G)
TPH (ug/l)					
Gasoline	752	5480	NA	NA	NGV

Notes:
1. * = NYSDEC. June 1998. Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (1.1.1).
2. NA = Not Analyze
3. **BOLD** = reported concentration is above Guidance Value or Standard
4. Blank space = concentration below detection limits
5. ug/l = micrograms per liter which is equivolent to parts per billion (ppb)
6. NGV = No guidance value has been established by New York State
7. (G) = Guidance Value

TABLE 10
Summary of General Groundwater Qualitly Analytes
180-182 Exchange Boulevard
Rochester, New York

Analytical Parameters	Units	MW-1	MW-3	Groundwater Standard
Hardness	mg/l	467	511	NA
Manganese	mg/l	0.385	0.802	0.3*
Ferrous Iron	mg/l	0.33	0.40	0.3*
Biochemical Oxygen Demand-5	mg/l	19	21	NA
Sulfate	mg/l	ND<2	79	250*
Nitrate as N	mg/l	ND<0.02	ND<0.02	10*
Chemical Oxygen Demand	mg/l	15	8	NA

Notes:
1. Blank space = concentration below detection limits
2. mg/l = milligrams per liter= parts per million
3. * = NYSDEC. June 1998. Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (1.1.1).
4. NA= no applicable regulation.

Appendix A

CORRECTIVE ACTION PLAN

180-182 EXCHANGE STREET
ROCHESTER, NEW YORK
NYSDEC SPILL NO.: 0070040

JUNE 2000

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
6274 EAST AVON-LIMA ROAD
AVON, NEW YORK 14414

Prepared on behalf of:

CITY OF ROCHESTER
DEPARTMENT OF ENVIRONMENTAL SERVICES
DIVISION OF ENVIRONMENTAL QUALITY

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CORRECTIVE ACTION PLAN

180-182 EXCHANGE STREET
ROCHESTER, NEW YORK
NYSDEC SPILL NO.: 0070040

JUNE 2000

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
6274 EAST AVON-LIMA ROAD
AVON, NEW YORK 14414

Prepared on behalf of:

CITY OF ROCHESTER
DEPARTMENT OF ENVIRONMENTAL SERVICES
DIVISION OF ENVIRONMENTAL QUALITY

Prepared by:

SEAR BROWN
85 METRO PARK
ROCHESTER, NEW YORK 14623

1.0 Scope of Work

This Corrective Action Plan (CAP) was prepared for the 180-182 Exchange Street Boulevard property located in Rochester, New York, and was based on the work completed and described previously by Sear-Brown. The CAP provides a work plan for the implementation of remedial measures and contingency monitoring at the subject site as described below.

2.0 Remedial Field Activities

2.1 Agency Coordination

It is proposed to provide the New York State Department of Environmental Conservation (NYSDEC) with one week of advance notice of the field activities prior to their commencement. Sear-Brown will perform general project coordination with the City of Rochester, Monroe County and NYSDEC.

2.2 Groundwater Monitoring Well Abandonment

Prior to beginning excavation activities, Sear-Brown shall properly decommission bedrock groundwater monitoring wells MW-1 and MW-2 in accordance with NYSDEC Well Decommissioning Procedures (1993) and dispose of the materials. MW-1 and MW-2 are being decommissioned as they are located within the excavation area and would be damaged during excavation activities.

2.3 Soil Excavation, Replacement and Disposal

Following removal of the Quonset Hut and the underlying concrete pad by others, Sear-Brown will contact both the underground facilities protection organization (UFPO) to locate publicly owned underground utilities and the City of Rochester to locate privately owned utilities in the area. The general area has a significant number of utilities present. Please note that the Monroe County Civic Center maintains a 24-inch diameter cast iron cooling water discharge line situated directly within the remediation area. Sear-Brown will coordinate with the Civic Center Chief Engineer to incorporate appropriate precautionary measures to maintain the integrity of the water discharge line. It is anticipated that the normal standard of care (i.e. hand excavation next to pipe) is all that will be required and no supplemental shoring or bracing will be needed.

Petroleum-impacted soil will be excavated while field screening is taking place to evaluate the presence of petroleum contamination. The field screening will consist of periodically placing soil samples collected by the excavator bucket into sealed containers. After allowing the containerized soil samples to equilibrate to ambient temperatures, a calibrated photoionization detector will be used to screen the

accumulated vapors in the headspace of the soil containers for the presence of volatile organic vapors. Field screening measurements will guide the determination of excavation limits for subsequent confirmatory soil sampling and laboratory analysis (Section 3.1). Approximately 1800 to 2000 tons of material is to be excavated. Approximately 500-700 tons is estimated to be impacted soil. Approximately 1400-1600 tons is estimated to be clean soil to be placed back in the excavation. Approximately 110 tons of petroleum impacted soil will be left in place due to the 24" water discharge pipe.

Surficial clean soils will require segregating, separate stockpiling on and covering with poly sheeting, and placement back into the excavations. Sear-Brown will be responsible for the loading, transportation and off-site disposal of surficial clean soils. The proposed off-site disposal facility for clean soils is Silvarole Trucking Company in Henrietta, New York.

Sear-Brown will separately stage the petroleum-contaminated soil on poly sheeting and cover it with the same or load it directly in trucks for off-site disposal. Sear-Brown will collect characterization samples and obtain approval from the selected landfill to dispose of the contaminated soils. Sear-Brown will be responsible for the characterization, loading and transportation of the soil at a permitted facility. It is anticipated that the soil will be disposed of at the Mill Seat Landfill in Riga, NY.

Sear-Brown will separately stage concrete/construction debris on poly sheeting and cover it with the same or load it directly into a truck for off-site disposal. Sear-Brown will be responsible for the loading, transportation and off-site disposal of concrete and other construction debris off-site that cannot be reused as backfill. The proposed off-site disposal facility is Dolomite Products Company in Gates, New York.

Sear-Brown will backfill and compact the excavations with imported select fill, capable of achieving 95% compaction, placed in 10 inch lifts and compacted with a vibratory plate tamper. The final 18 inches shall be completed with #2 crusher run, placed in two 9 inch lifts with each being compacted with a vibratory plate tamper. It is anticipated no density testing will be required.

2.4 Excavation Confirmatory Soil Sampling

After excavation is complete, Sear-Brown will collect confirmatory soil samples from the excavation sidewalls and bottom. Soil samples will be containerized and preserved in accordance with applicable EPA protocols. It is estimated that ten (10) soil samples will be collected and forwarded to a NYSDOH certified laboratory for analysis. The soil samples will be analyzed for NYSDEC STARS TOTAL VOCs.

2.5 *Application of ORC to Residual Contamination*

After sample collection, Sear-Brown will apply 1,100 pounds of oxygen-releasing compound (ORC) to the exposed wall and floor of the excavation to address residual petroleum contamination within the subsurface, including those areas below the 24-inch diameter water discharge pipe.

The application of the ORC will be performed in a careful and controlled manner to allow for general coverage of the sidewalls and floor of the excavation.

2.6 *Excavation Dewatering*

Affected water exposed during the remedial action excavation will be collected and stored on-site and ultimately will be discharged to the Monroe County Pure Waters (Pure Waters) sewer system or transported off-site for disposal at a permitted facility. Containment of the water will allow for settling of soil particulates. If the water is to be treated and discharged, the following steps will be taken to receive permission from Pure Waters to discharge the accumulated groundwater:

- Written notification to Pure Waters of intent to discharge to their sewer system;
- Completion of a Permit Application for the discharge of accumulated groundwater;
- Sampling and analysis of accumulated groundwater as required and specified by Pure Waters;
- If required by Pure Waters (based on laboratory data), ex-situ treatment of groundwater by activated carbon adsorption;
- Following approval, conduct a site visit with a Pure Waters representative and select a sewer manhole for discharge of accumulated groundwater; and
- Discharge of accumulated groundwater to the selected Pure Waters manhole.

Unaffected water exposed during the remedial action excavation will be collected and stored on-site and will ultimately be discharged to the Pure Waters sewer system or transported off-site for disposal at a permitted facility. Containment of the water will allow for settling of soil particulates. If the unaffected water is to be discharged to the sewer, the following steps will be taken to receive permission from Pure Waters:

- Written notification to Pure Waters of intent to discharge to their sewer system;
- Completion of a Permit Application for the discharge of accumulated groundwater;
- Sampling and analysis of accumulated groundwater as required and specified by Pure Waters;
- Following approval, conduct a site visit with a Pure Waters representative and select a sewer manhole for discharge of accumulated groundwater; and
- Discharge of accumulated groundwater to the selected Pure Waters manhole.

2.7 *Staged Drum Disposal*

There are six (6), 55-gallon drums staged at the site from past environmental investigations which have been performed. One of the drums contains development and purge groundwater; two drums contain soil cuttings, and three drums are empty. It is estimated that one drum will be filled from well decommissioning activities and two 55-gallon drums will be filled from the monitoring well installations (described further below), one for soil and one for groundwater. Sear-Brown will be responsible for the characterization, loading, transportation and off-site disposal of six soil and groundwater drums at a permitted facility.

2.8 *Monitoring Well Installation*

Sear-Brown will install three (3) bedrock groundwater monitoring wells. Two of the wells will be installed to replace MW-1 and MW-2. The third well, MW-5, will be situated in the southwest corner of the work area, within the former Quonset building footprint. Prior to drilling activities, the drilling rig, augers, rods, split spoons, screens and other pertinent equipment will be decontaminated. These decontamination activities will be performed in a designated on-site area. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will not be permitted.

The borings will be advanced with four and one quarter inch inside diameter hollow stem augers under the supervision of a qualified geologist/engineer. Continuous split spoon samples will be collected to auger refusal, which may vary from 10 to 14 feet bgs. Then, a HQ diamond-coring bit will be used to core five feet into bedrock. The groundwater monitoring wells will be constructed of schedule-40 PVC with 0.010-inch slot well screens. Approximately five feet of screen will be installed in bedrock and five feet will be screened in the overburden. Sand packs will consist of fine sand extending six inches below and 24 inches above the well screens. The sand packs will be capped with bentonite seals and the remaining annulus grouted to the surface. The wells will be completed with locking flush-mounted protective casings.

The split spoon soil samples and rock cores will be screened with a PID. Soil and core samples will also be visually inspected for physical indications of contamination such as staining, oils, fill material, etc. In conjunction with the well installation program one (1) soil sample will be collected from MW-5 and analyzed by Sear-Brown. The soil sample will be analyzed for NYSDEC STARS VOCs by a New York State Department of Health (NYSDOH) certified laboratory.

If evidence of contamination is observed, the drill cuttings, development water, and decontamination water will be contained and stored on-site in secured 55-gallon drums. As previously discussed, we have assumed that one drum of soil cuttings and one drum of rock coring, decontamination and purge water will be generated and disposed of as non-hazardous waste from this portion of the program.

After allowing the bentonite seals to expand, the monitoring wells will be developed utilizing bailers, a Waterra inertial lift pump or a peristaltic Geopump. The wells will be developed in an effort to cleanse them of suspended sediments so that turbidities are reduced to the maximum extent practicable. General water quality field parameters (i.e. turbidity, pH, specific conductance, dissolved oxygen and temperature) will be monitored during development. The wells will be developed within 1 to 2 days of installation and sampled within 1 to 2 weeks after development. The wells will be purged and field parameters rechecked prior to sample collection (Section 3.2).

Following well installation and using a relative datum, the tops of the well casings (reference) will be surveyed by Sear-Brown to the nearest 1/100 ft., and depth to groundwater will be measured to allow for an evaluation of local groundwater flow direction.

2.9 Monitoring Well Sampling

One (1) groundwater sample will be collected from the two existing wells and the three new monitoring wells. Prior to sample collection, each of the selected wells will be appropriately purged to ensure sampling of formation water. The five (5) groundwater samples will be preserved in accordance with applicable EPA protocols and forwarded to a NYSDOH certified laboratory for analysis. The groundwater samples will be analyzed for NYSDEC STARS VOCs. In addition, a trip blank will be analyzed for VOCs for quality assurance/quality control (QA/QC) purposes.

2.10 Removal of Closed In-Place UST

If the closed in-place UST is encountered, as reported in the Day Engineering Phase I ESA, it will be removed and closed in accordance with NYSDEC and City of Rochester requirements.

3.0 Site Inactivation

3.1 Petroleum Spill Site Inactivation (PSSI) Evaluation

It is proposed that the results of the site characterization be applied to the NYSDEC PSSI guidance document. This PSSI evaluation will include a summary of visual soil inspection and headspace measurements in addition to analytical results for soil and groundwater samples. An exposure assessment will be carried out that will include the identification of potential receptors, pathways of exposure, exposure determination, and the need for any additional remediation. Based upon the findings of our investigation, we will evaluate if the site can qualify for potential inactivation by the NYSDEC. If so, we will prepare a PSSI Evaluation report soliciting inactive status for the Spill File from the NYSDEC.

3.2 One-Year Groundwater Monitoring

If needed, one (1) groundwater sample will be collected from the two existing wells and the three new monitoring wells on a quarterly basis for one year. The five (5) groundwater samples will be collected and preserved in accordance with applicable EPA protocol and forwarded to a NYSDOH certified laboratory for analysis. The groundwater samples will be analyzed for NYSDEC STARS VOCs. In addition, a trip blank will be analyzed for VOCs for quality assurance/quality control (QA/QC) purposes. A letter report will be generated following each sampling event to present sampling and analytical data.

The purged groundwater will be containerized in a secured 55-gallon drum. It is estimated that one (1) drum of purge water will be generated as a result of the groundwater sampling events and disposed of as non-hazardous waste.

4.0 Reporting

A closure report summarizing field activities and data collected will be prepared after completion of the remediation activities. To the extent that follow-up groundwater monitoring is needed, individual reports (four total) will be prepared following each quarterly sampling event.

Appendix B

THE
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ROCHESTER NEW YORK
14623
716-475-1440
FAX: 716-272-1814

Test Boring No. GP-101

Page 1 of 1

Project 180-182 Exchange

Client C/O Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Andreas

Water Level - During Drilling _____ Inspector Gerardi

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

Sample				
	Rec.	No	Depth	
				asphalt pieces Brown Sandy loam [FILL]
		1		
5				
		2		
10			9'	Same as Previous w/more Brick Slight Petro odor
		3		
			13.5'	Light grey Silty Sand (moist) Petro odor
15				Same as Previous (moist to wet)
		4		
				Refusal @ 13.5'

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Test Boring No. GP-102
Page 1 of 1

Project 180-182 Exchange
Client c/o Rochester
Elevation _____ Start 3-22 Completed 3-22 Driller Marcor
Water Level - During Drilling _____ Inspector Gerardi
Water Level - At Completion _____
Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
			1		asphalt pieces, Brown Sandy loam, Coal and Brick Pieces [FILL]
5					
			2		same as previous
10				10'	Lt. Grey Silty Sand (moist) petro odor
			3		Same as previous
15					
			4		Refused @ 14'

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Project 100-102 Exchange

Client c/o Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Mason

Water Level - During Drilling _____ Inspector Gerardi

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
			1		asphalt pieces, Brown Sandy loam, Coal and Brick pieces [FILL]
5					7.5 Same as Previous
			2		Light grey Silty Sand (moist)
10					12' Same as Previous
			3		Refusal @ 12'
15					

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Test Boring No. GP104

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Project 180-182 Exchange

Client C/O Rochesty

Elevation _____ Start 3-22 Completed 3-22 Driller Marcor

Water Level - During Drilling _____ Inspector Gelardi

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
			1		asphalt pieces, Brown Sandy loam, Coal and Brick pieces [FILL]
5					
				7.5'	Same as previous
			2		
10					Lt. Grey Silty Sand (moist) petro odor
			3		
				13.5'	Same as previous (moist to wet)
15					Refusal @ 13.5'

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Test Boring No. GP-105

Page 1 of 1

Project 180-182 Exchange

Client C/O Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Marcor

Water Level - During Drilling _____ Inspector _____

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

Sample				
	Rec.	No	Depth	
				asphalt pieces, brown sandy loam, coal, wood
		1		4' and brick pieces [FILL]
5				Lt-grey silty sand (moist)
				petro odor
		2		
10				Same as previous (moist to wet)
		3		
				13.5' Same as previous
15				Refusal @ 13.5'
		4		

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Test Boring No. GP106

Page 1 of 1

Project 100-102 Exchange

Client C/O Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Mayer

Water Level - During Drilling _____ Inspector Gerardi

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
			1		asphalt pieces, Brown Sandy loam, Coal, ash, Brick Pieces [FILL]
5					
			2		8' Same as previous
10					Lt. Grey silty Sand (Moist)
			3		13' Same as previous
15					Refusal @ 13'

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FAX: 716-272-1814

Test Boring No. GP-107

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Project 180-182 Exchange

Client C/O Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Mayco

Water Level - During Drilling _____ Inspector Gerardi

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

	Sample Rec.	Sample No	Sample Depth	
				asphalt pieces, Brown sandy loam, brick pieces wood and ash [FILL]
		1		
5				
				7.5' Same as previous
		2		Lt. Grey Silty Sand (moist) Petro odor
10				
		3		13.5' Same as previous Strong Petro odor
15				Refusal @ 13.5'

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ROCHESTER NEW YORK
14621
716-475-1440
FAX: 716-272-1814

Test Boring No. GP-108

Page 1 of 1

Project 100-102 Exchange

Client C/O Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Mercer

Water Level - During Drilling _____ Inspector Gerards

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
					Brown Sandy loam, Brick pieces, coal and ash [FILL]
			1		
5					Same as previous
			2		8'
					Lt. Grey Silty Sand (moist)
10					
			3		13.5' Same as previous (Petro odor)
15					Refusal @ 13.5'

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14621
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FAX: 716-272-1814

Test Boring No. GP-109

Project 180-182 Ex Change
Client C/O Rochester
Elevation _____ Start 3-22 Completed 3-22 Driller Mercer
Water Level - During Drilling _____ Inspector Gerardi
Water Level - At Completion _____
Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
					Brown Sandy loam, Brick piece and ash [FILL]
			1		
5					same as previous w/more brick (moist)
			2		9' Same as Previous
10					Lt. Grey Silty Sand (moist)
			3		12'
					Refusal @ 12'
15					

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Test Boring No. GP110

Page 1 of 1

Project 180-182 Exchange

Client C/O Rochester

Elevation _____ Start 3-22 Completed 3-22 Driller Marcor

Water Level - During Drilling _____ Inspector Gerardi

Water Level - At Completion _____

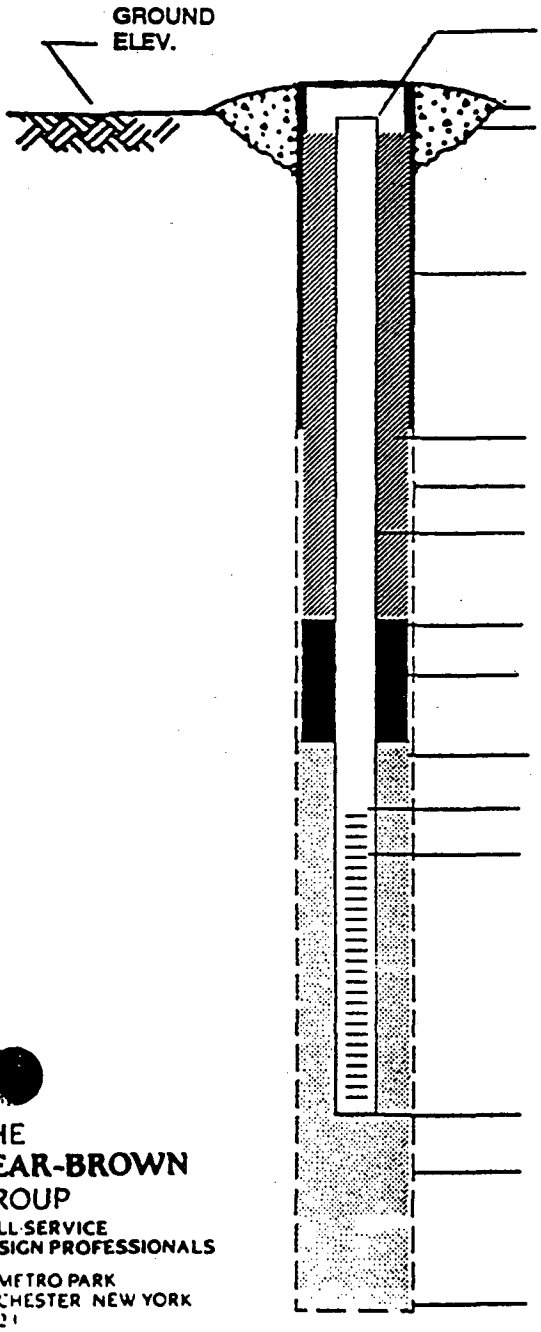
Seasonal and climatic changes may alter observed water levels.

	Sample				
		Rec.	No	Depth	
			1		Brown Sandy loam w/Brick Pieces, Coal and ash [FILL]
5					Same as Previous
			2	8'	
10					Lt. Grey Silty Sand (moist) petro odor
			3	12'	
					Refusal @ 12'
15					

MONITORING WELL COMPLETION RECORD

Well Number: MW-1
Project: 180-182 Exchange
Project Number: 15155.07
Driller: Nature's Way

Drilling Method:
Geologist: Gerardi
Installation Date(s): 3-29-02



Elevation/Top of Riser Pipe:

Type of Surface Seal: Concrete

I.D. of Surface Casing: Steel Manhole

Type of Surface Casing: flush mount

Type of Backfill: clean Fill

Borehole Diameter: 8"

I.D. of Riser Pipe: 2"

Type of Riser Pipe: PVC

Depth of Seal: 4.5

Type of Seal: Bentonite

Depth of Sand Pack: 7.5

Depth Top of Screen: 8.5

Type of Screen: PVC

Slot Size x Length:

I.D. of Screen: 10 Slot 10'

Type of Sand Pack:

Depth Bottom of Screen: 18.5

Depth Bottom of Sand Pack:

Depth of Hole: 18.5

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Test Boring No. MW-2
Page 1 of 1

Project 180-182 Exchange Street
Client C/O Rochester
Elevation _____ Start 12:55 Completed 15:20 Driller Nature's Way
Water Level - During Drilling _____ Inspector Gerard
Water Level - At Completion _____
Seasonal and climatic changes may alter observed water levels.

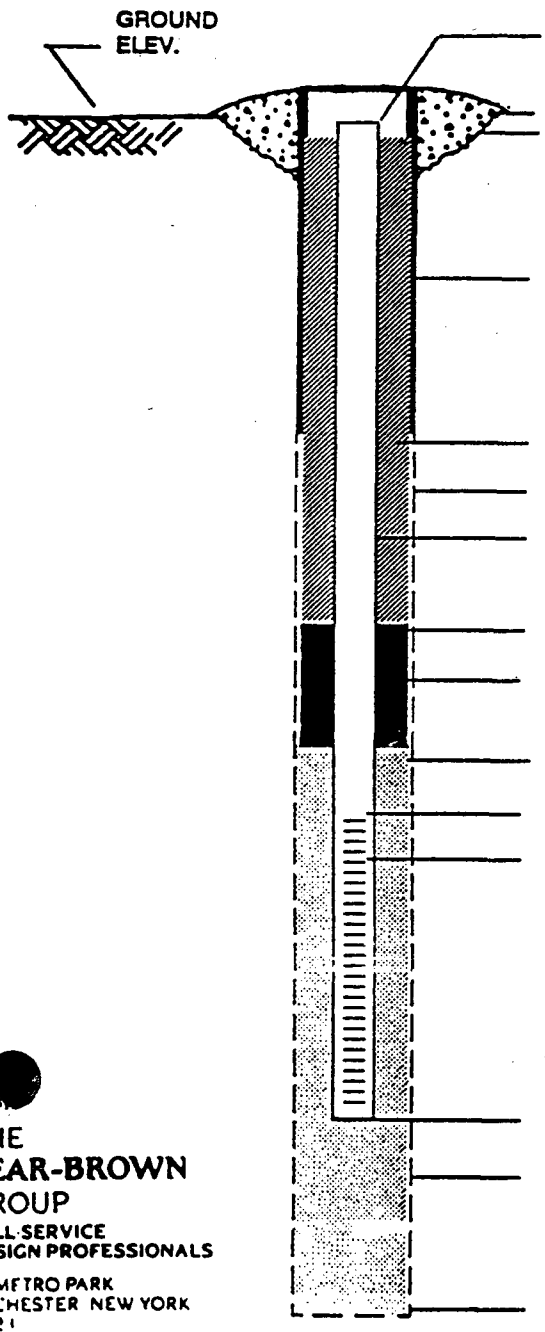
0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	Sample N	Rec.	No	Depth	Soil and Rock Information Remarks
		24								Asphalt-Concrete, Brown
			16							Sandy loam [FILL]
				8						
					8	1	24/6			
		7								
			24							
				50/2						
						2	16			moved 1' South & continue
		7								Lt. Brown Sandy loam
			11							Some Silt [FILL] (moist)
				3						
					9	3	24/10			
		4								
			7						7.5'	Lt. grey silty Sand (moist)
				5						Petro odor
					6	4	24/6			
		6								
			6							
				4						
					5	5	24/10			Same as above
		1								
			1							
				1						
					2	6	24/24			Same as above
		1								(Strong Petro odor)
			1							
				1						
					50/3.	7	24/21		13.7	Refusal
										63" Recovery
										100% Recovery
										85.7% RQD

N=No. of Blows to Drive _____ Spoon _____ with _____ lb. wt. _____ Ea. Blow
C=No. of Blows to Drive _____ Casing _____ with _____ lb. wt. _____ Ea. Blow

MONITORING WELL COMPLETION RECORD

Well Number: MW-2
Project: 180-182 Exchange
Project Number: 15155.07
Driller: Nature's Way

Drilling Method:
Geologist: Gerardi
Installation Date(s): 3-28-00



Elevation/Top of Riser Pipe:

Type of Surface Seal: Concrete

I.D. of Surface Casing: Steel manhole

Type of Surface Casing: flush mount

Type of Backfill: Clean Fill

Borehole Diameter:

I.D. of Riser Pipe:

Type of Riser Pipe:

Depth of Seal: 4.5

Type of Seal: Bentonite

Depth of Sand Pack: 7.5

Depth Top of Screen: 8.5

Type of Screen:

Slot Size x Length: 10 Slot 10'

I.D. of Screen:

Type of Sand Pack:

Depth Bottom of Screen: 18.5

Depth Bottom of Sand Pack:

Depth of Hole: 18.5

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Test Boring No. MW-3

Page 1 of 1

Project 180-182 Exchange

Client C/o Rochester

Elevation _____ Start 8:50 Completed 11:50 Driller Natures Way

Water Level - During Drilling _____ Inspector Herrell

Water Level - At Completion _____

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	Sample N	Rec.	No	Depth	Soil and Rock Information Remarks
		10								
			10							asphalt pieces, Brown Sandy loam [FILL]
				13						
					15	1	24/12			
		15								
			9							Same as above w/ Brick Pieces
				6						
					8	2	24/12			
		7								
			4							Same as previous
				3						
					3	3	24/1			
		6								
			4							Same as previous
				3						
					2	4	24/16			More Brown Sandy loam (moist)
		3								
			3							
				4						
					5	5	24/12			10' Lt grey Silty Sand (moist) slight petro odor
		2								
			2							
				1						
					1	6	24/12			
		1								
			2							Same as above
				50/5						13.4 Refusal
						7	15/3			
										65" Recovery
										100% Recovery
										75.3% RQD

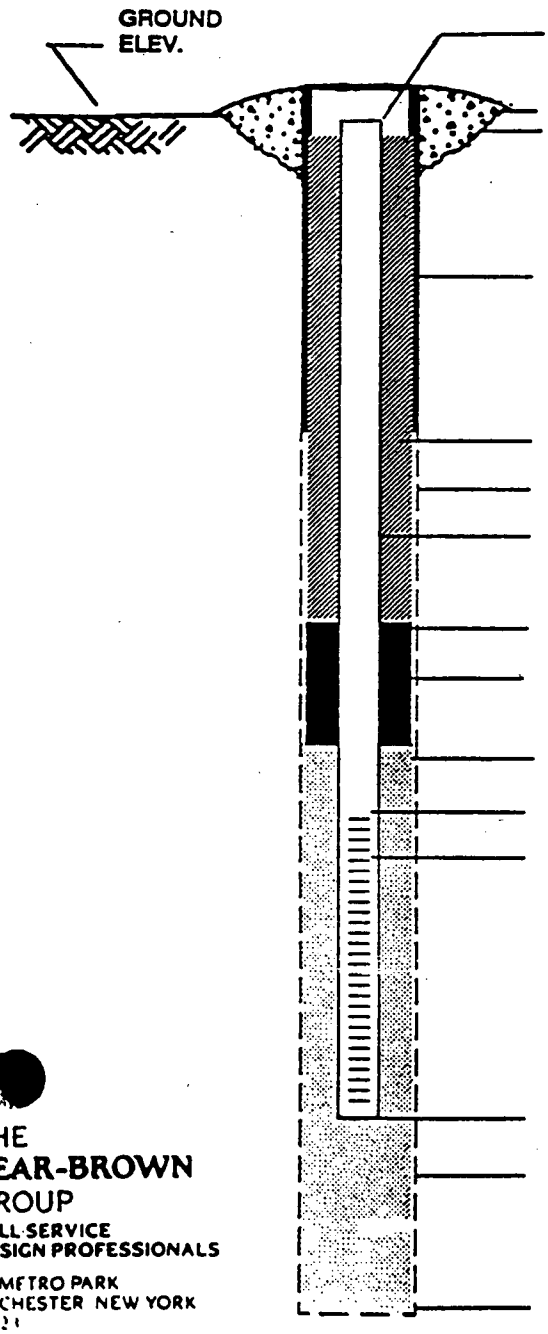
N=No. of Blows to Drive _____ Spoon _____ with _____ lb. wt. _____ Ea. Blow

C=No. of Blows to Drive _____ Casing _____ with _____ lb. wt. _____ Ea. Blow

MONITORING WELL COMPLETION RECORD

Well Number: MW-3
Project: 180-182 Exchange St.
Project Number: 15155.07
Driller: Natureway

Drilling Method:
Geologist: Gerardi
Installation Date(s): 3-28-00



Elevation/Top of Riser Pipe:

Type of Surface Seal: Concrete

I.D. of Surface Casing: Steel manhole

Type of Surface Casing: flush mount

Type of Backfill: Clean Fill

Borehole Diameter:

I.D. of Riser Pipe:

Type of Riser Pipe:

Depth of Seal: 4.5

Type of Seal: Bentonite

Depth of Sand Pack: 7.5

Depth Top of Screen: 9.5

Type of Screen:

Slot Size x Length:

I.D. of Screen: 10 slot 10'

Type of Sand Pack:

Depth Bottom of Screen: 18.5

Depth Bottom of Sand Pack:

Depth of Hole: 18.5

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Test Boring No. MW-4
Page 1 of 1

Project 180-182 Exchange
Client c/o Rochester
Elevation _____ Start 11:30 Completed 14:40 Driller Nature's Way
Water Level - During Drilling _____ Inspector Gerardi
Water Level - At Completion _____
Seasonal and climatic changes may alter observed water levels.

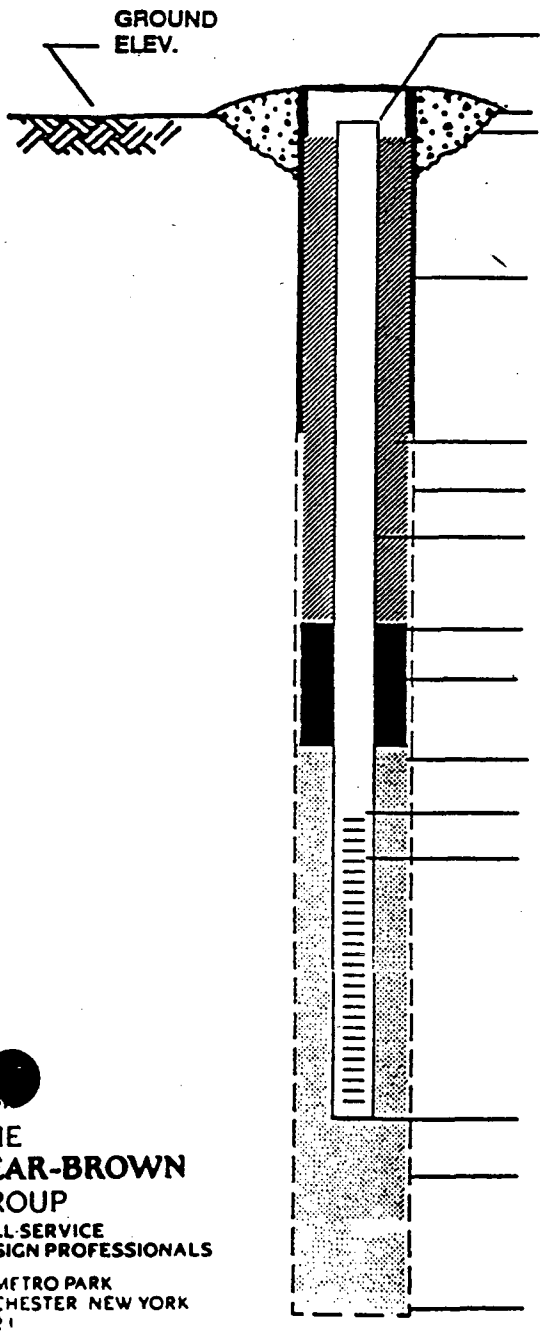
0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	Sample N	Rec.	No	Depth	Soil and Rock Information Remarks
		5								
			11							Blacktop, Brick fragments, Coal Cinders, ash, Brown
				0						
					7	1	24/6			Sandy loam [Fill]
		8								
			13							
				9						Same as previous
					11	2	24/10			More ash
		14								
			11							
				5						
					4	3	24/6			Same as previous except
		6								More Brown Sandy loam
			1							(Moist) [FILL]
				3						
					3	4	24/8			
		11								
			4							
				4						9.5'
					4	5	24/14			Lt grey Silty Sand (Moist)
		6								
			2							
				2						Same as previous
					3	6	24/4			
		2								
			1							13.2 Refusal
				50/3			14/6			
						7				
										63" Recovery
						8				100% Recovery
										74.6% RQD
						9				

N=No. of Blows to Drive _____ Spoon _____ with _____ lb. wt. _____ Ea. Blow
C=No. of Blows to Drive _____ Casing _____ with _____ lb. wt. _____ Ea. Blow

MONITORING WELL COMPLETION RECORD

Well Number: MW-4
Project: 180-182 Exchange
Project Number: 15155.01
Driller: Naturesway

Drilling Method:
Geologist: Gerardi
Installation Date(s): 3-29-00



Elevation/Top of Riser Pipe:

Type of Surface Seal: Concrete

I.D. of Surface Casing: steel manhole & Aerator

Type of Surface Casing: flush mount

Type of Backfill: Clean Fill

Borehole Diameter:

I.D. of Riser Pipe:

Type of Riser Pipe:

Depth of Seal:

Type of Seal: Bentonite

Depth of Sand Pack: 6.5

Depth Top of Screen: 7.5

Type of Screen:

Slot Size x Length: 10 Slot 10'

I.D. of Screen:

Type of Sand Pack:

Depth Bottom of Screen: 17.5

Depth Bottom of Sand Pack:

Depth of Hole: 17.5

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Appendix C

MALCOLM PIRNIE

MALCOLM PIRNIE, INC.
INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS & CONSULTANTS

April 24, 2000

MAY - 5 2000
THE SEAR-BROWN GROUP

The Sear-Brown Group
85 Metro Park
Rochester, New York 14623-2674

Attn: Mr. Bill Goodman

Re: Soil Testing Analytical Report

Gentlemen:

In accordance with your request, we are pleased to present the results of the analysis of the samples received from the Exchange Street project.

The samples were analyzed for the following parameters:

Parameter	Method
Grain Size	ASTM D421, 422
Porosity	ACOE EM 1110-2-1906

The results are summarized on the following pages and the invoice is attached for your review.

If you should have any questions regarding these results or require additional information, please feel to contact me at (716) 667-0900. We look forward to serving your analytical needs again in the near future.

Very truly yours,

MALCOLM PIRNIE, INC.

Anne Marie C. McManus, P.E., DEE
Soils Laboratory Manager

Enclosure
File: 2532-001

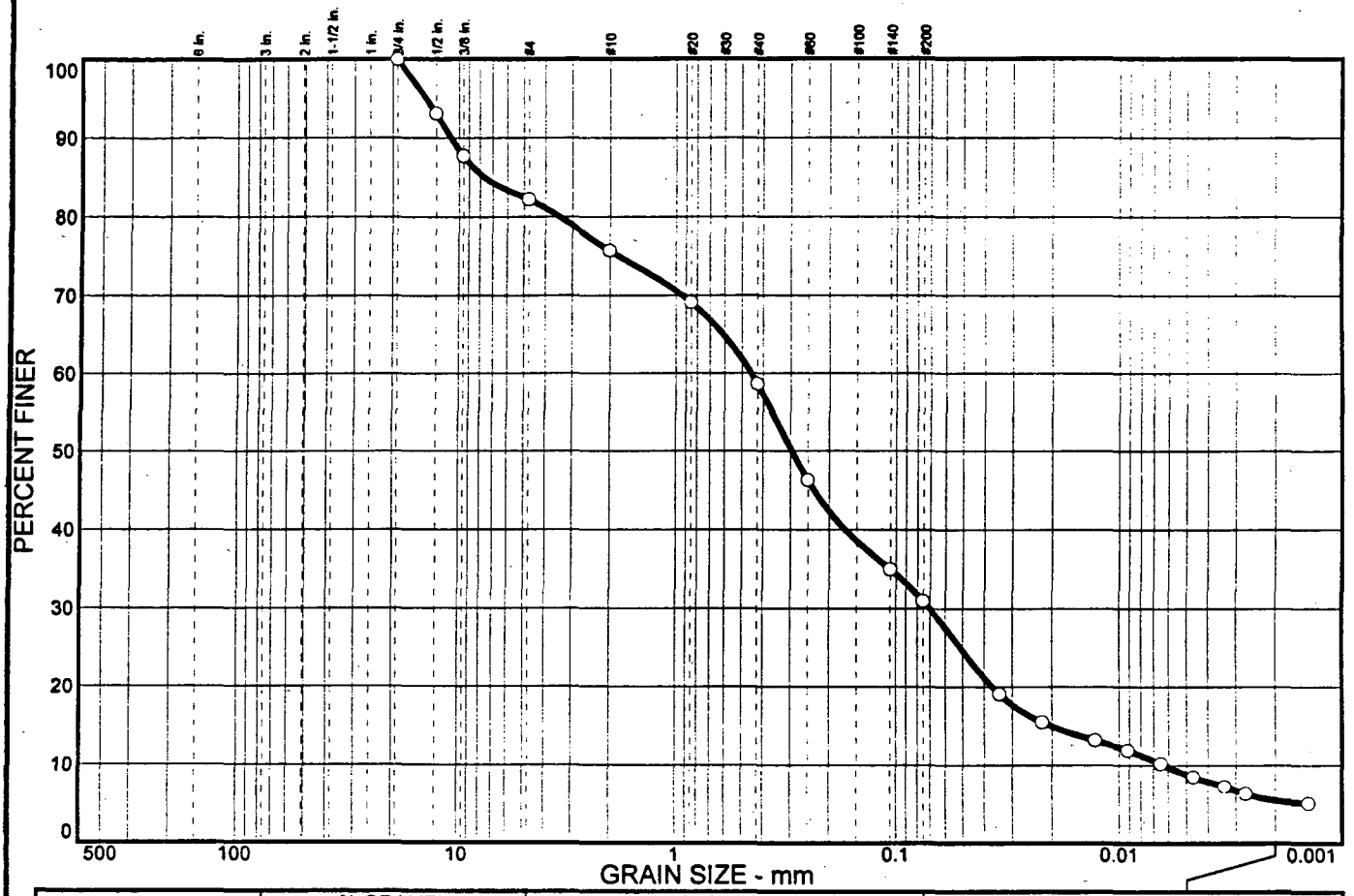
Malcolm Pirnie, Inc.

Project:: 180-182 Exchange Street

Project No.: 2532-001

Sample	Gravel %	Sand %	Silt %	Clay %	Moisture Content %	Porosity %	Wet Density pcf	Dry Density pcf	Specific Gravity
GP-103	0.0	52.9	40.5	6.6	25.4	42.2	122.6	97.8	2.71
GP-103 Fill	17.8	51.2	25.4	5.6	11.2	42.7	105.1	94.5	2.64
GP-109	0.0	16.8	69.9	13.3	21.7	36.9	130.5	107.2	2.72

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	17.8	6.5	17.1	27.6	25.4	5.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	93.1		
.375 in.	87.7		
#4	82.2		
#10	75.7		
#20	69.1		
#40	58.6		
#60	46.3		
#140	35.0		
#200	31.0		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 7.61 D_{60}= 0.455 D_{50}= 0.295
D_{30}= 0.0699 D_{15}= 0.0200 D_{10}= 0.0063
C_u= 72.54 C_c= 1.71

Classification

USCS= AASHTO=

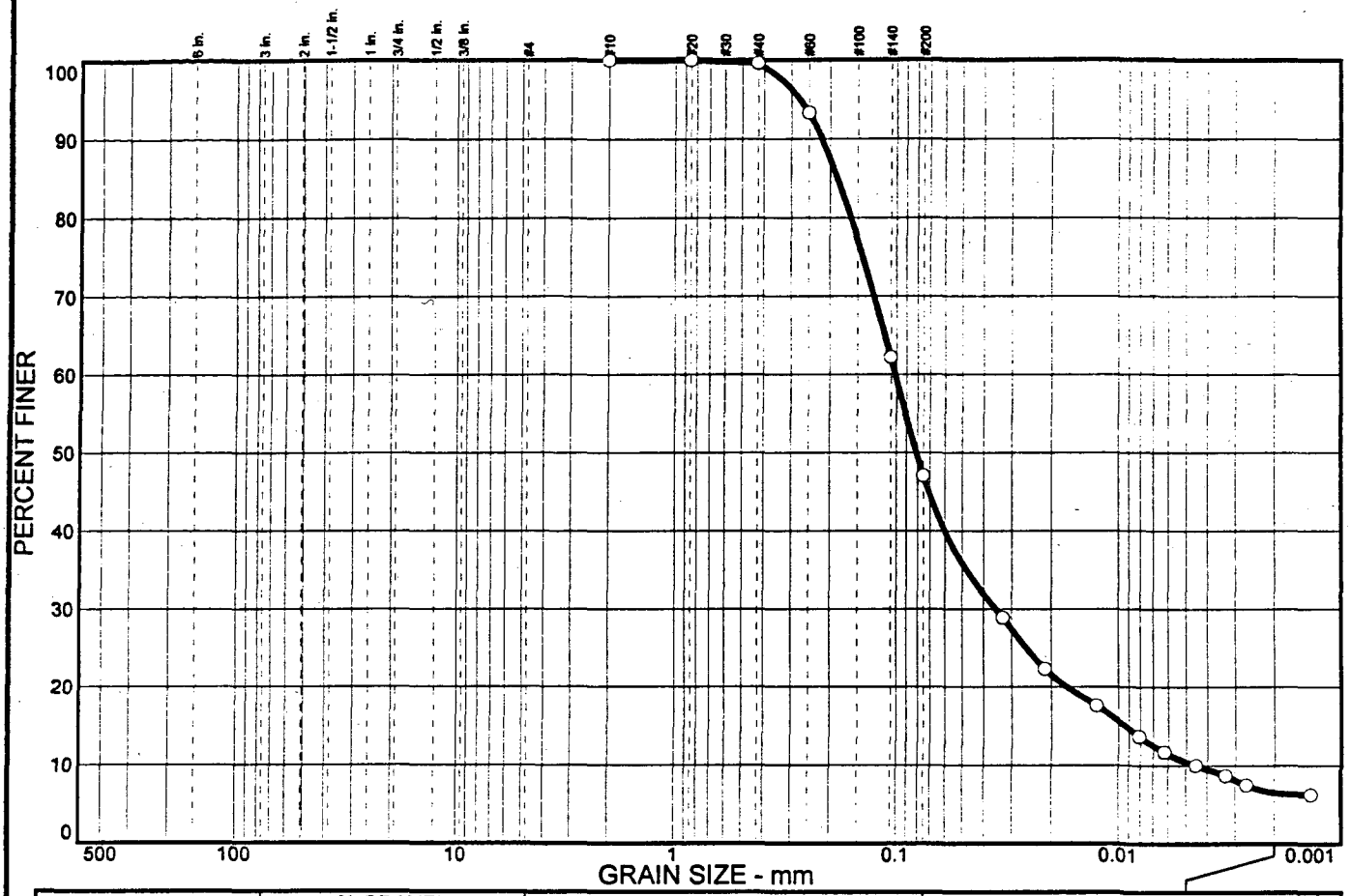
Remarks

Sample No.: GP-103 Fill **Source of Sample:** Sear Brown **Date:** 4-3-00
Location: **Elev./Depth:**

MALCOLM PIRNIE, INC.

Client: Sear Brown
Project: 180-182 Excange Street
Project No: 2535-001 **Plate**

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.4	52.5	40.5	6.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	99.6		
#60	93.3		
#140	62.2		
#200	47.1		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.185 D_{60}= 0.101 D_{50}= 0.0807
D_{30}= 0.0351 D_{15}= 0.0093 D_{10}= 0.0045
C_u= 22.51 C_c= 2.71

Classification

USCS= AASHTO=

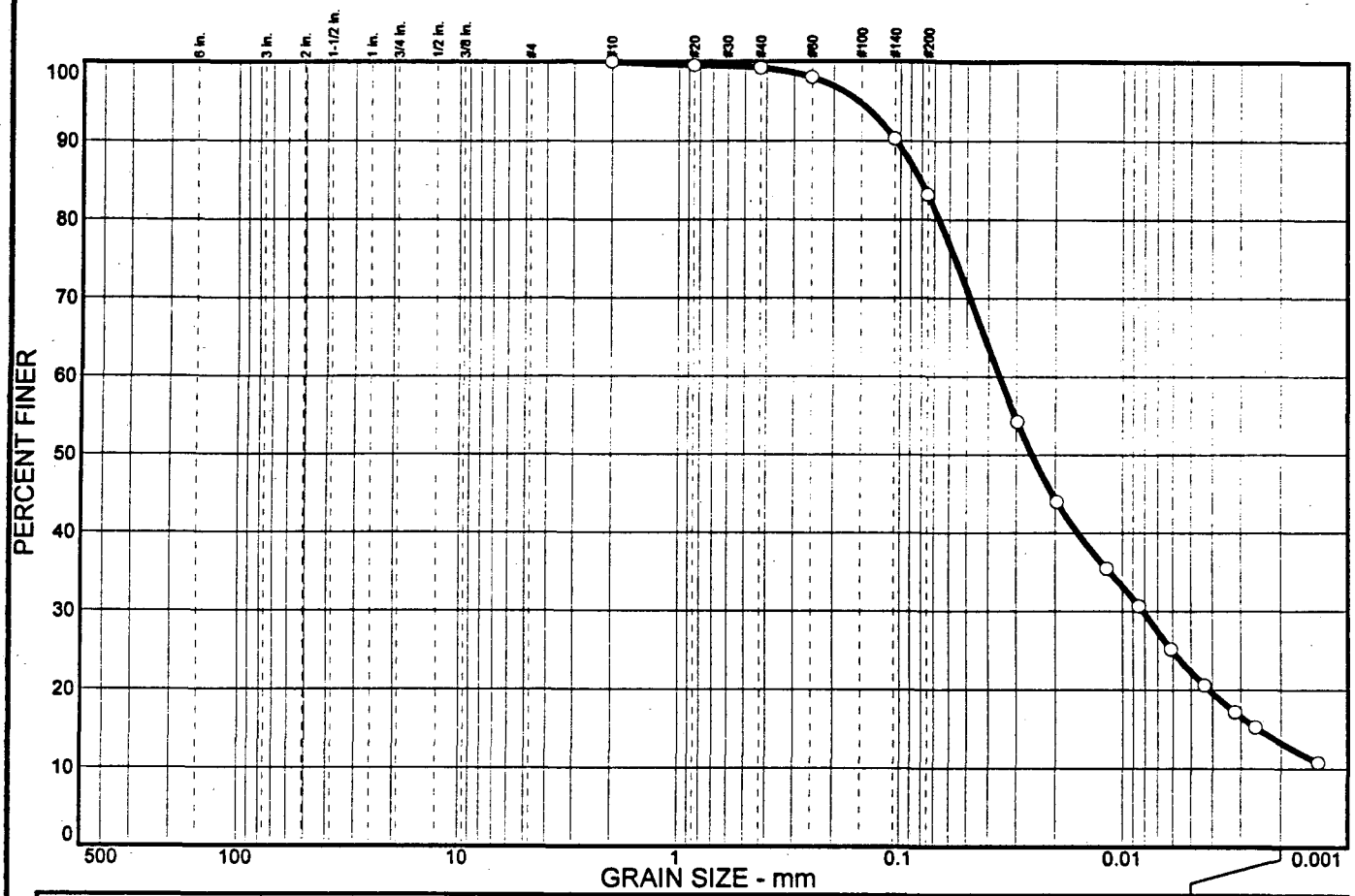
Remarks

Sample No.: GP-103 **Source of Sample:** Sear Brown **Date:** 4-3-00
Location: **Elev./Depth:**

MALCOLM PIRNIE, INC.

Client: Sear Brown
Project: 180-182 Excange Street
Project No: 2535-001 **Plate**

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.8	16.0	69.9	13.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.5		
#40	99.2		
#60	98.0		
#140	90.3		
#200	83.2		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0808 D_{60}= 0.0357 D_{50}= 0.0254
D_{30}= 0.0081 D_{15}= 0.0025 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: GP-109 **Source of Sample:** Sear Brown **Date:** 4-3-00
Location: **Elev./Depth:**

MALCOLM PIRNIE, INC.

Client: Sear Brown
Project: 180-182 Excange Street
Project No: 2535-001 **Plate**

Appendix D

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Organic Compound Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No:**	00-0585
		Lab Sample No:	2397
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No:	15155.07		
		Date Sampled:	03/23/00
Field Location:	GP-101	**Date Received:**	03/23/00
Field ID No:	N/A	**Date Analyzed:**	03/24/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromodichloromethane	ND< 829	Benzene	ND< 829
Bromomethane	ND< 829	Chlorobenzene	ND< 829
Bromoform	ND< 829	Ethylbenzene	21,500
Carbon tetrachloride	ND< 829	Toluene	15,900
Chloroethane	ND< 829	m,p - Xylene	87,200
Chloromethane	ND< 829	o - Xylene	36,400
2-Chloroethyl vinyl ether	ND< 829	Styrene	ND< 829
Chloroform	ND< 829		
Dibromochloromethane	ND< 829		
1,1-Dichloroethane	ND< 829		
1,2-Dichloroethane	ND< 829		
1,1-Dichloroethene	ND< 829		
trans-1,2-Dichloroethene	ND< 829	**Ketones & Misc.**	
1,2-Dichloropropane	ND< 829	Acetone	ND< 3,320
cis-1,3-Dichloropropene	ND< 829	Vinyl acetate	ND< 1,660
trans-1,3-Dichloropropene	ND< 829	2-Butanone	ND< 1,660
Methylene chloride	ND< 2,070	4-Methyl-2-pentanone	ND< 1,660
1,1,2,2-Tetrachloroethane	ND< 829	2-Hexanone	ND< 1,660
Tetrachloroethene	ND< 829	Carbon disulfide	ND< 1,660
1,1,1-Trichloroethane	ND< 829		
1,1,2-Trichloroethane	ND< 829		
Trichloroethene	ND< 829		
Vinyl Chloride	ND< 829		

Analytical Method: EPA 8260 ELAP ID No: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000585V1.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Soil/Sludge

(Additional 8260 compounds)

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2397
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07		
		Date Sampled:	03/23/00
Field Location:	GP-101	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/24/00

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-Butyl Ether	ND< 829
Isopropylbenzene	2,510
n-Propylbenzene	8,980
1,3,5-Trimethylbenzene	19,800
tert-Butylbenzene	ND< 829
1,2,4-Trimethylbenzene	66,000
sec-Butylbenzene	1,070
p-Isopropyltoluene	2,540
n-Butylbenzene	ND< 829
Naphthalene	19,700

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By: _____
Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2398
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-102	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 24.2	Benzene	ND< 24.2
Bromomethane	ND< 24.2	Bromobenzene	ND< 24.2
Carbon Tetrachloride	ND< 24.2	n-Butylbenzene	ND< 24.2
Chloroethane	ND< 24.2	sec-Butylbenzene	ND< 24.2
Chloromethane	ND< 24.2	tert-Butylbenzene	ND< 24.2
1,2-Dibromomethane	ND< 24.2	Chlorobenzene	ND< 24.2
Dibromomethane	ND< 24.2	2-Chlorotoluene	ND< 24.2
1,2-Dibromo-3-Chloropropane	ND< 24.2	4-Chlorotoluene	ND< 24.2
1,1-Dichloroethane	ND< 24.2	1,2-Dichlorobenzene	ND< 24.2
1,2- Dichloroethane	ND< 24.2	1,3-Dichlorobenzene	ND< 24.2
1,1-Dichloroethene	ND< 24.2	1,4-Dichlorobenzene	ND< 24.2
cis- 1,2-Dichloroethene	ND< 24.2	Ethyl Benzene	226.1
trans-1,2-Dichloroethene	ND< 24.2	Hexachlorobutadiene	ND< 24.2
1,2 - Dichloropropane	ND< 24.2	Isopropylbenzene	ND< 24.2
1,3-Dichloropropane	ND< 24.2	4-Isopropyltoluene	ND< 24.2
2,2-Dichloropropane	ND< 24.2	Naphthalene	ND< 24.2
1,1- Dichloropropene	ND< 24.2	n-Propylbenzene	44.6
cis-1,3-Dichloropropene	ND< 24.2	styrene	ND< 24.2
trans-1,3-Dichloropropene	ND< 24.2	Toluene	41.9
Methylene Chloride	ND< 60.4	1,2,3-Trichlorobenzene	ND< 24.2
1,1,1,2-Tetrachloroethane	ND< 24.2	1,2,4-Trichlorobenzene	ND< 24.2
1,1,2,2-Tetrachloroethane	ND< 24.2	1,2,4-Trimethylbenzene	225.9
Tetrachloroethene	ND< 24.2	1,3,5-Trimethylbenzene	70.5
1,1,1-Trichloroethane	ND< 24.2	m,p-xylene	812.2
1,1,2-Trichloroethane	ND< 24.2	o-Xylene	280.1
Trichloroethene	ND< 24.2		
Trichlorofluoromethane	ND< 24.2		
1,2,3-Trichloropropane	ND< 24.2		
Vinyl Chloride	ND< 24.2		
Bromodichloromethane	ND< 24.2		
Bromoform	ND< 24.2		
Chloroform	ND< 24.2		
Dibromochloromethane	ND< 24.2		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2399
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-103	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 9.9	Benzene	ND< 9.9
Bromomethane	ND< 9.9	Bromobenzene	ND< 9.9
Carbon Tetrachloride	ND< 9.9	n-Butylbenzene	ND< 9.9
Chloroethane	ND< 9.9	sec-Butylbenzene	ND< 9.9
Chloromethane	ND< 9.9	tert-Butylbenzene	ND< 9.9
1,2-Dibromomethane	ND< 9.9	Chlorobenzene	ND< 9.9
Dibromomethane	ND< 9.9	2-Chlorotoluene	ND< 9.9
1,2-Dibromo-3-Chloropropane	ND< 9.9	4-Chlorotoluene	ND< 9.9
1,1-Dichloroethane	ND< 9.9	1,2-Dichlorobenzene	ND< 9.9
1,2- Dichloroethane	ND< 9.9	1,3-Dichlorobenzene	ND< 9.9
1,1-Dichloroethene	ND< 9.9	1,4-Dichlorobenzene	ND< 9.9
cis- 1,2-Dichloroethene	ND< 9.9	Ethyl Benzene	ND< 9.9
trans-1,2-Dichloroethene	ND< 9.9	Hexachlorobutadiene	ND< 9.9
1,2 - Dichloropropane	ND< 9.9	Isopropylbenzene	ND< 9.9
1,3-Dichloropropane	ND< 9.9	4-Isopropyltoluene	ND< 9.9
2,2-Dichloropropane	ND< 9.9	Naphthalene	ND< 9.9
1,1- Dichloropropene	ND< 9.9	n-Propylbenzene	ND< 9.9
cis-1,3-Dichloropropene	ND< 9.9	styrene	ND< 9.9
trans-1,3-Dichloropropene	ND< 9.9	Toluene	ND< 9.9
Methylene Chloride	ND< 24.7	1,2,3-Trichlorobenzene	ND< 9.9
1,1,1,2-Tetrachloroethane	ND< 9.9	1,2,4-Trichlorobenzene	ND< 9.9
1,1,2,2-Tetrachloroethane	ND< 9.9	1,2,4-Trimethylbenzene	ND< 9.9
Tetrachloroethene	ND< 9.9	1,3,5-Trimethylbenzene	ND< 9.9
1,1,1-Trichloroethane	ND< 9.9	m,p-xylene	11.0
1,1,2-Trichloroethane	ND< 9.9	o-Xylene	ND< 9.9
Trichloroethene	ND< 9.9		
Trichlorofluoromethane	ND< 9.9		
1,2,3-Trichloropropane	ND< 9.9		
Vinyl Chloride	ND< 9.9		
Bromodichloromethane	ND< 9.9		
Bromoform	ND< 9.9		
Chloroform	ND< 9.9		
Dibromochloromethane	ND< 9.9		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2400
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-104	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 10.4	Benzene	123.9
Bromomethane	ND< 10.4	Bromobenzene	ND< 10.4
Carbon Tetrachloride	ND< 10.4	n-Butylbenzene	ND< 10.4
Chloroethane	ND< 10.4	sec-Butylbenzene	ND< 10.4
Chloromethane	ND< 10.4	tert-Butylbenzene	ND< 10.4
1,2-Dibromomethane	ND< 10.4	Chlorobenzene	ND< 10.4
Dibromomethane	ND< 10.4	2-Chlorotoluene	ND< 10.4
1,2-Dibromo-3-Chloropropane	ND< 10.4	4-Chlorotoluene	ND< 10.4
1,1-Dichloroethane	ND< 10.4	1,2-Dichlorobenzene	ND< 10.4
1,2- Dichloroethane	ND< 10.4	1,3-Dichlorobenzene	ND< 10.4
1,1-Dichloroethene	ND< 10.4	1,4-Dichlorobenzene	ND< 10.4
cis- 1,2-Dichloroethene	ND< 10.4	Ethyl Benzene	215.6
trans-1,2-Dichloroethene	ND< 10.4	Hexachlorobutadiene	ND< 10.4
1,2 - Dichloropropane	ND< 10.4	Isopropylbenzene	ND< 10.4
1,3-Dichloropropane	ND< 10.4	4-Isopropyltoluene	ND< 10.4
2,2-Dichloropropane	ND< 10.4	Naphthalene	ND< 10.4
1,1- Dichloropropene	ND< 10.4	n-Propylbenzene	ND< 10.4
cis-1,3-Dichloropropene	ND< 10.4	styrene	ND< 10.4
trans-1,3-Dichloropropene	ND< 10.4	Toluene	ND< 10.4
Methylene Chloride	ND< 25.9	1,2,3-Trichlorobenzene	ND< 10.4
1,1,1,2-Tetrachloroethane	ND< 10.4	1,2,4-Trichlorobenzene	ND< 10.4
1,1,2,2-Tetrachloroethane	ND< 10.4	1,2,4-Trimethylbenzene	50.0
Tetrachloroethene	ND< 10.4	1,3,5-Trimethylbenzene	19.1
1,1,1-Trichloroethane	ND< 10.4	m,p-xylene	251.9
1,1,2-Trichloroethane	ND< 10.4	o-Xylene	ND< 10.4
Trichloroethene	ND< 10.4		
Trichlorofluoromethane	ND< 10.4		
1,2,3-Trichloropropane	ND< 10.4		
Vinyl Chloride	ND< 10.4		
Bromodichloromethane	ND< 10.4		
Bromoform	ND< 10.4		
Chloroform	ND< 10.4		
Dibromochloromethane	ND< 10.4		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

PARADIGM
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SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2401
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-105	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 11.8	Benzene	ND< 11.8
Bromomethane	ND< 11.8	Bromobenzene	ND< 11.8
Carbon Tetrachloride	ND< 11.8	n-Butylbenzene	ND< 11.8
Chloroethane	ND< 11.8	sec-Butylbenzene	24.9
Chloromethane	ND< 11.8	tert-Butylbenzene	ND< 11.8
1,2-Dibromomethane	ND< 11.8	Chlorobenzene	ND< 11.8
Dibromomethane	ND< 11.8	2-Chlorotoluene	ND< 11.8
1,2-Dibromo-3-Chloropropane	ND< 11.8	4-Chlorotoluene	ND< 11.8
1,1-Dichloroethane	ND< 11.8	1,2-Dichlorobenzene	ND< 11.8
1,2- Dichloroethane	ND< 11.8	1,3-Dichlorobenzene	ND< 11.8
1,1-Dichloroethene	ND< 11.8	1,4-Dichlorobenzene	ND< 11.8
cis- 1,2-Dichloroethene	ND< 11.8	Ethyl Benzene	ND< 11.8
trans-1,2-Dichloroethene	ND< 11.8	Hexachlorobutadiene	ND< 11.8
1,2 - Dichloropropane	ND< 11.8	Isopropylbenzene	44.7
1,3-Dichloropropane	ND< 11.8	4-Isopropyltoluene	ND< 11.8
2,2-Dichloropropane	ND< 11.8	Naphthalene	ND< 11.8
1,1- Dichloropropene	ND< 11.8	n-Propylbenzene	80.0
cis-1,3-Dichloropropene	ND< 11.8	styrene	ND< 11.8
trans-1,3-Dichloropropene	ND< 11.8	Toluene	ND< 11.8
Methylene Chloride	ND< 29.5	1,2,3-Trichlorobenzene	ND< 11.8
1,1,1,2-Tetrachloroethane	ND< 11.8	1,2,4-Trichlorobenzene	ND< 11.8
1,1,2,2-Tetrachloroethane	ND< 11.8	1,2,4-Trimethylbenzene	ND< 11.8
Tetrachloroethene	ND< 11.8	1,3,5-Trimethylbenzene	ND< 11.8
1,1,1-Trichloroethane	ND< 11.8	m,p-xylene	ND< 11.8
1,1,2-Trichloroethane	ND< 11.8	o-Xylene	ND< 11.8
Trichloroethene	ND< 11.8		
Trichlorofluoromethane	ND< 11.8		
1,2,3-Trichloropropane	ND< 11.8		
Vinyl Chloride	ND< 11.8		
Bromodichloromethane	ND< 11.8		
Bromoform	ND< 11.8		
Chloroform	ND< 11.8		
Dibromochloromethane	ND< 11.8		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

PARADIGM
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179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Organic Compound Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No:**	00-0585
		Lab Sample No:	2402
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No:	15155.07		
		Date Sampled:	03/23/00
Field Location:	GP-106	**Date Received:**	03/23/00
Field ID No:	N/A	**Date Analyzed:**	03/24/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromodichloromethane	ND< 880	Benzene	ND< 880
Bromomethane	ND< 880	Chlorobenzene	ND< 880
Bromoform	ND< 880	Ethylbenzene	3,120
Carbon tetrachloride	ND< 880	Toluene	ND< 880
Chloroethane	ND< 880	m,p - Xylene	13,300
Chloromethane	ND< 880	o - Xylene	4,350
2-Chloroethyl vinyl ether	ND< 880	Styrene	ND< 880
Chloroform	ND< 880		
Dibromochloromethane	ND< 880		
1,1-Dichloroethane	ND< 880		
1,2-Dichloroethane	ND< 880		
1,1-Dichloroethene	ND< 880		
trans-1,2-Dichloroethene	ND< 880	**Ketones & Misc.**	
1,2-Dichloropropane	ND< 880	Acetone	ND< 3,520
cis-1,3-Dichloropropene	ND< 880	Vinyl acetate	ND< 1,760
trans-1,3-Dichloropropene	ND< 880	2-Butanone	ND< 1,760
Methylene chloride	ND< 2,200	4-Methyl-2-pentanone	ND< 1,760
1,1,2,2-Tetrachloroethane	ND< 880	2-Hexanone	ND< 1,760
Tetrachloroethene	ND< 880	Carbon disulfide	ND< 1,760
1,1,1-Trichloroethane	ND< 880		
1,1,2-Trichloroethane	ND< 880		
Trichloroethene	ND< 880		
Vinyl Chloride	ND< 880		

Analytical Method: EPA 8260 ELAP ID No: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000585V6.XLS

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SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Soil/Sludge

(Additional 8260 compounds)

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2402
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07		
		Date Sampled:	03/23/00
Field Location:	GP-106	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/24/00

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-Butyl Ether	ND< 880
Isopropylbenzene	ND< 880
n-Propylbenzene	1,790
1,3,5-Trimethylbenzene	4,630
tert-Butylbenzene	ND< 880
1,2,4-Trimethylbenzene	11,900
sec-Butylbenzene	ND< 880
p-Isopropyltoluene	ND< 880
n-Butylbenzene	ND< 880
Naphthalene	ND< 4400

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By: _____
Laboratory Director

00585V6.XLS

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179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2403
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-107	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 76.8	Benzene	ND< 76.8
Bromomethane	ND< 76.8	Bromobenzene	ND< 76.8
Carbon Tetrachloride	ND< 76.8	n-Butylbenzene	ND< 76.8
Chloroethane	ND< 76.8	sec-Butylbenzene	313.8
Chloromethane	ND< 76.8	tert-Butylbenzene	ND< 76.8
1,2-Dibromomethane	ND< 76.8	Chlorobenzene	ND< 76.8
Dibromomethane	ND< 76.8	2-Chlorotoluene	ND< 76.8
1,2-Dibromo-3-Chloropropane	ND< 76.8	4-Chlorotoluene	ND< 76.8
1,1-Dichloroethane	ND< 76.8	1,2-Dichlorobenzene	ND< 76.8
1,2- Dichloroethane	ND< 76.8	1,3-Dichlorobenzene	ND< 76.8
1,1-Dichloroethene	ND< 76.8	1,4-Dichlorobenzene	ND< 76.8
cis- 1,2-Dichloroethene	ND< 76.8	Ethyl Benzene	2177.0
trans-1,2-Dichloroethene	ND< 76.8	Hexachlorobutadiene	ND< 76.8
1,2 - Dichloropropane	ND< 76.8	Isopropylbenzene	662.8
1,3-Dichloropropane	ND< 76.8	4-Isopropyltoluene	703.4
2,2-Dichloropropane	ND< 76.8	Naphthalene	2580.5
1,1- Dichloropropene	ND< 76.8	n-Propylbenzene	2505.2
cis-1,3-Dichloropropene	ND< 76.8	styrene	ND< 76.8
trans-1,3-Dichloropropene	ND< 76.8	Toluene	ND< 76.8
Methylene Chloride	ND< 192.0	1,2,3-Trichlorobenzene	ND< 76.8
1,1,1,2-Tetrachloroethane	ND< 76.8	1,2,4-Trichlorobenzene	ND< 76.8
1,1,2,2-Tetrachloroethane	ND< 76.8	1,2,4-Trimethylbenzene	12791.0 E
Tetrachloroethene	ND< 76.8	1,3,5-Trimethylbenzene	3158.0
1,1,1-Trichloroethane	ND< 76.8	m,p-xylene	7716.2
1,1,2-Trichloroethane	ND< 76.8	o-Xylene	2351.6
Trichloroethene	ND< 76.8		
Trichlorofluoromethane	ND< 76.8		
1,2,3-Trichloropropane	ND< 76.8		
Vinyl Chloride	ND< 76.8		
Bromodichloromethane	ND< 76.8		
Bromoform	ND< 76.8		
Chloroform	ND< 76.8		
Dibromochloromethane	ND< 76.8		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected
E = estimated value

PARADIGM
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179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2404
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-108	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 18.6	Benzene	126.8
Bromomethane	ND< 18.6	Bromobenzene	ND< 18.6
Carbon Tetrachloride	ND< 18.6	n-Butylbenzene	ND< 18.6
Chloroethane	ND< 18.6	sec-Butylbenzene	ND< 18.6
Chloromethane	ND< 18.6	tert-Butylbenzene	ND< 18.6
1,2-Dibromomethane	ND< 18.6	Chlorobenzene	ND< 18.6
Dibromomethane	ND< 18.6	2-Chlorotoluene	ND< 18.6
1,2-Dibromo-3-Chloropropane	ND< 18.6	4-Chlorotoluene	ND< 18.6
1,1-Dichloroethane	ND< 18.6	1,2-Dichlorobenzene	ND< 18.6
1,2- Dichloroethane	ND< 18.6	1,3-Dichlorobenzene	ND< 18.6
1,1-Dichloroethene	ND< 18.6	1,4-Dichlorobenzene	ND< 18.6
cis- 1,2-Dichloroethene	ND< 18.6	Ethyl Benzene	56.3
trans-1,2-Dichloroethene	ND< 18.6	Hexachlorobutadiene	ND< 18.6
1,2 - Dichloropropane	ND< 18.6	Isopropylbenzene	309.6
1,3-Dichloropropane	ND< 18.6	4-Isopropyltoluene	ND< 18.6
2,2-Dichloropropane	ND< 18.6	Naphthalene	615.3
1,1- Dichloropropene	ND< 18.6	n-Propylbenzene	705.6
cis-1,3-Dichloropropene	ND< 18.6	styrene	ND< 18.6
trans-1,3-Dichloropropene	ND< 18.6	Toluene	ND< 18.6
Methylene Chloride	ND< 46.4	1,2,3-Trichlorobenzene	ND< 18.6
1,1,1,2-Tetrachloroethane	ND< 18.6	1,2,4-Trichlorobenzene	ND< 18.6
1,1,2,2-Tetrachloroethane	ND< 18.6	1,2,4-Trimethylbenzene	319.1
Tetrachloroethene	ND< 18.6	1,3,5-Trimethylbenzene	29.4
1,1,1-Trichloroethane	ND< 18.6	m,p-xylene	107.1
1,1,2-Trichloroethane	ND< 18.6	o-Xylene	38.0
Trichloroethene	ND< 18.6		
Trichlorofluoromethane	ND< 18.6		
1,2,3-Trichloropropane	ND< 18.6		
Vinyl Chloride	ND< 18.6		
Bromodichloromethane	ND< 18.6		
Bromoform	ND< 18.6		
Chloroform	ND< 18.6		
Dibromochloromethane	ND< 18.6		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

PARADIGM
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SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2405
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-109	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 10.9	Benzene	ND< 10.9
Bromomethane	ND< 10.9	Bromobenzene	ND< 10.9
Carbon Tetrachloride	ND< 10.9	n-Butylbenzene	ND< 10.9
Chloroethane	ND< 10.9	sec-Butylbenzene	ND< 10.9
Chloromethane	ND< 10.9	tert-Butylbenzene	ND< 10.9
1,2-Dibromomethane	ND< 10.9	Chlorobenzene	ND< 10.9
Dibromomethane	ND< 10.9	2-Chlorotoluene	ND< 10.9
1,2-Dibromo-3-Chloropropane	ND< 10.9	4-Chlorotoluene	ND< 10.9
1,1-Dichloroethane	ND< 10.9	1,2-Dichlorobenzene	ND< 10.9
1,2- Dichloroethane	ND< 10.9	1,3-Dichlorobenzene	ND< 10.9
1,1-Dichloroethene	ND< 10.9	1,4-Dichlorobenzene	ND< 10.9
cis- 1,2-Dichloroethene	ND< 10.9	Ethyl Benzene	ND< 10.9
trans-1,2-Dichloroethene	ND< 10.9	Hexachlorobutadiene	ND< 10.9
1,2 - Dichloropropane	ND< 10.9	Isopropylbenzene	ND< 10.9
1,3-Dichloropropane	ND< 10.9	4-Isopropyltoluene	ND< 10.9
2,2-Dichloropropane	ND< 10.9	Naphthalene	15.3
1,1- Dichloropropene	ND< 10.9	n-Propylbenzene	ND< 10.9
cis-1,3-Dichloropropene	ND< 10.9	styrene	ND< 10.9
trans-1,3-Dichloropropene	ND< 10.9	Toluene	ND< 10.9
Methylene Chloride	ND< 27.3	1,2,3-Trichlorobenzene	ND< 10.9
1,1,1,2-Tetrachloroethane	ND< 10.9	1,2,4-Trichlorobenzene	ND< 10.9
1,1,2,2-Tetrachloroethane	ND< 10.9	1,2,4-Trimethylbenzene	ND< 10.9
Tetrachloroethene	ND< 10.9	1,3,5-Trimethylbenzene	ND< 10.9
1,1,1-Trichloroethane	ND< 10.9	m,p-xylene	ND< 10.9
1,1,2-Trichloroethane	ND< 10.9	o-Xylene	ND< 10.9
Trichloroethene	ND< 10.9		
Trichlorofluoromethane	ND< 10.9		
1,2,3-Trichloropropane	ND< 10.9		
Vinyl Chloride	ND< 10.9		
Bromodichloromethane	ND< 10.9		
Bromoform	ND< 10.9		
Chloroform	ND< 10.9		
Dibromochloromethane	ND< 10.9		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

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179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Soil/Sludge

Client:	Sear - Brown Group	**Lab Project No.:**	00-0585
		Lab Sample No.:	2406
Client Job Site:	Exchange St.		
		Sample Type:	Soil
Client Job No.:	15155.07	**Date Sampled:**	03/23/00
Field Location:	GP-110	**Date Received:**	03/23/00
Field ID No.:	N/A	**Date Analyzed:**	03/28/00

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 31.8	Benzene	ND< 31.8
Bromomethane	ND< 31.8	Bromobenzene	ND< 31.8
Carbon Tetrachloride	ND< 31.8	n-Butylbenzene	629.6
Chloroethane	ND< 31.8	sec-Butylbenzene	254.9
Chloromethane	ND< 31.8	tert-Butylbenzene	ND< 31.8
1,2-Dibromomethane	ND< 31.8	Chlorobenzene	ND< 31.8
Dibromomethane	ND< 31.8	2-Chlorotoluene	ND< 31.8
1,2-Dibromo-3-Chloropropane	ND< 31.8	4-Chlorotoluene	ND< 31.8
1,1-Dichloroethane	ND< 31.8	1,2-Dichlorobenzene	ND< 31.8
1,2- Dichloroethane	ND< 31.8	1,3-Dichlorobenzene	ND< 31.8
1,1-Dichloroethene	ND< 31.8	1,4-Dichlorobenzene	ND< 31.8
cis- 1,2-Dichloroethene	ND< 31.8	Ethyl Benzene	ND< 31.8
trans-1,2-Dichloroethene	ND< 31.8	Hexachlorobutadiene	ND< 31.8
1,2 - Dichloropropane	ND< 31.8	Isopropylbenzene	65.1
1,3-Dichloropropane	ND< 31.8	4-Isopropyltoluene	129.3
2,2-Dichloropropane	ND< 31.8	Naphthalene	ND< 31.8
1,1- Dichloropropene	ND< 31.8	n-Propylbenzene	539.3
cis-1,3-Dichloropropene	ND< 31.8	styrene	ND< 31.8
trans-1,3-Dichloropropene	ND< 31.8	Toluene	ND< 31.8
Methylene Chloride	ND< 79.6	1,2,3-Trichlorobenzene	ND< 31.8
1,1,1,2-Tetrachloroethane	ND< 31.8	1,2,4-Trichlorobenzene	ND< 31.8
1,1,2,2-Tetrachloroethane	ND< 31.8	1,2,4-Trimethylbenzene	1657.2
Tetrachloroethene	ND< 31.8	1,3,5-Trimethylbenzene	ND< 31.8
1,1,1-Trichloroethane	ND< 31.8	m,p-xylene	ND< 31.8
1,1,2-Trichloroethane	ND< 31.8	o-Xylene	ND< 31.8
Trichloroethene	ND< 31.8		
Trichlorofluoromethane	ND< 31.8		
1,2,3-Trichloropropane	ND< 31.8		
Vinyl Chloride	ND< 31.8		
Bromodichloromethane	ND< 31.8		
Bromoform	ND< 31.8		
Chloroform	ND< 31.8		
Dibromochloromethane	ND< 31.8		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: _____
Laboratory Director

Notes: ND denotes Not Detected

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Solids (STARS List)

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0655
		Lab Sample No.:	2603
Client Job Site:	15155.07		
		Sample Type:	Soil
Client Job No.:	15155.07		
		Date Sampled:	03/27/00
Field Location:	MW-3 (12'-13.4')	**Date Received:**	03/31/00
Field ID No.:	N/A	**Date Analyzed:**	04/05/00

VOLATILE AROMATICS	RESULTS (ug/Kg)
Methyl tert-butyl Ether	ND< 11.1
Benzene	ND< 11.1
Toluene	ND< 11.1
Ethylbenzene	ND< 11.1
m,p-Xylene	ND< 11.1
o-Xylene	ND< 11.1
Isopropylbenzene	ND< 11.1
n-Propylbenzene	ND< 11.1
1,3,5-Trimethylbenzene	ND< 11.1
tert-Butylbenzene	ND< 11.1
1,2,4-Trimethylbenzene	ND< 11.1
sec-Butylbenzene	ND< 11.1
p-Isopropyltoluene	ND< 11.1
n-Butylbenzene	ND< 11.1
Naphthalene	ND< 55.5

Analytical Method: EPA 8021 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

000655v1

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue

Rochester, NY 14608

(716) 647-2530 * (800) 724-1997

CHAIN OF CUSTODY

REPORT TO:	INVOICE TO:		
COMPANY: Sear-Brown Group	COMPANY:	LAB PROJECT #:	CLIENT PROJECT #: 15155.07
ADDRESS: 75 Metro Park	ADDRESS: Same		
CITY: Rochester NY STATE: ZIP: 14623	CITY: STATE: ZIP:	TURNAROUND TIME: (WORKING DAYS)	
PHONE: 475-1440 FAX: 424-5951	PHONE: FAX:		STD / OTHER
PROJECT NAME/SITE NAME: 15155.07	ATTN: Mike Stromsky	ATTN:	1 2 3 5
	COMMENTS:		

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	8021A VOC	STARS 8021	EPA 8260 TCL									REMARKS	PARADIGM LAB SAMPLE NUMBER
1	3-22-00	9:40		X	GP-101	S	4		X	X										
2		11:00			GP-102			X												
3		10:15			GP-103			X												
4		11:25			GP-104			X												
5		12:00			GP-105			X												
6		12:40			GP-106				X	X										
7		14:25			GP-107			X												
8		15:00			GP-108			X												
9		15:45			GP-109			X												
10		16:15			GP-110			X												

LAB USE ONLY

SAMPLE CONDITION: Check box if acceptable or note deviation: CONTAINER TYPE: PRESERVATIONS: HOLDING TIME: TEMPERATURE:

Sampled By: Rebecca Hardy	Date/Time: 3-22-00	Received By:	Date/Time:	Total Cost:
Relinquished By: [signature]	Date/Time: 3-23-00 @ 14:20	Received By: [signature]	Date/Time: 3/23/00, 14:20	
Relinquished By:	Date/Time:	Received @ Lab By:	Date/Time:	P.I.F.

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(716) 647-2530 * (800) 724-1997

CHAIN OF CUSTODY

REPORT TO:
COMPANY: THE SEAR-BROWN GROUP
ADDRESS: 85 METRO PARK
CITY: ROCHESTER STATE: NY ZIP: 14623
PHONE: 475-1440 FAX: 424-5951
ATTN: MIKE STORONSKY

INVOICE TO:
COMPANY: SAME
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #:
CLIENT PROJECT #: 15155.07

TURNAROUND TIME: (WORKING DAYS) 1 2 3 STD (X) 5 OTHER

PROJECT NAME/SITE NAME: 15155.07

COMMENTS:

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	STARS 8021										REMARKS	PARADIGM LAB SAMPLE NUMBER
1	3/27/00	10:00		X	MW-3 (12'-13.4')	Soil	1 (4oz)	X											
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

****LAB USE ONLY****

SAMPLE CONDITION: Check box if acceptable or note deviation: CONTAINER TYPE: PRESERVATIONS: HOLDING TIME: TEMPERATURE:

Sampled By: REBECCA GERARDI Date/Time: 3/27/00
Relinquished By: [signature] Date/Time: 3/31/00 15:00
Relinquished By: Date/Time:

Received By: [signature] Date/Time: 3/27/00
Received By: Date/Time:
Received @ Lab By: [signature] Date/Time: 3/31/2000 14:50

Total Cost:
P.I.F.

Appendix E

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Non-Potable Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
Client Job Site:	Exchange Street	**Lab Sample No.:**	2757
Client Job No.:	15515-07	**Sample Type:**	Water
Field Location:	GW-15515-0400-DG-01	**Date Sampled:**	04/06/00
		Date Received:	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/13/00

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 20.0	Benzene	339
Bromomethane	ND< 20.0	Chlorobenzene	ND< 20.0
Bromoform	ND< 20.0	Ethylbenzene	ND< 20.0
Carbon tetrachloride	ND< 20.0	Toluene	46.5
Chloroethane	ND< 20.0	m,p - Xylene	70.9
Chloromethane	ND< 20.0	o - Xylene	356
2-Chloroethyl vinyl ether	ND< 20.0	Styrene	ND< 20.0
Chloroform	ND< 20.0		
Dibromochloromethane	ND< 20.0		
1,1-Dichloroethane	ND< 20.0		
1,2-Dichloroethane	ND< 20.0		
1,1-Dichloroethene	ND< 20.0		
trans-1,2-Dichloroethene	ND< 20.0		
1,2-Dichloropropane	ND< 20.0		
cis-1,3-Dichloropropene	ND< 20.0	**Ketones**	
trans-1,3-Dichloropropene	ND< 20.0	Acetone	ND< 100
Methylene chloride	ND< 50.0	Vinyl acetate	ND< 50.0
1,1,2,2-Tetrachloroethane	ND< 20.0	2-Butanone	ND< 50.0
Tetrachloroethene	ND< 20.0	4-Methyl-2-pentanone	ND< 50.0
1,1,1-Trichloroethane	ND< 20.0	2-Hexanone	ND< 50.0
1,1,2-Trichloroethane	ND< 20.0		
Trichloroethene	ND< 20.0	Carbon disulfide	ND< 20.0
Vinyl Chloride	ND< 20.0		

Analytical Method: EPA 8260 ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000704V1.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water
(Additional EPA 8260 Compounds)

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2757
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	04/06/00
Field Location:	GW-15515-0400-DG-01	**Date Received:**	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/13/00

VOLATILE AROMATICS	RESULTS (ug/L)
Methyl tert-Butyl Ether	ND< 20.0
Isopropylbenzene	ND< 20.0
n-Propylbenzene	ND< 20.0
1,3,5-Trimethylbenzene	193
tert-Butylbenzene	ND< 20.0
1,2,4-Trimethylbenzene	199
sec-Butylbenzene	ND< 20.0
p-Isopropyltoluene	43.0
n-Butylbenzene	ND< 20.0
Naphthalene	ND< 50.0

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

00704V1.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Non-Potable Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
Client Job Site:	Exchange Street	**Lab Sample No.:**	2758
Client Job No.:	15515-07	**Sample Type:**	Water
Field Location:	GW-15515-0400-DG-02	**Date Sampled:**	04/06/00
		Date Received:	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/14/00

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 100	Benzene	303
Bromomethane	ND< 100	Chlorobenzene	ND< 100
Bromoform	ND< 100	Ethylbenzene	1,370
Carbon tetrachloride	ND< 100	Toluene	5,750
Chloroethane	ND< 100	m,p - Xylene	4,900
Chloromethane	ND< 100	o - Xylene	2,310
2-Chloroethyl vinyl ether	ND< 100	Styrene	ND< 100
Chloroform	ND< 100		
Dibromochloromethane	ND< 100		
1,1-Dichloroethane	ND< 100		
1,2-Dichloroethane	ND< 100		
1,1-Dichloroethene	ND< 100		
trans-1,2-Dichloroethene	ND< 100		
1,2-Dichloropropane	ND< 100		
cis-1,3-Dichloropropene	ND< 100	**Ketones**	
trans-1,3-Dichloropropene	ND< 100	Acetone	ND< 500
Methylene chloride	ND< 250	Vinyl acetate	ND< 250
1,1,2,2-Tetrachloroethane	ND< 100	2-Butanone	ND< 250
Tetrachloroethene	ND< 100	4-Methyl-2-pentanone	ND< 250
1,1,1-Trichloroethane	ND< 100	2-Hexanone	ND< 250
1,1,2-Trichloroethane	ND< 100		
Trichloroethene	ND< 100	Carbon disulfide	ND< 100
Vinyl Chloride	ND< 100		

Analytical Method: EPA 8260 ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000704V2.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water
(Additional EPA 8260 Compounds)

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2758
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	04/06/00
Field Location:	GW-15515-0400-DG-02	**Date Received:**	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/13/00

VOLATILE AROMATICS	RESULTS (ug/L)
Methyl tert-Butyl Ether	ND< 20.0
Isopropylbenzene	99.0
n-Propylbenzene	194
1,3,5-Trimethylbenzene	451
tert-Butylbenzene	ND< 20.0
1,2,4-Trimethylbenzene	1,800
sec-Butylbenzene	ND< 20.0
p-Isopropyltoluene	42.2
n-Butylbenzene	ND< 20.0
Naphthalene	302

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Non-Potable Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
Client Job Site:	Exchange Street	**Lab Sample No.:**	2759
Client Job No.:	15515-07	**Sample Type:**	Water
Field Location:	GW-15515-0400-DG-03	**Date Sampled:**	04/06/00
		Date Received:	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/14/00

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 2.00	Benzene	ND< 0.700
Bromomethane	ND< 2.00	Chlorobenzene	ND< 2.00
Bromoform	ND< 2.00	Ethylbenzene	ND< 2.00
Carbon tetrachloride	ND< 2.00	Toluene	ND< 2.00
Chloroethane	ND< 2.00	m,p - Xylene	ND< 2.00
Chloromethane	ND< 2.00	o - Xylene	ND< 2.00
2-Chloroethyl vinyl ether	ND< 2.00	Styrene	ND< 2.00
Chloroform	ND< 2.00		
Dibromochloromethane	ND< 2.00		
1,1-Dichloroethane	ND< 2.00		
1,2-Dichloroethane	ND< 2.00		
1,1-Dichloroethene	ND< 2.00		
trans-1,2-Dichloroethene	ND< 2.00		
1,2-Dichloropropane	ND< 2.00		
cis-1,3-Dichloropropene	ND< 2.00	**Ketones**	
trans-1,3-Dichloropropene	ND< 2.00	Acetone	ND< 10.0
Methylene chloride	ND< 5.00	Vinyl acetate	ND< 5.00
1,1,2,2-Tetrachloroethane	ND< 2.00	2-Butanone	ND< 5.00
Tetrachloroethene	ND< 2.00	4-Methyl-2-pentanone	ND< 5.00
1,1,1-Trichloroethane	ND< 2.00	2-Hexanone	ND< 5.00
1,1,2-Trichloroethane	ND< 2.00		
Trichloroethene	ND< 2.00	Carbon disulfide	ND< 2.00
Vinyl Chloride	ND< 2.00		

Analytical Method: EPA 8260 ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000704V3.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water
(Additional EPA 8260 Compounds)

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2759
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	04/06/00
Field Location:	GW-15515-0400-DG-03	**Date Received:**	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/14/00

VOLATILE AROMATICS	RESULTS (ug/L)
Methyl tert-Butyl Ether	ND< 2.00
Isopropylbenzene	ND< 2.00
n-Propylbenzene	ND< 2.00
1,3,5-Trimethylbenzene	ND< 2.00
tert-Butylbenzene	ND< 2.00
1,2,4-Trimethylbenzene	ND< 2.00
sec-Butylbenzene	ND< 2.00
p-Isopropyltoluene	ND< 2.00
n-Butylbenzene	ND< 2.00
Naphthalene	ND< 5.00

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

00704V3.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Non-Potable Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
Client Job Site:	Exchange Street	**Lab Sample No.:**	2760
Client Job No.:	15515-07	**Sample Type:**	Water
Field Location:	GW-15515-0400-DG-04	**Date Sampled:**	04/06/00
		Date Received:	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/14/00

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 2.00	Benzene	1.30
Bromomethane	ND< 2.00	Chlorobenzene	ND< 2.00
Bromoform	ND< 2.00	Ethylbenzene	ND< 2.00
Carbon tetrachloride	ND< 2.00	Toluene	ND< 2.00
Chloroethane	ND< 2.00	m,p - Xylene	5.31
Chloromethane	ND< 2.00	o - Xylene	7.74
2-Chloroethyl vinyl ether	ND< 2.00	Styrene	ND< 2.00
Chloroform	ND< 2.00		
Dibromochloromethane	ND< 2.00		
1,1-Dichloroethane	ND< 2.00		
1,2-Dichloroethane	ND< 2.00		
1,1-Dichloroethene	ND< 2.00		
trans-1,2-Dichloroethene	ND< 2.00		
1,2-Dichloropropane	ND< 2.00		
cis-1,3-Dichloropropene	ND< 2.00	**Ketones**	
trans-1,3-Dichloropropene	ND< 2.00	Acetone	ND< 10.0
Methylene chloride	ND< 5.00	Vinyl acetate	ND< 5.00
1,1,2,2-Tetrachloroethane	ND< 2.00	2-Butanone	ND< 5.00
Tetrachloroethene	ND< 2.00	4-Methyl-2-pentanone	ND< 5.00
1,1,1-Trichloroethane	ND< 2.00	2-Hexanone	ND< 5.00
1,1,2-Trichloroethane	ND< 2.00		
Trichloroethene	ND< 2.00	Carbon disulfide	ND< 2.00
Vinyl Chloride	ND< 2.00		

Analytical Method: EPA 8260 ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000704V4.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water
(Additional EPA 8260 Compounds)

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2760
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	04/06/00
Field Location:	GW-15515-0400-DG-04	**Date Received:**	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/14/00

VOLATILE AROMATICS	RESULTS (ug/L)
Methyl tert-Butyl Ether	ND< 2.00
Isopropylbenzene	ND< 2.00
n-Propylbenzene	ND< 2.00
1,3,5-Trimethylbenzene	22.4
tert-Butylbenzene	ND< 2.00
1,2,4-Trimethylbenzene	158
sec-Butylbenzene	ND< 2.00
p-Isopropyltoluene	3.30
n-Butylbenzene	ND< 2.00
Naphthalene	ND< 5.00

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Non-Potable Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
Client Job Site:	Exchange Street	**Lab Sample No.:**	2761
Client Job No.:	15515-07	**Sample Type:**	Water
Field Location:	Trip Blank	**Date Sampled:**	N/A
		Date Received:	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/13/00

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 2.00	Benzene	ND< 0.700
Bromomethane	ND< 2.00	Chlorobenzene	ND< 2.00
Bromoform	ND< 2.00	Ethylbenzene	ND< 2.00
Carbon tetrachloride	ND< 2.00	Toluene	ND< 2.00
Chloroethane	ND< 2.00	m,p - Xylene	ND< 2.00
Chloromethane	ND< 2.00	o - Xylene	ND< 2.00
2-Chloroethyl vinyl ether	ND< 2.00	Styrene	ND< 2.00
Chloroform	ND< 2.00		
Dibromochloromethane	ND< 2.00		
1,1-Dichloroethane	ND< 2.00		
1,2-Dichloroethane	ND< 2.00		
1,1-Dichloroethene	ND< 2.00		
trans-1,2-Dichloroethene	ND< 2.00		
1,2-Dichloropropane	ND< 2.00		
cis-1,3-Dichloropropene	ND< 2.00	**Ketones**	
trans-1,3-Dichloropropene	ND< 2.00	Acetone	ND< 10.0
Methylene chloride	ND< 5.00	Vinyl acetate	ND< 5.00
1,1,2,2-Tetrachloroethane	ND< 2.00	2-Butanone	ND< 5.00
Tetrachloroethene	ND< 2.00	4-Methyl-2-pentanone	ND< 5.00
1,1,1-Trichloroethane	ND< 2.00	2-Hexanone	ND< 5.00
1,1,2-Trichloroethane	ND< 2.00		
Trichloroethene	ND< 2.00	Carbon disulfide	ND< 2.00
Vinyl Chloride	ND< 2.00		

Analytical Method: EPA 8260 ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By _____
Laboratory Director

000704V5.XLS

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water
(Additional EPA 8260 Compounds)

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2761
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	N/A
Field Location:	Trip Blank	**Date Received:**	04/06/00
Field ID No.:	N/A	**Date Analyzed:**	04/13/00

VOLATILE AROMATICS	RESULTS (ug/L)
Methyl tert-Butyl Ether	ND< 2.00
Isopropylbenzene	ND< 2.00
n-Propylbenzene	ND< 2.00
1,3,5-Trimethylbenzene	ND< 2.00
tert-Butylbenzene	ND< 2.00
1,2,4-Trimethylbenzene	ND< 2.00
sec-Butylbenzene	ND< 2.00
p-Isopropyltoluene	ND< 2.00
n-Butylbenzene	ND< 2.00
Naphthalene	ND< 5.00

Analytical Method: EPA 8260 NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By: _____
Laboratory Director

00704V5.XLS

PARADIGM
Environmental Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Laboratory Analysis For Petroleum Hydrocarbons in Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2757
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	04/06/2000
Field Location:	GW-15515-0400-DG-01	**Date Received:**	04/06/2000
Field ID No:	N/A	**Date Analyzed:**	04/13/2000

Petroleum Hydrocarbon	Result (ug/L)	Reporting Limit (ug/L)
Light Weight PHC as Gasoline	752	250

N.Y.D.O.H. Analytical Method: 310.13 ELAP ID No.: 10958

Comments: BDL denotes Below Detection Limit

Approved By: _____
Laboratory Director

File ID: 000704S1.XLS

PARADIGM
Environmental Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Laboratory Analysis For Petroleum Hydrocarbons in Water

Client:	The Sear-Brown Group	**Lab Project No.:**	00-0704
		Lab Sample No.:	2758
Client Job Site:	Exchange Street		
		Sample Type:	Water
Client Job No.:	15515-07		
		Date Sampled:	04/06/2000
Field Location:	GW-15515-0400-DG-02	**Date Received:**	04/06/2000
Field ID No:	N/A	**Date Analyzed:**	04/13/2000

Petroleum Hydrocarbon	Result (ug/L)	Reporting Limit (ug/L)
Light Weight PHC as Gasoline	5,480	250

N.Y.D.O.H. Analytical Method: 310.13 ELAP ID No.: 10958

Comments: BDL denotes Below Detection Limit

Approved By: _____
Laboratory Director

File ID: 000704S2.XLS

PARADIGM Environmental Services, Inc.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: The Sear-Brown Group

Client Job Site: Exchange Street

Client Job No.: 15515-07

Lab Project No.: 00-0704

Sample Type: Water
Method: SW846 3005,6010

Date(s) Sampled: 04/06/2000
Date Received: 04/06/2000
Date Analyzed: 04/10/2000

Lab Sample No.	Field ID No.	Field Location	Manganese Results (mg/L)
2757	N/A	GW-15515-0400-DG-01	0.385
2759	N/A	GW-15515-0400-DG-03	0.802

ELAP ID No.: 10958

Comments:

Approved By: _____
Laboratory Director

File ID: 000704mn

PARADIGM Environmental Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: The Sear-Brown Group

Client Job Site: Exchange Street

Client Job No.: 15515-07

Lab Project No.: 00-0704

Sample Type: Water
Method: EPA 200.7
Date Sampled: 04/06/2000
Date Received: 04/06/2000

Lab Sample No.:	Field ID	Field Location	Total Hardness (mg/L)
2757	N/A	GW-15515-0400-DG-01	467
2759	N/A	GW-15515-0400-DG-03	511

ELAP ID No.:10958

Comments:

Approved By: _____
Laboratory Director

File ID: 000704h

PARADIGM Environmental Services, Inc. 179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: The Sear-Brown Group

Client Job Site: Exchange Street

Client Job No.: 15515-07

Field Location: GW-15515-0400-OG-01
Field ID No.: N/A

Lab Project No.: 00-0704
Lab Sample No.: 2757

Sample Type: Water

Date Sampled: 04/06/2000
Date Received: 04/06/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/L)
Ferrous Iron*	04/07/2000	SM18, 3500FE D	0.33
Biochemical Oxygen Demand-5	04/07/2000	EPA 405.1	19
Sulfate	04/14/2000	EPA 375.4	ND<2
Nitrate-N	04/11/2000	EPA 353.1	ND<0.02
Chemical Oxygen Demand	04/14/2000	EPA 410.4	15

ELAP ID.No.: 10709

Comments: ND denotes Non Detected.
* Performed by Cebam Analytical, Inc.

Approved By: _____
Laboratory Director

File ID: VARPAR00-0704-1

PARADIGM
Environmental Services, Inc. 179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: The Sear-Brown Group

Client Job Site: Exchange Street

Client Job No.: 15515-07

Field Location: GW-15515-0400-OG-03
Field ID No.: N/A

Lab Project No.: 00-0704
Lab Sample No.: 2759

Sample Type: Water

Date Sampled: 04/06/2000
Date Received: 04/06/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/L)
Ferrous Iron*	04/07/2000	SM18, 3500FE D	0.40
Biochemical Oxygen Demand-5	04/07/2000	EPA 405.1	21
Sulfate	04/14/2000	EPA 375.4	79
Nitrate-N	04/11/2000	EPA 353.1	ND<0.02
Chemical Oxygen Demand	04/14/2000	EPA 410.4	7.5

ELAP ID.No.: 10709

Comments: ND denotes Non Detected.
* Performed by Cebam Analytical, Inc.

Approved By: _____
Laboratory Director

File ID: VARPAR00-0704-2

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue
Rochester, NY 14608
(716) 647-2530 • (800) 724-1997
FAX (716) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		LAB PROJECT #
COMPANY Sear-Brown		COMPANY same		00-0704
ADDRESS 85 Metro Drive		ADDRESS		
CITY Rochester	STATE NY ZIP 14623	CITY	STATE ZIP	P.O. #
ATT. Mike Storosky	PHONE# 475-1440	ATT.	PHONE#	
David Grage	FAX#	FAX#		☐ ADDENDUM

PROJECT NAME/SITE NAME: Exchange Street
PROJECT #: 15515-07
COMMENTS: hold extra sample in case MS/MSD
TURN AROUND TIME (WORKING DAYS): ☐ ONE ☐ THREE ☒ FIVE(STD) ☐ OTHER
REPRESENTATIVE:

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOC	EPA 8260 plus DEC STARS	TPH 310.13	Ferrous	Iron	BOD	COD	Manganese	Nitrate	Sulfate	Hardness	REMARKS	PARADIGM LAB SAMPLE NUMBER	ANALYTICAL COSTS
1	4/6/00	9:20			GW-15515-0400-06-01	H2O		X		X	X	X	X	X	X	X	X	X		2757	
2																					
3		10:05			GW-15515-0400-06-02			X		X									Hold ~~TPH &~~ wet chem possible future analysis	2758	
4																					
5		10:35			GW-15515-0400-06-03			X			X		X	X	X	X	X	X	Hold TPH possible future analysis	2759	
6																					
7		11:20			GW-15515-0400-06-04			X											Hold TPH & wet chem, for possible future	2760	
8																					
9					Trip Blank			X												2761	
10																					
11																					
12																					

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	SAMPLE CONDITION	CHECK #	TOTAL COST
[signature]	12:50 4/6/00	[signature]	4/6/00 12:50			
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	CARRIER COMPANY	AIR BILL NO.	P.I.F
RELINQUISHED BY:	DATE/TIME	RECEIVED @ LAB BY: [signature]	DATE/TIME 4-6-00 1430	CARRIER PHONE #	DATE RESULTS REPORTED BY:	DATE/TIME

WHITE COPY-SAMPLE YELLOW COPY-FILE PINK COPY-RELINQUISHER

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	A	Inspected By:	Dave Gnage	Weather/Temp:	Rain/±40°
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	13:30	Stop Time:	16:30	Agency Rep:	

Comments:

- ☒ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☒ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

60 Fill % _____ MSW %
40 C&D% _____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
0 - 2"	Asphalt		0.3	0.3	
2" - 1.5'	Brown sand, some silt and gravel				
1.5 - 2.0'	Black sand and gravel				
@ 2.0'	Wood and 6" X 3' long iron pieces				
2.0 - 2.5'	Yellow/brown clay/silt, some sand				
2.5 - 3.5'	Black gravel, some sand, shale pieces, cobble, brick				
3.5 - 4.5'	Pink/gray ash, brick				
4.5'	End of Hole				

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	A1	Inspected By:	Dave Gnage	Weather/Temp:	Rain/±40°
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	13:30	Stop Time:	16:30	Agency Rep:	

Comments:

- ☐ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☐ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

80 Fill % _____ MSW %
20 C&D% _____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
0 - 3"	Asphalt		0.4	0.3	
3" - 6'	Brown sand, some silt and gravel				
@ 6'	Concrete pad				Pad 11' x 6' x 6' minimum
					No spouts or fill ports visible

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	B	Inspected By:	Dave Gnage	Weather/Temp:	40° Overcast
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	10:20	Stop Time:	11:55	Agency Rep:	

Comments:

- ☒ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☒ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

40 Fill % _____ MSW %
60 C&D% _____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
0 - 4"	Asphalt		0.3	0.3	
4" - 5"	Red/brown silty sand, trace gravel				
5" - 1'	Red/black gravel, pieces of slag				
1' - 7'	Grey, sand, some silt, some gravel, brick, concrete and rubble			@ 5'	2' long x 2" iron pipe; oxidation on some of the rocks
@ 7'	1' long x 1 ½ " dia. iron pipe				
7'	End of Hole			-	6" piece of slag in pile

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	C	Inspected By:	Dave Gnage	Weather/Temp:	45°
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	06:66	Stop Time:	07:50	Agency Rep:	N/A

Comments:

- ☒ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☒ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

40 Fill % _____ MSW %
60 C&D% _____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
4"	Asphalt	0.4	0.4	0.5	
4" - 2.0'	Brown sand and gravel, trace silt, brick and concrete				Fill
2.0' - 6.0'	Light brown sand and gravel with brick and concrete				Fill
@ 5'	Wire observed and clay/terra-catta pipe				
6.0'	End of Hole				slag observed in pile, no staining, no odors, observed one piece of rebar in concrete

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	D	Inspected By:	Dave Gnage	Weather/Temp:	Rain, 40°
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	07:55	Stop Time:	08:50	Agency Rep:	N/A

Comments:

- ☒ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☒ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

100% Fill _____ MSW %
_____ C&D% _____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
4"	Asphalt		0.4	0.4	
4" - 1.0'	Crusher run gravel				
1.0' - 8.0'	Light brown/red sand, some silt, little to trace gravel				Seeps at base of crusher
8.0'	End of Hole				All "clean" fill observed in test pit

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	E	Inspected By:	Dave Gnage	Weather/Temp:	Rain, 40°
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	08:55	Stop Time:	10:15	Agency Rep:	N/A

Comments:

- ☒ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☒ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

50% Fill ____ MSW %
50% C&D% ____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
0.4"	Asphalt	0.3		0.3	
[illegible]" - 10"	Crusher run				Fill
10" - 3'	Light brown sand, some silt, little to trace gravel				Fill
3' - 3.4"	Red/brown sand and gravel, possible slag				Only on east wall
3' - 8'	Gray silt, some sand, trace gravel, damp				Some concrete and brick, large slabs of concrete
8'	End of Hole				no odors, possible staining on east wall, dry

THE
SEAR-BROWN
GROUP

Project: Exchange Street
Project No.: 15155.07
Date: May 19, 2000

TEST PIT / TEST TRENCH SEGMENT LOG

Test Hole No:	F	Inspected By:	Dave Gnage	Weather/Temp:	Rain, 40°
Location/Station:		N:	E:	Elev.:	
Equipment Used:	JD 410D	Contractor:	Bedrock	Operator:	R. Aponte
Start Time:	12:20	Stop Time:		Agency Rep:	N/A

Comments:

- ☒ No Rock Encountered.
- ☐ Rock Encountered At ___ Ft.
- ☒ No Ground Water Encountered.
- ☐ Ground Water Encountered At ___ Ft.

70% Fill ____ MSW %
30% C&D% ____ Native %(USCS)

LOCATION SKETCH:

DEPTH		PID READINGS			
(ft. BGS)	CLASSIFICATION	MAX	SUST	BKGD	NOTES/SAMPLES
0 - 4"	Asphalt		0.3	0.3	
4" - 8"	Brown sand, some silt, little gravel				
8" - 1.0'	Concrete pad				Moved 4' south, hit pad again, moved west
1.0' - 2.0'	Gray sand, some silt, yellow/black staining, pieces of wood				
@ 2.0'	Metal (Fe^{+3}) bands approximately 3" wide, running North-easterly only				Numerous iron bands, appear to be old railing
2.0' - 3.0'	Black sand and gravel, trace silt				
3.0' - 6.0'	Brown sand, some silt, little gravel, cobbles, brick, iron pieces				
6.0'	End of Hole				

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02
By: B. MADHURE | Checked: KDI
Date: 5/30/00 | Sheet 1 of 14

CROSS SECTIONS FOR EXCHANGE BLVD

ASSUMPTIONS

HORIZONTAL SCALE : 1 inch = 20 ft ie. 4 UNITS = 20 FEET ∴ 1 UNIT = 5 Feet

VERTICAL SCALE : 1 UNIT = 1 FOOT

PID READINGS : SUSTAINED PID ≥ 10 ppm → DIRTY SOIL
SUSTAINED PID < 10 ppm → CLEAN SOIL

REFERENCES

PID Readings data taken from field notes for GP101 – 110.
PID READINGS FOR B-3, 4, 5, 6, 7 TAKEN FROM PHASE II ENVTL. INVESTIGATION REPORT (Feb 23, 1999).

WATER LEVELS EXTRAPOLATED FROM CONTOUR AND TOPOGRAPHY MAPS.

NOTES:

1) THERE ARE NO PID READINGS FOR MW 1 ∵ SPLIT SPOON ACTIVITIES WERE PROHIBITED DUE TO LOCATION OF MW-1 WITHIN QUONSET HUT

2). PID READINGS WERE TAKEN FROM: N:\15155.07\DATA\d0001.xls\P1 FOR MW2, 3, 4.

3) THE MANHOLE ON CROSS SECTION A-A' APPEARS TO BE CONNECTED WITH THE WATER CONDENSER PIPE. REFERING MAP - NYR-144 CONTRACT S-10A, REVISED MAY 1, 1972, THE TOP OF THE PIPES ARE APPROXIMATELY 3' FEET DOWN FROM THE SURFACE AS MEASURED WITHIN MANHOLE.

4) FOR CALCULATION OF WATER LEVELS, THE ELEVATIONS WERE EXTRAPOLATED AND/OR AVERAGED.

DEPTH OF WATER (Ft) = ELEVATION (TOP OF RISER ELEVATION Ft. AMSL) − WATER LEVEL (WATER LEVEL FT. AMSL)

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD Project No. 15155.02

By: B. MADHURE Checked: KDI

Date: 5/30/00 Sheet 2 of 14

CALCULATIONS

ITEM	WATER TABLE CONTOUR	ELEVATION CONTOUR	DEPTH OF WATER (FT)
GP101	498.5	511.30	12.8
GP102	SAME AS GP101		12.8
GP 103	497.0	511.25	14.25
GP 104	497.5	NOT POSSIBLE	
GP 105	499.5	511.30	11.8
GP106	498.5	511.14	12.64
GP107	497.5	≃511.1	13.6
GP108	497	511	14.0
GP109	496.89	511.10	14.21
GP110	≃498.8	511.25	12.45
B-3	≃498.8	≃511.3	12.5
B-4	≃498.8	511.24	12.67
B-5	497.5	511.25	13.75
B-6	498.0	510.77	12.77
B-7	499.5	511.0	11.5

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KM

Date: 5/30/00 | Sheet 3 of 14

1. ONCE GROUNDWATER LEVEL IS CHECKED, GO BACK AND DETAIL THE DIRTY WATER.

SO FAR:-

- B-3, 4, 5, 6, 7 HAVE NO GROUNDWATER DATA ∵ NO WATER WAS FOUND DURING BORINGS.

- MW-1, 2, 4 DIRTY H_2O } TO EVALUATE GW QUALITY DURING
  MW-3 ND. } THE ADDITIONAL PHASE II ENVTL. INVESTION (i.e. along with GP 101-110).

OF THE ABOVE, MW-3 APPEARS TO HAVE H_2O ABOVE BEDROCK
MW-1 " " " " SLIGHTLY ABOVE BEDROCK
MW-4 " " " " " " "

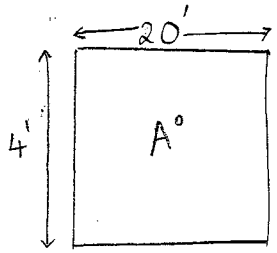
THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KM

Date: 5/30/00 | Sheet 4 of 14

CALCULATION OF CONTAMINATED SOIL IN THE VARIOUS CROSS SECTIONS USING A PLANIMETER.



SCALE, AS MENTIONED BEFORE
HORIZONTAL: 1 INCH = 20'
VERTICAL : 1 INCH = 4'
OR
1 UNIT = 1'

AREA OF A° = 20' × 4' = 80 ft²

∴ IN THEORY, 1.0 PLANAR UNITS = 80 ft², i.e. if YOU MEASURE THE CIRCUMFERENCE OF A°, THE READING SHOULD BE 1.0 PLANAR UNITS.

IN PRACTICE, TAKE THE AVERAGE OF 3 READINGS.

1.0850, 1.0385, 1.0385, 1.0385 ∴

∴ 1.0385 planar units

$(1.0385)\,80 = 83.08\ ft^2$

A-A' = [(1.9685 + 1.8910 + 1.9685)/3] 80 = (1.9427)(80)	= 155.41 ft² ≃ 155.5 ft²
B-B' = [(3.0690 + 3.1000 + 3.0380)/3] 80 = (3.069)(80)	= 245.52 ft² ≃ 245.5 ft²
C-C' = [(0.3255 + 0.3255 + 0.3255)/3] 80 = (0.3255)(80)	= 26.04 ft² ≃ 26.0 ft²
D-D' = [(3.7355 + 3.7355 + 3.6425)/3] 80 = (3.7045)80	= 296.36 ft² ≃ [illegible] ft²

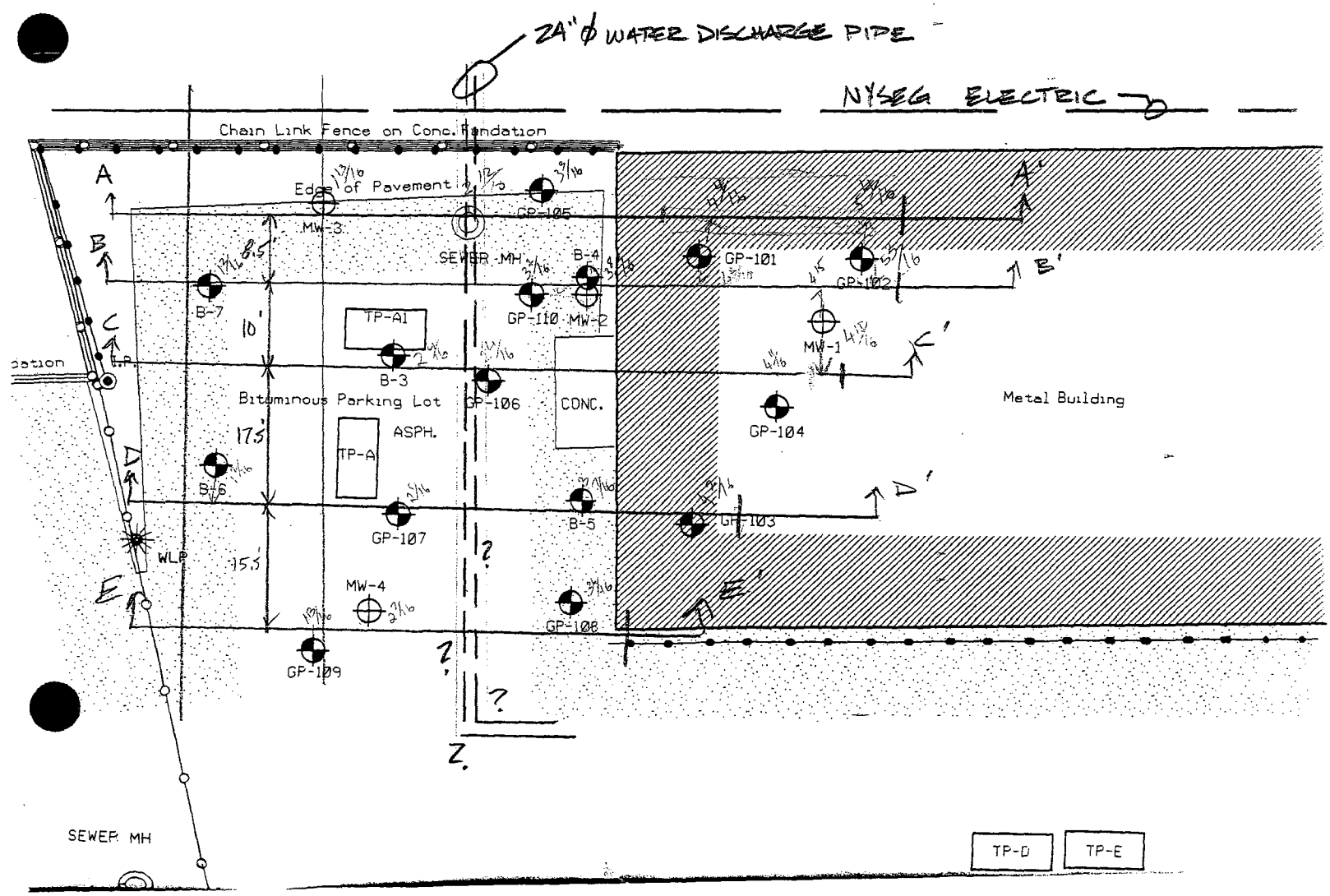
THE DISTANCES BETWEEN THE CROSS SECTIONS ARE MEASURED, TO SCALE

A → B = 8.5'
B → C = 10.0'
C → D = 17.5'
D → E = 15.5'

RI

CROSS SECTIONS

SCALE 1"=20'

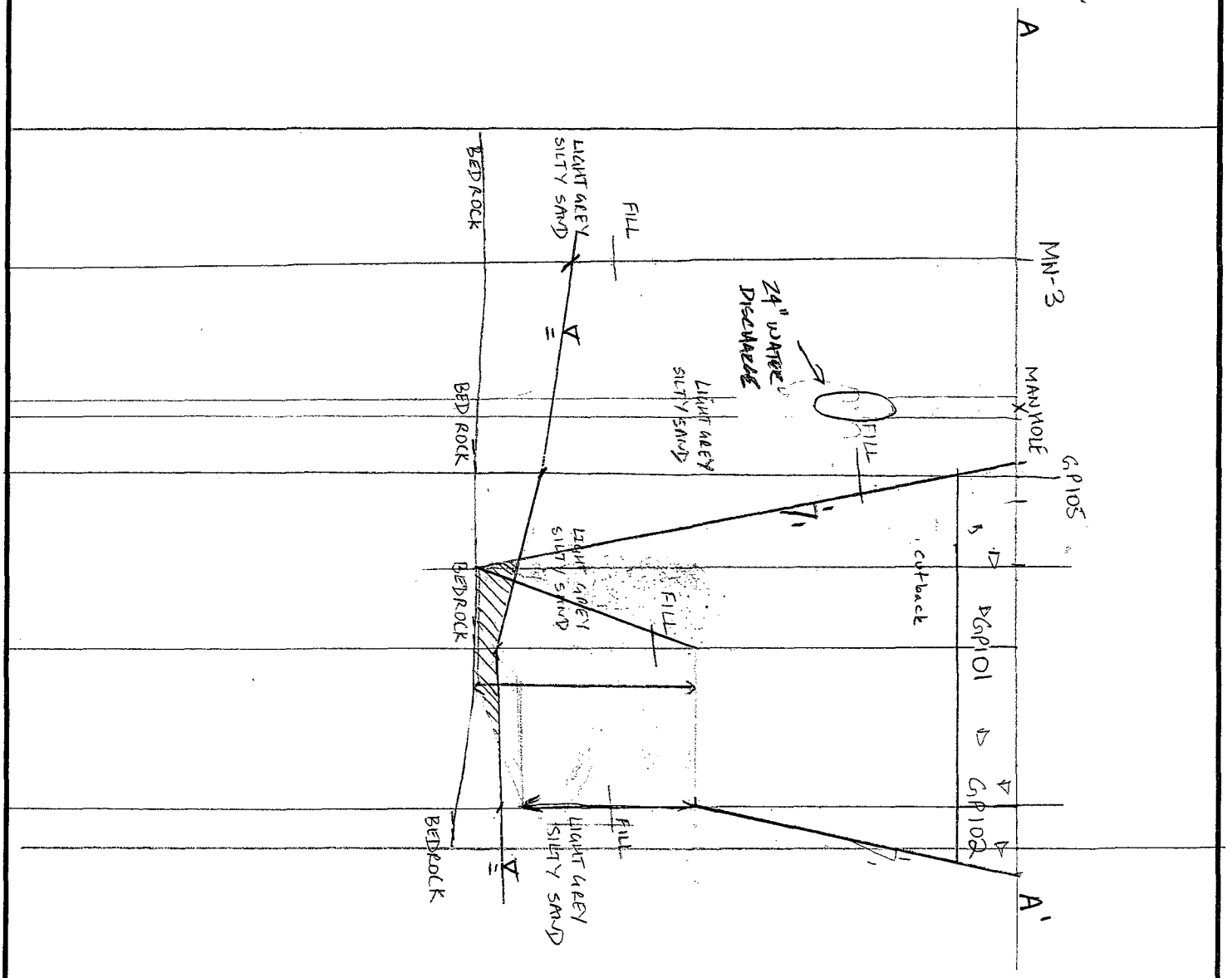


THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KDI

Date: 5/30/00 | Sheet 6 of 14



Scale 1" = 20'
Vert = 1" = 4'

1. GP105 IS CLEAN
2. MW-3 IS CLEAN
3. ASSUME CONTAMINATION LIMIT IS AT GP102.
4. BUT THE CONTAMINATION IS SPLIT BETWEEN GP101 AND GP105.

LEGEND

"CLEAN" MAT'L

"CONTAMINATED" MAT'L

"GROUNDWATER"

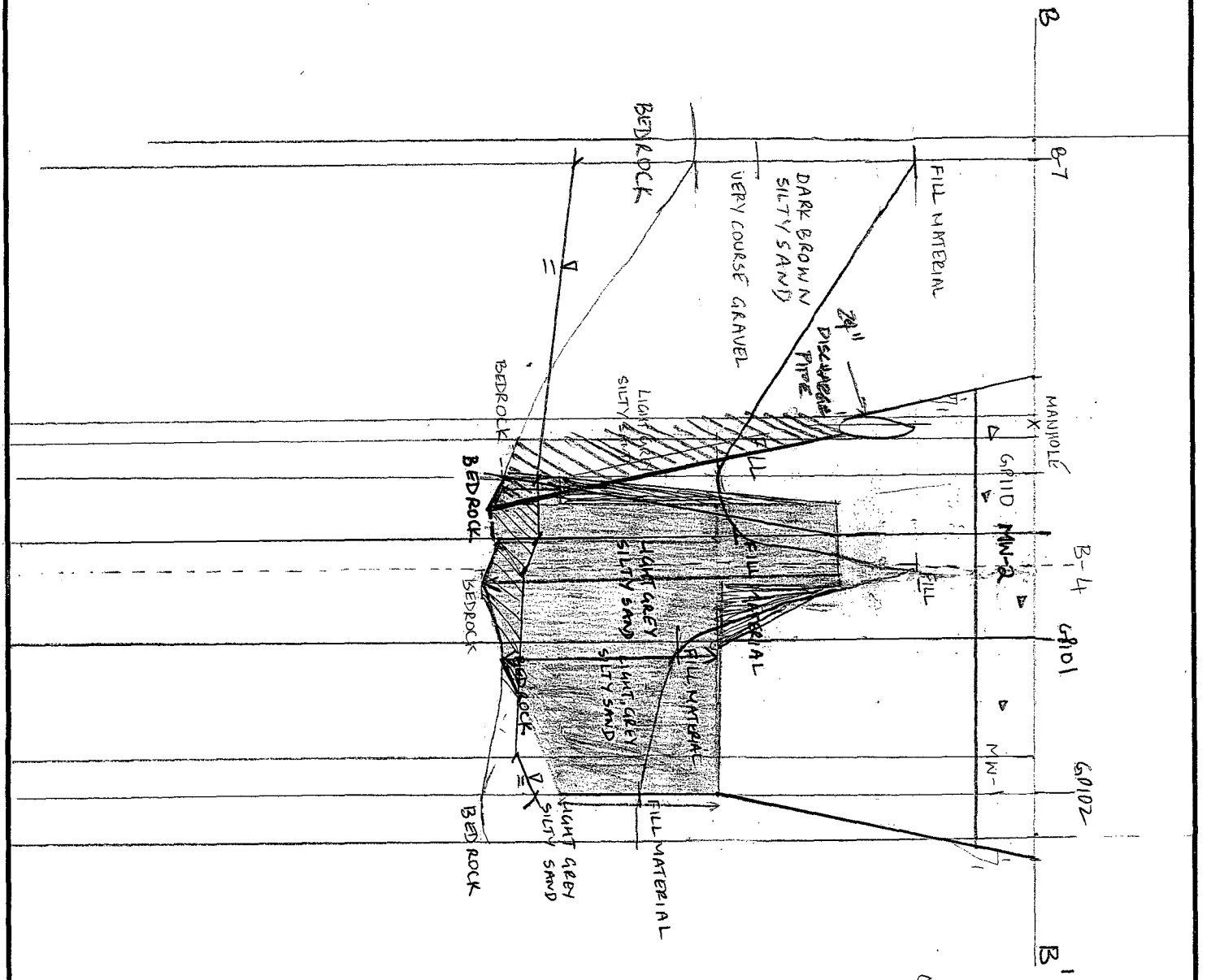
JDK 5/30/00

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KDI

Date: 5/30/00 | Sheet 7 of 14



SCALE
1" = 20' (HORIZONTAL)
1" = 4' (VERTICAL)

1. FOR GP102, THE LIMIT OF CONTAMINATED SOIL IS GP102 ITSELF. (KEVIN)
2. ||| YLW LIMIT FOR GP110, IS GP110 ITSELF, BASED UPON GP102.
3. NOT SURE IF GP102, 101 ARE TO BE CONSIDERED AS 'PINCHING OFF'
4. B-7 IS CLEAN
5. MW-1 NO DATA
6. THE ENDPOINTS OF GP101 AND GP102 ARE JOINED, THE DISTANCE WAS NOT SPLIT BETWEEN GP101 & MW-1 AND GP102 & MW-1

LEGEND

"CLEAN" MAT'L

"PIPE BENCH" MAT'L

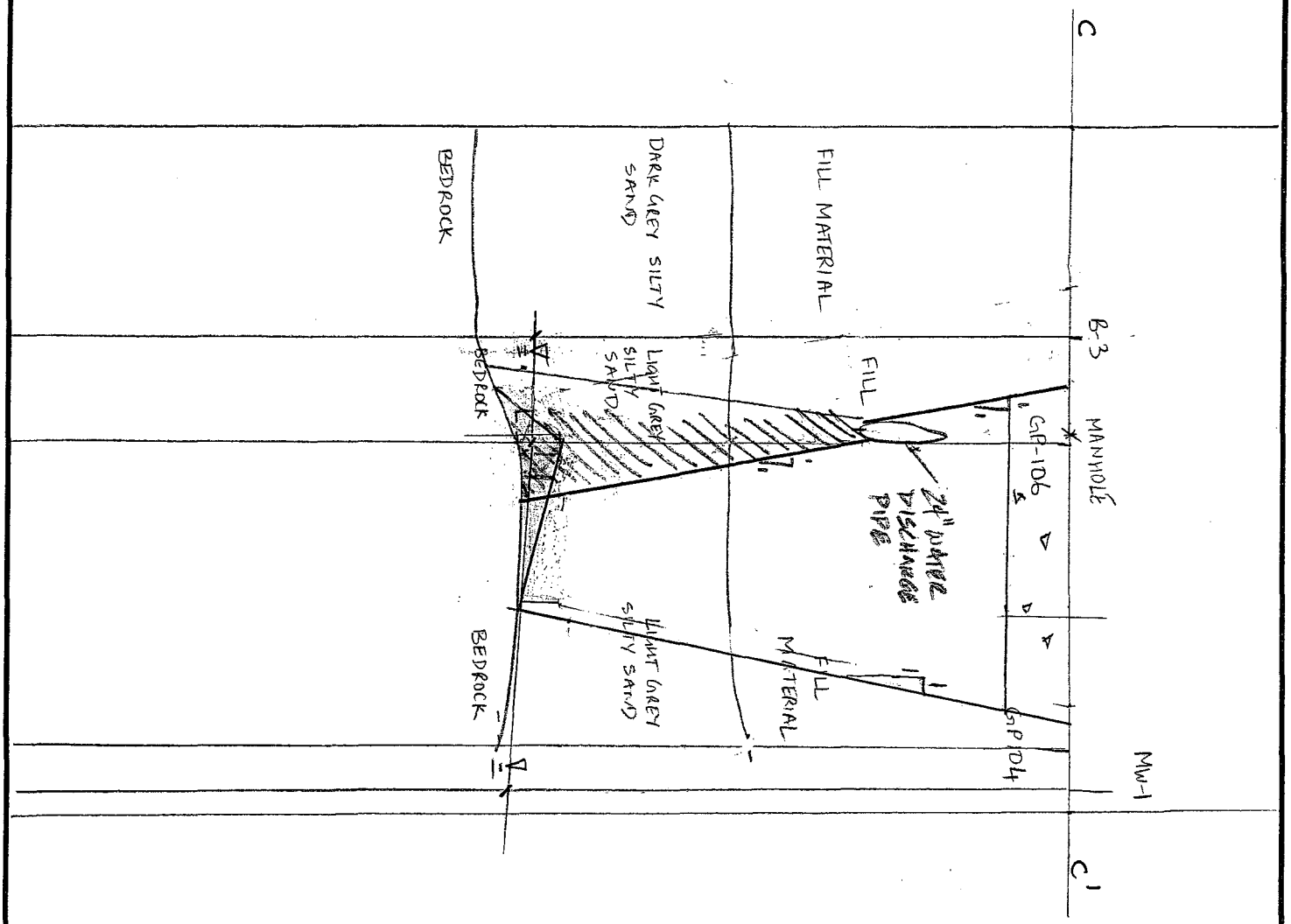
"CONTAMINATED" MAT'L

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: [illegible]

Date: 5/30/00 | Sheet 8 of 14



SCALE
HORIZONTAL 1" = 20'
VERTICAL 1" = 4'

1. B-3 IS CLEAN
2. GP 104 IS CLEAN
3. THE DISTANCE IS SPLIT BETWEEN GP 106 AND GP 104 AND GP 106 AND B-3

LEGEND

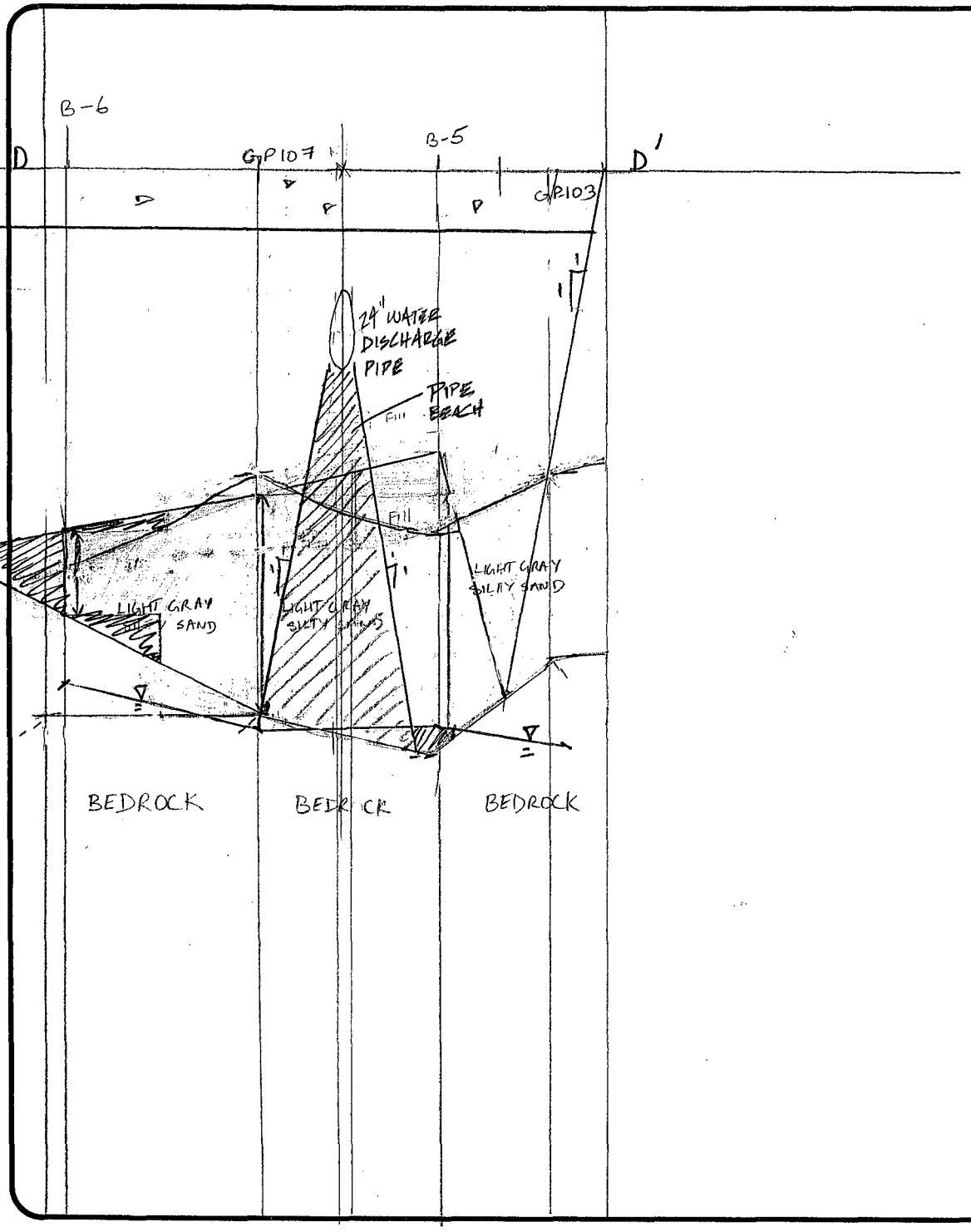
- "CLEAN" MATL
- "CONTAMINATED" MATL
- "PIPE BENCH" MATL

Project: EXCHANGE BLVD Project No. 15155.08

By: B. MADHURE Checked: KD

Date: 5/30/00 Sheet 9 of 14

THE SEAR-BROWN GROUP



NOTE: 1) GP103 is clean VOK KD 5/30/00

2) EVEN THOUGH H_2O LEVEL FOR B-6, B-5 WERE APROXIMATED AT ABOVE BEDROCK, REPORT (99) SAYS H_2O LEVEL ANTICIPATED WITHIN BEDROCK.

3) B-5, SOIL LOGS SAY FROM 7 FEET FOR DIRTY SOIL, PID TABLE SAYS FROM 9 FEET. THE FORMER IS MORE CONSERVATIVE.

4) B-6, PID TABLE SAYS SOIL IS CLEAN, SOIL LOG SAYS 9-11' is DIRTY SOIL.

LEGEND

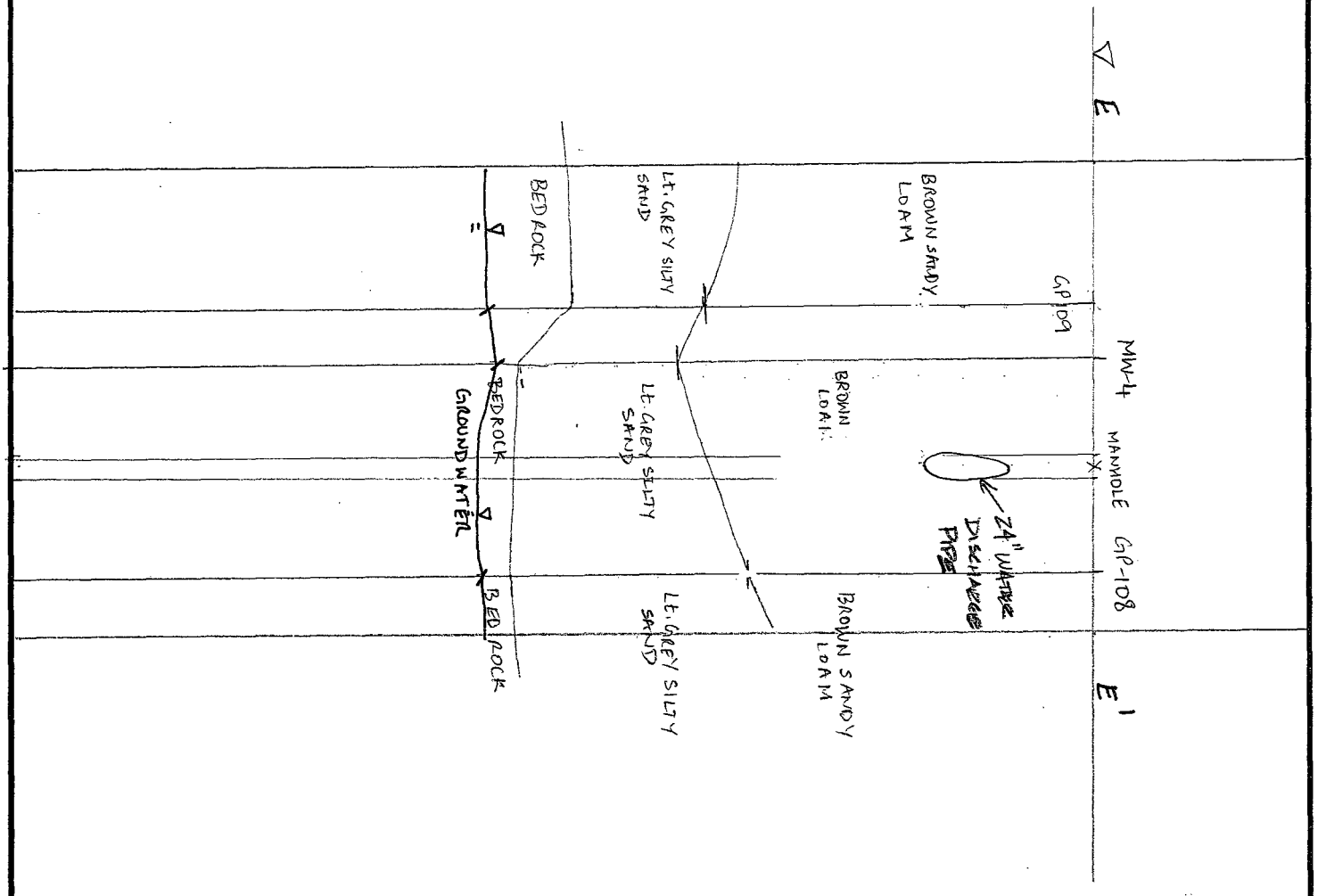
- "CLEAN" MAT'L
- "PIPE BENCH" MAT'L
- "CONTAMINATED" MAT'L
- GROUNDWATER

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KDI

Date: 5/30/00 | Sheet 10 of 14



NO DIRTY SOIL IN GP108, 109, MW-4

LEGEND

"CLEAN" MAT'L

KDI 5/30/00

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KDI

Date: 5/30/00 | Sheet 11 of 14

CROSS SECTION A-A'

$A_{CLEAN} = \frac{4.743 + 4.836 + 4.821}{3} * 80\ FT^2 = 384\ FT^2$

$A_{DIRTY} = \frac{1.597 + 1.586 + 1.550}{3} * 80\ FT^2 = 126.2\ FT^2$

$A_{TOTAL} = 384 + 126.2 = 510.2\ FT^2$

$A_{CRUSHED} = \frac{0.961 + 0.868 + 0.930}{3} * 80\ FT^2 = 73.6\ FT^2$

$A_{FILL} = A_{DIRTY} - A_{CRUSHER} = 152.6\ FT^2$

$A_{GW} = \frac{0.155 + 0.217 + 0.186}{3} * 80\ FT^2 = 14.9\ FT^2$

CROSS SECTION B-B'

$A_{CLEAN} = \frac{4.667 + 4.635 + 4.743}{3} * 80\ FT^2 = 374.5\ FT^2$

$A_{DIRTY} = \frac{3.069 + 3.069 + 3.147}{3} * 80\ FT^2 = 247.6\ FT^2$

$A_{TOTAL} = 622.1\ FT^2$

$A_{CRUSHER} = \frac{1.085 + 1.178 + 1.178}{3} * 80\ FT^2 = 91.8\ FT^2$

$A_{FILL} = 155.8\ FT^2$

$A_{GW} = \frac{0.233 + 0.279 + 0.217}{3} * 80\ FT^2 = 19.4\ FT^2$

"REMAINING" $A_{DIRTY} = \frac{0.031 + 0.078 + 0.093}{3} * 80\ FT^2 = 5.4\ FT^2$

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02
By: B. MADHURE | Checked: VDI
Date: 5/30/00 | Sheet 12 of 14

CROSS SECTION C-C'

$A_{CLEAN} = \frac{4.123 + 4.2 + 4.169}{3} * 80\ FT^2 = 333.1\ FT^2$

$A_{DIRTY} = \frac{0.0465 + 0.062 + 0.0465}{3} * 80\ FT^2 = 4.1\ FT^2$

$A_{TOTAL} = 337.2\ FT^2$

$A_{CRUSHER} = \frac{0.713 + 0.687 + 0.728}{3} * 80\ FT^2 = 56.6\ FT^2$

$A_{FILL} = (52.5\ FT^2)$

$A_{GW} = \frac{0.031 + 0.031 + 0.062}{3} * 80\ FT^2 = 3.3\ FT^2$

"REMAINING" $A_{DIRTY} = \frac{0.140 + 0.155 + 0.109}{3} * 80\ FT^2 = 10.8\ FT^2$

CROSS SECTION D-D'

$A_{CLEAN} = \frac{8.742 + 8.696 + 8.727}{3} * 80\ FT^2 = 697.7\ FT^2$

$A_{DIRTY} = \left[\frac{1.488 + 1.581 + 1.566}{3} + \frac{0.93 + 1 + 0.92}{3}\right] * 80\ FT^2 = 199.6\ FT^2$

$A_{TOTAL} = 897.3\ FT^2$

$A_{CRUSHER} = \frac{1.628 + 1.705 + 1.674}{3} * 80\ FT^2 = 133.5\ FT^2$

$A_{FILL} = 66.1\ FT^2$

$A_{GW} = \frac{0.062 + 0.031 + 0.0156}{3} * 80\ FT^2 = 2.9\ FT^2$

"REMAINING" $A_{DIRTY} = \frac{1.085 + 1.116 + 1.1}{3} * 80\ FT^2 = 88\ FT^2$

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: VDI

Date: 5/30/00 | Sheet 13 of 14

$$\forall_{\text{CLEAN SOIL}} = \left[\frac{384 + 374.5}{2}\right] 8.5' + \left[\frac{374.5 + 333.1}{2}\right] 10' + \left[\frac{333.1 + 697.7}{2}\right] 17.5 + \left[\frac{697.7 + 0}{2}\right] 15.5'$$

$$\boxed{\forall_{\text{CLEAN SOIL}} = 21{,}188 \text{ FT}^3 = 785 \text{ CY}}$$

$$\forall_{\substack{\text{DIRTY SOIL}\\ \text{REMOVED}}} = \left[\frac{126.2 + 247.6}{2}\right] 8.5' + \left[\frac{247.6 + 4.1}{2}\right] 10' + \left[\frac{4.1 + 199.6}{2}\right] 17.5 + \left[\frac{199.6 + 0}{2}\right] 15.5'$$

$$\boxed{\forall_{\substack{\text{DIRTY SOIL}\\ \text{REMOVED}}} = 6{,}176 \text{ FT}^3 = 229 \text{ CY}} \times 1.8 \text{ TONS/CY} = 412 \text{ TONS}$$

$$\boxed{\forall_{\text{TOTAL EXCAV.}} = \forall_{\text{CLEAN SOIL}} + \forall_{\substack{\text{DIRTY SOIL}\\ \text{REMOVED}}} = 1013 \text{ CY}}$$

$$\forall_{\text{CRUSHED RUN}} = \left[\frac{13.6 + 91.8}{2}\right] 8.5' + \left[\frac{91.8 + 56.6}{2}\right] 10' + \left[\frac{56.6 + 153.5}{2}\right] 17.5 + \left[\frac{153.5 + 0}{2}\right] 15'$$

$$\boxed{\forall_{\text{CRUSHED RUN}} = 4109 \text{ FT}^3 = 152 \text{ CY}}$$

$$\forall_{\text{SELECT FILL}} = \left[\frac{52.6 + 155.8}{2}\right] 8.5 + \left[\frac{155.8 + (-52.5)}{2}\right] 10' + \left[\frac{-52.5 + 66.1}{2}\right] 17.5 + \left[\frac{66.1 + 0}{2}\right] 15'$$

$$\boxed{\forall_{\text{SELECT FILL}} = 2017 \text{ FT}^3 = 75 \text{ CY}}$$

THE SEAR-BROWN GROUP

Project: EXCHANGE BLVD | Project No. 15155.02

By: B. MADHURE | Checked: KDI

Date: 5/30/00 | Sheet 14 of 14

$$V_{GW} = \left[\frac{14.9 + 19.4}{2}\right]8.5 + \left[\frac{19.4 + 3.3}{2}\right]10' + \left[\frac{3.3 + 2.9}{2}\right]17.5 + \left[\frac{2.9 + 0}{2}\right]15.5$$

$$\boxed{V_{GW} = \underset{\substack{\uparrow \\ \text{Assumed} \\ \text{Porosity}}}{0.35} * (336\,FT^3)(7.4805\,g/FT^3) = 8880\ gal}$$

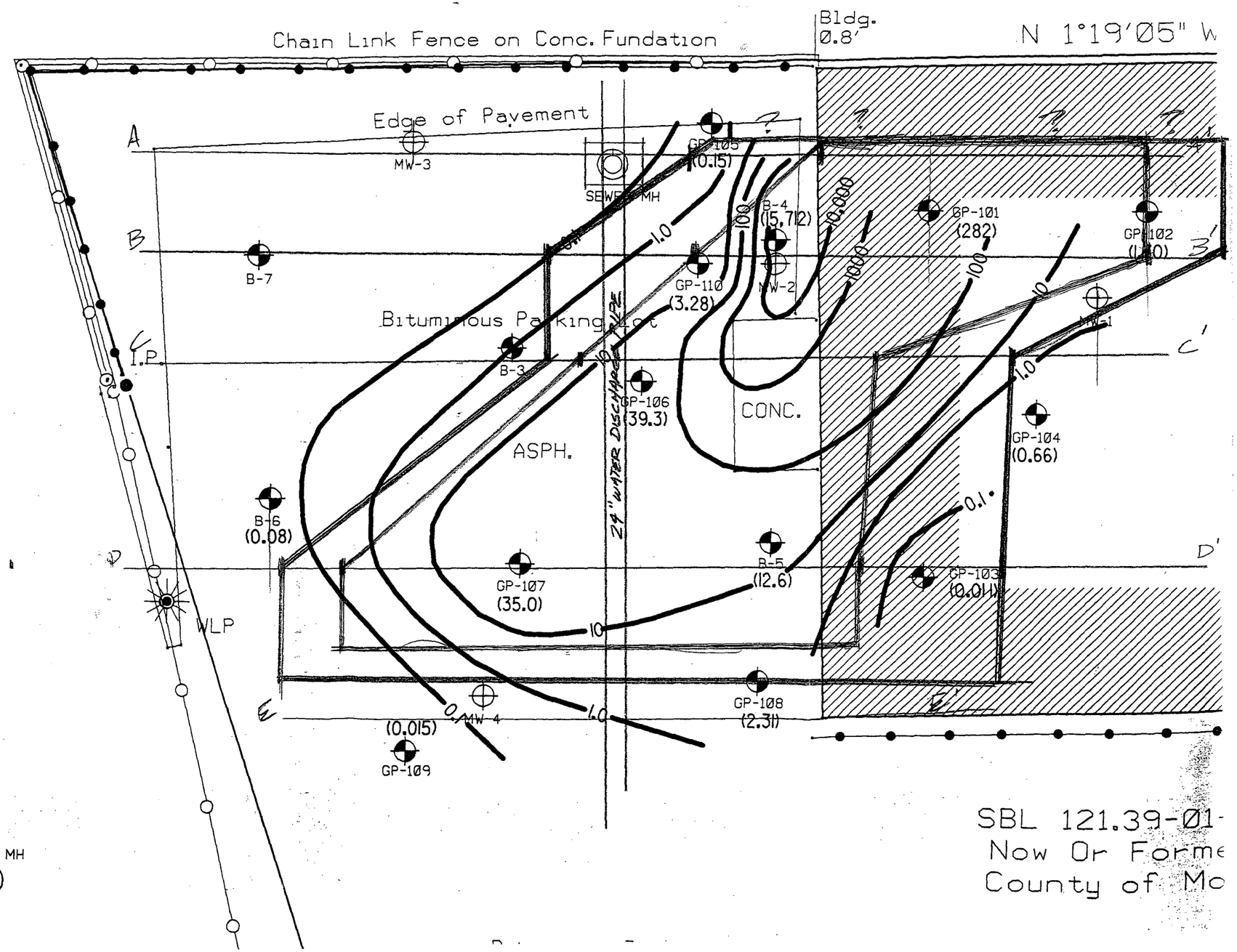
$$V_{\substack{\text{DIRTY SOIL} \\ \text{Remaining} \\ \text{Below 24" Pipe}}} = \left[\frac{0 + 5.4}{2}\right]8.5 + \left[\frac{5.4 + 10.8}{2}\right]10' + \left[\frac{10.8 + 8.8}{2}\right]17.5 + \left[\frac{8.8 + 0}{2}\right]15.5$$

$$\boxed{V_{\substack{\text{DIRTY} \\ \text{REMAINING}}} = 1650\,FT^3 = 61\ CY.}$$

Plotted By: Tim Sc
Design File: \\r02l
Plotted: 03 MA
Plot Config: ...\Impo

ROCHESTER GAS & El
PROPEF

SCALE 1"=40'



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Now Or Forme
County of Mo

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

REORDER BY NUMBER 075AR

DRAWING NUMBER

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PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

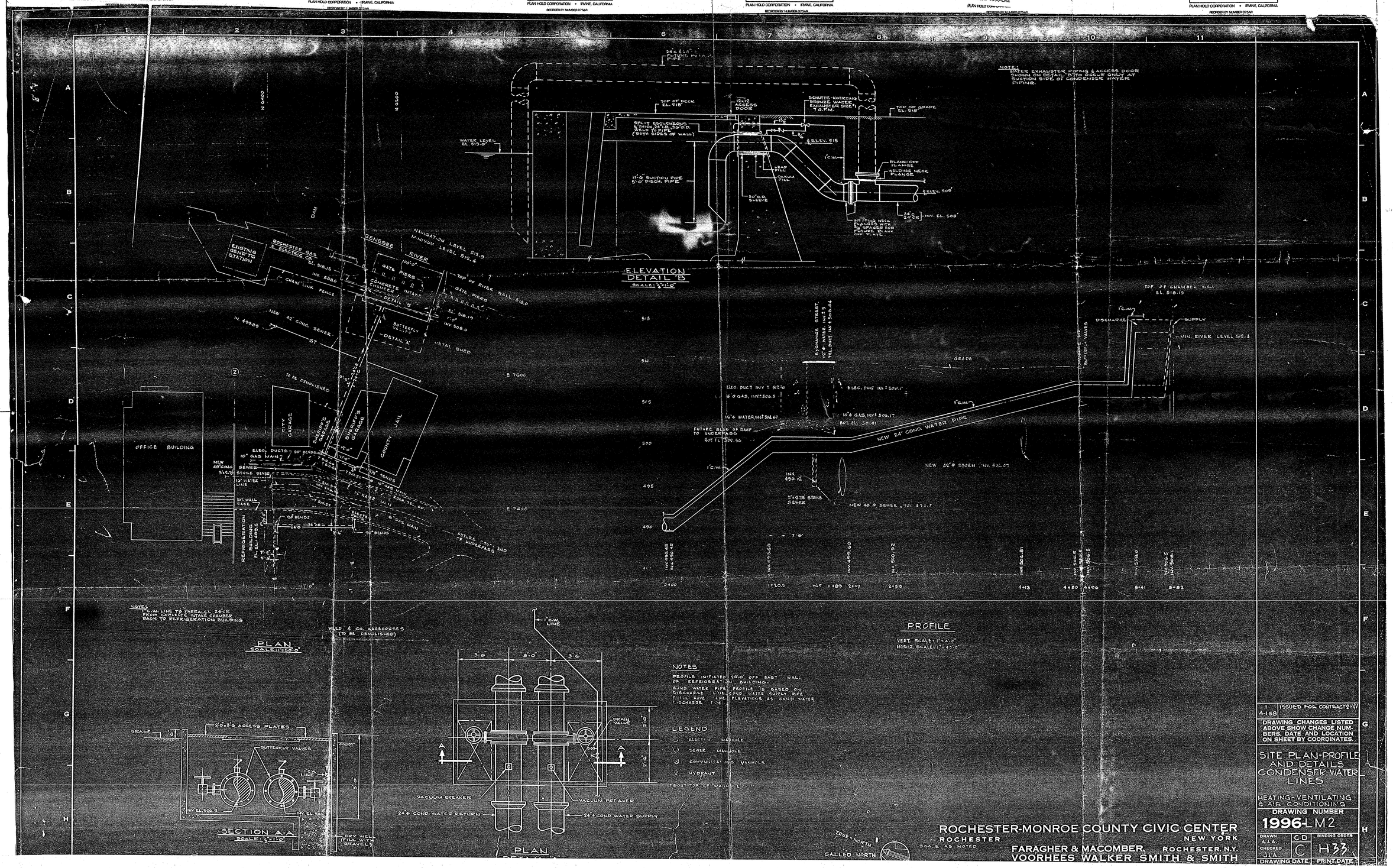
REORDER BY NUMBER 075AR

CIVIC CENTER HVAC
CONTRACT 2 H&V
SITE PLAN-PROFILE & DETAILS
CONDENSER WATER LINES
DWG. # 1996-LM2

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

REORDER BY NUMBER 075AR



REVISIONS	Date	By
~~COMBINED OVERFLOW CONN. AT INTERSECTIONS OF MT. HOPE AT AVERILL AVE & HAMILTON ST.~~	~~8-81~~	D.G.
U.C. #3; CHESTNUT ST. MONROE AVE. W., (C-1)	7-81	A.L.
RELOCATED BROADWAY & LAWN ST. (C-3)	7-81	A.L.
SAVANNAH ST. & PITKIN ST. STORM SEWER (C-5)	7-81	A.L.
CHESTNUT ST. - PARK ST. (C-6). COURT ST. (C-8)	7-81	A.L.
EXCHANGE ST. (S-10A); MT. HOPE AVE.	7-81	A.L.
SOUTH FITZHUGH STREET BACK LOT SEWERS	8-81	D.G.
EXCHANGE BLVD. S-10 SECT. I	8-81	D.G.
S. FITZHUGH ST. S-9	8-81	D.G.
MINERVA PL. ABANDONED	8-81	A.L.
GENESEE GATEWAY UTIL. CONTR. U-1	10-81	D.G.
REVISED FROM NOTES ON OLD CITY MILE SQUARE	5-82	A.L.

REVISIONS	Date	By
REPLACEMENT OF SEWERS HUMBOLDT ST. - EAST AVE. BETWEEN UNION ST. & ALEXANDER ST.; ANSON PL. 379'-18"	6-82	D.G.
CLINTON AVE., CHESTNUT ST., S.L.U.R.P. BROAD ST., JAMES ST.	6-82	D.G.
CHESTNUT ST.-FROM JAMES TO MAIN ST. & COURT ST. INTERSECTION.	8-82	A.L.
SOUTH AVE.-FROM MAIN ST. E. TO CAPRON ST.	9-82	A.L.
AVERILL AVE.- FROM MT. HOPE TO SOUTH AVE.	10-82	R.M.
LINWOOD-PRIEM CONNECTOR	3-83	D.G.
CORNHILL PK. SECTION 3	3-85	A.L.
street name change: SOUTH ST. to ST. MARY'S PL.	4-85	D.G.
WADSWORTH SQ. TOWNHOUSES	9-85	A.L.
ABANDONED PORTION OF AJAX AL. PER ORD. NO 82-462	5-30-86	A.L.L.
ABANDONED PORTION OF MINERVA PL. PER ORD. NO. 85-437 (A.L.L.)	6-2-86	A.L.L.
PRINCE ST. SEWER REPLACEMENT	3-24-81	ALL.

REVISIONS	Date	By
EAST AVE. REHABILITATION - UNION ST. TO ARNOLD ST.	11-20-86	ALL.
ADDITIONAL R.O.W. ADDED ON COURT & E. BROAD ST. PER ORD. NO. 87-59	12-1-87	A.L.L.
UPDATED C.M.S.	1-7-88	ALL.
SEWER DIVERSION PLAN - S.E. LOOP, PARCEL 4F	1-19-88	ALL.
COURT ST. RECONSTRUCTION - NEW SEWERS BETWEEN SOUTH AVE & CLINTON AVE	3-16-88	A.L.L.
REPLACEMENT OF SEWERS - SO. UNION ST. FROM MONROE AVE. TO 112'± SO. OF EAST AVE & LAFAYETTE PL. S.R.	7-26-88	A.L.L.
ABANDONED PORTION OF AVERILL AVE PER ORD. NO. 87-240	6-27-89	ALL.
JOHNSON PL. DEDICATED PER ORD. NO. 89-300	3-15-90	ALL.
600 Brown [illegible] Residential [illegible]	2-16-93	Joe
AVERILL ST. Parking Garage and Related Facilities / Genesee Hospital	3/1/94	G.K.
ANSON PLACE - NEW M.H. SEE PERMIT 2858	1989	

REVISIONS	DATE	BY
UPDATE CITY M.S.	7-1-94	R.B.
Added M.H. on Whalin St. 1909-10	7-26-96	G.K.
GARDINER PARK REPLACED 12" CEM WITH 15" PVC. SDR-35	4/97	B.W.

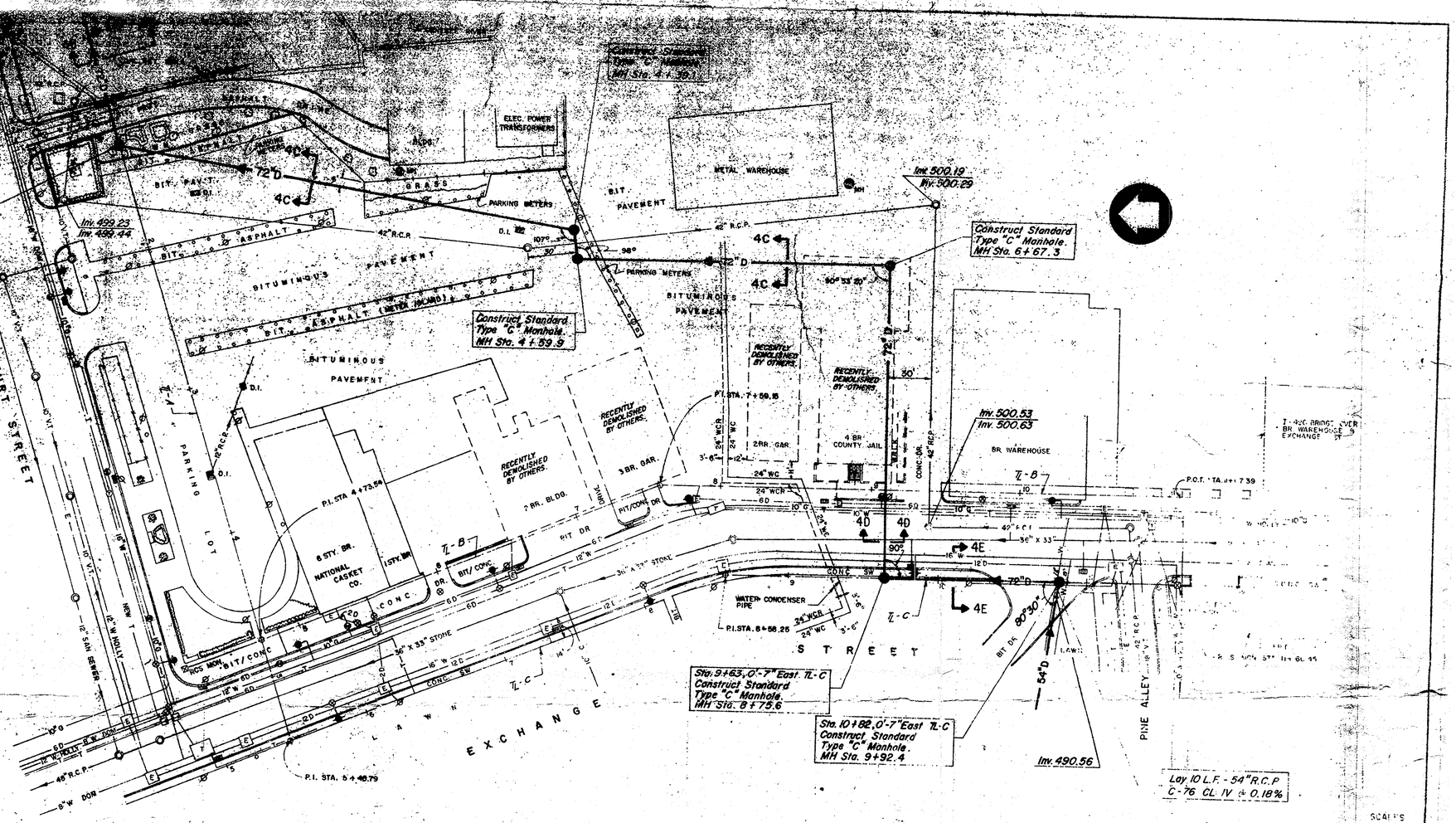
NOTES:

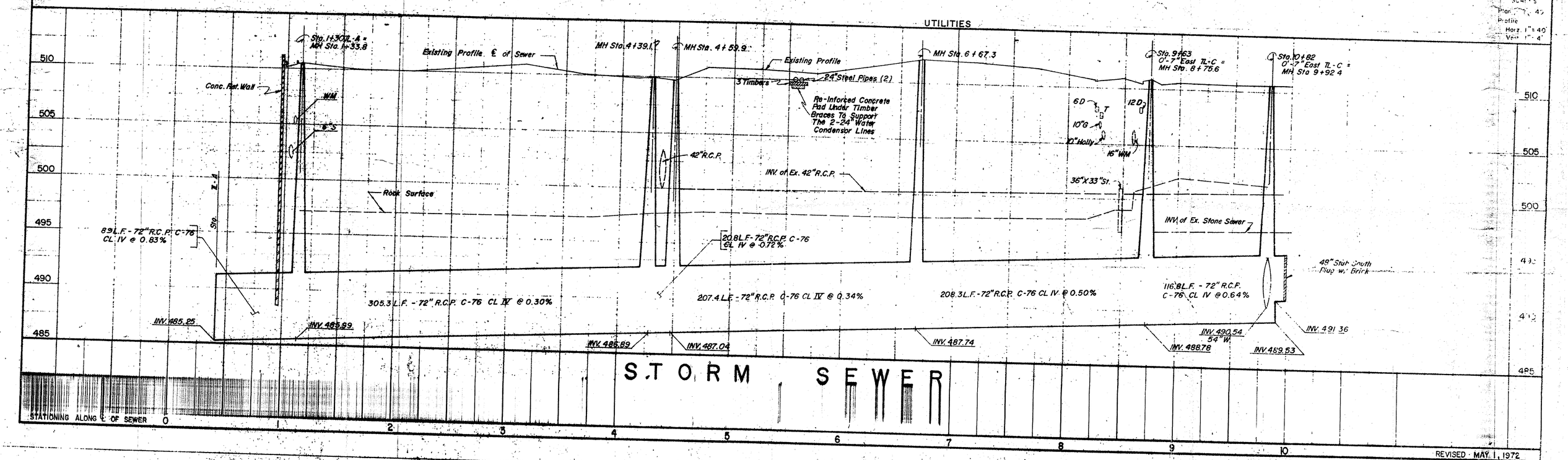
AVAILABLE RECORDS INDICATE THAT THE FOOTING FOR THE EXISTING CONCRETE RETAINING WALL EXTENDS BELOW GRADE TO A DEPTH APPROXIMATELY EQUAL TO THE TOP OF THE PROPOSED 72" STORM DRAIN. THE CONTRACTOR SHALL DETERMINE THE ELEVATION OF THE BOTTOM OF FOOTING PRIOR TO ANY CONSTRUCTION IN THIS AREA. IN THE EVENT THAT THE WALL INTERFERES WITH THE PROPOSED PIPE, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER HIS PROPOSED METHOD OF CONSTRUCTION FOR APPROVAL.

ANY REMOVAL OF FOUNDATION WALLS OR BASEMENT FLOORS NECESSARY TO CONSTRUCT THE SEWER IN THE AREA OF THE OLD COUNTY JAIL SHALL BE MERGED WITH THE UNIT COST FOR UNCLASSIFIED EXCAVATION.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SEWAGE, STORM AND DOMESTIC WATER FLOW AT ALL TIMES DURING THE PERIOD OF CONSTRUCTION.

THE PARKING METERS SHALL BE REMOVED AND REPLACE BY OTHERS AT NO EXTRA COST TO THE CONTRACTOR. HOWEVER, IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO NOTIFY THE PROPER AGENCY A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATION IN THE AREA OF THE PARKING METERS.





REVISED MAY 1, 1972

NYR-144 CONTRACT S-10A SHEET 3 OF 5 SHEETS

As Built