

M-764

Formerly Utilized Sites Remedial Action Program (FUSRAP)

ADMINISTRATIVE RECORD

for the Maywood Site, New Jersey



**US Army Corps
of Engineers®**

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M-764

FINAL
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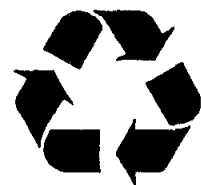
MAYWOOD SOILS GROUPING REPORT VOLUME 1

MAYWOOD, NEW JERSEY

JANUARY 1998

prepared by
U.S. Army Corps of Engineers, New York District Office, Formerly Utilized Sites Remedial Action Program

with technical assistance from
Science Applications International Corporation ESC-FUSRAP
under Contract No. DACA62-94-D-0029



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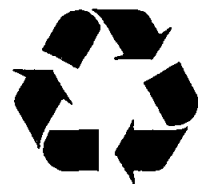


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ACRONYMS AND ABBREVIATIONS

ASTM	American Society of Testing and Materials
BNI	Bechtel National, Inc.
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
cm	centimeters
COCs	constituents of concern
cpm	counts per minute
DOE	Department of Energy
ft	feet/foot
FUSRAP	Formerly Utilized Sites Remedial Action Program
g	gram(s)
MISS	Maywood Interim Storage Site
ML	inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
NAREL	National Air and Radiation Environmental Laboratory
ORNL	Oak Ridge National Laboratory
pCi	picocuries
Ra-226	radium-226
SC	clayey sands, sand-clay mixtures
SC&A	Sanford Cohen & Associates
SM	silty-sands, sand-silt mixtures
SOR	sum of the ratios
Th-232	thorium-232
U-238	uranium-238
yd ³	cubic yard(s)

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EXECUTIVE SUMMARY

The Maywood Phase II remedial action will address 24 commercial and government properties containing approximately 259,000 cubic yards of impacted materials. As part of the remedy evaluation process the Formerly Utilized Sites Remedial Action Program is evaluating treatment alternatives for these Phase II soils. The results of laboratory treatment studies performed on soil samples from two of the Maywood Phase II properties (Maywood Interim Storage Site and Stepan) showed that a physical separation treatment process (particle size separation combined with hydroclassification, and possibly density separation) could achieve volume reductions ranging from approximately 50 percent to over 60 percent while producing clean soil streams meeting treatment criteria of 5 picocuries per gram (pCi/g) or 15 pCi/g, respectively.

To qualitatively judge the applicability of this treatment process to the other Maywood Phase II property soils a comparison of the soil characteristics of the 24 properties was performed. The purpose of this comparison was to determine the similarity between the Phase II property soils and the similarity of these soils to the soil samples used in the laboratory treatment studies.

The characteristics for the Maywood Phase II property soils were evaluated using geologic borehole logs. The soil descriptions on these logs are based on the site geologist's visual observations and tend to be subjective and differ between individual geologist. Therefore, the comparisons and groupings presented in this document should be considered qualitative in nature and provide general information about the Maywood Phase II soils.

This soil evaluation classifies the Phase II property soils as similar, potentially similar, not similar, or undetermined. Soils designated as undetermined are classified as such due to lack of soil data. For the total impacted soil volume, 74.7 percent is classified as similar, 1.2 percent as potentially similar, 13.4 percent as not similar, and 10.8 percent as unknown. For the total accessible impacted soil volume, 79.8 percent is classified as similar, 1.4 percent as potentially similar, 15.2 percent as not similar, and 3.6 percent as unknown. These percentages are summarized in Figures ES-1 and ES-2.

The areas identified as having the most limited data for the comparison yet contributing substantially to the impacted soil volume estimate are the retention basins and the burial pits. Additional information regarding the actual volume, the soil types, and radionuclide concentrations for these two areas would strengthen this comparison.

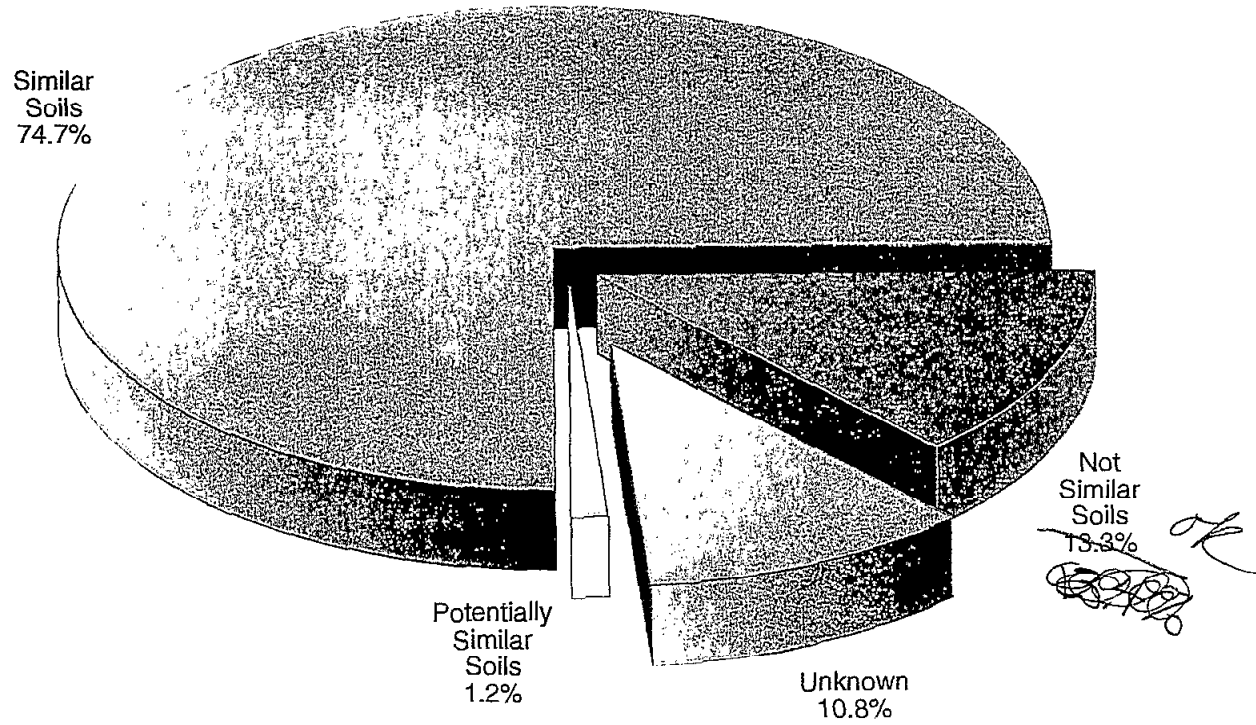


Figure ES-1. Soils Comparison Summary for the Total Impacted Phase II Soil Volume

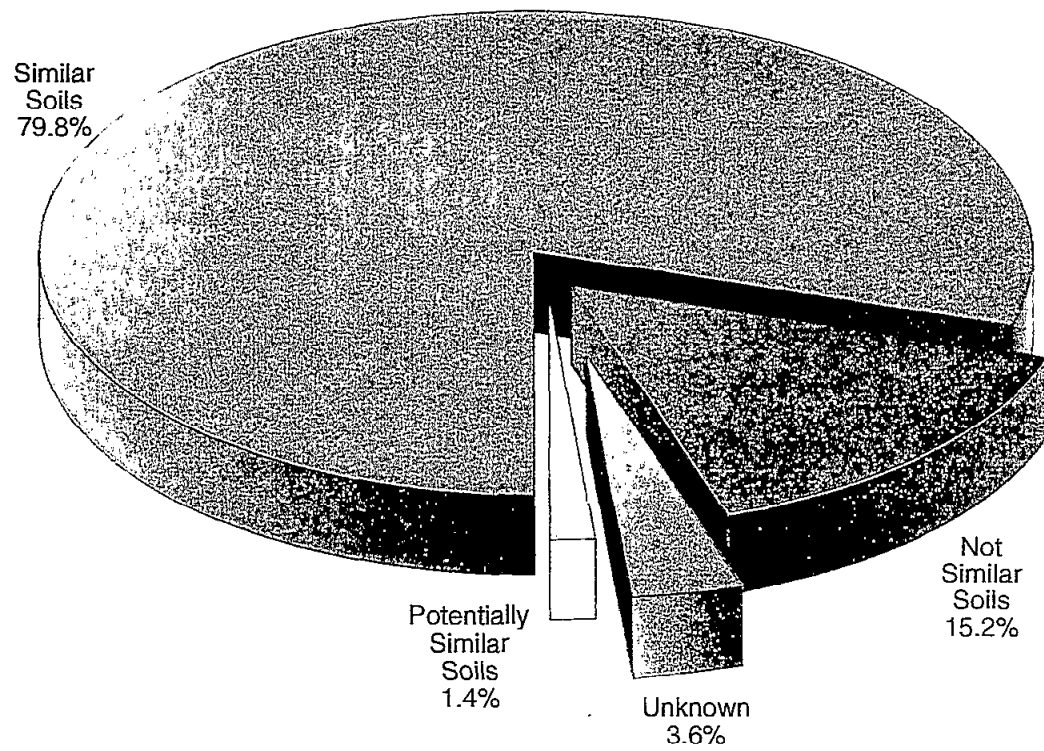


Figure ES-2. Soils Comparison Summary for the Accessible Impacted Phase II Soil Volume

1.0 INTRODUCTION

1.1 PURPOSE

The Maywood Phase II remedial action will address 24 commercial and government properties containing approximately 259,000 cubic yards (yd³) of impacted material (see Table 1-1). As part of the remedy evaluation process for Maywood the Formerly Utilized Sites Remedial Action Program (FUSRAP) is evaluating treatment alternatives for this site. To evaluate the technical and cost effectiveness of physical separation processes, such as soil washing, Sanford Cohen and Associates (SC&A), a commercial laboratory experienced in soil characterization and remediation, was contracted to performed treatment characterization studies on soil samples from the site.

Soil samples for the studies were collected from selected locations on the Maywood Interim Storage Site (MISS) and Stepan properties. The results of these studies showed that volume reductions ranging from approximately 50 percent to over 60 percent could be achieved with a treatment system consisting of particle size separation, hydroclassification and possibly density separation unit operations (SC&A 1997).

To qualitatively judge the applicability of this treatment process to the other soils at the Maywood site a comparison of the soil characteristics of the 24 properties was performed. The purpose of this comparison was to determine the similarity between the Phase II property soils and the similarity of these soils to the soil samples used in the SC&A treatment studies. (The soils that were judged dissimilar to the treatment study soils were grouped according to their similarities to each other.)

1.2 PHASE II PROPERTIES

For the purposes of this document, properties have been split into two groups, the Phase II North Properties (north of State Route 17) and the Phase II South Properties (south of State Route 17). These properties are shown in Figure 1-1. The Phase II South properties represent 8.18 percent of the estimated total impacted soil volume and 8.63 percent of the estimated total accessible impacted soil volume (Figures 1-2 and 1-3). The Phase II North properties represent 86.0 percent of the estimated total impacted soil volume and 84.45 percent of the estimated accessible impacted soil volume (Figures 1-2 and 1-3).

1.3 COMPARISON METHODOLOGY

A four step methodology was used to perform the soil comparison. These steps were to: 1) identify the areas of impacted soil, 2) identify the soil characteristics and radiological constituents

Table 1-1. Listing of the Phase II Properties and Estimated Volume of Impacted Soil

Phase II Properties	Volume (yd ³)		Phase II Properties	Volume (yd ³)	
	Total	Accessible		Total	Accessible
Lodi Government			Maywood Commercial		
New Jersey Vehicle Inspection Station	2,194	2,194	23 Howcroft (DeSaussure)	1,693	1,524
1-80 West	158	158	149 Maywood (Sears)	54,395	33,910
			205 Maywood (Myron)	38	38
Lodi Commercial			137 Route 17 (Former Federal Express)	1,045	1,045
160 Essex Street	1,013	912	AMF/Voit	57	57
174 Essex Street	255	229	167 Route 17 (Sunoco)	3,993	3,793
170 Gregg Street	*	*	200 Route 17 (Sears Small Truck)	242	242
80 Industrial Road	1,145	687	239 Route 17 (Gulf)	1,559	1,481
80 Hancock Street	5,732	4,012	85 Route 17 (Hunter Douglas)	57	57
100 Hancock Street	2,166	1,733	Route 17 S & Essex Street (Muscarelle)	233	233
72 Sidney	*	*	Scanel & Hackensack Rail Road	8,000	8,000
			113 Essex Street (Nation County Bank)	1,350	1,350
	12663	9975	NYS & Western Railroad	6,000	6,000
Maywood Government			Stepan	45,082	45,082
NJ Route 17	20,000	0			
			MISS		
			MISS Insitu	102,531	102,531
~ Phase II Soil Volume ¹ :				259,000	yd ³
~ Phase II Accessible Soil Volume ¹ :				215,000	yd ³

Source: BNI 1997

¹ Volume is rounded to thousandth place

* Volume included with other properties

Total 4.89
Acc 4.62
South

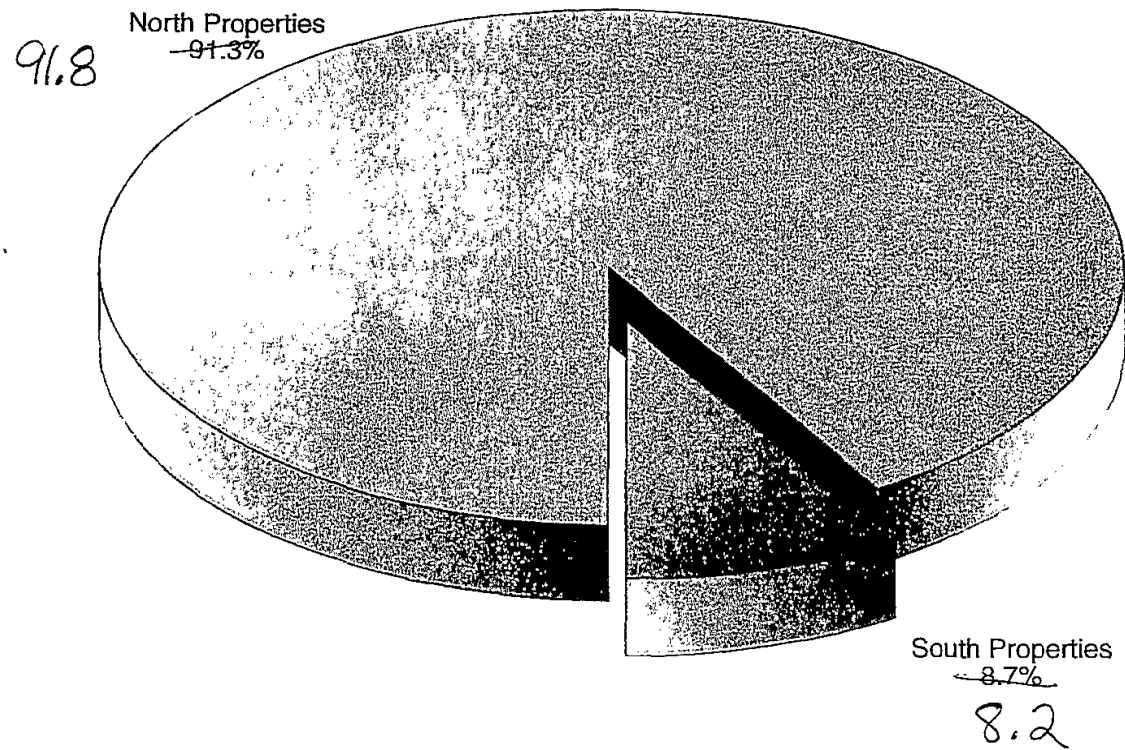


Figure 1-2. Comparison of Maywood Phase II Total Impacted Soil Volumes

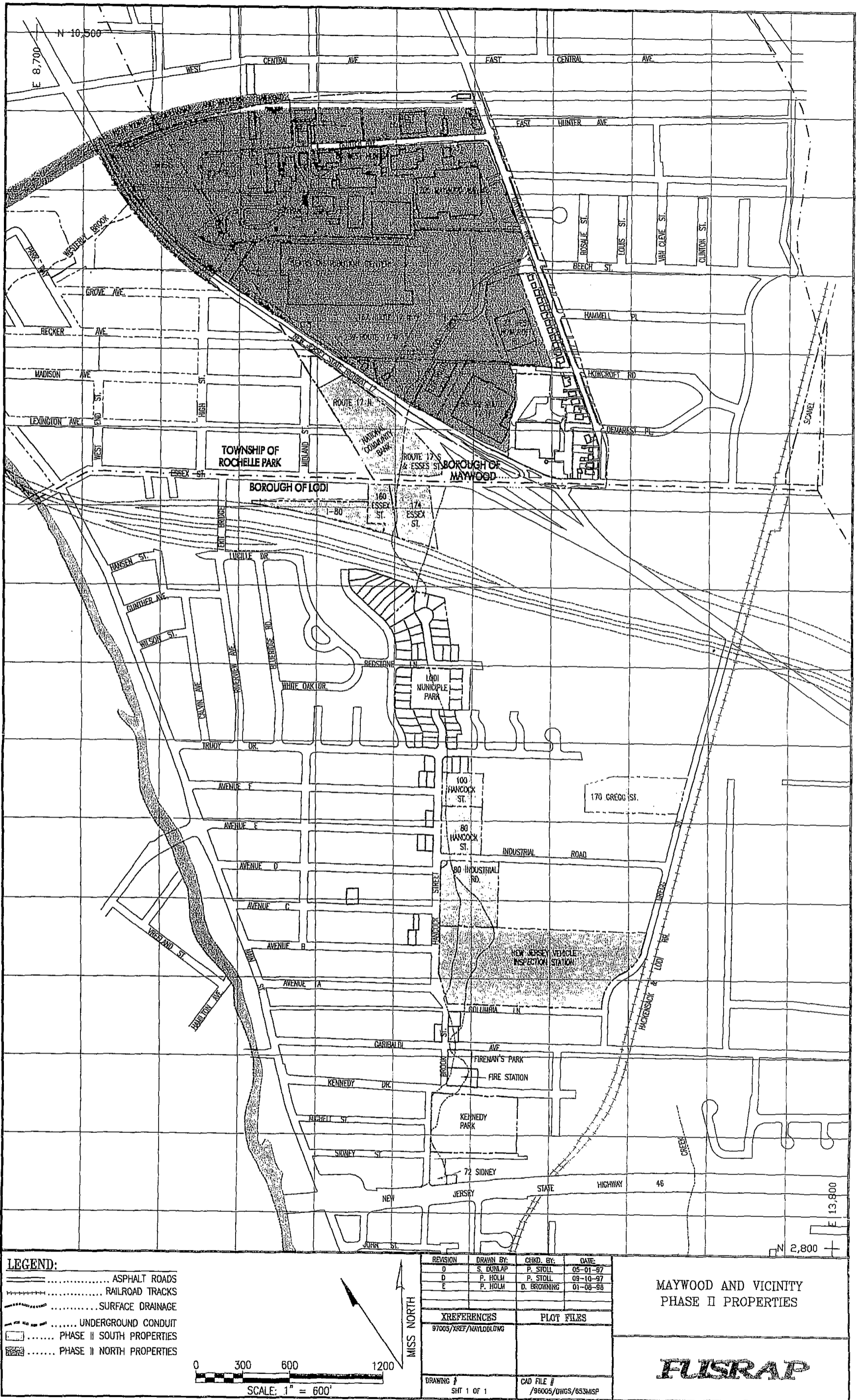


Figure 1-1. Maywood and Vicinity Phase II Properties

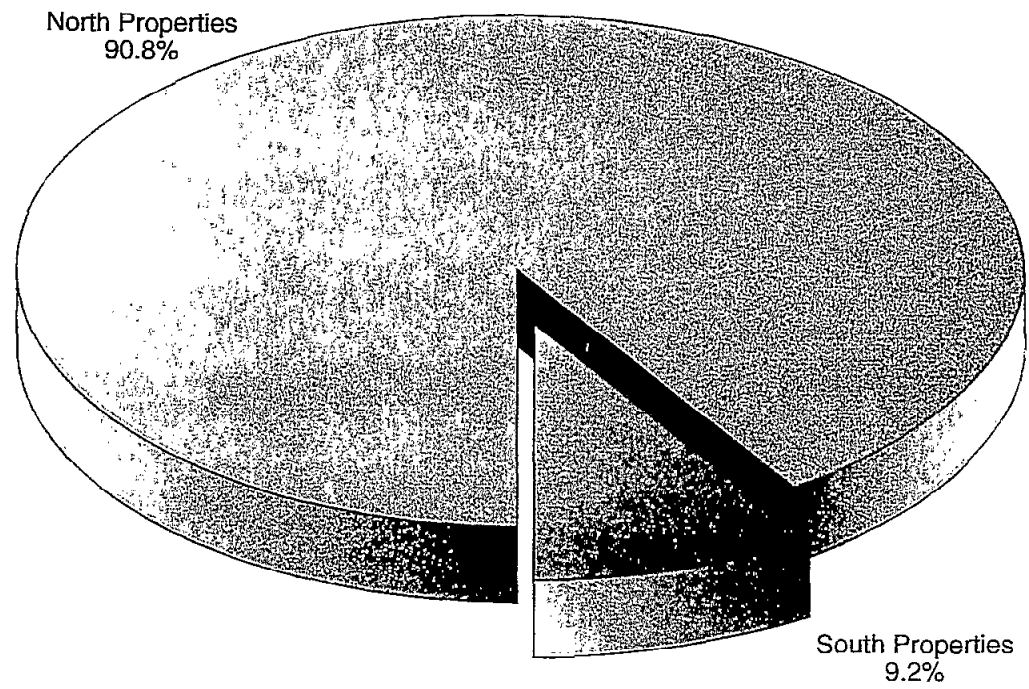


Figure 1-3. Comparison of Maywood Phase II Accessible Impacted Soil Volumes

in the impacted areas, 3) compare the soil characteristics and radiological constituents of the impacted areas to the treatability study soils, and 4) group areas by similar soil characteristics.

The impacted areas for each Phase II property were identified using either the "sum of the ratios" (SOR) method as specified in Department of Energy (DOE) Order 5400.5 or gamma log data. The SOR method was used when sufficient analytical data was available; where as gamma log data was used to determine impacted areas at properties with limited or no analytical data. The SOR method determines the combined concentrations of constituents of concern (COCs) allowed when more than one constituent is present, while accounting for the naturally occurring levels of COCs in the soil (background levels). At the Maywood site, the SOR method is described by the following equations where all concentrations are in units of pCi/g.

For Surface Samples*

$$SOR^1 = MAX \left(\frac{U-238 - 2.9}{50} \right) + MAX \left(\frac{Ra-226 - 0.7}{5} \right) + MAX \left(\frac{Th-232 - 1.0}{5} \right)$$

For Subsurface Samples*

$$SOR^1 = MAX \left(\frac{U-238 - 2.9}{50} \right) + MAX \left(\frac{Ra-226 - 0.7}{15} \right) + MAX \left(\frac{Th-232 - 1.0}{15} \right)$$

*With 2.9 pCi/g, 0.7 pCi/g, and 1.0 pCi/g being the background concentrations for U-238, Ra-226, and Th-232, respectively, and where max (x, y) was the maximum value between x and y. This eliminated negative numbers at locations where the value is less than the average background concentration.

In cases where specific radionuclides were missing, other radionuclides were substituted for these missing values. The equation uses different radionuclide cleanup guidelines depending upon the depth of the contamination and classification of the property. The site specific cleanup criteria for uranium-238 (U-238) at the Maywood site is 50 pCi/g for all properties regardless of depth. The site specific cleanup criteria for radium-226 (Ra-226) and thorium-232 (Th-232) at the Maywood site is 5 pCi/g in the surface soils [top 15 centimeters (cm)] and 15 pCi/g in the subsurface soils (soils deeper than 15 cm) for all Phase II commercial and government properties. A SOR value greater than 1.0, using the appropriate radionuclide cleanup guidelines requires remediation.

¹ If U-238 was missing, U-238 was set equal to Th-232. If U-238 and U-232 were missing U-238 was set to equal to 4 × Ra-226. If Th-232 was missing, Th-232 was set equal to U-238. If Ra-226 was missing, Ra-226 was set equal to ¼Th-232. If Ra-226 and Th-232 were missing, Ra-226 was set equal to ¼U-238.

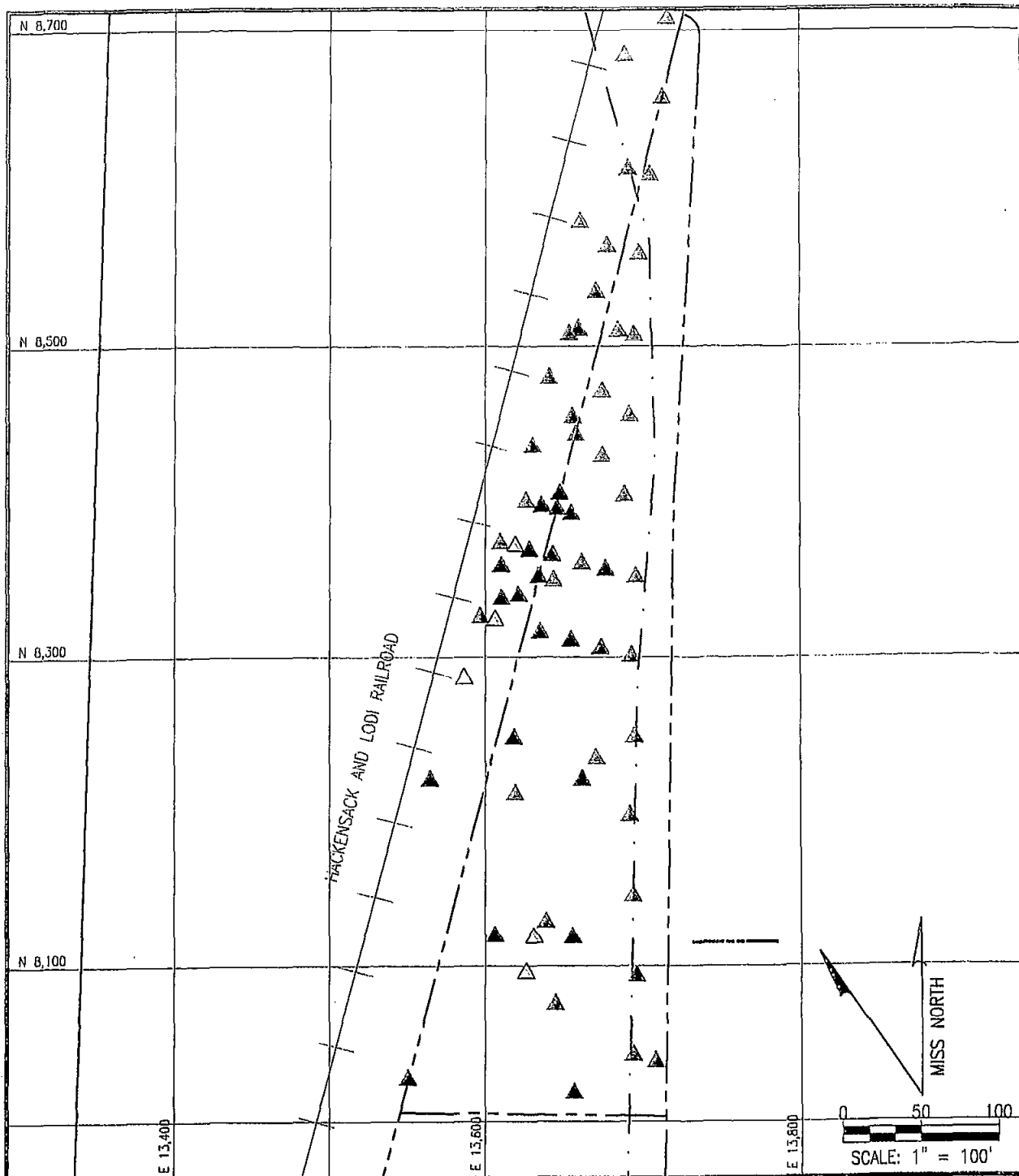
For areas without extensive analytical data, impacted areas were determined using gamma log information. Because Th-232 decay products emit significant gamma radiation, a correlation can often be derived relating pCi/g concentrations to the gamma log measurements in counts per minute (cpm) (e.g., from a sodium iodide detector). At the Maywood site, two correlation studies were performed to determine a count rate equivalent to 15 pCi/g of Th-232. The goal of these correlation studies was to provide a means to identify soils exceeding DOE concentration guidelines using down-hole gamma data as a proxy for costly analytical soil sample analyses. The correlation studies determined that 30,000 cpm is approximately equivalent to 15 pCi/g of Th-232 (BNI 1992).

The soil characteristics for the impacted areas were evaluated using the geologic borehole logs. These logs are visual classifications of the soils identified by the site geologist during drilling activities, and as such, provide a qualitative classification of the soil. Geologic borehole logs were obtained to identify areas of elevated COCs and typically did not indicate the relative percentages of gravel, sand, silt, or clay.

The soil characteristics for the treatability studies were evaluated using particle size analysis (EPA 1993 and SC&A 1997). A particle size analysis allows a soil sample to be divided into its composition of gravel, sand, silt, and clay on a percentage basis. Table 1-2 provides a typical list of particle sizes along with their American Society of Testing and Materials (ASTM) classification. (Geologic borehole logs for the treatability soil samples were not available for comparison). The particle size analysis classifies the soil based on the percentages of particles retained on different size screens. This data provides a more composite-related and quantitative classification than geologic logs.

Table 1-2. Typical Particle Size Distributions and ASTM Soil Classification

ASTM Soil Classification	Particle Size	Sieve Size
Gravel	76.2 - 4.75 mm	passing 3-in and retained on No. 4
Coarse Sand	4.75 - 2.00 mm	passing No. 4 and retained on No. 10
Medium Sand	2.00 - 0.425 mm	passing No. 10 and retained on No. 40
Fine Sand	0.425 - 0.075 mm	passing No. 40 and retained on No. 200
Silt and Clay	<0.075 mm	passing No. 200



LEGEND:

MAXIMUM ACTIVITY RATIO FOR ANY DEPTH:

- ▲ ≤ 1
- ▲ > 1 - ≤ 10
- △ > 10 - ≤ 50
- ▲ > 50

NOTES:

1) DATA RECEIVED FROM PAT RYAN, 0-05-97. THE DATABASE INCLUDED ALL RADIONUCLIDE MEASUREMENTS FOR SOIL SAMPLES THAT WERE VERIFIED FOR THE MAYWOOD LITE 3-D VISUALIZATION EFFORT. (1996)

----- PROPERTY BOUNDARY
 +++++ RAILROAD

PHASE II SOUTH PROPERTIES
 SOR MEASUREMENTS
 IN SOIL

FUSRAP

DRAWN BY: P. HOLM	REV. NO./DATE: 3 / 09-05-97	CAD FILE: /96005/DWGS/653PH2-5
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Figure 2-1. Maximum SOR Calculated for Sampling Points at the Scanel and Hackensack Railroad Property

2.0 PHASE II SOUTH PROPERTIES

There are 12 Phase II South properties. These properties account for 22,488 yd³ (8.7 percent) of the total impacted soil volume, and 19,750 yd³ (9.2 percent) of the total accessible impacted soil volume. A summary of each of the 13 Phase II South properties is presented below. The properties are organized in decreasing total impacted soil volume. The first four properties (Scanel & Hackensack Railroad, 80 Hancock Street, New Jersey Vehicle Inspection Station, and 100 Hancock Street) account for 18,082 yd³ of the total impacted soil volume and 15,939 yd³ of the total accessible impacted soil volume. These four properties represent 80.5 percent of the total impacted soil and 80.7 percent of the total accessible impacted soil for the Phase II South properties.

2.1 SCANEL & HACKENSACK RAILROAD PROPERTY

Sample locations along with the maximum SOR for a specific location are indicated in Figure 2-1. The impacted soils in the southern portion appear to be located between 0 to 6.0 feet below ground surface. These boreholes were drilled by NUS in 1983 (NUS 1983). Impacted soil in the central to northern portion of the site was identified between 0 and 2.5 feet below ground surface. These boreholes were drilled by Bechtel National, Incorporated (BNI) in 1985, however, boring logs are not available for these locations. The soil borings drilled by NUS were used to determine the soil characteristics in the vicinity of the southern impacted area. The boring logs used to determine soil characteristics at this property are shown on Figure A-1 and are presented in Volume II.

Based on a review of the boring logs in the impacted areas, the soils at the Scanel property are predominately clay in the southern portion of the property. There were no boring logs available to determine the soil characteristics in the northern portion of the property. Due to a lack of geologic data for the northern and central portion of the property, the characterization for the southern area has been assumed to be an accurate representation of the entire property. The SORs range from <1.0–49.5 and the radiological activities range from <0.5–238.4 pCi/g for Th-232 and 0.5–68.0 pCi/g for Ra-226. U-238 did not exceed the cleanup guideline at any of the locations.

2.2 80 HANCOCK STREET PROPERTY

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-2. The impacted areas were identified during studies conducted by Oak Ridge National Laboratory (ORNL) in 1986 (ORNL 1989a) and BNI in 1987 and appear to be located at 0 to 7.0 feet below ground surface (BNI 1989a). Soil borings were not available from the ORNL investigation; boring logs used to determine soil characteristics at this property are shown on Figure A-2 and are presented in Volume II.

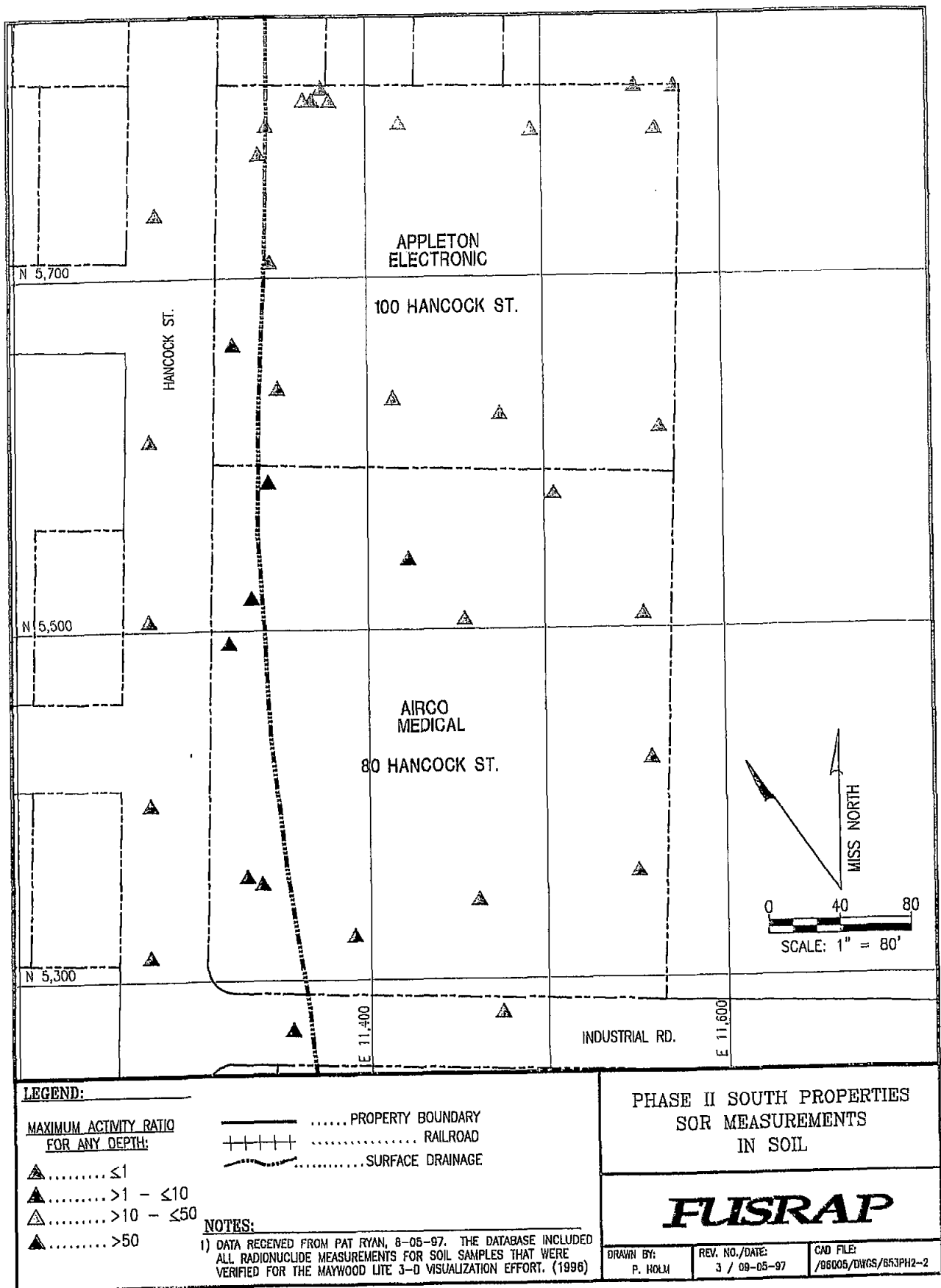


Figure 2-2. Maximum SOR Calculated for Sampling Points at 80/100 Hancock Street Properties

Based on a review of the boring logs in the impacted areas, the soils at the 80 Hancock Street property are predominately gravelly silts from 0 to 4 feet below ground surface and silts below 4 feet. The SORs range from <1.0 - 2.69 and the radiological activities range from 0.4 - 34.8 pCi/g for Th-232 and 0.4 - 5.1 pCi/g for Ra-226. U-238 did not exceed the cleanup guideline at any of the locations where it was reported. U-238 was not reported at the ORNL sampling locations.

2.3 NEW JERSEY VEHICLE INSPECTION STATION PROPERTY

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-3. The impacted areas appear to be located at 0 to 0.5 feet below ground surface. The impacted areas were identified during investigations conducted by BNI in 1986 (BNI 1987a). Soil borings were not available from this investigation; however, a soil boring drilled by BNI in 1986 was used to determine the soil characteristics in the vicinity of the impacted area as shown on Figure A-7 and as presented in Volume II.

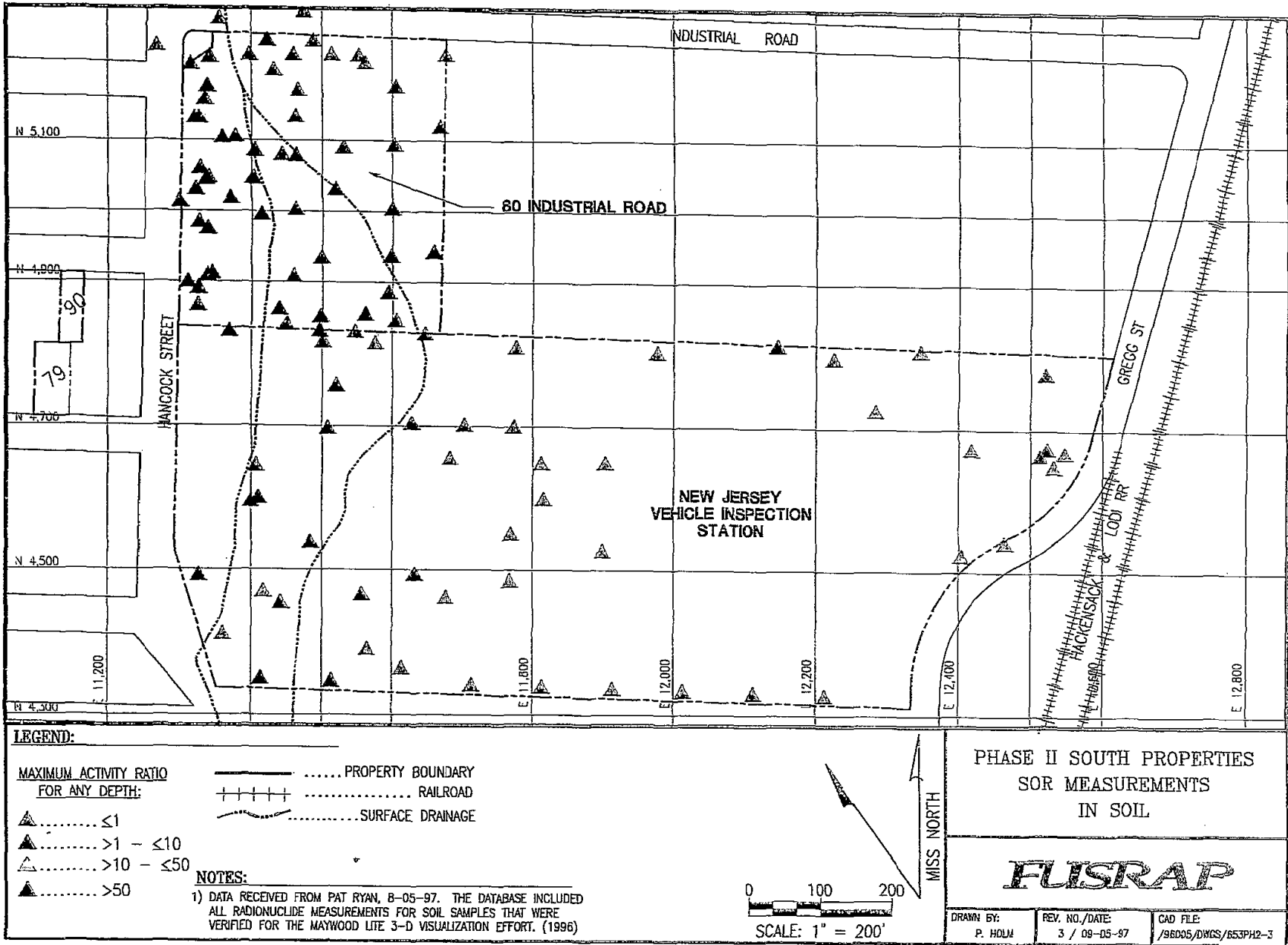
Based on a review of the boring log in the impacted area, the soils at the New Jersey Vehicle Inspection Station property are predominately silty sands underlying topsoil. The SORs range from <1.0 - 2.49 and the radiological activities range from 0.8 - 12.5 pCi/g for Th-232. U-238 and Ra-226 did not exceed the cleanup guideline at any of the locations reported.

2.4 100 HANCOCK STREET PROPERTY

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-2. The impacted areas appear to be located predominantly at the surface (0 to 0.5 feet) with one occurrence at 4.0 to 5.0 feet below ground surface. The impacted area at depth was identified during studies conducted by ORNL in 1986 (ORNL 1989b) and the shallow impacted area was identified by BNI in 1988 (BNI 1989b). Soil borings were not available from the ORNL investigation; boring logs used to determine soil characteristics at this property are shown on Figure A-2 and are presented in Volume II.

Based on a review of the boring logs in the impacted areas, the soils at the 100 Hancock Street property are predominately silty sand with some isolated areas of increasing sand or silt content. The SORs range from <1.0 - 2.7. For the shallow soils, the radiological concentrations range from 0.8 - 8.0 pCi/g for Th-232. Ra-226 did not exceed the cleanup guideline in the shallow soil. For the deep soil, the radiological concentrations ranged from 0.6 - 29.0 pCi/g for Th-232 and 0.3 - 5.4 pCi/g for Ra-226. U-238 did not exceed the cleanup guideline at any of the locations where it was reported. U-238 was not reported at the ORNL sampling locations.

Figure 2-3. Maximum SOR Calculated for Sampling Points at 80 Industrial Road and New Jersey Vehicle Inspection Station Properties



2.5 113 ESSEX STREET PROPERTY (NATIONAL COMMUNITY BANK)

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-4. The impacted areas appear to be located at 0 to 2.0 feet below ground surface and 7.0 to 9.0 feet in boring R633. The impacted areas were identified during studies conducted by ORNL in 1986 (May.264) and BNI in 1990 (BNI 1992). Soil borings were not available from the ORNL investigation; the boring logs used to determine soil characteristics at this property are shown on Figure A-4 and are presented in Volume II.

Based on a review of the boring logs in the impacted areas, the soils at the 113 Essex Street property are predominately clayey silt in the northern portion of the property with some isolated areas of increased sand and gravel content. In the southern portion of the property, the soils are predominately silty sands to sandy silts. The 7 to 9 foot interval in boring R633 is a silty sand. The SORs range from <1.0 - 4.3. For the surface soils, the radiological concentrations range from <0.7 - 17.0 pCi/g for Th-232 and 0.4 - 5.2 pCi/g for Ra-226. For the subsurface soils, the concentrations ranged from 0.2 - 18.0 pCi/g for Th-232 and 0.4 - 10.0 pCi/g for Ra-226. U-238 did not exceed cleanup guidelines at any of the locations.

2.6 80 INDUSTRIAL ROAD PROPERTY

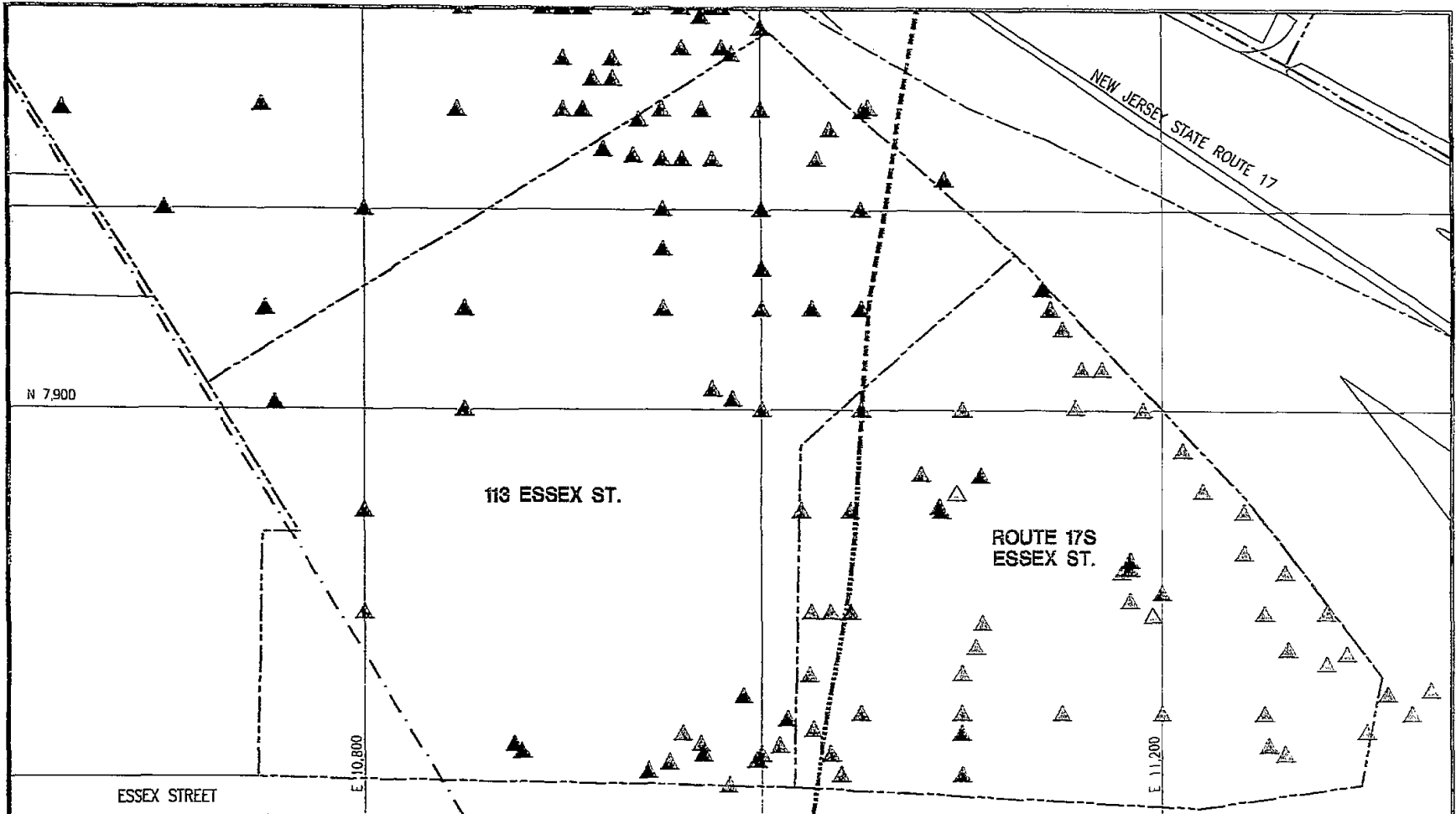
Sample locations along with the maximum SOR for a specific location are presented in Figure 2-3. The impacted areas appear to be located at 0 to 9.0 feet below ground surface. The impacted areas were identified during studies conducted by BNI in 1987 and 1988 (BNI 1989c). The boring logs used to determine soil characteristics at this property are shown on Figure A-3 and are presented in Volume II.

Based on a review of the boring logs in the impacted area, the soils at the 80 Industrial Road property are predominately silty sands to sandy silts. The SORs range from <1.0 - 7.8 and the radiological activities range from 0.4 - 28.8 pCi/g for Th-232 and 0.4 - 13.3 pCi/g for Ra-226. U-238 did not exceed the cleanup guideline at any of the locations reported.

2.7 160/174 ESSEX STREET PROPERTY

Sample locations along with the maximum SOR for a specified location are presented in Figure 2-5. The impacted areas appear to be located at 0 to 3.0 feet below ground surface. These areas were identified during studies conducted by ORNL in 1987 (ORNL 1989c, ORNL 1989d) and BNI in 1990 (BNI 1992). Soil borings were not available from the ORNL investigations. Boring logs used to determine soil characteristics at this property are shown on Figure A-5 and are presented in Volume II.

Figure 2-4. Maximum SOR Calculated for Sampling Points at 113 Essex Street and the Intersections of Rt. 17S and Essex Street Properties



LEGEND:

<p>MAXIMUM ACTIVITY RATIO FOR ANY DEPTH:</p> <p>▲..... ≤1</p> <p>▲..... >1 - ≤10</p> <p>▲..... >10 - ≤50</p> <p>▲..... >50</p>	<p>..... PROPERTY BOUNDARY</p> <p>++++ RAILROAD</p> <p>~~~~ SURFACE DRAINAGE</p> <p>----- UNDERGROUND CONDUIT</p>
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NOTES:

1) DATA RECEIVED FROM PAT RYAN, 8-05-97. THE DATABASE INCLUDED ALL RADIONUCLIDE MEASUREMENTS FOR SOIL SAMPLES THAT WERE VERIFIED FOR THE MAYWOOD LITE 3-D VISUALIZATION EFFORT. (1996)

MISS NORTH

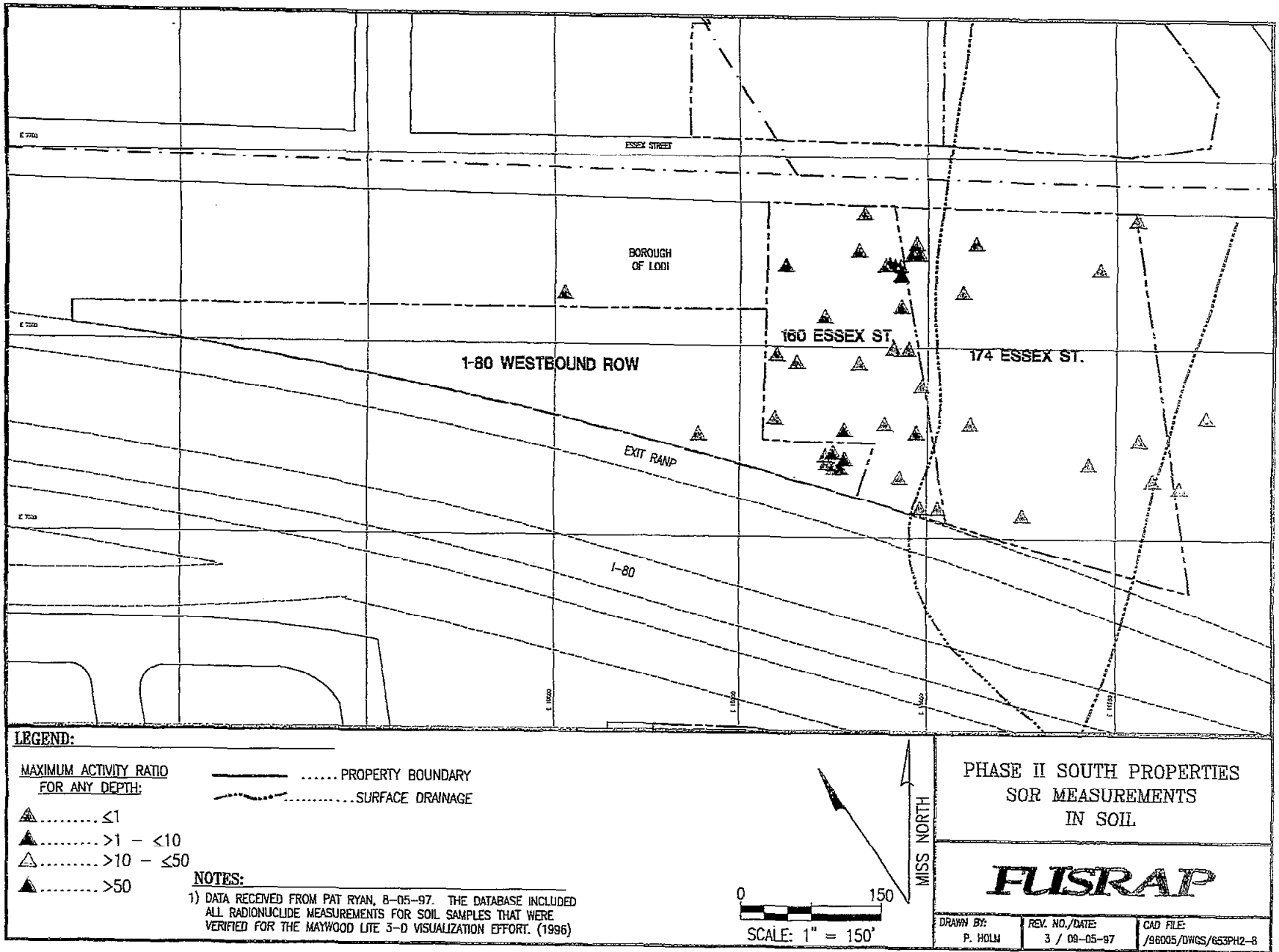
SCALE: 1" = 80'

PHASE II SOUTH PROPERTIES
SOR MEASUREMENTS
IN SOIL

FUSRAP

DRAWN BY: P. HOLM	REV. NO./DATE: 3 / 09-05-97	CAD FILE: /96005/DWGS/653PH2-7
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Figure 2-5. Maximum SOR Calculated for Sampling Points at I-80 West and 160/174 Essex Street Properties



Based on a review of the boring logs in the impacted areas, the soils at the 160/174 Essex Street property are predominately silty gravel in the vicinity of the old stream channel running north to south near the property line of 160 and 174 Essex Street. The soil appears to increase in silt content toward the interior of the 160 Essex Street property which may include boring 1126R. The SORs range from <1.0 - 4.42 and the radiological activities range from 0.4 - 49.0 pCi/g for Th-232 and 0.37 - 5.1 pCi/g for Ra-226. U-238 did not exceed the cleanup guideline at any of the locations where it was reported. U-238 was not reported at the ORNL sampling locations.

2.8 200 ROUTE 17N PROPERTY (SEARS SMALL TRUCK FACILITY)

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-6. The impacted area appears to be located at 0 to 4.0 feet below ground surface. These areas were identified during studies conducted by ORNL in 1987 (ORNL 1989e) and BNI in 1990 (BNI 1992). Boring logs are not available at all of these locations. The boring logs used to determine soil characteristics at this property are shown on Figure A-6 and are presented in Volume II.

Based on a review of the boring logs in the impacted areas, the soils at the 200 Route 17N property are predominately silty to clayey sand with some isolated areas of increasing sand or silt content. The SORs range from <1.0 - 35.96 and the radiological activities range from 0.30-390.0 pCi/g for Th-232 and 0.30 - 35.0 pCi/g for Ra-226. U-238 did not exceed cleanup guidelines at any of the locations.

2.9 ROUTE 17S AND ESSEX STREET PROPERTY (MUSCARELLE)

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-4. The impacted areas appear to be located at 0 to 1.0 feet below ground surface. These areas were identified during studies conducted by ORNL in 1987 (ORNL 1989f) and BNI in 1990 (BNI 1992). Soil borings were not available from the ORNL investigation; boring logs used to determine soil characteristics at this property are shown on Figure A-4 and are presented in Volume II.

Based on a review of the boring logs in the impacted areas, the soils in the western portion of the Route 17S and Essex Street property are predominately silty sands with some gravel underlying topsoil or asphalt. The southeast corner of the property contains silty clays with some sand. The SORs range from <1.0 - 14.0 and the radiological activities range from 0.4 - 61 pCi/g for Th-232 and 0.3 - 6.0 pCi/g for Ra-226. U-238 did not exceed cleanup guidelines at any of the locations.

2.10 I-80 WEST

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-5. There were no boring logs available for review to evaluate the soils on the I-80 West

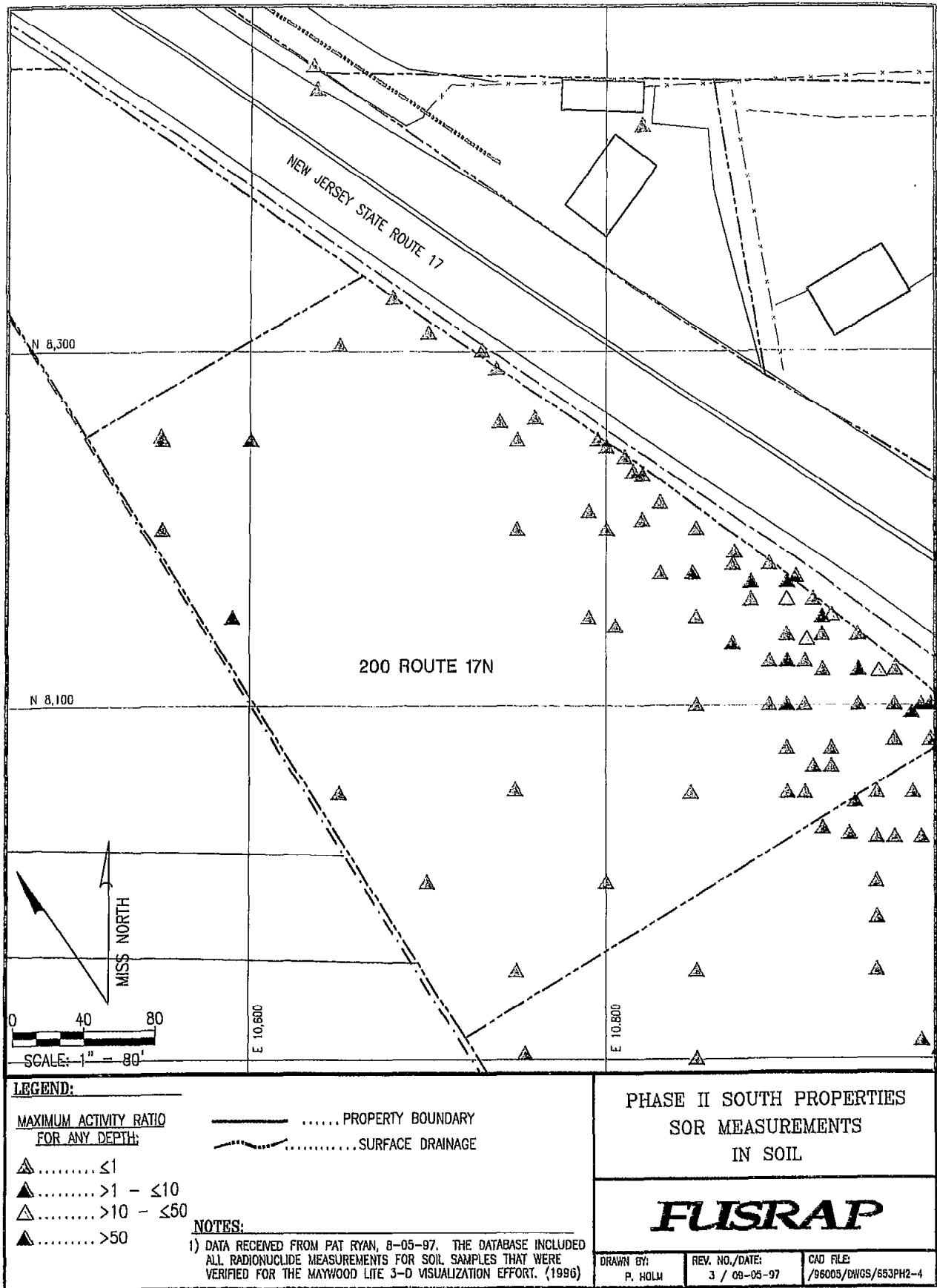


Figure 2-6. Maximum SOR Calculated for Sampling Points at the 200 Route 17N Property (Sears Small Truck Facility)

property. The SORs range from $<1.0 - 2.0$ at depths down to 1.5 ft., and the radiological activities range from 0.73 - 21.0 pCi/g for Th-232. Ra-226 and U-238 did not exceed the cleanup guidelines at any of the locations sampled.

2.11 170 GREGG STREET PROPERTY (BERGEN CABLE)

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-7. The impacted areas appear to be located at 0 to 1.0 feet below ground surface. Impacted areas were identified during studies conducted by BNI in 1986 (BNI 1987b). The boring logs used to determine soil characteristics at this property are shown on Figure A-7 and are presented in Volume II.

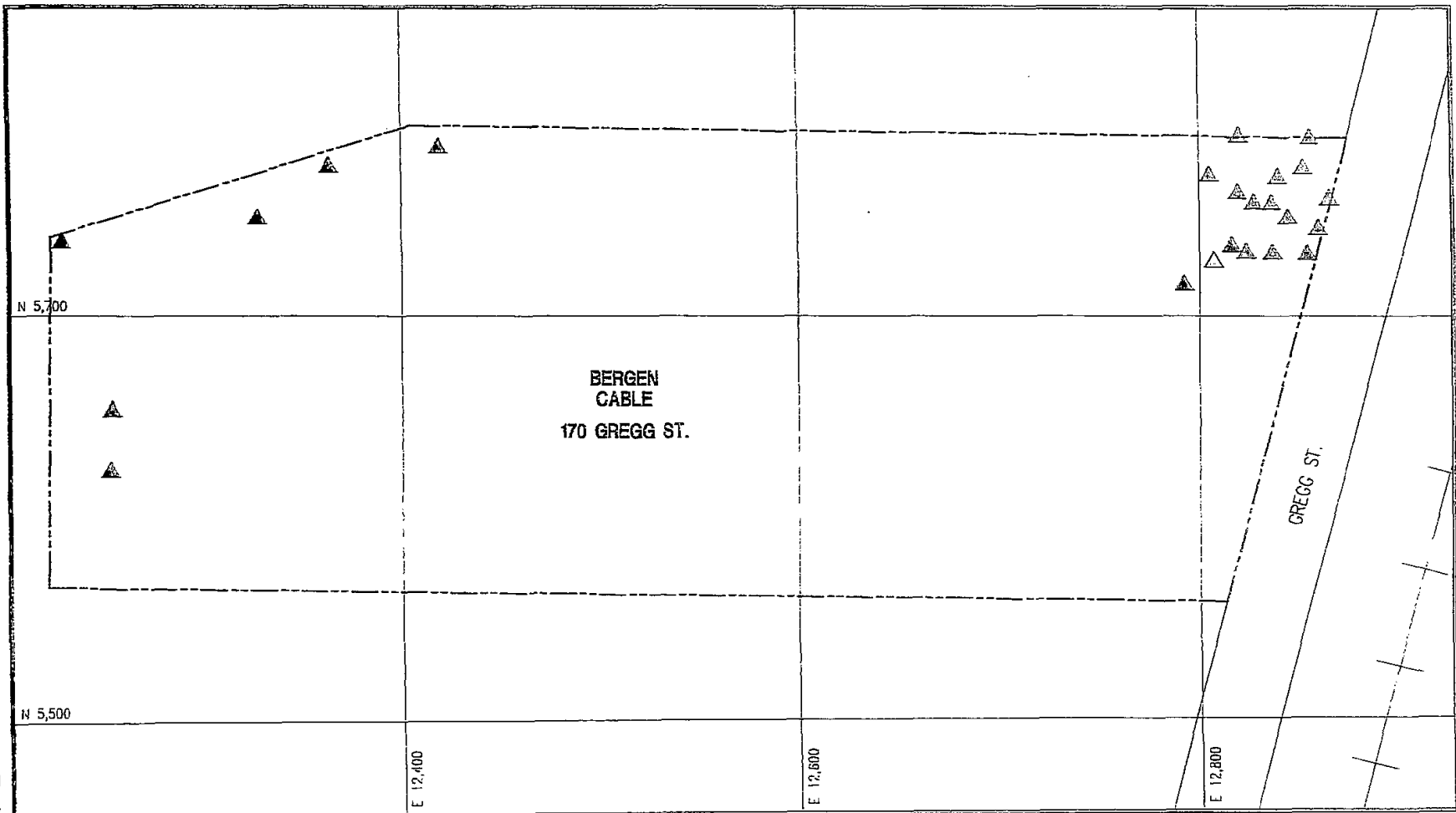
Based on a review of the boring logs in the impacted areas, the soils at the 170 Gregg Street property are predominately silty sands. The SORs range from $<1.0 - 16.58$ and the radiological activities range from 0.7 - 72.0 pCi/g for Th-232 and 0.5 - 11.0 pCi/g for Ra-226. U-238 did not exceed the cleanup guideline at any of the locations where it was reported.

2.12 72 SYDNEY STREET PROPERTY

Sample locations along with the maximum SOR for a specific location are presented in Figure 2-8. The impacted areas appear to be located at 3.5 to 5.0 feet below ground surface. Radionuclides were identified during studies conducted by ORNL in 1987 (May.362). Soil borings were not available from the ORNL investigation; however, soil borings drilled by BNI in 1987 were used to determine soil characteristics at this property. These borings are shown on Figure A-8 and are presented in Volume II.

Based on a review of the boring logs in the impacted areas, the soils at the 72 Sydney Street property are predominately silt with a small percentage of sand or gravel. The SORs range from $<1.0 - 1.39$. The radiological activities range from 0.36 - 16.0 pCi/g for Th-232. Ra-226 did not exceed the cleanup guideline at any locations sampled. U-238 was not reported at the ORNL sampling locations.

Figure 2-7. Maximum SOR Calculated for Sampling Points at the Gregg Street Property (Bergen Cable)



LEGEND:

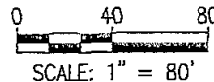
MAXIMUM ACTIVITY RATIO
FOR ANY DEPTH:

- ▲ ≤ 1
- ▲ > 1 - ≤ 10
- △ > 10 - ≤ 50
- ▲ > 50

..... PROPERTY BOUNDARY
+++++ RAILROAD

NOTES:

1) DATA RECEIVED FROM PAT RYAN, 8-05-97. THE DATABASE INCLUDED ALL RADIONUCLIDE MEASUREMENTS FOR SOIL SAMPLES THAT WERE VERIFIED FOR THE MAYWOOD LITE 3-D VISUALIZATION EFFORT. (1996)



MISS NORTH

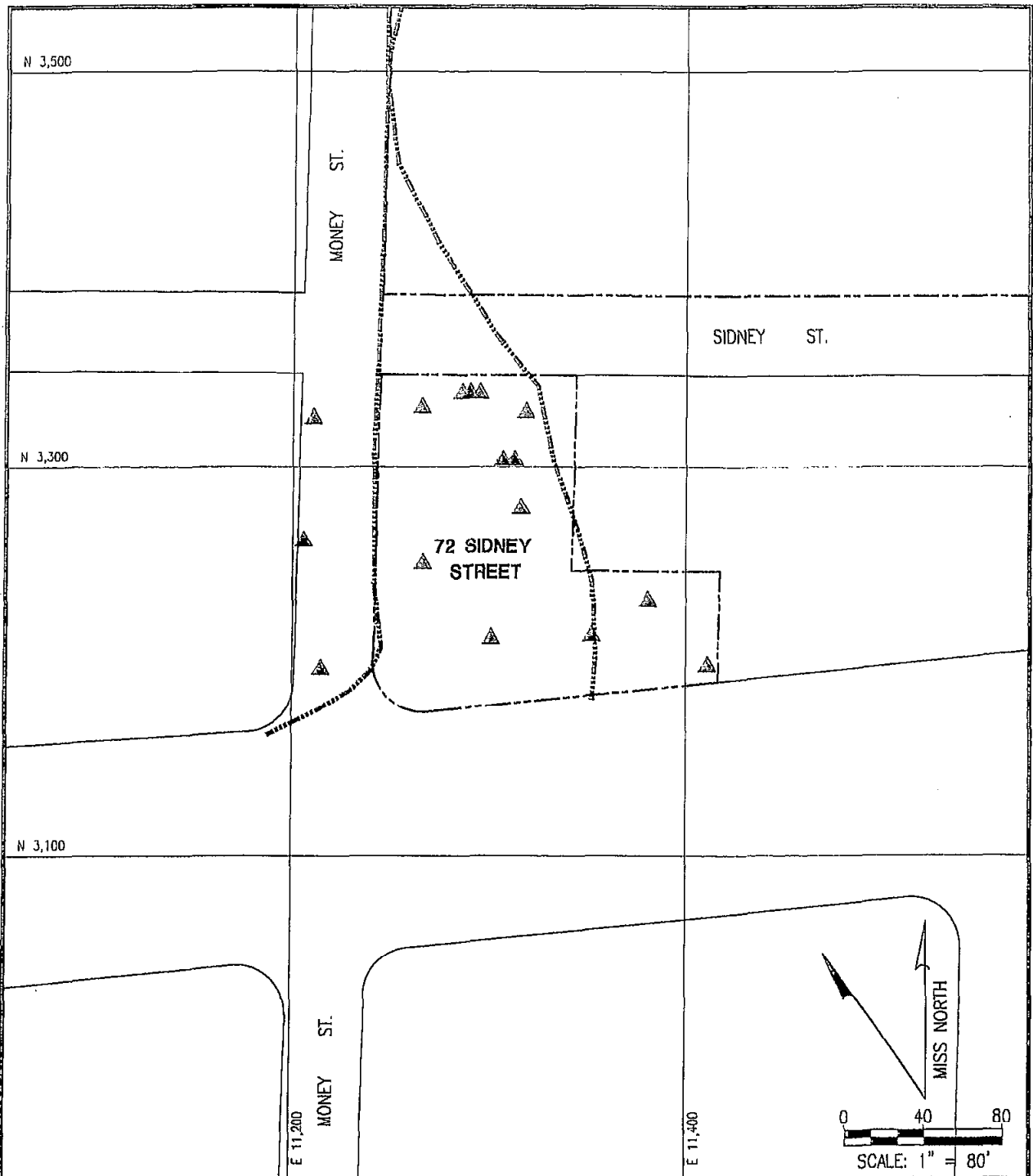
PHASE II SOUTH PROPERTIES
SOR MEASUREMENTS
IN SOIL

FUSRAP

DRAWN BY:
P. HOLM

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CAD FILE:
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LEGEND:

MAXIMUM ACTIVITY RATIO FOR ANY DEPTH:

- ▲..... ≤1
- ▲..... >1 - ≤10
- ▲..... >10 - ≤50
- ▲..... >50

NOTES:

1) DATA RECEIVED FROM PAT RYAN, 8-05-97. THE DATABASE INCLUDED ALL RADIONUCLIDE MEASUREMENTS FOR SOIL SAMPLES THAT WERE VERIFIED FOR THE MAYWOOD LITE 3-D VISUALIZATION EFFORT. (1996)

..... PROPERTY BOUNDARY

..... SURFACE DRAINAGE

PHASE II SOUTH PROPERTIES
SOR MEASUREMENTS
IN SOIL

FUSRAP

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Figure 2-8. Maximum SOR Calculated for Sampling Points at the 72 Sidney Street Property

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3.0 PHASE II NORTH PROPERTIES

There are 12 Phase II North properties. These properties account for 236,450 yd³ (91.3 percent) of the total impacted soil volume, and 195,518 yd³ (90.8 percent) of the total accessible impacted soil volume. A summary of each of the 11 Phase II North properties is presented below. The properties are organized in decreasing total impacted soil volume. The first four properties (MISS, Sears, Stepan, and NJ Route 17) account for 222,008 yd³ of the total impacted soil volume and 181,523 yd³ of the total accessible impacted soil volume. These four properties represent 94.9 percent of the total impacted soil and 91.8 percent of the total accessible impacted soil for the Phase II North properties.

3.1 MAYWOOD INTERIM STORAGE SITE

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The impacted soils appear to be located between 0 to 16 feet below ground surface. The soil borings drilled by BNI in 1986 (BNI 1987c) were used to determine the soil characteristics at the property. The boring logs used to determine soil characteristics at this property are shown on Figure B-1 and are presented in Volume II. Four of the geotechnical soil samples collected for the 1996 treatability study were collected from this property.

Based on a review of the boring logs for this property, the soils at the MISS property are predominately silty sand (which is relatively similar to the 1996 treatability soil samples), except in the vicinity of the former retention basins. The characteristics of the soil in the retention basins is discussed in Section 4.0. The SORs range from <1.0 - 380.86 and the radiological activities range from <3.0 - 1699.0 pCi/g for Th-232, 1.0 - 447.0 pCi/g for Ra-226, and 4.0 - 316.0 pCi/g for U-238.

3.2 SEARS PROPERTY

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The impact areas appear to be located between 0 to 12 feet below ground surface. The soil borings drilled by BNI in 1986 (BNI 1987d) were used to determine the soil characteristics at the property. These boring logs are shown on Figure B-1 and are presented in Volume II.

Based on a review of the boring logs for this property, the soils at the Sears property are predominately silty sand. The SORs range from <1.0 - 40.64 and the radiological activities range from 0.10 - 190.0 pCi/g for Th-232, 0.4 - 80.0 pCi/g for Ra-226, and 0.56 - 250.0 pCi/g for U-238.

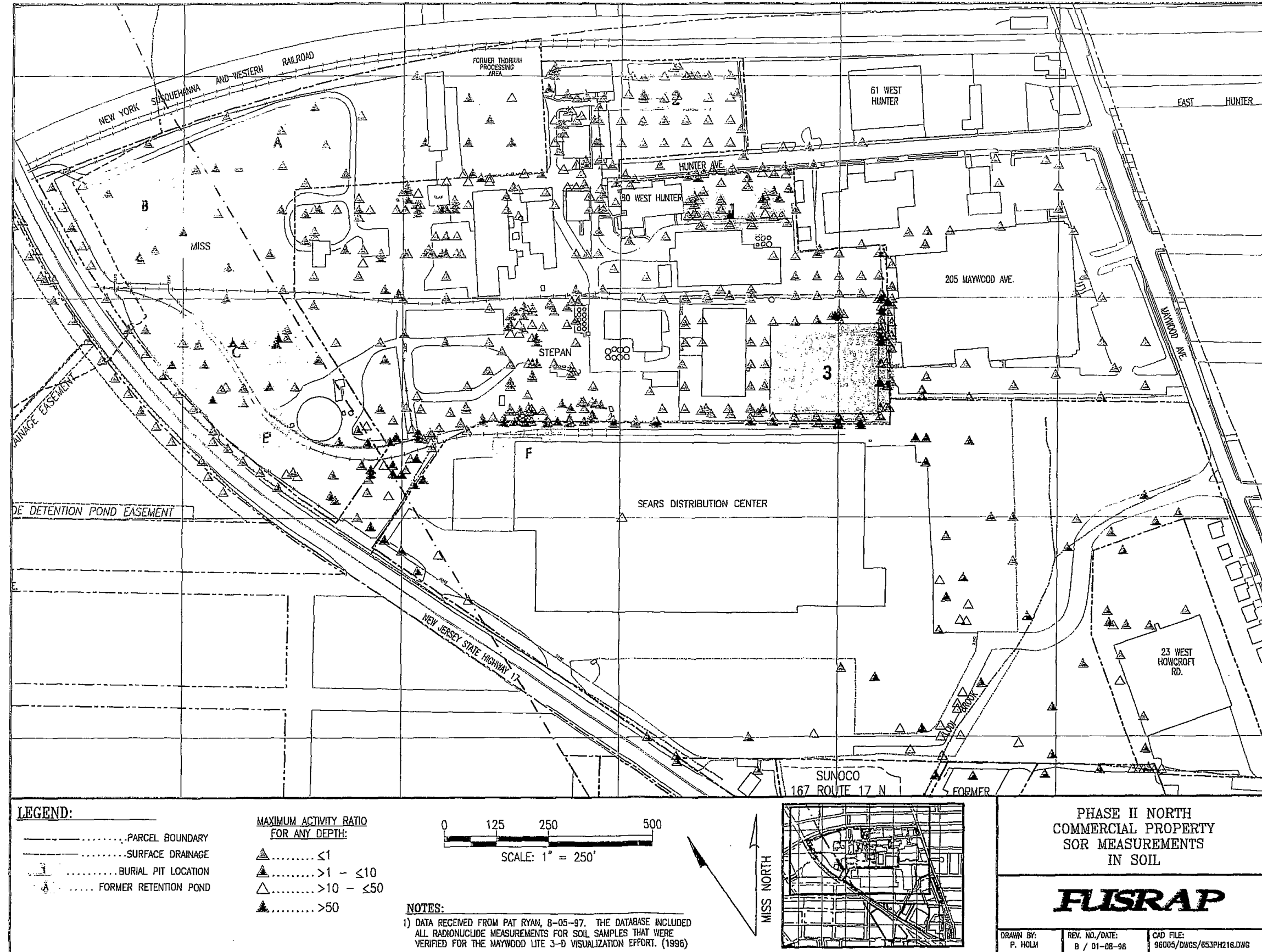


Figure 3-1. Maximum SOR Calculated for Sampling Points at MISS, Stepan, Sears, New Jersey Rt. 17, Myron and Desaussure Properties

3.3 STEPAN PROPERTY

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The burial pit areas on the Stepan property are discussed separately in Section 4.2. The impact areas appear to be located between 0 to 8 feet below ground surface. The soil borings drilled by BNI in 1986 (BNI 1992) were used to determine the soil characteristics at the property. The boring logs used to determine soil characteristics at this property are shown on Figure B-1 and are presented in Volume II. Three of the soil samples collected for the 1996 treatability study were collected from this property.

Based on a review of the boring logs for this property, the soils at the Stepan property are predominately silty sand (which is relatively similar to the 1996 treatability soil samples), except in the vicinity of the burial pit areas. The SORs, excluding the burial pit areas, range from <1.0 - 96.6 and the corresponding radiological activities range from 0.10 - 380.0 pCi/g for Th-232, 0.8 - 190.0 pCi/g for Ra-226, and 0.7 - 82.0 pCi/g for U-238.

3.4 NJ ROUTE 17 PROPERTY

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The impacted areas appear to be located between 0 to .5 feet below ground surface. The soil borings drilled by BNI in 1986 (Kannard 1986) were not available to determine the soil characteristics at the property.

There were no boring logs available for review to evaluate the soils on the NJ Route 17 property. The SORs for this property range from <0 - 3.58 and the radiological activities ranged from 1.10 - 17.70 pCi/g for Th-232. Radium-226 and U-238 did not exceed the cleanup guidelines at the locations sampled.

3.5 NYS & WESTERN RAILROAD PROPERTY

No radiological characterization data or boring logs are available for review to evaluate the soils on the NYS & Western Railroad property.

3.6 SUNOCO STATION PROPERTY (167 ROUTE 17N)

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-2. The impacted areas appear to be located between 0 to 4 feet below ground surface, based on downhole gamma logs. Sediments samples were collected from a stream onsite. The analytical results for the sediments were used to calculate the SORs because the soil boring was not analyzed. The soil borings drilled by BNI in 1986 (BNI 1987e) were used to determine the soil characteristics

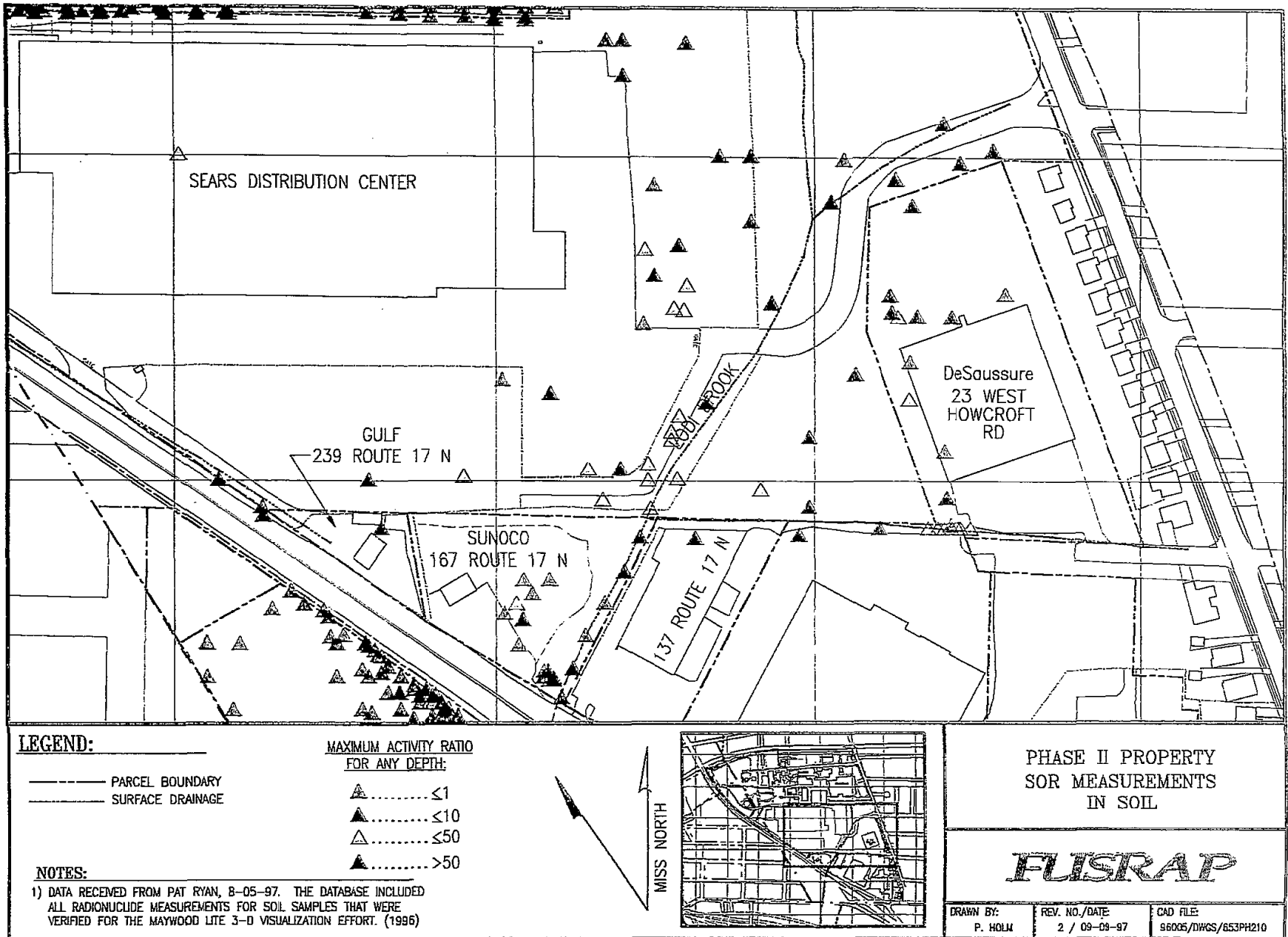


Figure 3-2. Maximum SOR Calculated for Sampling Points at Gulf Station, Sunoco Station, Hunter Douglas, and Former Federal Express Properties

at the property. The boring logs used to determine soil characteristics at this property are shown on Figure B-2 and are presented in Volume II.

Based on a review of the boring logs for this property, the soils at the Sunoco Station property at 167 Route 17N are predominately silty sand. The SORs range from <1.0 - 1.79 and the radiological activities range from 1.1 - 7.6 pCi/g for Th-232. Radium-226 and U-238 did not exceed the cleanup guidelines at any of the locations sampled.

3.7 DESAUSSURE PROPERTY (23 WEST HOWCROFT ROAD)

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The impacted areas appear to be located between 0 to 0.5 feet below ground surface. No soil borings have been drilled at the DeSaussure property.

Due to the lack of soil borings drilled at the DeSaussure property, no determination can be made as to the soil type. The SORs range from <1.0 - 26.84 and the radiological activities range from 0.9 - 124.30 pCi/g for Th-232, 0.4 - 12.90 pCi/g for Ra-226, and 5.0 - 80.0 pCi/g for U-238.

3.8 GULF STATION PROPERTY (239 ROUTE 17N)

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-2. The impacted areas appear to be located between 0 to 2 feet below ground surface. The soil boring drilled by BNI in 1987 (BNI 1989d) were used to determine the soil characteristics at the property. The boring logs used to determine soil characteristics at this property are shown on Figure B-2 and are presented in Volume II.

Based on a review of the boring logs for this property, the soils at the Gulf Station property at 239 Route 17N are predominately silty sand. The SORs in the single boring analyzed for radionuclides range from <1.0 - 1.43 and the radiological activities range from 3.2 - 8.9 pCi/g for Th-232, and 9.2 - 51.0 pCi/g for U-238. Radium-226 did not exceed the cleanup guideline at any of the locations sampled.

3.9 FORMER FEDERAL EXPRESS PROPERTY (137 ROUTE 17N)

The sample location along with the maximum SOR for the specific location is indicated in Figure 3-2. The impacted areas appear to be located between 0 to .5 feet below ground surface, based on downhole gamma logs. A sediment sample was collected from a stream onsite. The analytical results from this sediment sample were used to calculate the SOR because the soil samples were not analyzed. The soil borings drilled by BNI in 1987 (BNI 1987f) were used to determine the

soil characteristics at the property. The boring logs used to determine soil characteristics at this property are shown on Figure B-2 and are presented in Volume II.

Based on a review of the boring logs for this property, the soils at the former Federal Express property at 137 Route 17N are predominately silty sand. The SOR for this point is 1.56 and the radiological activity was 7.7 pCi/g for Th-232. Ra-226 and U-238 did not exceed the cleanup guideline at this location.

3.10 AMF/VOIT PROPERTY

No radiological characterization data or boring logs are available for review to evaluate the soils on the AMF/Voit property.

3.11 HUNTER DOUGLAS PROPERTY (85-99 ROUTE 17N)

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-2. The impacted areas appear to be located between 0 to .5 feet below ground surface, based on downhole gamma logs. Three sediment samples were collected from a stream onsite. The analytical results from these sediment samples were used to calculate SORs because the soil boring was not analyzed. The soil borings drilled by BNI in 1986 (BNI 1987g) were used to determine the soil characteristics at the property. The boring logs used to determine soil characteristics at this property are shown on Figure B-2 and are presented in Volume II.

Based on a review of the boring logs for this property, the soils at the Hunter Douglas property at 85 to 99 Route 17N are predominately silty sand. The SORs for this property range from <0 - 7.67 and the radiological activity ranged from 3.2 - 33.4 pCi/g for Th-232. Radium-226 and U-238 did not exceed the cleanup guideline at the sampled location.

3.12 MYRON PROPERTY (205 MAYWOOD AVE)

Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. No boring logs were available for review to evaluate the soils on the Myron property.

Due to the close proximity of the Myron property to the Stepan property, the soil types of the two properties are probably similar. The SORs range from <1.0 - 3.92 with depths down to 2.0 feet and the radiological activities range from 0.4 - 31.0 pCi/g for Th-232. Ra-226 and U-238 did not exceed the cleanup guideline at any locations sampled.

4.0 RETENTION BASINS AND BURIAL PITS

4.1 RETENTION BASINS

There are five former retention basins located on the MISS, Stepan, and Sears properties. Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The impacted areas appear to be located between 0 to 10 feet below ground surface. The impacted volume associated with the retention basin sediments is estimated at 82,923 yd³ (SAIC 1997). The soil borings drilled by BNI in 1986 (BNI 1992) were used to determine the soil characteristics of the retention basin soils. The boring logs used to determine soil characteristics at this property are shown on Figure B-1 and are presented in Volume II.

Based on the review of the boring logs, the soils in retention basin A appear to be silty clayey sand from 0.5 to 5 feet below ground surface and there may be some sludge mixed in with the soil. Below this 5-foot soil layer is a 1 foot-thick layer of sludge. The soils in retention basin B appear to be silty sand with ash and sludge from ground surface to a depth of approximately 9 to 14 feet. The soils in retention basin C appear to be silty clayey sand with ash and sludge from ground surface to a depth of approximately 10 to 11 feet. No data is available for retention basin E, however, the soil would probably be similar to the soils in the other retention basins. The soils at retention basin F appear to be gravelly silty sand to sandy silt. In addition, sludge in retention basin F appears to be located between 4 and 8 feet below ground surface and consists of silt and clay.

In general, the soils associated with the retention basins appear to be relatively similar to the SC&A treatability soil samples except for the ash and sludge. The ash and sludge present in the retention basins may affect the treatability of these soil. The SORs for these basins range from <0-24.70 and the radiological activity ranged from 3.0-324.0 pCi/g for Th-232, 2.0-61.0 for Ra-226, and 17.0-101.0 for U-238.

4.2 BURIAL PITS

Three burial pits are located on the Stepan property. Sample locations along with the maximum SOR for a specific location are indicated in Figure 3-1. The impacted areas appear to be located between 0 to 10 feet below ground surface. The soil borings drilled by BNI in 1986 (BNI 1992) were used to determine the characteristics of the burial pit soils. The boring logs used to determine soil characteristics at this property are shown on Figure B-1 and are presented in Volume II.

Based on a review of the boring logs, the burial pit 1 "sludge" consists of a gravelly silt and clay and the soils are silty sand. Burial pit 2 consists of silt and clay and the soils are silty sand. The soils on the perimeter of the burial pit consists of a gravelly, sandy silt. The boring logs for burial pit 3 do not indicate the composition of the sludge (beyond the classification of sludge). The SORs for these pits range from <0 - 119.0 and the radiological activity ranged from 5.1 - 1592.0 pCi/g for Th-232, 1.6 - 333.0 pCi/g for Ra-226, and <4.20 - 170.0 pCi/g for U-238.

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5.0 TREATABILITY STUDY SOILS

5.1 1992 TREATMENT CHARACTERIZATION STUDY

In early 1992 there were more than five hundred 55-gallon drums of soil cuttings from Maywood soil sampling boreholes at the MISS. Most of the drums contained soil from a number of boreholes so that there was a range of commingled contaminant concentrations vertically within boreholes, and laterally between boreholes at different locations. In 1992, fifteen samples (designated as MV-1 through MV-15) were collected from these drums to represent a range of contaminant levels, soil types and locations on properties with the largest volumes of contaminated soil. These samples were submitted to the Environmental Protection Agency's National Air and Radiation Laboratory (NAREL) for soil treatment characterization analysis. As part of their studies, NAREL evaluated the particle size distribution of the soil samples as a function of isotopic concentration (EPA 1993).

Sample MV1 contained soil cuttings from BNI drum #85 which was comprised of two boreholes located on the MISS property east of Building 76. The sample was comprised of approximately 7 percent gravel, 3 percent coarse sand, 8 percent medium sand, 51 percent fine sand, and 31 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 38.35 with radionuclide activities of 107 pCi/g for Ra-226, 439 pCi/g for Th-232, and 106 pCi/g for U-238.

Sample MV2 contained soil cuttings from BNI drum #104 which was comprised of sixteen boreholes located on the MISS property along New Jersey State Highway 17. The sample was comprised of approximately 6 percent gravel, 3 percent coarse sand, 6 percent medium sand, 17 percent fine sand, and 68 percent silt/clay. The ASTM visual classification of this sample would be sandy silt or clay. The SOR for this sample was 0.32 with radionuclide activities of 3.36 pCi/g for Ra-226, 3.10 pCi/g for Th-232, and 1.70 pCi/g for U-238.

Sample MV3 contained soil cuttings from BNI drum #114 which was comprised of three boreholes located on the southern portion of the MISS property near New Jersey State Highway 17. The sample was comprised of approximately 4 percent gravel, 2 percent coarse sand, 12 percent medium sand, 33 percent fine sand, and 49 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.58 with radionuclide activities of 3.98 pCi/g for Ra-226, 6.48 pCi/g for Th-232, and 1.47 pCi/g for U-238.

Sample MV4 contained soil cuttings from BNI drum #116 which was comprised of ten boreholes located on the MISS property along New Jersey State Highway 17. The sample was comprised of approximately 40 percent gravel, 9 percent coarse sand, 11 percent medium sand, 15 percent fine sand, and 25 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey gravel. The SOR for this sample was 0.11 with radionuclide activities of .808 pCi/g for Ra-226, .706 pCi/g for Th-232, and .602 pCi/g for U-238.

Sample MV5 contained soil cuttings from BNI drum #117 which was comprised of three boreholes located on the MISS property along New Jersey State Highway 17. The sample was comprised of approximately 9 percent gravel, 3 percent coarse sand, 16 percent medium sand, 46 percent fine sand, and 26 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.14 with radionuclide activities of 2.06 pCi/g for Ra-226, 1.71 pCi/g for Th-232, and 1.17 pCi/g for U-238.

Sample MV6 contained soil cuttings from BNI drum #234 which was comprised of one borehole located on the south east corner of the Sears property. The sample was comprised of approximately 4 percent gravel, 3 percent coarse sand, 10 percent medium sand, 28 percent fine sand, and 55 percent silt/clay. The ASTM visual classification of this sample would be sandy, silt or clay. The SOR for this sample was 1.88 with radionuclide activities of 9.54 pCi/g for Ra-226, 19.6 pCi/g for Th-232, and 5.35 pCi/g for U-238.

Sample MV7 contained soil cuttings from BNI drum #246 which was comprised of one borehole located near the southeast corner of the building on the Sears property. The sample is comprised of approximately 9 percent gravel, 5 percent coarse sand, 10 percent medium sand, 32 percent fine sand, and 44 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.04 with radionuclide activities of 1.22 pCi/g for Ra-226, .541 pCi/g for Th-232, and .516 pCi/g for U-238.

Sample MV8 contained soil cuttings from BNI drum #248 which was comprised of two boreholes located near the southeast corner of the building on the Sears property. The sample was comprised of approximately 19 percent gravel, 8 percent coarse sand, 10 percent medium sand, 33 percent fine sand, and 30 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand with gravel. The SOR for this sample was 0.64 with radionuclide activities of 2.95 pCi/g for Ra-226, 8.33 pCi/g for Th-232, and 1.28 pCi/g for U-238.

Sample MV9 contained soil cuttings from BNI drum #349 which was comprised of two boreholes located near the southern property line and the southeast corner of the building on the Sears property. The sample was comprised of approximately 34 percent gravel, 4 percent coarse sand, 8 percent medium sand, 24 percent fine sand, and 30 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand with gravel. The SOR for this sample was 0.80 with radionuclide activities of 4.65 pCi/g for Ra-226, 8.99 pCi/g for Th-232, and 1.50 pCi/g for U-238.

Sample MV10 contained soil cuttings from BNI drum #116 which was comprised of ten boreholes located on the MISS property along New Jersey State Highway 17. MV10 was considered a duplicate of MV4. The sample was comprised of approximately 47 percent gravel, 8 percent coarse sand, 8 percent medium sand, 12 percent fine sand, and 25 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey gravel. The SOR for this sample was 0.01 with radionuclide activities of .854 pCi/g for Ra-226, .812 pCi/g for Th-232, and .432 pCi/g for U-238.

Sample MV11 contained soil cuttings from BNI drum #246 which was comprised of one borehole located near the southeast corner of the building on the Sears property. MV11 was considered a duplicate of MV7. The sample was comprised of approximately 12 percent gravel, 4 percent coarse sand, 10 percent medium sand, 31 percent fine sand, and 43 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.04 with radionuclide activities of 1.23 pCi/g for Ra-226, .808 pCi/g for Th-232, and .649 pCi/g for U-238.

Sample MV12 contained soil cuttings from BNI drum #137 which was comprised of two boreholes located the Federal Express property. The sample was comprised of approximately 5 percent gravel, 2 percent coarse sand, 13 percent medium sand, 47 percent fine sand, and 33 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.03 with radionuclide activities of 1.14 pCi/g for Ra-226, .473 pCi/g for Th-232, and .646 pCi/g for U-238.

Sample MV13 contained soil cuttings from BNI drum #213 which was comprised of three boreholes located at the New Jersey Vehicle Inspection property. The sample was comprised of approximately 9 percent gravel, 4 percent coarse sand, 12 percent medium sand, 46 percent fine sand, and 29 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.68 with radionuclide activities of 6.17 pCi/g for Ra-226, 5.73 pCi/g for Th-232, and 2.41 pCi/g for U-238.

Sample MV14 contained soil cuttings from BNI drum #479 which was comprised of three boreholes located near the northwest property line of the Stepan property. The sample was comprised of approximately 11 percent gravel, 4 percent coarse sand, 10 percent medium sand, 30 percent fine sand, and 45 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 0.14 with radionuclide activities of 2.01 pCi/g for Ra-226, 1.76 pCi/g for Th-232, and 1.12 pCi/g for U-238.

Sample MV15 contained soil cuttings from BNI drum #507 which was comprised of two boreholes located near the northern property line of the Stepan property. The sample was comprised of approximately 19 percent gravel, 5 percent coarse sand, 10 percent medium sand, 30 percent fine sand, and 36 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand with gravel. The SOR for this sample was 0.17 with radionuclide activities of 1.66 pCi/g for Ra-226, 2.59 pCi/g for Th-232, and .747 pCi/g for U-238.

5.2 1996 TREATMENT CHARACTERIZATION STUDY

5.2.1 Individual Soil Samples

To further evaluate the feasibility of treating the Maywood subsurface soils, SC&A performed treatment characterization studies in 1996 on seven individual soil samples collected from

various locations on the MISS and Stepan properties (see Figure 5-1). As part of their studies, SC&A evaluated the particle size distribution of the soil samples as a function of isotopic concentration.

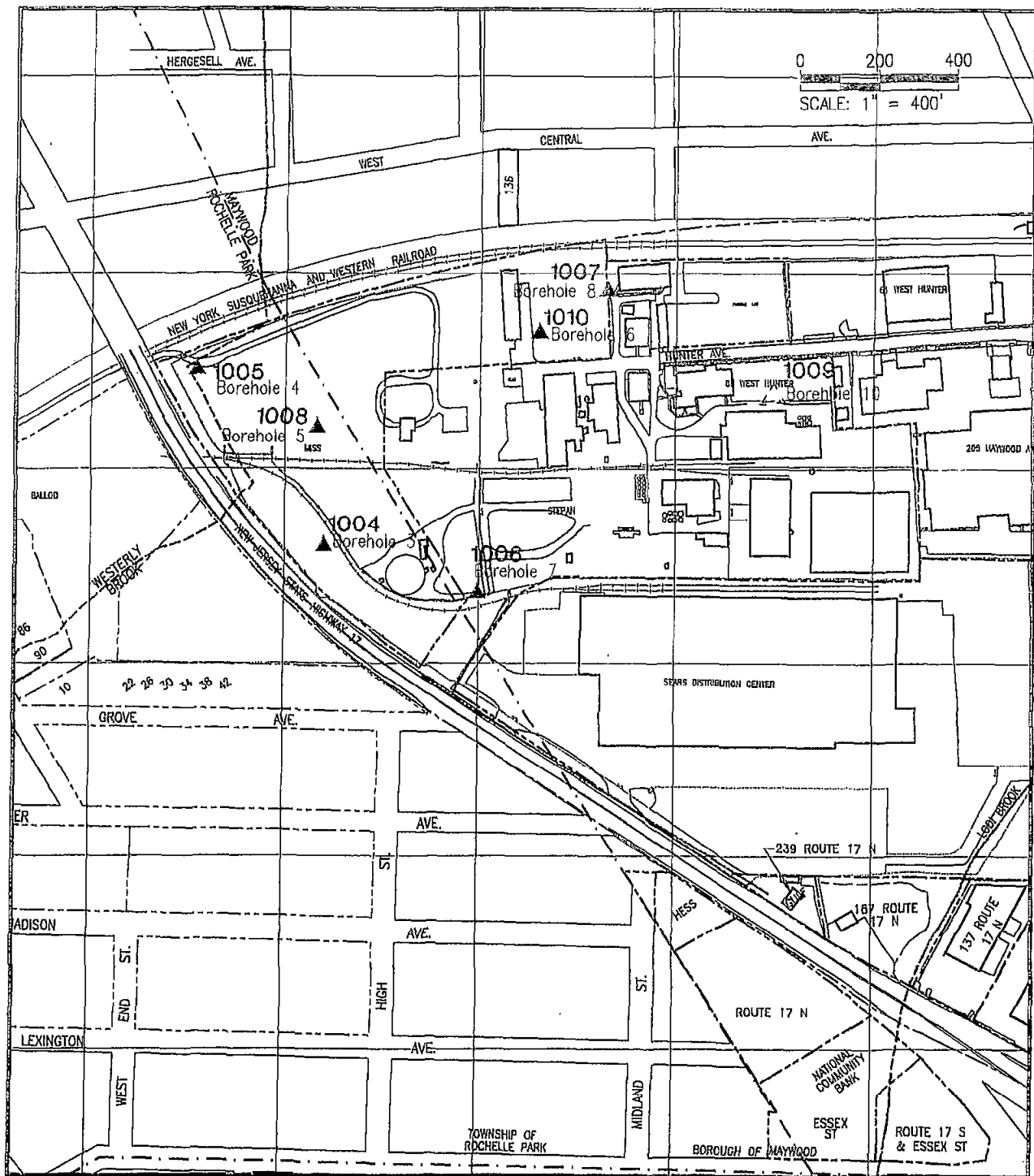
Borehole 3 (sample ID 1004) is located on the MISS property near the New Jersey State Highway 17 and is outside of the area of the highest radionuclide concentrations. The soil sample from this borehole was collected at a depth of 9 ft below ground surface and is predominately a sandy silt or clay. The sample is comprised of approximately 7 percent gravel, 1 percent coarse sand, 5 percent medium sand, 16 percent fine sand, and 71 percent silt/clay. The ASTM visual classification of this sample would probably be silty clay. The SOR for this sample was 1.64 with radionuclide activities of 3.5 pCi/g for Ra-226, 22.6 pCi/g for Th-232, and 5.9 pCi/g for U-238.

Borehole 4 (sample ID 1005) is located on the MISS property near the intersection of the railroad tracks and New Jersey State Highway 17 and is outside of the area of the highest radionuclide concentrations. The soil sample from this borehole was collected at a depth of 11 ft below ground surface and is predominately a silty, clayey sand. The sample is comprised of approximately 4 percent gravel, 2 percent coarse sand, 14 percent medium sand, 36 percent fine sand, and 44 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 1.32 with radionuclide activities of 2.2 pCi/g for Ra-226, 19.1 pCi/g for Th-232, and 3.5 pCi/g for U-238.

Alt Borehole 5 (sample ID 1008) is located on the MISS property between boreholes 3 and 4 along the southwest edge of the historical storage pile and is outside of the area of the highest radionuclide concentrations. The soil sample from this borehole was collected at a depth of 7 ft below ground surface and is predominately a silty, clayey sand with gravel. The sample is comprised of approximately 15 percent gravel, 2 percent coarse sand, 18 percent medium sand, 36 percent fine sand, and 29 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 4.78 with radionuclide activities of 9.73 pCi/g for Ra-226, 63.6 pCi/g for Th-232, and 2.70 pCi/g for U-238.

Borehole 6 (sample ID 1010) is located in the northeastern corner of the MISS property and is near the area containing some of the highest radionuclide concentrations. The soil sample from this borehole was collected at a depth of 6 ft below ground surface and is predominately a silty, clayey sand. The sample is comprised of approximately 14 percent gravel, 5 percent coarse sand, 12 percent medium sand, 28 percent fine sand, and 41 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 101.54 with radionuclide activities of 237 pCi/g for Ra-226, 1262 pCi/g for Th-232, and 89.0 pCi/g for U-238.

Alt Borehole 7 (sample ID 1006) is located in the southwestern corner of the Stepan property in an area associated with some of the highest radiological concentrations. The soil sample from this borehole was collected at a depth of 2.5 ft below ground surface and is predominately a silty, clayey sand with gravel. The sample is comprised of approximately 20 percent gravel, 10 percent coarse sand, 15 percent medium sand, 27 percent fine sand, and 28 percent silt/clay. The ASTM visual



LEGEND:

- - - - - SURFACE DRAINAGE
 - - - - - PROPERTY BOUNDARY
 ▲ 1004 Borehole 3 BOREHOLE LOCATION

MAXIMUM ACTIVITY RATIO
 ▲ <1
 ▲ >1 - <10
 ▲ >10 - <50
 ▲ >50

ID	Depth (bgs)
1004	9 feet
1005	11 feet
1006	2.5 feet
1007	4 feet
1008	7 feet
1009	9 feet
1010	6 feet

1996 TREATABILITY STUDY
SAMPLE LOCATIONS

FUSRAP

DRAWN BY: P. HOLM
 REV. NO./DATE: 0/ 04/18/97
 CAD FILE: 98005/DWGS/878BH.DWG

Figure 5-1. 1996 Treatability Study Soil Sample Locations

classification of this sample would be silty, clayey sand. The SOR for this sample was 1.81 with radionuclide activities of 6.5 pCi/g for Ra-226, 22.10 pCi/g for Th-232, and 3.60 pCi/g for U-238.

Alt Borehole 8 (sample ID 1007) is located in the northern portion of the Stepan property and borders the area of highest radionuclide concentrations. The soil sample from this borehole was collected at a depth of 4 ft below ground surface and is predominately a silty, clayey sand with gravel. The sample is comprised of approximately 15 percent gravel, 7 percent coarse sand, 13 percent medium sand, 34 percent fine sand, and 31 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 3.34 with radionuclide activities of 5.2 pCi/g for Ra-226, 46.6 pCi/g for Th-232, and 2.7 pCi/g for U-238.

Alt Borehole 10 (sample ID 1009) is located in the northeastern corner of the Stepan property in an area of highest measured radiological concentrations. The soil sample from this borehole was collected at a depth of 9 ft below ground surface and is predominately a silty, clayey sand with gravel. The sample is comprised of approximately 16 percent gravel, 2 percent coarse sand, 7 percent medium sand, 30 percent fine sand, and 45 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand. The SOR for this sample was 26.86 with radionuclide activities of 44.2 pCi/g for Ra-226, 338 pCi/g for Th-232, and 77.5 pCi/g for U-238.

5.2.2 Composite Soil Samples

Two composite soil samples were prepared from the seven discrete soil samples. Composite 1015 consisted of a weighted composite of Borehole 3, Borehole 4, Alt Borehole 5, Alt Borehole 7, and Alt Borehole 8 based on their similarity in whole-soil activities. The distribution of weight percents was 10, 25, 20, 35, and 10, respectively. Each sample was weighted based on its particle-size distribution and the amount of area it was believed to represent. Borehole 4, Alt Borehole 5, and Alt Borehole 7 were weighted the heaviest due to the large areas believed to be represented by these samples. Borehole 3 was weighted less due to its atypical particle size distribution. Alt Borehole 8 was weighted less due to its location on the edge of the area of highest concentration; therefore, its activity may not represent the activity of the surrounding area.

Composite 1015 is predominately a silty, clayey sand. The sample is comprised of approximately 11 percent gravel, 8 percent coarse sand, 17 percent medium sand, 29 percent fine sand, and 36 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand.

Composite 1016 consisted of a weighted composite of Borehole 6 and Alt Borehole 10. The weighing percents were 80 and 20, respectively. Borehole 6 was weighted heavier than Alt Borehole 10 based on the larger area believed to be represented by its activity. This composite sample was determined to be a less promising soil for treatment due to its high radionuclide concentration.

Composite 1016 is predominately a silty, clayey sand with gravel. The sample is comprised of approximately 16 percent gravel, 4 percent coarse sand, 13 percent medium sand, 26 percent fine

sand, and 41 percent silt/clay. The ASTM visual classification of this sample would be silty, clayey sand.

5.3 SUMMARY OF SOIL CHARACTERIZATION RESULTS

In general, the soils evaluated by NAREL in the 1992 characterization study are classified as silty, clayey sands and may contain up to 47 percent gravel. On average, the 1992 characterization study soils consists of approximately 16 percent gravel, 4 percent coarse sand, 10 percent medium sand, 32 percent fine sand, and 38 percent silt/clay. Due to the methods used to collect these samples it is suspected that these samples do not accurately represent the Maywood subsurface soils.

In general, the soils evaluated by SC&A in the 1996 treatability study are classified as silty, clayey sands and may contain up to 20 percent gravel. On average, the 1996 treatment study soils consists of approximately 13 percent gravel, 4 percent coarse sand, 12 percent medium sand, 30 percent fine sand, and 41 percent silt/clay.

Overall, the soils from the 1992 study and the 1996 study compare favorably however, the minor differences noted may be due to sample collection methods, sample location, and analysis methods.

It appears that the soils at the Maywood Site and vicinity can be classified as silty, clayey sands with varying amounts of gravel. In addition, the percentage of silt or clay may also vary at the site.

6.0 COMPARISON OF THE PHASE II SOILS TO THE 1996 TREATMENT STUDY SOILS

Based upon a review of the available data, the Maywood Phase II properties can be separated into three groups: 1) properties with soil similar to the treatment study soils, 2) properties with soil potentially similar to the treatment study soils, and 3) properties with soil different from the treatment study soils.

6.1 SOIL COMPARISON FOR THE PHASE II SOUTH PROPERTIES

The properties with a soil type of silty sand that appear to be similar to the 1996 treatment study soils are 100 Hancock Street, 80 Industrial Road, 170 Gregg Street, and the central portion of 113 Essex Street.

The properties with a soil type potentially similar to the treatment study soils are 200 Route 17N, the southern portion of 113 Essex Street, the northern portion of Route 17S and Essex Street, and the New Jersey Vehicle Inspection Station. The similarity of these properties will be dependent upon the silt content of the soil.

The northern portion of 113 Essex Street, the southern portion of Route 17S and Essex Street, the Scanel property, and 72 Sydney Street all have similar soil characteristics of silt and clay, however, the soils are not similar to the treatment study soils. The 80 Hancock Street and 160/174 Essex Street soils are a gravelly silt and a silty gravel, respectively which are not similar to the other properties or the treatment study soils. A soil comparison for the I-80W property could not be performed as the borehole logs were not available.

6.2 SOIL COMPARISON FOR THE PHASE II NORTH PROPERTIES

The properties with a soil type of silty sand that appear to be similar to the 1996 treatment study soils are MISS, Stepan, Sears, Gulf, Sunoco, Hunter Douglas and Former Federal Express properties. There was no soil data available for the Myron, DeSaussure, NYS & Western Railroad, AMF/Voit, and NJ Route 17 properties.

6.3 SOIL COMPARISON FOR THE RETENTION BASINS AND BURIAL PITS

The soils/sediment associated with the retention basins appear to be predominately silty sand with ash and sludge. Except for the ash and sludge, these soils appear to be similar to the 1996 treatment study soils. The ash and sludge present in the retention basins may affect the treatability of the soil/sediment.

The soils associated with the burial pits appear to be gravelly, sandy, silt and clay which are not similar to the 1996 treatment study soils or to the other properties.

6.4 SUMMARY OF SOIL COMPARISON

The soil comparison of the Maywood Phase II properties classified the soils with respect to the 1996 treatment study soils as either similar, potentially similar, not similar, or no soil data available. The total impacted soil volume that was considered similar to the 1996 treatment soils is 193,423 yd³ (74.7%), while the total accessible soil volume considered similar is 171,769 yd³ (79.8%). The total impacted soil volume that was considered potentially similar to the 1996 treatment soils is 3,006 yd³ (1.2%), and the total accessible impacted soil volume considered potentially similar is 3,006 yd³ (1.4%). The total impacted soil volume that was considered not similar to the 1996 treatment soils is 34,563 yd³ (13.3%), while the total accessible impacted soil volume is 32,716 yd³ (15.2%). The total impacted volume of soil that could not be categorized due to the limited data available is 27,946 yd³ (10.8%) with the total accessible soil volume being 7,777 yd³ (3.6%). These groups are presented in Figures 6-1, summarized in Figures 6-2 and 6-3, and summarized by property in Tables 6-1, 6-2, and 6-3.

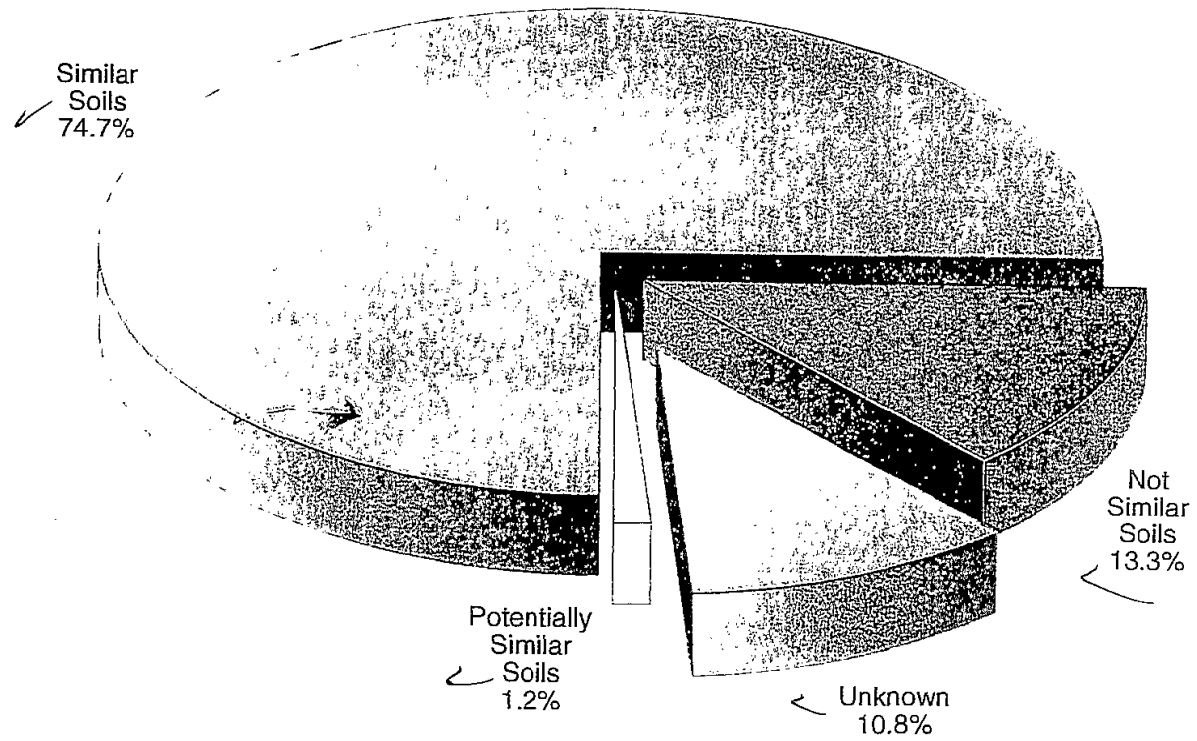


Figure 6-2. Soils Comparison Summary for the Total Impacted Phase II Soil Volume

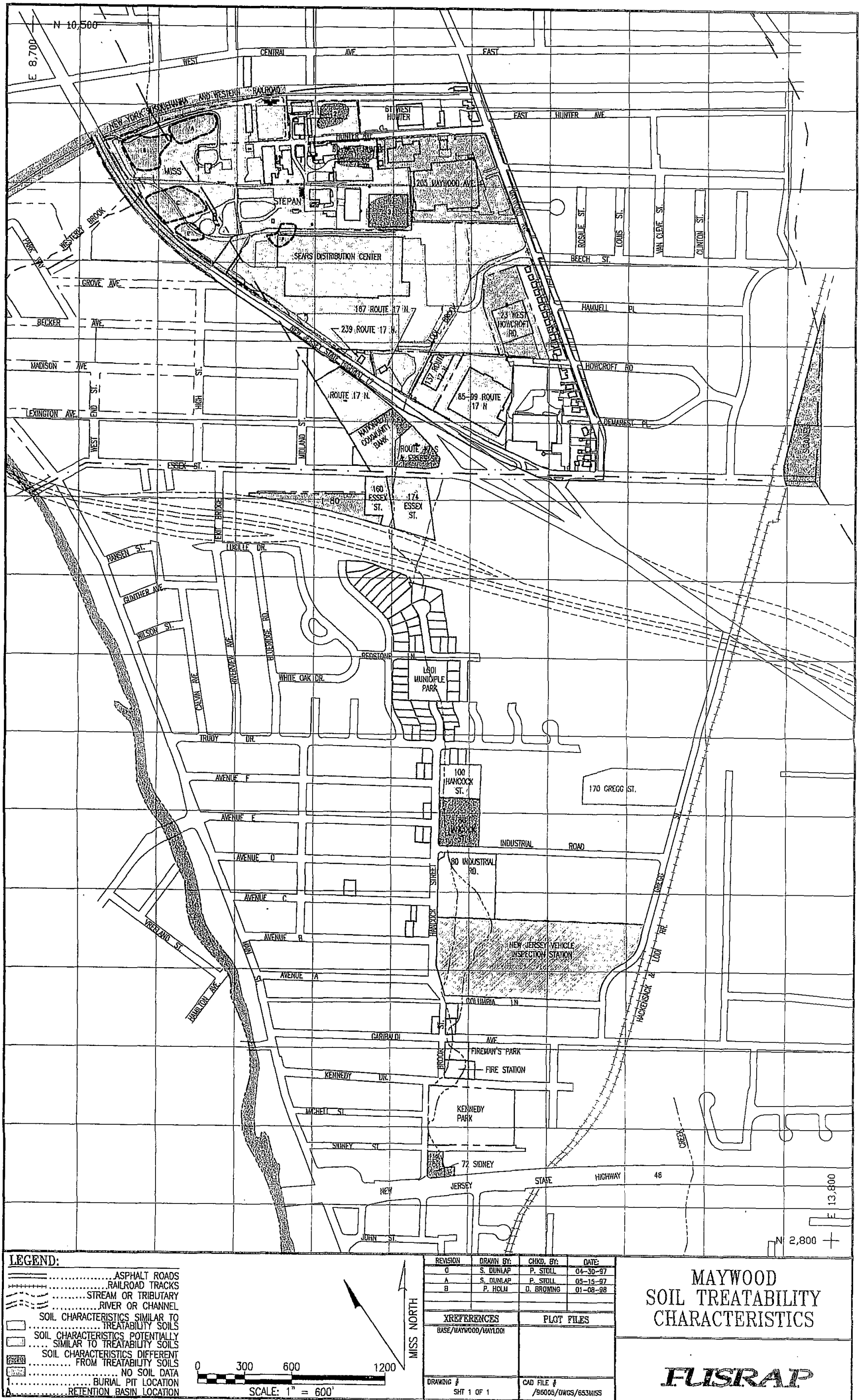


Figure 6-1. Maywood Soils Comparison Results at the Phase II North and South Properties

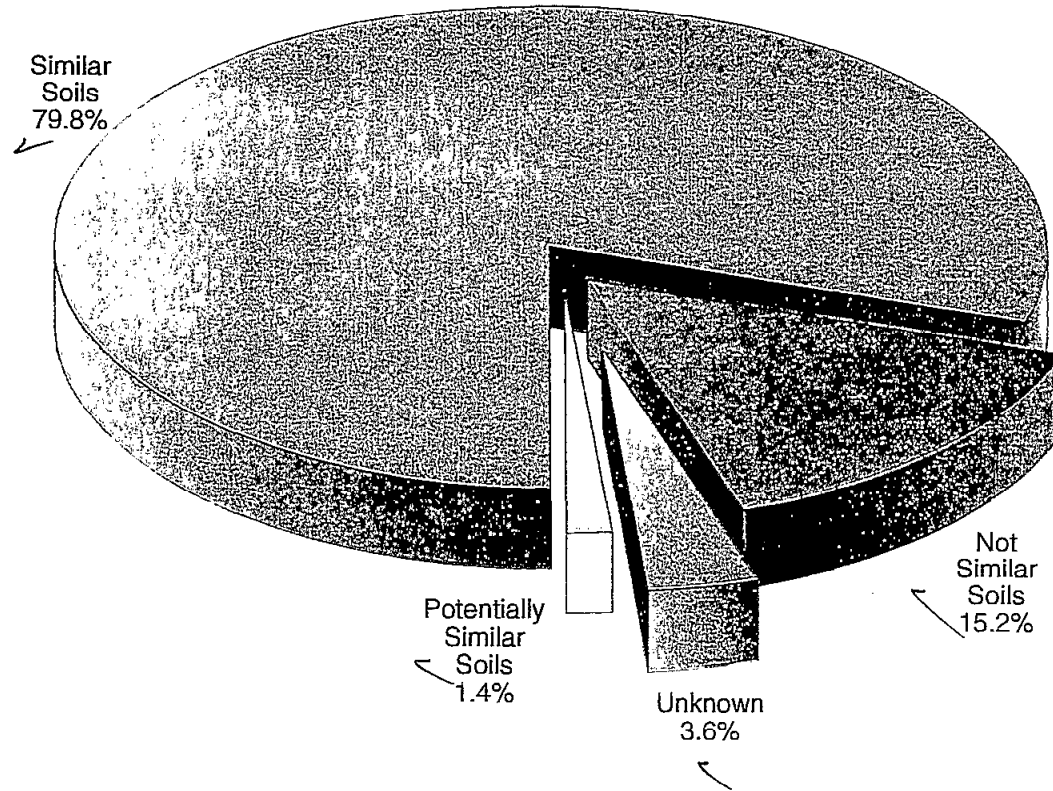


Figure 6-3. Soils Comparison Summary for the Accessible Impacted Phase II Soil Volume

Table 6-1. Properties with Soils Similar to the Treatment Study Soils

Property Name	% Total Volume	Total Volume (yd ³)	% Accessible Volume	Accessible Volume (yd ³)
100 Hancock St.	0.84	2,166	0.81	1,733
80 Industrial Road	0.44	1,145	0.32	687
170 Gregg St.	*	*	*	*
113 Essex St. (Central Portion)	0.17	450	0.21	450
MISS**	39.60	102,531	47.63	102,531
Stepan (excluding burial pits)	10.03	25,982	12.07	25,982
Sears	21.01	54,395	15.75	33,910
Gulf	0.60	1,559	0.69	1,481
Sunoco	1.54	3,993	1.76	3,793
Hunter Douglas	0.02	57	0.03	57
Former Federal Express	0.40	1,045	0.49	1,045
Total	74.65	193,323	79.76	171,675

* Volume included with other properties.

** The soils of the Maywood retention basins appear to be similar to the 1996 treatment study soils with the exception of the ash and sludge noted in the boring logs and therefore are included in this volume estimate.

Table 6-2. Properties with Soils Potentially Similar to the Treatment Study Soils

Property Name	% Total Volume	Total Volume (yd ³)	% Accessible Volume	Accessible Volume (yd ³)
200 Route 17N	0.09	242	0.11	242
113 Essex St. (Southern Portion)	0.17	450	0.21	450
Route 17S and Essex St. (Northern Portion)	0.05	120	0.06	120
New Jersey Vehicle Inspection Station	0.85	2,194	1.02	2,194
Total	1.16	3,006	1.40	3,006

Table 6-3. Properties with Soils Not Similar to the Treatment Study Soils

Property Name	% Total Volume	Total Volume (yd ³)	% Accessible Volume	Accessible Volume (yd ³)
113 Essex St. (Northern Portion)	0.17	450	0.21	450
Route 17S and Essex St. (Southern Portion)	0.04	113	0.05	113
Scanel	3.09	8,000	3.72	8,000
72 Sydney Street	*	*	*	*
80 Hancock Street	2.21	5,732	1.86	4,012
160/174 Essex	0.39/0.10	1013/255	0.42/0.11	912/229
Stepan Burial Pits	7.38	19,100	8.87	19,100
Total	13.38	34,663	15.24	32,816

Shaded areas indicate soils that have similar soil characteristics of silt and clay.

* Volume included with other properties.

Table 6-4. Properties with No Soil Data Available for Evaluation

Property Name	% Total Volume	Total Volume ^a (yd ³)	% Accessible Volume	Accessible Volume (yd ³)
Myron	0.01	38	0.02	38
DeSaussure	0.65	1,693	0.71	1,524
NYS & Western RR	2.32	6,000	2.79	6,000
AMF/Voit	0.02	57	0.03	57
NJ Route 17	7.72	20,000	0	0
I-80W	0.06	158	0.07	158
Total	10.78	27,946	3.62	7,777

^a Impacted soil volumes for properties without radiological analytical data were determined through the use of gamma logs.

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7.0 LIMITATIONS OF SOIL EVALUATIONS AND GROUPINGS

7.1 GENERAL LIMITATIONS

The purpose of this soils comparison is to determine the similarity between the various Maywood Phase II property soils, and to determine the potential applicability of the physical separation treatment process specified by the SC&A treatment studies to the various Maywood Phase II property soils. There are several areas in which the data used for this comparison is limited or highly qualitative and subjective. These areas include; soil descriptions, incomplete radiological results, estimated sample locations, and missing borehole logs.

As previously stated, the soil descriptions are based on the site geologist's visual observations during drilling activities. These observations, according to ASTM procedure, should include the name and symbol of the soil group, a visual estimate of the percent of different particle sizes, the particle angularity, the particle shape, maximum particle size, hardness of coarse sand and larger particles, plasticity of fines, dry strength, color, odor, and moisture content. A majority of the soil logs written in the field during drilling activities, usually contain the name of the soil group, color, odor, and moisture content. These types of observations tend to be subjective and differ between individuals and do not provide any quantitative information regarding the particle size distributions.

Several properties had no radiological analytical data that could be used for the calculation of SORs. The impacted soils at these properties were determined through the use of gamma logs. At several of the sites, not all radionuclides were analyzed. At these sites different proportions of the other radionuclides were used to calculate the SOR values (see Section 1.3). In several of the early investigations, shallow and surface soil sampling locations were identified in a site map, but were not surveyed. These sample locations have been estimated from the site maps and are in the Maywood database.

Also in several of the early investigations, soil boring logs were prepared in conjunction with drilling activities. Surface soil sampling and shallow soil sampling activities, performed by hand (or hand augering), did not have soil boring logs associated with them or they are contained within site logbooks and were not transposed into borehole logs. Some borehole logs for more recent studies were documented as having been performed; however, could not be located.

7.2 LIMITATIONS OF SOILS EVALUATIONS FOR THE PHASE II SOUTH PROPERTIES

This section discusses the evaluation limitations specific to the Phase II South properties, this information is summarized in Table 7-1. Of the 12 Phase II South properties discussed in this report, nine properties have sufficient information to classify the soils into one of the three categories (similar, potentially similar, or different than the treatment study soils) and sufficient radiological data to determine SORs. Two of these properties, 72 Sidney Street and 170 Gregg Street, have

calculated SORs above 1.0, however, the volume estimate is included with that of other properties. Three properties, New Jersey Vehicle Inspection Station, I-80 West, and Scanel & Hackensack Rail Road properties have sufficient radiological information; however, a sufficient number of soil borings was not available for the soils comparison.

7.3 LIMITATIONS OF SOILS EVALUATIONS FOR THE PHASE II NORTH PROPERTIES

This section discusses the evaluation limitations specific to the Phase II North properties. This information is summarized in Table 7-2. Of the 12 Phase II North properties discussed in this report, five properties have sufficient information to classify the soils into one of the three categories (similar, potentially similar, or different than the treatment study soils) and sufficient radiological results to determine SORs. Three properties, NJ Route 17, 23 Howcroft (DeSaussure), and 205 Maywood Ave. (Myron), have sufficient radiological information; however, soil borings logs were not available for the soils comparison. One property, 167 Route 17 (Sunoco), has sufficient information to classify the soils however, SORs can not be calculated because only one radiological sample was collected during the characterization of the property. Two properties, AMF/Voit and NYS & Western Railroad, lack information to classify the soils and SORs could not be calculated because radiological data was not available.

7.4 LIMITATIONS OF SOILS EVALUATIONS FOR THE RETENTION BASINS AND BURIAL PITS

Sufficient radiological data have been collected for the retention basins and burial pits 1 and 2 to calculate SORs; however, a definitive soil classification for the retention basins and burial pit 3 is difficult due to the subjective terms "sludge" and "ash" used throughout the soil logs for these areas. The ash and sludge present in these areas may affect the treatability of the soils. Although, the surface aerial extent of the retention ponds is fairly well defined from historical aerial photographs, the volume has not been confirmed. The retention basin volume is believed to represent a large portion of the impacted soils on MISS, Stepan, and Sears however, only limited borehole data is available to make soil comparisons. Therefore, the classification uncertainty for these soils is quite high. In addition, the exact boundary for burial pit 3 is unknown and a majority of this area is believed to be under a building. These factors made selecting representative soil logs in burial pit 3 difficult. The evaluation limitations for these two area are summarized in Table 7-3.

Table 7-1. Availability of Data for the Phase II South Properties Grouping Evaluation

Property	Boring Logs	Th ²³² Data	Ra ²²⁶ Data	U ²³⁸ Data	Gamma Logs	Impacted Volume	Impacted Accessible Volume	Evaluation Confidence
Scanel & Hackensack RR	-----	Adequate	Adequate	Adequate	Adequate	3.09%	3.72%	-----
200 Route 17N (Sears Small Truck)	Limited	Adequate	Adequate	Adequate	Adequate	0.09%	0.11%	Medium
113 Essex St. (National Community Bank)	Limited	Adequate	Adequate	Adequate	Adequate	0.51%	0.63%	Medium
160/174 Essex St.	Adequate	Adequate	Adequate	-----	Adequate	0.49%	0.53%	Medium
170 Gregg St. (Bergen Cable)	Limited	Adequate	Adequate	Adequate	Adequate	0.00%	0.00%	Medium
100 Hancock St.	Limited	Adequate	Adequate	Limited	Adequate	0.84%	0.81%	Medium
80 Hancock St.	Limited	Adequate	Adequate	Limited	Adequate	2.21%	1.86%	Medium
80 Industrial Rd.	Adequate	Adequate	Adequate	Adequate	Adequate	0.44%	0.32%	High
New Jersey Vehicle Inspection Station	-----	Adequate	Adequate	Adequate	Adequate	0.85%	1.02%	-----
72 Sidney St.	Limited	Adequate	Adequate	-----	Adequate	0.00%	0.00%	Medium
I-80 West	-----	Adequate	Adequate	Adequate	Adequate	0.06%	0.07%	-----

Table 7-2. Availability of Data for the Phase II North Properties Grouping Evaluation

Property	Boring Logs	Th ²³² Data	Ra ²²⁶ Data	U ²³⁸ Data	Gamma Logs	Impacted Volume	Impacted Accessible Volume	Evaluation Confidence
Maywood Interim Storage Site (excluding Retention Basins)	Adequate	Adequate	Adequate	Adequate	Adequate	3.29%	3.96%	High
Stepan (excluding Burial Pits)	Adequate	Adequate	Adequate	Adequate	Adequate	10.07%	12.12%	High
205 Maywood Ave. (Myron)		Adequate	Adequate	Adequate	Adequate	0.01%	0.02%	
Sears	Adequate	Adequate	Adequate	Adequate	Adequate	21.01%	15.75%	High
23 West Howcroft Rd. (DeSaussure)		Adequate	Adequate	Adequate	Adequate	0.65%	0.71%	
239 Route 17N (Gulf Station)	Limited	Adequate	Adequate	Adequate	Adequate	0.60%	0.69%	Medium
167 Route 17N (Sunoco Station)	Limited				Limited	1.54%	1.76%	Low
137 Route 17N (Former Federal Express)	Limited				Limited	0.40%	0.49%	
85-99 Route 17N (Hunter Douglas)	Limited				Limited	0.02%	0.03%	
NYS & Western RR	None	None	None	None	Limited	2.32%	2.79%	
AMF/Voit	None	None	None	None	Limited	0.02%	0.03%	
NJ Route 17	None	Adequate	Adequate	Adequate	Adequate	7.72%	0.00%	

Table 7-3. Availability of Data for the Retention Basin Sediments and Burial Pits Soils Grouping Evaluation

Property	Boring Logs	Th ²³² Data	Ra ²²⁶ Data	U ²³⁸ Data	Gamma Logs	Impacted Volume	Impacted Accessible Volume	Evaluation Confidence
Retention Basin Sediments		Adequate	Adequate	Adequate	Adequate	36.30%	43.67%	
Burial Pits		Adequate	Adequate	Adequate	Adequate	7.34%	8.38%	

8.0 RECOMMENDATIONS

The Maywood Phase II properties' soils compare favorably to the soils used in the 1996 treatability study. The collection of additional soil data for all properties with an evaluation confidence of "low" (as shown in Tables 7.1-7.3) would increase the confidence of these soils evaluations. At a minimum, properties that contribute a significant percentage to the total impacted soil volume should be evaluated with a reasonable confidence.

Approximately 75 percent of the total impacted soils are considered similar to the treatability soils. This percentage however, reflects the inclusion of the retention basin soil volume. The soils associated with the retention basins account for 40.6 percent of this group. It was not possible from the soil borings to determine the volume of the basin soils that are associated with the sludge or ash. The composition of the sludge and ash and its similarity to the treatability soils could alter the overall percentage of soils that are considered similar to the treatability soils. Due to the large volume of soils associated with the retention basins' it is recommended that geotechnical information be determined for these soils.

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9.0 REFERENCES

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ORNL 1989c. *Results of the Radiological Survey at 160 Essex Street (LJ072), Lodi, New Jersey,* ORNL/RASA088/49, Oak Ridge, TN, June.

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ORNL 1989e. *Results of the Radiological Survey at 200 Rt. 17 (MJ035), Maywood, New Jersey,* ORNL/RASA-88/22, Oak Ridge, TN, February.

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APPENDIX A

**LOCATION MAPS SHOWING SOIL LOGS FOR THE
PHASE II SOUTH PROPERTIES**

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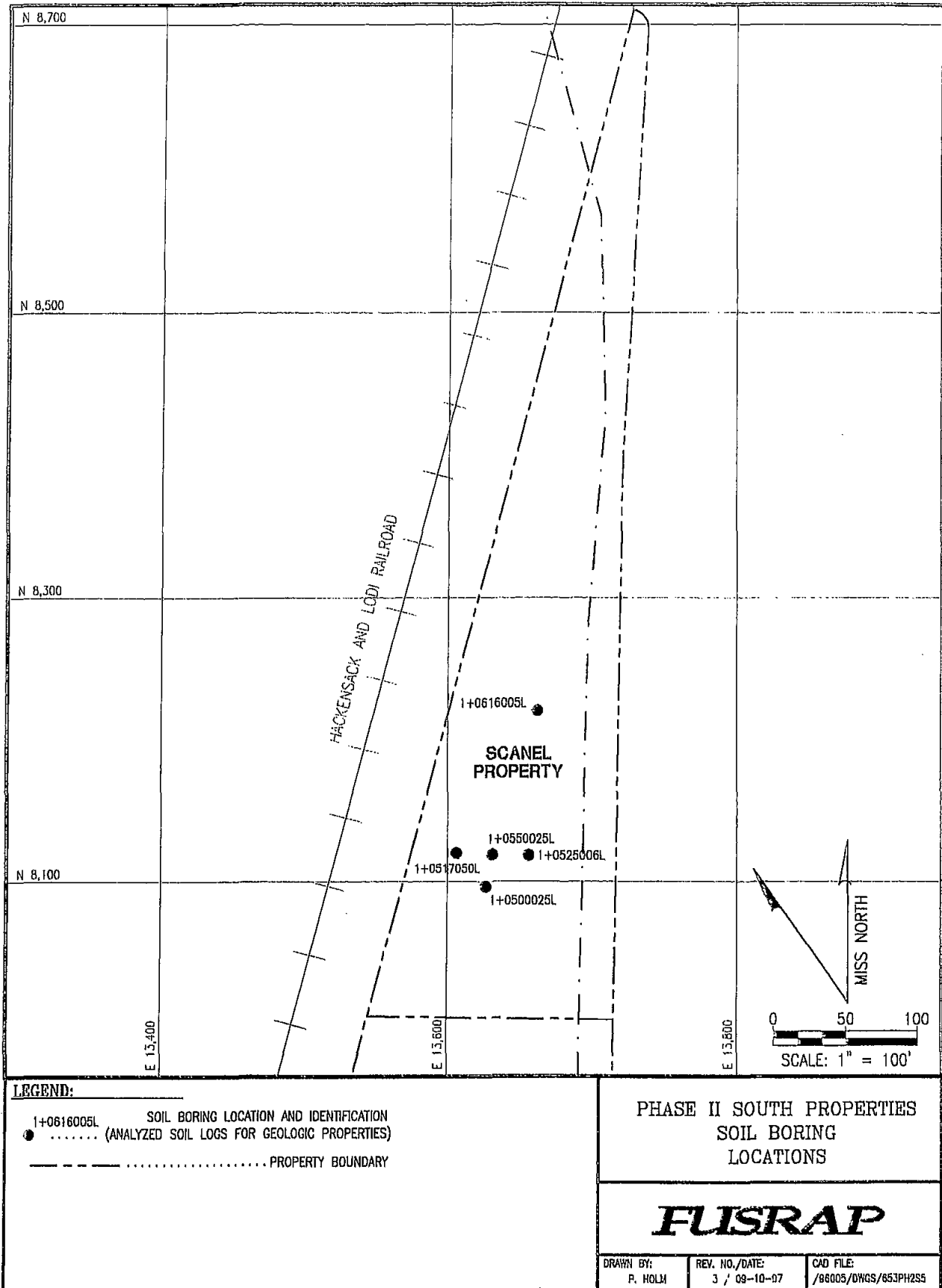


Figure A-1. Location of Soil Boring Logs used in the Soil Evaluation for the Scanel Hackensack Railroad Properties

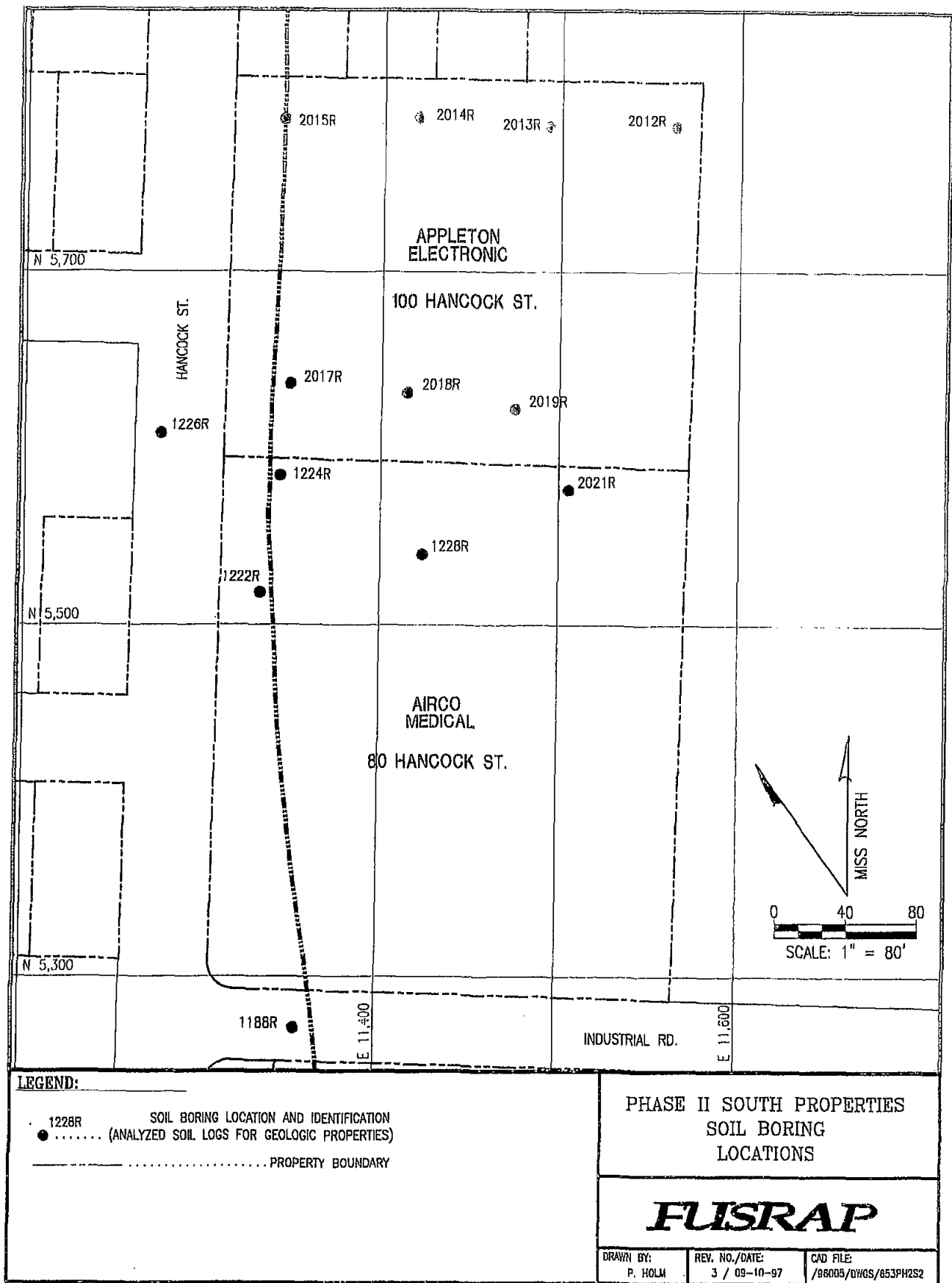
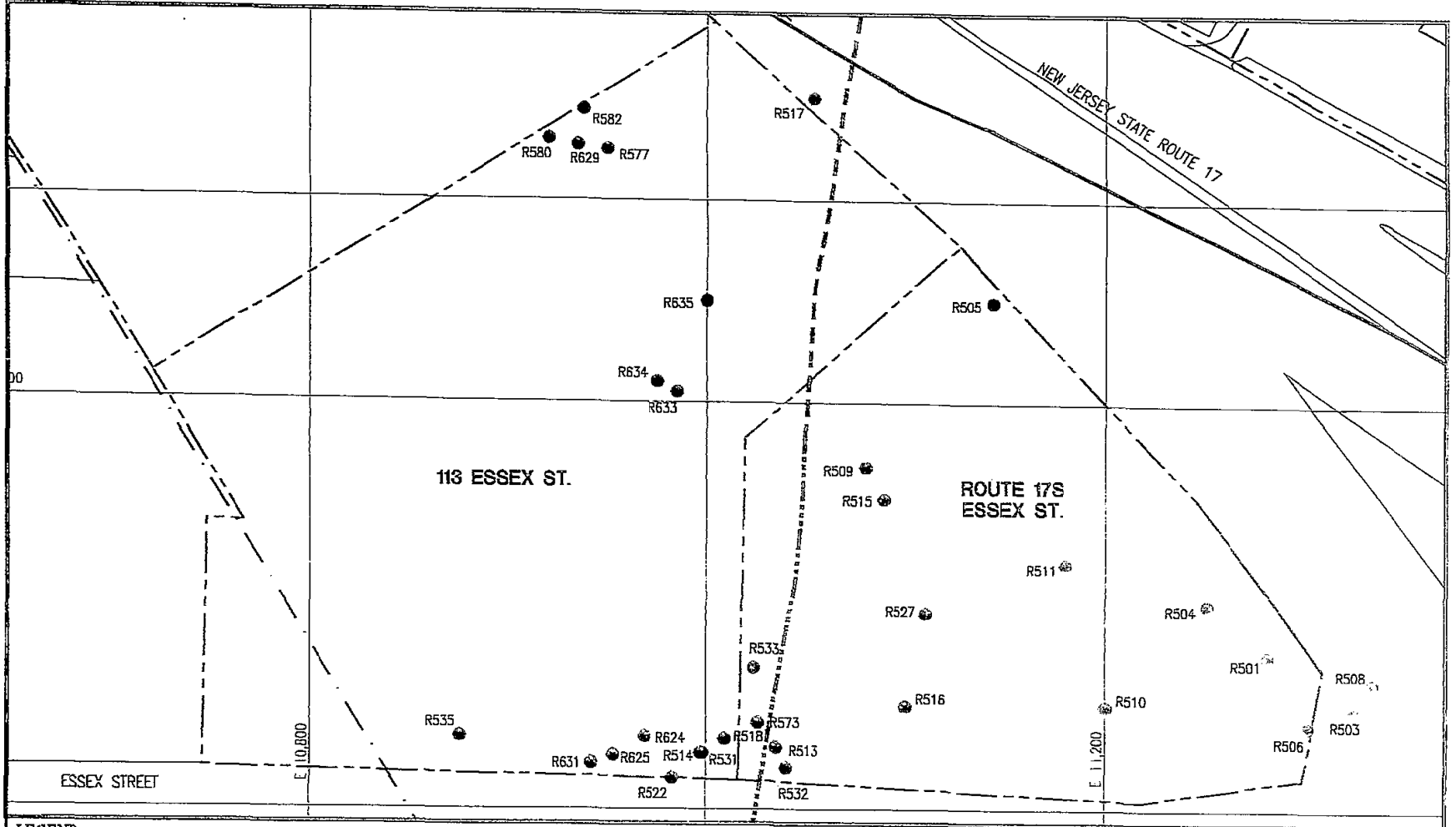
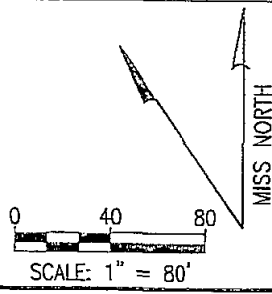


Figure A-2. Location of Soil Boring Logs used in the Soil Evaluation for the 80/100 Hancock Street Properties



LEGEND:

R535 SOIL BORING LOCATION AND IDENTIFICATION
 ● (ANALYZED SOIL LOGS FOR GEOLOGIC PROPERTIES)
 - - - - - PROPERTY BOUNDARY



**PHASE II SOUTH PROPERTIES
SOIL BORING
LOCATIONS**

FLUSRAP

DRAWN BY: P. HOLM	REV. NO./DATE: 3 / 09-10-97	CAD FILE: /9600S/DWGS/653PH257
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**Figure A-4. Location of Soil Boring Logs used in the Soil Evaluation for
 113 Essex Street and the Intersection of Rt. 17S and Essex Street Properties**

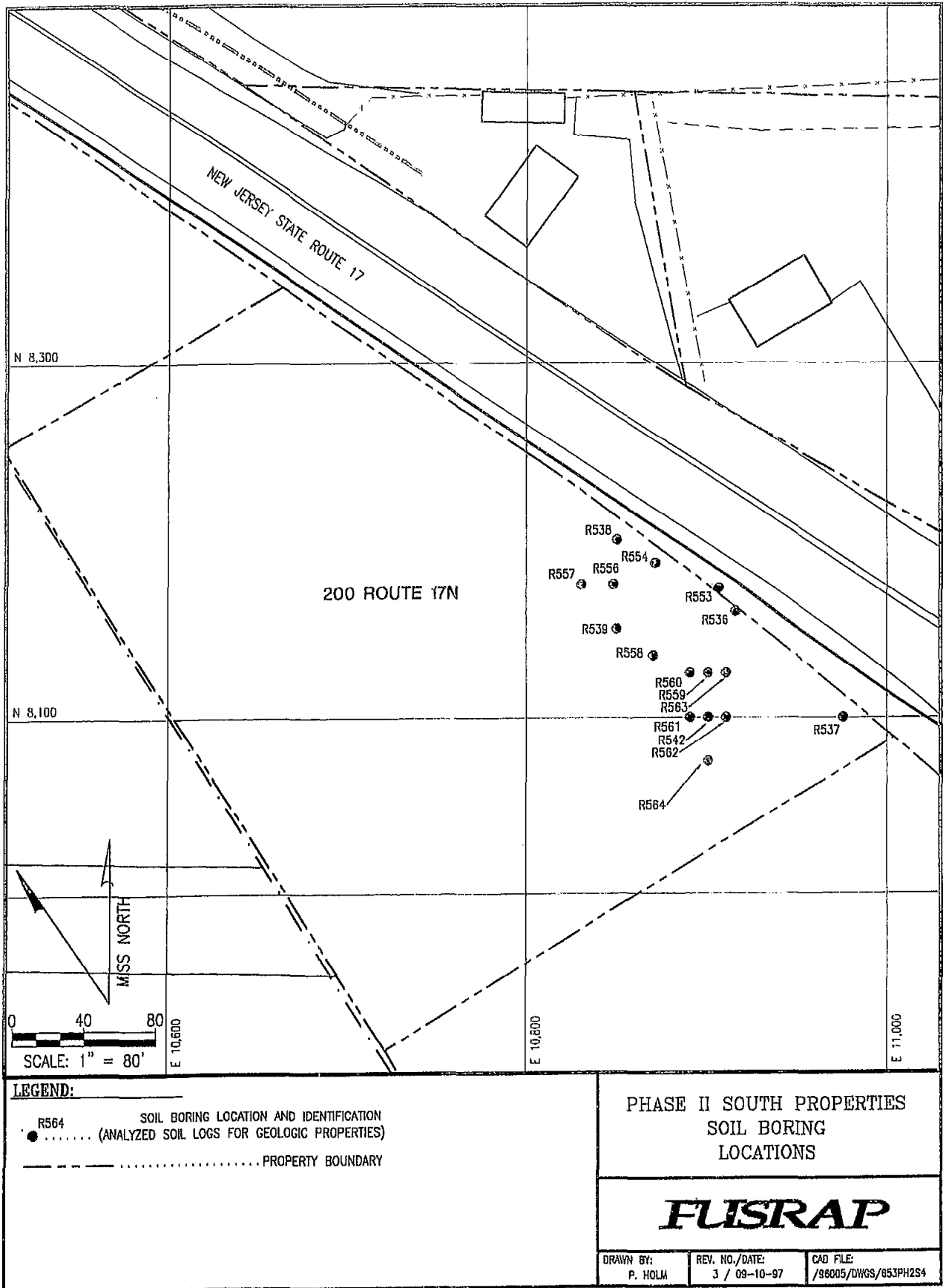
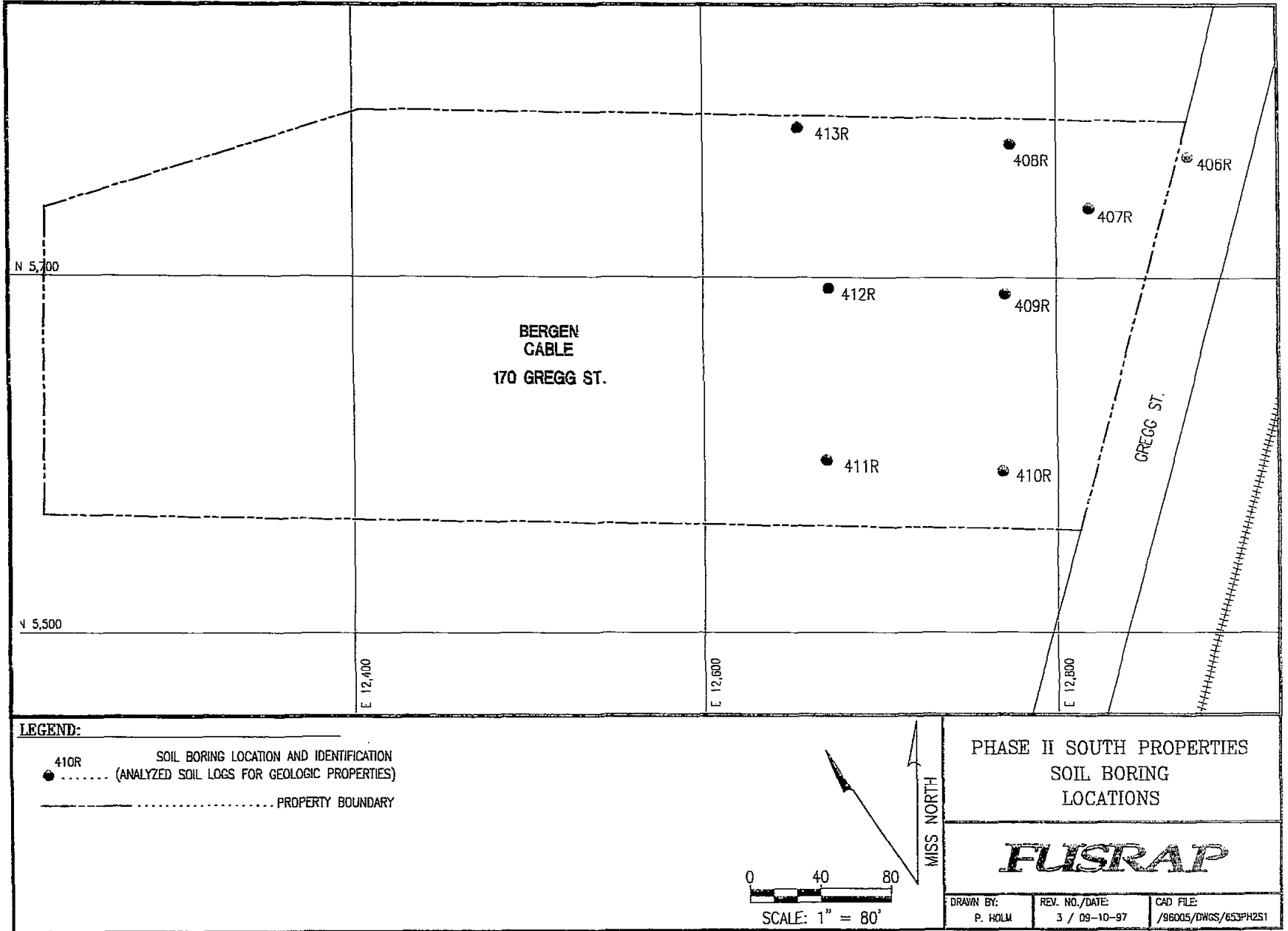


Figure A-6. Location of Soil Boring Logs used in the Soil Evaluation for the 200 Route 17N Property (Sears Small Truck Facility)

Figure A-7. Location of Soil Boring Logs used in the Soil Evaluation for the 170 Gregg Street Property (Bergen Cable)



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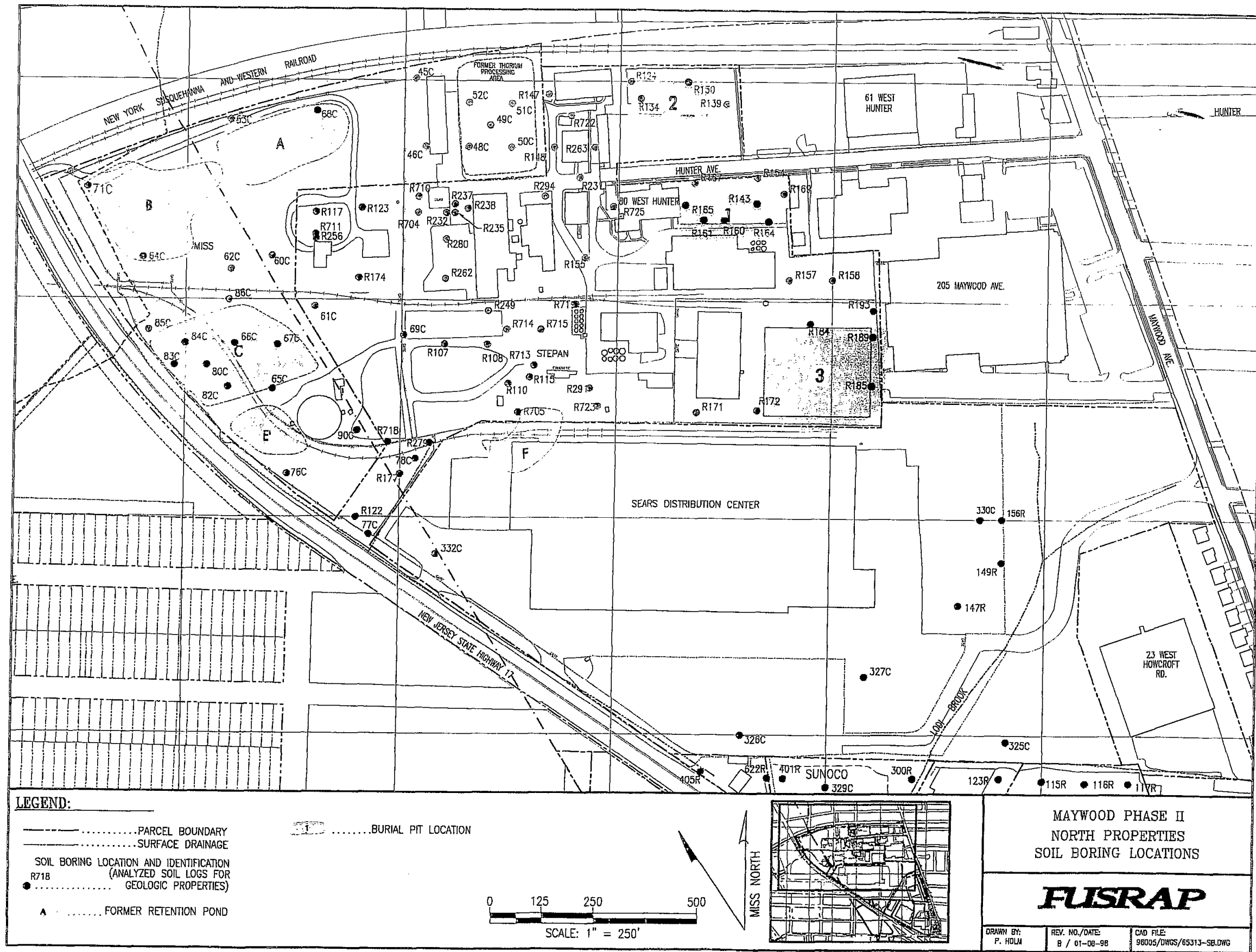
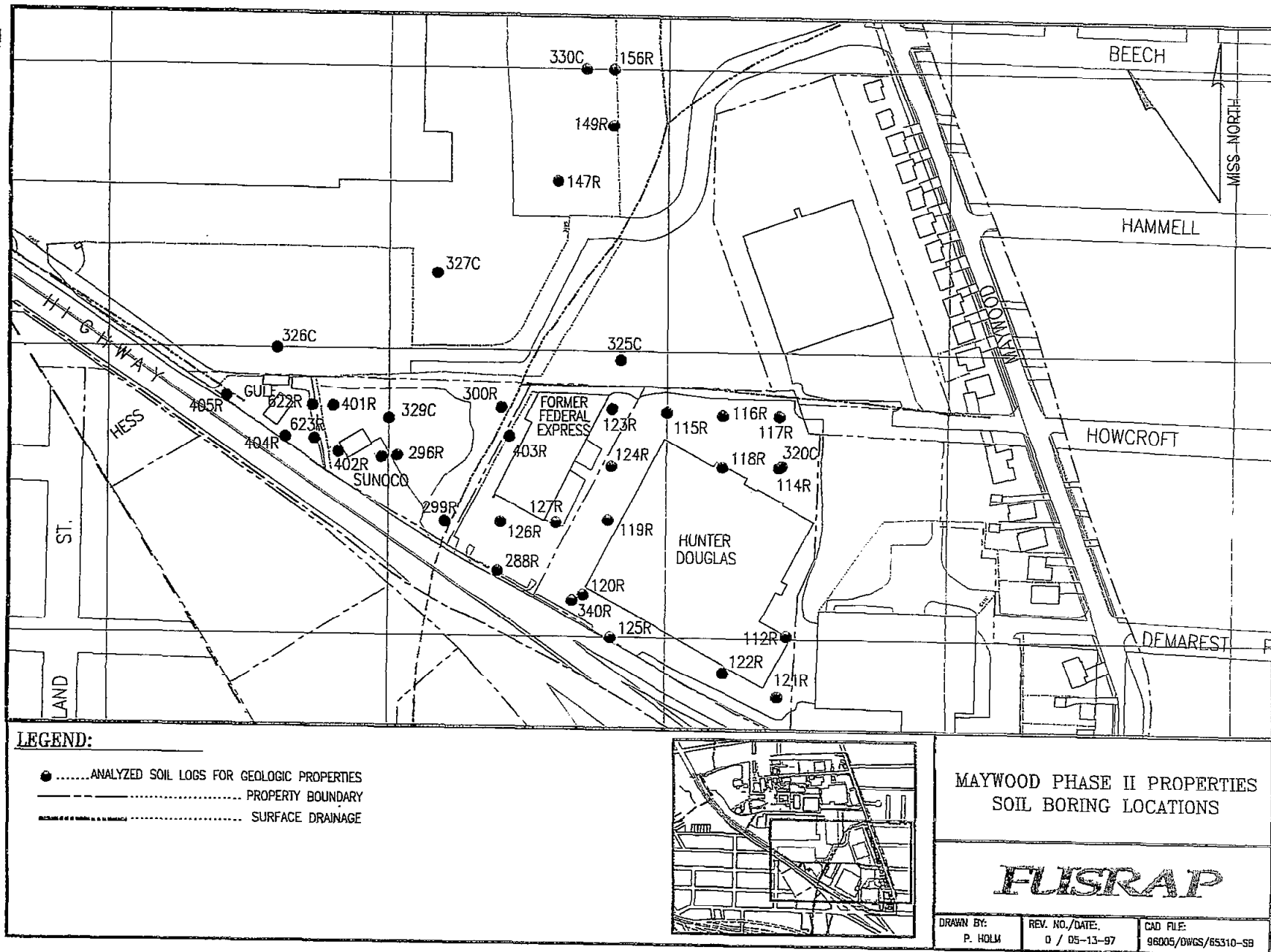


Figure B-1. Location of Soil Boring Logs used in the Soil Evaluation for MISS, Stepan, Sears, New Jersey Rt. 17 and Myron Properties

Figure B-2. Location of Soil Boring Logs used in the Soil Evaluation for Gulf Station, Sunoco Station, Hunter Douglas, and Former Federal Express Properties



160084

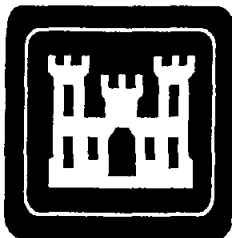
M-764

FINAL
USACE/OR/DA CA62-1032

MAYWOOD SOILS GROUPING REPORT VOLUME II

MAYWOOD, NEW JERSEY

JANUARY 1998



U.S. Army Corps of Engineers
New York District Office
Formerly Utilized Sites Remedial Action Program



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.			
SITE MAYMOOD INTERIM STORAGE SITE - NJV15										FLSRAP		14501-130		1 OF 1		N155-200R			
COORDINATES										N1220, E1270		ANGLE FROM HORIZ.		DIP/SLUR		DIP/SLUR			
DATE		COMPLETED		BELLER				DRILL NAME AND MODEL		HOLE SIZE		DEPTH/SLUR (FT.)		ROCK (FT.)		TOTAL DEPTH			
8/5/86		8/5/86		MORETRENCH ENVIRONMENTAL SERVICES				MOBILE B-33		8"		5.0'		0.0'		5.0'			
CORE SECURITY/L/D				CORE DIAMETER		SAMPLES		SL. TOP OF CORE		GRAB/SL.		DEPTH/SL. SPREAD WATER		DEPTH/SL. TOP OF ROCK					
N/A				N/A		N/A		N/A		99.5'		NONE OBSERVED		N/A					
SAMPLE NUMBER/DEPTH/PAUL				CORE LEFT IN HOLE/DRAWN/DEPTH				LOGGED BY											
N/A				N/A				D. McGRANE											
SAMPLE TYPE AND DIAMETER	SAMPLE LOCATION - LEGAL CORNER	SPECIAL PREPARATION - CORE PREPARATION	SAMPLE NUMBER	PERCENT CORE RECOVERY	IN SITU TESTS			ELEVATION	DEPTH	GRAB/SL.	SAMPLE	DESCRIPTION AND CLASSIFICATION*	DEPTH ON WATER LEVEL, WATER RETURN, CONTACT OF BELLER, ETC.						
					LOGS	IN SITU	IN SITU												
AUGER, 6" THROUGHOUT								99.5	0										
								94.5	5			0-5.0' SILTY SAND (SM) COLOR STRATIFIED SOIL HORIZONS, FINE TO MEDIUM GRAINED WITH OCCASIONAL PIECES OF REDDISH BROWN (OYR/2) SANDSTONE GRAVEL AND PEBBLES AT VARIOUS LITHOLOGES; SOFT; POORLY CONSOLIDATED & LOOSE; MOIST. 0-10' MODERATE BROWN (SYR/6) NUMEROUS GRASS ROOTS AND ORGANICS. 10-10' DARK YELLOWISH ORANGE (OYR/6) BOTTOM OF HOLE AT 5.0 FT.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.						
									10										
									15										
									20										
									25										
									30										
									35										
SPLIT SPINDLE STABILITY TEST										MAYMOOD INTERIM STORAGE SITE - NJV15									
PERCENTAGE P-FRAC WATER										HOLE NO.									
										N155-200R									

ELEVATIONS ESTABLISHED RELATIVE TO AN ARBITRARY DATUM.

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 1123R

SITE

160 Essex St. (LODI)

COORDINATES

N 2.327 E 4.117

ANGLE FROM HORIZ BEARING

Vertical

BEGUN

11-6-87

COMPLETED

11-6-87

DRILLER

E.D.I.

DRILL MAKE AND MODEL

MOBILE B-57

SIZE

6.5"

OVERBURDEN

4.0

ROCK (FT.)

4.0

TOTAL DEPTH

8.0

CORE RECOVERY (FT./%)

3.1/39

CORE BOXES/SAMPLES

4

GROUND EL.

DEPTH/EL. GROUND WATER

4.0'

DEPTH/EL. TOP OF ROCK

4.0'

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

NONE

LOGGED BY:

D. Harnish

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN Q.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	0.8	14-42 13-15						0.0 - 2.0 Ft. <u>Silty GRAVEL FILL (GM)</u> . Broken basalt gravel; silt is dark brown.	Borehole advanced 0-8 Ft. with 6.5" o.d. hollow stem auger.	
									0.4 Ft. Yellow powder distributed in fill.		
SS	2.0	0.8	1-3-7 12						2.0 - 4.0 Ft. <u>SILT and Silty SAND (ML, SM)</u> . Silt is reddish brown; sand is gray, medium-grained.	Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.	
SS	2.0	0.8	15-17 17-17						4.0 - 8.0 Ft. <u>WEATHERED BEDROCK</u> . Dusky red sandstone, hard, clayey at top, damp at base. New Brunswick sandstone.		
SS	2.0	0.7	9-11 38-40								
Bottom of borehole at 8.0 ft. Borehole backfilled with spoils, 11/6/87.										Hole is dry.	
										Description and classification of samples by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

160 Essex St. (LODI)

HOLE NO.

1123R

GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
										FUSRAP	14501-138	1 OF 1	1124R
SITE					COORDINATES					ANGLE FROM HORIZ. BEARING			
160 Essex St. (LODI)					N 2.347 E 4.020					Vertical -----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
11-9-87	11-9-87	E.D.I.	MOBILE B-57		6.5"	6.4	1.6	8.0					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
4.8/60			4			/ 11/9/87		6.4/					
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in			NONE			D. Harnish <i>CHP</i>							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.							
SS	2.0	1.0	3-6-2-3								0.0 - 4.3 Ft. Silty GRAVEL and Gravelly SILT FILL (GM).	Borehole advanced 0-8 Ft. with 6.5" o.d. hollow stem auger.	
SS	2.0	0.7	1-2-2-2								0.0-0.6 Ft. Silty GRAVEL, broken basalt gravel, black silt.	Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.	
SS	2.0	1.5	2-10-12-12								0.6-4.3 Ft. Gravelly SILT, gray (5YR5/1), with soft silt pebbles, grayish brown and yellowish brown, round gravel, and pieces of charcoal.		
SS	2.0	1.6	12-13-28-28								4.3 - 6.4 Ft. SAND (SP). Dark gray (10YR4/1) with slight greenish tint, fine-grained, saturated at top, iron-oxide stained at base.	6.0 Ft. Groundwater observed. At TD, ENMET reads 100 ppm toxic with probe at 1.0 Ft.	
											6.4 - 8.0 Ft. WEATHERED BEDROCK. Dusky red (10R3/6) sandstone, some coarse grayish brown sand. Becomes harder downward. New Brunswick sandstone.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/9/87.													
												Description and classification of samples by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

160 Essex St. (LODI)

HOLE NO.
1124R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	MOLE NO.				
160 Essex St. (LODI)				N 2.365 E 4.075	4501-138	1 OF 1	1125R				
SITE		COORDINATES			ANGLE FROM HOR: Z BEARING						
160 Essex St. (LODI)		N 2.365 E 4.075			Vertical						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-9-87	11-9-87	E.D.I.	MOBILE B-57	6.5"	6.5	0.2	6.7				
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
4.4/66		4			4.9/ 11/9/87		6.5/				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in		NONE		D. Harnish							
SAMP. TYPE AND DIAH.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEU.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	0.8	7-7-10 6							0.0 - 4.9 Ft. Silty GRAVEL and Gravelly SILT FILL (GM).	Borehole advanced 0-6.7 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. 4.9 Ft. Groundwater observed. Auger refusal at 6.7 Ft.
SS	2.0	1.2	3-2-1-4						0.0-0.7 Ft. Broken basalt gravel, brown silt.		
SS	2.0	1.8	25-28 28-25						0.7-2.5 Ft. Gravelly SILT, dark brown (7.5 YRS/2), pebbles of soft yellowish brown silt and hard dusky red New Brunswick sandstone, damp.		
SS	0.6	0.6	50-25/0						2.5-4.9 Ft. Dusky red New Brunswick sandstone gravel fixed in weathered clay and silt (FILL?).		
									4.9 - 6.5 Ft. SAND (SP). Grayish brown (10 YRS/2), fine-grained, medium-grained toward top, wet. (Brook sediments?)		
									6.5 - 6.7 Ft. BEDROCK. Dusky red, hard New Brunswick		
Bottom of borehole at 6.7 Ft. Borehole backfilled with spoils, 11/9/87.											
Description and classification of samples by visual examination.											
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE D = DENNISON; P = PITCHER; O = OTHER											
160 Essex St. (LODI)							MOLE NO. 1125R				

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 1126R

SITE 160 Essex St. (LODI)		COORDINATES N 2.408 E 4.068		ANGLE FROM HORIZBEARING Vertical		-----	
BEGUN 11-9-87	COMPLETED 11-9-87	DRILLER E.D.I.	DRILL MAKE AND MODEL MOBILE B-57	SIZE 6.5"	OVERBURDEN 8.4	ROCK (FT.) 1.6	TOTAL DEPTH 10.0
CORE RECOVERY (FT./%) 5.2/52		CORE BOXES 5	SAMPLES/EL. TOP CASING 5	GROUND EL. 5.2	DEPTH/EL. GROUND WATER 5.2	DEPTH/EL. TOP OF ROCK 8.4	
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH NONE		LOGGED BY: D. Harnish			

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N"	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.3	5-11-7	6						0.0 - 4.3 Ft. Gravelly SILT FILL (GM-ML).	Borehole advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. At TD, ENMET reads 300 ppm, 2 bars LEL with probe at 0.5 Ft.	
SS	2.0	0.0								0.0-0.7 Ft. Mixed dark brown (10YR3/3) and dark gray.		
SS	2.0	0.8	4-4-8	15						0.7-4.3 Ft. Mixed dark brown (10YR3/3), reddish brown (2.5YR4/4) and dark gray SILT, pieces of wood, dusky red New Brunswick sandstone, soft reddish brown silt pebbles, and other gravel.		
SS	2.0	2.0	16-17	18-17						4.3 - 6.3 Ft. SAND (SP) Dark reddish gray (5YR4/2), fine- to medium-grained, minor silt, rare round gravel.		
SS	2.0	1.1	19-22	37-42						6.3 - 8.4 Ft. Clayey SAND (SC). Grayish brown (10YR5/2), medium-grained, some clay.		
										6.3-6.6 Ft. CLAY.		
										8.0-8.4 Ft. Clayey SAND.		
										8.4 - 10.0 Ft. WEATHERED BEDROCK, dusky red, fractured weathered New Brunswick sandstone.		
Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 11/9/87.												

Description and classification of samples by visual examination.

SS = SPLIT SPON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

160 Essex St. (LODI)

HOLE NO. 1126R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 1127R

SITE

160 Essex St. (LODI)

COORDINATES

N 2.482 E 4.078

ANGLE FROM HORIZ BEARING

Vertical -----

BEGUN

11-9-87

COMPLETED

11-9-87

DRILLER

E.D.I.

DRILL MAKE AND MODEL

MOBILE B-57

SIZE

6.5"

OVERBURDEN

6.8

ROCK (FT.)

1.2

TOTAL DEPTH

8.0

CORE RECOVERY (FT./%)

5.2/65

CORE BOXES/SAMPLES

4

EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

6.8/

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in.

CASING LEFT IN HOLE: DIA./LENGTH

NONE

LOGGED BY:

D. Harnish



SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.1	7-4-4-5						0.0 - 4.4 Ft. Gravelly SILT FILL and Silty SAND (GM-ML, SM).	Borehole advanced 0-8 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.	
SS	2.0	1.4	2-3-1-6					0.0-0.5 Ft. Silty GRAVEL, black silt, broken basalt gravel.			
SS	2.0	1.4	4-6-18 16					0.3-2.8 Ft. Gravelly SILT, silt is black and dark brown, pebbles of soft red silt, pieces of wood, coal ash.			
SS	2.0	1.3	23-34 50/2"					2.8-4.4 Ft. Silty SAND, reddish gray (5YR4/2), fine-grained, small (< 1 cm) pieces of decomposed wood, some reddish brown slightly decomposed New Brunswick sandstone gravel.			
									4.4 - 6.0 Ft. Clayey SILT (ML-CL). Reddish brown (5YR5/3) with yellowish brown iron-oxide stain, grayish green on top.		
									6.0 - 6.8 Ft. SILT and SAND (ML-OL, SP). Greenish gray sand, yellowish brown silt.		
									6.5-6.6 Ft. SILT, black, organic.		
									6.8 - 8.0 Ft. WEATHERED BEDROCK. Dusky red New Brunswick sandstone, becomes harder downward.		
Bottom of borehole at 8.0 Ft. Borehole backfilled with spoils, 11/9/87.											

Description and classification of samples by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

160 Essex St. (LODI)

HOLE NO. 1127R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501-138

SHEET NO.

1 OF 1

HOLE NO.

1128R

SITE 160 Essex St. (LODI)		COORDINATES N 2.395 E 4.138		ANGLE FROM HORIZ BEARING Vertical	
BEGUN 11-9-87	COMPLETED 11-9-87	DRILLER E.D.I.	DRILL MAKE AND MODEL MOBILE B-57	SIZE 6.5"	OVERBURDEN 7.5
CORE RECOVERY (FT./%) 6.3/79		CORE BOXES (SAMPLES) 4	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH NONE		LOGGED BY: D. Harnish	

SAMP. TYPE AND DIA.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. "N" BLOWS X CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.5	15-11-7								0.0 - 5.7 Ft. SILT and Gravelly SILT FILL (ML, ML-GL).	Borehole advanced 0-8 Ft. with 6.5" o.d. hollow stem auger.
SS	2.0	1.5	3-4-5-4								0.0-0.4 Ft. Silty GRAVEL, black silt, broken basalt gravel.	Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.
SS	2.0	1.3	3-4-16								0.4-2.0 Ft. Gravelly SILT, black (2.5YR2.5/0), with pieces of wood, dusky red New Brunswick sandstone, other rock.	
SS	2.0	2.0	17-21								2.0-5.7 Ft. SILT, black, small pieces of greenish gray silt, minor coarse-grained round sand, medium-grained reddish gray silty sand mixed in.	6.0 Ft. ENMET reads 300 ppm with probe at top of hole.
			22-26								4.0-5.0 Ft. Green stain.	
											5.7 - 7.5 Ft. SAND (SP).	Borehole is dry.
											5.7-6.9 Ft. Raddish gray (5YR5/2), fine-grained, saturated, runny.	
											6.9-7.5 Ft. Yellowish brown (10YR5/6), fine-grained.	
											7.5 - 8.0 Ft. WEATHERED BEDROCK.	
											Dusky red, New Brunswick sandstone, hard pieces separated by more weathered soft clayey areas.	
Bottom of borehole at 8.0 Ft. Borehole backfilled with spoils, 11/9/87.												

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP	14501-138	1 OF 1	1166R					
SITE			COORDINATES		ANGLE FROM HORIZ. BEARING							
160 Essex St. (LODI)			N 2.351 E 4.200		Vertical -----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
11-24-87	11-24-87	E.D.I.	Mobile B-57	6.5"	10.0		10.0					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
4.2/42			5			8.2/ 11/24/87						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs./30 in.		NONE		D. Harnish <i>DH</i>								
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.0	8-8-6-7								0.0 - 3.2 Ft. Silty GRAVEL, Gravelly SILT and SILT FILL (GM, GM-ML, OL).	Borehole advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. Elevated readings with HP-260 from 2.7-3.2 Ft. 8.2 Ft. Groundwater observed. At TD, ENMET reads 90 ppm, 1 bar LEL with probe at 0.5 Ft.
SS	2.0	1.5	1-2-4 12							0.0-2.0 Ft. Silty GRAVEL, broken pieces of basalt, cement and New Brunswick sandstone.		
SS	2.0	1.7	3-3-7-4							2.0-2.7 Ft. Gravelly SILT, black, pieces of soft silt, grayish green, brownish gray.		
SS	2.0		9-11-12 11							2.7-3.2 Ft. SILT, black, soft.		
SS	2.0		2-2-8-8							3.2 - 4.9 Ft. Silty SAND and SILT (SM, ML). Grayish green, fine-grained, some medium-grained sand, beds are 0.3 ft. thick; sand and silt is interbedded.		
										4.9 - 10.0 Ft. Silty SAND and SAND (SM, SP). Reddish gray (5YR5/2), becoming brown downward, fine- to medium-grained, some gravel of New Brunswick sandstone.		
										5.8 Ft. Some coarse-grained sand.		
										6.3-6.4 Ft. SILT, greenish gray.		
										6.4-8.2 Ft. Silty SAND, brown (10YR4/3); may be disturbed fill.		
										8.2-10 Ft. SAND, brown (10YR4/2), very fine-grained bedding evident, saturated.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/24/87.												
Description and classification of samples by visual examination.												

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

160 Essex St. (LODI)

HOLE NO.
1166R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
160 Essex St. (LODI)				N 2.433 E 4.186	FUSRAP	14501-138 1 OF 1	1167R					
SITE		COORDINATES		ANGLE FROM HORIZ BEARING								
160 Essex St. (LODI)		N 2.433 E 4.186		Vertical -----								
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
11-24-87	11-24-87	E.D.I.	Mobile B-57	6.5"	10.0		10.0					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
4.8/48			5			8.0/ 11/24/87						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs./ 30 in.		NONE		D. Harnish <i>[Signature]</i>								
SAMP. TYPE AND DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	0.8	7-14-8 4							0.0 - 4.6 Ft. Gravelly SILT, SILT FILL (ML-GI, ML-OL).	Borehole advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. 2" of asphalt at surface. Hole caved in to 8.5 Ft. 8.0 Ft. Groundwater observed. Drager tube poly-test positive with hole to TD.	
SS	2.0	1.3	3-5-4-4						0.0-2.6 Ft. Gravelly SILT, dark brown (7.5YR3/4); gravel is New Brunswick sandstone, basalt, and concrete.			
SS	2.0	1.4	2-7-10 22					5	2.6-2.9 Ft. SILT and Silty SAND, horizontally interlayered gray fine-grained silty sand, reddish gray very fine-grained silty sand and black silt.			
SS	2.0	0.0	19-36 25-16						2.9-4.6 Ft. SILT, black.			
SS	2.0	1.3	5-9-7 12						4.6 - 6.0 Ft. Silty SAND (SM). Dark grayish brown (10YR4/2), fine-grained.			
									6.0 - 8.0 Ft. SILT (ML). Dark gray (5YR4/1).			
								10	8.0 - 10.0 Ft. Silty SAND (SM). Weak red (2.5YR5/3), fine-grained, subangular grains, saturated.			
bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/24/87.												

Description and classification of samples by visual examination.

GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501-138	SHEET NO.	1 OF 1	HOLE NO.	1168R
SITE			COORDINATES			ANGLE FROM HORIZ BEARING				
160 Essex St. (LODI)			N 2,399 E 4,257			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
11-24-87	11-24-87	E.D.I.	Mobile B-57		6.5"	10.0		10.0		
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
8.1/81		5			8.7/ 11/24/87					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs./ 30 in.		NONE			D. Harnish <i>DH</i>					

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N"	% CORE RECOVERY	WATER PRESSURE TESTS			ELEU.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.7	9-25 40-26									0.0 - 6.5 Ft. Gravelly SILT, Silty GRAVEL and SAND FILL (ML-GM, GM, SP).	Borehole advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. 2" of asphalt at surface. Elevated readings with HP-260 from 6.0-6.5 Ft.
SS	2.0	1.8	12-17 18-18								0.0-3.9 Ft. Gravelly SILT, dusky red (10R3/2) decomposed New Brunswick sandstone and shale matrix, silt and very-fine sand; gravel is broken pieces of New Brunswick sandstone.		
SS	2.0	1.7	3-4-4 12								1.1-1.4 Ft. Piece of lumber.		
SS	2.0	1.3	14-15 12-13								2.0-3.9 Ft. Some dark gray and brown silt, some round gravel.		
SS	2.0	1.6	6-10-10 14								3.9-4.1 Ft. SAND, gray, fine-grained, clean.		
												4.1-5.9 Ft. SILT, dark grayish brown to black, pieces of grayish green, reddish brown and grayish brown silt mixed in.	With augers in the hole to 8.0 Ft., ENMET reads 100 ppm at surface.
												5.9-6.0 Ft. SAND, black, fine-grained, damp.	
												6.0-6.5 Ft. Silty SAND, dark gray, some black sand mixed in, some pea gravel, grayish green silt pieces.	8.7 Ft. Groundwater observed.
												6.5 - 7.8 Ft. Silty SAND (SM). Weak red (5R4/3), fine- to medium-grained.	
												7.8 - 8.7 Ft. SILT (ML). Dark yellowish brown (10YR4/4), weakly laminated.	
												8.7 - 10 Ft. SAND (SP). Dark grayish brown (10YR4/2), fine-grained, saturated	At TD, ENMET reads >300 ppm, >10% LEL with probe at 0.5 Ft. Drager tube poly-test showed very minor positive at top of hole after TD.
												9.2-9.5 Ft. Brown (10YR4/3), very fine-grained.	
Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 11/24/87.												Description and classification of samples by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE	160 Essex St. (LODI)	HOLE NO.	1168R
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GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.		
				FUSRAP		14501-138		1 OF 1		2008R		
SITE				COORDINATES				ANGLE FROM HORIZ BEARING				
174 Essex St. (LODI)				N 2.394 E 4.296				Vertical -----				
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN		
10-7-88		10-7-88		EMPIRE SOILS		CME 45B		12"		10.0		
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES		ELEV. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
5.6/80		4						7.0/ 10/7/88				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
300 lbs./ 24 in.			NONE			J. Lord <i>JL</i>						
SAMP. TYPE AND DIAH.	SAMP. ADU. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.						
SS	1.0	0.8	13-12									Borehole advanced 0-10 Ft. using 6 1/4" i.d. hollow stem augers. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. Groundwater detected in hole, 7.0 Ft. Top of undisturbed soil, 7.7 Ft. Elevated scan at 2.0-4.0 interval. Description and classification of soils by visual examination of samples.
SS	2.0	0.8	11-8-5-							0.0 - 1.0 Ft. ASPHALT & GRAVEL. Nat'l Comm. Bank driveway.		
SS	2.0	2.0	5-4-4-8							1.0 - 4.3 Ft. Gravelly SAND (FILL). Dark grayish red (5YR3/2). Poorly sorted sediments with gravel, cobbles, glass, brick, and a 3" thick plug of wood. Moist to slightly moist, soft.		
SS	2.0	2.0	7-4-6-6							3.0-4.0 Ft. No recovery		
SS	2.0	2.0	7-4-6-6							4.3 - 5.3 Ft. Silty Gravelly SAND (SG). Dusky brown (5YR2/2). Moist, soft, dense, cohesive. FILL?		
										5.3 - 7.7 Ft. Silty SAND (SP). Dusky yellowish brown (10YR2/2), poorly sorted silty sand. 10% coarse fraction. Petroleum odor. Loose, moist to saturated.		
										6.0-7.7 Ft. Grading to moderate brown (5YR4/6). Coarsening downwards.		
										7.7 - 10.0 Ft. Silty SAND (SM). Dark yellowish orange (10YR6/6). Well sorted fine-grained sand and silt. Adhesive, saturated, soft. Rapid dilatancy. Undisturbed.		
Bottom of borehole at 10.0 Ft. Borehole backfilled from bottom to 5' with grout, from 5' to 6" with spoils, and patched with asphalt in top 6", 10/7/88.												

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

174 Essex St. (LODI)

HOLE NO.
2008R

GEOLOGIC DRILL LOG

PROJECT: FUSRAP
 JOB NO.: 14501-138 1 OF 1
 SHEET NO.:
 HOLE NO.: 2009R

SITE: 174 Essex St. (LODI)
 COORDINATES: N 2.285 E 4.217
 ANGLE FROM HORIZ BEARING: Vertical

BEGUN: 10-7-88
 COMPLETED: 10-7-88
 DRILLER: EMPIRE SOILS
 DRILL MAKE AND MODEL: CME 45B
 SIZE: 12"
 OVERBURDEN: 2.1
 ROCK (FT.):
 TOTAL DEPTH: 2.1

CORE RECOVERY (FT./%): 1.0/63
 CORE BOXES: 1
 SAMPLES: 1
 EL. TOP CASING: /
 GROUND EL.: /
 DEPTH/EL. GROUND WATER: /
 DEPTH/EL. TOP OF ROCK: /

SAMPLE HAMMER WEIGHT/FALL: 300 lbs./ 24 in.
 CASING LEFT IN HOLE: DIA./LENGTH: NONE
 LOGGED BY: J. Lord

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N"	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.						

SS	1.5	1.0	20-30-75									0.0 - 1.5 Ft. ASPHALT & GRAVEL . Nat'l Comm. Bank driveway.	Borehole advanced 0-2.1 Ft. using 6 1/4" i.d. hollow stem augers. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. No groundwater detected. Top of undisturbed soil 2.1 Ft. Spoon & auger refusal at 2.1 Ft. Bedrock
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SS	0.1	0.0	100/1									1.5 - 2.0 Ft. GRAVEL (G) . Driveway base of large angular limestone to 3" in diam.
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												2.0 - 2.1 Ft. SANDSTONE . New Brunswick formation.
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Bottom of borehole at 2.1 Ft.
 Borehole backfilled with spoils to 6", and asphalt to the surface, 10/7/88.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE: 174 Essex St. (LODI)
 D = DENNISON; P = PITCHER; O = OTHER; HOLE NO.: 2009R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP	14501-138	1 OF 1	1118R				
SITE			COORDINATES		ANGLE FROM HORIZ BEARING						
174 Essex St. (LODI)			N 2.273 E 4.079		Vertical						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-5-87	11-5-87	E.D.I.	MOBILE B57		6.5"	8.0	2.0	10.0			
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
4.7/47		5			8.0/ 11/5/87		8.0/				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in		NONE		D. Harnish							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	0.3	15-17-8 12						0.0 - 6.6 Ft. Silty GRAVEL and SILT FILL (GM, ML).	Borehole advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. ENMET reads 100 ppm at 0.5 Ft. when hole is 8.0 Ft. deep. 8.0 Ft. Groundwater observed.	
SS	2.0	1.9	5-13-13 14						0.0-2.1 Ft. Silty GRAVEL, black broken basalt gravel; loose, slightly damp.		
SS	2.0	0.3	4-7-9-9						2.1-6.6 Ft. SILT, weak red (2.5Y4/2) and light brown (7.5YR6/4) some sub-rounded soft pebbles, yellowish brown and reddish brown; few pieces of hard dark red New Brunswick sandstone.		
SS	2.0	1.5	4-6-7-8						6.6 - 8.0 Ft. SILT (ML). Weak red (2.5YR4/2), few small pebbles.		
SS	2.0	0.7	14-16-18 25/1"						8.0 - 10.0 Ft. WEATHERED SHALE BEDROCK. Dusky red (2.5YR3/2), hard, New Brunswick formation.		
									Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 11/5/87.		

Description and classification of samples by visual examination.

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.	
				FUSRAP	14501-138	1 OF 1	1121R	
SITE			COORDINATES		ANGLE FROM HOR: Z BEARING			
174 Essex St. (LODI)			N 2,337 E 4,267		Vertical			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
11-6-87	11-6-87	E.D.I.	MOBILE B-57		6.5"	9.5	0.5	10.0
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
5.2/52			5				9.5/	
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:				
140 lbs/30 in		NONE		D. Harnish <i>DH</i>				

SAMP. TYPE AND DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" / CORE % RECOVERY	WATER PRESSURE TESTS			ELEU.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.3	6-6-3-3								0.0 - 4.3 Ft. Silty GRAVEL FILL (GM) . Broken metamorphic and basalt gravel, black and reddish brown silt.	Borehole advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.
SS	2.0	0.2	2-2-5-6								4.3 - 6.3 Ft. Silty SAND (SM) . Greenish gray, medium-grained; distinct chemical smell.	
SS	2.0	0.8	6-11-14 14								6.3 - 7.0 Ft. SAND (SP) . Grayish brown (10YR5/2), very fine-grained.	
SS	2.0	1.6	6-10-16 17								7.0 - 9.5 Ft. CLAY (CL) . Sandy in places.	
SS	2.0	1.3	10-13 23-45								7.0-8.2 Ft. Grayish brown (10YR5/2). 8.2-9.0 Ft. Strong brown (7.5YR4/6). 9.0-9.5 Ft. Weak red, bedrock residuum.	
											9.5 - 10 Ft. BEDROCK . Reddish brown, hard, New Brunswick sandstone.	Auger refusal at 10 Ft.
Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 11/6/87.												

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE	174 Essex St. (LODI)	HOLE NO.	1121R
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BEAM

GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
MAYWOOD INTERIM STORAGE SITE				FUSRAP- MISS		14501-138	1 of 1	MISS-406R					
SITE		COORDINATES			ANGLE FROM HORIZ.		BEARING						
MAYWOOD INTERIM STORAGE SITE		N	410	E	2480	90°	N/A						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH					
8-11-86	8-11-86	MORETRENCH	MOBILE B-33		6"	5.0 FT.	FT.	5.0 FT.					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A		N/A	N/A	N/A	36.4 FT.	4.5 FT./31.9 FT.		- FT./ - FT.					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
N/A		N/A			D. McGranz								
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE IN.	SAMPLER RECOVERY CORE RECOVERY	SAMPLE BLOWS "N"	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
Auger, 6"								31.4'	50'			0.0-5.0 FT. SILTY SAND (SM-SC). Color stratified. Fine-medium grained; soft; poorly consolidated (loose); slightly moist - saturated at 4.5 FT. 0.0-1.0 FT. Moderate brown (5YR 3/4); numerous grass roots and organics. 1.0-1.5 FT. Organic layer; black. 1.5-2.5 FT. Dark reddish brown (10R 3/4); fine grained. 2.5-5.0 FT. Dark yellowish brown (10YR 4/2). 5.0 FT. BOTTOM OF HOLE. Hole immediately refilled with auger spoils.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 4.5 FT. GROUND WATER LEVEL, 8/11/86.

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.

SS = SPLIT SPOON; ST = SHELBY TUBE; B = BENNISON; P = PITCHER; O = OTHER

SITE MAYWOOD INTERIM STORAGE SITE

HOLE NO. MISS-406R

BEH

GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
MAYWOOD INTERIM STORAGE SITE										N 455 E 2450	14501-138	1 of 1	MISS-407 R
DATE		DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
8-11-86		M. DRETTRECH		MOBILE R-33		6"	5.0 FT.	- FT.	5.0 FT.				
CORE RECOVERY (FT./4)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A		N/A	N/A	N/A	36.5 FT.	4.5 FT. / 32.0 FT.		- FT. / - FT.					
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
N/A			N/A			D. McGraw, O. McGraw							
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLER RECOVERY CORE RECOVERY	SAMPLER BLOWS "N"	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
								36.3	02			0.0-0.2 FT. GRAVEL (.5 IN.) 0.2-5.0 FT. SILTY SAND (SM) Color stratified; fine-medium grained; soft; poorly consolidated (loose); moist-saturated at 4.5 FT. 0.2-1.0 FT. Moderate brown (5 YR 3/4). 1.0-2.5 FT. Dark reddish brown (10 R 3/4). 2.5-5.0 FT. Dark yellowish brown (10 YR 4/2) with numerous pieces of dark reddish brown sandstone and rounded pebbles of various lithologies.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.
								31.5'	50			5.0 FT. BOTTOM OF HOLE. Hole immediately refilled with Auger spoils.	4.5 FT. GROUND WATER LEVEL, 8/11/86

Auger, 6"

SS = SPLIT SPOON; ST = SHELBY TUBE;

HOLE NO. MISS-407A

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.

BECHTEL

GEOLOGIC DRILL LOG			PROJECT	JOB NO.	SHEET NO.	HOLE NO.
			FUSRAP- MISS	14501-138	1 of 1	MISS-408
SITE		COORDINATES			ANGLE FROM HORIZ.	BEARING
MAYWOOD INTERIM STORAGE SITE		N 500 E 2485			90°	N/A
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)
8-11-86	8-11-86	McRETRENCH	ENVIRONMENTAL SERVICE MOBILE R-33	6"	65 FT.	2.5 FT.
TOTAL DEPTH		CORE RECOVERY (FT./%)		CORE BOXES		SAMPLES
9.0 FT.		N/A		N/A		N/A
EL. TOP OF CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK
N/A		36.8 FT.		5.0 FT./33.8 FT.		65 FT./30.3 FT.
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:		
N/A		N/A		O. McGrantz		

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE PLUS	SAMPLER RECOVERY CORE RECOVERY	SAMPLE BLOWS "N"	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN S.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
								36.6'	0.2			0.0-0.2 FT. GRAVEL. (2 IN.).	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.
								35.3'	1.5			0.2-1.5 FT SANDY SILT (ML). Moderate brown (5 YR 3/4); fine grained with numerous rounded gravel, woodchips and organics; soft; poorly consolidated (loose); moist.	
									5.0			1.5-6.5 FT. SILTY SAND (SM). Dark yellowish brown (10 YR 4/6) with Dark reddish brown (10 R 3/4) silty zones (decomposed sandstone gravel); moist - saturated at 5.0 FT.	
								30.3'	6.5			6.5-9.0 FT. DECOMPOSED SANDSTONE. Dark reddish brown; fine grained (argillaceous); soft-moderately hard; poorly-well cemented; totally decomposed-highly weathered; Drill spoils consist of silty sand (SM) and gravel; saturated.	
								27.8'	9.0			9.0 FT. BOTTOM OF HOLE. Hole was immediately refilled with the auger spoils.	SOFT. GROUND WATER LEVEL, 8/11/86

Auger, 6"

SS = SPLIT SPOON; ST = SHELBY TUBE; O = DENNISON; P = PITCHER; C = OTHER

SITE MAYWOOD INTERIM STORAGE SITE

HOLE NO. MISS-408R

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.

BECHTEL

GEOLOGIC DRILL LOG			PROJECT FUSRAP- MISS	JOB NO. 14501-138	SHEET NO. 1 of 1	HOLE NO. MISS 409 R
SITE MAYWOOD INTERIM STORAGE SITE		COORDINATES N 500 E 2400			ANGLE FROM HORIZ. 90°	BEARING N/A
BEGUN 8-11-86	COMPLETED 8-11-86	DRILLER MCRETRENCH	DRILL MAKE AND MODEL ENVIRONMENTAL SERVICE MOBILE R-33	HOLE SIZE 6"	OVERBURDEN (FT.) 5.0 FT.	ROCK (FT.) -
CORE RECOVERY (FT./%) N/A		CORE BOXES N/A	SAMPLES N/A	EL TOP OF CASING N/A	GROUND EL. 37.3 FT.	DEPTH/EL. GROUND WATER - FT./ - FT.
SAMPLE HAMMER WEIGHT/FALL N/A		CASING LEFT IN HOLE: DIA./LENGTH N/A		LOGGED BY: D. McGrantz		

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLER RECOVERY CORE RECOVERY	SAMPLE BLOWS "N"	PERCENTY CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN S.P.M.	P.S.I.	TIME IN MINUTES						
								37.0	0.3	4.4	0.0-0.3 FT. GRAVEL (.5 IN).	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 5.0 FT. NO GROUND WATER OBSERVED. 8/11/86.	
											0.3-5.0 FT. SILTY SAND (SM). Color stratified; fine grained; soft; poorly consolidated (loose); moist.		
											0.3-1.5 FT. Moderate brown (54R 3/4)		
											1.5-3.0 FT. Dark reddish brown (10R 3/4) with an occasional dusky yellow (546/4) silty zone and pieces of sandstone.		
								32.3'	5.0		3.0-3.5 FT. Dark yellowish brown (10YA 4/2).		
											3.5-5.0 FT. As 1.5-3.0 FT.		
											5.0 FT. BOTTOM OF HOLE. Hole immediately refilled with auger spoils,		

Auger, 6"

SS - SPLIT SPOON; ST - SHELBY TUBE; D - DENNISON; P - PITCHER; O - OTHER	SITE MAYWOOD INTERIM STORAGE SITE	HOLE NO. MISS-409 R
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* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.

BECHTEL

GEOLOGIC DRILL LOG			PROJECT FUSRAP- MISS	JOB NO. 14501-138	SHEET NO. 1 of 1	HOLE NO. MISS 410R
SITE MAYWOOD INTERIM STORAGE SITE		COORDINATES N 500 E 2300			ANGLE FROM HORIZ. 90°	BEARING N/A
DRILLER 8-11-86	COMPLETED 8-11-86	DRILLER MCRETRENCH	DRILL MAKE AND MODEL ENVIRONMENTAL SERVICE MOBILE B-33	HOLE SIZE 6"	OVERBURDEN (FT.) 5.0 FT.	ROCK (FT.) -
CORE RECOVERY (FT./%) N/A		CORE BOXES N/A	SAMPLES N/A	EL. TOP OF CASING N/A	GROUND EL. 37.1 FT.	DEPTH/EL. GROUND WATER - FT. / - FT.
SAMPLE HAMMER WEIGHT/FALL N/A		CASINGS LEFT IN HOLE: DIA./LENGTH N/A		LOGGED BY: O. McGraw		

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLER RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN S.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
								36.8'	93	AA	0.0-0.3 FT. ASPHALT.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.	
								32.1'	50		0.3-5.0 FT. SILTY SAND (SM). Color stratified; fine-medium grained; soft; poorly consolidated (loose); moist. 0.3-2.0 FT. Moderate brown with numerous pieces of 2 IN. gravel (subgrade); occasional organics. 2.0-3.0 FT. Dark reddish brown (10R 3/4) with numerous pieces of sandstone gravel 3.0-5.0 FT. Dark yellowish brown (10YR 4/2), mottled with zones of dark yellowish orange (10YR 6/6).		5.0 FT. NO GROUND WATER OBSERVED 8/11/86.
											5.0 FT. BOTTOM OF HOLE. Hole immediately refilled with auger spoils and resealed with asphalt.		

Auger, 6"

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE MAYWOOD INTERIM STORAGE SITE	HOLE NO. MISS-410R
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BECHTEL

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.							
MAYWOOD INTERIM STORAGE SITE				N 600 E 2303	14501-138	1 of 1	MISS-411R							
SITE		COORDINATES			ANGLE FROM HORIZ.		BEARING							
MAYWOOD INTERIM STORAGE SITE		N 600 E 2303			90°		N/A							
REQUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH							
8-11-86	8-11-86	McRETRANCH	MOBILE B-33	6"	0.3 FT.	0.7 FT.	1.0 FT.							
CORE RECOVERY (PT.%)		CORE BOXES	SAMPLES	EL TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK							
N/A		N/A	N/A	N/A	37.7 FT.	- FT./ - FT.	0.3 FT./ 37.4 FT.							
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:									
N/A		N/A			O. McGraw O. McGraw									
SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE	LENGTH CORE IN	SAMPLER RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN S.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
Auger, 6"									37.4'	0.0	4.4	0.0-0.3 FT. ASPHALT.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.	
								36.7'	1.0		6.3-1.0 FT. DECOMPOSED SANDSTONE. Dark reddish brown (10 R 3/4); fine grained (argillaceous); soft-moderately hard; poorly-well cemented; totally decomposed - highly weathered; Drill spoils consist of silty sand (sm) and gravel; dry.			
												1.0 FT. BOTTOM OF HOLE	1.0 FT. NO GROUND WATER OBSERVED 8/11/86; REFUSAL.	
													Hole was immediately refilled with auger spoils and resealed with asphalt.	

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.

SS = SPLIT SPOON; ST = SHELLEY TUBE; D = DENNISON; P = PITCHER; O = OTHER

SITE MAYWOOD INTERIM STORAGE SITE

HOLE NO. MISS-411R

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GEOLOGIC DRILL LOG PROJECT FUSRAP- MISS - JOB NO. 14501-138 SHEET NO. 1 of 1 HOLE NO. MISS 412 R

SITE MAYWOOD INTERIM STORAGE SITE COORDINATES N 600 E 2400 ANGLE FROM HORIZ. 90° BEARING N/A-

BEGIN -11-86 COMPLETED 8-11-86 DRILLER MDRETTRENCH DRILL MAKE AND MODEL ENVIRONMENTAL SERVICE MOBILE R-33 HOLE SIZE 6" OVERBURDEN (FT.) 6.0 FT. ROCK (FT.) 1.5 FT. TOTAL DEPTH 7.5 FT.

CORE RECOVERY (PT.%) N/A CORE BOXES N/A SAMPLES N/A EL TOP OF CASING N/A GROUND EL. 37.7 FT. DEPTH/EL. GROUND WATER 5.5 FT. / 32.2 FT. DEPTH/EL. TOP OF ROCK 6.0 FT. / 31.7 FT.

SAMPLE HAMMER WEIGHT/FALL N/A CASING LEFT IN HOLE: DIA./LENGTH N/A LOGGED BY: O. McGrantz O. McAvoy

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLER RECOVERY	SAMPLER BLOWS "N"	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
								37.2'	-0.5'	A	0.0-0.5 FT. GRAVEL (5IN)	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 5.5 FT. GROUND WATER LEVEL, 8/11/86. 7.5 FT. REFILL.	
											0.5-6.0 FT. SILTY SAND (SM-SC). Color stratified; fine-medium grained; soft; poorly consolidated (loose) with one denser clayey zone (3.0-4.0 FT), moist-saturated at 5.5 FT.		
											0.5-1.5 FT. Moderate brown (5 YR 3/4); fine grained. 1.5-2.0 FT. Black; speckled with a white silicious material. 2.0-3.0 FT. Dark yellowish orange (10 YR 6/6), r		
											3.0-4.0 FT. Clayey layer; Alternating .25 IN lenses of pale green (5G 7/2), dark yellowish orange, and dark reddish brown (10 R 3/4).		
								31.7'	-6.0'				
											4.0-6.0 FT. Dark yellowish brown.		
								30.2'	-7.5'			6.0-7.5 FT. DECOMPOSED SANDSTONE, Dark reddish brown; fine grained (argillaceous), soft-moderately hard; poorly-well cemented; totally decomposed-highly weathered; Drill spoils consist of silty sand (SM) and gravel; saturated.	
											7.5 FT. BOTTOM OF HOLE. Hole was immediately refilled with auger spoils.	* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.	

Auger, 6"

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE MAYWOOD INTERIM STORAGE SITE HOLE NO. MISS-412R
D = DENNISON; P = PITCHER; O = OTHER

BECHTEL

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.	
MAYWOOD INTERIM STORAGE SITE				FUSRAP- MISS -	14501-138	1 of 1	MISS413 R	
COORDINATES		ANGLE FROM HORIZ.		BEARING				
N 620 E 2490		90°		N/A				
BEGIN	COMPLETED	DRILLER	MOORE TRENCH	DRILL MAKE AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH
8-11-86	8-11-86	ENVIRONMENTAL SERVICE	MOBILE R-33	6"	3.0 FT.	- FT.	- FT.	5.0 FT.
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK		
N/A	N/A	N/A	N/A	37.5 FT.	- FT./ - FT.	- FT./ - FT.		
SAMPLE HAMMER WEIGHT/FALL	CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:					
N/A	N/A		O. McGraw O. McGraw					

SAMPLER TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLER RECOVERY CORE RECOVERY	SAMPLE BLOWS "N"	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
								32.5'	5.0'			<p>0.0-5.0 FT. SILTY SAND (SM). Color stratified; fine-medium grained; soft; poorly consolidated (loose) moist.</p> <p>0.0-1.0 FT. moderate brown (5 YR 3/4).</p> <p>1.0-3.0 FT. Dark yellowish brown (10 YR 4/2).</p> <p>3.0-5.0 FT. Dark reddish brown (10 R 3/4); numerous pieces of sandstone gravel; decomposed sandstone?</p> <p>5.0 FT. BOTTOM OF HOLE. Hole immediately refilled with auger spoils.</p>	<p>SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.</p> <p>5.0 FT. NO GROUND WATER OBSERVED 9/11/86</p>

Auger, 6"

SS = SPLIT SPOON; ST = SHELBY TUBE; C = DENNISON; P = PITCHER; O = OTHER

SITE MAYWOOD INTERIM STORAGE

HOLE NO. MISS. 1117 P

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION.

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP	14501-138	1 OF 1	1131R				
SITE				COORDINATES		ANGLE FROM HORIZ BEARING					
80 Industrial Rd. (LODI)				N 1.916 E 1.886		Vertical -----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-10-87	11-10-87	E.D.I.	MOBILE B-57		6.5"	23.0		23.0			
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
12.4/78		8									
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs./ 30 in.			NONE		D. Harnish JPH						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.3	1-20-15 10							0.0 - 3.8 Ft. <u>SILT and Gravelly SILT FILL (ML, GM-ML).</u>	Borehole advanced 0-23 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	1.9	5-8-7 10						0.0-0.5 Ft. Topsoil, dark brown (10YR3/3), organic.		
SS	2.0	1.2	5-8-8-8						0.5-1.1 Ft. Gravel, dusky red, broken Brunswick sandstone.		
SS	2.0	2.0	7-4-4-3						1.1-2.6 Ft. Gravelly silt, dark brown (10YR4/3), soft reddish brown silt pebbles, dusky red Brunswick sandstone gravel toward base.		
SS	2.0	1.8	4-12 10-7						2.6-2.9 Ft. Silt, black.		
SS	2.0	1.0	3-14 11-12						2.9-3.1 Ft. Silt, black interlayered with dark brown silt.		
SS	2.0	1.2	3-4-7-7						3.1-3.8 Ft. Gravelly silt, grayish brown with soft yellowish brown, green and reddish brown silt pebbles.		
SS	2.0	2.0	6-7-18 20						3.8 - 4.7 Ft. <u>CLAY (CL).</u> Reddish brown (5YR5/3), base has plant fragments and small silt pieces.		
									4.7 - 7.1 Ft. <u>SAND (SP).</u> Dark gray (10YR4/1), fine-grained, minor small round gravel.		
									7.1 - 8.4 Ft. <u>ORGANIC SILT (OL).</u> Black, soft, organic.		
									7.5-7.8 Ft. Silty sand, weak red, medium-grained, wet.		
									7.8-8.4 Ft. Sludge, black, organic.		
									8.4 - 10.7 Ft. <u>CLAY (CL).</u> Reddish brown (2.5YR4/4) and grayish brown (10YR5/2) finely interbedded; yellowish brown clay interbedded toward base.		
									10.7 - 23.0 Ft. <u>SAND (SP).</u> Reddish brown (5YR4/3), fine- to coarse-grained, some round gravel, wet.		
									10.7-12.5 Ft. Fine-grained.		
									12.5-12.8 Ft. Medium-grained.		
									12.8-13.0 Ft. Coarse-grained, some round gravel.		
									13.0-13.2 Ft. Brownish yellow with low density plant material mixed in.		
									14.0-15.5 Ft. Reddish brown, medium-grained.		
									15.5-16.0 Ft. Coarse-grained, gravelly, channel sand.		
									18.0 Ft. Gravelly.		
Bottom of borehole at 23.0 ft. Borehole backfilled with spoils, 11/10/87.											
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE D = DENNISON; P = PITCHER; O = OTHER											
80 Industrial Rd. (LODI)											
HOLE NO. 1131R											

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				COORDINATES	FUSRAP	14501-138 1 OF 1	1136R				
BEGUN		COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-16-87		11-16-87	E.D.I.	MOBILE B-57	6.5"	10.0		10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
5.9/66			5								
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs./ 30 in.			NONE		D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.8	1-14 17-9							0.0 - 6.8 Ft. Gravelly SILT and SILT FILL (GM-ML, OL).	Drilled with hollow stem auger, 3.5" ID/6.5" OD.
SS	1.0	1.0	8-35 50/0"							0.0-6.0 Ft. Gravelly silt, very dusky red (2.5YR2.5/2), some very fine- and coarse-grained sand, Brunswick sandstone and basalt gravel.	Boring geophysically logged by Eberline Analytical.
SS	2.0	0.3	4-6-3-3							3.0-3.5 Ft. Rock; glacial erratic?	Drilled through rock 3-4 ft.
SS	2.0	1.3	7-11 17-18							6.0-6.8 Ft. Silt, black, soft, bluish gray clay mixed in at base.	Water rose to 6.0 ft. in 20 min. after hole completed.
SS	2.0	1.5	14-25 25-25							6.8 - 10.0 Ft. Silty CLAY (CL-ML). Weak red (2.5YR5/2) varying to dusky red in places, minor finely interbedded very fine-grained sand, beds 1 cm thick.	ENMET alarm >300 ppm, 5 bars LEL, 6 in. down 10 ft. hole.
										8.5-8.9 Ft. Sand, dark reddish gray (5YR4/2), very fine-grained.	
										8.9-10.0 Ft. Dark reddish gray (5YR4/2).	
										9.5 Ft. Thin bed of medium-grained sand.	
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/16/87.											
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER										SITE	80 Industrial Rd. (LODI)
										HOLE NO.	1136R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
80 Industrial Rd. (LODI)				COORDINATES	FUSRAP	14501-138 1 OF 1	1137R					
SITE		COORDINATES			ANGLE FROM HORIZ			BEARING				
80 Industrial Rd. (LODI)		N 1.860 E 1.891			Vertical			-----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
11-16-87	11-16-87	E.D.I.	MOBILE B-57	6.5"	10.0		10.0					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
5.8/58			5									
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs./ 30 in.		NONE		D. Harnish <i>DH</i>								
SAMP. TYPE AND DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.0	1-5-17-8								0.0 - 4.7 Ft. Gravelly SAND and SAND FILL (SW-SP).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 2-4 Ft. Grab-sampled from auger flight.
SS	2.0	0.2	4-4-7-13							0.0-4.3 Ft. Gravelly sand, dark reddish brown (2.5YR2.5/4), fine-grained, abundant broken pieces of hard Brunswick sandstone.		
SS	2.0	1.8	8-2-2-6							4.3-4.6 Ft. Sand, yellowish brown (10YR5/6), medium- to fine-grained, loose.		
SS	2.0	1.3	7-18 19-13							4.6-4.7 Ft. Silt, black, laminated, soft.		
SS	2.0	1.5	4-15 12-17							4.7 - 6.4 Ft. SILT (OL). Grayish brown (10YR5/2), soft, damp, plant fragments with iron-oxide reaction halos around them.		
										6.4 - 10.0 Ft. SILT (ML). Dark reddish gray (5YR4/2), some thin sand interbeds, very fine-grained, yellowish brown.		
										8.0-10.0 Ft. Dark brown (7.5YR4/2) with slight reddish tint.		
Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 11/16/87.												
											Description and classification of soils by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1137R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP	14501-138	1 OF 1	1138R				
SITE			COORDINATES			ANGLE FROM HORIZ BEARING					
80 Industrial Rd. (LODI)			N 1.877 E 1.775			Vertical ---					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL				
11-16-87	11-16-87	E.D.I.	MOBILE B-57	6.5"	10.0		10.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES/EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
6.8/68			5								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs./ 30 in.		NONE		D. Harnish <i>972</i>							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.5	1-3-11 20						0.0 - 3.5 Ft. <u>Gravelly SILT and SILT FILL</u> (ML-GM, OL).	Borehole advanced 0-10 Ft. using 6.5 o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS	2.0	1.8	6-6-6-3					0.0 - 2.8 Ft. Gravelly silt, dusky red (5R5/3), minor fine-grained sand and black silt interbeds; gravel is Brunswick sandstone.			
SS	2.0	1.3	1-3-11 13				5	2.8-3.3 Ft. Silt matrix is brown (10YR4/3).			
SS	2.0	0.8	13-12 10-9					3.3-3.5 Ft. Silt, black, soft.			
SS	2.0	1.4	5-6-10 12					3.5 - 5.0 Ft. <u>SILT (ML)</u> . Olive gray (5Y5/2) to gray (5Y5/1), black plant fragments and minor iron-oxide mottling.			
							10	5.0 - 8.0 Ft. <u>SAND (SP)</u> . Dark grayish brown (2.5Y4/2), very fine-grained, saturated.			
								8.0 - 10.0 Ft. <u>CLAY and SILT (CL-ML)</u> . Weak red (5R5/3), and reddish gray (10R5/1), interbedded as 1 cm layers.			
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/16/87.											

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1138R

GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
				FUSRAP		14501-138		1 OF 1		1139R	
SITE				COORDINATES				ANGLE FROM HORIZ BEARING			
80 Industrial Rd. (LODI)				N 1.881 E 1.688				Vertical -----			
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN	
01-16-87		11-16-87		E.D.I.		MOBILE B-57		6.5"		10.0	
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES		SEL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK	
8.7/87		5									
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:			
140 lbs./ 30 in.				NONE				D. Harnish <i>[Signature]</i>			
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	3.0	1.7	1-4-4-8						0.0 - 3.8 Ft. Gravelly SILT and SILT FILL (ML-GM, ML).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS	2.0	1.8	3-3-2-3						0.0-2.7 Ft. Gravelly silt, very dusky red (7.5R2.5/2), coarse-grained gravel of Brunswick sandstone, soft, damp.		
SS	2.0	1.1	3-9-17 20						2.7-3.4 Ft. Silt, mixed grayish brown (10YR5/2) and weak red, root pieces.		
SS	2.0	1.4	11-18 21-20						3.4-3.8 Ft. Silt, black, organic. FILL?		
SS	2.0	1.7	9-12 10-13						3.8 - 4.7 Ft. Silty SAND (SM). Gray (10YR5/1) mottled with grayish brown and greenish gray, fine-grained.		
									4.7 - 8.0 Ft. SAND (SP). Brown (10YR5/3), very fine-grained, few thin interbeds of reddish brown silt toward base.		
									8.0 - 10.0 Ft. SILT and CLAY (ML-CL). Reddish gray (5YR5/2) becoming brown (7.5YR 5/4 downward, finely interbedded).		
Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 11/16/87.											
Description and classification of soils by visual examination.											

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1139R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP	14501-138	1 OF 1	1141R					
SITE			COORDINATES		ANGLE FROM HORIZ/BEARING							
80 Industrial Rd. (LODI)			N 1.925 E 1.729		Vertical -----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL D					
11-17-87	11-17-87	E.D.I.	MOBILE B-57	6.5"	10.0		10.0					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
7.4/74			5									
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs./ 30 in.		NONE		D. Harnish <i>[Signature]</i>								
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.0	1-15-2 6								0.0 - 3.3 Ft. Gravelly SILT and SILT FILL (GM-ML, ML).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	1.8	4-2-4-5							0.0-2.0 Ft. Gravelly silt, dark brown (10YR3/3) topsoil mixed with yellowish brown silty sand, gravel is dusky red Brunswick shale.		
SS	2.0	1.9	3-15 30-25					5		2.0-2.4 Ft. Gravelly silt, very dusky red (7.5R2.5/2) decomposed Brunswick shale and sandstone with angular sandstone and shale gravel.		
SS	2.0	1.3	13-24 25-24							2.4-2.6 Ft. Silt, yellowish brown silt with 0.1 Ft. thick layer of yellowish white silt.		
SS	2.0	1.4	11-10 11-16					10		2.6-3.3 Ft. Silt, mixed very dark brown and grayish brown, root cast, iron-oxide stained, disturbed material.		
										3.3 - 4.9 Ft. SILT (ML). Light gray (10YR7/2), abundant small root holes and finely disseminated iron-oxide stain.	10.0 Ft. ENMET reads 100 ppm, 2 bar LEL, 6" down on hole.	
										4.0-4.9 Ft. Light brownish gray (10YR6/2), some thin beds of gray clay.		
										4.9 - 6.9 Ft. SAND (SP). Yellowish brown (10YR5/4) becoming brown (7.5YR5/4) downward, fine- to very fine-grained.		
										6.9 - 10.0 Ft. SAND and SILT (SP, ML). Fine-grained, finely interbedded, wet.		
										6.9-8.0 Ft. Brown (7.5YR5/4). 8.0-10.0 Ft. Dark reddish gray (5YR4/2).		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/17/87.											Description and classification of soils by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1141R

GEOLOGIC DRILL LOG	PROJECT FUSRAP	JOB NO. 14501-138	SHEET NO. 1 OF 1	HOLE NO. 1143R
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SITE 80 Industrial Rd. (LODI)	COORDINATES N 1.923 E 1.535	ANGLE FROM HORIZ BEARING Vertical
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BEGUN 11-17-87	COMPLETED 11-17-87	DRILLER E.D.I.	DRILL MAKE AND MODEL MOBILE B-57	SIZE 6.5"	OVERBURDEN 12.2	ROCK (FT.) 1.8	TOTAL DEPTH 14.0
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CORE RECOVERY (FT./%) 11.0/79	CORE BOXES/SAMPLES 7	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK 12.2/
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SAMPLE HAMMER WEIGHT/FALL 140 lbs./ 30 in.	CASING LEFT IN HOLE: DIA./LENGTH NONE	LOGGED BY: D. Harnish
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SAMP. TYPE AND DIAM.	SAMP. ADU. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "IN" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.3	1-4-4-4								0.0 - 4.8 Ft. SAND and SILT FILL (SP, ML) .	Borehole advanced 0-14 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	2.0	2-2-4-12							0.0-0.7 Ft. Silt, dark brown, some dusky red Brunswick gravel.		
SS	2.0	1.5	6-15 10-13							0.7-4.8 Ft. Sand, yellowish brown (10YR5/6) with minor darker iron-oxide stain, fine-grained, loose.		
SS	2.0	1.5	7-20-20 20							4.8 - 9.7 Ft. SAND and SILT (SP, ML) . Finely interbedded with 1-3 cm layers, some clay toward top.		
SS	2.0	1.9	12-13 17-20							4.8-6.7 Ft. Strong brown (7.5YR4/6). 6.7-8.0 Ft. Silt, reddish gray (5YR5/2). 8.0-9.7 Ft. Brown (10YR4/3) silt, sand is weak red (7.5R5/2).		
SS	2.0	1.2	2-2-7-9							9.7 - 12.2 Ft. SAND (SM) . Brown (10YR4/3), some gravel, silty, wet.		
SS	2.0	1.6	10-31 24-34							9.7-10.6 Ft. Medium- to coarse-grained, round grains, some subrounded gravel. 10.6-12.2 Ft. Very fine-grained.		
											12.2 - 14.0 Ft. WEATHERED BEDROCK . Dusky red, silty gravel, Brunswick formation, gets harder downward.	13.0 Ft. Top of weathered bedrock.
											Bottom of borehole at 14.0 ft. Borehole backfilled with spoils, 11/17/87.	

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE 80 Industrial Rd. (LODI)	HOLE NO. 1143R
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GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501-138	SHEET NO.	1 OF 1	HOLE NO.	1144R
SITE			COORDINATES			ANGLE FROM HORIZ BEARING				
80 Industrial Rd. (LODI)			N 1,642 E 1,522			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
11-17-87	11-17-87	E.D.I.	MOBILE B-57		6.5"	18.5	1.5	20.		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
11.4/71			8					18.5/		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs./ 30 in.		NONE			D. Harnish <i>[Signature]</i>					

SAMP. TYPE AND DIAM.	SAMP. ADU. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.4	1-1-9-9								0.0 - 5.0 Ft. Gravelly SILT GRAVEL and SILT (ML-GM, GP, OL).	Borehole advanced 0-20 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 4-6 Ft. Grab-sampled from auger flight.
SS	2.0	1.7	9-8-8 14							0.0-1.0 Ft. Silt, dark brown (10YR3/3), humus topsoil.		
SS	2.0	0.2	11-10-3 3							1.0-2.7 Ft. Gravelly silt, dark reddish brown (2.5YR2.5/4), pieces of wood, Brunswick sandstone.		
SS	2.0	1.7	2-4-1-1							2.7-3.9 Ft. Silt, black, damp, homogeneous, organic.		
SS	2.0	1.8	5-12 15-27							3.9-4.1 Ft. Gray, fine-grained loose sand.		
SS	2.0	1.7	7-24 27-42							4.1-5.0 Ft. Gravel, broken pieces of Brunswick sandstone.		
SS	2.0	1.5	8-21 24-18							5.0 - 7.8 Ft. Silty SAND (SM). Black to dark gray and gray, fine-grained, saturated.		
SS	2.0	1.4	4-12 15-15							6.7-7.8 Ft. Finely interbedded.		
										7.8 - 8.9 Ft. SAND. Greenish gray (5Y5/1), fine-grained, saturated.		
										8.9 - 14.5 Ft. SILT and CLAY (ML-CL). Weak red (2.5YR4/2), laminated with 3-5 mm layers.		
										14.5 - 18.0 Ft. SAND and SILT (SP, ML). Dark yellowish brown (10YR4/4), fine- to medium-grained, some coarse-grained sand, thin interbeds of sand of silt.		
										18.0 - 20.0 Ft. WEATHERED BEDROCK.	18.0 Ft. Top of weathered bedrock.	
										Bottom of borehole at 20.0 ft. Borehole backfilled with spoils, 11/17/87.	Liquified sands cause rotary bit to get stuck. Water coming out of hole. Pulled bit out and augered to 20.0 Ft.	

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE	80 Industrial Rd. (LODI)	HOLE NO.	1144R
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GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.		
80 Industrial Rd. (LODI)				N 1,750 E 1,520		14501-138 1 OF 1		1 OF 1		1145R		
SITE				COORDINATES				ANGLE FROM HORIZ BEARING				
80 Industrial Rd. (LODI)				N 1,750 E 1,520				Vertical				
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN		
11-17-87		11-17-87		E.D.I.		MOBILE B-57		6.5"		12.0		
CORE RECOVERY (FT./%)			CORE BOXES		SAMPLES/EL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK	
9.8/82			6									
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:				
140 lbs./ 30 in.				NONE				D. Harnish				
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.3	1-1-4-8								0.0 - 2.4 Ft. <u>Gravelly SILT FILL</u> (ML-GM). Dark brown (10YR3/3) to black, organic with plant fragments, Brunswick sandstone gravel.	Borehole advanced 0-12 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. Hole caved in to 3.0 Ft. deep. Cleaned out twice to 6.0 Ft. but hole would not remain open.
SS	2.0	1.8	8-7-15 20								2.4 - 4.0 Ft. <u>SAND (FILL?)</u> (SP). Brown (10YR4/3), fine-grained, subangular grains, damp.	
SS	2.0	1.4	10-11 12-8								4.0 - 9.0 Ft. <u>SAND</u> (SM). Dark grayish brown (10YR4/2), silty.	
SS	2.0	2.0	9-12 10-15									
SS	2.0	2.0	4-7-15 18									
SS	2.0	1.3	3-6-7 12								9.0 - 12.0 Ft. <u>SAND and SILT</u> (SP, ML). Brown (10YR4/3), very fine-grained, interbedded with 5-10 mm layers, saturated.	
											Bottom of borehole at 12.0 ft. Borehole backfilled with spoils, 11/17/87.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO. 1145R

GEOLOGIC DRILL LOG				PROJECT FUSRAP		JOB NO. 14501-138	SHEET NO. 1 OF 1	HOLE NO. 1146R			
SITE 80 Industrial Rd. (LODI)			COORDINATES N 1.793 E 1.806			ANGLE FROM HORIZ BEARING Vertical					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL			
11-18-87	11-18-87	E.D.I.	MOBILE B-57		6.5"	12.0		12.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
4.8/40			6								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs./ 30 in.		NONE			D. Harnish <i>DPZ</i>						
SAMP. TYPE AND DIAM.	SAMP. ADU. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	0.3	3-13 13-13						0.0 - 7.5 Ft. <u>Silty GRAVEL</u> (GW).	Borehole advanced 0-12 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 0-2 Ft. Grab sample from auger flights. 6-8 Ft. Grab sample from auger flights. 8-10 Ft. Sample has chemical odor; green tint. 12.0 Ft. ENM reads 200 ppm α - β in open hole. 10-12 Ft. Sample is saturated.	
SS	2.0	0.6	3-13 13-10					0.0-2.0 Ft. Very dusky red Brunswick sandstone gravel with some black coal ash (?). 2.0-6.0 Ft. Brunswick sandstone gravel with mixed silts: very dusky red, dark gray, dusky red.			
SS	2.0	1.3	7-6-10 12				5		6.0-7.5 Ft. Basalt gravel.		
SS	2.0	0.1	4-4-4 11						7.5 - 10.0 Ft. <u>SAND</u> (SP). Greenish gray, very fine- and medium-grained interbedded.		
SS	2.0	1.2	13-14-3 8				10		10.0 - 12.0 Ft. <u>SILT</u> and <u>SAND</u> (ML, SP). Silt is gray and dark olive gray (5Y3/2); sand is light greenish gray, fine- and medium-grained. Bottom is silt, brown.		
SS	2.0	1.3	5-2-3 14						Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 11/18/87.		
Description and classification of soils by visual examination.											

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER

SITE

80 Industrial Rd. (LODI)

HOLE NO.
1146R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				N 1,791 E 1,843	14501-138	1 OF 1	1147R				
BEGUN		COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-18-87		11-18-87	E.D.I.	MOBILE B-57	6.5"	10.0		10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
6.4/64			5								
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs./ 30 in.			NONE		D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	0.7	7-18 16-13						0.0 - 6.0 Ft. Gravelly SILT and Silty GRAVEL FILL (GW-ML, GW).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS	2.0	1.8	8-12 8-11						0.0-4.0 Ft. Silty gravel, dusky red Brunswick sandstone, broken angular pieces, some basalt gravel, pieces of glass; silt is grayish brown.		
SS	2.0	1.0	9-9-8 10				5		4.0-6.0 Ft. Gravelly silt, grayish brown (10YR5/2), pieces of Brunswick sandstone.		
SS	2.0	1.1	2-1-1-2						6.0 - 6.4 Ft. SAND (SP). Olive gray (5Y6/2), fine-grained.		
SS	2.0	1.8	10-14 8-5				10		6.4 - 7.8 Ft. SILT. Black, organic with some plant material.		
									7.8 - 10.0 Ft. Silty SAND (SM). Light greenish gray (5Y7/2), fine- and medium-grained, minor clay and silt interbedded, wet.	8-10 Ft. Sample has chemical odor. 10.0 Ft. ENMET reads 200 ppm at 6" in open hole.	
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/18/87.										No groundwater observed.	
										Description and classification of soils by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE;
O = DENNISON; P = PITCHER; O = OTHER

SITE

80 Industrial Rd. (LODI)

HOLE NO.

1147R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

4501-138 1 OF 1 1148R

SITE

COORDINATES

80 Industrial Rd. (LODI)

N 1.849 E 1.756

ANGLE FROM HORIZ BEARING

Vertical --

BEGUN

COMPLETED

DRILLER

DRILL MAKE AND MODEL

SIZE

OVERBURDEN

ROCK (FT.)

TOTAL DEP

11-18-87 11-18-87

E.D.J.

MOBILE B-57

6.5"

8.0

8.0

CORE RECOVERY (FT./%)

CORE BOXES

SAMPLES

EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

2.4/30

4

SAMPLE HAMMER WEIGHT/FALL

CASING LEFT IN HOLE: DIA./LENGTH

LOGGED BY:

140 lbs./ 30 in.

NONE

D. Harnish

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	0.2	1-3-8 24								0.0 - 5.8 Ft. <u>Gravelly SILT and SILT FILL</u> (GW, ML).	Borehole advanced 0-10 Ft. using 6.5 i o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc 0-2 Ft. Grab-sampled from auger flight.
SS	2.0	1.1	6-10 15-10							0.0-4.0 Ft. Gravelly silt, dusky red (2.5YR3/2), some sand, broken gravel of Brunswick sandstone.		
SS	2.0	1.1	5-3-2-4							4.0-5.8 Ft. Silt, grayish brown (10YR5/2), disturbed.		
SS	2.0	0.0	9-26 30-27							5.8 - 8.0 Ft. <u>Silty SAND (SM)</u> . Greenish gray and dark olive gray (5Y3/2), fine-grained.		
											7.1-8.0 Ft. Grayish brown (10YR5/2) becoming yellowish brown downward.	
Bottom of borehole at 8.0 ft. Borehole backfilled with spoils, 11/18/87.												

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO. 1148R

GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501-138	SHEET NO.	1 OF 1	HOLE NO.	1156
SITE			COORDINATES			ANGLE FROM HORIZ BEARING				
80 Industrial Rd. (LODI)			N 1,651 E 1,612			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DE		
11-20-87	11-20-87	E.D.I.	MOBILE B-57		6.5"	8.0		8.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
5.2/87			3							
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs./ 30 in.			NONE			D. Harnish <i>GH</i>				

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS WATER RETURN CHARACTER OF DRILLING, ET
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
											0.0 - 2.2 Ft. <u>Silty SAND (FILL?)</u> (SM). Olive gray (5Y4/2) with some black silt, mushy, wet.	Borehole advance 0-8 Ft. using 6.5 o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, I 0-2 Ft. Grab sar from auger flight. 0-0.5 Ft. is load; dock cement slab Olive color at 2.2 Ft. may be petroleum-relate
SS	2.0	1.8	4-12-15 18								2.2 - 8.0 Ft. <u>SILT and SAND</u> (ML, SP). Fine- to very fine-grained, 3-5 mm beds interlayered.	
SS	2.0	1.6	10-13 14-15								2.2-2.9 Ft. Olive (5Y5/4).	
SS	2.0	1.8	10-15 12-20								2.9-4.0 ft. Brown (7.5YR4/2) with some olive layers.	
											4.0-6.0 Ft. Silt, brown.	
											6.0-.08 Ft. Silt, dark reddish gray (5YR4/2), faintly laminated.	
											Bottom of borehole at 8.0 Ft. Borehole backfilled with spoils, 11/20/87.	

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE	80 Industrial Rd. (LODI)	HOLE NO.	1156R
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GEOLOGIC DRILL LOG				PROJECT FUSRAP		JOB NO. 4501-138	SHEET NO. 1 OF 1	HOLE NO. 1157R				
SITE 80 Industrial Rd. (LODI)			COORDINATES N 1,791 E 1,751			ANGLE FROM HORIZ BEARING Vertical						
BEGUN 11-20-87	COMPLETED 11-20-87	DRILLER E.D.I.	DRILL MAKE AND MODEL MOBILE B-57		SIZE 6.5"	OVERBURDEN 12.0	ROCK (FT.)	TOTAL DEPTH 12.0				
CORE RECOVERY (FT./%) 7.4/62		CORE BOXES 6	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
SAMPLE HAMMER WEIGHT/FALL 140 lbs./ 30 in.		CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: D. Harnish							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	0.7	3-6-6-8								0.0 - 7.5 Ft. <u>Silty GRAVEL, SILT, Gravelly SILT FILL</u> (GM, ML, ML-GM).	Borehole advanced 0-12 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 0-2 Ft. Grab sample from auger flights. 6.3-7.0 Ft. HP-260 gives elevated reading for sample. 5.0 Ft. Groundwater observed.
SS	2.0	1.1	4-5-20 16							0.0-2.8 Ft. Silt, mixed dusky red, grayish brown, minor black.		
SS	2.0	1.5	8-9-7-8							2.8-4.0 Ft. Silty gravel, cement, Brunswick sandstone, black rock.		
										3.0 Ft. Some white powder.		
SS	2.0	1.6	4-3-5 11							4.0-6.3 Ft. Gravelly silt, mixed very dusky red (SR2.5/2), gray, black; gravel is Brunswick sandstone, granite, schist.		
SS	2.0	1.2	11-14 14-12							6.3-7.3 Ft. Black silt, with gray sand 6.4-6.5 Ft.		
SS	2.0	1.3	9-14 15-22							7.3-7.5 Ft. Sand, dark greenish gray, fine-grained.		
										7.5 - 12.0 Ft. <u>SILT and Silty SAND</u> (ML, SM). Weak red (SR5/3), more gray toward top, some brown silt beds, thinly interbedded with sand present as 0.1-0.2 Ft. thick beds.		
Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 11/20/87.												
Description and classification of soils by visual examination.												

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1157R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				FUSRAP	14501-138	1 OF 1	1158R				
SITE		COORDINATES			ANGLE FROM HORIZ BEARING						
80 Industrial Rd. (LODI)		N 1.591 E 1.620			Vertical -----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-20-87	11-20-87	E.D.I.	MOBILE B-57	6.5"	8.0		8.0				
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
3.0/38		4									
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs./ 30 in.		NONE		D. Harnish <i>[Signature]</i>							
SAMP. TYPE AND DIAM.	SAMP. LEN. CORE	SAMP. REC. CORE	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.5	2-5-8 12							0.0 - 2.6 Ft. <u>SILT and Sandy SILT FILL</u> (GM-ML, SM-ML).	Borehole advanced 0-8 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	1.5	5-13 17-14						0.0-0.2 Ft. Silt, yellowish brown (10YR4/6), dusky red gravelly silt on top.		
SS	2.0		10-15 21-20						0.2-2.6 Ft. Sandy silt, reddish brown (5YR5/3) mixed with yellowish brown sand, light greenish gray silt, abundant iron-oxide mottling.		
SS	2.0		19-16 19-18						2.6 - 8.0 Ft. <u>SAND and SILT</u> (SM, SP, ML). Interbedded, sand is dark brown, silt is reddish brown to reddish gray.		
									2.6-3.1 Ft. Silt, reddish brown (5YR5/4).		
									3.1-4.2 Ft. Sand, dark brown (10YR3/3), fine-grained.		
									4.2-6.0 Ft. Silt, reddish gray (5YR5/2), beds 3-10 mm thick.		
									6.0-7.4 Ft. Sand, dark brown (10YR4/3), some silt, subangular, damp.		
									7.4-8.0 Ft. Silt.		
Bottom of borehole at 8.0 Ft. Borehole backfilled with spoils, 11/20/87.											
Description and classification of soils by visual examination.											
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER							SITE			HOLE NO.	
80 Industrial Rd. (LODI)							1158R				

GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
				FUSRAP		14501-138	1 OF 1	1159R			
SITE			COORDINATES			ANGLE FROM HORIZ BEARING					
80 Industrial Rd. (LODI)			N 1.654 E 1.561			Vertical -----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-20-87	11-20-87	E.D.I.	MOBILE B-57		6.5"	12.0		12.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
8.6/72			6								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs./ 30 in.		NONE			D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN IN	G.P.H	PRESS. P.S.I.					
SS	2.0	1.7	3-6-6-4							0.0 - 1.3 Ft. <u>Sandy SILT (FILL?)</u> (SM-ML). Dark grayish brown on top to dark gray (10YR3/1), soft.	Borehole advanced 0-12 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 1.3-2.4 Ft. Strong diesel odor to silt. ENMET reads 300+ ppm.
SS	2.0	1.8	3-6-6-7						1.3 - 2.4 Ft. <u>SILT (FILL?)</u> (OL). Black.		
SS	2.0	1.8	3-4-5 12						2.4 - 4.3 Ft. <u>SILT (ML)</u> . Grayish green, minor iron-oxide mottling.		
SS	2.0	1.3	17-15 24-24						4.3 - 12.0 Ft. <u>SAND and SILT</u> (SP, ML). Gray and grayish brown, fine- to very fine-grained, interbedded.		
SS	2.0	1.8	6-6-7-8						4.3-4.7 Ft. Sand, very dark gray, some silt, wet.		
SS	2.0	0.2	11-16 23-28						4.7-6.2 Ft. Sand and silt, gray.		
									6.2-6.7 Ft. Sand, grayish brown (2.5Y5/2), subangular grains.		
									6.7-8.0 Ft. Silty sand, dark grayish brown (2.5Y4/2), saturated.		
									8.0-8.7 Ft. Silt, light grayish green.		
									8.7-12.0 Ft. Sand, dark brown (10YR4/3), some silt, saturated, liquefied.		
										Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 11/20/87.	
Description and classification of soils by visual examination.											

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1159R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				N 1.790 E 1.675	FUSRAP	14501-138 1 OF 1	1160R				
SITE		COORDINATES			ANGLE FROM HORIZ			BEARING			
80 Industrial Rd. (LODI)		N 1.790 E 1.675			Vertical			-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-23-87	11-23-87	E.D.I.	MOBILE B-57	6.5"	12.0		12.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
8.2/68			6								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs./ 30 in.		NONE			D. Harnish <i>982</i>						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.5	2-2-6 14							0.0 - 6.4 Ft. <u>Gravelly SILT and SILT FILL</u> (GM-ML, ML-OL).	Borehole advanced 0-12 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	1.7	15-15 11-8						0.0-6.0 Ft. Gravelly silt, mixed reddish brown, dark brown, light gray; pieces of wood, hard gray slag, and dusky red Brunswick sandstone gravel.		
SS	2.0	0.4	5-4-2-6								
SS	2.0	1.7	3-12 14-22						6.0-6.4 Ft. Silt, black, very soft, semi-liquid.		
SS	2.0	1.1	4-15 20-24						6.4 - 8.0 Ft. <u>SILT (ML)</u> . Grayish green becoming dark grayish brown (10YR4/2) toward base, some iron-oxide mottling, interbedded.		
SS	2.0	1.8	8-7-14 15						6.4-6.8 Ft. Laminated with 5-10 mm layers. 6.8-8.0 Ft. Some interbeds of fine-grained sand.		
									8.0 - 12.0 Ft. <u>SAND and SILT (SM, ML)</u> . Grayish brown (10YR4/2), 30% silt beds 2-30 mm in thickness. 10.0-12.0 Ft. Brown (7.5YR4/2), some 2-7 mm silt interbeds, saturated.		
Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 11/23/87.											
Description and classification of soils by visual examination.											

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER

SITE

80 Industrial Rd. (LODI)

HOLE NO.

1160R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP	14501-138	1 OF 1	1161R				
SITE			COORDINATES			ANGLE FROM HORIZ BEARING					
80 Industrial Rd. (LODI)			N 1,790 E 1,580			Vertical -----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-23-87	11-23-87	E.D.I.	MOBILE B-57	6.5"	10.0		10.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
4.5/45			5								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs./ 30 in.		NONE		D. Harnish <i>DH</i>							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.4	1-3-9-9						0.0 - 4.2 Ft. Gravelly SILT and SILT FILL (GM-ML, OL).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 2-4 Ft. Grab sample from auger flight.	
SS	2.0	0.6	10-18 14-7						0.0-3.5 Ft. Gravelly silt, dark brown, reddish brown, light grayish brown, broken pieces of cement, Brunswick sandstone, charcoal.		
SS	2.0	1.2	1-3-6 11						3.5-4.0 Ft. SILT, black, soft. 4.0-4.2 Ft. SILT, grayish red.		
SS	2.0	1.3	4-8-13 13						4.2 - 10.0 Ft. Silty SAND and SILT (SM, ML). Dark grayish brown becoming brown downward, fine- to very fine-grained.		
SS	2.0		6-12 12-16						4.2-7.3 Ft. Silty sand, massive, unconsolidated. 7.3-7.5 Ft. Silt, dark grayish brown (2.5Y4/2). 7.5-10.0 Ft. Sand, brown (7.5YR4/2), few 5-10 mm silt interbeds.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/23/87.										8-10 Ft. Sample had little water. 10.0 Ft. ENMET reads 80 ppm, 70% LEL 6" into open hole.	
Description and classification of soils by visual examination.											
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER								SITE		HOLE NO.	
80 Industrial Rd. (LODI)								1161R			

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
80 Industrial Rd. (LODI)				N 1.850 E 1.717	14501-138	1 OF 1	1162R					
BEGUN		COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-23-87		11-23-87	E.D.I.	Mobile B-57	6.5"	12.0		12.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
7.5/63			6									
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs./ 30 in.			NONE		D. Harnish <i>DH</i>							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	0.8	1-2-26 26								0.0 - 8.0 Ft. Gravelly SILT and SILT FILL (GM-ML, ML).	Borehole advanced 0-12 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	1.8	13-15 8-13							0.0-6.2 Ft. Gravelly silt, dusky red (5R3/2), gravel is broken Brunswick sandstone, granite. Silt is decomposed Brunswick formation.		
SS	2.0	0.9	7-12-8 3				5			4.0-6.2 Ft. Brown silt mixed in.		
SS	2.0	1.4	1-2-3-4							5.0-6.0 Ft. Gravel.		
SS	2.0	1.7	3-8-14 14							6.2-8.0 Ft. Silt, mixed greenish gray, dark gray, and brown with wood at the bottom.		
SS	2.0	0.9	4-12 19-20				10			8.0 - 9.8 Ft. SILT (OL). Grayish brown (10YR5/2), organic, faint laminations, medium stiff.		
										8.0-8.3 Ft. Wet and soft.	Hole caved in to 10.0 Ft.	
										9.8 - 12.0 Ft. SILT (ML-OL). Dark brown (10YR4/2), vague laminations 5-10 mm thick defined by reddish brown hue.	12.0 Ft. ENMET reads 100 ppm, 30% LEL 6" into open hole.	
Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 11/23/87.												
Description and classification of soils by visual examination.												
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE											HOLE NO.	
D = DENNISON; P = PITCHER; O = OTHER											80 Industrial Rd. (LODI)	
											1162R	

GEOLOGIC DRILL LOG				PROJECT FUSRAP		JOB NO. 4501-138	SHEET NO. 1 OF 1	HOLE NO. 1163R			
SITE 80 Industrial Rd. (LODI)			COORDINATES N 1.838 E 1.666			ANGLE FROM HORIZ BEARING Vertical					
BEGUN 11-23-87	COMPLETED 11-23-87	DRILLER E.D.I.	DRILL MAKE AND MODEL Mobile B-57		SIZE 6.5"	OVERBURDEN 10.0	ROCK (FT.)	TOTAL DEPTH 10.0			
CORE RECOVERY (FT./%) 5.9/59		CORE BOXES	SAMPLES/EL. TOP CASING 5	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
SAMPLE HAMMER WEIGHT/FALL 140 lbs./ 30 in.		CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.3	1-3-7 10						0.0 - 4.7 Ft. <u>Gravelly SILT and SAND FILL (GM-ML, SP)</u> .	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS	2.0	0.6	5-9-3-2					0.0-4.0 Ft. Gravelly silt, mixed dark brown and yellowish brown, some gray silty sand, gravel is cement and Brunswick sandstone.			
SS	2.0	1.1	7-2-7 10				5	4.0-4.7 Ft. Sand, dark yellowish brown, fine-grained, some medium-grained, uniformly graded.			
SS	2.0	1.2	3-8-14 11					4.7 - 6.4 Ft. <u>SILT (FILL?) (ML)</u> . Reddish gray (5YR5/2) with some iron-oxide stain; disturbed?			
SS	2.0	1.7	11-14 16-19				10	6.4 - 10.0 Ft. <u>SAND (SP)</u> . Brown (10YR4/3), very fine-grained, uniform, wet.			
									8.1 Ft. Thin silt bed.		
									9.6 Ft. Thin silt bed.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/23/87.											

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE 80 Industrial Rd. (LODI) HOLE NO. 1163R
 O = DENNISON; P = PITCHER; O = OTHER

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				COORDINATES	FUSRAP	14501-138 1 OF 1	1164R				
BEGUN		COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-23-87		11-23-87	E.D.I.	Mobile B-57	6.5"	10.0		10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
5.7/57			5								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs./ 30 in.		NONE			D. Harnish <i>[Signature]</i>						
SAMP. TYPE AND DIAH.	SAMP. ADU. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.9	4-4-6-6							0.0 - 4.0 Ft. <u>SILT FILL</u> (ML). Dark brown mixed with other silts.	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 4-6 Ft. Sample is saturated. Hole caved in to 9.0 Ft.
SS	2.0	0.7	5-5-5-5						0.0-0.9 Ft. Mixed with light brownish gray (10YR6/2) silt.		
SS	2.0	1.5	2-2-7-8						1.6-2.0 Ft. Mixed with yellowish brown silt.		
SS	2.0	1.6	4-6-8 12						4.0 - 4.3 Ft. <u>SAND (FILL?)</u> (SM). Brown (10YR4/3), silty, wet.		
SS	2.0		9-14 15-13						4.3 - 4.7 Ft. <u>SILT (FILL?)</u> (OL). Very dark brown to black, organic.		
									4.7 - 8.0 Ft. <u>Silty SAND</u> (SM). Brown, fine-grained, massive.		
									6.8-7.5 Ft. Faint bedding defined by variations in silt fraction.		
									7.9-8.0 Ft. Silt, brown (10YR4/3), laminated.		
									8.0 - 10.0 Ft. <u>SAND</u> (SM). Dark brown (7.5YR4/2), very fine-grained, wet.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/23/87.											
Description and classification of soils by visual examination.											
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER								SITE		HOLE NO.	
								80 Industrial Rd. (LODI)		1164R	

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				COORDINATES	FUSRAP	14501-138 1 OF 1	1165R				
SITE				N 1.877 E 1.511		ANGLE FROM HORIZBEARING					
80 Industrial Rd. (LODI)						Vertical					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-23-87	11-23-87	E.D.I.	Mobile B-57	6.5"	8.0		8.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
4.5/56			4								
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs./ 30 in.			NONE		D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "IN" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.3	2-2-3-6							0.0 - 3.8 Ft. <u>Silty SAND (FILL?) (SM)</u> . 0.0-0.7 Ft. Dark brown (10YR3/3) topsoil.	Borehole advanced 0-8 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	1.7	4-8-10 11							0.7-3.8 Ft. Brown (10YR3/3) with iron-oxide mottling which increases downward to a pervasive stain, very fine-grained.	
SS	2.0	1.5	5-10-9 12							3.8 - 4.4 Ft. <u>Silty SAND (FILL?) (SM)</u> . Black, thin beds with black silt, reworked fill?	
SS	2.0		7-16 19-25							4.4 - 6.3 Ft. <u>Silty SAND (SM)</u> . Brown (10YR4/3), fine-grained, subangular grains, saturated.	
										6.3 - 8.0 Ft. <u>SAND and SILT (SP, ML)</u> . Dark reddish brown (2.5YR3/4) becoming weak red (2.5YR4/2) downward, very fine-grained sand, some clay toward top, beds 2-10 mm. thick.	Hole caved in to 6.0 Ft.
										Bottom of borehole at 8.0 Ft. Borehole backfilled with spoils, 11/23/87.	
											Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER

SITE

80 Industrial Rd. (LODI)

HOLE NO.
1165R

GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.		
80 Industrial Rd. (LODI)				N 1.921 E 1.826		14501-138		1 OF 1		1170R		
SITE				COORDINATES				ANGLE FROM HORIZ BEARING				
80 Industrial Rd. (LODI)				N 1.921 E 1.826				Vertical				
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN		
11-24-87		11-24-87		E.D.I.		Mobile B-57		6.5"		10.0		
CORE RECOVERY (FT./%)			CORE BOXES		SAMPLES		SEL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER	
7.4/74					5							
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:				
140 lbs./ 30 in.				NONE				D. Harnish <i>[Signature]</i>				
SAMP. TYPE AND DIAM.	SAMP. ACU. LEN	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.5	1-1-2-1							0.0 - 6.7 Ft. Gravelly SILT, Silty SAND and SILT FILL (GM-ML, SM, ML-OL).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS	2.0	1.8	15-14 15-10							0.0-1.4 Ft. Gravelly silt, dark reddish brown (2.5YR3/4), some Brunswick sandstone gravel; base is dusky red with abundant gravel.		
SS	2.0	1.3	10-6-4 6							1.4-3.0 Ft. Silty sand, yellowish brown becoming light yellowish brown (2.5Y6/4) at base, very fine-grained, slightly stiff.		
SS	2.0	1.4	4-4-11 15							3.0-4.0 Ft. Silt, mixed reddish brown, black, yellowish brown, and brown, horizontally interlayered.		
SS	2.0	1.4	7-14 14-17							4.0-6.7 Ft. Silt, mixed dark gray, gray, with pieces of grayish green and black silt, minor yellowish brown sand, and wood.		
										6.0 Ft. Wood with tarry black coating. 6.3-6.7 Ft. Wood in black silt.		
										6.7 - 10.0 Ft. SILT (ML). Laminated, becoming more distinct downward.		
										6.7-8.4 Ft. Weak red (5R5/3) and gray.		
										8.4-10.0 Ft. Reddish brown (5YR5/3) and yellowish brown (5YR5/3) interlayered, less yellowish brown downward.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/24/87.												
											Description and classification of soils by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO. 1170R

GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501-138	SHEET NO.	1 OF 1	HOLE NO.	1188R
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING		
Industrial Rd. (LODI)			N 1.904 E 1.940			Vertical		---		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPT		
12-2-87	12-2-87	E.D.I.	MOBILE B-57		6.5"	10.0		10.0		
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
5.4/68		5								
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs./ 30 in.			NONE			D. Harnish				

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M	PRESS. P.S.I.	TIME IN MIN.						
SS	1.5	1.0	14-15-14								0.0 - 5.5 Ft. Gravelly SILT, SILT, and GRAVEL FILL (GM-ML, ML, GP).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 4.5-5.5 Ft. Possible glacial erratic. 8.0 Ft. ENMET read >300 ppm 6" into open hole. No free water in hole
SS	2.0	1.2	7-13 11-22							0.0-0.5 Ft. Gravel, broken basalt. 0.5-1.0 Ft. Gravel, dusky red Brunswick sandstone.		
SS	0.5	0.5	8							1.0-4.5 Ft. Silt, grayish brown (10YR5/2), small pieces of reddish brown and black mixed in at top, black, olive green and green mixed in through the rest.		
SS	2.0	1.4	10-19 25-25							4.5-5.5 Ft. Rock, metamorphic rock cobble.		
SS	2.0	1.3	9-10 9-10							5.5 - 10.0 Ft. SILT (ML). Grayish brown (10YR5/2) becoming brown (7.5YR4/2) downward with minor iron-oxide stain, faint bedding.		
										6.0-10.0 Ft. Wet. 8.0-10.0 Ft. Faint laminae.		
											Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 12/2/87.	

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER;	SITE	Industrial Rd. (LODI)	HOLE NO.	1188R
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GEOLOGIC DRILL LOG				PROJECT FUSRAP		JOB NO. 4501-138	SHEET NO. 1 OF 1	HOLE NO. 1195R			
SITE 80 Industrial Rd. (LODI)			COORDINATES N 1,733 E 1,705			ANGLE FROM HORIZ BEARING Vertical					
BEGUN 12-4-87	COMPLETED 12-4-87	DRILLER E.D.I.	DRILL MAKE AND MODEL MINUTEMAN	SIZE 6.5"	OVERBURDEN 12.0	ROCK (FT.)	TOTAL DEPTH 12.0				
CORE RECOVERY (FT./%) 2.9/25		CORE BOXES	SAMPLES 3	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
SAMPLE HAMMER WEIGHT/FALL 140 lbs./ 30 in.		CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS 1.5	1.1	8-13-26							0.0 - 0.5 Ft. CONCRETE FOUNDATION.	Borehole advanced 0-12 Ft. using 3 in. o.d. split-spoons and 6.5 in. o.d. solid-stem augers. Cored through 6 in. concrete floor. All depths from top of floor. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS 2.0	1.8	10-17 18-19						0.5 - 4.0 Ft. Gravelly SILT and SILT FILL (GM-ML, ML, OL).			
SS 2.0	0.0	15-14 9-9					5	0.5-1.3 Ft. Gravelly silt, dark reddish brown (5YR3/2), round cobbles.			
SS 2.0		ND						1.3-2.0 Ft. Silt, gray mixed with very dark gray (7.5YR3/0) and dark reddish brown.			
SS 2.0		16-ND						2.0-4.0 Ft. Gravelly silt, dusky red (2.5YR3/2), gravel is Brunswick sandstone and shale, silt is soft.			
SS 2.0		7-15 15-7					10	2.5-2.7 Ft. Minor black and very dark gray (7.5YR3/0) silt mixed in.			
								3.1-3.3 Ft. Light olive gray silt (5Y6/2) mixed in.			
									4.0 - 6.0 Ft. Silty SAND (FILL?) (SM). Brown, some round gravel.		
									6.0 - 8.1 Ft. SILT (FILL?) (OL). Very dark gray (7.5YR3/0), organic with pieces of wood, soft.		
									8.1 - 8.9 Ft. SILT and Silty SAND (ML, SM). Grayish green becoming brown downward, sand is fine-grained, sand and silt are interbedded.		
									8.9 - 12.0 Ft. Silty SAND (SM). Weak red (5YR5/3) with yellowish brown iron-oxide stain near base, fine-grained, damp.		
									11.1-12.0 Ft. Brown (10YR4/3), medium-grained with some gravel, saturated.		
Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, 12/4/87.											

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1195R

GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
				FUSRAP		14501-138	1 OF 1	1202R			
SITE			COORDINATES			ANGLE FROM HORIZ BEARING					
80 Industrial Rd. (LODI)			N 1.836 E 1.912			Vertical					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DE			
12-2-87	12-2-87	G. Engel; BNI.	MINUTEMAN AUGER		4"	8.5		8.5			
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
7.5/88		8									
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs./ 18 in.			NONE		R. Miguez <i>RM</i>						
SAMP. TYPE AND DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H	PRESS. P.S.I.	TIME IN MIN.					
SS	1.0	1.1							0.0 - 0.5 Ft. <u>Sandy silty CLAY (CL-ML)</u> . Dusky yellowish brown (10YR2/2). Fine- to medium-grained.	Borehole advanced 0-8.5 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.	
SS	1.0	1.0						0.5 - 4.0 Ft. <u>Pebbly clayey silty SAND (SC-SG)</u> . Moderate reddish brown (10R4/6). Fine- to coarse-grained with subangular pebbles to 1.0 in.; Brunswick Fm. and other lithologies.			
SS	1.0	1.0						4.0 - 5.0 Ft. <u>SAND (SW)</u> . Pale olive (10Y6/2) finely layered with lesser portions of moderate reddish brown (10R4/6) and brownish gray (5YR4/1) layers. Fine- to medium-grained.			
SS	1.0	0.6						5.0 - 6.0 Ft. <u>Sandy CLAY (CL-SC)</u> . Brownish gray (5Y4/1).			
SS	1.0	1.0						6.0 - 7.0 Ft. <u>SAND (SP)</u> . Light olive gray (5Y6/1) mottled with greenish gray (5GY6/1) and dusky yellowish green (5GY5/2).			
SS	1.0	0.7						7.0 - 8.5 Ft. <u>SILT (ML)</u> . Pale red (5R6/2) mottled with light brownish gray (5YR6/1).			
SS	1.5	1.2									

Bottom of borehole at 8.5 Ft.
Borehole backfilled with spoils, 12/2/87.

Description and classification of soils by visual examination.

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 1203R

SITE

COORDINATES

ANGLE FROM HORIZ BEARING

80 Industrial Rd. (LODI)

N 1.770 E 1.913

Vertical

BEGUN

COMPLETED

DRILLER

DRILL MAKE AND MODEL

SIZE

OVERBURDEN

ROCK (FT.)

TOTAL DEPTH

12-2-87

12-2-87

G. Engel; BNI.

Minuteman Auger

4"

11.0

11.0

CORE RECOVERY (FT./%)

CORE BOXES

SAMPLES

EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

8.5/77

11

SAMPLE HAMMER WEIGHT/FALL

CASING LEFT IN HOLE: DIA./LENGTH

LOGGED BY:

140 lbs./ 18 in.

NONE

R. Miguez

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H	PRESS. P.S.I.	TIME IN MIN.						
SS	1.0	0.7									0.0 - 1.4 Ft. Silty sandy CLAY (CL-ML). Dusky yellowish brown (10YR2/2). Fine- to medium-grained.	Borehole advanced 0-11 Ft. using 6.5 in. o.d. hollow-stem auger. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. Augered to 8.5 Ft. Gamma-logged to 8.0 Ft.
SS	1.0	0.6								1.4 - 5.0 Ft. Clayey silty SAND (SC-SM). Moderate reddish brown (10R4/6). Fine- to very coarse-grained with angular fragments of brunswick and carbonaceous material, or paint or ink residues.		
SS	1.0	0.9								5.0 - 5.4 Ft. SAND (SW). Pale yellowish brown (10YR6/2). Fine- to medium-grained.		
SS	2.0	0.4								5.4 - 5.9 Ft. Sandy CLAY (CL-SC). Light brown (5YR5/6) mottled with pale brown (5YR5/2) and moderate reddish brown (10R4/6).		
SS	1.0	1.0								5.9 - 6.4 Ft. CLAY (CL). Dusky yellowish brown (10YR2/2) mottled with dark reddish brown (10R5/4).		
SS	1.0	1.0								6.4 - 7.0 Ft. Silty SAND (SM). Brownish gray (5YR4/1) mottled with moderate reddish brown (10R4/6). Fine- to medium-grained.		
SS	1.0	1.0								7.0 - 7.7 Ft. SAND (SP). Medium light gray (N6). Fine- to coarse-grained.		
SS	1.0	0.9								7.7 - 8.1 Ft. CLAY (CL). Medium gray (N5).		
SS	1.0	1.0								8.1 - 9.5 Ft. SAND (SW). Light brownish gray (5YR6/1). Fine- to medium-grained layered with grayish orange (10YR7/4) and light brown (5YR5/6). 9.0-9.5 Ft. Light olive gray (5Y6/1), and increasingly coarse-grained.		
SS	1.0	1.0								9.5 - 10.9 Ft. CLAY (CL). Light olive gray (5Y6/1) layered with moderate reddish brown (10R4/6) and dark yellowish orange (10R6/6).		
										10.9 - 11.0 Ft. SAND (SP). Pale reddish brown (10R5/4). Fine- to coarse-grained.		
Bottom of borehole at 11.0 Ft. Borehole backfilled with spoils, 12/2/87.												

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER

SITE

80 Industrial Rd. (LODI)

HOLE NO.

1203R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				N 1,750 E 1,607	14501-138	1 OF 1	1217R				
BEGUN		COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
12-10-87		12-11-87	E.D.I.	LIL BEAVER	6.5"	10.6		10.6			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
4.8/48			4								
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs./ 30 in.			NONE		D. Harnish <i>DH</i>						
SAMP. TYPE AND DIAM.	SAMP. ADU. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" X CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.7	6-6-16 20						0.0 - 0.6 Ft. CEMENT . Concrete foundation of Flint Ink.	Borehole advanced 0-10.6 Ft. using 3 in. o.d. split-spoons and 6.5 in. o.d. solid-stem augers. Cored through 6 in. concrete floor. All depths from top of floor. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. Augered and gamma-logged to 8.0 Ft. 10.6 Ft. ENMET reads >300 ppm. >20% LEL, at mouth of open hole.	
SS	2.0	0.8	11-21 23-22						0.6 - 9.0 Ft. Gravelly SILT FILL (GM-ML) . Dark grayish brown with reddish brown and grayish green silt mixed in; gravel is Brunswick sandstone, some angular pieces of basalt and metamorphic rock, few wood pieces; top 0.4 ft. is dusky red Brunswick sandstone gravel.		
SS	2.0	1.2	9-13 10-6								
SS	2.0	1.1	5-7-14 16								
SS	2.0		ND						contact is approximate		
									9.0 - 10.6 Ft. Silty SAND (SM) . Gray (5Y5/1), fine-grained, damp.		
Bottom of borehole at 10.6 Ft. Borehole backfilled with spoils, 12/10/87.											
Description and classification of soils by visual examination.											

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Industrial Rd. (LODI)

HOLE NO.
1217R

GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	SHEET NO.	HOLE NO.
SITE			COORDINATES		ANGLE FROM HORIZ		BEARING
80 Industrial Rd. (LODI)			N 1.724 E 1.764		Vertical		-----
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
12-10-87	12-10-87	E.D.I.	L'I'L BEAVER	6.5"	10.6		10.6
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	ELEV. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
7.5/75		5					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
140 lbs./ 30 in.		NONE		D. Harnish <i>[Signature]</i>			

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.F.	TIME IN MIN.						
SS	2.0	1.3	11-29 24-21								0.0 - 0.6 Ft. CEMENT . Concrete foundation of Flint Ink.	Borehole advanced 0-10.6 Ft. using 3 in. o.d. split-spoons and 6.5 in. o.d. solid-stem augers. Cored through 6 in. concrete floor. All depths from top of floor. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 4-6 Ft. OVA reads 1000 ppm toxics at mouth of open hole. Augered and gamma-logged to 8.0 Ft.
SS	2.0	1.5	12-18 15-6							0.6 - 5.3 Ft. Silty GRAVEL and SILT FILL (GM, ML).		
SS	2.0	1.5	5-5-3 13							0.6-2.4 Ft. Silty gravel, dusky red on top and dark reddish brown below, broken Brunswick sandstone gravel, some silt and sand, bits of glass at 1.8 Ft.		
SS	2.0	1.4	13-25 23-19							2.4-3.2 Ft. Silt, brownish gray, dry.		
SS	2.0	1.8	8-14 11-11							3.2-5.3 Ft. Gravel, dusky red, broken Brunswick sandstone.		
										5.3 - 5.8 Ft. SILT (OL). Very dark gray to black becoming dark gray downward, organic, abundant plant material.		
										5.8 - 9.4 Ft. Silty SAND (SM). Dark gray (5Y4/1), fine-grained, some sandy silt, gradational contact with unit above.		
										9.4 - 10.6 Ft. Silty SAND (SM). Brown (10YR4/3), fine-grained.		
										10.2-10.3 Ft. Silt, reddish brown (5YR5/3).		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 12/10/87.												

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE	80 Industrial Rd. (LODI)	HOLE NO.	1218R
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GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	SHEET NO.	HOLE NO.				
80 Industrial Rd. (LODI)				COORDINATES		N 1.942 E 1.875		Vertical	-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-8-88	11-22-88	EMPIRE SOILS	TRIPOD		4"	8.0		8.0				
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
7.6/95		4			5.0/ 11/22/88							
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lb. / 12 in.			NONE			J. Lord						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	2.0	7-15-45 40							0.0 - 1.0 Ft. TOPSOIL . Moderate brown (5YR5/4) silty sand topsoil. Loose, dry, some roots, worms, grass.	<p>Borehole advanced 0-8 ft. using 3 in. i.d. split-spoon samplers inside 4 in. o.d. steel drive pipe. Radiologically sampled and gamma-logged by TMA-Eberline, Inc. 5.0 Ft. Groundwater observed.</p> <p>Boring originally driven to 6', 10/8/88. Extended to 8', 11/22/88.</p> <p>5.3 Ft. Top of undisturbed soil.</p>	
SS	2.0	2.0	23-30 31-37						1.0 - 2.8 Ft. Silty clayey LOAM (FILL) . Dusky brown (5YR2/2) matrix with mixed colors and organic flecks. Compressed, cohesive, dry. Crumbles easily. No thread. Some gravel and cobble pieces.			
SS	2.0	2.0	55-67 60-89						2.8 - 5.3 Ft. Silty SAND (SM) . Greenish gray (5G6/1). Moist, loose, adhesive, slightly stiff. Slight fines component, poorly sorted overall. No thread.			
SS	2.0	1.6	12-19 22-19						5.0 Ft. Water .			
										5.3 - 8.0 Ft. Sandy SILT (ML) . Light brown (5YR5/6). Moist. Stiff, well sorted, slightly cohesive, but crumbles easily. Dense. Probably undisturbed.		
										6.0 Ft. Saturated .		
Bottom of borehole at 8.0 Ft. Borehole backfilled with well gravel and spoils, 11/22/88.												

SS = SPLIT SPOON; ST = SHELBY TUBE;
 O = DENNISON; P = PITCHER; 0 = OTHER

SITE

80 Industrial Rd. (LODI)

HOLE NO.
2027R

GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
80 Hancock St. (LODI)				FUSRAP		14501-138		1 OF 1		2021R	
SITE				COORDINATES				ANGLE FROM HORIZ BEARING			
80 Hancock St. (LODI)				N 1,763 E 2.250				Vertical -----			
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN	
9-25-88		9-25-88		EMPIRE SOILS		CME 45B		12"		10.0	
CORE RECOVERY (FT./%)		CORE BOXES		SAMPLES		EL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER	
6.5/81				4						8.0/ 9/25/88	
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:			
300 lbs./ 24 in.				NONE				J. Lord			
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.8	5-5-6-17						0.0 - 0.2 Ft. ASPHALT & GRAVEL. AIRCO Driveway.	Borehole advanced 0-10 Ft. using 12 in. o.d. hollow-stem augers. Sampled to 8' and gamma-logged to 10' by TMA-Eberline, Inc. 8.0 ft. Groundwater observed. 6.8 Ft. Top of undisturbed soil.	
SS	2.0	1.0	5-3-4-3						0.2 - 5.0 Ft. Silty gravelly SAND (SM-SG). Moderate brown (5YR3/4) to dusky red (5R3/4). Mixed organic flecks, brick, gravel with a sandy silt loam. Dry, soft, crumbles easily. No cohesion. Strong petroleum odor. Borehole next to underground diesel storage tank.		
SS	2.0	1.7	2-2-6-11						5.0 - 6.8 Ft. Silty SAND (SM). Light gray (N6) to light bluish gray (5B7/1). Wet, loose, adhesive, slightly stiff. Slight fines component, slightly elastic or rubbery.		
SS	2.0	2.0	12-12 11-15						6.8 - 7.6 Ft. Silty SAND (SM). Moderate yellowish brown (10YR5/4) medium- to coarse-grained sand. Wet, subangular, poorly sorted with 20% silt. Adhesive due to the moisture. No shear strength. Mixed feldspar and quartz minerals. Compact, no thread, rubbery.		
									7.6 - 10.0 Ft. SAND (SW). Moderate brown (5YR3/4) coarse-grained sand with some fines. Saturated, slightly adhesive, loose. Mixed mineralogy.		
Bottom of borehole at 10.0 Ft. Borehole backfilled with clean spoils, 9/25/88.											
Description and classification of soils by visual examination of samples.											

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER

SITE

80 Hancock St. (LODI)

HOLE NO. 2021R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 1228R

SITE

COORDINATES

ANGLE FROM HORIZ BEARING

80 Hancock St. (LODI)

N 1,844 E 2,211

Vertical

BEGUN

COMPLETED

DRILLER

DRILL MAKE AND MODEL

SIZE

OVERBURDEN

ROCK (FT.)

TOTAL DEP

12-8-87

12-8-87

E.D.I.

MOBILE B-57

6.5"

10.0

10.0

CORE RECOVERY (FT./%)

CORE BOXES/SAMPLES

EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

5.7/60

5

SAMPLE HAMMER WEIGHT/FALL

CASING LEFT IN HOLE: DIA./LENGTH

LOGGED BY:

140 lbs./ 30 in.

NONE

D. Harnish

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	1.5	1.3	6-10-21								0.0 - 4.0 Ft. GRAVEL and SILT FILL (GF, ML).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Gamma-logged by TMA-Eberline, Inc. 0-0.5 Ft. No sample. Road bed. ENMET reads 110 ppm 6 in. into 10 ft. deep hole.
SS	2.0	1.2	11-20 12-12								0.0-0.5 Ft. Gravel; broken basalt.	
SS	2.0	0.2	12-3-3 21								0.5-1.2 Ft. Silt; very dark gray and light gray, interlayered.	
SS	2.0	1.5	14-24 22-27								1.2-4.0 Ft. Gravel; dusky red Brunswick formation.	
SS	2.0	1.5	19-25 31-33								1.5-1.6 Ft. Dark brown silt with basalt gravel.	
SS	2.0	1.5	19-25 31-33								4.0 - 6.1 Ft. SAND (SP). Gray (5YR5/1), fine-grained, damp.	
											6.1 - 8.3 Ft. SILT (ML). Brown (7.5YR3/4), crumbly, slightly damp, massive.	
											8.3 - 8.7 Ft. Silty SAND (SM). Strong brown (7.5YR3/4).	
											8.7 - 10.0 Ft. SILT and Silty SAND (ML, SM). Grayish brown (10Y5/2), silt becomes silty sand downward, very fine- to fine-grained.	

Bottom of borehole at 10.0 ft.
Borehole backfilled with spoils, 12/8/87.

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER

SITE

80 Hancock St. (LODI)

HOLE NO.

1228R

GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
80 Hancock St. (LODI)				COORDINATES		14501-138	1 OF 1	1224R				
12-8-87				E.D.I.		MOBILE B-57		6.5" 10.0				
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE				
12-8-87		12-8-87		E.D.I.		MOBILE B-57		6.5" 10.0				
CORE RECOVERY (FT./%)			CORE BOXES/SAMPLES		EL. TOP CASING	GROUND EL.		DEPTH/EL. GROUND WATER				
6.5/65			5					DEPTH/EL. TOP OF ROCK				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs./ 30 in.			NONE			D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS				ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.7	7-10-17 20							0.0 - 4.6 Ft. Gravelly SILT and SILT FILL (GM-ML, ML).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Gamma-logged by TMA-Eberline, Inc. 2-4 Ft. Grab sample from auger flights.	
SS	2.0	0.4	12-9 5-6							0.0-0.7 Ft. Gravelly silt, dark grayish brown (10YR4/2), crushed Brunswick sandstone gravel.		
SS	2.0	1.2	3-5-5-5							0.7-1.2 Ft. Gravelly silt, dusky red (2.5YR5/2), crushed Brunswick sandstone gravel.		
SS	2.0	1.6	12-26 30-45							1.2-4.0 Ft. Gravelly silt, very dark gray (10YR3/1), abundant plant material, crushed Brunswick sandstone gravel.		
SS	2.0	1.6	6-16 17-15							4.0-4.6 Ft. Silt, weak red (5YR4/2), disturbed (?).		
										4.6 - 6.5 Ft. SILT (FILL?) (MH). Very dark gray (10YR4/1), organic.		
										6.5 - 10.0 Ft. SILT (ML). Weak red (2.5YR5/2), stiff, crumbly and dry, downward becomes dark reddish gray (5YR4/2) and wet.		
										8.0-8.2 Ft. Clay, same color.		
										8.2-10.0 Ft. Dark reddish gray, wet.		
Bottom of borehole at 10.0 ft. Borehole backfilled with spoils, 12/8/87.												
Description and classification of soils by visual examination.												
SS = SPLIT SPOON; ST = SHELBY TUBE; SITE												
O = DENNISON; P = PITCHER; O = OTHER												
80 Hancock St. (LODI)								HOLE NO. 1224R				

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 1222R

SITE

80 Hancock St. (LODI)

COORDINATES

N 1,933 E 2,186

ANGLE FROM HORIZ BEARING

Vertical

BEGUN

12-7-87

COMPLETED

12-7-87

DRILLER

E.D.I.

DRILL MAKE AND MODEL

MOBILE B-57

SIZE

6.5"

OVERBURDEN

10.0

ROCK (FT.)

TOTAL DEPT

10.0

CORE RECOVERY (FT./%)

6.3/63

CORE BOXES

5

SAMPLES EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

SAMPLE HAMMER WEIGHT/FALL

140 lbs./ 30 in.

CASING LEFT IN HOLE: DIA./LENGTH

NONE

LOGGED BY:

D. Harnish

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H	PRESS. P.S.I.	TIME IN MIN.						
SS 2.0	1.0	1-1-6-14									0.0 - 4.6 Ft. Gravelly SILT, GRAVEL, and SILT FILL (GM-ML, GP, ML).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Gamma-logged by TMA-Eberline, Inc. 1-2 Ft. Grab sample from auger flights. 3.5-4.0 Ft. Brunswick SS erratic.
SS 2.0	1.7	15-14 14-15									0.0-2.4 Ft. Gravelly silt, dark reddish brown (5YR3/3) mixed with dark brown topsoil and Brunswick sandstone gravel; glass at base.	
SS 2.0	2.0	7-2-2-5					5				2.4-3.0 Ft. Gravel, dusky red, Brunswick sandstone.	
SS 2.0	1.6	3-21-20 19									3.0-3.3 Ft. Silt, mixed dark gray, dark reddish brown, brownish yellow, some black silt.	
SS 2.0		6-9-11-									3.3-4.6 Ft. Gravel, dusky red, Brunswick sandstone; dead plants and grass at base, (pre-fill surface?).	
							10				4.6 - 6.9 Ft. SILT (ML). 4.6-4.9 Ft. Reddish gray, organic. 4.9-5.4 Ft. Sandy, gray (10YR5/1). 5.4-6.8 Ft. Very dark gray (7.5YR3/0). 6.8-6.9 Ft. Sand, very dark gray.	
											6.8 - 10.0 Ft. SILT (ML). Light brown (7.5YR6/4) and dry becoming brown (7.5YR5/4) and damp downward.	
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 12/7/87.												

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

80 Hancock St. (LODI)

HOLE NO. 1222R

GEOLOGIC DRILL LOG				PROJECT FUSRAP		JOB NO. 14501-138	SHEET NO. 1 OF 1	HOLE NO. 1226R				
SITE Hancock St. (LODI)			COORDINATES N 1,993 E 2,275			ANGLE FROM HORIZ. BEARING Vertical						
BEGUN 12-8-87	COMPLETED 12-8-87	DRILLER E.D.I.	DRILL MAKE AND MODEL MOBILE B-57	SIZE 6.5"	OVERBURDEN 10.0	ROCK (FT.)	TOTAL DEPTH 10.0					
CORE RECOVERY (FT./%) 6.6/69		CORE BOXES 5	SAMPLES 1	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
SAMPLE HAMMER WEIGHT/FALL 140 lbs./ 30 in.			CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: D. Harnish						
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	1.5	1.3	20-14-13								0.0 - 4.4 Ft. GRAVEL and Silty GRAVEL FILL (GP, GM).	Borehole advanced 0-10 Ft. using 6.5 in. o.d. hollow-stem auger. Sampled and gamma-logged by TMA-Eberline, Inc. 0.0-0.5 Ft. Not sampled. Road base. ENMET reads >300 ppm with probe at 6 in. in a 10.0 Ft. boring.
SS	2.0	1.0	7-13 24-18							0.0-0.9 Ft. Gravel, broken basalt gravel. 0.9-4.0 Ft. Silty gravel, dusky red, angular Brunswick sandstone, basalt and schist gravel; thin layers of organic silt.		
SS	2.0	1.6	26-60-75							4.0-4.4 Ft. Silt, greenish gray, soft, damp.		
SS	2.0	1.5	33-32 33-29							4.4 - 10.0 Ft. SILT (ML). Grayish brown (10YR5/2) becoming brown (7.5YR5/4) downward, top has yellowish brown iron-oxide mottling.		
SS	2.0	1.2	8-9-16 13							4.4-4.7 Ft. Pieces of reddish brown and dark green silt mixed in. 4.4-8.0 Ft. Dry, stiff, crumbly. 8.0-10.0 Ft. Damp.		
											Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 12/8/87.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

Hancock St. (LODI)

HOLE NO.
1226R

GEOLOGIC DRILL LOG			PROJECT FUSRAP	JOB NO. SHEET NO. HOLE NO. 14501-138 1 OF 1 2012R
SITE 100 Hancock St. (LODI)		COORDINATES N 1.710 E 2.456		ANGLE FROM HORIZ. BEARING Vertical
BEGUN 9-28-88	COMPLETED 9-28-88	DRILLER EMPIRE SOILS	DRILL MAKE AND MODEL CME 45B	SIZE 12"
CORE RECOVERY (FT./%) 6.0/100		CORE BOXES/SAMPLES, EL. TOP CASING 3	GROUND EL. 7.2/ 9/28/88	OVERBURDEN 10.0
SAMPLE HAMMER WEIGHT/FALL 300 lbs./ 24 in.		CASING LEFT IN HOLE: DIA./LENGTH NONE		LOGGED BY: J. Lord

SAMP. TYPE AND DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	2.0	15-20 21-20							0.0 - 0.5 Ft. TOPSOIL . Dusky red (5R3/4) to grayish brown (10YR5/6) silty sandy loam. Dry, crumbles with little pressure. Earthy odor, few grass roots and organics. Some mediumgrained sand (<10%). Probable FILL.	Borehole advanced 0-10 Ft. using 12 in. o.d. hollow stem augers.
SS	2.0	2.0	15-17 17-13							0.5 - 5.5 Ft. Silty SAND (SM) . Dark yellowish orange (10YR6/6). Very slightly moist to dry. Dense, loose, no odor. Crumbles under pressure. Sand is poorly sorted fine- to coarse-grained. Grades to very coarse-grained at 5.5 Ft. contact.	Radiologically sampled to 6' and gamma-logged to 10' by TMA-Eberline, Inc.
SS	2.0	2.0	13-12-9 7							5.5 - 6.0 Ft. Clayey SILT (ML-CL) . Moderate reddish brown (10R4/6). Dense, moist to saturated at the contact, plastic. Good thread.	5.5 Ft. Groundwater observed. 5.5 Ft. Top of undisturbed soil.
										6.0 - 10.0 Ft. Not sampled, but augered to a depth of 10.0 ft. Auger flight grab samples suggest clayey silt to 6.0 ft. and sand to 10 Ft.	
Bottom of borehole at 10 ft. Borehole backfilled with spoils, 9/28/88.											

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE	100 Hancock St. (LODI)	HOLE NO. 2012R
OD = DENNISON; P = PITCHER; O = OTHER		

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO. SHEET NO. HOLE NO.
14501-138 1 OF 1 2013R

SITE 100 Hancock St. (LODI)			COORDINATES N 1.780 E 2.454			ANGLE FROM HORIZ. BEARING Vertical -----		
BEGUN 9-28-88	COMPLETED 9-28-88	DRILLER EMPIRE SOILS	DRILL MAKE AND MODEL CME 45B	SIZE 12"	OVERBURDEN 10.0	ROCK (FT.)	TOTAL DEPTH 10.0	
CORE RECOVERY (FT./%) 6.0/100		CORE BOXES/SAMPLES 3	SEL. TOP CASING	GROUND EL. 5.0/ 9/28/88	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK	
SAMPLE HAMMER WEIGHT/FALL 300 lbs./ 24 in.		CASING LEFT IN HOLE: DIA./LENGTH NONE			LOGGED BY: J. Lord			

SAMP. TYPE AND DIAM.	SAMP. ADU. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE "N" BLOWS % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	2.03	4-7-12						0.0 - 1.0 Ft. TOPSOIL . Dusky red (5R3/4) to grayish brown (10YR5/6) silty sandy loam. Dry, crumbles with little pressure. Earthy odor, few grass roots and organics. Some medium-grained sand (<10%). Probable FILL.	Borehole advanced 0-10 Ft. using 12 in. o.d. hollow stem augers. Radiologically sampled to 6' and gamma-logged to 10' by TMA-Eberline, Inc. 5.0 Ft. Groundwater observed. 6.0 Ft. Top of undisturbed soil.	
SS	2.0	2.07	7-12-12 12					1.0 - 2.9 Ft. Silty SAND (SM) . Dark yellowish orange (10YR6/6). Very slightly moist to dry. Dense, loose, no odor. Crumbles under pressure. Sand is poorly sorted fine- to coarse-grained.			
SS	2.0	2.06	8-6-11					2.6 - 2.9 Ft. Clayey SILT (ML-CL) . Light gray (N7) to pale blue (5B6/2). Dense, moist, plastic. Coarsening downwards.			
								2.9 - 6.0 Ft. SAND (SP) . Moderate yellowish brown (10YR5/4). Medium- to fine-grained sand with 5% silt. Loose, moist, dense, subrounded, adhesive. Undisturbed material.			
									6.0 - 10.0 Ft. Not sampled, but augered to a depth of 10.0 ft. Auger flight samples suggest sand to 10 Ft.		
Bottom of borehole at 10 Ft. Borehole backfilled with spoils, 9/28/88.											

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

100 Hancock St. (LODI)

HOLE NO. 2013R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP	14501-138	1 OF 1	2014R					
SITE			COORDINATES		ANGLE FROM HORIZ BEARING							
100 Hancock St. (LODI)			N 1.855 E 2.456		Vertical							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL D.				
9-28-88	9-28-88	EMPIRE SOILS	CME 45B		12"	10.0		10.0				
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
8.0/94		4			5.5/ 9/28/88							
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
300 lbs./ 24 in.		NONE		J. Lord								
SAMP. TYPE AND DIAH.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	LOSS IN O.P.M	WATER PRESSURE TESTS	PRESS. P.S.F.	TIME IN MIN.	ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.5	2-4-5-3								0.0 - 2.6 Ft. TOPSOIL . Dusky red (5R3/4) to grayish brown (10YR5/6) silty sandy loam. Dry, crumbles with little pressure. Earthy odor, few grass roots and organics. Some medium-grained sand (<10%). Probable FILL.	Borehole advanced 0-10 Ft. using 12 in. o.d. hollow stem augers.
SS	2.0	2.0	4-6-16 20								2.2 Ft. Increasing stiffness and clay content. Cobbles.	Radioiologically sampled to 8' and gamma-logged to 10' by TMA-Eberline Inc.
SS	2.0	2.0	30-24 23-20						5		2.6 - 4.0 Ft. Silty SAND (SM) . Dark yellowish orange (10YR6/6). Moderate to weak thread, slightly elastic, yet more than 50% sand. Very slightly moist to dry. Dense. Crumbles under pressure.	7.2 Ft. Groundwater observed
SS	2.0	2.0	13-14 9-10						10		4.0 - 7.4 Ft. Sandy SILT (ML) . Dusky red (5R3/4) to moderate brown (5YR4/4). Weak cohesion, dry. Weak thread, soft, molds easily. Sand is moderately rounded quartz.	7.4 Ft. Top of undisturbed soil.
											6.0-7.0 Ft. Increasing moisture; decreasing fines. Stiffer, denser.	
											7.4 - 10.0 Ft. SAND (SP) . Medium- to coarse-grained multi-colored sand of Qtz. & Feis. grains. Subrounded, saturated. Adhesive, but no shear strength. Well sorted.	Gamma-log peak reading of 16,308 cpm at 1.5' deep
											Bottom of borehole at 10 ft. Borehole backfilled with spoils, 9/28/88.	
											Description and classification of soils by visual examination.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; C = OTHER

100 Hancock St. (LODI)

HOLE NO.
2014R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO. SHEET NO. HOLE NO.

14501-138 1 OF 1 2015R

SITE

100 Hancock St. (LODI)

COORDINATES

N 1.931 E 2.453

ANGLE FROM HORIZ BEARING

Vertical -----

BEGUN

9-2-88

COMPLETED

9-2-88

DRILLER

EMPIRE SOILS

DRILL MAKE AND MODEL

CME 45B

SIZE

3"

OVERBURDEN

3.5

ROCK (FT.)

TOTAL DEPTH

8.0

CORE RECOVERY (ft./%)

8.0/38

CORE BOXES

SAMPLES

2

SEL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

SAMPLE HAMMER WEIGHT/FALL

300 lbs. / 24 in.

CASING LEFT IN HOLE: DIA./LENGTH

NONE

LOGGED BY:

J. Lord

SAMP. TYPE AND DIAM.	SAMP. ADU. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE "N" BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	2.0	2-8-12 20						0.0 - 1.3 Ft. TOPSOIL . Dusky red (5R3/4) to grayish brown (10YR5/6) silty sandy loam. Dry, crumbles with little pressure. Earthy odor, few grass roots and organics. Some medium-grained sand (<10%). Probable FILL.	Borehole advanced 0-5 Ft. using 3.0 in. o.d. split-spoon sampler. Radiologically sampled by TMA-Eberline, Inc. No gamma-log. After 2nd spoon with no recovery, high ppm levels on OVA (>1000), and a 3 in. chunk of concrete in the spoon's mouth, it appeared that a storm drain had been breached at 3.5 ft. However, excavation to 4.5 ft. proved no conduit was present.	
SS	2.0	1.0	11-12 23-12								
SS	2.0	0.0	4-6-5-7								
SS	2.0	0.0	4-6-6-2								
									1.3 - 3.5 Ft. Sandy SILT (ML) . Dusky red to moderate brown (5YR4/4). Weak cohesion, dry, slightly compacted. Some lenses of poorly sorted sand less than 0.5 in. thick. Sand is moderately rounded quartz.		
									NO SAMPLES from 3.5 Ft. to bottom of boring.		
									Bottom of borehole at 8.0 ft. Borehole and excavation backfilled with spoils on 9/6/88.		

Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

100 Hancock St. (LODI)

HOLE NO. 2015R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.
				FUSRAP	14501-138	1 of 1	2017R
SITE		COORDINATES			ANGLE FROM HORIZ. BEARING		
100 Hancock St. (LODI)		N 1.921 E 2.306			Vertical		
BEGIN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL
9-1-88	9-1-88	EMPIRE SOILS	CME 45B	12"	14.0		14.0
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
8.3/64		7			10.0/ 9/1/88		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
300 lbs. / 24 in.		NONE		J. Lord			

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	1.0	1.0	10-20								0.0 - 1.0 Ft. ASPHALT . 2 inches of asphalt and 10 inches of limestone cobble base. Not sampled.	Borehole advanced 0-14 Ft. using 12 in. o.d. hollow stem augers.
SS	2.0	0.8	15-12-3 11								1.0 - 9.1 Ft. Silty clayey LOAM (FILL) . 1.0-5.0(?) Ft. Dusky brown (5YR2/2) matrix with mixed colors and organic flecks. Compressed, cohesive, dry. Crumbles easily. No thread.	
SS	2.0	0.9	6-6-6-5								5.0-9.1 Ft. Dusky yellowish brown (10YR2/2) sandy clayey silt. Moist. Lots of wood plugs as if the sampler is going through lumber. Bits of brick and leaves.	Radiologically sampled and gamma-logged by Elevated gamma-log at 6.5-10.5 ft. interval.
SS	2.0	2.0	5-7-8-10								8.0-9.1 Ft. Same but SATURATED . 9.1 - 10.2 Ft. SHY SAND (SM) . Moderate brown (5YR3/4) medium- to coarse-grained, subangular sand with up to 20% organic flecks. Moisture decreases with depth. Stiffness increases with depth.	9.1 Ft. Top of undisturbed soil. 10.0 Ft. Groundwater observed.
SS	2.0	1.2	6-8-9-8								10.2 - 14.0 Ft. Clayey Silt (ML-CL) . Light brown (5YR5/6). Moderately quick dilatancy. Moist, adhesive, soft. No shear strength. Moisture decreases and stiffness increases with depth.	
SS	2.0	2.0	4-9-12-8								Bottom of borehole at 14.0 Ft. Borehole backfilled with grout from 14 to 8 ft., with spoils to 6 inches, and with new asphalt in the top 6 inches, 9/1/88.	

SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER	SITE	100 Hancock St. (LODI)	HOLE NO.	2017R
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GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

SHEET NO.

HOLE NO.

14501-138 1 OF 1 2018R

SITE

100 Hancock St. (LODI)

COORDINATES

N 1.855 E 2.302

ANGLE FROM HORIZ. BEARING

Vertical -----

BEGUN

COMPLETED

DRILLER

DRILL MAKE AND MODEL

SIZE

OVERBURDEN

ROCK (FT.)

TOTAL DEPTH

8-31-88

9-1-88

EMPIRE SOILS

CME 45B

12"

14.0

14.0

CORE RECOVERY (FT./%)

10.2/76

CORE BOXES/SAMPLES

6

EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

7.5/ 8/31/88

DEPTH/EL. TOP OF ROCK

/

SAMPLE HAMMER WEIGHT/FALL

140 lbs./ 30 in.

CASING LEFT IN HOLE: DIA./LENGTH

NONE

LOGGED BY:

J. Lord

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS "N" / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	1.4	1.3	16-9-9								0.0 - 0.7 Ft. ASPHALT. 2 inches of asphalt and 8 inches of limestone cobble base. Not sampled.	Borehole advanced 0-14 Ft. using 12 in. o.d. hollow stem augers. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	0.0	1-6-3-3							0.8 - 4.9 Ft. Silty clayey LOAM (FILL). 1.0-4.0(?) Ft. Moderate brown (5YR4/4) matrix with mixed colors and organic flecks. Compressed, cohesive, dry. Crumbles easily. No thread.	Top of undisturbed soil not recognized.	
SS	2.0	1.7	3-4-17 30							4.0-4.9 Ft. Becoming mixed Moderate brown and dark greenish gray (5G4/1).		7.5 Ft. Groundwater observed.
SS	2.0	1.2	6-7-17 10							4.9 - 8.0 Ft. Silty SAND (SM). Moderate yellowish brown (10YR5/4) medium- to coarse-grained, subangular sand with up to 20% organic flecks. Dry. Stiffness increases with depth.		
SS	2.0	2.0	15-14 27-17							6.0-8.0 Ft. Light brown (5YR6/4). Moderately cohesive. Saturated at 6 Ft. for 2 inches. Decreasing moisture thereafter with depth. Weak thread; samples crumble easily.		
SS	2.0	2.0	7-8-10 10							8.0 - 14.0 Ft. SAND (SP). Pale reddish brown (10YR5/4) subrounded, medium- to coarse-grained, mixed mineralogy of feldspar and quartz. Moist, adhesive, no shear strength. No organics, no depositional structures seen. Moisture decreasing and stiffness increasing with depth.		
SS	2.0	2.0	5-6-4-5							Bottom of borehole at 14.0 Ft. Borehole collapsed to 10.0 Ft. depth upon removal of PVC. Borehole backfilled with grout from 10 to 5 ft., with spoils to 6 inches, and with new asphalt in the top 6 inches, 9/1/88.		Description and classification of soils by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

100 Hancock St. (LODI)

HOLE NO. 2018R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
100 Hancock St. (LODI)				N 1.794 E 2.295	14501-138 1 of 1		2019R				
100 Hancock St. (LODI)				COORDINATES	ANGLE FROM HORIZ BEARING						
100 Hancock St. (LODI)				N 1.794 E 2.295	Vertical						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DE				
9-7-88	9-9-88	EMPIRE SOILS	CME 45B	12"	12.0		12.0				
CORE RECOVERY (FT./%)		CORE BOXES/SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
11.0/100		6			6.4/ 9/9/88 11.8/ 9/9/88		/				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
300 lbs./ 24 in.		NONE		J. Lord							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" % CORE RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.						
										0.0 - 1.0 Ft. ASPHALT & COBBLES.	
SS	1.0	1.0	12-8							1.0 - 3.5 Ft. TOPSOIL. Dusky red (5R3/4) to grayish brown (10YR5/6) silty sandy loam. Dry, crumbles with little pressure. Earthy odor, few grass roots and organics. Some medium-grained sand (<10%). Probable FILL.	Borehole advanced 0-12 Ft. using 12 in. o.d. hollow stem augers. Radiologically sampled and gamma-logged by TMA-Eberline, Inc.
SS	2.0	2.0	8-8-7-7								
SS	2.0	2.0	2-2-5-15							3.5 - 5.2 Ft. Sandy silty GRAVEL (FILL). Moderate reddish brown (10R4/6). Angular gravel to 0.5 inch, medium-grained sand, and some silt. Poorly sorted, dry to slightly moist. Crumbles easily, slightly cohesive to non-cohesive.	
SS	2.0	2.0	15-17 14-11								
SS	2.0	2.0	6-7-6-10							4.9 Ft. Moisture increasing. Some olive gray (5Y4/1) fine silt.	Groundwater observed at 6.8 and 11.8 ft. 5.2 Ft. Top of undisturbed soil.
SS	2.0	2.0	15-6-7-9							5.2 - 6.8 Ft. Silty SAND (SM). Dark gray (N4) to olive gray (5Y4/1). Stiff, compact, moist, cohesive, but no thread. Fractures easily with weak finger pressure. Sand is subrounded, medium- to coarse-grained, mixed mineralogy.	
										6.4-6.8 Ft. Saturated. Soft, almost runny.	
										6.8 - 11.8 Ft. Sandy SILT (ML). Moderate brown (5YR4/4). Stiff, dry, compact, barely cohesive. Crumbles easily. Trace fines.	
										10.0-11.8 Ft. Increasing plasticity and saturation. Softer. Coarse-grained sand.	
										11.8 - 12.0 Ft. SAND (SW).	
										Moderate brown (5YR3/4) subangular coarse- to very coarse-grained sand. Saturated. Adhesive due to the moisture. No shear strength. Mixed feldspar and quartz minerals.	
										Bottom of borehole at 12.0 Ft. Borehole backfilled with spoils, and top 6" asphalt, 9/9/88.	

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
 D = DENNISON; P = PITCHER; O = OTHER

100 Hancock St. (LODI)

HOLE NO. 2019R

GEOLOGIC DRILL LOG

PROJECT	FUSRAP	JOB NO.	4501-138	SHEET NO.	1 OF 1	HOLE NO.	1101R
COORDINATES	72 Sidney St. (LODI)		N 1,939 W 2		ANGLE FROM HORIZ BEARING		
DRILLER	E.D.I.	DRILL MAKE AND MODEL	MOBILE B-57	SIZE	6.5"	OVERBURDEN	10.0
COMPLETED	10-30-87	ROCK (FT.)	Vertical		TOTAL DEPTH		
10-30-87	8.5/85	CORE RECOVERY (FT./%)	5	DEPTH/EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
SAMPLE NUMBER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
140 lbs/30 in		NONE		David Harnish			

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS "N" X CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.F.	TIME IN MIN.					
SS	2.0	1.4	7-14-9-3						0.0 - 4.4 ft. SILT and SAND FILL (ML, SP).	Boring advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.	
SS	2.0	1.3	6-4-3-2					0.0-0.5 ft. Gravely SILT. Gray (6YR5/1), coal pieces at base.			
SS	2.0	2.0	3-4-6-6					0.5-1.8 ft. SILT. Reddish brown (2.5YR4/4), mixed with SAND, brown, medium-grained.			
SS	2.0	1.3	9-9-9-9					1.5-4.3 ft. SILT. Dark grayish brown (10YR4/3), minor gravel, yellowish brown sand, coal, coal ash, plant fragments.			
SS	2.0	1.3	1-3-6-11					4.3-4.4 ft. Coal ash, black (2.5YR2.5/0) low density, loose.			
								4.4 - 5.1 ft. CLAY (CL). Gray (7.5YR5/0) with organic stains.			
								5.1 - 6.4 ft. SILTY SAND (SM). Light gray (2.5Y7/2), fine-grained, some iron-oxide nodules and plant pieces.			
								6.4 - 8.7 ft. SILT (ML). Laminated.			
								6.4-7.4 ft. Yellowish brown (10YR5/6).			
								7.4-8.7 ft. Reddish gray (5R5/1) with gray CLAY interbeds.			
								8.7 - 10.0 ft. SAND (SW). Yellowish brown (10YR5/4), fine-grained, variable bedding.			
								8.7-9.8 ft. Medium-grained, with minor gravel.			

Bottom of borehole at 10.0 ft.
Borehole backfilled with spoils, 10/30/87.

Identification and classification of soil samples by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE; SITE
D = DENNISON; P = PITCHER; O = OTHER

72 Sidney St. (LODI)

HOLE NO.
1101R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

4501-138

SHEET NO.

1 of 1

MOLE NO.

1104R

72 Sidney St. (LODI)

COORDINATES

N 1,886 W 3

ANGLE FROM NORTH

Vertical

BEARING

DATE

COMPLETED

DRILLER

DRILL MAKE AND MODEL

SIZE

OVERBURDEN

ROCK (FT.)

TOTAL DEPTH

11-2-87

11-2-87

E.D.I.

MOBILE B-57

6.5"

10.0

10.0

CORE RECOVERY (FT./%)

CORE BOXES

SAMPLES

SEL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

8.7/87

5

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN MOLE: DIA./LENGTH

NONE

LOGGED BY:

David Harnish

SOIL TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" X CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.8	10-17 18-17						0.0 - 4.0 ft. Gravely SILT and SAND (GM-ML, SP, SM).	Boring advanced 0-10 Ft. with 6.5" o.d. hollow stem auger.	
SS	2.0	1.9	10-4-10 7						0.0-1.3 ft. Gravely SILT; black (10YR2/1), some fine-grained sand and broken glass.	Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp.	
SS	2.0	2.0	2-3-6-5						1.3-2.3 ft. SAND; pale brown (10YR6/3), fine-grained, loose.		
SS	2.0	1.3	16-18 13-14						2.3-3.3 ft. Silty SAND; dark brown (10YR4/3), fine-grained, some rounded gravel, bits of coal.		
SS	2.0	2.0	4-8-11 14						3.3-4.0 ft. SILT; black (10YR2/1), pieces of glass.		
							10		4.0 - 6.5 ft. SAND (SP). Black and dark grayish brown (10YR4/2), with pieces of wood and some small round gravel; damp.		
									6.5 - 9.0 ft. SAND and CLAYEY SAND (SP, SC). Gray (5Y8/1) and greenish gray, medium-grained. Clayey sand is fine-grained. Interbedded thicknesses of 1-3 cm.		
									6.5-6.5 ft. SAND is dusky brown (7.5YR5/6), SILT is yellowish brown (10YR5/6).		
									7.5-7.5 ft. Gravely.		
									9.0 - 10.0 ft. SILT (ML). Yellowish red (5YR4/6).		
Bottom of borehole at 10.0 Ft. Borehole backfilled with spoils, 11/2/87.											

Identification and classification of soil samples by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER

SITE

72 Sidney St. (LODI)

MOLE NO.

1104R

GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501-138

SHEET NO.

1 OF 1

MOLE NO.

1105R

SITE
72 Sidney St. (LODI)

COORDINATES

N 1,887 W 52

ANGLE FROM NORTH BEARING

Vertical

BEGAN

11-2-87

COMPLETED

11-2-87

DRILLER

E.D.I.

DRILL MAKE AND MODEL

MOBILE B-57

SIZE

6.5"

OVERBURDEN

12.0

ROCK (FT.)

TOTAL DEPTH

12.0

CORE RECOVERY (FT./%)

9.2/77

CORE BOXES

SAMPLES

SEL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

SAMPLE NUMBER WEIGHT/FALL

140 lbs/30 lb

CASING LEFT IN MOLE: DIA./LENGTH

NONE

LOGGED BY:

David Harnish

SAMP. DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. NO. X CORE RECOVERY	WATER PRESSURE TESTS			ELEU.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN O.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.5	6-14-15 14						0.0 - 4.7 ft. SILT and HARD FILL (ML, GM, SP, SM).	Boring advanced 0-10 Ft. with 6.5" o.d. hollow stem auger. Boring radiologically sampled and gamma-logged by TMA-Eberline, Corp. 6.5-8.0 Ft. Distinct fuel smell.	
SS	2.0	2.0	6-7-7-7					0.0-0.8 ft. Gravally SILT, black.			
SS	2.0	2.0	3-1-1-4					0.8-2.3 ft. SILT, dark gray and dark brown, some gravel.			
SS	2.0	1.8	9-15 13-16					2.3 - 3.3 ft. SILTY SAND, mixed yellowish brown (10YR 5/6) and gray (10YR 5/1), fine grained. 3.3-3.5 ft. SILT, reddish brown (5YR4/3).			
SS	2.0	0.1	10-17 13-9					3.5-4.8 ft. COAL ASH, black (7.5YR2/0) with white sinter. 4.8-4.7 ft. SAND (SP), dark yellowish brown (10YR4/6) fine-grained.			
SS	2.0	1.8	3-3-3-8					4.7 - 6.0 ft. SILT (ML-OL). Very dark gray (7.5YR3/0), with some iron-oxide mottling; small root holes.			
									6.0 - 6.8 ft. CLAY (CL). Light gray (7.5YR7/0), iron stained at top, some sand.		
									6.8 - 12.0 ft. SILTY SAND (SM). Brown (10YR5/3), medium-grained, some gravel, saturated.		
									6.5-8.0 ft. Greenish tint.		
									8.0-8.1 ft. Gravally.		

Bottom of borehole at 12.0 ft.
Borehole backfilled with spoils, 11/3/87.

Identification and classification of soil samples by visual examination.

SS = SPLIT SPOON; ST = SHELBY TUBE;
D = DENNISON; P = PITCHER; O = OTHER.

SITE

72 Sidney St. (LODI)

MOLE NO.

1105R



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.	
SITE MAYWOOD INTERIM STORAGE SITE										COORDINATES N8800,E11300			14501-138	1 OF 1	MISS-147R
BEGIN 6/30/86		COMPLETED 6/30/86		DRILLER MORETRENCH ENVIRONMENTAL SERVICES		DRILL MAKE AND MODEL MOBILE B-33		HOLE SIZE 6"	OVERBURDEN FT/J 9.0'	ROCK FT/J 2.5'	TOTAL DEPTH 11.5'				
CORE RECOVERY FT./% N/A		CORE BOXES N/A	SAMPLES N/A	EL TOP OF CASING N/A		GROUND EL. 45.3	DEPTH/EL GROUND WATER 4.0'/41.3'		DEPTH/EL TOP OF ROCK 9.0'/36.3'						
SAMPLE HAMMER WEIGHT/FALL N/A			CASING LEFT IN HOLE: DIA./LENGTH N/A			LOGGED BY: P. YEN									
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CHIPPING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
					LOSS IN FT.	G.P.A.L.	PRESSURE P.S.I.								
AUGER, 6", THROUGHOUT.								45.3	0			0.0-3.0': SILT (M); GRAYISH BROWN (5YR3/2), RESIDUAL SOL, DRY TO MOIST.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION 7-9-86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.		
								42.3	5		3.0-9.0': SAND (SC-SH); FINE GRAINED, SILTY, SLIGHTLY PLASTIC TO NON-PLASTIC. 3.0-5.5': VERY LIGHT GRAY (M6), WITH ASH. 5.5-6.0': BLACK WITH PALE YELLOWISH BROWN SPECKS (M WITH 10YR6/2). 6.0-9.0': LIGHT OLIVE GRAY (5Y5/2), WITH CLAYEY SLUDGE.				
								36.3	10		9.0-11.5': SANDSTONE; LIGHT BROWN (5YR6/4), SOFT TO MODERATELY HARD, FINE GRAINED, SILTY, WEATHERED, SATURATED.				
								33.8	11.5			BOTTOM OF HOLE AT 11.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 7/9/86.			
									15				AUGER REFUSAL AT 11.5 FT. *DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.		
									20						
									25						
									30						
									35						

SS-SPLIT SPOON ST-SHELBY TUBE
D-DONNISON PATTISON D-OTHER

SITE

MAYWOOD
INTERIM STORAGE SITE

HOLE NO.

MISS-147R



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP		14501-138	1 OF 1	WISS-149R					
SITE			COORDINATES			ANGLE FROM HORIZ.		BLANG					
MAYWOOD INTERIM STORAGE SITE			N8900, E11400			90°		N/A					
BEGIN	COMPLETED	DRILLED	DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH					
6/30/86	6/30/86	MORE TRENCH ENVIRONMENTAL SERVICES	MOBILE B-33		6"	4.0'	1.5'	5.5'					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A		N/A	N/A	N/A	44.2	1.0' / 43.2'		4.0' / 40.2'					
SAMPLE HAMMER WEIGHT / T.M.A.		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
N/A		N/A			P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE IN LOSS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON WATER LEVELS, WATER RETENTION, CHARACTER OF DRILLING, ETC.
					LOSS FT.	IN %	COMPL.						
AUGER, 6", THROUGHOUT.								44.2	0			0.0-1.0': SILT (ML); DUSKY BROWN (5YR2/2); RESIDUAL SOIL.	7-9-86 SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. *DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.
								43.2				1.0-4.0': SAND (SC-SM); FINE GRAINED, SILTY AND CLAYEY, SLIGHTLY PLASTIC, DRY TO MOIST.	
								40.2				1.0-2.5': BLACK WITH LIGHT GRAY SPECKS (M WITH NT). 2.5-4.0': LIGHT GRAY (N7), WITH CLAY SEAM.	
								36.7	5.5			4.0-5.5': SANDS (SH); LIGHT BROWN (5YR6/4); SOFT, FINE GRAINED, SILTY, WEATHERED, DRY TO MOIST. BOTTOM OF HOLE AT 5.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 7/9/86.	
									10				
									15				
									20				
									25				
									30				
									35				

SS-SPLT SPOON; ST-SHELBY TUB;
D-DENISON P-PIT OVER; O-OTHER

STL

MAYWOOD
INTERIM STORAGE SITE

HOLE NO.

WISS-149R



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.		
MAYWOOD INTERIM STORAGE SITE										FUSRAP		14501-138	1 OF 1	MISS-156R		
COORDINATES										N9000, E11400		ANGLE FROM HORIZ.		BEARING		
7/1/86										7/1/86		DRILLER		TOTAL DEPTH		
MORE TRENCH ENVIRONMENTAL SERVICES										MOBILE B-33		6'	5.5'	6.5'		
CORE RECOVERY (%)										N/A	N/A	N/A	N/A	45.7	1.0' / 44.7'	5.5' / 40.2'
SAMPLE RECOVERY (%)										N/A	N/A	N/A	N/A	N/A	N/A	
CLOGGING LEFT IN HOLE, DIA./LENGTH										N/A	N/A	N/A	N/A	N/A	N/A	
LOGGED BY:										P. YEN	P. YEN	P. YEN	P. YEN	P. YEN	P. YEN	
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH	CORE RECOVERY	SAMPLE RECOVERY	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.			
					LOSS IN P.S.I.	LOSS IN P.S.I.	LOSS IN P.S.I.									
AUGER, 6" THROUGHOUT.								45.7	0			0.0-2.5' SILT (ML); BROWNISH BLACK (5YR2/1), RESIDUAL SCL.	7-9-86 SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. *DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.			
							43.2	2.5			2.5-5.5' SAND (SC-SM); LIGHT BROWN (5YR6/4), FINE GRAINED, SILTY, DRY TO MOIST, TRACE OF GRAVEL (1/8-1/4"), SLIGHT RESISTANCE AT 4.5 FT. CLAYEY LAYER (GRAYISH BLACK, N2) AT 5.0 FT.					
							40.2	5			5.5-6.5' SANDSTONE; LIGHT BROWN (5YR6/4) AND DUSKY RED (5YR3/4), SOFT TO MODERATELY HARD, FINE GRAINED, SILTY, WEATHERED, SATURATED.					
							39.2	6.5			BOTTOM OF HOLE AT 6.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 1/3/86.					
									10							
									15							
									20							
									25							
									30							
									35							

55-57.7 SPOON ST-SHELBY TUBE;
D-DANFORTH, P-PITCHER, O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-156



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
MAYWOOD INTERIM STORAGE SITE										FUSRAP		14501-138	1 OF 1	MISS-325C			
COORDINATES										N8485,E11415		ANGLE FROM HORIZ.		BEARING			
DRILLER										MOBILE B-33		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH		
COMPLETED										MOORE TRENCH ENVIRONMENTAL SERVICES		8"	7.0'	0.0'	7.0'		
CORE RECOVERY (FT./30)										CORE BOXES	SAMPLES	EL. TOP OF CASING		GROUND EL.	DEPTH/VEL. GROUND WATER		DEPTH/VEL. TOP OF ROCK
N/A										N/A	1	N/A		45.3'	5.0'/40.3'		N/A
SAMPLE NUMBER HEIGHT/FALL										CASING LEFT IN HOLE (DIA./LENGTH)		LOGGED BY:					
N/A										N/A		P. YEN					
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORE IN)	SAMPLE RECOVERY CORE RECOVERY	SAMPLE LOSS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CORRE LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION*	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.				
					LOSS IN IN	P. CAP.	PRESSURE P.S.I.										
								45.3	0								
SS	24"	N/A	N/A					44.3	0.5			0.0-0.5' SILT OILY; DUSKY BROWN (SYR2/2) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. 9/5/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.				
								43.3	2.0			0.5-2.0' SILT AND SLUDGE; LIGHT GRAY (NYR3/2), FINE GRAINED, SILTY, SOFT.					
								41.3	4.0			2.0-4.0' SAND; GRAYISH BROWN (SYR3/2), FINE GRAINED, SILTY.					
								40.8	4.5			4.0-4.5' SLUDGE; MEDIUM GRAY (NY), SILTY, SOFT, DUSKY YELLOWISH BROWN (OYR2/2), FINE GRAINED, SILTY, SATURATED.					
								38.3	7.0			4.5-7.0' SAND (SC-SM); PALE YELLOWISH BROWN (NYR6/2), FINE GRAINED, SILTY, SATURATED.					
									10			BOTTOM OF HOLE AT 7.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 9/5/86.	ADVANCED HOLE WITH HOLLOW S ALGER (4x8 IN.)				
									15								
									20								
									25								
									30								
									35								

* DESCRIPTION CLASSIFICATION 'B' VISUAL EXAMINATION OF CUTTINGS



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.	
SITE MAYWOOD INTERIM STORAGE SITE										COORDINATES N8500,E10800			ANGLE FROM HORIZ. 90°	BEARING N/A	
BEGIN 8/27/86		COMPLETED 8/27/86		DRILLER MORE TRENCH ENVIRONMENTAL SERVICES			DRILL MAKE AND MODEL MOBILE B-33		HOLE SIZE 8"	OVERBURDEN (FT.) 4.5'	ROCK FT. 2.5'	TOTAL DEPT. 7.0'			
CORE RECOVERY (%)/ZD N/A			CORE BOXES N/A	SAMPLES 1	EL. TOP OF CASING N/A		GROUND EL. 45.3'	DEPTH/VEL. GROUND WATER 5.0' / 40.3'			DEPTH/VEL. TOP OF ROCK 4.5' / 40.8'				
SAMPLE NUMBER WEIGHT/FALL N/A				CASING LEFT IN HOLE/DIA./LENGTH N/A				LOGGED BY: P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS IN PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION*	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.			
				LOSS IN WT. %	G.P.A.L.	PRESSURE P.S.I.									
							45.3	0							
SS L5*	24'	N/A	N/A				44.3	1.0		1	0.0-1.0': ASPHALT AND CRUSHED ROCK; PAVEMENT AND ROAD BASE. 1.0-3.0': SILT (CL); DUSKY BROWN (5YR2/2), SANDY, MOIST.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION.			
							42.3	3.0			3.0-4.5': SAND (SC-SM); PALE YELLOWISH BROWN (5YR6/2), FINE GRAINED, SILTY, MOIST.				
							40.8	4.5			4.5-7.0': SANDSTONE; SOFT, FINE GRAINED, SILTY, WEATHERED, ROCK FRAGMENTS. 4.5-5.0': BROWNISH GRAY (5YR3/D). 5.0-7.0': DUSKY RED (5R3/4).	9/5/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.			
							38.3	7.0			BOTTOM OF HOLE AT 7.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 9/5/86.	ADVANCED HOLE WITH HOLLOW STEM ALGER (4x8 INCH)			
								10							
								15							
								20							
								25							
								30							
								35							

* DESCRIPTION AND CLASSIFICATION VISUAL EXAMINATION OF CUTTING

SS-SPLIT SPOON ST-SHELBY TUBE, DICKERSON PFT/DR OTHER


SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

M155-32



GEOLOGIC DRILL LOG				PROJECT: FUSRAP		JOB NO. 14501-138	SHEET NO. 1 OF 1	HOLE NO. WISS-327C				
SITE MAYWOOD INTERIM STORAGE SITE			COORDINATES N8635, E11085			ANGLE FROM HORIZ. 90°		BEARING N/A				
DATE 8/27/86	COMPLETED 8/27/86	DRILLER MORE TRENCH ENVIRONMENTAL SERVICES	DRILL MAKE AND MODEL MOBILE B-33	HOLE SIZE 8"	OVERBURDEN (FT.) 10.0'	ROCK (FT.) 1.0'	TOTAL DEPTH 11.0'					
CORE RECOVERY (FT./TD) N/A		CORE BOXES N/A	SAMPLES 1	EL. TOP OF CASING N/A	GROUND EL. 45.3'	DEPTH/EL. GROUND WATER 8.0' / 37.3'		DEPTH/EL. TOP OF ROCK 10.0' / 35.3'				
SAMPLE NUMBER WEIGHT / TALL N/A		CASING LEFT IN HOLE, DIA./LENGTH N/A		LOGGED BY: P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOW BY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION*	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN PRESSURE P.S.I.	TIME IN MINUTES							
							45.3	0				
SS LS*	24"	N/A	N/A				44.3			1	0.0-10.0: ASPHALT AND CRUSHED ROCK; PAVEMENT AND ROAD BASE. 10-10.0: SAND (SC-SND); FINE GRAINED, SILTY, MOIST, GRAVELLY TO 8.0 FT. 10-2.0: PALE YELLOWISH BROWN (OYR6/2). 2.0-6.0: DUSKY BROWN (SYR2/2). 6.0-8.0: DARK GRAY (ND), SLIGHT GASOLINE OOR. 8.0-10.0: PALE BROWN (SYR5/2), SATURATED BELOW 8.0 FT.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.  9/5/86
							34.3	10 H.O.			10.0-11.0: SANDSTONE; DUSKY RED (SR3/4), SOF TO MODERATELY HARD, FINE GRAINED, SILTY, SATURATED. BOTTOM OF HOLE AT 10 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 9/5/86.	ADVANCED HOLE WITH HOLLOW STEEL AUGER 14x8 IN.
								15				
								20				
								25				
								30				
								35				

* DESCRIPTION CLASSIFICATION OF VISUAL EXAMINATION OF CUTTING:

SS=SPLIT SPOON; ST=SHALLOW TUBE; DR=DRIBBON; P=PARTIAL; O=OTHER

SITE MAYWOOD INTERIM STORAGE SITE

HOLE NO. WISS-327C



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.			
MAYWOOD INTERIM STORAGE SITE										FUSRAP		14501-138		1 OF 1		M1SS-330C			
COORDINATES										N9000, E11350		ANGLE FROM HORIZ.		90°		BEARING		N/A	
BEGIN		COMPLETED		DRILLER			DRILL MAKE AND MODEL			HOLE SIZE		OVERBURDEN (FT.)		ROCK (FT.)		TOTAL DEPTH			
9/2/86		9/2/86		MORE TRENCH ENVIRONMENTAL SERVICES			MOBILE B-33			8"		6.0'		2.0'		8.0'			
CORE RECOVERY (FT./%)				CORE BOXES		SAMPLES		EL. TOP OF CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A				N/A		1		N/A		45.7'		6.0' / 39.7'		6.0' / 39.7'					
SAMPLE HAMMER WEIGHT / FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:											
N/A				N/A				P. YEN											
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE IN OPS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION*	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.						
					LOSS IN G.P./3AL	PRESSURE P.S.I.	TIME IN MINUTES												
SS 1/2"	24"	N/A	N/A				45.7	0											
							45.2	0.5		1	0.0-0.5': SILT AND CLAY; DUSKY BROWN (SYR2/2) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION 9/5/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.							
								1.5			0.5-1.5': SILT AND CLAY OIL; DUSKY YELLOWISH BROWN (OYR2/2), SLIGHTLY PLASTIC.								
								5			1.5-6.0': SAND (SC-SND); FINE GRAINED, SILTY, MOIST. 1.5-3.0': BLACK (ND). 3.0-5.5': LIGHT GRAY (NT).								
							39.7	6.0			5.5-6.0': PALE YELLOWISH BROWN (OYR6/2).								
							37.7	8.0			6.0-8.0': SANDSTONE; DUSKY RED (SR3/4), SOF TO MODERATELY HARD, FINE GRAINED, SILTY, WEATHERED, MOIST.								
								10											
								15											
								20											
								25											
								30											
								35											
SS-SPLIT SPOON; S1-SHELL; BY TUB; DICKINSON; P-MPT; OTHER; OTHER										SITE		MAYWOOD INTERIM STORAGE SITE				HOLE NO.		M1SS-330C	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
MAYWOOD INTERIM STORAGE SITE				FUSRAP		14501-138	1 OF 1	N155-426C					
COORDINATES				N9000, E10506		ANGLE FROM HORIZ.		BEARING					
						90°		N/A					
BEHIN	COMPLETED	DRILLED	MORE TRENCH ENVIRONMENTAL SERVICES		DRILL BIT AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
8/22/86	8/22/86				ACKER ELECTRIC CATHEAD	4.5"	10.5'	0.0'	10.5'				
CORE RECOVERY(FT./TD)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A		N/A	1	N/A	53.0'	DRY		N/A					
SAMPLE NUMBER HEIGHT/ALL			CASING LEFT IN HOLE/DIAL LENGTH		LOGGED BY:								
N/A			N/A		P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH/DEPTH	SAMPLE RECOVERY	SAMPLE IN CORE	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN C.P.A.	PRESSURE P.S.I.	TIME IN P. MINUTES						
DRIVE CASING, 4.5 IN. DIA.	24'	N/A	N/A				53.0	0					
							42.5	10.5				0.0-0.5': CONCRETE FLOOR SLAB. 0.5-10.5': SAND (SC-SM); FINE GRAINED, SILTY, MOST TO 6.8 FT. SATURATED 6.8-10.5 FT WITH SLIGHTLY PLASTIC SLUDGE. 0.5-1.5': PALE BROWN (SYR2/2). 1.5-5.0': MEDIUM GRAY OESL. 5.0-6.4': LIGHT GRAY OY7. 6.4-6.6': BLACK OYD. 6.6-6.8': PALE YELLOWISH BROWN OYR6/2. 6.8-10.5': MEDIUM GRAY OESL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. GROUND WATER LEVEL MEASURED ON 9-8-86.
												BOTTOM OF HOLE AT 10.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 9/8/86.	CONCRETE FLOOR SLAB CORED WITH AN ELECTRIC CORE DRILL AND A 6" DIA BIT. HOLE ADVANCED USING A 300 LB CASING HAMMER DRIVING 4.5" DIA CASING.
													* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

8 1/2" SPLIT SPOON ST-SHELF TUBE; SPECIMEN PARTS OTHER

WTL

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

N155-426C



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
SITE MAYWOOD INTERIM STORAGE SITE - FEDERAL EXPRESS										COORDINATES	NR400, E11400	ARRIVE FROM HORIZ.	BLANKS
DATE	COMPLETED	DRILLER			DRILL NAME AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH			
6/20/86	6/20/86	MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-33		6"	10.0'	1.5'	11.5'			
CORE RECOVERY(%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/VEL. GROUND WATER		DEPTH/VEL. TOP OF ROCK					
N/A		N/A	N/A	N/A	45.3'	6.0' / 39.3'		10.0' / 35.3'					
SAMPLE NUMBER BEHIND P/ALL			CASING LEFT IN HOLE; DRILL LENGTH			LOGGED BY							
N/A			N/A			P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LEADIN CORE NO.	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BEHIND PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAVIM. LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS IN P/ALL	PRELIMINARY P.S.I.	TIME IN P/ALL							
AUGER 6" THROUGHOUT							45.3	0			0.0-1.5': SILT AND CRUSHED ROCK GM - GRAY GRAYISH BROWN (SYR2/2)	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. 6/20/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
							45.8	1.5		1.5-10.0': SAND (S2-S4) FINE-GRAINED, GENERALLY SILTY. 1.5-5.0': DUSKY RED (SR3/4) BRICK FRAGMENTS NOTED AT 4.0 FT. 5.0-6.0': DUSKY BROWN (SYR2/2) 7.0-8.0': YELLOWISH GRAY (SYR1/8) 8.0-10.0': BROWNISH BLACK (SYR2/8), LIGHT GRAY (TRACE) ON, BECOMES MORE CLAYEY WITH LIGHT GRAY SPECKS.			
							35.3 33.8	10 11.5			10.0-11.5': SANDSTONE; DUSKY RED (SR3/4), SOFT TO MODERATELY HARD, FINE-GRAINED, SILTY, WEATHERED, SATURATED.		
											BOTTOM OF HOLE AT 11.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.	AUGER REFUSAL AT 11.5 FT.	

• DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

SE-SPILT SPOON ST-SPELBY TUBS
P-CORRECTION P-PHYT OVER Q-OTHER

SITE
MAYWOOD INTERIM STORAGE SITE -
FEDERAL EXPRESS

HOLE NO.
MISS-123R



GEOLOGIC DRILL LOG

PROJECT				FLUSRAP		JOB NO.	14501-130	SHEET NO.	1 OF 1	HOLE NO.	WISS-127R
SITE				COORDINATES				ANGLE FROM MERID.		SLANT	
MAYWOOD INTERIM STORAGE SITE - FEDERAL EXPRESS				NE200, E11300				90°		N/A	
DATE	COMPLETED	DRILLER		DRILL NAME AND MODEL	HOLE SIZE	DEPTH (FEET)	ROCK (FT)	TOTAL DEPTH			
6/23/86	6/23/86	MORETRENCH ENVIRONMENTAL SERVICES		MOBILE B-33	6"	10.0'	0.0'	10.0'			
CORE RECOVERY %		CORE BOXES	SAMPLES	EL. TOP OF CASING	GRINDING EL.	DEPTH/EL. GRINDING WATER		DEPTH/EL. TOP OF ROCK			
N/A		N/A	N/A	N/A	45.6'	5.0' / 40.6'		N/A			
SAMPLE NUMBER BEGIN / END			CASING LEFT IN HOLE / LENGTH			LOGGED BY					
N/A			N/A			P. YEH					

SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH CORRECTION	SAMPLE INTERVAL CORRECTION	SAMPLE BEARING	PERCENT CORE RECOVERY	IN SITU PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTICE ON WATER LEVEL, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOGS IN P.S.J.	PRESSURE P.S.J.	TIME IN MINUTES						
AUGER, 6", THROUGHOUT.								45.6	0				
								45.1	0.5		0.0-0.5': ASPHALT; GRAYISH BLACK ORG.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION 6/25/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
							44.6	1.0		0.5-0.7': CRUSHED ROCK DARK GRAY ORG. BASALT, ANGULAR, 2 MINUS.			
								5		1.0-10.0': SAND (S&S) FINE-GRAINED, SILTY, SLIGHTLY CLAYEY, MOST TO SATURATED. 1.0-4.5' LIGHT BROWN (S&S) / 4L 4.5-10.0' GREENISH GRAY (S&S) / 4L			
								35.6	10			BOTTOM OF HOLE AT 10.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/25/86.	

BE-SPLIT SPOON ST-SHELLY FLUID	DATE	MAYWOOD INTERIM STORAGE SITE - FEDERAL EXPRESS	HOLE NO.
INCORPORATE PARTICLES OTHER			WISS-127R

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
SITE MAYWOOD INTERIM STORAGE SITE - FEDERAL EXPRESS										COORDINATES		NO 115, E 111 NS	HOLE FROM HORIZ.	BEARING
DRILLER	COMPLETED	DRILLER			DRILL UNIT AND MODEL		HOLE SIZE	OVERBURDEN (FT)	ROCK (FT)	TOTAL DEPTH				
8/5/86	8/5/86	MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-33		6"	10.0'	0.0	10.0'				
CORE RECOVERY (FT)/%		CORE DIAMETER	SAMPLES	GL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK						
N/A		N/A	N/A	N/A	44.2'	6.0' / 38.2'		N/A						
SAMPLE DAMAGED BEHIND/ALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
N/A			N/A			D. McGRANE								
SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH CORRECTION	SAMPLE IN EXCESS OF CORE RECOVERY	SAMPLE BELOW PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
				LOG IN FT. D.P.A.L.	PRESSURE IN P.S.I.	TIME IN MINUTES								
AUGER 6" THROUGHOUT.						44.2	0							
						43.9	0.3			0.0-0.1: ASPHALT. 0.3-10.0: SILTY SAND (SM-SC) COLOR STRATIFIED SOIL HORIZONS; FINE-TO MEDIUM-GRAINED; SOFT; POORLY CONSOLIDATED (LOOSE) WITH ONE CLAYEY DENSE LAYER (4.5-5.0 FT); NUMEROUS PIECES OF SANDSTONE GRAVEL. 0.3-1.0: MODERATE BROWN (S)S/4L. 1.0-4.5: DARK REDDISH BROWN (O)R3/4L. 4.5-5.0: CLAYEY LAYER; GRAY (O)S. 5.0-10.0: DARK REDDISH BROWN; MANY FINES.	SITE CHECKED FOR RADIOACTIVITY CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 8/10/86 NIGHT DRILLING - COLORS MAY BE SLIGHTLY DIFFERENT.			
						34.2	10			BOTTOM OF HOLE AT 10.0 FT. AUGER SPOILS WERE IMMEDIATELY REPLACED IN THE HOLE AND THE HOLE WAS RESEALED WITH ASPHALT.				



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
MAYWOOD INTERIM STORAGE SITE - FEDERAL EXPRESS				FLSRAP		14501-138	1 OF 1	MS55-403R					
COMPLETED				MO350, E11215		ANGLE FROM HORIZ.		DEVIATION					
						90°		N/A					
DATE	COMPLETED	BILLER	DRILL NAME AND NUMBER	HOLE SIZE	OVERBURDEN (FT)	DRILL (FT)	TOTAL DEPTH						
8/18/86	8/18/86	MOORE TRENCH ENVIRONMENTAL SERVICES	MOBILE B-33	6"	0.0'	0.5'	0.5'						
CORE RECOVERY (%)		CORE BONES	SAMPLES	EL. TOP OF CORE	DRILLING EL.	DEPTH/VEL. DRIVING RATE	DEPTH/VEL. TOP OF DRILL						
N/A		N/A	N/A	N/A	46.2'	4.0' / 44.2'	0.0' / 38.2'						
SAMPLE NUMBER BEHIND/ALL		CORES LEFT IN HOLE, IN ALTERN		LOGGED BY:									
N/A		N/A		D. McGRANE									
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH (FEET)	SAMPLE WEIGHT (POUNDS)	SAMPLE NO.	PERCENT CORE RECOVERY	ON THE PREVIOUS TEST			ELEVATION	DEPTH	DRILLING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVEL, SOIL RETURN, CHARACTER OF DRILLING, ETC.
					LONG	THRU	TIME						
6" AUGER THROUGHOUT.								46.2	0				
								45.9	0.3				SITE CHECKED FOR RADIOACTIVITY CONTAMINATION AND HOLE SAMPLER LOGGED BY EBERLINE ANALYTICAL CORPORATION 8/10/86
									5		0.0-0.3: ASPHALT. 0.3-0.5: SILTY SAND; REDDISH COLOR STRATIFIED FINE-TO MEDIUM-GRAINED SOFT; POORLY CONSOLIDATED (LOSE) WITH ONE DENSER CLAYEY ZONE (6.0-6.5 FT) MOST TO SATURATED AT 4.0 FT. 0.5-2.0: MODERATE BROWN (GYR3/4) WITH NUMEROUS PIECES OF DARK REDDISH BROWN (GR3/4) SANDSTONE GRAVEL. 2.0-6.0: DARK YELLOWISH BROWN (GYR4/2) WITH A FEW PIECES OF A WHITE CLAYEY MATERIAL; CLAYEY; CONTAINS PIECES OF METAL NAILS, SODA POP TOPS.		
								37.7	8.5		6.0-6.5: CLAYEY ZONE, PALE GREEN (SG7/2). 6.5-8.0: DARK YELLOWISH BROWN (GYR4/2).		
								10		8.0-8.5: DECOMPOSED SANDSTONE; DARK REDDISH BROWN (GR3/4) FINE-GRAINED (ARGILLACEOUS); SOFT TO MODERATELY HARD; POORLY CONSOLIDATED (LOSE); TOTALLY DECOMPOSED TO HIGHLY WEATHERED; AUGER SPOILS CONSIST OF SILTY SAND (SND) AND GRAVEL; SATURATED.			
									15		BOTTOM OF HOLE AT 8.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 8/10/86.		
									20				
									25				
									30				
									35				
									40				
									45				
									50				
									55				
									60				
									65				
									70				
									75				
									80				
									85				
									90				
									95				
									100				
SAMPLE SPOON STIMULITY TUBE		SITE		MAYWOOD INTERIM STORAGE SITE - FEDERAL EXPRESS					HOLE NO.		MS55-403R		
MOODING PITCHER OTHER													




GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE: MAYWOOD INTERIM STORAGE SITE - SUNOCO STATION				COORDINATES	FUSRAP	14501-138	1 OF 1	MISS-296R					
DATE: 8/7/86				DRILLER: MORETRENCH ENVIRONMENTAL SERVICES	DRILL TIME AND SERIAL: MOBILE B-33	HOLE SIZE: 6"	ANGLE FROM HORIZ: 90°	BEARING: N/A					
COMPLETED: 8/7/86		CORE DEVICES: N/A		SAMPLES: N/A	EL. TOP OF CASING: N/A	DRILL DEPTH: 10.0	HOIST #1: 0.0	TOTAL DEPTH: 10.0'					
CORE RECOVERY %: N/A		CORE LOSS: N/A		EL. TOP OF CASING: N/A	CASING EL.: 46.3'	RETRIEVAL: 4.5' / 41.8'		DEPTH: N/A					
SAMPLE NUMBER: N/A		CASING LEFT IN HOLE: N/A		LOGGED BY: D. McGRANE									
SAMPLE TYPE AND NUMBER	SAMPLE GRAIN LENGTH CODE	SAMPLE WEIGHT	SAMPLE NO.	PERCENT CORE RECOVERY	IN SITU PRESSURE TEST			ELEVATION	DEPTH	GRAPIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF MUDS, ETC.
					LONG P.S.P.	MEDIUM P.S.P.	SHORT P.S.P.						
ALPAC, 6" THROUGHOUT.							46.3	0			0.0-0.1' CONCRETE.	8/10/86 SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.	
						46.2	0.1				0.1-10.0' SILTY SAND (SH-SCH) COLOR STRATIFIED FINE-TO MEDIUM-GRAINED; SOFT; POORLY CONSOLIDATED (LOOSE) WITH NUMEROUS DENSE SILT AND CLAY LENSES, SLIGHTLY MOST TO SATURATED AT 4.5 FT. 0.1-1.0' DARK YELLOWISH BROWN (00TR/2). 1.0-3.5' MODERATE BROWN (5YR3/4) WITH A FEW GRAY (05-6) CLAYEY LENSES. 3.5-5.0' ORGANIC LAYER; BLACK WITH A FEW PALE GREEN (5G7/2) CLAYEY LENSES. 5.0-6.0' PALE GREEN CLAYEY. 6.0-9.0' DARK YELLOWISH BROWN (00TR/2) VERY SILTY. 9.0-10.0' DARK REDDISH BROWN (00R3/4) VERT SILTY; DECOMPOSED SANDSTONE. BOTTOM OF HOLE AT 10.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 8/10/86.		
							36.3	10				DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CLIPPINGS.	

DRILLER: MORETRENCH ENVIRONMENTAL SERVICES

MAYWOOD INTERIM STORAGE SITE - SUNOCO STATION

HOLE NO. MISS-296R



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.						
				FLSRAP		14501-130	1 OF 1	MISS-297R						
SITE			COORDINATES			DIBBLE FROM HOLE		REMARKS						
MAYWOOD INTERIM STORAGE SITE - SINOCC STATION			N8300, E12000			90°		N/A						
DATE	COMPLETED	BILLER	NO. OF TRENCH	BILLER NAME AND NUMBER	HOLE SIZE	DEPTH (FT.)	NO. OF TRENCH	TOTAL DEPTH						
8/7/86	8/7/86	NORE TRENCH ENVIRONMENTAL SERVICES		MOBILE B-33	6"	6.5'	2.5'	9.0'						
CORE RECOVERY (%)		CORE DIAMETER	SAMPLES	EL. TOP OF CORE	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF HOLE							
N/A		N/A	N/A	N/A	46.3'	4.0' / 42.3'	6.5' / 39.8'							
SAMPLE NUMBER CORRECTION			CORE LEFT IN HOLE (IN) / LENGTH		LOGGED BY:									
N/A			N/A		D. McGRANE									
SAMPLE TYPE AND DIAMETER	SAMPLE SPACING - LENGTH (FEET)	SAMPLE DEPTH - CORE NUMBER	SAMPLE SIZE	PERCENT CORE RECOVERY	WATER PRESSURE TESTS				ELEVATION	DEPTH	BRINE LAB	SAMPLE	DESCRIPTION AND CLASSIFICATION	DEPTH OR OTHER LEVELS WHERE RECORDS CONTACTED BY DRILLER, ETC.
					LOG IN IN P.S.P.A.	PERCENTAGE P.S.I.	TIME IN MINUTES	PERCENTAGE						
AUGER, 6" THROUGHOUT.									46.3	0			0.0-0.5' CONCRETE.	
									46.2	2			0.5-3.0' SILTY SAND (S&S) SOFT TO STRATIFIED SOIL HORIZONS FINE-TO MEDIUM-GRAINED (SFT); POORLY CONSOLIDATED (LOOSE) WITH A FEW DENSER CLAYEY ZONES (3.0-4.0 FT); SLIGHTLY MOIST TO SATURATED AT 4.0 FT.	 8/10/86 SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBECLINE ANALYTICAL CORPORATION.
									39.8	6.5			0.1-3.0' MODERATE BROWN (S&S/4) FEW ROUNDED PEBBLES; FEW ORGANICS. 3.0-4.0' ORGANIC LAYER; BLACK WITH A FEW PALE GREEN (S&S/2) CLAYEY LENSES. 4.0-5.0' PALE GREEN. 5.0-6.5' DARK YELLOWISH BROWN (S&S/4) VERY SILTY.	
									37.3	9.0		6.5-9.0' (S&S) COMPOSED SANDSTONE; DARK REDDISH BROWN (S&S/4) FINE-GRAINED (ARGILLACEOUS) SOFT TO MODERATELY HARD; POORLY TO WELL CEMENTED; TOTALLY DECOMPOSED TO HIGHLY WEATHERED; AUGER SPILLS CONSIST OF SILTY SAND (S&S) AND GRAVEL; SATURATED. BOTTOM OF HOLE AT 9.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 8/10/86.	REFUSAL AT 9.0 FT.	

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG				PROJECT			JOB NO.		SHEET NO.		HOLE NO.	
SITE: MAYWOOD INTERIM STORAGE SITE - SINOCD STATION				COORDINATES: N8200, E11100			14501-130		1 OF 1		MISS-299R	
DRILLER		COMPLETED		DRILLER		DRILL MAKE AND MODEL		HOLE SIZE		OVERBURDEN (FT.)		ROCK (FT.)
R/L/86		R/L/86		MORE TRENCH ENVIRONMENTAL SERVICES		MOBILE B-33		6"		5.0'		0.0
CORE RECOVERY (%)			CORE DIAMETER		SAMPLES		EL. TOP OF CASING		GROUND EL.		DEPTH/EL. OPENED WATER	
N/A			N/A		N/A		N/A		46.2'		NONE OBSERVED	
SAMPLE DAMAGED WEIGHT/FALL				CASING LEFT IN HOLE/DOWNLENGTH				LOGGED BY:				
N/A				N/A				D. MCGRANE				
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH (INCHES)	SAMPLE WEIGHT (POUNDS)	SAMPLE RECOVERY (%)	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAINING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETENTION, CHARACTER OF DRILLING, ETC.
				IN LBS	IN P.S.I.	IN THE 30 IN. TO MINUTES						
ALGER, 6" THROUGHOUT.							46.2	0			0.0-3.5'; SILTY SILT (S6) MODERATE BROWN (S7C3/4) FINE-GRAINED, SOFT, POORLY CONSOLIDATED (LOOSE), MOIST.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EVERLINE ANALYTICAL CORPORATION.
							41.2	3.5			3.5-5.0'; SILTY SAND (S6) DARK YELLOWISH BROWN (S7M/2) WITH A FEW LENSES OF PALE GREEN (S67/2) SILT AND NUMEROUS PIECES OF DARK REDDISH BROWN (S67/4) SANDSTONE, FINE-TO MEDIUM-GRAINED, SOFT, POORLY CONSOLIDATED (LOOSE), MOIST.	
											BOTTOM OF HOLE AT 5.0 FT. HOLE WAS IMMEDIATELY BACKFILLED WITH THE ALGER SPOILS.	

30-SPLOT SPOILS BY RAIL, INCLUDING PAPER COVER



SITE

MAYWOOD INTERIM STORAGE SITE - SINOCD STATION

HOLE NO.

MISS-299R



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
WFL MAYWOOD INTERIM STORAGE SITE - SINOCC STATION				FUSRAP		14501-130	1 OF 1	WISS-329C					
COMMENTS				NO 390, E 11000		ANGLE FROM HORIZ.		RELATIVE					
						90°		N/A					
DATE	COMPLETED	BORER	MORE/TRENCH	BORER MAKE AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	SOCK (FT.)	TOTAL DEPTH					
8/29/86	8/29/86	ENVIRONMENTAL SERVICES		MOBILE B-33	8"	9.0'	1.0'	10.0'					
CORE RECOVERY (%)		CORE BOXES	SAMPLES	EL. TOP OF CORES	GRINDING EL.	DEPTH/EL. GRINDING WATER		DEPTH/EL. TOP OF SOCK					
N/A		N/A	2	N/A	46.3'	5.0'/41.3'		9.0'/37.3'					
SAMPLE NUMBER IDENT./VAL		CAGES LEFT IN HOLE (DIA./DEPTH)		LOGGED BY									
N/A		N/A		P. YEN									
SAMPLE TYPE AND DIAMETER	SAMPLE OR ADVANCE LENGTH CODE (SEE)	SAMPLE RECOVERY CODE (RECOVERY)	SAMPLE LOSS CODE (LOSS)	PERCENT CORE RECOVERY	IN SITU PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CONTACTS OF BOLLERS, ETC.
					LOG IN P. (P./A.)	PRESSURE (P.S.I.)	TIME IN MINUTES						
								46.4	0				
SS	24"	N/A	N/A					45.3	16	1	0.0-0.5: ASPHALT AND CRUSHED ROCK PAVEMENT AND ROAD BASE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION	
LS	12"	N/A	N/A					42.3	6	2	0.0-5.0: SAND (S2/S3) FINE-GRAINED, SILTY, MOIST. 4.0-5.0: DUSKY BROWN (S2R2/Z). 5.0-9.0: BROWNISH GRAY (S2R3/L).	 9/5/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
								37.3	9.0		9.0-10.0: SANDSTONE; DUSKY RED (S2R3/L), FINE-GRAINED, SILTY, WEATHERED SOFT.	ADVANCED HOLE WITH HOLLOW STEM AUGER (4x8 INCH)	
								36.3	10		BOTTOM OF HOLE AT 100 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 9/5/86.		
									15				
									20				
									25				
									30				
									35				
SS-SPLT SPHER ST-BELLY TUBE S-BENCH P-PITCHED WATER				WFL				MAYWOOD INTERIM STORAGE SITE - SINOCC STATION				HOLE NO. WISS-329C	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.		
SITE WAYWOOD INTERIM STORAGE SITE - SINOCC STATION				COMPLETED		14501-138	1 OF 1	MISS-401R		
				NO-400, E10900		ANGLE FROM HORIZ.		REMARKS		
DRILLER		DRILLER		DRILL MACH. AND SERIAL		HOLE SIZE	OVERBURDEN (FT.)	RICK (FT.)	TOTAL DEPTH	
8/8/86		8/8/86		MORE TRENCH ENVIRONMENTAL SERVICES		MOBILE B-33	6"	10.0'	0.0'	10.0'
CORE RECOVERY (F/L)		CORE INDEX	SAMPLES	ELL. TOP OF CASING	GROUND EL.	DEPTH/ELL. GROUND WATER		DEPTH/ELL. TOP OF RICK		
N/A		N/A	N/A	N/A	46.3'	6.5' / 39.8'		N/A		
SAMPLE NUMBER BEING / ALL			CASING LEFT IN HOLE: CO./LENGTH			LOGGED BY:				
N/A			N/A			D McGRANE				
SAMPLE TYPE AND DIAMETER	SAMPLES OBTAINED (LENGTH OF CORE RUN)	SAMPLE WEIGHT (CORE RECOVERY)	SAMPLE WGT. (%)	WATER PRESSURE TECH.	ELEVATION	DEPTH	GRADING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF MUDS, ETC.
6" AUGER THROUGHOUT.					46.3	0				
					45.9	0.4			0.0-0.4: ASPHALT. 0.4-10.0: SILTY SAND (SH-SL) COLOR STRATIFIED FINE-TO MEDIUM-DRAINED SOFT, POORLY CONSOLIDATED (CLOSED) WITH ONE DENSER CLAYEY ZONE (5.0-5.5 FT) MOST TO SATURATED AT 6.5 FT. 0.4-5.0: GRAYISH BLACK (GZ) NUMEROUS GRASS ROOTS (0.4-1.0 FT) AND ORGANICS. 5.0-5.5: CLAYEY ZONE; ALTERNATING 0.25' LENSES OF DUSKY YELLOW (SY6/0) AND PALL GREEN (SG7/2). 5.5-7.0: DARK YELLOWISH BROWN (OY8A/2). 7.0-10.0: DARK REDDISH BROWN (OR3/4); DECOMPOSED SANDSTONE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 1/2/86
					35.9	10			BOTTOM OF HOLE AT 10.0 FT. AUGER SPOILS WERE IMMEDIATELY REPLACED IN THE HOLE.	
						15				
						20				
						25				
						30				
						35				
						35				

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

30-SPLIT SPOILS STANDARD TUBE SPECIMENS PATCHED 0-0102

SITE WAYWOOD INTERIM STORAGE SITE - SINOCC STATION

HOLE NO. MISS-401R



GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.					
SITE: MAYWOOD INTERIM STORAGE SITE - SUNDCO STATION				COORDINATES		14501-138		1 OF 1		MISS-402R					
				N8320, E10910		ANGLE FROM HORIZ.		90°		REMARKS					
DATE		COMPLETED		DRILLER		DRILL HOLE AND HOLE NO.		HOLE SIZE		OVERBURDEN (FT.)					
8/8/86		8/8/86		MORTRENCHE ENVIRONMENTAL SERVICES		MOBILE B-33		6"		10.0'					
CORE RECOVERY (%)		CORE BOXES		SAMPLES		EL. TOP OF CASING		CIRCUIT EL.		DEPTH/EL. SPINDLE WATER					
N/A		N/A		N/A		N/A		46.3'		6.5'/39.0'					
SAMPLE NUMBER BEING P/L				CASING LEFT IN HOLE/DIA/DEPTH				LOGGED BY							
N/A				N/A				D McGRANE							
SAMPLE TYPE AND DIAMETER	SAMPLE DEPTH - LENGTH CORRECTION	SAMPLE LOCATION - CORRECTION	SAMPLE BLANK	PERCENT CORE RECOVERY	IN-THE-PIESCE TECH.			ELEVATION	DEPTH	CORRECTION LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLER, ETC.		
					LOW FT. IN P/L	PRESSURE P.L.	TIME IN P/L								
6" AUGER THROUGHOUT.								46.3	0						
								46.0	0.3			0.0-0.3: ASH/CL. 0.3-10.0: SILTY SAND (SPESS) COLOR STRATIFIED FINE-TO MEDIUM-GRAINED, SOFT, POORLY CONSOLIDATED (LOOSE) WITH A FEW DENSER CLAYEY ZONES (0.5-5.0 FT); MOIST TO SATURATED AT 6.5 FT. 0.3-1.5: DARK YELLOWISH BROWN GOTH/2L 1.5-5.0: GRAYISH BLACK (M) WITH A FEW GRAY (MS) CLAYEY LENSES; NUMEROUS WOOD CHIPS AND ORGANICS. 5.0-10.0: DARK YELLOWISH BROWN CLAYEY.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. ▽ 8/8/86		
								36.3	10			BOTTOM OF HOLE AT 10.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 8/10/86.			
25-PLATE SPINDLE ST-DRILLER TYPE SPECIALLY MADE CORRECTION												SITE MAYWOOD INTERIM STORAGE SITE - SUNDCO STATION		HOLE NO. MISS-402R	



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
										FUSRAP	14501	1 OF 1	R536				
SITE					COORDINATES					ANGLE FROM HORIZ BEARING							
Sears; 200 St. Rt. 17					N 8,160.0; E 10,915.0					Vertical -----							
BEGUN	COMPLETED	DRILLER			DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH							
11-1-90	11-1-90	Hydro Group, Inc.			Tripod		3.5"	9.4	0.0	9.4							
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK									
7.9/84"		0	5	NA	44.0	- 8' ATD		NA/NA									
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:											
140 lbs/30 in			none			Stephen Knuttel											
										(Template: NYWD)							
										DESCRIPTION AND CLASSIFICATION							
										NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.							
SAND TYPE AND DIA.	SAMP. ADV. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOMS % CORE RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS PRESS. P.S.I.	TIME IN MIN.	ELEV.	DEPTH	GRAPHICS								
SS	2.0	1.5	4 8 8				44.0			0.0 - 1.5 ft: Sandy SILT, (ML); Blackish red (5R2/2), minor roots present, moderately firm, moist.							
SS	2.0	1.5	4 8 10 18				42.5 42.0			2.0 - 3.5 ft: SAND, (SW); Moderate brown (5YR4/4), fine grained, moderately sorted, dirty, firm, moist.							
SS	2.0	1.7	10 15 18 22				40.5 40.0			4.0 - 5.7 ft: SAND, (SW); Moderate reddish brown (10R4/6), fine to medium grained, poorly sorted, with some thin interlayered clay and silt layers, minor pebbles up to 1 cm present, firm, moist.							
SS	2.0	1.8	6 10 12 20				38.3 38.0			6.0 - 9.2 ft: SAND, (SW); Moderate brown (5YR4/4), fine grained, moderately sorted, dirty, with minor subrounded pebbles up to 0.5 cm common, firm, moist.							
SS	1.4	1.4	8 27 50/6"				36.2 36.0										
										9.2 - 9.4 ft: Interlayered SAND and SILT, (SP & ML); Moderate brown (5YR4/4), very fine grained, moderately well sorted, layers -0.5 - 1 cm thick, firm, moist.							
										TOTAL DEPTH = 9.4 FT.							
										Spoon refusal at 9.4'. Borehole enlarged by driving 3.5" OD split spoon to depth. 3" PVC casing inserted to 7.0' for gamma-logging. PVC casing was removed after logging and hole backfilled with drilling spoils.							
										* Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).							
SS = SPLIT SPOON; NO = CORE BARREL; SX = HAND AUGER; O = OTHER										SITE		Sears; 200 St. Rt. 17		Last Update: 10-08-92		HOLE NO. R536	



GEOLOGIC DRILL LOG

PROJECT **FUSRAP**

JOB NO. **14501** SHEET NO. **1 OF 1** HOLE NO. **R537**

COORDINATES **N 8100.0; E 10975.0**

ANGLE FROM HORIZ. BEARING **Vertical**

Location: **Sears; 200 St. Rt. 17**

GUN COMPLETED DRILLER **Hydro Group, Inc.** DRILL MAKE AND MODEL **Tripod** SIZE **3.5"** OVERBURDEN **10.4** ROCK (FT.) **1.6** TOTAL DEPTH **12.0**

RECOVERY (FT./X) **8.8/73°** CORE BOXES **0** SAMPLES **6** EL. TOP CASING **NA** GROUND EL. **44.0** DEPTH/EL. GROUND WATER **3' / -11' ATD** DEPTH/EL. TOP OF ROCK **10.4/33.6**

W/PLE HAMMER WEIGHT/FALL **140 lbs/30 in** CASING LEFT IN HOLE: DIA./LENGTH **none** LOGGED BY: **Stephen Knuttel**

HOLE NO.	RND. DIAM.	SOUP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOBS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS	G.P.M.	P.S.F.					
SS	2.0	1.0			3 7 11 12				44.0	5		0.0 - 0.5 ft: TOPSOIL, (SM); Grayish black (N2), abundant roots present. 0.5 - 1.0 ft: Sandy GRAVEL, (GW); Blackish red (6R2/2), gravel is sandstone, minor silt and clay present, moderately firm, moist. 1.0 - 3.1 ft: Silty SAND, (SM); Dark reddish brown (10R5/4), sand is fine to medium grained, moderately sorted, minor angular sandstone gravel, some clayey layers present, firm, moist. 3.1 - 9.8 ft: Gravally Silty SAND, (SM); Dark reddish brown (10R5/4), fine to medium sand, moderately sorted; gravel is angular, sandstone, content decreasing with depth; some sediment clasts composed of Clayey Silt, Grayish black (N2), present between 8.0 - 9.8'; firm, moist.	Complete borahole number is BS890R537. Borahole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3" OD split spoon samplers.
									43.5				
									43.0				
									42.0				
									40.9				
SS	2.0	1.1		6 6 19 22				40.0	10	34.2 34.0 33.6	10.4 - 12.0 ft: Gravally SAND, (SW); Blackish red (6R2/2) changing to Dark reddish brown (10R5/4) at 10.5', with fine roots present between 10.4 - 10.5'; sand is fine to medium grained, moderately sorted; gravel is angular, weathered, sandstone; firm, moist.	Borahole enlarged by driving 3.5" OD split spoon to depth. 3" PVC casing inserted to 10.5' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.	
								38.6					
								38.0					
								36.5					
SS	2.0	1.6		20 10 15 16				36.5			TOTAL DEPTH = 12.0 FT.	* Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).	
								36.0					
								32.0					

CITE

Sears; 200 St. Rt. 17

1st Update: 05-19-92 HOLE NO. R537



GEOLOGIC DRILL LOG

PROJECT **FUSRAP**

JOB NO. **14501**

SHEET NO. **1 OF 1**

HOLE NO. **R539**

Sears, 200 St. Rt. 17

COORDINATES

N 8150.0; E 10850.0

ANGLE FROM HORIZ BEARING

Vertical

COMPLETED **1-90**

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Tripod

SIZE

3.5"

OVERBURDEN

8.0

ROCK (FT.)

0.0

TOTAL DEPTH

8.0

RECOVERY (FT./%)

6.1/76%

CORE BOXES

0

SAMPLES

4

EL. TOP CASING

NA

GROUND EL.

43.5

DEPTH/EL. GROUND WATER

NA

ATD

DEPTH/EL. TOP OF ROCK

NA/NA

W/LE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

none

LOGGED BY:

Stephen Knuttel

(Template: NYLD)

SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLKS	RECOVERY	LOSS	G.P.M.	WATER PRESS. TESTS	P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
2.0	1.6	40							43.1				0.0 - 0.4 ft. ASPHALT; over sand and gravel.	Complete borehole number is B3890R539.
		28							43.7				0.4 - 2.3 ft. SAND, (SW); Moderate brown (5YR4/4), fine grained, moderately sorted, with minor silt and fine pebbles, firm, moist.	
2.0	1.6	20							42.0				2.3 - 2.6 ft. SAND, (SP); Grayish green (10GY5/2), fine grained, moderately well sorted, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
		29							41.5				2.6 - 4.4 ft. SAND interlayered with Silty SAND, (SP & SM); Light brown (5YR5/6) mottled with Moderate yellowish brown (5YR5/6), sand is fine grained, moderately to well sorted, firm, moist.	
2.0	1.5	12							39.9				4.4 - 4.5 ft. GRAVEL, (GW); Grayish black (N2), fine, loose, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
		10							39.5				4.5 - 5.5 ft. SILT, (ML); Moderate brown (5YR4/4) to light brown (5YR4/4), minor very fine sand, slightly plastic, firm, moist.	
		12							39.1				5.0 - 7.5 ft. Interlayered SAND and SILT, (SP & ML); Dark yellowish brown (10YR4/2) to Moderate yellowish brown (10YR5/4), sand is fine to very fine grained, finely layered, moderately well to well sorted within the layers, firm, moist.	PVC casing was removed after logging and hole was backfilled with drilling spoils.
		19							38.0					
		7							37.5					
		13							36.0					
		15							35.5					
		19												

TOTAL DEPTH = 8.0 FT.

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).

03-19-92 HOLE NO. **R539**



GEOLOGIC DRILL LOG			PROJECT FUSRAP	JOB NO. 14501	SHEET NO. 1 OF 1	HOLE NO. R542
SITE Sears; 200 St. Rt. 17		COORDINATES N 8100.0; E 10900.0			ANGLE FROM HORIZ Vertical	BEARING -----
BEGUN 11-2-90	COMPLETED 11-2-90	DRILLER Hydro Group, Inc.	DRILL MAKE AND MODEL Tripod	SIZE 3.5"	OVERBURDEN 6.4	ROCK (FT.) 0.0
CORE RECOVERY (FT./%) 4.6/72*	CORE BOXES 0	SAMPLES 4	SEL. TOP CASING NA	GROUND EL. 44.0	DEPTH/EL. GROUND WATER none ATD	DEPTH/EL. TOP OF ROCK NA/NA
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH none			LOGGED BY: Stephen Knuttel	

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. LOSS % CORE RECOVERY	WATER PRESSURE TESTS LOSS G.P.M.	PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.4	20 46 10 11				44.0 43.8				0.0 - 0.3 ft: ASPHALT.	Complete borehole number is B3890R542. Sampled through asphalt with split spoon. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3" OD split spoon samplers. Spoon refusal at 6.4'. Borehole enlarged by driving 3.5" OD split spoon to depth. 3" PVC casing inserted to 5.0' for gamma-logging. PVC casing was removed after logging and hole was grouted to -3' below surface and remaining hole backfilled with drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
							42.6				0.3 - 0.4 ft: BAND, (SW); Dark reddish brown (5YR5/2), fine grained.	
SS	2.0	1.8	10 18 20 21				42.0 41.1				0.4 - 1.4 ft: SILT, (ML); Black (N1), minor very fine sand, roots and wood fragments present, firm, slightly moist.	
							40.2				2.0 - 2.9 ft: SAND, (SW); Black (N1), fine to medium grained, poorly sorted; minor silt, roots and wood fragments; loose, moist.	
SS	2.0	1.1	20 35 31 33				40.0 39.4 38.9				2.9 - 3.8 ft: SAND, (SW); Moderate brown (5YR3/4), fine grained, moderately sorted, minor subrounded pebbles up to 0.5 cm; sedimentary clasts composed of clay present between 2.9 - 3.2'; firm, moist.	
							38.0				4.0 - 4.8 ft: SAND, (SP); Moderate brown (5YR4/4), very fine grained, well sorted, increasing silt with depth, firm, wet.	
SS	0.4	0.3	60/6*				37.7 37.6				4.8 - 5.1 ft: SILT, (ML); Moderate brown (5YR4/4), firm, moist.	
											5.1 - 6.0 ft: Gravely SILT, (GM); Moderate reddish brown (10R3/4), sandstone fragments with silt.	
TOTAL DEPTH = 6.4 FT.												

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE Sears; 200 St. Rt. 17	Last Update: 03-19-92	HOLE NO. R542
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GEOLOGIC DRILL LOG		PROJECT	FUSRAP		JOB NO.	SHEET NO.	HOLE NO.
SITE		COORDINATES			14501	1 of 1	R553
Sears; 200 St. Rt. 17		N 8173.0; E 10905.0			ANGLE FROM HORIZ BEARING		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
11-7-90	11-7-90	Hydro Group, Inc.	Tripod	3.5"	10.0	0.0	10.0
CORE RECOVERY (FT./%)	CORE BOXES/SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK		
6.7/67*	0	5 NA	44.0	3 / none ATD 3 / NA	NA/NA		
SAMPLE HAMMER WEIGHT/FALL	CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:				
140 lbs/30 in	NONE		Stephen Knuttel				

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REL.	SAMP. BLKS. RECOVERY	LOSS G.P.M.	WATER PRESS. TESTS	ELEV.	DEPTH	GRAPHICS	SUBTITLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.4	7			44.0				(Template: NYLD)	
			7			43.3				0.2 - 0.7 ft: TOPSOIL; Grayish black (N2), silt and fine grained sand, minor roots, moderately sorted, loose, slightly moist.	Complete borehole number is B3890R553.
SS	2.0	1.1	9			42.0				0.7 - 2.3 ft: Gravally, Silty SAND; Blackish red (5R2/2) to Moderate reddish brown (10R4/6), sand is fine to medium grained, poorly sorted, gravel is sandstone, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
			9			41.7					
			10			40.0				2.3 - 2.8 ft: Clayey SILT, (ML); Black (N1) to Grayish black (N2), minor root material; stringers of fine grained sand below 2.5'; slightly plastic, moderately firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
			15			39.9					
			16			38.7	5			2.8 - 4.1 ft: SAND (SW); Dark yellowish brown (10YR4/2), fine grained, moderately sorted, moderately firm, moist.	
			18			38.0				4.1 - 9.2 ft: SAND, (SP); Grayish red (5R4/2) gradually changing to Pale brown (5YR5/2) below 6.4', very fine to fine grained, well sorted, increasing silt content with depth, slightly layered, firm, moist, wet below 6.0'.	
SS	2.0	1.7	10			36.3					
			12			36.0					
			13								
			11								
SS	2.0	1.3	8			34.8					
			9								
			16								
			21								
						34.0	10			TOTAL DEPTH = 10.0 FT.	Borehole enlarged by driving 3.5" OD split spoon to depth.
											3" PVC casing inserted to 8.0' for gamma-logging.
											PVC casing was removed after logging and hole was grouted to -2' below surface and remaining hole backfilled with drilling spoils.
											* Core recovery refers to total soil & rock sample.
											Ground elevation estimated from site topographic map.
											Description & classification by visual examination of sample.
											Colors from "Rock-Color Chart" (GSA, 1948).

SPLIT SPOON; NO = CORE BARREL; HAND AUGER; 0 = OTHER	SITE	Sears; 200 St. Rt. 17	Last Update: 03-19-92	HOLE NO. R553
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GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
				FUSRAP		14501	1 OF 1	R554			
SITE			COORDINATES			ANGLE FROM HORIZ BEARING					
Sears; 200 St. Rt. 17			N 8187.0; E 10871.0			Vertical -----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-7-90	11-7-90	Hydro Group, Inc.	Tripod		3.5"	8.0	0.0	8.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
5.9/74*		0	4	NA	44.0	/ none ATD / NA		NA/NA			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in		none			Stephen Knuttel						
SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SOLIDS % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME MIN.					
SS	2.0	0.9	12 16 12 0				44.0 43.1 42.0 41.4 40.5 40.2 40.0 39.8		0.0 - 0.9 ft: Gravelly SAND; Dusky brown (5YR3/2), sand is fine to medium grained, poorly sorted, gravel is sandstone, minor debris, firm, slightly moist.	Complete borehole number is B3890R554.	
SS	2.0	1.8	12 9 7						2.0 - 2.6 ft: SAND, (SW); Moderate brown (5YR3/4), minor Black (N1); fine grained, moderately sorted, moderately firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	1.6	13 16 16 11						2.6 - 3.5 ft: Sandy SILT and CLAY, (ML & CL); Grayish black (N2) to Black (N1), clay increases with depth; roots present below 3.0'; slightly plastic, firm, moist, sharp contact with unit below.	Hole advanced to depth by 3" OD split spoon samplers.	
SS	2.0	1.6	12 19 15 12						3.5 - 4.5 ft: Clayey SAND, (SC); Greenish gray (5GY6/1) minor mottling with Moderate brown (5YR4/4); layer of coarse grained sand between 4.4 - 4.5'; sand is fine to medium grained, moderately sorted, slightly plastic, firm, moist.		
									4.5 - 5.6 ft: Sandy, Clayey SILT, (ML); Grayish red (5R4/2) mottled with Moderate brown (5YR4/4), firm, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.	
									5.6 - 7.6 ft: SAND, (SP); Moderate brown (5YR3/4), very fine grained, moderately well sorted; minor silt between 6.0 - 6.4'; firm, wet.	3" PVC casing inserted to 7.0' for gamma-logging.	
TOTAL DEPTH = 8.0 FT.									PVC casing was removed after logging and hole was grouted to -4' below surface and remaining hole backfilled with drilling spoils.		
SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; 0 = OTHER									* Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).		
SITE						Last Update:		HOLE NO.			
Sears; 200 St. Rt. 17						03-19-92		R554			



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
SITE										COORDINATES		14501	1 OF 1	R556			
Sears; 200 St. Rt. 17										N 8175.0; E 10848.0		ANGLE FROM HORIZ BEARING					
BEGUN										COMPLETED	DRILLER		DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
11-7-90										11-7-90	Hydro Group, Inc.		Tripod	3.5"	8.0	0.0	8.0
CORE RECOVERY (FT./%)		CORE BOXES		SAMPLES		SEL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
6.5/81*		0		4		NA		44.0		-7' ATD		NA/NA					
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:									
140 lbs/30 in				none				Stephen Knuttel									
SAMP. TYPE	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS	CORE RECOVERY	LOSS IN %	G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION		NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
SS	2.0	1.6	40	20	16	9			44.0	43.5			0.0 - 0.2 ft: ASPHALT.		Complete borehole number is BS890R556.		
									42.7	42.4			0.2 - 1.3 ft: Gravely SAND; Grayish brown (5YR3/3), sand is fine to medium grained, poorly sorted, firm, moist.		Sampled through asphalt with split spoon.		
SS	2.0	1.7	15	20	21	25			42.0	41.4			1.3 - 2.6 ft: Sandy SILT and CLAY, (ML & CL); Black (N1), clay increases with depth, sand is fine to medium; roots present between 2.0 - 2.3'; mixed with sediment below between 2.3 - 2.6'; slightly plastic, firm, moist, sharp contact with layer below.		Borehole sampled and gamma-logged by TMA/Eberline Corp.		
									41.0	40.3			2.6 - 3.0 ft: Clayey SAND, (SC); Grayish green (10GY5/2), sand is fine grained, moderately sorted; minor layers of well sorted clean sand; slightly plastic, firm, moist.		Hole advanced to depth by 3" OD split spoon samplers.		
SS	2.0	1.5	19	16	16	16			40.0	38.5			3.0 - 3.7 ft: SAND, (SP); Grayish red (6R4/2), very fine to fine grained, well sorted, firm, moist.				
									38.0	36.3			4.0 - 7.7 ft: Interlayered SAND and SILT, (SP & ML); Moderate brown (5YR3/4) to Moderate reddish brown (10R4/6), very fine to fine grained, moderately well sorted within the layers, firm, moist, wet below 6.0'.		Borehole enlarged by driving 3.5" OD split spoon to depth.		
									35.0				TOTAL DEPTH = 8.0 FT.		3" PVC casing inserted to 4.3' for gamma-logging.		
															PVC casing was removed after logging and hole was grouted to -2' below surface and remaining hole backfilled with drilling spoils.		
															* Core recovery refers to total soil & rock sample.		
															Ground elevation estimated from site topographic map.		
															Description & classification by visual examination of sample.		
															Colors from "Rock-Color Chart" (GSA, 1948).		

SS = SPLIT SPOON; NO = CORE BARREL; S
 MX = HAND AUGER; D = OTHER

Sears; 200 St. Rt. 17

Last Update: 03-19-92

HOLE NO. R556



GEOLOGIC DRILL LOG

PROJECT **FUSRAP** JOB NO. **14501** SHEET NO. **1 OF 1** HOLE NO. **R557**

SITE **Sears; 200 St. Rt. 17** COORDINATES **N 8175.0; E 10830.0** ANGLE FROM HORIZ. BEARING **Vertical**

REGUN **11-7-90** COMPLETED **11-7-90** DRILLER **Hydro Group, Inc.** DRILL MAKE AND MODEL **Tripod** SIZE **3.5"** OVERBURDEN **6.0** ROCK (FT.) **0.0** TOTAL DEPTH **6.0**

CORE RECOVERY (FT./X) **2.3/38"** CORE BOXES **0** SAMPLES **3** EL. TOP CASING **NA** GROUND EL. **44.0** DEPTH/EL. GROUND WATER **none ATD** DEPTH/EL. TOP OF ROCK **NA/NA**

SAMPLE HAMMER WEIGHT/FALL **140 lbs/30 in** CASING LEFT IN HOLE: DIA./LENGTH **none** LOGGED BY: **Stephen Knuttel**

SAMP. TYPE	SAMP. DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. LOSS	RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS G.P.M.	PRESS. P.S.I.						
SS	2.0	0.6	40					44.0				0.0 - 0.2 ft: ASPHALT	Complete borehole number is B3890R557.
			23					43.8				0.3 - 0.4 ft: SAND; Moderate brown (5YR3/2), fine grained.	
			14					43.4				0.4 - 2.4 ft: Clayey SAND, (CL); Black (N1), sand is fine grained, poorly sorted, minor gravel, moist.	
SS	2.0	0.4	25					42.0					Sampled through asphalt with split spoon.
			28					41.6					
SS	2.0	1.3	10					40.0				4.0 - 4.6 ft: SILT, (ML); Grayish red (5R4/2), firm, moist, gradational contact with layer below.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
			16					39.4					
			20					38.7				4.6 - 5.3 ft: SAND, (SP); Grayish red (5R4/2), fine grained, well sorted, firm, moist to wet.	Hole advanced to depth by 3" OD split spoon samplers.
			25					38.0					
TOTAL DEPTH = 6.0 FT.												Borehole enlarged by driving 3.5" OD split spoon to depth. 3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.	

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; NQ = CORE BARREL; SITE **Sears; 200 St. Rt. 17** Last Update: **03-19-92** HOLE NO. **R557**
HX = HAND AUGER; O = OTHER



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
SITE										COORDINATES	14501	1 OF 1	R558
Sears; 200 St. Rt. 17										N 8135.0; E 10870.0	ANGLE FROM HORIZ		BEARING
BEGIN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-7-90	11-7-90	Hydro Group, Inc.		Tripod		3.5"	8.0	0.0	8.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
5.1/64"		0	4	NA	43.5	3 / -1' ATD		NA/NA					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
140 lbs/30 in		none			Stephen Knuttel								
										(Template: NYWD)			
SAMP TYPE	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE LOSS	WATER PRESSURE	ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.				
SS	2.0	0.6	40		43.5			0.0 - 0.2 ft: ASPHALT.	Complete borehole number is B5890R558.				
			27		42.9			0.2 - 0.6 ft: FILL; mixed gravel, sand and clay.	Sampled through asphalt with split spoon.				
			26		41.5			2.0 - 3.0 ft: Clayey SAND, (SC); Greenish gray (5GY6/1) mottled with Grayish red (5Y4/2), sand is fine to medium grained, moderately sorted, slightly layered, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.				
SS	2.0	1.4	27		40.5			3.0 - 7.8 ft: SAND, (SP); Grayish red (10R4/2) changing to Moderate brown (5YR4/4) at 3.1' and to Moderate brown (5YR2/4) at 6.0'; layer of medium grained sand, moderately sorted, loose, between 3.0 - 3.1'; very fine grained between 3.1 - 5.3'; fine grained between 6.0 - 7.8'; well sorted, clean, firm, moist, wet below 6.0'.	Hole advanced to depth by 3" OD split spoon samplers.				
			26		40.4								
			24		40.1								
			22		39.5								
SS	2.0	1.3	16		38.2								
			18		37.5								
			22										
			18										
SS	2.0	1.8	7		35.7								
			12		35.6								
			23										
			26										
							TOTAL DEPTH = 8.0 FT.						
										Borehole enlarged by driving 3.5" OD split spoon to depth.			
										3" PVC casing inserted to 4.0' for gamma-logging.			
										PVC casing was removed after logging and hole was backfilled with drilling spoils.			
										* Core recovery refers to total soil & rock sample.			
										Ground elevation estimated from site topographic map.			
										Description & classification by visual examination of sample.			
										Colors from "Rock-Color Chart" (GSA, 1945).			
										Last Update: HOLE NO.			
										03-19-92		R558	
SITE										Sears; 200 St. Rt. 17			



GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501

SHEET NO.

1 OF 1

HOLE NO.

R559

SITE

Sears; 200 St. Rt. 17

COORDINATES

N 8125.0; E 10900.0

AN. FROM HORIZ. BEARING

Vertical

BEGUN

11-8-90

COMPLETED

11-8-90

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Tripod

SIZE

3.5"

OVERBURDEN

8.0

ROCK (FT.)

0.0

TOTAL DEPTH

8.0

CORE RECOVERY (FT./%)

6.6/83%

CORE BOXES

0

SAMPLES

4

EL. TOP CASING

NA

GROUND EL.

43.5

DEPTH/EL. GROUND WATER

NA

DEPTH/EL. TOP OF ROCK

NA/NA

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

none

LOGGED BY:

Stephen Knuttel

(Template: MYMD)

SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	% CORE RECOVERY	LOSS IN G.P.M.	WATER PRESSURE		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					FEET	TIME MIN.						
SS	2.0	1.3	37				43.5				0.0 - 0.2 ft: ASPHALT.	Complete borehole number is B3890R559.
			13				42.2				0.2 - 2.4 ft: Clayey, Sandy SILT, (ML); Black (N1); gravelly between 0.2 - 0.7'; increased sand below 2.0'; wood fragments present, firm, moist.	
SS	2.0	1.7	30				41.5				2.4 - 3.7 ft: SAND, (SW); Grayish brown (5YR5/2), fine grained, poorly sorted, minor silt and clay, small sedimentary clasts present; changing to Moderate brown (5YR5/4), very fine grained, moderately sorted, at 2.9'; firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
			23				41.1					
SS	2.0	1.8	14				39.8				4.0 - 5.4 ft: SAND, (SP); Brownish black (5YR2/1) changing to Moderate brown (5YR3/4) at 4.8', fine grained, moderately well sorted, firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
			20				39.5					
SS	2.0	1.8	17				35.1				5.4 - 5.8 ft: Gravelly, Sandy SILT, (ML); Grayish red (5R4/2); gravel is mixed composition, rounded; very poorly sorted, firm, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
			21				37.7					
			25				35.7				6.0 - 7.3 ft: SAND, (SW); Dark reddish brown (10R3/4), medium grained, moderately sorted, little fines, loose, moist.	3" PVC casing inserted to 6.5' for gamma-logging.
			23				35.0					
											7.3 - 7.8 ft: Gravelly, Sandy SILT, (ML); Dark reddish brown (10R3/4); gravel is sandstone, subrounded to subangular; poorly sorted, firm, moist.	PVC casing was removed after logging and hole was grouted to -3' below surface and remaining hole backfilled with drilling spoils.
TOTAL DEPTH = 8.0 FT.												

SS = SPLIT SPOON; NO = CORE BARREL;
HX = HAND AUGER; O = OTHER

SITE

Sears; 200 St. Rt. 17

gsl Update: 3-19-92

HOLE NO.

R559



GEOLOGIC DRILL LOG		PROJECT FUSRAP		JOB NO. 14501	SHEET NO. 1 of 1	HOLE NO. R560
SITE Sears; 200 St. Rt. 17			COORDINATES N 8125.0; E 10890.0		ANGLE FROM HORIZ BEARING Vertical	
BEGUN 11-8-90	COMPLETED 11-8-90	DRILLER Hydro Group, Inc.	DRILL MAKE AND MODEL Tripod	SIZE 3.5"	OVERBURDEN 6.9	ROCK (FT.) 0.0
CORE RECOVERY (FT./%) 5.0/72*		CORE BOXES 0	SAMPLES 4	EL. TOP CASING NA	GROUND EL. 43.5	DEPTH/EL. GROUND WATER 3 / NA
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH none		LOGGED BY: Stephen Knuttel		

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. SOLE RECOVERY	LOSS IN G.P.M.	WATER PRESS. TESTS	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.3	40 30 31 30				43.5 43.3 42.3 41.5 40.8 39.9 39.5				<p>(Template: NYWD)</p> <p>0.0 - 0.6 ft: ASPHALT; over sand and gravel.</p> <p>0.6 - 2.7 ft: SAND, (SW); Pale brown (5YR5/2) to Grayish brown (5YR3/2), fine grained, poorly sorted, minor sandstone gravel and small sedimentary clasts present, firm, moist.</p> <p>2.7 - 5.5 ft: SAND, (SW); Light brown (5YR5/6); with layers of Silty Sand below 4.0'; fine grained, poorly sorted, minor silt, clay, and gravel; gravel is mixed composition, subrounded to subangular; firm, moist to wet.</p> <p>5.5 - 5.7 ft: SAND, (SP); Dark reddish brown (10R3/4), medium grained, moderately well sorted, little fines, loose, moist.</p> <p>5.7 - 6.3 ft: Gravelly, Sandy SILT, (ML); Dark reddish brown (10R3/4), with fine to medium sand and subrounded to subangular sandstone gravel, firm, moist.</p> <p>TOTAL DEPTH = 6.9 FT.</p>	<p>Complete borehole number is B3860R560.</p> <p>Sampled through asphalt with split spoon.</p> <p>Borehole sampled and gamma-logged by TMA/Eberline Corp.</p> <p>Hole advanced to depth by 3" OD split spoon samplers.</p> <p>Spoon refusal at 6.9'. Borehole enlarged by driving 3.5" OD split spoon to depth.</p> <p>3" PVC casing inserted to 4.0' for gamma-logging.</p> <p>PVC casing was removed after logging and hole was backfilled with drilling spoils.</p>
SS	2.0	1.6	38 35 33 32				38.0 37.8 37.6 37.5 37.2					
SS	2.0	1.9	12 14 31 25									
SS	0.9	0.3	25 50/5"				36.6					

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE Sears; 200 St. Rt. 17	Last Update: 03-19-92	HOLE NO. R560
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GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501

SHEET NO.

1 OF 1

HOLE NO.

R561

SITE

Sears; 200 St. Rt. 17

COORDINATES

N 8100.0; E 10890.0

ANGLE FROM HORIZ BEARING

Vertical

BEGUN

11-8-90

COMPLETED

11-8-90

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Tripod

SIZE

3.5"

OVERBURDEN

8.0

ROCK (FT.)

0.0

TOTAL DEPTH

8.0

CORE RECOVERY (FT./%)

4.2/53*

CORE BOXES

0

SAMPLES

4

SEL. TOP CASING

NA

GROUND EL.

44.0

DEPTH/EL. GROUND WATER

none ATD

DEPTH/EL. TOP OF ROCK

NA/NA

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

none

LOGGED BY:

Stephen Knuttel

SAMP TYPE AND DIAM.	SPLIT. ADV. LEN. CORE	SAMPLER REC. CORE REC. SO. CORE	SAMPLER REC. CORE REC. SO. CORE	RECOVERY %	LOSS IN G.P.M.	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						PRESS. P.S.I.	TIME MIN.						
SS	2.0	1.4	26	22					44.0			0.0 - 0.5 ft: ASPHALT; over sand and gravel.	<p>Complete borehole number is B3890R561.</p> <p>Sampled through asphalt with split spoon.</p> <p>Borehole sampled and gamma-logged by TMA/Eberline Corp.</p> <p>Hole advanced to depth by 3" OD split spoon samplers.</p> <p>Borehole enlarged by driving 3.5" OD split spoon to depth.</p> <p>3" PVC casing inserted to 5.0' for gamma-logging.</p> <p>PVC casing was removed after logging and hole was backfilled with drilling spoils.</p> <p>* Core recovery refers to total soil & rock sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>
			13					43.0			0.5 - 1.0 ft: SAND, (SW); Pale brown (5YR5/2), fine grained, moderately sorted, firm, moist.		
			10					42.7					
SS	2.0	1.4	16	23				42.0			1.0 - 1.4 ft: Silty SAND and Clayey SILT, (SM & ML); Silty Sand, Black (N1), sand is fine grained, moderately sorted; changing to Clayey Silt, Grayish black (N2), slightly plastic, with wood fragments, at 1.3'; firm, moist, sharp contact with layer below.		
			4					41.2					
								40.6					
SS	2.0	0.9	20	30				40.0			1.0 - 2.8 ft: Clayey SAND, (SC); Greenish gray (5GY6/1), sand is very fine grained, moderately sorted, interlayered with silt, slightly plastic, firm, moist.		
			30					39.1					
			40					38.0			2.8 - 3.4 ft: Silty SAND, (SM); Grayish red (5R4/2) changing to Moderate reddish brown (10R3/4) at 3.0', sand is fine grained, poorly sorted, minor subrounded gravel, poorly sorted, firm, moist.		
			35					37.5					
SS	2.0	0.6	30	28				36.0			4.0 - 6.5 ft: Gravelly, Silty SAND, (SM); Dark reddish brown (10R3/4), sand is fine grained, poorly sorted, Sandy Silt in places; gravel is primarily sandstone, subangular to angular, firm, moist.		
			22										
			16										

TOTAL DEPTH = 8.0 FT.

SS = SPLIT SPOON; NQ = CORE BARREL; HX = HAND AUGER; 0 = OTHER

SITE

Sears; 200 St. Rt. 17

Last Update: 03-19-92

HOLE NO.

R561



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
SITE Sears; 200 St. Rt. 17										COORDINATES N 8100.0; E 10910.0		ANGLE FROM HORIZ/BEARING Vertical -----	
BEGUN	COMPLETED	DRILLER			DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-8-90	11-8-90	Hydro Group, Inc.			Tripod		3.5"	8.0	0.0	8.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
4.2/53%		0	4	NA	44.0	/ none ATD		NA/NA					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
140 lbs/30 in		none			Stephen Knuttel								
										(Template: NYWD)			
										DESCRIPTION AND CLASSIFICATION			
										NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.			
SAMP TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE SPOILS	% CORE RECOVERY	LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE		
SS	2.0	1.5	21	24				44.0			0.0 - 0.2 ft: ASPHALT.		
			21	24				43.5			0.2 - 0.5 ft: SAND, (SW); Moderate reddish brown (10R4/6), fine grained.		
			21	26				42.5			0.5 - 1.5 ft: Silty SAND and Clayey SILT, (SM & ML); Grayish black (N2) changing to Olive gray (5Y5/2) at 0.7', clay decreases with depth, sand is fine to medium grained, poorly sorted, slightly plastic, firm, moist.		
SS	2.0	1.5	21	26				42.0			2.0 - 2.5 ft: Clayey SAND, (SC); Light olive gray (5Y5/2) mottled with Grayish red (5R4/2), sand is fine to medium grained, moderately sorted, slightly plastic, firm, moist.		
			21	27				41.2			2.5 - 6.5 ft: Gravelly SILT to Sandy GRAVEL, (ML-GM); Grayish red (5R4/2), gravel is mixed composition up to 0.2', subrounded to angular, poorly sorted, firm to dense, moist.		
SS	2.0	0.7	25	27				40.5					
			25	34				40.0					
			25	34				39.3					
			27	34				38.0					
SS	2.0	0.6	27	30				37.5					
			27	30				36.0					
										TOTAL DEPTH = 8.0 FT.			
										Borehole enlarged by driving 3.5" OD split spoon to depth.			
										3" PVC casing inserted to 5.5' for gamma-logging.			
										PVC casing was removed after logging and hole was backfilled with drilling spoils.			
										* Core recovery refers to total soil & rock sample.			
										Ground elevation estimated from site topographic map.			
										Description & classification by visual examination of sample.			
										Colors from "Rock-Color Chart" (GSA, 1948).			

Sears; 200 St. Rt. 17

Last Update: 03-19-92

HOLE NO. R562



GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501

SHEET NO.

1 OF 1

HOLE NO.

R563

SITE

Sears; 200 St. Rt. 17

COORDINATES

N 8125.0; E 10910.0

ANGLE FROM HORIZ BEARING

Vertical

BEGUN

11-8-90

COMPLETED

11-8-90

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Tripod

SIZE

3.5"

OVERBURDEN

6.0

ROCK (FT.)

0.0

TOTAL DEPTH

6.0

CORE RECOVERY (FT./%)

3.7/62*

CORE BOXES

SAMPLES

EL. TOP CASING

NA

GROUND EL.

43.5

DEPTH/EL. GROUND WATER

none ATD

NA

DEPTH/EL. TOP OF ROCK

NA/NA

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

none

LOGGED BY:

Stephen Knuttel

SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOCS	% CORE RECOVERY	LOSS	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						G.P.M.	PRESS. P.S.I.	TIME MIN.						
SB	2.0	1.1	10						43.5				0.0 - 0.4 ft: ASPHALT over sand and gravel.	Complete borehole number is B3890R563.
			23											
			18											
			16											
SS	2.0	1.4	25					41.5				0.4 - 2.4 ft: SAND, (SW); Moderate brown (5YR4/4), fine to medium grained, poorly sorted, dirty, firm, moist.	Sampled through asphalt with split spoon.	
			23											
			20											
			16											
SS	2.0	1.2	9					40.4				2.4 - 3.1 ft: Gravely, Silty SAND, (SM); Dark reddish brown (10R3/4), sand is fine grained, poorly sorted; gravel is sandstone, subrounded to subangular; firm, moist to wet.	Borehole sampled and gamma-logged by TMA/Eberline Corp.	
			13											
			14											
			16											
								38.3				3.1 - 3.4 ft: SAND, (SW); Moderate brown (5YR4/4), fine grained, moderately sorted, firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.	
								37.5						
													4.0 - 5.2 ft: SAND, (SP); Moderate brown (5YR4/4), very fine to fine grained, well sorted, firm, moist to wet.	Borehole enlarged by driving 3.5" OD split spoon to depth.
													TOTAL DEPTH = 6.0 FT.	
													3" PVC casing inserted to 4.5' for gamma-logging.	PVC casing was removed after logging and hole was backfilled with drilling spoils.

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).

SS = SP. T SPOON; NO = CORE BARREL; SX = NA; AUGER; 0 = OTHER

SITE

Sears; 200 St. Rt. 17

Last Update: 03-19-92

HOLE NO.

R563



GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R564
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING			
Sears; 200 St. Rt. 17			N 8075.0; E 10900.0			Vertical		-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-8-90	11-8-90	Hydro Group, Inc.	Tripod	3.5"	8.0	0.0	8.0				
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
4.9/61*	0	4	NA	45.0	↓ / none ATD ↓ / NA	NA/NA					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in		none		Stephen Knutle							

SAMP TYPE AND DIAH.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY %	LOSS IN G.P.M.	WATER PRESSURE P.S.F.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.6	20				45.0				0.0 - 0.4 ft: ASPHALT over sand and gravel.	Complete borehole number is B3890R564.
			17				44.8				0.4 - 1.6 ft: SAND, (SW); Moderate brown (5YR3/4), fine to medium grained, moderately sorted, firm, moist.	
SS	2.0	0.8	26				43.4				2.0 - 4.3 ft: Clayey SAND, (SC); Grayish red (5Y4/2), sand is fine grained, moderately sorted, slightly plastic, very firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
			27				43.0					
SS	2.0	1.4	35				41.0				4.3 - 4.9 ft: Gravelly, Silty SAND, (SM); Dusky red (5R3/4), sand is fine to medium grained, poorly sorted, Sandy Silt in places, gravel is sandstone, firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
			32				40.7					
SS	2.0	1.1	20				39.0				4.9 - 5.4 ft: Clayey SAND, (SC); Grayish red (5Y4/2), sand is fine grained, moderately sorted, slightly plastic, very firm, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
			25				38.6					
			23				37.9				6.4 - 7.1 ft: Silty, Gravelly SAND, (SW); Dark reddish brown (10R3/4), sand is fine to medium grained, poorly sorted, gravel is sandstone, firm, moist to wet.	5" PVC casing inserted to 6.0' for gamma-logging.
			27				37.0					
TOTAL DEPTH = 8.0 FT.											PVC casing was removed after logging and hole was backfilled with drilling spoils.	

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	Sears; 200 St. Rt. 17	Last Update: 03-19-92	HOLE NO. R564
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GEOLOGIC DRILL LOG		PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	C570
SITE		COORDINATES			ANGLE FROM HORIZ		BEARING		
Sears; 200 St. Rt. 17		N 8123.0; E 10900.0			Vertical		-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
11-13-90	11-13-90	Hydro Group, Inc.	Tripod	3.5"	7.2	0.0	7.2		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK	
3.8/53%		0	4	NA	43.5	4.5' ATD		NA/NA	
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs/30 in		none			Stephen Knuttel <i>[Signature]</i>				

SAMP TYPE	SAMP DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.						
SS	2.0	1.1		30					43.1				0.0 - 0.3 ft: ASPHALT.	Complete borahole number is B3890R570. Sampled through asphalt with split spoon. Borahole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3" OD split spoon samplers. Spoon refusal at 7.2'. Borahole enlarged by driving 3.5" OD split spoon to depth. 3" PVC casing inserted to 7.0' for gamma-logging. PVC casing was removed after logging and hole was grouted to -2' below surface and remaining hole was backfilled with drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
				16					43.5				0.3 - 1.1 ft: Sandy SILT, (ML); Black (N1), sand is fine grained; gravelly between 0.3 - 0.4'; firm, moist.	
SS	2.0	1.2		12					41.5				2.0 - 3.2 ft: SAND, (SW); Grayish brown (5YR5/2), fine to medium grained, poorly sorted, minor silt and clay, firm, moist.	
				28					40.3					
				24					39.5					
SS	2.0	1.1		16					38.4				4.0 - 5.1 ft: SAND, (SP); Moderate brown (5YR4/4), very fine grained, well sorted, firm, wet.	
				18					37.5					
				24					37.1					
				20					36.3					
SS	1.2	0.4		30									6.0 - 6.4 ft: Gravelly, Silty SAND, (SM); Dark reddish brown (10R3/4), sand is fine to medium grained, poorly sorted, gravel is sandstone, firm, moist.	
				40										
				50/3"										
TOTAL DEPTH = 7.2 FT.														

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	Sears; 200 St. Rt. 17	Last Update: 03-19-92	HOLE NO. C570
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GEOLOGIC DRILL LOG

PROJECT: FUSRAP		WELL NO.: 14501-158	SHEET NO.: 1 OF 1	WELL NO. MISS-
SITE: MAYWOOD INTERIM STORAGE SITE - GULF STATION		COORDINATES: NS-415, E18710		WELL NO. MISS-
DATE: 8/2/76	COMPLETED: 8/2/76	DRILLER: MORETRENCH ENV. SERV.	DRILL TYPE AND SPEC: MOBILE B-33	WELL NO. MISS-
LOG RECORDING: N/A	CORE BORED: N/A	SAMPLES: N/A	WELL DEPTH: 6'	WELL NO. MISS-
SAMPLE BODIES: N/A		DEPTH TO TOP OF CASING: N/A	DISCHARGE (PTJ): 10.0'	WELL NO. MISS-
Casing Left in Well: N/A		RECORD EL.: 46.5'	WELL (PTJ): 0.0'	WELL NO. MISS-
LOGGED BY: D. MOORHEAD		TOTAL DEPTH: 10.0'		

SAMPLE TYPE AND DIAMETER	SAMPLE STRONG-LENGTH CORRECTION	SAMPLE WEIGHT	SAMPLE NO.	PERCENT CORE RECOVERY	IN SITU PRESSURE TESTS			ELEVATION	DEPTH	CHANGING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	OTHER DATA WATER LEVELS, WATER RETURN, CHARACTER OF COLLAR, ETC.
					LOG	DEPTH	TIME						
6" AUGER THROUGHOUT.							46.5	0				0.0-0.3: ASPHALT	✓ 8/2/76 SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE CASING LOGGED BY EBERLE ANALYTICAL CORPORATION.
							46.2	0.3				0.3-10.0: SILTY SAND (SH-SCL) COLOR STRATIFIED, FINE TO COARSE GRAINED, SOFT, POORLY CONSOLIDATED, LOGGED WITH A FEW DENSER CLAYEY ZONES (0.3-7.0, MOST TO SATURATED AT 4.5').	
							76.5	10				7.0-10.0: DARK YELLOWISH BROWN (OYR4/2) WITH A FEW PALE GREEN (SG7/2), GRAY (O4), AND BLACK (ORGANIC) RICH CLAYEY ZONES, NUMEROUS ROUNDED PEBBLES AND GRAVEL OF VARIOUS LITHOLOGIES. 10.0-10.0: DARK REDDISH BROWN (OOR3/4), FINE-GRAINED, DECOMPOSED SANDSTONE?	
												BOTTOM OF HOLE AT 10.0'. HOLE WAS IMMEDIATELY FILLED WITH AUGER SPOILS AND RESEALED WITH ASPHALT.	

MAYWOOD INTERIM STORAGE SITE - GULF STATION

DESCRIPTION CLASSIFICATION VISUAL EXAMINATION

WELL NO. MISS-

GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	WELL NO.
MAYWOOD INTERIM STORAGE SITE - GULF STATION										FLUORAP		14501-138	1 OF 1	N055-6228
COORDINATES										N2491, E10063		ANGLE FROM HORIZ.		BEARING
DATE	COMPLETED	DRILLER			WELL BORE AND LOGS		WELL SIZE	DEPTH FROM FT/J	WELL FT/J	TOTAL DEPTH				
2/24/87	2/24/87	MORETROICH DRY. SERV.			DCE-55		6"	12.0'	0.0'	12.0'				
CORE RECOVERY %		CORE BOXES	SAMPLES	REL. TOP OF CASING	GROUND EL.	BOTTOM OF BOREHOLE WATER		DEPTH/QUALITY OF BORE						
N/A		N/A	N/A	N/A	46.0'	10.0'/35.0'		N/A						
SAMPLE NUMBER RANGE / ALL			CASING LEFT IN WELL DEPTH/TYPE			LOGGED BY:								
N/A			N/A			D. MOFFAWE								
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH	SAMPLE DEPTH	SAMPLE NUMBER	PERCENT CORE RECOVERY	WATER PRESENCE TESTS			ELEVATION	DEPTH	BOREHOLE LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION*	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOW	MOD.	HIGH							
6" ANNE THROUGHT.								46.0	0			0.0-2.0': SILTY SUBS (S&S) FILL AND INDOGENOUS MATERIAL (5.0-2.0') COLORSTRATIFIED FINE- TO MEDIUM-GRAINED WITH FEW TO NUMEROUS PIECES OF SUBANGULAR-ROUNDED GRAVEL OF VARIOUS LITHOLOGIES; SOFT; UNCONSOLIDATED; SOFT; UNCONSOLIDATED; SOMETIMES CLAYEY (5.0-0.0); MOST - SATURATED AT 10.0'. 0.0-2.0': MODERATE BROWN (GY/S) G; NUMEROUS ORGANICS; FILL. 2.0-5.0': DARK YELLOWISH BROWN (GY/T) G; FEW ORGANICS; FILL. 5.0-7.0': BLACK; VERY SILTY; NUMEROUS ORGANICS; STREAM SEDIMENTS? 7.0-12.0': DARK YELLOWISH BROWN DECOMPOSED SANDSTONE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 2/24/87	
							34.0	12.0			BOTTOM OF HOLE AT 12.0 FT. HOLE WAS IMMEDIATELY BACKFILLED WITH A MIXTURE OF CONCRETE AND CLEAN AUGERSPOOLS; 2/24/87.			* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

SP-SPLIT SPON ST-HEAVY TUBE;
HOCKESSON PITCHER CAPTION

BY:

MAYWOOD INTERIM STORAGE SITE - GULF STATION

WELL NO.

N055-6228

GEOLOGIC DRILL LOG

PROJECT		FUSRAP		JOB NO.	14501-138	SHEET NO.	1 OF 1	HOLE NO.	KISS-623R
SITE			COORDINATES			ANGLE FROM MERID.		SCALING	
MAYWOOD INTERIM STORAGE SITE - GULF STATION			NO. 343, E 10067			90°		N/A	
DATE	COMPLETED	WELLER		WELL NAME AND MODEL		WELL SIZE	DEPTH (FEET)	WELL FT/D	TOTAL BODYS
2/24/87	2/24/87	MOFETRENCH DRY. SERV.		DIE-55		6"	10.0'	0.0'	10.0'
CORE RECOVERY (%)		CORE LOSS	SAMPLES	DI. TOP OF CORE	WELL DI.	DEPTH TO GROUND WATER		DEPTH TO TOP OF ROCK	
N/A		N/A	N/A	N/A	46.5'	8.5'/38.0'		N/A	
SAMPLE NUMBER (SIZES/ALL)			CHANGES LEFT IN WELL (SIZES/ALL)			LOGGED BY			
N/A			N/A			D. McGRANE			

SAMPLE TYPE AND DIAMETER	SAMPLE DEPTH (LITHO CORRECTION)	SAMPLE PROPERTY (CORE RECOVERY)	SAMPLE NAME	PERCENT CORE RECOVERY	OTHER PROVISIONAL TESTS			ELEVATION	DEPTH	GRAPING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN % (S/A)	PERCENTAGE P.S.I.	TIME IN MINUTES						
6" AUGER THROUGHOUT.							46.5	0					
								5					
							36.5	10					

0.0-10.0: SILTY SAND (S&S) FILL AND INDIGENOUS MATERIAL (4.0-10.0); COLOR STRATIFIED, FINE- TO MEDIUM-GRAINED WITH FEW TO NUMEROUS PIECES OF SUBANGULAR TO ROUNDED GRAVEL OF VARIOUS LITHOLOGIES; SOFT; UNCONSOLIDATED; SOMETIMES CLAYEY (S&O); MOIST TO SATURATED AT 8.5'.
 0.0-4.0: MODERATE BROWN (S&O); NUMEROUS ORGANICS; FILL.
 4.0-6.0: BLACK; VERY SILTY; NUMEROUS ORGANICS; STREAM SEDGENTS.
 6.0-8.0: GRAY (S&S).
 8.0-10.0: DARK YELLOWISH BROWN (O&T); DECOMPOSED SANDSTONE.
 BOTTOM OF HOLE AT 10.0 FT.

HOLE WAS IMMEDIATELY BACKFILLED WITH A CEMENT AND CLEAN CUTTINGS GROUT/MORTAR, 2/24/87.

SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.

2/24/87

SAMPLE FROM STRONGEST INDICATED SECTION NOTES	SITE MAYWOOD INTERIM STORAGE SITE - GULF STATION	HOLE NO. KISS-623R
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GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS				FUSRAP		14501-138	1 OF 1	MISS-112R					
DATE				COORDINATES			ANGLE FROM HORIZ.	REMARKS					
6/18/86				N8005, E11715			90°	N/A					
DATE	COMPLETED	BILLER	DRILL NAME AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH					
6/18/86	6/18/86	MORE TRENCH ENVIRONMENTAL SERVICES	MOBILE B-35		5"	6.0'	4.0'	10.0'					
CORE RECOVERY (FT./%)		CORE TYPES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/VOL. GROUND WATER		DEPTH/VOL. TOP OF ROCK					
N/A		N/A	N/A	N/A	47.1'	6.0' / 41.1'		6.0' / 41.1'					
SAMPLE NUMBER BEHIND WALL			CASING LEFT IN HOLE (IN) / LENGTH		LOGGED BY								
N/A			N/A		P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLE APPROX. LENGTH (CORRECTION)	SAMPLE LOCATION (CORRECTION)	SAMPLE LENGTH (CORRECTION)	SAMPLE TYPE (CORRECTION)	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN P.P.A.L.	PRESSURE (P.A.J.)	TIME IN MINUTES						
5" AUGER THROUGHOUT.								47.1	0			0.0-1.0': ASPHALT; GRAYISH BLACK GRZ.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION 6/20/86 EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
								46.1	1.0			1.0-2.0': SILT (M/S); DUSKY BROWN (SYR2/2); SANDY, SLIGHTLY CLAYEY, DRY.	
								45.1	2.0			2.0-6.0': SAND (SC-S); FINE-GRAINED, SILTY, SLIGHTLY PLASTIC TO NON-PLASTIC, MOIST.	
								41.1	6.0			2.0-4.0': PALE YELLOWISH BROWN (OYR6/2); 4.0-6.0': GREENISH GRAY (SGY6/L) CLAYEY.	
								37.1	10			6.0-10.0': SANDSTONE; DARK REDDISH BROWN (NOR3/4); SOFT TO MODERATELY HARD, FINE-GRAINED, SILTY, WEATHERED, SATURATED.	BOTTOM OF HOLE AT 10.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.
<small>NO-SPLIT SPINDLE ST-DRIFT TUBE SP-DRIFT SPINDLE ST-DRIFT TUBE</small>												<small>DATE</small> MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS	<small>HOLE NO.</small> MISS-112R



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS										FLSRAP		14501-138		1 OF 1		MISS-113R	
COORDINATES										NR210, E11720		ANGLE FROM NORD.		90°		SLANT	
DATE		COMPLETED		DRILLER			DRILL MACH. AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	RICK (FT.)	TOTAL DEPTH					
6/18/86		6/18/86		MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-33		5"	5.0'	0.0'	5.0'					
CORE RECOVERY (%)		CORE INDEX	SAMPLES	EL. TOP OF CASING		GROUND EL.	DEPTH/EL. GROUND WATER			DEPTH/EL. TOP OF RICK							
N/A		N/A	N/A	N/A		43.2'	3.0' / 40.2'			N/A							
SAMPLE NUMBER WEIGHT / ALL				CASING LEFT IN HOLE; CAL. LENGTH				LOGGED BY									
N/A				N/A				P. YEN									
SAMPLE TYPE AND CHARACTER	SAMPLE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE INDEX	PERCENT CORE RECOVERY	WATER TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.				
					LOSS IN P.P.A.	PRESSURE P.S.I.	TIME IN P. MINUTES										
5" AUGER THROUGHOUT.							43.2	0				CL-LS: ASPHALT AND CRUSHED ROCK; GRAYISH BLACK 022.					
							41.7	15				LS-5.0' SAND (SC-SM) DARK REDDISH BROWN (023/4) FINE-GRAINED SILTY, NON-PLASTIC, MOIST TO SATURATED.	▽ 6/20/86				
							38.2	5				BOTTOM OF HOLE AT 5.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.	AUGER REFUSAL AT 5.0 FT; POSSIBLE SEWER PIPE AT THIS ELEVATION. SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.				


SE-SPILT SPOON ST-BELBY TUBES
 3-DIGIT 868 PART 028 0-0782

SITE

MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS

HOLE NO.

MISS-113R

GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS				COORDINATES	FUSRAP	14501-138	1 OF 1						
				N8300, E11700	ANGLE FROM MERID.		DECLINE						
DATE		COMPLETED	DRIILLER	MORE TRENCH	DRILL NAME AND NUMBER	HOLE SIZE	DEPTH FROM HOLE	TOTAL DEPTH					
6/18/86		6/18/86	ENVIRONMENTAL SERVICES		MOBILE B-33	5"	4.0'	5.0'					
CORE RECOVERY %		CORE DIAMETER	SAMPLES	BL. TOP OF CASING	GROUND EL.	DEPTH TO GROUND WATER	DEPTH TO TOP OF ROCK						
N/A		N/A	N/A	N/A	44.4'	3.0' / 41.4'	4.0' / 40.4'						
SAMPLE NUMBER BEHIND WALL			CASING LEFT IN HOLE DIA. / LENGTH		LOGGED BY:								
N/A			N/A		P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH	SAMPLE RECOVERY	SAMPLE RECOVERY %	WATER PRESSURE TESTS				ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOGS	IN	PERCENTAGE	TIME						
5" AUGER THROUGHOUT.								44.4	0			0.0-1.0: ASPHALT; GRAYISH BLACK DRZL.	 6/20/86
								43.4	1.0			1.0-4.0: SAND (SC-SM); DARK REDDISH BROWN GRZL/4, FINE-GRAINED, SILTY, NON-PLASTIC, MOIST TO SATURATED.	
								40.4 39.4	4.0 5.0			4.0-5.0: SANDSTONE; LIGHT OLIVE GRAY (S/S); SOFT TO MODERATELY HARD, FINE-GRAINED, SILTY, WEATHERED, SATURATED.	
												BOTTOM OF HOLE AT 5.0 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.	AUGER REFUSAL AT 5.0 FT. SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. HEAVY ODOOR OF GASOLINE ABOVE GROUND, EXCEEDING THE EXPLOSIVE LIMIT. POSSIBLE SITE OF ABANDONED FUEL STATION AS REPORTED BY PERSONS FROM ADJACENT BUILDING. *DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

SA-SPLR SPDRS ST-SHLY TUBS
 D-CORRDS P-PYCHS P-PTER

SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS

HOLE NO. MISS-114R



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.			
MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS										FLUSRAP		14501-130		1 OF 1		MISS-115R			
COORDINATES										NAD 83, E 11500		ANGLE FROM MERID.		90°		BEARING		N/A	
DATE		COMPLETED		DRILLER			DRILL NAME AND MODEL			HOLE SIZE		OVERBURDEN (FT.)		RICK (FT.)		TOTAL DEPTH			
6/18/06		6/18/06		MORE TRENCH ENVIRONMENTAL SERVICES			MOBILE B-33			5"		0.0'		3.5'		11.5'			
CORE RECOVERY (T/%)			CORE DIAMETER		SAMPLES		EL. TOP OF CASING		BENCH EL.		DEPTH/EL. FROM BATHY		DEPTH/EL. TOP OF RICK						
N/A			N/A		N/A		N/A		44.8'		3.0' / 41.8'		0.0' / 36.0'						
SAMPLE NUMBER BEHIND/TAIL				CASING LEFT IN HOLE IN LAID IN				LOGGED BY:				P. YEN							
N/A				N/A															
SAMPLE TYPE AND DIAMETER	SAMPLE LOCATION (DOWN CORE NO.)	SAMPLE ID	SAMPLE WEIGHT (G)	PERCENT CORE RECOVERY	WATER PRESSURE TESTS				ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.					
					FLOW	IN	OUT	TIME											
5" AUGER THROUGHOUT.									44.8	0			0.0-0.0' ASPHALT; GRAYISH BLACK GR2.						
									43.8	1.0			1.0-5.0' SAND (SC-SAB) FINE-GRAINED, SILTY, NON-PLASTIC TO SLIGHTLY PLASTIC, MOST TO SATURATED. 5.0-6.0' DARK REDDISH BROWN (OR3/4).	6/20/06 SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. *DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.					
									36.8	8.0			6.0-8.0' GREENISH GRAY (SG6/8).						
										33.3	11.5				8.0-11.5' SANDS (OR6) MODERATE REDDISH BROWN (OR4/6), SOFT, FINE-GRAINED, SILTY, WEATHERED, NON-PLASTIC, SATURATED.				
													BOTTOM OF HOLE AT 11.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/06.						

EX-101/117 SP-1000 ST-1000/117
 P-1000/117 P-1000/117

SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS

HOLE NO. MISS-115R



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS				COORDINATES	FUSRAP	14501-138	1 OF 1						
				N8390, E11600	ANGLE FROM HORIZ.		SLABS						
					90°	N/A							
DATE	COMPLETED	DRILLER		DRILL MAKE AND MODEL	HOLE SIZE	OVERBURDEN FT.	DRILL FT.	TOTAL DEPTH					
6/18/86	6/18/86	MORE TRENCH ENVIRONMENTAL SERVICES		MOBILE B-33	5"	11.0'	4.0'	15.0'					
CORE RECOVERY %		CORE BOXES	SAMPLES	EL. TOP OF CORE	GROUND EL.	DEPTH TO GROUND WATER		DEPTH TO EL. TOP OF ROCK					
N/A		N/A	N/A	N/A	45.6'	0.5'/45.1'		11.0'/34.6'					
SAMPLE BARREL WEIGHT / GALL			CARGO LEFT IN HOLE DRILLER'S		LOGGED BY								
N/A			N/A		P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH (INCHES)	SAMPLE WEIGHT (POUNDS)	SAMPLE MOISTURE (%)	SAMPLE MOISTURE (%)	SWELL PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN FLUID (%)	LOSS IN PRESSURE (P.S.I.)	TIME IN MINUTES						
5" AUGER THROUGHOUT.								45.6	0			0.0-1.0': ASPHALT; GRAYISH BLACK GR2.	6/20/86 SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
								44.6	1.0			1.0-1.0': SAND (SC-5) FINE-GRAINED, SILTY, NON-PLASTIC, MOIST TO DRY. 1.0-8.0 FT. SATURATED (8.0-10 FT.) 1.0-2.0': DARK REDDISH BROWN COB3/4L 2.0-3.0': MODERATE BROWN (CY)3/4L 3.0-4.0': DARK REDDISH BROWN COB3/4L 4.0-7.0': GREENISH GRAY (GY)6/8L 7.0-8.0': PINKISH GRAY (SY)8/8L 8.0-9.0': GRAYISH ORANGE COYR7/4L 9.0-10.0': YELLOWISH GRAY (SY)7/2L	
								34.6	10.0			10-15.0': SANDSTONE; MODERATE REDDISH BROWN COYR4/6H SOFT TO MODERATELY HARD, FINE-TO MEDIUM-GRAINED, SILTY, SATURATED.	
								30.6	15.0			BOTTOM OF HOLE AT 15.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 6-20-86.	
												DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.	
16-SPLE SPINNING ST-DRILL BY TUNG, INCORPORATED PAPER CITY, OHIO				SITE				MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS				HOLE NO.	NISS-116R



GEOLOGIC DRILL LOG							PROJECT	JOB NO.	SHEET NO.	WELL NO.		
SITE MAYWOOD STORAGE SITE - HUNTER DOUGLAS							COORDINATES N8300 E11600	FUSRAP	14501-138	(07)	MISS-118R	
DATE	COMPLETED	DRILLER			DRILL NAME AND MODEL	WELL SIZE	OVERBURDEN (FT.)	ROCK (FT.)	REMARKS			
6-19-86	6-19-86	MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-33	6"	5.0'	4.0'	N/A			
CORE RECOVERY %		CORE DIAM.	SAMPLES	TL TOP OF CORE	GROUND EL.	DEPTH/VEL. SPEND WATER		DEPTH/VEL. TOP OF ROCK				
N/A		N/A	N/A	N/A	44.0'	3.0/41.0'		5.0/39.0'				
SAMPLE NUMBER BEHIND/ALL		CORES LEFT IN WELL OR LOST			LOGGED BY:							
N/A		N/A			P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE (LARGE CORE ONLY)	SAMPLER RECOVERY (CORE RECOVERY %)	SAMPLER LOSS (%)	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAINING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
6" AUGER THROUGHOUT							44.0					
							43.0	1.0			0-1.0': ASPHALT GRAYISH BLACK (N2).	6-20-86 SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION.
							41.0	3.0		1.0-3.0': CRUSHED ROCK MEDIUM DARK GRAY (N4).		
							39.0	5		3.0-5.0': SAND DUSKY RED (SR 3/4), FINE-GRAINED, SILTY, NON-PLASTIC, MOIST.		
							35.0	9.0		5.0-9.0': SANDSTONE PALE YELLOWISH BROWN (10YR5/2) SOFT TO MODERATELY HARD, FINE-GRAINED, SILTY, WEATHERED, MOIST TO SATURATED.		
										BOTTOM OF HOLE AT 9.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 6-20-86	EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
68-0417 SPONGE STRAINING TUBE 8-000000 PITCHER 8-000000											SITE MAYWOOD STORAGE SITE - HUNTER DOUGLAS	WELL NO. MISS-118R



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS										FLURAP		14501-130		1 OF 1		NISS-119A	
COORDINATES										N6205, E11390		ANGLE FROM HORIZ.		90°		SLANT	
DRILLER		COMPLETED		BELLER		MORE TRENCH		DRILL MAKE AND MODEL		HOLE DIA.		OVERLAP (FT.)		RICK (FT.)		TOTAL DEPTH	
6/19/86		6/19/86		ENVIRONMENTAL SERVICES		ENVIRONMENTAL SERVICES		MOBILE B-33		6"		6.0'		4.0'		10.0'	
CORE RECOVERY (%)		CORE DIAM.		SAMPLES		EL. TOP OF CORE		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF RICK					
N/A		N/A		N/A		N/A		45.6'		6.0' / 39.6'		6.0' / 39.6'					
SAMPLE NUMBER (HOLE/PT./ALL)				CORES LEFT IN HOLE (HOLE/PT./ALL)				LOGGED BY:									
N/A				N/A				P. YEN									
SAMPLE TYPE AND DIAMETER	SAMPLE SPACING (LENGTH OF CORE)	SAMPLE DEPTH (FEET)	SAMPLE ID	PERCENT CORE RECOVERY	IN SITU PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION *	NOTES ON WATER LEVELS, WATER RETENTION, CHARACTER OF MUDS, ETC.				
					LOGS	IN SITU	IN SITU										
6" ALUMINUM THROUGHOUT								45.6	0				SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. 6/20/86				
							45.1	0.5			0.0-0.5': ASPHALT; GRAYISH BLACK BR2S.						
							44.6	1.0			0.5-1.0': CRUSHED ROCK; MEDIUM GRAY BR2S.						
											1.0-5.0': SAND (S ₁ -S ₂); DUSKY RED (SP ₁ /4); FINE-GRAINED, SILTY, NON-PLASTIC.						
											5.0-6.0': HEAVY DUSKY BROWN (S ₁ R ₂ /2) AND LIGHT OLIVE GRAY (S ₁ S ₂ /2) CLAYEY WITH ROOTS.						
							40.6	5			6.0-10.0': SANDSTONE; PALE YELLOWISH BROWN (O ₁ R ₂ /2); SOFT TO MODERATELY HARD; FINE-GRAINED, SILTY, WEATHERED, MOST TO SATURATED.						
							39.6	6.0									
							35.6	10									
BOTTOM OF HOLE AT 10.0 FT.																	
HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.																	

* DESCRIPTION AND CLASSIFICATION IS VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
SITE: MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS										COORDINATES: N0075, E11350				ANGLE FROM MERID: 90°		DEVIATION: N/A	
DATE: 6/19/86		COMPLETED: 6/19/86		DRILLER: MORETRENCH ENV. SERV.			DRILL NAME AND MODEL: MOBILE B-33		HOLE SIZE: 6"	CIRCULARITY (FT.): 0.75'		ROCK (FT.): 6.25'	TOTAL DEPTH: 7.0'				
CORE RECOVERY (%): N/A			CORE DIAM: N/A		SAMPLER: N/A		EL. TOP OF CASING: N/A		GROUND EL.: 45.0'		DEPTH/EL. GROUND WATER: UNABLE TO DETERMINE		DEPTH/EL. TOP OF ROCK: 6.75' / 44.25'				
SAMPLE NUMBER (HOLE/FT.): N/A				CASING LEFT IN HOLE (DIA./LENGTH): N/A				LOGGED BY: P. YEM									
SAMPLE TYPE AND DIAMETER	SAMPLER APPROX. LENGTH (CORE TAKE)	SAMPLE RECOVERY (CORE RECOVERY)	SAMPLE SIZE	PERCENT CORE RECOVERY	IN SITU PRESSURE TESTS			ELEVATION	DEPTH	GRADING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.				
					LOG	PRESSURE	TIME										
					FT.	PSI	MIN	45.0	0								
6" AUGER THROUGHOUT								44.25	.75			0.0-0.75': ASPHALT; GRAYISH BLACK (S&L)	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. GROUND WATER LEVEL MEASURED ON 6/20/86.				
								38.0	7.0			0.75-7.0': SANDSTONE; DUSKY RED (S&L); SOFT TO MODERATELY HARD; FINE-GRAINED; SILTY; MOIST.					
												BOTTOM OF HOLE AT 7.0 FT.					
												HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.					

* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
SITE MAYWOOD INTERIM STORAGE SITE - WINTER DOUGLAS										FLSRAP		14501-130		1 OF 1		N155-121R	
COORDINATES										N7900, E11700		ANGLE FROM HORIZ.		BEARING		N/A	
DATE		COMPLETED		DRILLER		DRILL NAME AND MODEL		HOLE SIZE		OVERLAP (FT.)		RICK (FT.)		TOTAL DEPTH			
6/19/86		6/19/86		MORETRENCH ENV. SERV.		MOBILE B-33		8"		7.0'		1.0'		8.0'			
CORE RECOVERY (%)		CORE BOXES		SAMPLES		EL. TIP OF CORE		RECORD EL.		DEPTH/VEL. BOREHOLE WATER		DEPTH/VEL. TIP OF RICK					
N/A		N/A		N/A		N/A		46.4'		8.0'/39.4'		7.0'/59.4'					
SAMPLE NUMBER (NORTH/ALL)				CORES LEFT IN HOLE (N/A)				LOGGED BY				P. YEN					
N/A				N/A													
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH (FEET)	SAMPLE RECOVERY (%)	SAMPLE NO.	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAIN LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTICE ON WATER LEVELS, WATER RISING, COLLAPSE OF DRILLING, ETC.					
				LOW	PT. 1	PT. 2											
6" AUZER THROUGHOUT							46.4	0		0.0-0.5' ASBESTOS; GRAYISH BLACK GRS.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION						
								2.5		0.5-0.75' CRUSHED ROCK; MEDIUM GRAY GRS.							
								5		0.75-5.0' SAND (SC-SM); MODERATE BROWN (SYR3/4); AND DUSKY BROWN (SYR2/2); FINE-GRAINED; SILTY; NON-PLASTIC.							
								7.0		5.0-7.0' SILT; LIGHT PALE OLIVE GRAY; CLAYEY; SANDY WITH SOIL SLUDGE.							
							39.4	7.0		7.0-8.0' SANDSTONE; DUSKY RED (SR3/4); SOFT; FINE-GRAINED; WEATHERED; MOIST.	6/20/86						
							38.4	8.0		HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.							

• DESCRIPTION / CLASSIFICATION / VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.					
SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS										COORDINATES				FUSRAP		14501-138		1 OF 1		MISS-122R	
CORE RECOVERY %										CORE SAMPLES		EL. TOP OF CASING		GROUND EL.		DEPTH/EL. DRILLING WATER		DEPTH/EL. TOP OF BICK		TOTAL DEPTH	
N/A										N/A		N/A		46.3'		6.0' / 40.3'		6.0' / 40.3'		15.0'	
SAMPLE NUMBER										CASING LEFT IN HOLE				LOGGED BY							
N/A										N/A				P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLER TYPE AND LENGTH	SAMPLER LENGTH	SAMPLER TYPE	SAMPLER TYPE	SAMPLER TYPE	SAMPLER TYPE	SAMPLER TYPE	SAMPLER TYPE	SAMPLER TYPE	SAMPLER TYPE	ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.					
																	LOGS	IN	IN	IN	IN
6" AUGER THROUGHOUT.											46.3	0			0.0-0.5' ASPHALT; GRAYISH BLACK (M2).	SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION. ▽ 6/25/86					
											45.8	0.5		0.5-1.0' LENSIFIED ROCK; MEDIUM GRAY (M2); 2.0" MINUS.							
											40.3	6.0		1.0-6.0' SAND (S2-S16); DUSKY RED (S23/4, 0.0-0.4'); MODERATE BROWN (S24/4, 4.0-6.0'); FINE-GRAINED; SILTY; NON-PLASTIC; MOIST.							
											31.3	15.0		6.0-15.0' SANDSTONE; DUSKY RED (S23/4); SOFT; FINE-GRAINED; NON-PLASTIC; SILTY; WEATHERED; SATURATED AT 13.0-15.0'.							
															BOTTOM OF HOLE AT 15.0 FT.						
															HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/25/86.						

• DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

60-017 (P) 0000 ST-0001 BY TUG;
DORRANCE PAPERCO OPTIMA

MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS

HOLE NO. MISS-122R



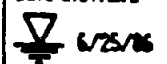
GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501-134	SHEET NO.	1 OF 1	HOLE NO.	WISS-124R
SITE			COORDINATES			ANGLE FROM MERID.		BEARING		
MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS			N8300, E11400			90°		N/A		
DATE	COMPLETED	DRILLER		DRILL MAKE AND MODEL	HOLE DIA.	OVERBURDEN (FT.)	DRILL (FT.)	TOTAL DEPTH		
6/20/86	6/20/86	NORETRENCH ENVIRONMENTAL SERVICES		MOBILE D-33	6"	7.0'	7.0'	14.0'		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. SPINDLE WATER		DEPTH/EL. TOP OF HOLE		
N/A		N/A	N/A	N/A	45.9'	6.0' / 39.9'		7.0' / 38.9'		
SAMPLE BARRED HEIGHT/FALL		CASING LEFT IN HOLE (IN./LBS/IN)			LOGGED BY					
N/A		N/A			P. YEN					

SAMPLE TYPE AND NUMBER	SAMPLER TYPE AND LENGTH CORRECTION	SAMPLER EXTENT CORRECTION	SAMPLER LOSS %	PERCENT CORE RECOVERY	WATER PRESSURE TEST		EL. (FT.)	DEPTH (FT.)	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER TABLE CHARACTER OF BELLUNG, ETC.	
					LOG IN IN	LOG OUT IN						
ALICOR, 6", THROUGHOUT.							45.9	0		0.0-0.5': ASPHALT; GRAYISH BLACK DRG.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION.	
							38.9	0.5		0.5-7.0': SAND (S&S); FINE-GRAINED, SILTY, NON-PLASTIC, MOIST.		
								7.0			7.0-10.0': SANDSTONE; SOFT, FINE-GRAINED, SILTY, WEATHERED, SATURATED.	
								10			10.0-14.0': LIGHT BROWN (S&S); CLAYEY.	EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
							31.9	14.0			BOTTOM OF HOLE AT 14.0 FT.	
											HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/20/86.	

6/20/86

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.		
				FUSRAP		14501-138	1 OF 1	NISS-125R		
SITE				COORDINATES			ANGLE FROM MERID.	SLANT		
MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS				N8000, E11400			90°	N/A		
DATE	COMPLETED	DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	RICK (FT.)	TOTAL DEPTH	
6/23/86	6/23/86	MORE TRENCH ENVIRONMENTAL SERVICES		MOBILE B-33		6"	1.0'	11.5'	12.5'	
CORE RECOVERY (%)		CORE DIAMETER	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/VEL. SPINDLE RATED		DEPTH/VEL. TOP OF RICK		
N/A		N/A	N/A	N/A	44.6'	4.5' / 40.1'		1.0' / 43.6'		
SAMPLE NUMBER BEING / FALL			CASING LEFT IN HOLE (DIA./LENGTH)			LOGGED BY:				
N/A			N/A			P. YEN				
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH (FEET)	SAMPLE DEPTH (FEET)	SAMPLE NO.	WATER PRESSURE TESTS	ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
AUGER 6" THROUGHOUT.					44.6	0				
					44.1	5.5			0.0-0.5': ASPHALT; GRAYISH BLACK GRG.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION.  6/25/86
					43.6	10.0			0.5-1.0': CRUSHED ROCK; DARK GRAY GRG. ANGULAR BASALT, 2" MINUS.	
						5		1.0-2.5': SANDSTONE; DUSKY RED (S.S./4). SOFT TO MODERATELY HARD, FINE-TO MEDIUM-GRAINED, SILTY, SLIGHTLY CLAYEY, WEATHERED. MOST TO SATURATED.		
						10			10.0-12.5': SATURATED SANDSTONE.	EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
					32.1	12.5			BOTTOM OF HOLE AT 12.5 FT. HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 6/25/86.	
										AUGER REFUSAL AT 12.5 FT.
<p>* DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.</p>										

30-SPLIT SPINDLE SYSTEM TUBE
 OPERATING PAPERED OPTION

DATE

MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS

HOLE NO.

NISS-125R



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.	
SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS										NUMBER	14501-138	1 OF 1	MISS-320C	
CORRELATION										MO363, E11705	ANGLE FROM HORIZ.		DIRECTION	
DRILLER										DRILL MAKE AND MODEL	HOLE SIZE	OVERLAP (FT.)	DEPTH (FT.)	TOTAL DEPTH
MORETRENCH ENVIRONMENTAL SERVICES										MOBILE B-33	8"	6.0'	3.0'	9.0'
START	COMPLETED	CONE NUMBER		SAMPLES	CL. TOP OF CORE	STARTING BL.	DEPTH/VEL. CORRECTED	DEPTH/VEL. TOP OF HOLE						
8/25/86	8/29/86	N/A		1	N/A	44.4'	N/A	6.0' / 38.4'						
SAMPLE NUMBER		CORE LEFT IN HOLE (BL./LNGTH)			LOGGED BY									
N/A		N/A			P. YEN									
SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH (COR. HOLE)	SAMPLE RECOVERY CORE RECOVERY	SAMPLE RECOVERY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CORRECTION LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER SETTING CHARACTER OF WELLING, ETC.		
				LOW IN FT.	SP. IN	TIME IN MINUTES								
SS 1/2"	2'	N/A	N/A				44.4							
							43.4	5.0		1	0-10': ASPHALT AND CRUSHED ROCK PAVEMENT AND ROAD BASE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. ADVANCED HOLE WITH HOLLOW STEM AUGER (4x2) INCH.		
							38.4	6.0			10-60': SAND (SC-SM) FINE-GRAINED, SILTY, MOIST, TRACE OF 1/4" GRAVEL. 10-45' GRAYISH RED (SRA/ZL) 45-60': MEDIUM LIGHT GRAY ONL.			
							35.4	9.0			60-90': SANDSTONE; DUSKY RED (SRO/A, SPT), FINE-GRAINED, SILTY, WEATHERED.			
										BOTTOM OF HOLE AT 50 FT.				
										HOLE BACKFILLED WITH CEMENT-BENTONITE GROUT, 9/5/86.				

• DESCRIPTION & CLASSIFICATION VS. VISUAL EXAMINATION OF CLTTINGS.



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS				COORDINATES	FUSRAP	14501-138	1 OF 1	NISS-340R					
				MOBILE FROM HOLE	90°		SLURRY	N/A					
DATE	COMPLETED	DRILLER		DRILL NAME AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH					
9/17/86	9/17/86	MORE TRENCH ENVIRONMENTAL SERVICES		MOBILE B-33	6"	5.0'	0.0'	5.0'					
CORE RECOVERY (%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/VEL. SPICED WATER		DEPTH/VEL. TOP OF ROCK					
N/A		N/A	N/A	N/A	46.9'	NONE OBSERVED		N/A					
SAMPLE BARRED WEIGHT/FILL			CASING LEFT IN HOLE/DOWNHOLE		LOGGED BY								
N/A			N/A		D McGRANE								
SAMPLE TYPE AND DIAMETER	SAMPLE LENGTH (L) (FEET)	SAMPLE WEIGHT (LBS)	SAMPLE WETNESS (%)	PERCENT CORE RECOVERY (%)	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRADING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION*	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOG	TIME	PERCENTAGE						
					LOG	TIME	PERCENTAGE	45.9	0				
								45.6	0.3				
								40.9	5				
AUGER, 6", THROUGHOUT.													
<p>0.0-0.3: ASH/CLAY.</p> <p>0.3-5.0: SILTY SAND; LIGHT COLOR STRATIFIED FINE-TO MEDIUM-GRAINED; NUMEROUS PIECES OF HARD LO-3.0 GRAVEL (0.3-2.5 FT) POORLY CONSOLIDATED & LOOSE; DRY TO MOIST.</p> <p>0.3-1.0: MODERATE BROWN (5YR3/4) DRY.</p> <p>1.0-5.0: DARK REDDISH BROWN (6YR3/4) OCCASIONAL PIECES OF ROUNDED GRAVEL; MOIST.</p> <p>BOTTOM OF HOLE AT 5.0 FT. HOLE WAS IMMEDIATELY BACKFILLED WITH CEMENT-BENTONITE GROUT AND FINISHED WITH CEMENT.</p>													<p>SITE CHECKED FOR RADIOACTIVE CONTAMINATION AND HOLE GAMMA LOGGED BY EBERLINE ANALYTICAL CORPORATION.</p> <p>REFUSAL AT 5.0 FT.</p>
<p>12-SPLE SPOON ST-BELLY TUBE, 12-CORNER P-PITCH OTHER</p>													<p>NOTE</p>
MAYWOOD INTERIM STORAGE SITE - HUNTER DOUGLAS											HOLE NO.	NISS-340R	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP	14501	1 of 1	RS01				
SITE			COORDINATES		ANGLE FROM HORIZ. BEARING						
Muscarella			N 7775.0; E 11280.0		Vertical -----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-6-90	10-6-90	Hydro Group, Inc.	Soil Sentry	6"	8.0	0.0	8.0				
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	E.L. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
6.4/80"		0	4	NA	51.0	none ATD / NA	NA/NA				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in		none			Lewis R. West <i>[Signature]</i>						
SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I. TIME MIN.						
SS	2.0	1.0	8			51.0				0.0 - 2.8 ft: Silty CLAY, (CL); Grayish black (N2), very fine grained; asphalt fragments mixed in top 6".	Complete borehole number is B3890R501.
SS	2.0	1.8	3			50.0					Borehole sampled and gamma-logged by TMA/Eberline Corp.
			4			49.0					
						48.2				2.8 - 3.8 ft: Silty SAND, (SM); Grayish red (5R4/2), sand is fine grained.	
SS	2.0	2.0	4			47.2				4.0 - 5.8 ft: Silty SAND, (SM); Dusky red (5R3/4), sand is fine grained; sandstone pebbles, Grayish red (10R4/2), at 5.0'.	Hole advanced to depth by 3" OD split spoon samplers.
			12			47.0					
			18			45.2					
			19			45.2					
SS	2.0	1.6	20			44.7				5.8 - 6.3 ft: Silty SAND, (SM); Very dusky red (10R2/2), sand is fine grained.	Borehole enlarged by drilling with 6" rock bit to depth.
			19			44.7					
			24			43.4				6.3 - 7.6 ft: Silty SAND, (SM); Dusky red (5R3/4), sand is fine grained, with sandstone pebbles; angular crystalline limestone pebble at 6.7'.	3" PVC casing inserted to 7.0' for gamma-logging.
			28			43.0					
										TOTAL DEPTH = 8.0 FT.	PVC casing was removed after logging and hole was backfilled with grout and drilling spoils.
											* Core recovery refers to total soil & rock sample.
											Ground elevation estimated from site topographic map.
											Description & classification by visual examination of sample.
											Colors from "Rock-Color Chart" (GSA, 1948).
SITE			Muscarella			Last Update: 03-19-92		HOLE NO. RS01			



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R503
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING		
Muscarelle			N 7750.0; E 11313.0			Vertical		-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-6-90	10-6-90	Hydro Group, Inc.	Tripod	3.5"	8.4	1.6	10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
7.4/74%		0	5	NA	51.0	NA	8.4/42.6			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs/30 in		none		Stephen Knuttel						

SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMP. RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SECRET	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					PRESS. P.S.I.	TIME MIN.						
SS	2.0	1.4	3 7 8				51.0				(Template: NYWD)	Complete borehole number is B3890R503. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 5" OD split spoon samplers. Borehole enlarged by driving 3.5" OD split spoon to depth. 5" PVC casing inserted to 6.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with grout and drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1945).
							50.2				0.0 - 0.8 ft: SILT, (ML); Brownish black (5YR3/1), with root material; clayey between 0.0 - 0.4' and sandy between 0.4 - 0.8'; firm, moist.	
							50.0				0.8 - 1.0 ft: Gravelly SAND, (SW); Brownish black (5YR2/1), moist.	
							49.6				1.0 - 1.4 ft: SAND, (SW); Grayish brown (5YR3/2) mottled with Dark reddish brown (10R3/4), fine grained, minor silt.	
							49.0				2.0 - 3.3 ft: Silty SAND, (SM); Grayish brown (5YR3/2) alternating with Dark reddish brown (10R3/4), roots present, minor pebbles up to 1 cm, firm, moist.	
SS	2.0	1.9	6 6 7 4				47.7				4.0 - 7.4 ft: SAND, (SW); Moderate reddish brown (10R4/6), fine to medium grained, poorly sorted; gravelly between 4.0 - 4.2'; minor angular to rounded gravel up to 2 cm below 4.2'; minor silt content decreasing with depth; firm, moist.	
SS	2.0	1.4	6 6 16				47.0				8.0 - 8.4 ft: SAND, (SW); Light brown (5YR5/6), medium grained, poorly sorted, firm, wet.	
							45.6				8.4 - 9.9 ft: Sandy GRAVEL, (GW); Dark reddish brown (10R3/4), gravel is primarily sandstone, up to 5 cm, dense, moist.	
							45.0					
SS	2.0	1.4	11 7 10 14				43.6					
							43.0					
							42.8					
SS	2.0	1.9	26 34 41 50				41.1					
							41.0	10				
TOTAL DEPTH = 10.0 FT.												



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.			
SITE Muscarella										COORDINATES N 7800.0; E 11250.0		ANGLE FROM HORIZ Vertical		BEARING -----					
BEGUN 10-6-90		COMPLETED 10-6-90		DRILLER Hydro Group, Inc.			DRILL MAKE AND MODEL Soil Sentry		SIZE 6"	OVERBURDEN 8.0	ROCK (FT.) 0.0	TOTAL DEPTH 8.0							
CORE RECOVERY (FT./%) 6.1/76%			CORE BOXES 0	SAMPLES 4	EL. TOP CASING NA	GROUND EL. 51.0	DEPTH/EL. GROUND WATER / none ATD		DEPTH/EL. TOP OF ROCK NA/NA										
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in			CASING LEFT IN HOLE: DIA./LENGTH none			LOGGED BY: Lewis R. West													
SAMP TYPE	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.						
					LOSS IN G.P.H.	PRESS. P.S.F.	TIME MIN.												
SS	1.8	1.0	4/4 12 14 18				51.0 50.8 49.8 49.0					0.0 - 0.5 ft: ASPHALT; over sand and gravel. 0.5 - 4.3 ft: Silty CLAY, (CL); Grayish black (N1), very fine grained, angular pebbles up to 2" between 3.2 - 3.6'.	Complete borehole number is B339DR504. Drilled through asphalt to 0.2'. Borehole sampled and gamma-logged by TMA/Eberline Corp.						
SS	2.0	1.6	3 4 5				47.4 47.0 46.8					4.3 - 8.0 ft: Silty SAND, (SM); Grayish red (5R4/2) changing to Blackish red (5R2/2) at 7.5'; sand is fine grained, few fine rounded pebbles between 5.5 - 6.6'.	Hole advanced to depth by 3" OD split spoon samplers.						
SS	2.0	2.0	4 8 9 17				46.0 44.5 43.0					TOTAL DEPTH = 8.0 FT.	Borehole enlarged by drilling with 6" rock bit to depth. 3" PVC casing inserted for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.						
													* Core recovery refers to total soil & rock samples. Ground elevation estimated from site topographic map. Description & classification by visual examination of samples. Colors from "Rock-Color Chart" (GSA, 1948).						

SS = SPLIT SPOON; NG = CORE BARREL;
HX = HAND AUGER; O = OTHER

SITE

Muscarella

Last Update:
03-19-92

HOLE NO.
R504



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R505
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING	
Muscarelle			N 7,950.0; E 11,144.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-6-90	10-6-90	Hydro Group, Inc.	Mobile B-80	8"	7.2	0.8	8.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
5.6/70*		0	5	NA	46.5	NA	7.2/39.3			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>					

SAMP TYPE	SAMP DIA.	SAMP ADV. LEN CORE	SAMP REC. CORE REC.	SAMPLE BLOWS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.						
									46.5				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R505. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 4.0'. Augered to 6.0'. Spoon refusal at 7.2'. Additional spoon attempted; spoon refusal at 7.3'. Augered to total depth of 8.0'. 3" PVC casing inserted to total depth for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	1.5	0.9		10					46.3				0.5 - 1.4 ft: Silty SAND, (SM); Moderate brown (5YR3/4); sand is fine to medium grained, subangular to subrounded, -60%; silt -30%, clay <10%; 2" diameter limonite cobbles present; moist.	
SS	2.0	1.7		9					45.1				2.0 - 4.3 ft: SAND, (SP); Pale brown (5YR5/2) changing to Olive gray (5Y4/1) at 2.8' and to Brownish gray (5YR4/1) at 3.2', fine to medium grained, subangular to subrounded, no plasticity, loose, moist.	
				10					44.5				4.3 - 4.8 ft: Silty SAND, (SM); Grayish red (10R4/2), very fine to fine grained, rounded to subrounded, low plasticity, moist.	
				6					42.8				4.8 - 5.3 ft: SAND, (SP); Grayish red (5R4/2), fine to medium grained.	
				17					42.5				5.3 - 7.2 ft: Silty SAND, (SM); Moderate brown (5YR3/4) changing to Grayish red (10R4/2) at 6.0'; sand is very fine to fine grained, rounded to subrounded, -50 - 60%; silt -40%, low plasticity, dense, moist.	
SS	2.0	1.7		9					42.2				7.2 - 7.3 ft: SANDSTONE; Dark reddish brown (10R3/4), fine to medium grained, rounded, micaceous, iron cement.	
				28					41.7				TOTAL DEPTH = 8.0 FT.	
				13					41.2					
				5					40.8					
SS	1.2	1.2		15					40.5					
				60/3"					39.3					
SS	0.1	0.1		60/2"					39.2					
									38.5					



GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R506
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING		
Muscarelle			N 7741.0; E 11300.0			Vertical			-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-6-90	10-6-90	Hydro Group, Inc.	Tripod		3.5"	5.7	0.8	6.5			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
5.2/80*		0	4	NA	51.0	/ none ATD / NA		5.7/45.3			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in		none		Stephen Knuttel <i>[Signature]</i>							

SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. LOSS RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS G.P.H.	PRESS. P.S.F.	TIME MIN.					
SS	2.0	1.7	4				51.0			0.0 - 1.7 ft: Silty SAND, (SM); Blackish red (5R3/2), with root material, firm, moist.	Complete borehole number is B3890R506.
SS	2.0	1.0	4				49.3 49.0			2.0 - 2.7 ft: Sandy, Silty GRAVEL, (GM); Blackish red (5YR3/2), gravel is coarse, angular, dense, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	2.0	6 8 17 41				47.0			2.7 - 5.7 ft: SAND, (SW); Moderate brown (5YR4/4), fine grained, minor silt, pebbles up to 3 cm common, firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
SS	0.5	0.5	27-50/0*				45.3 44.5			5.7 - 6.5 ft: Sandy GRAVEL, (GW); Dark reddish brown (10R3/4), gravel is primarily sandstone up to 5 cm. dense, moist.	Spoon refusal at 6.5'. Borehole enlarged by driving 3.5" OD split spoon to depth.
TOTAL DEPTH = 6.5 FT.											3" PVC casing inserted to 5.0' for gamma-logging.
											PVC casing was removed after logging and hole was backfilled with drilling spoils.

SS = SPLIT SPOON; HQ = CORE BARREL; HX = HAND AUGER; 0 = OTHER	SITE	Muscarelle	Last Update:	05-19-92	HOLE NO.	R506
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GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R507
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING		
Muscarella			N 7850.0; E 11045.0			Vertical		-----		
BEGUN	COMPLETED	DRILLER		DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-6-90	10-6-90	Hydro Group, Inc.		Mobile B-80	8"	8.0	0.0	8.0		
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
4.3/54°		0	4	NA	47.0	/ none ATD / NA		NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>					

SAMP. TYPE	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLONS	% CORE RECOVERY	LOSS	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						G.P.M.	P.S.F.	TIME MIN.					
									47.0				
SS	1.5	0.8	23	15					46.5			0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B8890R507.
			16						46.7			0.5 - 6.4 ft: Silty SAND (SM); Moderate reddish brown (10R4/8), sand is fine to medium grained, no plasticity, moderately dense, moist.	
SS	2.0	0.3	4	6					45.0				Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 4.0'.
			7						44.7				
SS	2.0	1.2	1	3					43.0				Augered to 6.0'.
			7						41.8				
SS	2.0	2.0	11	13					41.0			6.4 - 8.0 ft: Clayey SILT (ML); Moderate yellowish brown (10YR5/4), silt -50%, clay -50%, layering present -0.5 - 1.0" thick, moderately plastic, firm, moist.	Augered to total depth of 8.0'. 3" PVC casing inserted to 7.5' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.
			20						40.6				
											TOTAL DEPTH = 8.0 FT.		



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.
				FUSRAP	14501	1 OF 1	R508
SITE		COORDINATES			ANGLE FROM HORIZ		
Muscarelle		N 7,762.0; E 11,316.0			Vertical		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
10-6-90	10-6-90	Hydro Group, Inc.	Tripod	3"	9.6	0.0	9.6
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
7.0/73*	0	5	NA	50.5	NA / none ATD	NA/NA	
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
140 lbs/30 in		none		Stephen Knuttel			

SAMP TYPE AND DIAM.	SAMP ADV LEN CORE	SAMP REC. CORE REC.	SAMP BLOKS RECOVERY	LOSS IN IN	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					P.S.I. G.P.M.	TIME IN MIN.					
SS	2.0	1.5	4 15 6 6				50.5			0.0 - 0.5 ft: Clayey SILT, (ML); Grayish black (N2) with root material, firm, moist.	Complete borehole number is B3890R508.
							49.5			0.5 - 1.0 ft: GRAVEL, (GW); Dark reddish brown (10R3/4).	
SS	2.0	0.5	6 5 3 3				48.5			1.0 - 1.5 ft: Silty SAND, (SM); Grayish red (5R4/2) sand is fine grained, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
							48.0			2.0 - 2.5 ft: Clayey, Sandy GRAVEL, (GC); Moderate reddish brown (10R4/6), moist.	
SS	2.0	1.5	4 4 8 10				46.5			4.0 - 7.7 ft: SAND, (SW); Moderate brown (5YR4/4), fine to medium grained, moderately sorted, with minor silt, very fine layering in sections, firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
							44.7				
SS	2.0	1.7	15 19 24 41				44.5				
SS	1.6	1.5	32 32 36 50/2*				42.8 42.5			3.0 - 9.5 ft: Sandy GRAVEL interlayered with SAND, (GW & SW); gravel is primarily sandstone, Dark reddish brown (10R3/4), dense, moist; sand is fine grained, Moderate brown (5YR4/4), moist, layers are -0.1 - 0.2' thick.	Spoon refusal at 9.6'. Borehole enlarged by driving 3.5" OD split spoon to depth.
							41.0 40.9				

TOTAL DEPTH = 9.6 FT.

Spoon refusal at 9.6'. Borehole enlarged by driving 3.5" OD split spoon to depth.

3" PVC casing inserted to 6.0' for gamma-logging.

PVC casing was removed after logging and hole was backfilled with drilling spoils.

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O? = OTHER	SITE	Muscarelle	Last Update: 10-08-92	HOLE NO. R508
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GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R509	
SITE			Muscarella	COORDINATES		N 7868.0; E 11080.0		ANGLE FROM HORIZ		Vertical	BEARING	-----
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-6-90	10-6-90	Hydro Group, Inc.	Mobile B-80		8"	6.0	0.0	6.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
3.2/53*		0	3	NA	47.0	/ none ATD / NA		NA/NA				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in			none			Robert Cook <i>[Signature]</i>						

SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SUBSTRATE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					P.S.I.	TIME MIN.						
							47.0				(Template: NYWD)	
SS	1.5	0.5	10 17				46.8 46.2 46.0				0.0 - 0.5 ft: ASPHALT; over sand and gravel. 0.5 - 0.8 ft: SAND, (SP); Moderate yellowish brown (10YR5/4); fine to medium, subrounded to rounded, grained sand -80%; silt -10%, no plasticity, moist.	Complete borehole number is B3890R509. Augered through asphalt to 0.5'.
SS	2.0	1.2	17 33 34				45.0 43.8				0.8 - 4.3 ft: Silty SAND, (SM); Moderate reddish brown (10R4/6); sand is very fine to fine grained, subrounded to subangular, -50%; silt -30%, low plasticity, poorly graded, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 4.0'.
SS	2.0	1.6	10 11 8				43.0 42.7 41.6 41.0				4.3 - 5.5 ft: Clayey SILT, (ML); Grayish red (5R4/2), very fine grained, silt -70%, clay -30%, low plasticity, firm, moist.	Augered to total depth of 6.0'. 3" PVC casing inserted to 5.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.
TOTAL DEPTH = 6.0 FT.												

SS = SPLIT SPOON; NO = CORE BARREL; SITE: Muscarella

last Update: 03-19-92 HOLE NO. R509

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.
				FUSRAP	14501	1 OF 1	R510
SITE			COORDINATES		ANGLE FROM HORIZ/BEARING		
Muscarelle			N 7750.0; E 11200.0		Vertical -----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
10-6-90	10-6-90	Hydro Group, Inc.	Soil Sentry	3.5"	6.5	0.0	6.5
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
5.4/83*		0	3	NA	50.0	none ATD NA	NA/NA
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
140 lbs/30 in		none		Lewis R. West <i>[Signature]</i>			

SAMP TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP REC. CORE REC.	SAMP BLK % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION (Template: NYND)	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.						
							50.0					
SS	2.0	2.0	30 44 41				49.8				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R510. Drilled through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3" OD split spoon samplers.
SS	2.0	1.8	38 36 39				45.9 45.5				0.5 - 4.1 ft: Silty SAND, (SM); Dusky red (5R3/4), sand is fine to medium grained, increased sand content between 3.0 - 4.0', rounded limestone pebble (1.5" x 2.0") at 2.0', angular sandstone pebble (2" x 2.5") at 4.0'.	
SS	2.0	1.8	30 32 36 40				44.5 43.7 43.5	5			4.5 - 5.5 ft: Silty CLAY, (CL); Grayish olive (10Y4/3). 5.5 - 6.5 ft: Silty SAND, (SM); Grayish red (5R4/2), sand is fine grained.	
TOTAL DEPTH = 6.5 FT.												Borehole enlarged by driving 3.5" OD split spoon to depth (Note: drill rig transmission broke and hole could not be advanced by augering). 3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; NQ = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	Muscarelle	Log Update: 03-19-92	HOLE NO. R510
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GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R511
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING		
Muscarelle			N 7820.0; E 11180.0			Vertical		-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-6-90	10-6-90	Hydro Group, Inc.	Tripod		3.5"	8.0	0.0	8.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
5.7/71*		0	4	NA	52.0	none ATD		NA/NA		
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs/30 in			none			Stephen Knuttel <i>[Signature]</i>				

SAMP TYPE	SAMP DIA.	SAMP ADV. LEN. CORE	SAMP REC. CORE REC.	SAMP RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						P.S.I.	TIME MIN.					
SS	2.0	1.6	7	6				52.0			(Template: HYWD)	
			13	9				51.5			0.0 - 0.5 ft: TOPSOIL, (ML); Grayish black (N2), moist.	Complete borehole number is BS80R511.
			13	9				50.5			0.5 - 1.5 ft: Gravelly SAND, (SW); Moderate brown (5YR3/4), gravel up to 0.1' common, with minor silt, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.2	6	7				50.0			2.0 - 2.9 ft: Sandy GRAVEL, (GW); Moderate brown (5YR3/4), well graded, minor silt to gravel up to 0.2' wet.	Hole advanced to depth by 3" OD split spoon samplers.
			13	17				49.1			2.9 - 3.3 ft: SAND, (SP); Grayish red (10R4/2), medium grained, moderately well sorted, minor silt and clay, firm, moist.	
			13	17				48.8			4.0 - 7.0 ft: Gravelly, Silty SAND, (SM); Moderate brown (5YR4/4) mottled with Moderate reddish brown (10R4/6) and Dark reddish brown (10R3/4), with some areas of Grayish black (N2); sand is medium grained, poorly sorted, firm, moist; sedimentary clasts composed of silty clay, greenish gray, (5GY6/1), present between 5.0 - 6.0'.	
SS	2.0	2.0	24	20				48.0				
			20	19								
SS	2.0	1.0	27	31				45.0				
			37	37								
			37	37				44.0				
TOTAL DEPTH = 8.0 FT.											Borehole enlarged by driving 3.5" OD split spoon to depth.	
											3" PVC casing inserted to 6.0' for gamma-logging.	
											PVC casing was removed after logging and hole was backfilled with drilling spoils.	



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	WOLE NO.
SITE										COORDINATES		ANGLE FROM HORIZ	
Muscarelle										N 7730.0; E 11035.0		Vertical	
BEGUN	COMPLETED	DRILLER			DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-6-90	10-6-90	Hydro Group, Inc.			Mobile B-80		8"	8.0	0.0	8.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
4.8/60*		0	4	NA	46.0	/ none ATD / NA		NA/NA					
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in			none			Robert Cook							
										(Template: MYWD)			
SAMP TYPE	SAMP. DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS G.P.N.	PRESS. P.S.I.							
							46.0						
SS	1.5	0.8		26 18 27			45.7				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R513.	
SS	2.0	1.5		10 12 7 9			44.7				0.5 - 3.5 ft: Silty SAND (SM); Moderate reddish brown (10R4/8) changing to Dusky yellowish brown (10YR2/2) at 0.9', sand is very fine to fine grained -50%, silt -30%, clay -10 - 20%; gravel -10%, between 0.9 - 3.5'; wood fragment between 3.1 - 3.5'; very stiff, dense, no plasticity, moist.	Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	1.2		6 4 7 10			44.0				4.0 - 4.4 ft: Sandy SILT, (ML); Grayish brown (5YR3/2), very fine to fine grained, gravel <10%, very loose, no plasticity, moist.	Augered to 4.0'.	
SS	2.0	1.3		9 17 13 22			42.5 41.6 41.1 40.8				4.4 - 4.9 ft: Silty CLAY, (CL); Olive black (5Y2/1), very fine grained, medium plasticity, moist.	Augered to 6.0'.	
							40.0				4.9 - 6.8 ft: Silty CLAY and SAND, (CL & SP); clay is Greenish gray (5GY6/1), very fine grained, in layers -0.5" thick, medium plasticity, firm; with sand between 6.1 - 6.7'; sand is light olive gray (5Y6/1), fine to medium, rounded to subrounded, well sorted, no plasticity, moderately firm; moist.	Augered to total depth of 8.0'.	
							39.2				6.8 - 7.5 ft: SAND, (SP); Brownish gray (5YR4/1), fine to medium grained, rounded to subrounded, well sorted, no plasticity, moderately dense, moist.	5" PVC casing inserted to 7.5' for gamma-logging.	
							38.7					PVC casing was removed after logging and hole was backfilled with drilling spoils.	
							38.0						
										TOTAL DEPTH = 8.0 FT.			
												* Core recovery refers to total soil & rock sample.	
												Ground elevation estimated from site topographic map.	
												Description & classification by visual examination of sample.	
												Colors from "Rock-Color Chart" (GSA, 1948).	

SS = SPLIT SPOON; NO = CORE BARREL; SITE
HX = HAND AUGER; O = OTHER

Muscarelle

Last Update: HOLE NO.
03-19-92 R513



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.																																																													
SITE Muscarelle										COORDINATES N 7852.0; E 11089.0	14501	1 of 1	R515																																																													
BEGUN 10-6-90										COMPLETED 10-6-90	DRILLER Hydro Group, Inc.	DRILL MAKE AND MODEL Tripod	SIZE 3.5"	OVERBURDEN 6.0	ROCK (FT.) 0.0	TOTAL DEPTH 6.0																																																										
CORE RECOVERY (FT./%) 4.4/73*										CORE BOXES 0	SAMPLES 3	EL. TOP CASING NA	GROUND EL. 48.0	DEPTH/EL. GROUND WATER NA / NA	DEPTH/EL. TOP OF ROCK NA/NA																																																											
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in										CASING LEFT IN HOLE: DIA./LENGTH none	LOGGED BY: Lewis R. West																																																															
<table border="1"> <thead> <tr> <th rowspan="2">SAMP. TYPE AND DIAM.</th> <th rowspan="2">SAMP. ADV. LEN. CORE</th> <th rowspan="2">SAMP. REC. CORE REC.</th> <th rowspan="2">SAMP. RECOVERY %</th> <th rowspan="2">LOSS IN G.P.M.</th> <th rowspan="2">WATER PRESS. P.S.F.</th> <th rowspan="2">TIME MIN.</th> <th rowspan="2">ELEV.</th> <th rowspan="2">DEPTH</th> <th rowspan="2">GRAPHICS SAMPLE</th> <th rowspan="2">DESCRIPTION AND CLASSIFICATION</th> <th rowspan="2">NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.</th> </tr> <tr> <th>WATER TESTS</th> </tr> </thead> <tbody> <tr> <td>SS</td> <td>2.0</td> <td>2.0</td> <td>100</td> <td></td> <td></td> <td></td> <td>48.0</td> <td></td> <td></td> <td rowspan="3"> 0.0 - 5.8 ft: Silty SAND, (SM); Dusky red (5RS/4); sand is fine to medium grained between 0.0 - 2.0', medium grained below; weathered granitic pebble at 1.0'; rounded gravel between 1.8 - 2.0'; gravel, Grayish olive (10Y4/2) at 3.5'; moist, wet below 2.0'. </td> <td rowspan="3"> Complete borehole number is B3890R515. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3.5" OD split spoon samplers. </td> </tr> <tr> <td>SS</td> <td>2.0</td> <td>1.4</td> <td>70</td> <td></td> <td></td> <td>44.6</td> <td></td> <td></td> </tr> <tr> <td>SS</td> <td>2.0</td> <td>1.0</td> <td>50</td> <td></td> <td></td> <td>43.0</td> <td>5</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>42.4</td> <td></td> <td></td> <td> 5.8 - 6.0 ft: Silty CLAY, (CL); Olive gray (5Y4/2) mottled with Moderate yellowish brown (10YR5/4), fine grained. </td> <td rowspan="2"> 3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with grout and drilling spoils. </td> </tr> <tr> <td colspan="10"> TOTAL DEPTH = 6.0 FT. </td> </tr> </tbody> </table>										SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY %	LOSS IN G.P.M.	WATER PRESS. P.S.F.	TIME MIN.	ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	WATER TESTS	SS	2.0	2.0	100				48.0			0.0 - 5.8 ft: Silty SAND, (SM); Dusky red (5RS/4); sand is fine to medium grained between 0.0 - 2.0', medium grained below; weathered granitic pebble at 1.0'; rounded gravel between 1.8 - 2.0'; gravel, Grayish olive (10Y4/2) at 3.5'; moist, wet below 2.0'.	Complete borehole number is B3890R515. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3.5" OD split spoon samplers.	SS	2.0	1.4	70			44.6			SS	2.0	1.0	50			43.0	5									42.4			5.8 - 6.0 ft: Silty CLAY, (CL); Olive gray (5Y4/2) mottled with Moderate yellowish brown (10YR5/4), fine grained.	3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with grout and drilling spoils.	TOTAL DEPTH = 6.0 FT.									
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Last Update: 05-19-92										HOLE NO. R515																																																																
SITE: Muscarelle																																																																										



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.		
SITE Muscarella										COORDINATES N 7750.0; E 11100.0		14501	1 OF 1	R516		
BEGUN 10-6-90		COMPLETED 10-6-90		DRILLER Hydro Group, Inc.		DRILL MAKE AND MODEL Mobile B-80		SIZE 8"	OVERBURDEN 8.0	ROCK (FT.) 0.0	TOTAL DEPTH 8.0	ANGLE FROM HORIZ Vertical		BEARING -----		
CORE RECOVERY (FT./X) 5.1/64"		CORE BOXES 0	SAMPLES 4	SEL. TOP CASING NA		GROUND EL. 47.5	DEPTH/EL. GROUND WATER / none ATD		DEPTH/EL. TOP OF ROCK NA/NA		SAMPLE NUMBER WEIGHT/FALL 140 lbs/30 in					
CASING LEFT IN HOLE: DIA./LENGTH none		LOGGED BY: Robert Cook														
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS	% CORE RECOVERY	LOSS IN G.P.H.	WATER PRESS. TESTS	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION			NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
SS	1.5	0.8	18	13	20			47.5				0.0 - 0.5 ft: ASPHALT; over sand and gravel.			Complete borehole number is B3890R516.	
								47.0				0.5 - 1.3 ft: FILL; cobbles, sand, clay, moist.				
SS	2.0	0.7	18	22	20			46.2				2.0 - 2.7 ft: Silty SAND, (SM); Grayish red (10R4/2), sand -50%, silt -30%, gravel -20%, subrounded to subangular tabular grains and rounded elongated grains, well graded, moderately dense, no plasticity, moist.			Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	1.6	19	21	30			45.5				4.0 - 6.1 ft: SAND, (SW); Grayish red (5R4/2); fine to medium, rounded to subrounded, grained sand -90%; rounded gravel up to -1" -10%; no plasticity, moist.			Augered to 4.0'.	
SS	2.0	2.0	12	15	13			44.8				5.1 - 6.5 ft: Silty SAND, (SM); Pale yellowish reddish brown (10YR6/2) changing to Moderate reddish brown (10R4/6) at 6.0'; fine to coarse, rounded to subangular, grained sand -60%, coarser below 6.0'; silt -20%, gravel -20%; no plasticity, moderately dense, moist.			Augered to 6.0'.	
								43.5				6.5 - 6.9 ft: SAND, (SP); Pale brown (5YR5/2), fine to medium grained, rounded to subangular, well sorted, moderately dense, moist.			Augered to total depth of 8.0'.	
								42.4				6.9 - 7.4 ft: Silty SAND, (SM); Pale olive (10Y6/2), sand is very fine to fine grained, subangular to subrounded, low plasticity, moderately firm, moist.			3" PVC casing inserted to total depth for gamma-logging.	
								41.9				7.4 - 8.0 ft: CLAY, (CL); Greenish gray (5GY6/1), very fine grained, medium plasticity, very firm.			PVC casing was removed after logging and hole was backfilled with drilling spoils.	
								41.6								
								41.0								
								40.6								
								40.1								
								39.5								
												TOTAL DEPTH = 8.0 FT.				

SS = SPLIT SPOON; NO = CORE BARREL;
HX = HAND AUGER; ? = OTHER

SITE: **Muscarella** Last Update: **03-19-92** HOLE NO. **R516**



GEOLOGIC DRILL LOG		PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R527							
SITE		Muscarella		COORDINATES		N 7795.0; E 11110.0		ANGLE FROM HORIZ	Vertical							
BEGUN	10-8-90	COMPLETED	10-8-90	DRILLER	Hydro Group, Inc.		DRILL MAKE AND MODEL	Tripod	SIZE	3.5"	OVERBURDEN	8.0	ROCK (FT.)	0.0	TOTAL DEPTH	8.0
CORE RECOVERY (FT./%)		6.7/84%		CORE BOXES	0	SAMPLES	4	EL. TOP CASING	NA	GROUND EL.	49.0	DEPTH/EL. GROUND WATER	none ATD	DEPTH/EL. TOP OF ROCK	0.0/0.0	
SAMPLE HAMMER WEIGHT/FALL		140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH		none		LOGGED BY:		Lewis R. West						

SAMP. AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOWS / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS G.P.M.	PRESS. P.S.I.	TIME MIN.					
SS 2.0	1.8	15	25				49.0		0.0 - 1.8 ft: TOPSOIL, (ML); Dusky brown (5YR2/2), fine grained silt.	Complete borehole number is BSB90R527.	
SS 2.0	1.8	18	28				47.5		3.0 - 3.4 ft: Silty CLAY, (CL); Dusky brown (5YR2/2).	Borehole sampled and gamma-logged by TMA/Eberline Corp.	
		18	28				47.0				
		22	24				45.6		3.4 - 3.6 ft: CLAY, (CL); Light olive gray (5Y6/2), plastic.	Hole advanced to depth by 3" OD split spoon samplers.	
		24	24				45.4				
SS 2.0	1.6	22	24				45.2		3.6 - 3.8 ft: Silty SAND, (SM); Moderate brown (5YR3/4), fine to medium grained.		
		46	24				44.8				
		23	24				43.4		4.0 - 4.2 ft: Silty SAND, (SM); Blackish red (5R2/2).		
		25	24				43.0				
SS 2.0	1.8	33	24				41.2		4.2 - 7.8 ft: Silty SAND, (SM); Grayish red (10R4/2), medium grained, sandstone pebbles between 7.0 - 7.8', wat.	Borehole enlarged by driving 3.5" OD split spoon to depth.	
		15	24				41.0				
TOTAL DEPTH = 8.0 FT.										3" PVC casing inserted to 7.0' for gamma-logging.	
										PVC casing was removed after logging and hole was backfilled with drilling spoils.	

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R533				
SITE			COORDINATES			ANGLE FROM HORIZ/BEARING						
Muscarelle			N 7769.0; E 11024.0			Vertical -----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-9-90	10-9-90	Hydro Group, Inc.	Craze and hammer		3.5"	8.0	0.0	8.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
5.5/69*		0	4	NA	47.0	-5' ATD NA		NA/NA				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in		none			Stephen Knuttel <i>[Signature]</i>							
SAMP TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.I.	TIME MIN.						
							47.0				(Template: NYWD)	
SS	1.5	1.2	15 13 6				46.3				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R533.
SS	2.0	1.0	9 12 8 6				45.3 45.0				0.5 - 1.7 ft: Sandy GRAVEL, (GW); Grayish black (N2) changing to Moderate reddish brown (10R4/6) at 1.1'; gravel between 1.1 - 1.7' is primarily sandstone; minor silt, loose, dry.	Asphalt and base rock removed prior to sampling.
SS	2.0	2.0	4 4 9 17				44.0				2.0 - 4.2 ft: Gravelly, Sandy SILT, (ML); Moderate reddish brown (10R4/6), gravel is primarily sandstone, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.3	18 22 27 31				43.0 42.8 42.3 41.9 41.7 41.2 41.0 40.7				4.2 - 4.7 ft: Sandy GRAVEL, (GW); Grayish black (N2), gravel is coarse, sandstone, minor silt, wet.	Hole advanced to depth by 3" OD split spoon samplers.
							39.7 39.0				4.7 - 5.1 ft: Clayey SILT, (ML); Black (N1), some roots, moderately plastic, firm, moist.	
											5.1 - 5.3 ft: BAND, (SP); Olive gray (5Y4/1), grading with depth from fine to coarse, sharp angular contact with layer below.	
											5.3 - 5.8 ft: Clayey SILT, (ML); Dark greenish gray (5GY4/1), small root channels present staining sediment with Light olive brown (5Y6/6), plastic, very firm, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
											5.8 - 6.0 ft: BAND, (SP); Light olive gray (5Y6/3), fine grained, well sorted, firm, moist.	3" PVC casing inserted to 5.5' for gamma-logging.
											6.0 - 6.3 ft: Sandy GRAVEL, (GW); Greenish black (5GY3/1), with fragments of rounded sandstone, moist.	PVC casing was removed after logging; and hole was backfilled with drilling spoils.
											6.3 - 7.3 ft: BAND, (SW); Grayish red (5R4/2 - 10R4/2), fine to medium grained, poorly sorted, firm, moist.	
TOTAL DEPTH = 8.0 FT.												
<p>* Core recovery refers to total soil & rock sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												
SS = SPLIT SPOON; NO = CORE BARREL; MIX = HAND AUGER; O = OTHER			SITE			Muscarelle			Last Update: 03-19-92		HOLE NO. R533	



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R573
SITE			COORDINATES			ANGLE FROM HORIZ BEARING				
Muscarelle			N 7742.0; E 11026.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-17-90	11-17-90	Hydro Group, Inc.	Mobile B-80	8"	13.0	2.0	15.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
10.6/71*		0	8	NA	46.5	NA	13.0/33.5			
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:					
140 lbs/30 in			none		Robert Cook					

SAMP TYPE	SAMP DIAM.	SAMP ADV. LEN CORE	SAMP REC. CORE REC.	SAMP BLOWS	RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS G.P.M.	PRESS. P.S.I.	TIME MIN.					
									46.5			0.0 - 0.7 ft: ASPHALT; over sand and gravel.	Complete borehole number is BS890R573.
SS	1.5	1.1	10	13	7				46.3			0.7 - 4.3 ft: Sandy SILT, (ML); Dark reddish brown (10R3/2), changing to Dusky brown (5YR3/2) at 1.4' and to Dusky yellowish brown (10YR2/2) at 2.0', very fine to fine grained; gravel up to -3 cm, -10%, between 2.0 - 4.3'; no plasticity, moist.	Augered through asphalt to 0.5'
SS	2.0	1.5	9	20	21	11			44.9			4.3 - 5.0 ft: Clayey SILT, (ML); Grayish black (N2), very fine grained, silt -80%, clay -20%, low plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
			4	6	13	22			44.5			5.0 - 5.4 ft: Clayey SILT, (ML); Greenish gray (5GY6/1), very fine grained, low plasticity, moist.	Augered to 4.0'.
SS	2.0	1.8	16	18	20	25			43.0			5.4 - 9.8 ft: SAND, (SP); Olive gray (5Y4/1) changing to Moderate brown (5YR4/4) at 6.9'; layer of fine to very coarse grained sand, poorly sorted, between 6.7 - 6.9'; very fine to fine grained, well sorted, no plasticity, moist.	Augered to 6.0'.
			4	6	12	17			42.5			9.8 - 9.8 ft: SAND, (SP); Olive gray (5Y4/1) changing to Moderate brown (5YR4/4) at 6.9'; layer of fine to very coarse grained sand, poorly sorted, between 6.7 - 6.9'; very fine to fine grained, well sorted, no plasticity, moist.	Augered to 8.0'.
SS	2.0	1.9	7	10	16	27			42.3			13.0 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Augered to 10.0'.
			17	50/5*					41.1			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Augered to 12.0'.
SS	2.0	0.6	7	10	16	27			40.7			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Augered to 12.0'.
			17	50/5*					40.5			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Spoon refusal at 12.9'.
SS	2.0	1.9	4	6	12	17			39.8			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Augered to 13.0'.
			7	10	16	27			39.6			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Spoon refusal at 14.5'.
SS	2.0	0.6	7	10	16	27			38.7			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	Augered to total depth of 15.0'.
			17	50/5*					38.6			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	5" PVC casing inserted to 14.5' for gamma-logging.
SS	0.9	0.8	17	50/5*					36.7			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	PVC casing was removed after logging; and hole was backfilled with drilling spoils.
			17	50/5*					36.6			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
SS	1.8	1.1	17	34	37	50/4*			36.5			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
			17	34	37	50/4*			35.9			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
			17	34	37	50/4*			34.5			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
			17	34	37	50/4*			33.7			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
			17	34	37	50/4*			33.5			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
			17	34	37	50/4*			32.4			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
			17	34	37	50/4*			31.5			14.1 - 14.1 ft: SANDSTONE; Dark reddish brown (10R3/4), grains are -50% very fine to fine sand size and -50% silt size, blocky, iron-oxides cement, no plasticity.	
TOTAL DEPTH = 15.0 FT.													

SS = SPLIT SPOON; NG = CORE BARREL; SITE Muscarelle
 HX = HAND AUGER; O = OTHER
 Last Update: 03-19-92 HOLE NO. R573

* Core recovery refers to total soil & rock sample.
 Ground elevation estimated from site topographic map.
 Description & classification by visual examination of sample.
 Colors from "Rock-Color Chart" (GSA, 1948).



GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501

SHEET NO.

1 of 1

HOLE NO.

R517

SITE

National Community Bank

COORDINATES

N 8051.0; E 11054.0

ANGLE FROM HORIZ

Vertical

BEARING

BEGUN

10-8-90

COMPLETED

10-8-90

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Tripod

SIZE

3.5"

OVERBURDEN

8.0

ROCK (FT.)

0.0

TOTAL DEPTH

8.0

CORE RECOVERY (FT./%)

6.2/78%

CORE BOXES/SAMPLES

4

EL. TOP CASING

NA

GROUND EL.

45.5

DEPTH/EL. GROUND WATER

5.6 / NA

DEPTH/EL. TOP OF ROCK

NA/NA

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

none

LOGGED BY:

Lewis R. West

SAMP TYPE AND DIAM.	SAMP ADV. LEN. CORE	SAMP REC. CORE REC.	SAMP BLIND CORE RECOVERY	LOS IN G.P.M.	WATER PRESS. P.S.F.	TIME MIN.	ELEV.	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.6	4				45.5			(Template: NYWD)	
			6				44.6			0.0 - 0.9 ft: TOPSOIL, (ML); Pale brown (5YR5/2).	Complete borehole number is BS890R517. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3" OD split spoon samplers.
SS	2.0	1.3	7			43.0			0.9 - 3.3 ft: Clayey SILT, (ML); Grayish brown, (5YR5/2) changing to Dark reddish brown (10R3/4) at 3.2' and to Dusky brown (5YR2/2) at 3.4', very fine grained, angular pebbles between 1.5 - 1.6'.		
			15				42.5				
			21				41.5				
SS	2.0	1.6	15				39.9			4.0 - 5.6 ft: Silty SAND, (SM); Blackish red (5R2/2), sand is fine to medium grained, wet.	
			22				39.5				
			31								
			42								
SS	2.0	1.8	48				37.7			6.0 - 7.8 ft: Silty CLAY, (CL); Dusky red (5Y3/4), very fine grained, angular sandstone pebbles between 6.5 - 7.5'.	
			28				37.5				
			35								
			36								
TOTAL DEPTH = 8.0 FT.										Borehole enlarged by driving 3.5" OD split spoon to depth.	
										3" PVC casing inserted to 5.0' for gamma-logging.	
										PVC casing was removed after logging and hole was backfilled with drilling spoils.	
										* Core recovery refers to total soil & rock sample.	
										Ground elevation estimated from site topographic map.	
										Description & classification by visual examination of sample.	
										Colors from "Rock-Color Chart" (GSA, 1948).	

SS = SPLIT SPOON; NG = CORE BARREL; SITE
HX = HAND AUGER; O = OTHER

National Community Bank

Last Update: 03-19-92

HOLE NO. R517



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R518
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING	
National Community Bank			N 7734.0; E 11009.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-8-90	10-8-90	Hydro Group, Inc.	Tripod		3.5"	8.0	0.0	8.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
5.8/73°		0	4	NA	47.0	V / none ATD NA		NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Stephen Knuttel					

SAMP TYPE	SAMP DIA.	SAMP ADV. LEN	CORE REC. SAMPLE LEN	SAMP. LOSS %	RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.						
SS	2.0	1.4	2	4	0				47.0				0.0 - 1.0 ft: TOPSOIL, (ML); Grayish black (N2), with gravel and fine roots, soft, moist.	Complete borehole number is B3890R518.
									46.0				1.0 - 1.4 ft: Sandy SILT, (ML); Pale brown (5YR5/2) mottled with Grayish black (N2) and Grayish green (5GY5/2), firm, moist.	
SS	2.0	1.8	9	17	28				45.0				2.4 - 2.8 ft: SILT, (ML); Grayish black (N2), minor sand, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
									44.6				2.8 - 3.5 ft: Gravally Silty SAND, (SM); Moderate reddish brown (10R4/6), sand is fine to medium grained, moderately sorted, firm, slightly moist.	
SS	2.0	1.1	16	13	6				42.0				3.5 - 4.4 ft: Sandy GRAVEL, (GM); Olive black (5Y2/1), with silt, sand is fine to medium grained, moist.	Hole advanced to depth by 3" OD split spoon samplers.
									41.9				4.4 - 5.0 ft: Gravally Silty SAND, (SM); Moderate reddish brown (10R4/6), sand is fine to medium grained, moderately sorted, firm, slightly moist.	
SS	2.0	1.5	6	6	6				41.0				5.0 - 6.5 ft: SILT, (ML); Black (N1), fine roots present, minor sand, moist, gradational change with unit below.	Borehole enlarged by driving 3.5" OD split spoon to depth.
									40.7				6.5 - 7.5 ft: Silty CLAY, (CL); Grayish green (10GY5/2 mottled with 5G5/2) with small spotted areas of Moderate reddish orange (10R5/6), root channels present throughout, slightly plastic, firm, moist.	
									39.5					
									39.0					
TOTAL DEPTH = 8.0 FT.														

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO. R518
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GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R522
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING		
National Community Bank			N 7715.0; E 10983.0			Vertical		-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-8-90	10-8-90	Hydro Group, Inc.	Tripod	3.5"	9.2	0.0	9.2			
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
7.4/80°		0	5	NA	46.0	3 / none ATD 3 / NA	NA/NA			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs/30 in		NONE		Stephen Knuttel						

SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. LOSS % CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.					
SS	2.0	1.1	2				46.0			(Template: NYMD)	
			3				45.4			0.0 - 0.5 ft: TOPSOIL, (ML); Grayish black (N2), fine roots present, soft, moist.	Complete borehole number is B3890R522.
			3				44.9			0.6 - 4.7 ft: Sandy SILT, (ML); Moderate reddish brown (10R4/6), minor gravel between 0.6 - 1.1', increased gravel content below 3.0', soft between 0.6 - 1.1', firm below, moist, wet in places between 4.0 - 4.7.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.5	3				44.0				Hole advanced to depth by 3" OD split spoon samplers.
			4				42.5				
			4				42.0				
SS	2.0	1.7	3				41.3			4.7 - 5.5 ft: Clayey SILT, (ML); Grayish black (N2) to Grayish brown (5YR3/2), roots abundant, minor sand, moderately firm, moist.	
			4				40.5				
			11				40.3				
SS	1.7	1.6	4				40.0			5.5 - 5.7 ft: CLAY, (CL); Grayish green (10GY5/2 mottled with 5G5/2), moderately plastic, firm, moist.	
			6				38.7				
			23				38.5				
			50/3"				38.4			6.0 - 7.3 ft: SAND, (SP); Moderate brown (5YR4/4), fine to medium grained, moderately well sorted, clean, moderately firm, wet.	Spoon full of slough and would not advance beyond 7.7'.
SS	1.5	1.5	16				38.2			7.3 - 7.5 ft: Clayey SILT, (ML); Grayish green (10GY5/2 mottled with 5G5/2), plastic, firm, moist.	Spoon refusal at 9.2'.
			22				37.2			7.5 - 7.7 ft: SAND, (SW); Grayish green (10GY5/2), fine grained, moderately sorted, firm, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
			47				36.8			7.7 - 8.5 ft: SAND, (SP); Moderate brown (5YR4/4), fine grained grading with depth to medium, moderately well sorted, clean, firm, moist, sharp angular contact.	3" PVC casing inserted to 6.0' for gamma-logging.
										8.5 - 9.2 ft: Clayey SILT, (ML); Pale brown (5YR2/2), little plasticity, very firm, moist.	PVC casing was removed after logging and hole was backfilled with drilling spoils.
TOTAL DEPTH = 9.2 FT.											



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R531
SITE			COORDINATES			ANGLE FROM HORIZ. BEARING				
National Community Bank			N 7727.0; E 10998.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-9-90	10-9-90	Hydro Group, Inc.	Tripod		3.5"	7.0	0.0	7.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
4.7/63*		0	3	NA	46.5	6-7' ATD NA		NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Stephen Knuttel <i>[Signature]</i>					

SAMP. TYPE	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.H.	PRESS. P.S.I.	TIME MIN.						
								46.5					
SS	2.0	1.7	10					46.0				0.0 - 0.5 ft: TOPSOIL, (ML); Grayish black (N2), fine roots present, soft, moist.	Complete borehole number is B3890R531.
								45.5				0.5 - 1.3 ft: Gravelly Silty SAND, (SM); Blackish red (5R2/2) mottled with Grayish red (10R4/2), rounded gravel, minor roots and sedimentary clasts composed of Clayey Silt, firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.5	12					44.5				1.3 - 1.7 ft: Clayey SILT, (ML); Dark greenish gray (5GY4/1), minor gravel and sand, very firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
								43.0				2.0 - 2.6 ft: Sandy SILT, (ML); Grayish black (N2), minor root material present; wood fragment between 2.4 - 2.6'; soft, moist.	
SS	3.0	1.5	15					42.5				2.6 - 4.5 ft: Gravelly Sandy SILT, (ML); Moderate reddish brown (10R3/4) gradually changing to Dark reddish brown (10R5/4) with depth; increased sand between 3.0 - 3.5'; increased gravel between 4.0 - 4.5'; firm, moist.	Spoon fall in hole from 5.0 - 6.5'; assumed void. Spoon driven from 4.0 - 7.0'
								42.0				4.4 - 4.8 ft: Gravelly SILT, (ML); Grayish black (N2), soft, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
								41.7				4.8 - 5.5 ft: SAND interlayered with Gravelly SAND, (SW); Yellowish brown (10YR5/4) to Moderate Brown (5YR4/4), gravel is rounded, sand is medium grained, poorly sorted, loose, moist to wet.	3" PVC casing inserted to 6.0' for gamma-logging.
								41.0					
								39.5					
TOTAL DEPTH = 7.0 FT.													
												PVC casing was removed after logging and hole was grouted to -4' below surface and remaining hole was backfilled with drilling spoils.	



GEOLOGIC DRILL LOG		PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R532
SITE		COORDINATES			ANGLE FROM HORIZ/BEARING				
National Community Bank		N 7747.0; E 11013.0			Vertical				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-9-90	10-9-90	Hydro Group, Inc.	Crane and hammer	8"	8.0	0.0	8.0		
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
5.8/73*	0	4	NA	47.5	3' / - 5' ATD 3' / NA	NA/NA			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs/30 in		none			Stephen Knuttel <i>[Signature]</i>				

SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOBS	CORE RECOVERY	LOSS	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						G.P.H.	PRESS. P.S.I.	TIME MIN.						
SS	2.0	1.8	3	9					47.5				(Template: NYLD)	
			8	10					47.0				0.0 - 0.5 ft: TOPSOIL, (ML); Grayish black (N2), with fine roots present, soft, moist.	Complete borehole number is B3890R532.
									46.2				0.5 - 1.3 ft: Gravely SILT, (ML); Grayish red (10R4/2) to Blackish red (5R1/2), increased gravel with depth, moderately firm, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.3	14	10					46.0				1.3 - 1.5 ft: CLAY, (CL); Olive black (5Y2/1), plastic, very firm, moist.	Hole advanced to depth by 3" OD split spoon samplers.
			17						45.9				1.5 - 2.4 ft: Sandy SILT, (ML); Grayish black (N2), increased gravel between 2.0 - 2.4', soft changing with depth to firm, moist.	
			12						45.5				2.4 - 3.0 ft: Gravely, Sandy SILT, (ML); Moderate reddish brown (10R4/6), gravel is sandstone, firm, moist.	
SS	2.0	1.4	9	6					44.5				3.0 - 5.1 ft: Sandy GRAVEL, (GW); Dark Gray (N3), with minor silt, loose, moist.	
			6						43.5				5.1 - 6.4 ft: Clayey SILT, (ML); Grayish black (N2), fine roots present, slightly plastic, firm, moist.	
									42.4				6.4 - 7.3 ft: Silty CLAY, (CL); Grayish green (10GY5/2), root channels present throughout, plastic, very firm, moist.	
SS	2.0	1.6	2	3					42.1				7.3 - 7.6 ft: SAND, (SP); Light olive gray (5Y5/2), medium grained, moderately well sorted, minor silt, firm, moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
			16						41.5					3" PVC casing inserted to 6.0' for gamma-logging.
			29						41.1					PVC casing was removed after logging and hole was grouted to -4' below surface and remaining hole was backfilled with drilling spoils.
									40.2					
									39.9					
									39.5					

SS = SPLIT SPOON; RQ = CORE BARREL; SITE National Community Bank Last Update: 03-19-92 HOLE NO. R532
 RX = HAND AUGER; O = OTHER



GEOLOGIC DRILL LOG

PROJECT		FUSRAP		JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R535
SITE		National Community Bank		COORDINATES		N 7735.0; E 10875.0		ANGLE FROM HORIZ BEARING	
Vertical		-----		DRILL MAKE AND MODEL		TRIPOD		SIZE	3.5"
OVERBURDEN		8.0		ROCK (FT.)		0.0		TOTAL DEPTH	
8.0		NA		DEPTH/EL. GROUND WATER		V / - 6.5 ATD		W / NA	
DEPTH/EL. TOP OF ROCK		NA/NA		LOGGED BY:		Stephen Knuttel			
SAMPLE HAMMER WEIGHT/FALL		140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH		NONE			
BEGUN		10-11-90		COMPLETED		10-11-90		DRILLER	
Hydro Group, Inc.									
CORE RECOVERY (FT./%)		6.1/76*		CORE BOXES		0		SAMPLES	
4		NA		EL. TOP CASING		47.5		GROUND EL.	

SAMP. TYPE	SAMP. DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS	G.P.M.	P.S.I.						
SS	2.0	1.4	11						47.5				0.0 - 0.4 ft: TOPSOIL; Grayish black (N2), with roots, moist.	Complete borehole number is B3890R535.
									47.1				0.4 - 2.9 ft: Gravelly Sandy SILT, (ML); Grayish red (6R4/2) to Dark reddish brown (10R3/4); gravel up to 0.1', sandstone; firm, moist (Fill?).	
SS	2.0	1.3	5						44.6				2.9 - 3.5 ft: Silty SAND, (SM); Dusky brown (5YR3/2) changing to Moderate brown (5YR3/4) at 3.1'; sand is very coarse, poorly sorted, loose, with coal fragments between 2.9 - 3.1' and fine, well sorted, firm, below 3.1'; moist.	Hole advanced to depth by 3" OD split spoon samplers.
									44.2					
SS	2.0	1.8	1						43.8				4.0 - 5.1 ft: Graded Material; Black (N1), fine sand grading with depth to gravel size, larger pieces are vesicular with rust stains (reworked slag?), broken glass present in lower zones, loose, slightly moist.	Borehole enlarged by driving 3.5" OD split spoon to depth.
									42.4				5.1 - 5.4 ft: SAND, (SP); Moderate brown (5YR3/4), fine grained, moderately well sorted, firm, moist.	
SS	2.0	1.6	17						42.1				5.4 - 6.5 ft: Sandy SILT, (ML); Grayish red (6R4/2) to Blackish red (6R2/2) changing to Grayish brown (5YR3/2) at 6.0', with roots; firm and moist to soft and wet below 5.4'.	3" PVC casing inserted to 6.0' for gamma-logging.
									41.7				6.5 - 6.6 ft: Silty SAND, (SM); Dusky yellowish green (5GY6/2), sand is fine grained, firm, moist.	
			25						41.5				6.6 - 7.6 ft: SAND, (SP); Moderate brown (5YR3/4), fine to medium grained, moderately well sorted, firm, moist.	Casing broke after logging and core not be removed from hole.
									41.2					
			37						40.9					Hole was grouted to -1' below surface and remaining hole was backfilled with drilling spoils.
									39.9					
									39.5					

TOTAL DEPTH = 8.0 FT.

* Core recovery refers to total soil & rock sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).



GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R577
SITE				COORDINATES			ANGLE FROM HORIZ		BEARING		
National Community Bank				N 8025.0; E 10950.0			Vertical		-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-17-90	11-17-90	Hydro Group, Inc.	Soil Sentry	8"	10.0	0.0	10.0				
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
4.4/44"		0	5	NA	47.0	NA	NA/NA				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in			done			Stephen Knuttel					

SAMP TYPE	SAMP. DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOMS	RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.						
									47.0					
SS	1.8	0.9	12/4"	19					46.8				0.0 - 0.2 ft: ASPHALT.	Complete borehole number is B3890R577.
				19					45.9				0.2 - 1.1 ft: FILL; Disturbed soils, Sandy Silt, Dark reddish brown (10R3/4); Silty Clay, Grayish black (N2); and Sandy Clay, Greenish gray (5G8/1).	
SS	2.0	0.6	23	19					44.4				2.0 - 4.6 ft: Sandy, Clayey SILT, (ML); Grayish black (N2), subrounded pebbles up to -2 cm common between 2.0 - 2.6' and sparsely scattered between 4.0 - 4.6', moderately firm, moist.	Augered through asphalt to 0.2'. Borehole sampled and gamma-logged by TMA/Eberline Corp.
			8	10					43.0				4.6 - 6.2 ft: Sandy CLAY, (CL); Grayish green (10GY6/2), clay content decreases with depth, moderately plastic, firm, moist.	
SS	2.0	1.1	9	8					42.4				6.2 - 7.0 ft: Silty SAND, (SM); Grayish red (5R4/2), silt to medium sand, poorly sorted, with subrounded sandstone gravel, firm, moist.	Augered to 8.0'.
			30	35					41.9	5			8.0 - 8.8 ft: SAND, (SP); Moderate brown (5YR4/4) to Pale brown (5YR6/2), very fine grained, moderately well sorted, firm, wet.	
SS	2.0	1.0	9	28					41.0					
			17	26					40.8					
			18	17					40.0					
			26	42					39.0					
									38.2					
									37.0	10			TOTAL DEPTH = 10.0 FT.	Augered to total depth of 10.0'. 3" PVC casing inserted to total depth for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO. R577
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GEOLOGIC DRILL LOG		PROJECT	FUSRAP		JOB NO.	SHEET NO.	HOLE NO.
SITE		COORDINATES			ANGLE FROM HORIZ		
National Community Bank		N 8030.0; E 10920.0			Vertical -----		
BEGIN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
11-18-90	11-18-90	Hydro Group, Inc.	Mobile B-80	8"	8.0	0.0	8.0
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
7.0/88%	0	4	NA	47.5	3 / none ATD	NA/NA	
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
140 lbs/30 in		none		Robert Cook			

SAMP TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.					
							47.5			0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is BS890R580.
SS	1.6	1.1	11 14 13				45.9 45.5			0.5 - 4.7 ft: Clayey SILT, (ML); Pale brown (8YR5/2) changing to Dusky yellowish brown (10YR3/2) at 2.7'; with trace of silt, Greenish gray (5G6/1), between 4.6 - 4.7'; silt -70%, clay -20%, sand -10%; minor roots present between 2.0 - 3.0'; no plasticity, moist.	Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 4.0'.
SS	2.0	1.9	13 12 11 26				43.6 43.5 42.8			4.7 - 5.4 ft: SAND, (SP); Dark yellowish brown (10YR4/2), fine to medium grained, well sorted, no plasticity, moist.	Augered to 6.0'.
SS	2.0	2.0	18 16 15 21				42.1 41.6			5.4 - 5.9 ft: Clayey SILT, (ML); Dusky yellowish brown (10YR2/2), silt -60%, clay -30%, sand is fine -10%, low plasticity, moist.	Augered to total depth of 8.0'.
SS	2.0	2.0	21 20 26 26				39.5			5.9 - 8.0 ft: Sandy SILT, (ML); Dark reddish brown (10R3/4) mottled with Greenish gray (5G6/1) banding changing to Pale reddish brown (10R5/4) at 6.4', fine grained, silt -60%, sand -20%, clay -10%, no plasticity.	3" PVC casing inserted to 7.5' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.
TOTAL DEPTH = 8.0 FT.											



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.
SITE				COORDINATES	14501	1 OF 1	R582
National Community Bank				N 8045.0; E 10938.0	ANGLE FROM HORIZ BEARING		
Vertical				-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
11-18-90	11-18-90	Hydro Group, Inc.	Mobile B-80	8"	8.0	0.0	8.0
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
6.4/80%	0	4	NA	47.5	NA / none ATD	NA/NA	
SAMPLE HAMMER WEIGHT/FALL	CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:				
140 lbs/30 in	none		Robert Cook				

SAMP TYPE	SAMP DIA.	SAMP ADV. LEN. CORE	SAMP REC. CORE REC.	SAMP BLOBS	% CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
							PRESS. P.S.I.	TIME MIN.						
									47.5					
SS	1.5	1.1		8					47.5				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R582.
				9					46.1				0.5 - 1.4 ft: Clayey SILT, (ML); Moderate brown (5YR5/4), no plasticity, moist.	
				10					45.9				1.4 - 2.3 ft: SILT, (ML); Greenish gray (5G6/1) changing to Moderate brown (5YR5/4) at 2.0', silt -90%, sand -10%, no plasticity, moist.	Augered through asphalt to 0.5'.
SS	2.0	1.5		9					45.5				2.3 - 2.5 ft: Clayey SILT, (ML); Moderate reddish brown (10R4/6), silt -80%, clay -20%, no plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
				26					45.3				2.6 - 5.3 ft: Sandy SILT, (ML); Grayish brown (5YR5/4), silt -80%, fine to medium sand -20%; changing to Dark reddish brown (10R5/4) at 4.5'; and to Dusky yellowish brown (10YR2/2), silt -60%, very fine to fine sand -20%, clay -10, at 4.7'; no plasticity, moist.	Augered to 4.0'.
				15					44.9				5.3 - 5.5 ft: Silty CLAY, (CL); Olive gray (5Y4/1), no plasticity, moist.	Augered to 6.0'.
SS	2.0	1.8		5					44.0				5.5 - 7.8 ft: Sandy SILT, (ML); Moderate brown (5YR5/4), silt -80%, very fine to fine sand -20%; changing to Moderate reddish brown (10R4/6), fine to medium sand, no plasticity, at 6.4'; moist.	Augered to total depth of 8.0'.
				7					43.5				7.8 - 8.0 ft: Silty SAND, (SM); Moderate reddish brown (10R4/6), sand is fine to very coarse grained -60%, silt -40%, no plasticity, wet.	3" PVC casing inserted to 7.5' for gamma-logging.
				16					42.2					PVC casing was removed after logging and hole was backfilled with drilling spoils.
				29					42.0					
				30					41.7					
				31					41.5					
				40					39.7					
				42					39.5					
										TOTAL DEPTH = 8.0 FT.				

SS = SPLIT SPOON; NQ = CORE BARREL; HX = HAND AUGER; 0 = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO. R582
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GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R586
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING	
National Community Bank			N 8040.0; E 11035.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-18-90	11-18-90	Hydro Group, Inc.	Mobile B-80	8"	10.0	0.0	10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
6.7/67*		0	5	NA	46.0	/ none ATD		NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Robert Cook					

SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS	CORE RECOVERY	LOSS IN G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
								46.0				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R586.
SS	1.5	1.1	7					45.8				0.5 - 2.6 ft: Sandy SILT, (ML); Dark yellowish brown (10YR4/2), silt -60%, sand -30%, clay -10%, no plasticity, moist.	Augered through asphalt to 0.5'.
SS	2.0	1.6	4					44.4				2.6 - 3.3 ft: Clayey SAND, (SC); Dusky yellowish brown (10YR2/2), sand is fine to medium grained -50%, clay -30%, silt -20%, low plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.6	5					44.0				3.3 - 4.5 ft: Silty CLAY, (CL); Greenish gray (5GY6/1) changing to Olive black (5Y2/1) at 4.0', clay -60-70%, silt -30-40%, medium plasticity, moist.	Augered to 4.0'.
SS	2.0	1.3	5					43.4				4.5 - 6.9 ft: Sandy SILT, (ML); Dark yellowish brown (10YR4/2) changing to Grayish red (10R4/2) at 5.5' and to Moderate reddish brown (10R4/6) at 6.0', silt -60-70%, sand is fine to medium grained -30-40%, no plasticity, moist.	Augered to 6.0'.
SS	2.0	0.9	9					42.7				6.9 - 7.5 ft: Clayey SILT, (ML); Olive black (5Y2/1), firm, moist.	Augered to 8.0'.
								42.4				8.0 - 8.9 ft: Sandy SILT, (ML); Moderate reddish brown (10R4/6), silt -60%, sand -40%, minor sandstone cobbles present, no plasticity, moist.	Augered to total depth of 10.0'.
								42.0				TOTAL DEPTH = 10.0 FT.	3" PVC casing inserted to total depth for gamma-logging.
								41.5					PVC casing was removed after logging and hole was backfilled with drilling spoils.
								40.2					
								40.0					
								39.1					
								38.7					
								38.0					
								37.1					
								36.0					



GEOLOGIC DRILL LOG			PROJECT	JOB NO.	SHEET NO.	HOLE NO.
National Community Bank			FUSRAP	14501	1 OF 1	R624
SITE			COORDINATES		ANGLE FROM HORIZ	BEARING
N 7735.0; E 10969.0			Vertical		-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)
1-8-91	1-8-91	Hydro Group, Inc.	Tripod	3.5"	12.0	0.0
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER
5.9/49*		0	6	NA	58.0	7' ATD
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:	
140 lbs/30 in			none		Stephen Knuttel	

SAMP TYPE	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SPLIT SP. CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.F.	TIME MIN.					
SS	2.0	1.3	12				58.0				Complete borehole number is B3890R624. Borehole sampled and gamma-logged by TMA/Eberline Corp. Hole advanced to depth by 3" OD split spoon samplers. Borehole enlarged by driving 3.5" OD split spoon to depth. 3" PVC casing inserted to 10.5' for gamma-logging. PVC casing was removed after logging and hole was grouted to -5' below surface and remaining hole backfilled with drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	2.0	0.8	4				56.7		0.0 - 4.6 ft: Silty SAND, (SM); Moderate reddish brown (10R4/6) to Dusky brown (5YR2/2), sand is fine to medium grained, moderately sorted, firm, moist.		
SS	2.0	1.3	4				56.0				
SS	2.0	0.8	4				54.0				
SS	2.0	1.3	4				53.4				
SS	2.0	0.6	2				52.7	5	4.6 - 5.3 ft: Clayey SAND, (SC); Olive black (5Y2/1) to Blackish red (5R2/2), sand is fine to medium grained, poorly sorted; 0.2' pebbles, reworked? slag, hard, between 4.8 - 5.0'; firm, moist.		
SS	2.0	0.6	2				52.0		6.0 - 6.5 ft: SAND and Clayey SILT, (SM & ML); mixed interval, disturbed; sand is Moderate brown (5YR4/4), fine; silt is Olive black (5Y2/1).		
SS	2.0	0.8	2				50.0		8.0 - 8.3 ft: Silty CLAY, (CL); Olive black (5Y2/1), moderately plastic, firm, moist.		
SS	2.0	1.3	2				49.7		8.3 - 10.0 ft: SAND, (SW); Grayish black (N2), fine to coarse grained, poorly sorted; changing to Moderate brown (5YR4/4) to Grayish brown (5YR3/2), fine to medium grained, moderately sorted, at 10.0'; clean, firm, moist to wet.		
SS	2.0	1.3	2				49.2				
SS	2.0	1.3	9				48.0	10			
			12				47.1		10.9 - 11.3 ft: SILT, (ML); Light brown (5YR5/6), little plasticity, very firm, moist.		
			27				46.2				
			24				46.0				
TOTAL DEPTH = 12.0 FT.											

SS = SPLIT SPOON; *NO = CORE BARREL; WX = HAND AUGER; O = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO. R624
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GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
National Community Bank										FUSRAP		14501		1 OF 1		R625	
SITE										COORDINATES				ANGLE FROM HORIZON BEARING			
National Community Bank										N 7726.0; E 10953.0				Vertical -----			
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN		ROCK (FT.)		TOTAL DEPTH			
1-8-91		1-8-91		Hydro Group, Inc.		Tripod		3.5"		10.0		0.0		10.0			
CORE RECOVERY (FT./%)		CORE BOXES		SAMPLES		EL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
6.0/60*		0		5		NA		46.0		3 / none ATD 3 / NA		NA/NA					
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:									
140 lbs/30 in				none				Stephen Knuttel									
										(Template: NYWD)							
										DESCRIPTION AND CLASSIFICATION		NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.					
SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. CORE RECOVERY	LOSS	G.P.M.	PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE						
SS	2.0	1.7	5					46.0				0.0 - 0.5 ft: TOPSOIL, (SM); Grayish black (N2). Silty SAND, with roots, loc. moist.					
			19					45.5				0.5 - 3.1 ft: Gravally, Silty SAND, (SM); Blackish red (5R2/2) to Dark reddish brown (10R3/4), sand is fine to medium grained, moderately sorted, sandstone gravel, minor debris, firm, moist; sedimentary clasts composed of Clayey Silt, Greenish gray (5GY6/1) common below 2.0'.					
SS	2.0	1.1	11					44.3				4.0 - 4.8 ft: Clayey, Silty SAND, (SM); Olive black (5Y2/1) mottled with Dark reddish brown (10R3/4) and Blackish red (5R2/2), sand is fine to medium grained, poorly sorted, firm, moist.					
			13					44.0									
			19					42.9									
			27					42.0									
SS	2.0	0.8	9					41.2	5			6.0 - 9.1 ft: SAND, (SW); Grayish red (10R4/2) with minor Grayish green (10GY6/2) between 6.0 - 6.3', fine grained, moderately sorted; changing to Moderate brown (5YR4/4), fine to medium grained, poorly sorted, dirty, minor angular sandstone gravel, at 8.0'; firm, moist.					
			16					40.0									
			24					39.2									
			19					38.0									
SS	2.0	1.6	9					36.9				9.1 - 9.4 ft: SILT, (ML); Light brown (5YR5/6), little plasticity, very firm, moist.					
			16					36.6				9.4 - 9.8 ft: Silty SAND, (SM); Moderate brown (5YR4/4), sand is fine grained, moderately sorted, dirty, firm, moist.					
			16					36.4									
			27					36.0	10			TOTAL DEPTH = 10.0 FT.					
										3" PVC casing inserted to 9.0' for gamma-logging.		PVC casing was removed after logging and hole was grouted to -5' below surface and remaining hole backfilled with drilling spoils.					
										* Core recovery refers to total soil & rock sample.		Ground elevation estimated from site topographic map.					
										Description & classification by visual examination of sample.		Colors from "Rock-Color Chart" (GSA, 1948).					
										Last Update: 03-19-92		HOLE NO. R625					

NO = CORE BARREL; SITE

National Community Bank



GEOLOGIC DRILL LOG			PROJECT	FUSRA1*	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R629
SITE			COORDINATES			ANGLE FROM HORIZ/BEARING				
National Community Bank			N 8027.0; E 10935.0			Vertical -----				
BEGIN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
1-11-91	1-11-91	Hydro Group, Inc.	Soil Sentry	8"	10.0	0.0	10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
4.6/46*		0	5	NA	47.0	/ none ATD		NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs/30 in		none		Stephen Knuttel						

SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOCKS	% CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						PRESS. P.S.I.	TIME MIN.							
									47.0					
SS	1.6	0.8	10						48.8				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3390R629. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered through asphalt to 0.5'. Augered to 4.0'. Augered to 6.0'. Augered to 8.0'. Spoon refusal at 8.9'. Augered to total depth of 10.0'. 3" PVC casing inserted to 9.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
			16						45.7				0.5 - 1.3 ft: Gravely SAND, (SW); Moderate reddish brown (10R4/6), sand is fine to medium grained, poorly sorted, gravel as above, firm, moist.	
SS	2.0	0.9	10						45.0				2.0 - 2.9 ft: Sandy SILT, (ML); Grayish black (N2), minor gravel present, with root material, slightly plastic, firm, moist.	
			15						44.1					
			23						43.0					
SS	2.0	1.3	3						42.0				4.0 - 5.0 ft: Sandy, Clayey SILT, (ML); Grayish black (N2) mottled with minor Dark reddish brown (10R3/4), minor subrounded to subangular fine sandstone pebbles and coal fragments, moderately plastic, firm, moist.	
			8						41.7					
			14						41.0					
			26						39.7				5.0 - 5.3 ft: Clayey SAND, (SC); Grayish red (6R4/2) mottled with Grayish olive (10Y4/2), sand is fine grained, moderately sorted, minor roots and pebbles, firm, moist.	
SS	2.0	1.3	13						39.0				6.0 - 7.3 ft: Interlayered SILT and Silty SAND, (SM-ML); Grayish red (6R4/2 - 10R4/2); silts are very firm; sands are very fine grained, well sorted; minor fine pebbles of mixed composition; firm, moist.	
			36						38.7					
			32						37.0				8.0 - 8.3 ft: Sandy GRAVEL, (GW); Dark reddish brown (10R3/4); gravel is sandstone, angular; sand is fine to medium grained, moderately sorted; firm, moist.	
			27											
			50/5*											
TOTAL DEPTH = 10.0 FT.														

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO. R629
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GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
National Community Bank				FUSRAP	14501	1 OF 1	R631					
SITE				COORDINATES	ANGLE FROM HORIZ		BEARING					
National Community Bank				N 7722.0; E 10942.0	Vertical		-----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
1-14-91	1-14-91	Hydro Group, Inc.	Tripod	3.5"	8.9	0.0	8.9					
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
4.0/45%	0	5	NA	46.0	NA / none ATD	NA/NA						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		none		Stephen Knuttel								
SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY	LOSS IN G.P.H.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.3	1 6 7 6				48.0				0.0 - 0.5 ft: TOPSOIL, Grayish black (N2), silt and fine grained sand with root material.	Complete borehole number is B3890R631.
SS	2.0	0.2	1 3 4				44.8 44.0 43.8				0.5 - 2.2 ft: Silty SAND (SM); Moderate reddish brown (10R4/6), sand is fine to medium grained, poorly sorted, minor sandstone gravel, firm, moist; layer of Sandy Gravel, Black (N1), between 1.1 - 1.2'.	
SS	2.0	0.9	6 7 23 33				42.0 41.8 41.1				4.0 - 4.2 ft: GRAVEL (GW); Dark reddish brown (10R3/4), gravel is sandstone.	Hole advanced to depth by 3" OD split spoon samplers.
SS	2.0	1.6	6 23 30 35				40.0				4.2 - 7.5 ft: SAND (SW); Moderate brown (5YR4/4), sand is fine grained, moderately sorted; clayey between 4.2 - 4.4'; clean between 4.4 - 4.9' and minor silt, dirty, between 6.9 - 7.5'; moderately firm, moist.	
SS	0.9	0.2	36 80/4"				38.5 38.0 37.8 37.1				8.0 - 8.2 ft: SILT (ML); Moderate brown (5YR4/4) to light brown (5YR5/6), firm, moist.	Spoon refusal at 8.9'. Borehole enlarged by driving 3.6" OD split spoon to depth.
TOTAL DEPTH = 8.9 FT.												3" PVC casing inserted to 8.4' for gamma-logging.
												PVC casing was removed after logging and hole was backfilled with drilling spoils.
												* Core recovery refers to total soil & rock sample.
												Ground elevation estimated from site topographic map.
												Description & classification by visual examination of sample.
												Colors from "Rock-Color Chart" (GSA, 1948).
Last Update: 03-19-92												HOLE NO. R631

National Community Bank



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R633
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING	
National Community Bank			N 7905.0; E 10985.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
1-15-91	1-15-91	Hydro Group, Inc.	Soil Sentry		8"	11.0	0.0	11.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
5.7/52%		0	6	NA	49.5	/ none ATD / NA		NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs/30 in		none		Stephen Knuttel						

SAMP TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY %	LOSS IN G.P.M.	WATER PRESSURE		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					IN P.S.F.	TIME MIN.						
							49.5				(Template: NYND)	
SS	1.5	0.9	6				48.8				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3390R633.
			10				48.1				0.5 - 3.4 ft: Silty SAND, (SM); Grayish brown (5YR3/2) with minor Moderate reddish brown (10R4/6) and minor coal slag, Black (N1); sand is fine to coarse grained, poorly sorted; increased gravel of mixed compositions between 2.0 - 3.4'; firm, moist (Fill?).	Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.4	7				47.6					
			22				46.1					
			30				45.6					
SS	0.4	0.3	60/5*				45.3				4.0 - 4.2 ft: Silty SAND, (SM); Grayish black (N2), sand is fine, minor clay, moist.	Augered to 4.0'.
							44.8				4.2 - 4.3 ft: GRAVEL, (GW); Dark reddish brown (10R3/4), Gravel is sandstone.	Spoon refusal at 4.4'. Augered to 5.0'.
SS	2.0	1.5	9				43.6				5.0 - 5.9 ft: Gravely SAND, (SW); Dark reddish brown (10R3/4), sand is fine to medium grained, moderately sorted, firm, moist.	
			11				43.0					
			15				42.5					
			20				42.2					
SS	2.0	0.4	18				42.1				5.9 - 6.5 ft: Silty SAND, (SM); Grayish brown (5YR3/2), sand is fine to coarse grained, poorly sorted, dirty; subrounded pebbles common; suds fragment, -1 cm, White (N9), present (reworked?); firm, moist.	Augered to 7.0'.
			3				40.8					
			5				40.0				7.0 - 7.3 ft: SAND, (SW); Moderate brown (5YR3/4), coarse grained, moderately sorted, clean, loose, moist.	Augered to 9.0'.
			15				39.3	10			7.3 - 7.4 ft: Sandy SILT, (ML); Black (N1), minor fine roots, firm, moist.	
			17				38.5				9.0 - 10.2 ft: Interlayered Clayey SAND and SAND, (SC-SF); Grayish green (10GY5/2); clayey sands are fine grained, well sorted, dirty, moderately plastic, firm, moist; sands are fine to medium grained, well sorted, clean, loose to moderately firm, wet.	Augered to total depth of 11.0'. 3" PVC casing inserted to total depth for gamma-logging.
TOTAL DEPTH = 11.0 FT.											PVC casing was removed after logging and hole was grouted to -7' below surface and remaining hole backfilled with drilling spoils.	

SS = SPLIT SPOON; NQ = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO. R633
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GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R634
SITE				COORDINATES				ANGLE FROM HORIZ		BEARING	
National Community Bank				N 7910.0; E 10975.0				Vertical		-----	
BEGUN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
1-16-91	1-16-91	Hydro Group, Inc.		Soil Sentry		8"	12.0	0.0	12.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
7.7/64°		0	6	NA	49.5	/ none ATD / NA		NA/NA			
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in			none			Stephen Knuttel					

SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE BLOKS	CORE RECOVERY	LOSS IN G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
								49.5				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R634. Augered through asphalt to 0.5' Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 4.0'. Augered to 6.0'. Augered to 8.0'. Augered to 10.0'. Augered to total depth of 12.0'. 5" PVC casing inserted to total depth for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils. nr = not recorded. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	1.5	0.9	5	8				49.4				0.5 - 2.5 ft: Sandy GRAVEL, (GW); Moderate brown (5YR4/4 - 5/4); clay clast between 1.2 - 1.4'; sand is fine to medium grained, moderately sorted, moderately firm, moist.	
SS	2.0	1.5	7	10				48.1					
			8	11				47.5					
SS	2.0	1.2	19	30				46.0				4.0 - 7.3 ft: Gravelly SAND, (SW); Moderate reddish brown (10R4/8) changing to Moderate brown (5YR5/4) at 6.0', gravel is mix composition, primarily granitic between 6.0 - 7.2'; sand is fine to medium grained, moderately sorted, firm, moist.	
			46	45				45.5					
SS	2.0	1.3	30	36				44.3	5				
			26	5				43.5					
SS	2.0	1.3	2	6				42.2				8.0 - 8.1 ft: SILT, (ML); Black (N1), minor clay, firm, moist.	
			9	15				41.5					
			8					41.4					
			9					41.1				8.1 - 8.4 ft: Clayey SAND, (SC); Grayish green (10GY5/2), sand is fine grained, moderately sorted, dirty, clay content decreases with depth, firm, moist.	
			15					40.2					
SS	2.0	1.5	nr					39.5	10			8.4 - 11.0 ft: SAND, (SW); Grayish olive (10Y4/2), fine to medium grained, moderately sorted, clean in places, others with minor silt, firm, moist.	
								38.5					
								38.0					
								37.5				11.0 - 11.5 ft: SILT, (ML); Light brown (5YR5/6), non plastic, very firm, moist.	
TOTAL DEPTH = 12.0 FT.													



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R635
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING	
National Community Bank			N 7950.0; E 11000.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
1-16-91	1-16-91	Hydro Group, Inc.	Mobile B-80	8"	7.0	0.0	7.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
5.0/71*		0	4	NA	47.5	/ none ATD / NA	NA/NA			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs/30 in		none		Robert Cook <i>[Signature]</i>						

SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOMS RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					PRESS. P.S.I.	TIME IN MIN.						
							47.5					
SS	1.5	1.3	13 18 26				47.3				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R635. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 6.0'. Spoon refusal at 6.6'. Augered to -7', encountered gravel pack material similar to that used for sewer/water line; hole abandoned. 3" PVC casing inserted to 6.5' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	2.0	1.7	40 43 24 21				46.7 46.5				0.5 - 6.3 ft: FILL; Gravelly, Silty Clay; Moderate brown (8YR5/4), with wood fragments, brick fragment between 6.0 - 6.5', gravel -20-30%, no plasticity.	
SS	3.0	2.0	38 27 18 21				43.8 43.5					
SS	0.6	0.0	28-50/1*				41.3					
							40.5					
TOTAL DEPTH = 7.0 FT.												

SS = SPLIT SPOON; NG = CORE BARREL; HX = HAND AUGER; 70 = OTHER	SITE	National Community Bank	Last Update: 03-19-92	HOLE NO.	R635
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TDD NO. 02-8305-10B
 PROJECT NAME MAYWOOD CHEMICAL
 LOCATION Maywood, N.J.
 DIAMETER: CASING ID Temporary 4" PVC
 ROCK CORE _____
 COORDINATES: 525-25L

DATE: START 7/27 FINISH 7/27
 ELEVATIONS N/A
 GROUND SURFACE N/A from ground surface
 GROUND WATER 3 R feet
 DEPTH OF HOLE 8 feet
 OVERBURDEN X ROCK _____
 DIP N/A

CONTRACTOR H.P. Drilling LOGGED BY J. Cirilli CHECKED BY _____
 DRILLING METHOD Hollow Stem Auger SHEET 1 OF 35

GEOLOGIC PROFILE

DEPTH (FT)	ELEV. (FT.)	SYM BOL	SAMPLE			DESCRIPTION
			TYPE AND No.	BLOWS OR REC.	DEPTH RANGE (FT)	
1						Grayish red (10 R 4/2) silty sand with fragments of wood and brick.
2			SS-4 SS-11	3-5-72		-----
3						No recovery. Split spoon blocked by brick fragments.
4			SPT	3-1-2-2		-----
5						Med. moderate reddish brown (10 R 4/6) silty sand.
6			SS-5	3-2-2-3		-----
7						Pale brown (5 YR 5/2) sandy silt, traces of clay.
8			SPT	1-1-2-1		END OF BORING

SOIL AND ROCK TYPE

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE TYPE

SPT STANDARD PENETRATION TEST
 SS SPLIT SPOON SAMPLE

BOREHOLE LOG



NUS
CORPORATION

TDD NO. 02-8305-10B
PROJECT NAME MAYWOOD CHEMICAL
LOCATION Maywood, N.J.
DIAMETER: CASING ID Temporary 4" PVC

DATE: START 7/27 FINISH 7/27
ELEVATIONS N/A
GROUND SURFACE N/A
GROUND WATER 4.0 Ft. from ground surface
DEPTH OF HOLE 8 feet
OVERBURDEN X ROCK
DIP N/A

COORDINATES: 550-251
CONTRACTOR H.P. Drilling
DRILLING METHOD Hollow Stem Auger

LOGGED BY J. Cirilli CHECKED BY
SHEET 2 OF 35

GEOLOGIC PROFILE

DEPTH (FT.)	ELEV. (FT.)	SYM BOL	SAMPLE		ROD %	DESCRIPTION
			TYPE AND No.	BLOWS OR REC. DEPTH RANGE (FT.)		
1						Moderate brown (5 YR 4/4) silty sand.
2			SS-1	2-6-5-7		Moderate brown (5 YR 4/4) silty sand. ----- Fill consisting of red brick fragments. ----- Coal ash and cinders. ----- Red brick fragments in a moderate red (5 R 5/4) sand. -----
3						
4			SS-2	6-11-35 -10		Moderate yellowish brown (10 YR 5/4) sand.
5						-----
6			SS-3	2-4-7-6		Light brown (5 YR 6/4) sandy silt mottled with medium gray (N ₅) clay. -----
7			SS-6			Light brown (5 YR 6/4) sand, traces of clay, some light gray (N ₇) to light brown (5 YR 5/6) stained silty zones.
8			SS-7	2-3-5-6		----- END OF BORING

SOIL AND ROCK TYPE

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE TYPE

SPT STANDARD PENETRATION TEST
SS SPLIT SPOON SAMPLE

BOREHOLE LOG



TOD NO. 02-8305-10H
 PROJECT NAME MAYWOOD CHEMICAL
 LOCATION Maywood, N.J.
 DIAMETER: CASING ID Temporary 4" PVC
 ROCK CORE _____
 COORDINATES: _____ 525-00 (RI) 608 B

DATE: START 7/27 FINISH 7/27
 ELEVATIONS N/A
 GROUND SURFACE N/A from ground surface
 GROUND WATER 5 feet
 DEPTH OF HOLE 6 feet
 OVERBURDEN X ROCK _____
 DIP N/A

CONTRACTOR H.P. Drilling LOGGED BY J. Cirilli CHECKED BY _____
 DRILLING METHOD Hollow Stem Auger SHEET 7 OF 20

GEOLOGIC PROFILE

DEPTH (FT.)	ELEV. (FT.)	SYM BOL	SAMPLE		DESCRIPTION
			TYPE AND NO.	BLOWS OR REC. DEPTH RANGE (FT.)	
1					concrete fragments ----- brownish black (5 YR 2/1) clayey soil -----
2			SS-8	9-11-16-4	
3					Red brick fragments set in a moderate reddish brown (10 R 4/6) sand.
4			SS-9	6-8-3-6	
5					Brownish black (5 YR 2/1) clay ----- Moderate brown (5 YR 4/4) sand and clay, scattered quartz pebbles.
6			SS-10	1-6-7-9	END OF BORING
7					
8					

SOIL AND ROCK TYPE		SAMPLE TYPE		BOREHOLE LOG
<input type="checkbox"/>	<input type="checkbox"/>	SPT STANDARD PENETRATION TEST		
<input type="checkbox"/>	<input type="checkbox"/>	SS SPLIT SPOON SAMPLE		
<input type="checkbox"/>	<input type="checkbox"/>			



TDD NO. 02-8305-108
 PROJECT NAME MAYWOOD CHEMICAL
 LOCATION Maywood, N.J.
 DIAMETER: CASING ID Temporary 4" PVC
 ROCK CORE _____
 COORDINATES: 517-050L

DATE: START 7/27 FINISH 7/27
 ELEVATIONS N/A from ground surface
 GROUND SURFACE N/A
 GROUND WATER 5.5 feet
 DEPTH OF HOLE 6 feet
 OVERBURDEN X ROCK _____
 DIP N/A

CONTRACTOR H.P. Drilling LOGGED BY J. Cirilli CHECKED BY _____
 DRILLING METHOD Hollow Stem Auger SHEET 4 OF 39

GEOLOGIC PROFILE

DEPTH (FT.)	ELEV. (FT.)	SYM BOL	SAMPLE		DESCRIPTION
			TYPE AND No.	BLOWS OR REC. DEPTH RANGE (FT.)	
1					moderate brown (5 YR 3/4) silty soil. ----- red brick fragments. -----
2			SS-12	2-4-15 -10	
3					Red brick fragments set in a matrix of moderate reddish brown (10 R 4/6) gravelly sand. -----
4			SS-12	8-3-4-4	Red brick fragments set in a matrix of pale reddish brown (10 R 5/4) silty sand. -----
5			SS-14		Grayish yellow green (5 GY 7/2) to light gray (N7) silty sand, organic material consisted of root hairs and wood particles.
6			SS-15	9-6-4-5	END OF BORING
7					
8					

SOIL AND ROCK TYPE

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE TYPE

SPT STANDARD PENETRATION TEST
 SS SPLIT SPOON SAMPLE

BOREHOLE LOG



TDD NO. 02-8305-10B
 PROJECT NAME MAYWOOD CHEMICAL
 LOCATION Maywood, N.J.
 DIAMETER: CASING ID Temporary 4" PVC
 ROCK CORE _____
 COORDINATES: 616-5L

DATE: START 7/28 FINISH 7/28
 ELEVATIONS N/A from _____
 GROUND SURFACE N/A ground surface
 GROUND WATER 5-6 feet
 DEPTH OF HOLE 6 feet
 OVERBURDEN X ROCK _____
 DIP N/A

CONTRACTOR H.P. Drilling LOGGED BY J. Cirilli CHECKED BY _____
 DRILLING METHOD Hollow Stem Auger SHEET 5 OF 39

GEOLOGIC PROFILE

DEPTH (FT.)	ELEV. (FT.)	SYM BOL	SAMPLE			DESCRIPTION
			TYPE AND NO.	SLOWS OR REC.	DEPTH RANGE (FT.)	
1						dusky yellowish brown (10 YR 2/2) clayey soil with scattered pale red (10 R 6/2) pebbles. Middle of this zone, concrete material, ranging from white powder to pebbles overlying dark yellowish orange (10 YR 6/6) to light brown (5 YR 5/6) brick fragments.
2			SS-1E	4-14-6	10	-----
3						of dark yellowish brown (10YR 2/2) clayey soil. -----
4			SPT	7-5-11	-6	of light gray (N7) to light bluish gray conglomeritic (58 7/1) concrete fragments and chips.
5						No recovery. Split spoon blocked by 2" diameter wood chips.
6			SPT	8-10-7	-7	END OF BORING
7						
8						

SOIL AND ROCK TYPE	SAMPLE TYPE	BOREHOLE LOG
<input type="checkbox"/>	SPT STANDARD PENETRATION TEST	
<input type="checkbox"/>	SS SPLIT SPOON SAMPLE	
<input type="checkbox"/>		



TDD NO. 02-8305-10B
 PROJECT NAME MAYWOOD CHEMICAL
 LOCATION Maywood, N.J.
 DIAMETER: CASING ID Temporary 4" PVC
 ROCK CORE _____
 COORDINATES: 500-25L

DATE: START 7/26 FINISH 7/26
 ELEVATIONS N/A
 GROUND SURFACE N/A from ground surface
 GROUND WATER 6 feet
 DEPTH OF HOLE 7 feet
 OVERBURDEN 1 ROCK _____
 DIP N/A

CONTRACTOR H.F. Drilling LOGGED BY J. Cirilli CHECKED BY _____
 DRILLING METHOD Hollow Stem Auger SHEET 6 OF 39

GEOLOGIC PROFILE

DEPTH (FT)	ELEV. (FT)	SYM BOL	SAMPLE			DESCRIPTION
			TYPE AND No.	BLOWS OR REC.	DEPTH RANGE (FT)	
1						<p>concrete fragments, pale red (5 R 6/2 to 10 R 6/2) sandstone fragments set in a matrix of loose sand and pebbles of the same color. Some scattered white quartz pebbles.</p>
2			SPT	12-17-6-4		<p>moderate brown (5 YR 4/4) silty soil with some gray (N7) coal cinders.</p>
3						
4			SS-17	2-3-5-5		<p>dusky yellowish brown (10 YR 2/2) silty soil, brownish black (5 YR 2/1) organic rich soil, somewhat gritty, some small pebbles, moderate brown (5 YR 4/4) silty sand with traces of clay, scattered dusky yellow brown (10 YR 2/2) stained areas.</p>
5			SS-18			<p>dusky yellowish brown silty sand, medium gray (N5) to medium light gray (N6) silty sand, traces of clay.</p>
6			SS-19	2-4-3-2		
7			SPT			END OF BORING
8						

SOIL AND ROCK TYPE

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE TYPE

SPT STANDARD PENETRATION TEST
 SS SPLIT SPOON SAMPLE

BOREHOLE LOG



TOD NO. 02-H305-10B

PROJECT NAME MAYWOOD CHEMICAL

LOCATION Maywood, N.J.

DIAMETER: CASING ID Temporary 4" PVC

ROCK CORE _____

COORDINATES: 450-00BL

CONTRACTOR H.P. Drilling

LOGGED BY J. Cirilli CHECKED BY _____

DRILLING METHOD Hollow Stem Auger

SHEET 7 OF 39

DATE: START 7/28 FINISH 7/28

ELEVATIONS N/A from _____

GROUND SURFACE N/A from _____

GROUND WATER 6 feet

DEPTH OF HOLE 8 feet

OVERBURDEN X ROCK _____

DIP N/A

GEOLOGIC PROFILE

DEPTH (FT.)	ELEV. (FT.)	SYM BOL	SAMPLE			DESCRIPTION
			TYPE AND No.	BLOWS OR REC.	DEPTH RANGE (FT.)	
1						Pale red (5 R 6/2) to moderate red (5R 5/4) brick fragments in a moderate red (5 R 5/4) sand matrix.
2			SS-20	9-10-16-19		-----
3						loose pale red (5 R 6/2) gravelly soil. olive gray (5 R 3/2) trap rock fragments, cement and concrete debris, coal cinders and coal ash.
4			SS-21	12-9-8-4		-----
5						brownish black (5 YR 2/1) stiff clay with some organic material including plant roots and woody chips.
6			SS-22	2-5-11-6		-----
7						very dusky red (10 R 2/2) to dusky yellow brown (10 YR 2/2) clay with some silt. pale red (5 R 6/2) sand and silt. scattered brick fragments.
8			SPT	1-1-3-5		pale olive (10 Y 6/2) silt and clay.

END OF BORING

SOIL AND ROCK TYPE

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE TYPE

SPT STANDARD PENETRATION TEST
SS SPLIT SPOON SAMPLE

BOREHOLE LOG



TDD NO. 02-8305-10A
 PROJECT NAME MAYWOOD CHEMICAL
 LOCATION Maywood, N.J.
 DIAMETER: CASING ID Temporary 4" PVC
 ROCK CORE _____
 COORDINATES: _____ -0300-050R

DATE: START 8/2 FINISH 8/2
 ELEVATIONS N/A from _____
 GROUND SURFACE N/A _____
 GROUND WATER 5 Feet
 DEPTH OF HOLE 6 Feet
 OVERBURDEN Y ROCK _____
 DIP N/A

CONTRACTOR H.P. Drilling LOGGED BY J. Cirillic CHECKED BY _____
 DRILLING METHOD Hollow Stem Auger SHEET 25 OF 39

GEOLOGIC PROFILE

DEPTH (FT.)	ELEV. (FT.)	SYM BOL	SAMPLE			DESCRIPTION
			TYPE AND No.	BLOWS OR REC.	DEPTH RANGE (FT.)	
1						moderate brown (5 YR 3/4) clayey soil, halfway through this unit, white to very light gray (NB) clayey fill material occurs, light brown (5 YR 6/4) clayey silt.
2			SS-G7	2-2-3-4		dusky yellowish brown (10 YR 2/2) stiff organic clay, woody fragments & plant roots.
3						grayish yellow green (5 GY 7/2) silty clay.
4			SPT	3-3-17-18		yellowish gray (5 Y 7/2) clay
5						moderate brown (5 YR 4/4) to moderate yellowish brown (10 YR 5/4) sand.
6			SPT	15-16-16-12		END OF BORING
7						
8						

SOIL AND ROCK TYPE

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE TYPE

SPT STANDARD PENETRATION TEST
 SS SPLIT SPOON SAMPLE

BOREHOLE LOG



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R107				
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING				
Stepan Property			N 9400.0; E 10100.0			Vertical		-----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
9-20-90	9-20-90	Hydro Group, Inc.	Mobile B-80		8"	6.0	0.5	6.5				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
4.3/66*		0	4	NA	56.0			6.0/50.0				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in			none		Stephen Knutzel <i>[Signature]</i>							
SAND TYPE AND DIA.	SAND ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS	% CORE RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SUPPLY	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESS. P.S.F.						
SS	2.0	1.3	18 20 15 10				54.0				0.0 - 3.3 ft: Sandy GRAVEL, (GW); Dusky brown (8YR2/2) changing to Grayish black (N3) with Very light gray (N8) between 0.4 - 1.0', to Light brown (8YR5/6) at 2.3', and grading to Moderate reddish brown (10R4/6) at 3.0'; abundant coarse sand and rock, loose.	Complete borehole number is B3890R107.
SS	2.0	1.9	10 8 4 6				54.7 54.0 52.7				3.3 - 4.3 ft: Silty SAND, (SM); Grayish brown (8YR3/2) to Dusky brown (8YR2/2), moderately dense, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	1.6	0.9	2 4 12				51.8 51.5 51.1				4.3 - 4.5 ft: Silty SAND, (SM); Black (N1), fine to medium sand, moist.	Spoon refusal at 5.6'. Augered to 6.0'.
			50/2*				50.0				4.5 - 4.9 ft: SAND, (SW); Grayish brown (8YR3/2), fine grained, poorly sorted with minor gravel up to 1 cm.	Spoon refusal at 6.5'. Augered to total depth of 6.5'.
SS	0.5	0.2	50/6*				49.8 49.5				6.0 - 6.3 ft: SANDSTONE; Dark reddish brown (10R5/4), fine grained, friable, moist.	3" PVC casing inserted to 6.0' for gamma-logging.
TOTAL DEPTH = 6.5 FT.											PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.	
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER			SITE			Stepan Property			Log Update: 03-19-92		HOLE NO. R107	



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R108
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING	
Stepan Property			N 9400.0; E 10200.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
9-20-90	9-20-90	Hydro Group, Inc.	Mobile B-80	8"	2.0	5.3	7.3			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
4.7/64"		0	4	NA	56.0	/ NA	2.0/54.0			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		NONE			Stephen Knuttel <i>[Signature]</i>					

SAND TYPE AND DIAM.	SAMP. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOKS	CORE RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						PRESS. P.S.F.	TIME MIN.						
SS	2.0	1.3	16					56.0				0.0 - 1.3 ft: FILL; Gravelly Sand; Black (N1) to Grayish black (N2), gravel up to 1 cm, abundant coarse-grained sludge-like material between 1.0 - 1.5', loose, dry.	Complete borehole number is B3890R108.
			18					54.7					
			13					54.0				2.0 - 7.3 ft: Silty SAND to Sandy GRAVEL, (SM); Blackish red (SR2/3) changing to Grayish red (10R4/5) and to Dark reddish brown (10R3/4) at 4.5', pebbles up to 1 cm between 2.0 - 4.5', gravel increasing with depth, moderately dense to dense, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.3	nr					52.8					nr = not recorded.
								52.0					
SS	2.0	0.9	5					51.1					
			8					50.0					
			7										
			35										
SS	1.3	1.3	17					48.7					
			47										
			50/4"										
TOTAL DEPTH = 7.3 FT.												Spoon refusal at 7.3'. Augered to total depth of 7.3'. 3" PVC casing inserted to 6.5' for gamma-logging. PVC casing was removed after logging; hole was grouted to surface and covered with gravel.	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.							
SITE Stepan Property				COORDINATES N 9310.0; E 10250.0	FUSRAP	14501	1 OF 1 R110							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH							
9-24-90	9-24-90	Hydro Group, Inc.	Mobile B-80	8"	13.0	1.0	14.0							
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK							
9.4/67%		0	7	NA	55.0	NA	13.0/12.0							
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:										
140 lbs/30 in		NONE		S. Knuttel/R. Cook <i>[Signature]</i>										
SOIL TYPE AND DIAM.	SAMP. BOX LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.							
SS	2.0	1.6	30 28 13					55.0				0.0 - 6.6 ft: FILL: Sandy Gravel to Silty Gravelly Sand, Brownish gray (5YR4/1) changing to Grayish red (10R4/2) at 0.3', gravel up to 3 cm, abundant coal fragments; layer of fine coal sand between 1.2 - 1.6'. Black (N1), moderately well sorted, moist.	Complets borehole number is B3890R110. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	0.3	nr					53.4 53.0 51.7						
SS	2.0	0.7	nr					51.0 50.3						
SS	2.0	2.0	nr					49.0 48.4				6.6 - 10.6 ft: Silty CLAY, (CL); Light olive gray (5Y6/1), very fine grained, clay -60-70%, silt -20-30%, soft, dry to moist.	nr = not recorded (blow counts not obtained due to changing of geologists).	
SS	2.0	1.6	nr					46.8 46.0						
SS	2.0	1.8	nr					44.4	10			10.6 - 13.0 ft: Silty SAND, (SM); Moderate brown (5YR3/4), fine sand -40-60%, silt -30-40%.		
SS	2.0	1.5	nr					43.2 43.0						
								42.0 41.5 41.0				13.0 - 14.0 ft: SANDSTONE; Dark reddish brown (10R3/4), fine grained, moderately hard, very thinly bedded 1/2 - 2".	Augered to total depth of 14.0'. 3" PVC casing inserted to 11.6' for gamma-logging.	
TOTAL DEPTH = 14.0 FT.												PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.		
												* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).		
SS = SPLIT SPOON; NG = CORE BARREL; MX = HAND AUGER; O = OTHER											SITE	Stepan Property	Last Update: 03-19-92	HOLE NO. R110



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
SITE				COORDINATES	14501	1 OF 1	R115				
Stepan Property				N 9325.0; E 10300.0	ANGLE FROM HORIZ		BEARING				
BEGUN		COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)				
9-25-90		9-25-90	Hydro Group, Inc.	Soil Sentry	8"	8.5	2.3				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
7.1/66°		0	6	NA	55.0	8 / NA	8.5/46.5				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in		code		Stephen Knuttel <i>[Signature]</i>							
SAND TYPE AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.					
SS	2.0	1.3	65%				55.0		0.0 - 4.9 ft: FILL ; Sandy, Silty Gravel; Grayish black (N2) changing to Blackish red at 3.3', to Grayish black (N2) at 2.7', to Moderate brown (8YR5/4) at 4.0' and to Black (N1) at 4.6'; poorly sorted, root material present between 2.7 - 3.0', loose, dry to moist.	Complete borehole number is B3890R115.	
SS	2.0	1.4	70%				53.7			Borehole sampled and gamma-logged by TMA/Eberline Corp.	
							53.0				
SS	2.0	1.4	70%				51.6			Spoon refusal at 7.4'	
							51.0				
SS	2.0	1.4	70%				50.1	8	4.9 - 6.3 ft: CLAY (CL) ; Black (N1) with Light olive (10Y5/4) and Grayish olive green (8GY3/3), blocky.	Augered to 8.0'	
							49.6				
SS	1.4	0.6	71.8%				48.7		6.3 - 8.5 ft: PEAT (Pt) ; wood material with Black (N1) coating, block of wood between 6.3 - 6.8'.	Spoon refusal at 9.7'	
			50/5"				48.4				
SS	1.7	1.6	20/18%				47.0		8.5 - 10.8 ft: SANDSTONE ; Moderate reddish brown (10R4/6), fine to medium grained, thinly layered, weathered, hard.	Hard drilling between 9.5 - 10.0'	
			50/2"				46.5				
SS	0.8	0.8	25/50%				45.4	10		Augered to 10.0'	
			50/3"				45.0				
							44.2		TOTAL DEPTH = 10.8 FT.	Spoon refusal at 10.8'	
<p>3" PVC casing inserted to 10.0' for gamma-logging.</p> <p>PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.</p> <p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>											
<p>Best Update: 03-19-92</p> <p>HOLE NO. R115</p>											
<p>SS = SPLIT SPOON; ND = CORE BARREL; SITE</p> <p>Stepan Property</p>											



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
SITE				COORDINATES		14501	1 OF 1	R117			
Stepan Property				N 9700.0; E 9800.0		ANGLE FROM HORIZ BEARING					
BEGUN			COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
9-25-90			9-26-90	Hydro Group, Inc.	Soil Sentry	8"	13.0	0.2	13.2		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
12.7/96"		0	8	NA	57.0	3 / NA	13 / 4.0				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in		none			Stephen Knuttel						
SAND TYPE AND DIAM.	SAMP. GUV. LEN CORE	SAMP. REC. CORE REC.	SAMPLE RECOVERY %	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS G.P.M.	PRESS. P.S.I.	TIME MIN.					
SS	2.0	1.8	1/12"				57.0			0.0 - 13.2 ft: FILL. 0.0 - 0.3 ft: Topsoil. 0.3 - 6.0 ft: Sludge; Very light gray (N8), chalky, changing with depth below 2.0' to more cottony texture with darker color, moist.	Complete borehole number is B386OR117.
SS	2.0	2.0	2/10				55.2 55.0				Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	2.0	1/6								
SS	2.0	1.9	2/5							6.0 - 7.0 ft: Sandy Silt; Grayish black (N2), soft, moist.	
SS	2.0	2.0	6/18				49.1 49.0			7.0 - 7.6 ft: Sludge; Light greenish gray (5GY8/1), soft, cottony to chalky texture, moist. 8.0 - 8.6 ft: Clayey Silt; Moderate brown (5YR3/4), with organic matter present, soft, wet.	
SS	2.0	2.0	4/10					10		8.6 - 11.8 ft: Sludge; Light greenish gray (5GY8/1) changing to Moderate olive brown (5Y4/4) at 11.0', and to Olive black (5Y2/1) with depth, cottony texture, vertically layered with above sediment, trace gravel, soft, moist.	Spoon refusal at 11.8' Augered to 13.0'.
SS	0.8	0.8	6/60/4"				44.2 44.0				Spoon refusal at 13.2'
SS	0.2	0.2	60/3"				43.8			13.0 - 13.2 ft: SANDSTONE; Dark reddish brown (10YR3/4), hard.	3" PVC casing inserted to 13.0' for gamma-logging.
TOTAL DEPTH = 13.2 FT.										PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.	
										* Core recovery refers to total rock & soil sample.	
										Ground elevation estimated from site topographic map.	
										Description & classification by visual examination of sample.	
										Colors from "Rock-Color Chart" (GSA, 1948).	

SS = SPLIT SPOON; NO = CORE BARREL; SITE
 MX = HAND AUGER; O = OTHER

Stepan Property

Last Update: 05-19-92 HOLE NO. R117



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.						
				FUSRAP		14501	1 OF 1	R123						
SITE			COORDINATES			ANGLE FROM HORIZ/BEARING								
Stepan Property			N 9700.0; E 9900.0			Vertical -----								
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH						
9-27-90	9-27-90	Hydro Group, Inc.	Mobile B-80		8"	4.0	0.0	4.0						
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK							
3.1/78%		0	2	NA	57.0	3 / NA	NA/NA							
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:									
140 lbs/30 in		none			Robert Cook									
SAND TYPE	SAMP. DIA.	SAMP. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOKS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.						
SS	2.0	1.7		10 12 16 8					57.0				0.0 - 3.4 ft: FILL. 0.0 - 1.5 ft: Silty Sand; Moderate brown (8YR5/4), very fine grained, poorly graded, sand -40-60%, silt -40-60%, low plasticity, dry. 1.5 - 3.2 ft: Sand; Brownish black (8YR2/1), very fine to coarse grained, vitreous, low plasticity, fluid present in soil nodules when squeezed. 3.2 - 3.4 ft: Clay; Very pale orange (10YR8/3), very fine grained, stiff, low plasticity, dry.	Complete borehole number is B3890R123. Borehole sampled by TMA/Eberline Corp.
SS	2.0	1.4		9 14 18 10					55.3 55.0 53.6 53.0				TOTAL DEPTH = 4.0 FT.	Augered to 4.0'. Drilling terminated due to high LEL readings. Hole backfilled with drilling spoils.

SS = SPLIT SPOON; NO = CORE BARREL; SITE
 NX = HAND AUGER; O = OTHER

Stepan Property

LAST Update: 03-19-92 HOLE NO. R123



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		HOLE NO.	
Stepan Property										FUSRAP		14501		1 OF 1		R124	
SITE					COORDINATES					ANGLE FROM HORIZ. BEARING							
Stepan Property					N 10000.0; E 10525.0					Vertical							
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE		OVERBURDEN		ROCK (FT.)		TOTAL DEPTH			
9-27-90		9-27-90		Hydro Group, Inc.		Mobile B-80		8"		6.2		0.0		6.2			
CORE RECOVERY (FT./%)			CORE BOXES		SAMPLES		SEL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
4.6/74"			0		3		NA		75.0		NA / NA		NA/NA				
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE: DIA./LENGTH				LOGGED BY:									
140 lbs/30 lb				BODE				Robert Cook <i>[Signature]</i>									
										(Template: NYND)							
SAND TYPE	SAMP. LEN.	ADV. CORE	REC. CORE	SAMPLE BLOKS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SUBTITLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.			
						LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.									
									75.0								
									74.8				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R124.			
SS	1.8	1.8		10	25								0.5 - 0.5 ft: FILL.	Augered through asphalt to 0.5'.			
				21									0.5 - 3.0 ft: Sandy silt; Moderate reddish brown (10R4/6), red bed pebbles up to 8 cm, dry.	Borehole sampled and gamma-logged by TMA/Eberline Corp.			
SS	2.0	1.4		13	7				71.6				3.0 - 6.2 ft: Sludge; Light gray (N7), clayey, very fine grained, high plasticity, moist; changing to Grayish black (N2) at 3.2' and to Light gray (N7) at 4.0'; very fine grained, some roots, soft below 4.0'; color change to White (N6) and to Light Gray (N7) at 4.8', very stiff, moist.	Augered to 6.0'.			
				13	6				71.0					Spoon refusal at 6.2'; hollow sound and excessive bounce resulting from spoon against some object.			
SS	2.0	1.8		4	4				69.8					3" PVC casing inserted to 6.0' for gamma-logging.			
				4	5				69.0					PVC casing was removed after logging and hole backfilled with grout.			
				25					65.8					TOTAL DEPTH = 6.2 FT.			
SS	0.2	0.2		00/2										* Core recovery refers to total soil & rock sample.			

SS = SPLIT SPOON; NQ = CORE BARREL;
 MX = HAND AUGER; O = OTHER

SITE

Stepan Property

Last Update: 03-19-92

HOLE NO. R124



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R130
SITE			COORDINATES			ANGLE FROM HORIZ BEARING				
Stepan Property			N 10000.0; E 10660.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER		DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-1-90	10-1-90	Hydro Group, Inc.		Mobile B-80	8"	4.0	0.4	4.4		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
2.9/66*		0	3	NA	72.0	NA	4.0/6.0			
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs/30 in			none			Robert Cook				

SAMP TYPE AND DIAM.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS / CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS	ELEV.	DEPTH	GRAPHICS	SERIES	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						72.0				(Template: NYWD)	
SS	1.6	0.8	3 25 24			71.8				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R130. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 4.0', sampled to 4.4'. 3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging and hole backfilled with grout drilling spoils.
						70.7				0.5 - 3.7 ft: Silty SAND, (SM); Moderate brown (5YR4/4), very fine to medium grained, rounded, -1% gravel up to 1.6" below 2.0', moderately dense, dry.	
SS	2.0	1.7	12 15 14 30			70.0					
SS	0.4	0.4	50/5*			68.3 68.0 67.6				4.0 - 4.4 ft: SANDSTONE; Moderate red (5R5/4), fine to medium grained, rounded, micaceous, crystalline, silica cement, dry.	
										TOTAL DEPTH = 4.4 FT.	

SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER	SITE	Stepan Property	Last Update: 03-19-92	HOLE NO.	R130
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GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R134
SITE			COORDINATES			ANGLE FROM HORIZ. BEARING				
Stepan Property			N 9960.0; E 10550.0			Vertical			-----	
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-3-90	10-3-90	Hydro Group, Inc.	Mobile B-80	8"	12.0	0.0	12.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
6.8/57*		0	6	NA	75.0	NA	NA/NA			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		None			Robert Cook					

SAMP. TYPE	SAMP. DIA.	SAMP. LEN.	SAMP. REC. CODE	SAMP. BLOBS	RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS	PRESS. P.S.I.					
								75.0			0.0 - 0.5 ft: ASPHALT, over sand and gravel.	Complete borehole number is B389DR134. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	1.6	1.3		18				74.8			0.5 - 10.3 ft: FILL. 0.5 - 5.0 ft: Silty Sand; Moderate reddish brown (10R4/6) rounded, trace elongated grains, sand -50%, silt -40%, gravel -10%; some cobbles. Dark reddish brown (10R3/4), fine to medium grained, rounded to angular; well sorted, crystalline, iron-oxide cement; moderately dense, dry.	
SS	2.0	1.7		28				73.2				
				27				73.0				
				25								
SS	2.0	1.0		19				71.3				
				9				71.0				
				8								
SS	2.0	0.8		6				69.1			5.0 - 10.3 ft: Sludge; White (N0) to Medium gray (N6) to Moderate reddish brown (10R4/6) swirls in a conglomerated mix, changing to more gray and less red at 6.0'; clayey to silty; with gravel -20-30%, decreasing to <10% below 6.0', maximum size 2 cm; some wood fragments present below 6.0'.	
				7				69.0				
				3				68.2				
				4				67.0				
SS	2.0	0.8		4				66.2				
				1				65.0				
SS	2.0	0.3		1				64.7	10			
				1								
				18								
								63.0				
TOTAL DEPTH = 12.0 FT.											Augered to refusal at 12.0'; (similar to Hole R134). 3" PVC casing inserted to 11.6' for gamma-logging. PVC casing was removed after logging and hole backfilled with grout and drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).	



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
SITE										COORDINATES		14501	1 OF 1	R139
Stepan Property										N 9950.0; E 10750.0		Vertical	-----	
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-3-90		10-3-90		Hydro Group, Inc.		Mobile B-80		8"	6.0	2.0	8.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK						
6.0/75*		0	4	NA	68.0	/ NA		6.0/62.0						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:									
140 lbs/30 in		BOB6			Robert Cook <i>[Signature]</i>									
SOIL TYPE AND DIA.	SOIL ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE REC. CORE REC.	LOSS IN G.P.M.	WATER PRESSURE TESTS	ELEV.	DEPTH	GRAPHICS	SAMPLE	(Template: NYND)	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
SS	1.5	0.9	3 6 13			68.0 67.8					0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3450R139.		
SS	2.0	1.7	11 21 28 32			66.6 66.0					0.5 - 8.0 ft: Silty SAND, (SM); Moderate brown (5YR4/4) changing to Moderate reddish brown (10R4/6) at 2.0', very fine rounded grains, sand -60%, silt -40%, low plasticity, moderately dense, moist; some granitic pebbles up to 1.5" between 4.0 - 6.4'.	Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.		
SS	1.5	1.4	14 26 50/6"			64.3 64.0					6.0 - 8.0 ft: Silty SAND, (SM); Dark reddish brown (10R3/4), very fine grains, moderately dense, low plasticity, moist.	Spoon refusal at 8.5'. Augered to 8.0'.		
SS	2.0	2.0	13 18 26 20			62.6 62.0					TOTAL DEPTH = 8.0 FT.	Augered to total depth of 8.0'. 3" PVC casing inserted to 7.0' for gamma-logging. PVC casing was removed after logging and hole backfilled with drilling spoils.		
						60.0						* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).		

SS = SPLIT SPOON; NG = CORE BARREL;
HX = HAND AUGER; O = OTHER

SITE

Stepan Property

Last Update: 03-19-92

HOLE NO. R139



GEOLOGIC DRILL LOG			PROJECT	JOB NO.	SHEET NO.	WOLE NO.
			FUSRAP	14501	1 OF 1	R143
SITE			COORDINATES	ANGLE FROM HORIZ BEARING		
Stepan Property			N 9724.0; E 10825.0	Vertical -----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)
10-4-90	10-4-90	Hydro Group, Inc.	Mobile B-80	8"	16.0	0.7
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER
14.5/87°		0	9	NA	65.0	NA / NA
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:
140 lbs/30 in			none			Robert Cook <i>[Signature]</i>

SOIL TYPE AND DIA.	SOIL ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE CORE REC.	LOSS IN G.P.H.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					PRESS. P.S.I.	TIME MIN.					
SS	2.0	1.8	3 11 18 28				65.0			0.3 - 15.5 ft: FILL.	Complete borehole number is B3890R143. Borehole sampled and gamma-logged by TMA/Eberline Corp. Augered to 16.0'. Spoon refusal at 16.7'. 3" PVC casing inserted to 15.5' for gamma-logging. PVC casing was removed after logging and hole backfilled with grout and drilling spoils. * Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	2.0	1.7	3 12 0				65.8 63.0			0.3 - 3.1 ft: Silty Sand; Dark reddish brown (10R5/4), sand -60%, silt -30%, clay -10%, some sandstone pebbles up to 1.5".	
SS	2.0	1.6	3 0				61.3 61.0			3.1 - 15.5 ft: Sludge; White (N0) and Grayish black (N2) swirls, conglomerated mixture of layers, changing to Grayish orange (10YR7/4) and Pale olive (10Y6/2) at 9.8' and to Grayish black (N2) with Black (N1), at 14.6'; clayey to silty with gravel, pungent odor, moist; texture change to fibrous at 14.6'.	
SS	2.0	1.6	3 0				59.4 59.0				
SS	2.0	2.0	3 0				57.4 57.0				
SS	2.0	2.0	1 1 1								
SS	2.0	2.0	1 1 1								
SS	2.0	1.7	1 1 4 4								
SS	0.7	0.4	10 50/2'				49.5 49.3 49.0 48.6 48.3			15.5 - 15.7 ft: Clayey SILT, (ML); Moderate brown (5YR5/4), very fine to fine grained, silt -50-60%, clay -30%, sand -10-20%, some pebbles up to 3.4 mm, low plasticity, moist.	
										16.0 - 16.4 ft: SANDSTONE; Dark reddish brown (10R5/4), very fine to fine grained, rounded, micaceous, crystalline, iron-oxide cement, dry.	

TOTAL DEPTH = 16.7 FT.

SS = SPLIT SPOON; N0 = CORE BARREL; SX = HAND AUGER; 0 = OTHER	SITE	Stepan Property	Log. Update: 83-10-92	HOLE NO.	R143
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GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
SITE				COORDINATES	14501	1 OF 1	R147					
Stepan Property				N 9971.0; E 10336.0	ANGLE FROM HORIZ BEARING Vertical -----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
10-9-90	10-9-90	Hydro Group, Inc.	Mobile B-80	8"	6.2	0.0	6.2					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
4.3/69%		0	4	NA	67.0	NA	NA/NA					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		none		Robert Cook <i>[Signature]</i>								
SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.4	9 10 11				67.0			0.0 - 0.4 ft: FILL. 0.0 - 0.4 ft: Topsoil: Silty Sand, Moderate brown (5YR3/4), fine grained, sand -60%, silt -30%, low plasticity, moist. 0.4 - 0.7 ft: Sandy Silt; Dark reddish brown (10R3/4), fine to medium grained, silt -80%, sand -80%, some gravel to cobbles up to 3.0' below 3.0', low plasticity, moist.	Complete borehole number is B3890R147. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	1.9	18 20 22 26				65.6 65.0			0.7 - 0.4 ft: Clayey Gravel: Very light gray (N7) to Grayish black (N2), conglomeratic mass, no plasticity, possible concrete, oil-sludge-like residus, pungent, solvent small, moist.	Spoon refusal at 5.4'.	
SS	1.4	1.4	20 22 50/5*				61.6				Augered to 6.0', sampled to spoon refusal at 6.2'.	
SS	0.2	0.0	80/2*				60.8			TOTAL DEPTH = 6.2 FT.	3" PVC casing inserted to 5.5' for gamma-logging. PVC casing was removed after logging; hole backfilled with grout and drilling spoils.	
<p>* Core recovery refers to total soil & rock sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE				Stepan Property		Last Update: 03-19-92		HOLE NO. R147



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R148
SITE			COORDINATES			ANGLE FROM HORIZ. BEARING				
Stepan Property			N 9850.0; E 10350.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-9-90	10-9-90	Hydro Group, Inc.	Mobile B-80		8"	6.0	0.1	6.1		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK		
4.5/74"		0	4	NA	63.0	/ NA		6.0/57.0		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>					

SOIL TYPE	SOIL DIA.	SOIL ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE CORE LOSS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	1.8	1.0	6/4"						63.0				
									61.8		0.0 - 0.2 ft: ASPHALT.		Complete borehole number is B3860R148.
									61.0		0.2 - 1.8 ft: Sandy SILT (ML); Moderate yellowish brown (10YR5/4), fine to coarse grained, subrounded to subangular, silt -70%, sand -30%, low plasticity, moist.		Augered through asphalt to 0.2'.
SS	2.0	1.6	2 4 10 17						60.2		1.8 - 3.1 ft: SAND, (SW); Moderate brown (8YR4/4), fine to very coarse grained, angular to subrounded, no plasticity, moist.		Borehole sampled and gamma-logged by TMA/Eberline Corp.
									59.9		3.1 - 5.8 ft: Sandy SILT (ML); Moderate reddish brown (10R4/8), very fine to medium grained, silt -60%, sand -30%, gravel <10%, no plasticity, moist.		Spoon refusal at 5.9'.
SS	1.9	1.8	21 18 19 50/5"						57.2		6.0 - 6.1 ft: SANDSTONE; Dark reddish brown (10R3/4); very fine, subrounded to subangular grains; iron-oxide cement.		Augered to 6.0', sampled to spoon refusal at 6.1'.
SS	0.1	0.1	50/1"						56.9		TOTAL DEPTH = 6.1 FT.		3" PVC casing inserted to 5.6' for gamma-logging.

SS = SPLIT SPOON; NO = CORE BARREL; SITE: Stepan Property
 BK = HAND AUGER; O = OTHER
 Date: 03-19-92 HOLE NO. R148

* Core recovery refers to total soil & rock sample.
 Ground elevation estimated from site topographic map.
 Description & classification by visual examination of sample.
 Colors from "Rock-Color Chart" (GSA, 1948).



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP	14501	1 OF 1	R154				
SITE		COORDINATES			ANGLE FROM HORIZ			BEARING			
Stepan Property		N 9782.0; E 10823.0			Vertical			-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-10-90	10-10-90	Hydro Group, Inc.	Soil Sentry	8"	6.0	8.0	14.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
9.4/67*		0	7	NA	65.0	NA / NA	6.0/59.0				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>						
SAMP. TYPE AND DIA.	SAMP. LEN. CORE	SPLIT REC. CORE REC.	SPL. CORE RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS G.P.H.	PRESS. P.S.I.						TIME MIN.
SS 2.0	0.4	3	14			65.0 64.6			6.0 - 8.4 ft: FILL. 6.0 - 2.3 ft: Sandy Silt; Moderate brown (8YR5/4).	Complete borehole number is B3390R154.	
SS 2.0	1.6	3	14			63.0			2.3 - 8.4 ft: Sludge; White (N9) to Medium dark gray (N4) swirled conglomerated mass, clayey to silty, dry.	Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS 2.0	1.4	4	14			61.4 61.0					
SS 2.0	1.4	3	12			59.6 59.0			6.0 - 13.4 ft: Sandy SILT (ML); Moderate reddish brown (10R4/6), fine to medium grained, low plasticity, moderately dense, moist.		
SS 2.0	1.6	6	10			57.6 57.0					
SS 2.0	1.7	10	16			55.5 55.0					
SS 2.0	1.4	14	20			53.3 53.0				Augered to total depth of 14.0'.	
			18			51.6				3" PVC casing inserted to 14.0' for gamma-logging.	
			19			51.0				PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.	
TOTAL DEPTH = 14.0 FT.										* Core recovery refers to total soil & rock sample.	
										Ground elevation estimated from site topographic map.	
										Description & classification by visual examination of sample.	
										Colors from "Rock-Color Chart" (GSA, 1948).	
SS = SPLIT SPOON; MO = CORE BARREL; HX = HAND AUGER; O = OTHER				SITE			Stepan Property		Last Update: 03-19-92		HOLE NO. R154



GEOLOGIC DRILL LOG

PROJECT: FUSRAP

JOB NO. 14501 SHEET NO. 1 OF 1 HOLE NO. R155

SITE: Stepan Property COORDINATES: N 9598.0; E 10425.0

ANGLE FROM HORIZ. BEARING: Vertical

BEGUN: 10-10-90 COMPLETED: 10-10-90 DRILLER: Hydro Group, Inc.

DRILL MAKE AND MODEL: Mobile B-80 SIZE: 8" OVERBURDEN: 4.0 ROCK (FT.): 0.0 TOTAL DEPTH: 4.0

CORE RECOVERY (FT./%) 2.3/58% CORE BOXES: 0 SAMPLES: 2 ELEV. TOP CASING: NA GROUND EL.: 59.0 DEPTH/EL. GROUND WATER: NA/NA DEPTH/EL. TOP OF ROCK: NA/NA

SAMPLE HAMMER WEIGHT/FALL: 140 lbs/30 lb CASING LEFT IN HOLE: DIA./LENGTH: NONE LOGGED BY: Robert Cook

SAND TYPE AND DIA.	SMP. ADV. LEN. CORE	SMPLE REC. CORE REC.	SMPLE RECOVERY	LOSS G.P.M.	WATER PRESSURE P.S.I.	ELEV.	DEPTH	GRAPHICS	SHELE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						59.0				0.0 - 0.5 ft: ASPHALT, over sand and gravel.	Complete borehole number is B3990R155.
						58.2				0.5 - 2.9 ft: FILL.	Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	1.8	1.0	30			57.5				0.5 - 2.9 ft: Gravely Silt to Sand; Dark yellowish brown (10YR4/2) changing to Pale yellowish orange (10YR6/6) with Grayish black (N2) at 2.5'; with coal, Black (N1), vitreous sheen, gravely, between 1.5 - 1.6'; very weathered or burnt below 2.5'.	
SS	2.0	1.5	4			56.7				2.9 - 3.5 ft: Silty Sand; Moderate brown (5YR5/4), medium to coarse sand, silt -10%, gravel -10%, no plasticity.	
						55.0				TOTAL DEPTH = 4.0 FT.	Augered to total depth of 4.0', pipe suspected. 5" PVC casing inserted to 3.5' for gamma-logging. PVC casing was removed after logging and hole backfilled with drilling spoils.

SS = SPLIT SPOON; NG = CORE BARREL;
 MX = HAND AUGER; O = OTHER

SITE: Stepan Property

LOG. DATE: 03-19-92 HOLE NO. R155

* Core recovery refers to total soil & rock sample.
 Ground elevation estimated from site topographic map.
 Description & classification by visual examination of sample.
 Colors from "Rock-Color Chart" (GSA, 1948).



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	WOLE NO.							
				FUSRAP	14501	1 OF 1	R157							
SITE		COORDINATES		ANGLE FROM HORIZ		BEARING								
Stepan Property		N 9550.0; E 10900.0		Vertical		-----								
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH							
10-11-90	10-11-90	Hydro Group, Inc.	Mobile B-80	8"	4.7	3.3	8.0							
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK								
6.0/75*	0	4	NA	59.0	NA / NA	4.7/54.3								
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:										
140 lbs/30 in		NONE		Robert Cook <i>[Signature]</i>										
SAMP. TYPE AND DIA.	SAMP. COV. LEN. CORE	SAMPLER REC. CORE REC.	SPLITS BLOW'S	% CORE RECOVERY	LOSS IN G.P.M.	WATER PRESS. P.S.F.	TIME IN MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
														(Template: NYLD)
SS	1.5	1.0	30 28 12					59.0 58.8	0.0 - 0.5 ft: ASPHALT; over sand and gravel.			Completes borehole number is B3490R167.		
								57.6 57.4 57.0	0.5 - 1.4 ft: FILL; Grayish black (N2), coal.			Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.		
SS	2.0	1.5	7 6 6					55.5 55.0	1.4 - 4.7 ft: Silty SAND, (SM); Grayish brown (5YR3/2) changing to Moderate brown (5YR4/4) at 2.0'; fine grained, sand -50-70%, silt -30-40%, some gravel below 2.0', no plasticity, moist.					
SS	2.0	1.8	8 8 7 16					54.3 53.2 53.0	4.7 - 7.7 ft: Clayey SILT, (ML); Dark reddish brown (10R3/4), fine grained, silt -60%, clay -30%, sand -10%, some sandstone pebbles up to 1", low plasticity, moist.					
SS	2.0	1.7	13 12 15 11					51.3 51.0						
TOTAL DEPTH = 8.0 FT.												Augered to total depth of 8.0'. 3" PVC casing inserted to 7.5' for gamma-logging. PVC casing was removed after logging and hole backfilled with drilling spoils.		
* Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).														
SS = SPLIT SPOON; NO = CORE BARREL; BX = HAND AUGER; O = OTHER											SITE	Stepan Property	last Update: 03-19-92	HOLE NO. R157



GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501

SHEET NO.

1 OF 1

HOLE NO.

R160

SITE

Stepan Property

COORDINATES

N 9686.0; E 10750.0

ANGLE FROM HORIZ BEARING

Vertical

BEGUN

10-11-90

COMPLETED

10-11-90

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Soil Sentry

SIZE

8"

OVERBURDEN

10.9

ROCK (FT.)

0.7

TOTAL DEPTH

11.6

CORE RECOVERY (FT./%)

7.0/60%

CORE BOXES

SAMPLES

SEL. TOP CASING

GROUND EL.

66.0

DEPTH/EL. GROUND WATER

3 / NA

DEPTH/EL. TOP OF ROCK

NA/55.1

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 lb

CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY:

NONE

Robert Cook

SAMP. TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE RECOVERY	LOSS IN G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.6	4				66.0				0.0 - 10.0 ft: FILL. 0.0 - 3.6 ft: Silty Sand; Moderate reddish brown (10R4/6), fine grained, sand -30-60%, silt -30-40%, gravel -20%, clay -20%, low plasticity; sandstone cobble at 3.6'. Dark reddish brown (10R4/6), blocky, iron-oxide cement.	Complete borehole number is B3890R160. Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	0.6	8				64.5 64.0 63.4					
SS	2.0	1.1	12				62.0				4.0 - 10.0 ft: Sludge; Olive black (5Y2/1) changing to Moderate reddish brown (10R4/6) and Medium dark gray (N4) swirls at 6.0', to Grayish black (N2) at 6.8', to a conglomeratic mass of Yellowish gray (5Y4/1) and Medium light gray (N6) at 7.0'; clayey to silty, low to medium plasticity, moist to wet.	
SS	2.0	1.4	10				60.0					
SS	2.0	0.8	10				58.6 58.0 57.2					
SS	1.6	1.6	5				66.0	10'			10.0 - 10.9 ft: CLAY (CL); Dark gray (N3), very fine grained, with up to -20% silt, medium plasticity, soft wet. 10.9 - 11.6 ft: Silty SAND (SM); Moderate reddish brown (10R4/6), fine to coarse grains, sandstone cobbles present.	Augered to 10.0'. Spoon advanced to refusal at 11.6'. 3" PVC casing inserted to 10.8' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
							55.1 54.4				TOTAL DEPTH = 11.6 FT.	* Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).

SPLIT SPOON; NO = CORE BARREL; SITE
HAND AUGER; O = OTHER

Stepan Property

Last Update: 03-19-92

HOLE NO. R160



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
SITE				COORDINATES		14501	1 OF 1	R161				
Stepan Property				N 9686.0; E 10700.0		ANGLE FROM HORIZ BEARING						
Vertical				-----								
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
10-11-90	10-11-90	Hydro Group, Inc.	Soil Sentry	8"	4.3	0.0	4.3					
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
3.1/72*	0	3	NA	67.0	NA / NA	NA/NA						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		NONE		Robert Cook <i>[Signature]</i>								
SOIL TYPE AND DIAM.	SOIL LEN. CORE	SAMPLE REC. CORE REC.	SPOON CORE RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					PRESS. P.S.F.	TIME MIN.						
SS	2.0	1.5	0.000				67.0				(Template: NYWD)	
							66.7				0.0 - 2.2 ft: FILL.	Complete borehole number is B3890R161.
							66.0				0.0 - 1.3 ft: Sandy Silt; Grayish brown (NYR3/2), fine grained, silt -60%, sand -40%, low plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.8	10 13 19 18				65.2				2.0 - 3.8 ft: Sludge; Dark gray (N3) with traces of White (N6) areas within the composition, clayey to silty, moist.	
SS	0.3	0.0	50/4*				62.7					
TOTAL DEPTH = 4.3 FT.											Augered to 4.0'. Spoon advanced to refusal at 4.3'; hollow wooden sound when hitting spoon. 3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.	
											* Core recovery refers to total soil & rock sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).	

SS = SPLIT SPOON; N3 = CORE BARREL; SITE
 NX = HAND AUGER; 0 = OTHER

Stepan Property

Log. Updated: 05-19-92

HOLE NO. R161



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP	14501	1 OF 1	R164					
SITE			COORDINATES		ANGLE FROM HORIZ. BEARING							
Stepan Property			N 9683.0; E 10850.0		Vertical -----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
10-12-90	10-12-90	Hydro Group, Inc.	Soil Sentry	8"	6.0	4.5	10.5					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
9.1/87*		0	6	NA	65.0	NA / NA	6.0/59.0					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		NONE		Robert Cook <i>[Signature]</i>								
SAMP. TYPE AND DIAM.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS	G.P.M.	PRESS. P.S.I.						
SS	2.0	1.7	2 3 4				65.0				0.0 - 4.4 ft: Silty SAND, (SM); Grayish red (10R4/3) changing to Moderate brown (5YR3/4) at 1.5', fine grained, with sandstone cobbles below 2.0', low plasticity, moist.	Complete borehole number is B389OR164. Borehole sampled and gamma-logged by TMA/Eberlins Corp.
SS	2.0	1.4	6 12 10 11				63.2 63.0					
SS	2.0	2.0	5 11 22 26				61.6 61.0 60.6				4.4 - 6.0 ft: Sandy SILT, (ML); Light brown (5YR4/6) changing to Moderate brown (5YR4/4) at 5.1', very fine to fine grained, changing to fine to medium grained at 5.1', some cobbles below 5.1', low plasticity, moist.	
SS	2.0	2.0	11 40 20 21				59.0				6.0 - 10.4 ft: Sandy SILT and SANDSTONE, (ML); Moderate reddish brown (10R4/6) fine to medium grained, low plasticity, moist; with Sandstone, Dark reddish brown (10R5/4), very fine to fine grained, blocky, iron-oxide cement.	
SS	2.0	1.6	26 14 25 27				55.4 55.0 54.6					
SS	0.5	0.4	50/6*				54.5					
TOTAL DEPTH = 10.5 FT.											Spoon refusal at 10.5'. 3" PVC casing inserted to 10.0' for gamma-logging. PVC casing was removed after logging and hole backfilled with drilling spoils.	
											* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).	
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER			SITE			Stepan Property			Last Update: 03-19-92		HOLE NO. R164	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R165				
SITE			COORDINATES			ANGLE FROM HORIZ. BEARING						
Stepan Property			N 9720.0; E 10657.0			Vertical -----						
BEGUN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-15-90	10-15-90	Hydro Group, Inc.		Soil Sentry		8"	4.0	6.4	10.4			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
7.8/88%		0	6	NA	67.0			4.9/63.0				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in					Robert Cook <i>[Signature]</i>							
SOIL TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SPL. CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE		ELEV.	DEPTH	GRAPHICS	SECTILE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					PRESS. P.S.F.	TIME MIN.						
SS	3.0	1.4	1 17 12 4				67.0				0.8 - 1.0 ft: FILL; Sandy Silt; Grayish brown (5YR3/2), fine grained, silt -60%, sand -40%, no plasticity, moist; brick fragments between 0.3 - 1.0'.	Complete borehole number is B3890R165.
SS	2.0	1.5	12 14 nr nr				66.0 65.6 65.0				1.0 - 3.5 ft: Silty SAND, (SM); Moderate brown (5YR5/4) changing to Moderate brown (5YR4/4) at 3.0', fine to medium grained, no plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	2.0	11 20 34 50				63.8 63.0				4.0 - 10.4 ft: Silty SAND, (SM); Moderate reddish brown (10R4/6) changing to Dark reddish brown (10R3/4) at 6.0', fine to medium grained, sand -60%, silt -40%, some gravel, sandstone cobbles at 7.0'; sand content increasing below 9.0' with color change to Grayish red (10R4/2), medium grained, well sorted, micaceous, moist; changing to sandstone at 9.5', Grayish red (10R4/2), medium grained, well sorted, blocky, iron-oxide cement, moist.	Spoon refusal at 7.0'. Augered to 8.0'. Spoon refusal at 9.5'. Augered to 10.0'. Spoon refusal at 10.4'. 3" PVC casing inserted to 6.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
SS	1.0	1.0	34 80/6"				60.0 59.0					
SS	1.5	1.5	10 26 80/6"				57.5 57.0 56.8					
SS	0.4	0.4	80/5"					10				
TOTAL DEPTH = 10.4 FT.												

SS = SPLIT SPOON; NG = CORE BARREL; SITE
 BX = HAND AUGER; O = OTHER

Stepan Property

Last Update: 05-19-92 HOLE NO. R165



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
SITE				COORDINATES		14501	1 OF 1	R167					
Stepan Property				N 9770.0; E 10678.0		ANGLE FROM HORIZ BEARING							
BEGUN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)					
10-15-90	10-15-90	Hydro Group, Inc.		Soil Sentry		8"	11.4	2.8					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		TOTAL DEPTH					
9.1/64°		0	8	NA	67.0	/ NA		14.2					
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in			none			Robert Cook <i>[Signature]</i>							
SAMP. AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOBS	CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.						
SS	3.0	1.0	3 20 17 11					67.0			0.0 - 11.4 ft: FILL. 0.0 - 0.8 ft: Topsoil; Sandy silt; Moderate brown (5YR3/4), fine grained, moist. 0.8 - 4.7 ft: Sandstone Gravel; Dark reddish brown (10R3/4), blocky, iron-oxide cement.	Complete borehole number is B3890R167.	
SS	3.0	1.1	40 32 21 11					66.0				Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	3.0	1.5	12 3 3 6					65.0					
SS	2.0	1.3	1/13° 1 1					63.0			4.7 - 11.4 ft: Sludge; Light gray (N7) to Medium gray (N6) to Dark yellowish orange (10YR6/6), conglomerated mass, changing to Dark yellowish orange (10YR6/6) to Light brown (5YR4/6) conglomerated mass at 6.0'; clayey to silty, moist to wet at 6.0'.		
SS	2.0	1.3	1 1 3 3					61.5	5				
SS	2.0	1.7	3 3 3 27					61.0					
SS	1.6	1.1	2 8 12 60/1°					59.0			11.4 - 14.3 ft: Clayey SILT, (ML); Moderate reddish brown (10R4/6), silt -60%, clay -30%, some sandstone cobbles, low plasticity, moist; changing to sandstone at 14.0'; Dark reddish brown (10R3/4), fine to medium grained, micaceous, blocky, iron-oxide cement, moist.	Spoon refusal at 13.6'. Augured to 14.0'. Spoon refusal at 14.3'. 3" PVC casing inserted to 13.5' for gamma-logging.	
SS	0.3	0.3	60/1°					57.7					
								57.0	10				
								55.0					
								53.0					
								52.0					
TOTAL DEPTH = 14.3 FT.													
PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.													
* Core recovery refers to total rock & soil sample.													
Ground elevation estimated from site topographic map.													
Description & classification by visual examination of sample.													
Colors from "Rock-Color Chart" (GSA, 1948).													
SS = SPLIT SPOON; NQ = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE				Stepan Property		Last Update: 03-19-92		HOLE NO. R167	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.
				FUSRAP	14501	1 OF 1	R169
SITE		COORDINATES			ANGLE FROM HORIZ		BEARING
Stepan Property		N 9747.0; E 10884.0			Vertical		-----
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH
10-16-90	10-16-90	Hydro Group, Inc.	Soil Sentry	8"	3.1	4.4	7.5
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK	
5.4/72*	0	4	NA	64.0	/ NA	3.1/60.9	
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:			
140 lbs/30 in		NONE		Robert Cook <i>[Signature]</i>			
SOIL TYPE AND DIAM.	SOIL ADV. LEN. CORE	SAMPLE REC. CORE REC.	SOIL CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS	ELEV.	DEPTH
SS	2.0	0.6	33			64.0	
						63.4	
						62.0	
						60.9	
						60.5	
SS	2.0	1.8	4			60.0	
			10				
			10				
SS	1.8	1.4	10			58.2	
			27			58.0	
			50/8*				
						56.6	
						56.5	
				TOTAL DEPTH = 7.5 FT.			
<p>(template: NYND)</p> <p>DESCRIPTION AND CLASSIFICATION</p> <p>0.0 - 3.1 ft: Sandy SILT, (ML); Moderate brown (5YR3/4), silt -60%, sand -40%, moist.</p> <p>3.1 - 7.4 ft: Sandy SILT and SANDSTONE, (ML); Dark reddish sandstone cobbles between 4.0 - 7.1'; changing to sandstone at 7.1', fine grained, micaceous, iron-oxide cement; moist.</p>							
<p>NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.</p> <p>Complete borehole number is BS890R169.</p> <p>Borehole sampled and gamma-logged by TMA/Eberline Corp.</p> <p>Augered to 6.0'.</p> <p>Spoon refusal at 7.5'.</p> <p>3" PVC casing inserted to 5.8' for gamma-logging.</p> <p>PVC casing was removed after logging; hole was backfilled with drilling spoils.</p> <p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>							
SS = SPLIT SPOON; NQ = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE		Stepan Property	
				Last Update: 03-19-92		HOLE NO. R169	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R171				
SITE			COORDINATES			ANGLE FROM HORIZ. BEARING						
Stepan Property			N 9245.0; E 10688.0			Vertical -----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
10-16-90	10-16-90	Hydro Group, Inc.	Mobile B-80	8"	10.0	4.2	14.2					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
10.1/71*		0	8	NA	57.0	NA	10.0/17.0					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		None		Robert Cook <i>[Signature]</i>								
				(Template: NYLD)								
SAMP. TYPE AND DIAM.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOBS RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.						
SS	1.6	1.1	36 34 43				52.0 56.0			0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B389OR171.	
SS	1.9	1.7	14 17 34 80/6*				55.4 55.0			0.5 - 1.8 ft: Silty SAND (SM); Moderate reddish brown (10R4/6) changing to Grayish black (N2) at 1.2', fine grained, sand -8%, silt -30%, gravel -10%, some sandstone pebbles, pungent solvent odor below 1.2'. 2.0 - 3.7 ft: Silty GRAVEL (GM); Dusky brown (5YR3/2), gravel -40%, silt -40%, sand -30%, moist.	Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	1.0	4 8 9 8				53.3 53.0			4.0 - 10.0 ft: Silty SAND (SM); Dusky yellowish brown (10YR2/2) with 1" thick layer of medium dark gray (N4) changing to Pale reddish brown (10R5/4) at 6.0' and to Moderate reddish brown (10R4/6) at 8.0', fine to medium grained, sand -60%, silt -40%, moist.	Spoon refusal at 3.9'. Augered to 4.0'.	
SS	2.0	1.8	6 10 18 25				51.0					
SS	1.8	1.8	21 27 80/6*				49.3 49.0				Spoon refusal at 9.5'. Augered to 10.0'. Spoon refusal at 11.0'.	
SS	1.0	1.0	27 80/6*				47.5 47.0	10		10.0 - 14.3 ft: Silty SAND and SANDSTONE (SM); Moderate reddish brown (10R4/6) changing to Dark reddish brown (10R3/4) at 12.0', fine to medium grained, sand -40-70%, silt -40-50%; with sandstone pebbles and cobbles, micaceous, iron-oxide cement; moist to wet below 12.0 ft.	Augered to 13.0'. Spoon refusal at 13.9'. Augered to 14.0'. Spoon and auger refusal at 14.3'.	
SS	1.9	1.8	18 21 35 80/6*				45.0					
SS	0.2	0.2	80/6*				43.3 43.0 42.8				3" PVC casing inserted to 13.6' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilled spoils.	
TOTAL DEPTH = 14.3 FT.												
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												
SS = SPLIT SPOON; NG = CORE BARREL; SX = HAND AUGER; O = OTHER			SITE			Stepan Property			Last Update: 03-19-92		HOLE NO. R171	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	WOLE NO.							
				FUSRAP	14501	1 OF 1	R172							
SITE			COORDINATES		ANGLE FROM HORIZ		BEARING							
Stepan Property			N 9250.0; E 10828.0		Vertical		-----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH						
10-16-90	10-16-90	Hydro Group, Inc.	Mobile B-80		8"	4.0	10.0	14.0						
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK							
10.3/74"		0	7	NA	57.0	NA / NA	4.9/53.0							
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:									
140 lbs/30 in			NONE		Robert Cook									
SAND TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOCKS	CORE RECOVERY	LOSS G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
														(Template: NYLD)
SS	1.8	0.7	7	22				57.0				0.0 - 0.5 ft: ASPHALT, over sand and gravel.	Complete borehole number is B2490R172. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Spoon refusal at 8.9'. Augered to 10.0'. Spoon refusal at 11.9'. Augered to 12.0'. Spoon refusal at 13.9'. Augered to total depth of 14.0'. 5" PVC casing inserted to 13.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils. * Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).	
			22	44				55.8				0.5 - 2.1 ft: Gravelly, Sandy SILT, (GM); Moderate brown (10YR4/2) silt -50%, sand -25%, gravel -25%, fine to coarse grained, moist.		
SS	2.0	1.1	17	27				55.0				4.0 - 14.0 ft: Sandy SILT, (GM); Dark reddish brown (10R3/4) changing to Grayish red (5R4/2) at 10.0'; fine to medium, subangular to subrounded grains; silt -50-60%, sand -30-50%, some gravel, no plasticity, moist; very pungent solvent smell below 10.0'.		
			27	27				53.9						
SS	2.0	1.9	27	17				53.0						
			17	18				51.1						
			18	19				51.0						
SS	2.0	1.9	14	11				49.1						
			11	19				49.0						
			19	18				48.1						
SS	0.9	0.9	15	50/3"				47.0	10					
			7	28				45.1						
			28	34				45.0						
			34	50/5"				45.1						
SS	1.9	1.9	17	19				45.0						
			19	23				45.0						
			23	50/4"										
			50/4"											
TOTAL DEPTH = 14.0 FT.														
SS = SPLIT SPOON; NG = CORE BARREL; HX = HAND AUGER; O = OTHER														
SITE											Stepan Property		Last Update: 03-19-92	WOLE NO. R172



GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.

14501

SHEET NO.

1 OF 1

HOLE NO.

R174

SITE

Stepan Property

COORDINATES

N 9550.0; E 9900.0

ANGLE FROM HORIZ BEARING

Vertical

BEGIN

COMPLETED

DRILLER

Hydro Group, Inc.

DRILL MAKE AND MODEL

Mobile B-80

SIZE

8"

OVERBURDEN

10.8

ROCK (FT.)

0.2

TOTAL DEPTH

11.0

CORE RECOVERY (FT./X)

7.9/72"

CORE BOXES

SAMPLES

EL. TOP CASING

GROUND EL.

DEPTH/EL. GROUND WATER

DEPTH/EL. TOP OF ROCK

0

6

NA

57.0

NA

10.8/46.2

SAMPLE HAMMER WEIGHT/FALL

140 lbs/30 in

CASING LEFT IN HOLE: DIA./LENGTH

none

LOGGED BY:

Jon Novick

(Template: NYMD)

SAND TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME IN MIN.					
SS	2.0	1.4	100%				57.0			0.0 - 2.8 ft: FILL; Gravel; Brownish black (5YR2/1), Very light gray (N8) and Olive gray (5Y4/1), subangular, up to 1" in size.	Complete borohole number is B3890R174.
SS	2.0	1.0	50%				55.6 55.0 54.2 54.0			2.8 - 7.3 ft: Silty CLAY, (CL); Dark yellowish brown (10YR4/3) changing to Olive gray (5Y4/1) at 6.0' and to Moderate yellowish brown (10YR5/4) at 6.3', homogeneous; some gravel up to 1 cm between 6.0 - 6.3'; saturated.	Borohole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.2	60%				53.0 51.8 51.0			7.3 - 8.5 ft: SILT, (ML); Black (N1), homogeneous, saturated.	
SS	2.0	2.0	100%				49.8			8.5 - 10.8 ft: SAND, (SW); Dark yellowish brown (10YR4/3), fine to medium grained, friable, trace organics, wet.	Spoon refusal at 9.3'. Augered to 10.0'.
SS	1.3	1.3	12/17 80/4"				48.5 47.7 47.0			10.8 - 11.0 ft: SHALE; Dark reddish brown (10R4/6). fossils.	Spoon refusal at 11.0'. 3" PVC casing inserted to 9.3' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
SS	1.0	1.0	14-37 80/0"				46.2 46.0	10		TOTAL DEPTH = 11.0 FT.	* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; NG = CORE BARREL;
MX = HAND AUGER; O = OTHER

SITE

Stepan Property

Last Update:
03-19-92

HOLE NO.
R174



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
SITE										COORDINATES		14501	1 OF 1	R177
Stepan Property										N 9100.0; E 10000.0		Vertical	-----	
BEGUN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-17-90		10-17-90		Hydro Group, Inc.		Acker Soil Sentry		8"	3.7	0.3	4.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
3.6/90*		0	2	NA		51.0		3 / NA		3.7/47.3				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
140 lbs/30 in			none			Jon Novick <i>[Signature]</i>								
SOIL TYPE AND DIAM.	SOIL ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE RECOVERY	LOSS IN IN.	WATER PRESSURE		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
					G.P.H.	PRESS. P.S.F.								
SS	2.0	1.6	80				51.0				0.0 - 0.1 ft: FILL: wood chips.	Complete borehole number is B3890R177.		
							50.8				0.1 - 3.7 ft: Silty CLAY, (CL) Dusky brown (5YR3/3) to Moderate brown (5YR3/4 - 4/4), with roots, some gravel up to 3", some organics below 2.0', decreasing silt and increasing clay towards base, compressible, dry.			
SS	2.0	2.0	100				49.4				3.7 - 4.0 ft: SILTSTONE; Moderate brown (5YR4/4), homogeneous, dense.	Borehole sampled and gamma-logged by TMA/Eberline Corp.		
							49.0							
							47.3					Augured to total depth of 4.0'. 3" PVC casing inserted to 4.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.		
							47.0							
										TOTAL DEPTH = 4.0 FT.				

(Template: NYSD)

* Core recovery refers to total rock & soil sample.

Ground elevation estimated from site topographic map.

Description & classification by visual examination of sample.

Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; NO = CORE BARREL;
 MX = HAND AUGER; O = OTHER

SITE

Stepan Property

Last Update: 03-19-92

HOLE NO. R177



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R184				
SITE			COORDINATES			ANGLE FROM HORIZ/BEARING						
Stepan Property			N 9450.0; E 10950.0			Vertical -----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-22-90	10-22-90	Hydro Group, Inc.	Mobile B-80		8"	8.9	3.1	12.0				
CORE RECOVERY (FT./X)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
7.1/59"		0	6	NA	58.0	3' / NA		8.9/49.1				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 lb			NONE			Robert Cook <i>[Signature]</i>						
SAMP. AND DIA.	SAMP. LEN.	REC. CORE	SAMPLE BLOWS	RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS	G.P.M.	PRESS. TIME					
								58.0				
								57.7			0.0 - 1.0 ft: ASPHALT; over sand and gravel.	Complete borehole number is B38PQR184.
SS	1.0	0.9	7					57.0			1.0 - 4.7 ft: FILL.	Augered through asphalt to 1.0'.
			10					56.1			1.0 - 2.8 ft: Gravel; Moderate brown (5YR3/4) changing to Dark reddish brown (10R3/4) at 2.9', well graded, with concrete fragments, dry.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	1.0	0.6	17					56.0			4.0 - 4.3 ft: Silty Sand; Grayish red (10R4/2), low plasticity, moist.	
			80/6"					55.5				
								54.0			4.3 - 4.7 ft: Gravel; Light brown (5YR3/6) to Grayish black (N2), with coal -10-20%.	Spoon refusal at 3.0'.
SS	3.0	2.0	2					53.3			4.7 - 8.3 ft: Silty CLAY, (CL); Moderate brown (5YR3/4), medium plasticity, moist.	Augered to 4.0'.
			1					52.7			8.3 - 8.9 ft: Sandy to Clayey SILT, (ML); Light brown (5YR3/6) changing to Moderate brown (5YR4/4) at 8.0', silt -70%, sand -10-30%, clay -10-30%, gradational increase of clay and decrease of sand content with depth; low to medium plasticity, plasticity increasing with clay content; moist to wet; layer of sand between 8.8 - 8.9', medium rounded to subangular grains, silt <10%.	
			3					51.7				
SS	2.0	0.3	4					50.0				
			8					49.1				
			8					49.1				
			12					46.6				
SS	3.0	2.0	6					46.0				
			17									
			24									
			19									
SS	2.0	1.4	25									
			28									
			19									
			38									
TOTAL DEPTH = 12.0 FT.											Augered to total depth of 12.0'.	
											3" PVC casing inserted to 10.0' for gamma-logging.	
											PVC casing was removed after logging; hole was backfilled with drilling spoils.	
											* Core recovery refers to total rock & soil sample.	
											Ground elevation estimated from site topographic map.	
											Description & classification by visual examination of sample.	
											Colors from "Rock-Color Chart" (GSA, 1948).	
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER			SITE			Stepan Property		Last Update: 03-19-92		HOLE NO. R184		



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.		
				FUSRAP	14501	1 OF 1	R185		
SITE		COORDINATES			ANGLE FROM HORIZ				
Stepan Property		N 9307.0; E 11093.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
10-22-90	10-22-90	Hydro Group, Inc.	Mobile B-80	8"	14.0	0.0	14.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK		
9.4/67%		0	7	NA	56.0	NA	NA/NA		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:					
140 lbs/30 in		none		Robert Cook					
SOIL TYPE	SOIL ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE LOSS	WATER PRESSURE TESTS	ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					56.0			(Template: NYND)	
SS	1.5	0.8	6 4 0		55.8			0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R185.
SS	2.0	1.4	1 3 13 16		54.7			0.5 - 4.6 ft: FILL, Sandy SILT; Moderate brown (5YR3/4), fine grained, silt -80%, sand -40%, concrete fragments below 3.1', no plasticity, moist.	Augered through asphalt to 0.5'.
SS	2.0	0.8	4 2 2 7		54.0				Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.9	8 6 4 7		52.6			4.6 - 8.8 ft: Sandy to Clayey SILT, (ML); Moderate brown (5YR3/4), fine grained, silt -60%, sand and clay -40%; clay content increasing and color change to Olive gray (5Y4/1) mixed with Grayish black (N2) at 7.0'; sand content increasing and color change to Moderate brown (5YR3/4) at 7.3', fine grained; clay content increasing and color change to Grayish black (N2) at 8.5'; low plasticity, moist.	
SS	2.0	1.3	8 7 4 9		51.4			8.8 - 9.3 ft: Clayey GRAVEL, (GC); Brownish black (5YR3/1), fine to coarse grained, no plasticity, moist.	
SS	2.0	1.7	4 17 28 33		50.0	10		10.0 - 11.4 ft: Silty SAND, (SM); Olive gray (5Y4/1) changing to Moderate brown (5YR4/4) at 10.4', fine grained, well sorted, sand -60-80%, silt -20-40%, no plasticity, moist.	
SS	2.0	1.5	17 19 25 30		48.1			11.4 - 11.7 ft: Silty CLAY, (CL); Moderate yellowish brown (10YR5/4), very fine grained, low plasticity, moist.	Augered to total depth of 14.0'.
					48.0			11.7 - 12.0 ft: Silty SAND, (SM); Moderate brown (5YR4/4), very fine to coarse grained, well graded, no plasticity, moist.	3" PVC casing inserted to 13.0' for gamma-logging.
					47.2			12.0 - 13.5 ft: Silty CLAY, (CL); Moderate yellowish brown (10YR5/4), very fine grained, low plasticity, moist.	PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
					46.7			13.5 - 13.8 ft: Silty CLAY, (CL); Moderate yellowish brown (10YR5/4), very fine grained, low plasticity, moist.	
					46.0			TOTAL DEPTH = 14.0 FT.	
					44.6				* Core recovery refers to total rock & soil sample.
					44.3				Ground elevation estimated from site topographic map.
					44.0				Description & classification by visual examination of sample.
					42.7				Colors from "Rock-Color Chart" (GSA, 1948).
					42.5				
					42.0				
SS = SPLIT SPOON; NG = CORE BARREL; MX = HAND AUGER; O = OTHER		SITE		Stepan Property		Last Update: 03-19-92		HOLE NO. R185	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.			
SITE				COORDINATES	14501	1 OF 1	R189			
Stepan Property				N 9420.0; E 11095.0	ANGLE FROM HORIZ BEARING					
				Vertical			-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
10-24-90	10-24-90	Hydro Group, Inc.	Mobile B-80	8"	9.0	2.0	11.0			
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
7.4/67*	0	7	NA	57.0	NA	9.0/48.0				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:						
140 lbs/30 in		none		Robert Cook <i>[Signature]</i>						
SOIL TYPE AND DIAM.	SOIL COR. LEN. CORE	SAMPLE REC. CORE REC.	SOIL COR. RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.H.	PRESS. P.S.F.					
SS	1.6	1.3	11 13 16			57.0 56.5			0.0 - 0.5 ft: ASPHALT, over sand and gravel.	Complete borehole number is BS890R189. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Spoon refusal at 9.5'. Augered to 10.0'. Spoon refusal at 10.5'. Additional spoon attempted; refusal at 11.0'. Augered to total depth of 11.0'. 3" PVC casing inserted to 10.5' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils. * Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	2.0	1.7	22 11 10 8			55.3 55.0			0.5 - 0.8 ft: FILL; Sandy Silt; Moderate brown (5YR3/4) changing to Moderate reddish brown (10R4/6) at 0.9', to Grayish black (N2) at 3.5' and to Dusky brown (5YR2/2) at 4.0'; very fine to coarse grained, silt -70%, sand -20%, coal -10%, minor gravel, no plasticity, moist.	
SS	2.0	1.1	7 10 34 41			53.5 53.0			0.8 - 0.9 ft: Clayey SILT, (ML); Moderate brown (5YR4/4), fine grained, silt -70%, clay -30%, low plasticity, moist.	
SS	2.0	0.8	24 9 7 7			51.0 50.7 50.3 50.2			0.9 - 1.0 ft: GRAVEL, (GW); Dark reddish brown (10R3/4), sandstone, blocky.	
SS	1.5	1.5	10 14 50/6"			49.0			1.0 - 1.5 ft: Silty SAND, (SM); Moderate yellowish brown (10YR5/4), very fine to fine grained, well sorted, sand -40%, silt -40%, moist.	
SS	0.5	0.5	50/6"			48.0			1.5 - 11.0 ft: Clayey SILT, (ML); Moderate reddish brown (10R4/6), mottled; very fine grained, silt -60%, clay -40%, stiff, moist; changing to sandstone at 10.0', Dark reddish brown (10R3/4), micaceous, blocky, iron-oxide cement.	
SS	0.5	0.5	50/6"			47.5				
SS	0.5	0.5	50/6"			47.0	10			
						46.0			TOTAL DEPTH = 11.0 FT.	

SS = SPLIT SPOON; NG = CORE BARREL;
 MX = HAND AUGER; O = OTHER

SITE
 Stepan Property

Last Update:
 03-19-92 HOLE NO.
 R189



GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	HOLE NO.	R193
SITE			COORDINATES			ANGLE FROM HORIZ			BEARING		
Stepan Property			N 9480.0; E 11095.0			Vertical			-----		
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
10-25-90	10-25-90	Hydra Group, Inc.	Mobile B-80	8"	6.0	4.0	10.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
6.6/66"		0	5	NA	57.0	NA / NA	6.0/51.0				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>						

SAMP. AND DIA.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOBS	RECOVERY	LOSS IN G.P.M.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SHELF	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
						PRESS. P.S.I.	TIME MIN.						
								57.0				(Template: NYLD)	
SS	1.6	1.3	4	0				58.3				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R193.
								55.2				0.5 - 2.3 ft: FILL; Sandy SILT; Moderate brow. (8YR3/4), silt -70%, sand -30%; with coal and slag, Black (N1), below 1.3'.	Augered through asphalt to 0.5'.
SS	2.0	0.6	6	0				55.0				2.3 - 5.7 ft: Sandy SILT, (ML); Moderate brown (8YR4/4), fine grained, silt -70%, sand -30%, low plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.7	4	12				51.3					
								51.0					
SS	1.0	1.0	19	50/6"				50.0				6.0 - 10.0 ft: Sandy SILT (ML); Moderate reddish brown (10R4/6) changing to Dark reddish brown (10R3/4) at 7.0', very fine to fine grained, silt -60%, sand -40%, some sandstone cobbles.	Spoon refusal at 7.0'.
SS	2.0	2.0	17					49.0					Augered to 8.0'.
								47.0	30			TOTAL DEPTH = 10.0 FT.	Augered to total depth of 10.0'.
													3" PVC casing inserted to total depth for gamma-logging.
													PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
													* Core recovery refers to total rock & soil sample.
													Ground elevation estimated from site topographic map.
													Description & classification by visual examination of sample.
													Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; NG = CORE BARREL;
 HX = HAND AUGER; 0 = OTHER

SITE

Stepan Property

Last Update:
03-19-92

HOLE NO.
R193



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.		
				FUSRAP		14501	1 OF 1	R231		
SITE			COORDINATES			ANGLE FROM HORIZ BEARING				
Stepan Property			N 9781.0; E 10411.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
11-8-90	11-8-90	Hydro Group, Inc.	Mobile B-80	8"	1.5	4.5	6.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
4.9/82%		0	3	NA	63.0	NA	1.5/1.5			
SAMPLE NUMBER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs/30 in			none			Robert Cook <i>[Signature]</i>				
SAMP. TYPE AND DIAH.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.F.					
SS	1.6	1.3	18 17 25			63.0 62.8 61.8 61.0			0.0 - 0.5 ft: ASPHALT; over sand and gravel. 0.5 - 1.5 ft: SAND, (SP); Moderate brown (5YR4/4), fine grained, well sorted, no plasticity, moist. 1.5 - 6.0 ft: SANDSTONE; Dark reddish brown (10R5/4), weathered, blocky, iron-oxide cement, micaceous, moist.	Complete borehole number is B3890R231. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	3.0	1.6	20 25 22 26			59.4 59.0				
SS	3.0	2.0	23 26 33 28			57.0			TOTAL DEPTH = 6.0 FT.	Augered to total depth of 6.0'. 3" PVC casing, inserted to 5.6' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>										
SS = SPLIT SPOON; NO = CORE BARREL; HX = HAND AUGER; O = OTHER			SITE			Stepan Property			Last Update: 03-19-92 HOLE NO. R231	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE				COORDINATES	14501	1 OF 1	R232						
Stepan Property				N 9700.0; E 10090.0	ANGLE FROM HORIZONTAL		BEARING						
					Vertical		-----						
REG. NO.	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH						
11-8-90	11-8-90	Hydro Group, Inc.	Mobile B-80	8"	8.9	3.1	12.0						
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
8.0/67*		0	6	NA	58.0	NA	8.9/49.1						
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in			BODE		Robert Cook								
SAMP. TYPE AND DIA.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SPLITS	% CORE RECOVERY	WATER TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.H.	PRESS. P.S.I.	TIME IN MIN.						
SS	2.0	1.8	10					58.0			0.0 - 3.4 ft: FILL.	Complete borehole number is B3890R232. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
			27					56.4			0.0 - 3.4 ft: Sand, silt, sandstone, slag and coal, Grayish black (N2), fine grains to gravel, no plasticity.		
			28					56.0			3.4 - 2.9 ft: Slag, Black (N2) to White (N9), with Light brown (8YR5/6).		
			18					54.6			2.9 - 3.4 ft: Sludge; Very light gray (N8), very fine grained, no plasticity, dry.		
			13					54.0			4.0 - 5.1 ft: SILT, (ML); Dark yellowish brown (10YR4/2), very fine grained, wet.		
			7					52.9					
SS	2.0	1.1	1/12*					52.0			6.0 - 8.9 ft: Clayey SILT, (ML); Light brown (8YR5/6), fine grained, silt -60-80%, clay -20%, sand -0-20%, low plasticity, moist.		
			2					50.6					
			4					50.0					
			9					49.1					
SS	2.0	1.6	8					48.4			8.9 - 12.0 ft: Sandy SILT, (ML); Dark reddish brown (10R3/4), fine grained, low plasticity, moist.		
			7					48.0					
			13					47.1					
SS	2.0	0.9	6					46.0					
			12										
			18										
			34										
TOTAL DEPTH = 12.0 FT.											Augered to total depth of 12.0'. 3" PVC casing inserted to 11.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.		
											* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).		
SS = SPLIT SPOON; N9 = CORE BARREL; NA = HAND AUGER; 0 = OTHER				SITE				Stepan Property		Last Update: 03-19-92		HOLE NO. R232	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP	14501	1 OF 1	R235					
SITE		COORDINATES			ANGLE FROM HORIZ		BEARING					
Stepan Property		N 9700.0; E 10120.0			Vertical		-----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
11-9-90	11-9-90	Hydro Group, Inc.	Mobile B-80	8"	9.2	0.8	10.0					
CORE RECOVERY (FT./X)	CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
6.9/69"	0	5	NA	58.0	NA / NA	9.2/48.8						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN MOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>							
SAMP. TYPE	SAMP. DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. LOSS % CORE RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESS. P.S.I.						
							58.0				(Template: NYUD)	
							57.8				0.0 - 0.5 ft: ASPHALT; over sand and gravel.	Complete borehole number is B3890R235.
SS	1.5	1.2	40				56.3				0.5 - 4.2 ft: FILL.	Augered through asphalt to 0.5'.
			38				56.0				0.5 - 1.5 ft: Gravel, sand, silt and slag, Grayish black (N2).	Borehole sampled and gamma-logged by TMA/Eberline Corp.
			36								1.5 - 2.5 ft: Sludge, Very light gray (N8), very fine grain, no plasticity, moist.	
SS	2.0	1.6	14								2.5 - 3.5 ft: Slag, Black (N1) to White (N9) with Light brown (8YR5/6), moist.	
			16								3.5 - 4.2 ft: Sludge, Very light gray (N8) to Pinkish gray (8YR5/2), very fine grained, no plasticity, moist.	
			12				54.4				4.2 - 6.7 ft: Clayey SILT, (ML); Grayish brown (8YR5/2) to Moderate yellowish brown (10YR5/4) below 6.0', silt -70%, clay -30%, low plasticity, moist.	
			8				54.0					
SS	2.0	0.7	1				53.9					
			2				53.3					
			1									
			1									
SS	2.0	1.6	2				52.0				6.7 - 9.2 ft: Sandy SILT, (ML); Moderate brown (8YR4/4), fine grained, silt -60%, sand -30%, clay -10%, some sandstone cobbles, no plasticity, moist; mottled with up to 2" layers below 8.0'.	
			6				51.3					
			17				50.4					
			18				50.0					
SS	2.0	1.8	9								9.2 - 9.3 ft: Sandy SILT, (ML); Dark reddish brown (10R5/4), very fine grained, no plasticity, moist; Sandstone below 9.7', black iron-oxide cement.	Augered to total depth of 10.0'.
			16				48.8					
			18				48.2					
			23				48.0	10			TOTAL DEPTH = 10.0 FT.	3" PVC casing inserted to 10.0' for gamma-logging.
												PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
												* Core recovery refers to total rock & soil sample.
												Ground elevation estimated from site topographic map.
												Description & classification by visual examination of sample.
												Colors from "Rock-Color Chart" (GSA, 1943).
SS = SPLIT SPOON; NO = CORE BARREL;		SITE		Stepan Property		Last Update: 03-19-92		HOLE NO. R235				
MX = HAND AUGER; O = OTHER												



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	WOLE NO.				
SITE Stepan Property				COORDINATES N 9720.0; E 10120.0	14501	1 OF 1	R237				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
11-12-90	11-12-90	Hydro Group, Inc.	Mobile B-80	8"	6.9	3.1	10.0				
CORE RECOVERY (FT./X)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
5.0/50"	0	5	NA	58.0	3' / NA	6.9/51.1					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:							
140 lbs/30 in		None		Robert Cook <i>[Signature]</i>							
SAMP AND DIAM.	SAMP. ADV. LEN CORE	SAMP. REC. CORE REC.	SAMP. RECOVERY	WATER PRESSURE LOGS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.					
SS	1.8	1.2	8 18 13				58.0 57.8		0.0 - 0.5 ft: ASPHALT; over sand and gravel. 0.5 - 2.5 ft: FILL.	Complete borehole number is B3890R237. Augered through asphalt to 0.5'. Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	1.6	10 10 7 4				56.3 56.0		0.5 - 2.9 ft: Gravel and slag; Grayish black (N2), White (N9), and Light Brown (8YR5/6). 2.9 - 3.5 ft: Sludge; Very pale orange (10YR5/2), very fine grained, silty, no plasticity, moist; mixed with gravel and slag. Medium dark gray (N4) to White (N9) and Grayish black (N2) below 3.0'.		
SS	2.0	0.3	1 1/12" 3				54.5 54.0 53.7		4.0 - 6.9 ft: Silty SAND (SM); Moderate yellowish brown (10YR5/4), medium grained, sand -70%, silt -30%, no plasticity, moist to wet.		
SS	2.0	1.4	1 1 9				52.0 51.1 50.6		6.9 - 8.6 ft: Sandy SILT (ML); Dark reddish brown (10R3/4), fine grained, silt -60%, sand -40%, trace mottled light brown (8YR5/6) clayey silt, moist.		
SS	2.0	0.6	9 10 11 30				50.0 49.4				
							48.0	10	TOTAL DEPTH = 10.0 FT.		Augered to total depth of 10.0'. 3" PVC casing inserted to 10.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.
SS = SPLIT SPOON; NG = CORE BARREL; HX = HAND AUGER; O = OTHER											
SITE Stepan Property							Last Update: 03-19-92		HOLE NO. R237		



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.
SITE Stepan Property				COORDINATES N 9710.0; E 10150.0	14501	1 OF 1	R238
BEGUN 11-12-90	COMPLETED 11-12-90	DRILLER Hydro Group, Inc.	DRILL MAKE AND MODEL Mobile B-80	SIZE 8"	OVERBURDEN 7.5	ROCK (FT.) 1.0	TOTAL DEPTH 8.5
CORE RECOVERY (FT./%) 6.1/72*	CORE BOXES 0	SAMPLES 5	EL. TOP CASING NA	GROUND EL. 58.0	DEPTH/EL. GROUND WATER NA	DEPTH/EL. TOP OF ROCK 7.5/50.5	
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in	CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: none			Robert Cook <i>[Signature]</i>			
(Template: NY1D)							
SAMP. TYPE AND DIA.	SAMP. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS	LOSS IN G.P.H.	WATER PRESSURE TESTS	ELEV.	DEPTH
SS	1.6	1.4	8 10 17			58.0 57.8 56.6 56.0 55.0 54.0 53.8 53.1	0.0 - 0.5 ft: ASPHALT; over sand and gravel. 0.5 - 4.3 ft: FILL: Various colors, Grayish black (N3), White (N6), Dusky brown (5YR3/3), Pale reddish brown (10R5/4) and Very pale orange (10YR5/2); mixture of gravel, silt, clay, silt, and sludge, low plasticity.
SS	2.0	1.0	11 10 4			52.4 52.0	4.3 - 4.9 ft: Sandy SILT, (ML); Grayish brown (5YR3/2), very fine to fine grained, silt -70%, sand -30%, low plasticity, moist. 4.9 - 6.0 ft: Silty CLAY, (CL); Light brown (5YR5/6), very fine grained, clay -60%, silt -40%, high plasticity, wet.
SS	2.0	1.6	1 6 12 30			60.5 60.4 60.0 60.0	6.0 - 7.5 ft: Clayey SILT, (ML); Moderate brown (5YR4/4), very fine grained, silt -80%, clay -20%, low plasticity, moist. 7.5 - 8.5 ft: SANDSTONE; Dark reddish brown (10R3/4), very fine grained, micaceous, blocky, iron-oxide cement.
SS	0.5	0.5	50/6*				TOTAL DEPTH = 8.5 FT.
<p>Complete borehole number is B3890R238.</p> <p>Augered through asphalt to 0.5'.</p> <p>Borehole sampled and gamma-logged by TMA/Eberline Corp.</p> <p>Augered to 8.0'. Spoon refusal at 8.5'. 8" PVC casing inserted to 8.0' for gamma-logging.</p> <p>PVC casing was removed after logging and hole was backfilled with drilling spoils.</p> <p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>							
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE		Stepan Property Last Update: 03-19-92	
						HOLE NO. R238	



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	MOLE NO.			
SITE Stepan Property										COORDINATES N 9477.0; E 10201.0	14501	1 OF 1	R249			
BEGUN 11-14-90										COMPLETED 11-14-90	DRILLER Hydro Group, Inc.	DRILL MAKE AND MODEL Mobile B-80	SIZE 8"	OVERBURDEN 1.2	ROCK (FT.) 2.8	TOTAL DEPTH 4.0
CORE RECOVERY (FT./%) 3.2/80%										CORE BOXES/SAMPLES 0 2	EL. TOP CASING NA	GROUND EL. 58.0	DEPTH/EL. GROUND WATER NA / NA	DEPTH/EL. TOP OF ROCK 1.2/56.8		
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in										CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY: Robert Cook				
SOIL TYPE AND DIAM.	SAMP. LEN. CORE	SAMPLE REC. CORE REC.	SOIL CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.				
					PRESS. P.S.F.	TIME MIN.										
SS	2.0	1.8	8 12 13 15				58.0				0.0 - 1.3 ft: FILL; Sandy silt, Moderate brown (5YR5/4) changing to silt and silt, Grayish black (N2) and Very pale orange (10YR4/3) at 0.4' fine to coarse grained.	Complete borehole number is B3890R349.				
SS	2.0	1.7	6 7 15 20				56.8 56.1 56.0				1.3 - 3.7 ft: Sandy SILT, (ML); Dark reddish brown (10R3/4), fine grained, no plasticity, moist; with Sandstone, blocky, micaceous, very fine grained at 3.4'.	Borehole sampled and gamma-logged by TMA/Eberline Corp.				
										TOTAL DEPTH = 4.0 FT.		Augered to total depth of 4.0'. 3" PVC casing inserted to 3.6' for gamma-logging. PVC casing was removed after logging; hole was backfilled with drilling spoils.				

(Template: NYLD)

SS = SPLIT SPOON; NG = CORE BARREL; PIX = HAND AUGER; 0 = OTHER

SITE: Stepan Property

Last Update: 03-19-92

MOLE NO. R249



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.			
SITE				COORDINATES		14501	1 OF 1	R256			
Stepan Property				N 9640.0; E 9800.0		Vertical		-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
12-4-90	12-4-90	Hydro Group, Inc.	Soil Sentry		8"	8.0	2.0	10.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
6.1/61*		0	5	NA	57.0	5' / 5' ATD	8.0/49.0				
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY:									
140 lbs/30 in		none			Stephen Knuttel <i>[Signature]</i>						
SOIL TYPE AND DIAM.	SPLIT. BOX. LEN. CORE	SAMPLE REC. CORE REC.	SPLIT. BOXES / CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.I.	TIME MIN.					
SS	2.0	1.4	8 4 4 10				57.0		(Template: NYLD)		
SS	0.9	0.2	45 50/5*				55.8 55.0 54.0		0.0 - 2.3 ft: FILL; Silty Sand mixed with slag; sand is Very dusky red (10R2/3), loose, wet; slag is Black (N1) with White (N9), salt and pepper texture, coarse sand to fine gravel size, hard, loose.	Complete borehole number is B3890R256. Borehole sampled and gamma-logged by TMA/Eberline Corp. Spoon refusal at 2.3'.	
SS	2.0	1.6	8 7 7 16				53.0 52.3 51.4 51.0		4.0 - 4.9 ft: SAND, (SW); Moderate brown (5YR4/4), fine grained, moderately sorted, moderately firm, wet. 4.9 - 7.8 ft: Gravelly, Silty SAND, (SM); Blackish red (5R2/2) with areas of Black (N1); sand is fine grained, poorly sorted; gravel is sandstone, content decreasing with depth; firm, moist.	Augered to 4.0'.	
SS	2.0	1.6	8 6 10 16				49.4 49.0				
SS	2.0	1.3	6 11 21 25				47.7 47.0		8.0 - 9.3 ft: Gravelly, Silty SAND, (SM); Dark reddish brown (10R3/4) with some Blackish red (5R2/2); sand is fine grained, poorly sorted, gravel is sandstone, firm, moist.	Augered to 8.0'.	
TOTAL DEPTH = 10.0 FT.										Augered to total depth of 10.0'. 3" PVC casing inserted to 8.5' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.	
* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).											
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE				Stepan Property		Last Update: 03-19-92	
								HOLE NO.		R256	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
Stepan Property				FUSRAP		14501	1 OF 1	R262				
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING				
Stepan Property			N 9550.0; E 10100.0			Vertical		-----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
12-6-90	12-6-90	Hydro Group, Inc.	Soil Sentry		3.5"	2.7	4.4	7.1				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
3.1/44%		0	4	NA	59.0	NA		2.7/56.3				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:						
140 lbs/30 in			NONE			Stephen Knuttel						
SAMP TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS	% CORE RECOVERY	WATER PRESSURE		ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESS. P.S.F.						
							59.0					(Template: NYWD)
SS	2.0	1.3					58.5				8.0 - 8.7 ft: CONCRETE.	Complete borehole number is B3490R363.
							57.5				0.7 - 1.7 ft: Sandy GRAVEL, (GS); Dark gray (NS) to Black (N1), loose, moist.	Cut concrete with 6" core barrel to 0.7'.
							57.0				1.7 - 2.0 ft: Gravelly, Silty SAND, (SM); Dusky red (8RS/4), sand is fine to medium grained, poorly sorted, firm, slightly moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	0.9					56.3				2.7 - 7.0 ft: Gravelly, Silty SAND, (SM); Dark reddish brown (10RS/4), sand is fine grained, moderately sorted; gravel is sandstone, angular; firm, moist.	
							55.4					
							54.3					
SS	2.0	0.6					53.7					
							52.3					
							52.0					
SS	0.4	0.3		50/5*			51.9				TOTAL DEPTH = 7.1 FT.	Spoon refusal at 7.1'. Borehole enlarged by driving 3.5" OD split spoon to depth.
												PVC casing could not be inserted below 5.0'.
												PVC casing removed and gamma-logging completed in open hole.
												Hole was backfilled with drilling spoils.
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												
SS = SPLIT SPOON; NO = CORE BARREL; BX = HAND AUGER; O = OTHER			SITE			Stepan Property		Last Update: 03-19-92		HOLE NO. R262		



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	MOLE NO.					
SITE Stepan Property				COORDINATES N 9850.0; E 10444.0	FUSRAP	14501	1 of 1 R263					
BEGUN 12-6-90	COMPLETED 12-6-90	DRILLER Hydro Group, Inc.	DRILL MAKE AND MODEL Mobile B-80	SIZE 8"	OVERBURDEN 0.4	ROCK (FT.) 5.6	TOTAL DEPTH 6.0					
CORE RECOVERY (FT./%) 4.3/72*	CORE BOXES 0	SAMPLES 3	EL. TOP CASING NA	GROUND EL. 66.0	DEPTH/EL. GROUND WATER NA	DEPTH/EL. TOP OF ROCK 0.4/5.6						
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in		CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: BODE			Robert Cook							
SAMPLE TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS	CORE RECOVERY	LOSS IN G.P.H.	WATER PRESSURE TESTS	ELEV.	DEPTH	GRAPHICS	SAMPLE	(Template: NYMO)	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
											DESCRIPTION AND CLASSIFICATION	
SS	2.0	1.8	4				66.0 65.6				0.0 - 0.4 ft: FILL, Grass, sand, silt, cinders and slag.	Complete borehole number is B3890R263.
SS	2.0	0.9	1				64.4 64.0				0.4 - 5.6 ft: Clayey, Sandy SILT, (ML); Moderate reddish brown (10R4/6), very fine to fine grained, silt -80%, sand -10%, clay -10%, moist; very hard, trace sandstone, mostly weathered, below 4.0'.	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.8	6				63.1 62.0					
			21				60.2 60.0				TOTAL DEPTH = 6.0 FT.	Augered to total depth of 6.0'. 3" PVC casing inserted to 5.0' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.
			27									* Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS = SPLIT SPOON; NQ = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE Stepan Property		Last Update: 03-19-92		MOLE NO. R263				



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
SITE				COORDINATES	ANGLE FROM HORIZ		BEARING					
Stepan Property				N 9,172.0; E 10,068.0	Vertical		-----					
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
12-12-90	12-12-90	Hydro Group, Inc.	Mobile B-80	8"	9.6	1.9	11.5					
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
8.7/76"	0	7	NA	55.0	3' / NA 3' / NA	9.6/45.4						
SAMPLE NUMBER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SPOON CORE RECOVERY	LOSS IN G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.1	3 4 5 10				55.0				0.0 - 1.1 ft: FILL; Sandy silt; Moderate brown (5YR3/4); with gravel, cinders, coal and slag, Grayish black (N2) below 1.0'; moist.	Complete borehole number is B3890R279.
SS	2.0	1.6	5 4 5				53.0 52.2 51.4 51.0				2.0 - 2.5 ft: SILT, (ML); Bluish white (5B5/1), very fine grained, silt -80%, clay -20%, no plasticity, moist (Sludge?).	Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.7	2 4 7 8				50.4				2.5 - 4.6 ft: Silty SAND, (SM); Grayish black (N2); fine to medium, subrounded grains, sand -80%, silt -30%, solvent odor, no plasticity, moist.	
SS	2.0	1.6	13 18 21 36				49.3 49.0 48.2				4.6 - 6.5 ft: Sandy SILT, (ML); Grayish black (N2). Olive gray (5Y4/1) interbedded layers 1/4" at 5.5'; fine to medium grained, silt -70%, sand -30%, low plasticity, moist.	
SS	1.0	1.0	18 50/6"				47.4 47.0				6.5 - 9.6 ft: Silty SAND, (SM); Black (N1), sand -70%, silt -30%, no plasticity, moist to wet at 9.0'.	Spoon refusal at 9.0'. Augered to 9.0'.
SS	1.0	1.3	17 10 11 39				45.4 44.8	10			9.6 - 11.5 ft: Sandy SILT, (ML); Dark reddish brown (10R3/4), fine to medium grained, silt -60%, sand -40%, no plasticity; changing to Sandstone, fine grained, weathered, blocky, brittle, iron-oxide cement, at 11.0'.	Augered to 11.0'. Spoon refusal at 11.5'.
SS	0.5	0.5	50/6"				44.0 43.5				TOTAL DEPTH = 11.5 FT.	3" PVC casing inserted to 10.5' for gamma-logging. PVC casing was removed after logging and hole was backfilled with drilling spoils.
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												

SS = SPLIT SPOON; NO = CORE BARREL;
MX = HAND AUGER; O = OTHER

SITE

Stepan Property

Last Update: 03-19-92

HOLE NO. R279



GEOLOGIC DRILL LOG

PROJECT: FUSRAP
 JOB NO.: 14501
 SHEET NO.: 1 OF 1
 HOLE NO.: R280

SITE: Stepan Property
 COORDINATES: N 9640.0; E 10100.0
 ANGLE FROM HORIZ: Vertical
 BEARING: -----

BEGUN: 12-12-90
 COMPLETED: 12-12-90
 DRILLER: Hydro Group, Inc.
 DRILL MAKE AND MODEL: Mobile B-80
 SIZE: 8"
 OVERBURDEN: 11.1
 ROCK (FT.): 2.9
 TOTAL DEPTH: 14.0

CORE RECOVERY (FT./%) : 7.2/51%
 CORE BOXES : 0
 SAMPLES : 7
 EL. TOP CASING : NA
 GROUND EL. : 58.0
 DEPTH/EL. GROUND WATER : 8' / NA
 DEPTH/EL. TOP OF ROCK : 11.1/46.9

SAMPLE HAMMER WEIGHT/FALL : 140 lbs/30 in
 CASING LEFT IN HOLE: DIA./LENGTH : NONE
 LOGGED BY: Robert Cook

SOIL TYPE AND DIAM.	SPLIT SP. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOCKS	% CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.M.	PRESS. P.S.F.	TIME MIN.						
								58.0				0.0 - 1.0 ft: CONCRETE.	Complete borehole number is B3890R280. Cored through concrete to 1.0'. Borehole sampled and gamma-logged by TMA/Eberline Corp. Spoon refusal at 13.9'. Augered to total depth of 14.0'. 3" PVC casing inserted to 13.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils. * Core recovery refers to total soil & rock sample. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	1.0	1.0	21	18				57.0				1.0 - 2.5 ft: FILL, Gravel, clinders, slag and brick fragments; Grayish black (N3) changing to Light gray (N6) at 4.0', fine to very coarse grains, angular to subrounded grains below 4.0'.	
SS	2.0	1.0	12	10				55.0					
SS	3.0	0.6						54.0					
								53.4					
SS	2.0	0.7						53.0					
								51.5					
								51.3					
SS	2.0	1.4	9	11				50.0				6.5 - 6.7 ft: Silty CLAY (CL); Moderate brown (5YR4/4), very fine grained, clay -70%, silt -30%, high plasticity, wet.	
								49.2				8.0 - 8.2 ft: Gravelly SILT (GM); Moderate brown (5YR4/4), very fine grains to pebbles up to 1 cm, wet.	
								48.6				8.8 - 11.1 ft: Silty SAND (SM); Moderate yellowish brown (10YR5/4), very fine to fine grains, well sorted, sand -70%, silt -30%, pebbles up to 1 cm at 11.0', no plasticity, moist to wet at 10.0'.	
SS	2.0	1.3	18	14				48.0	10				
								46.9					
								46.7					
SS	1.9	1.3	7	16				46.0				11.1 - 13.9 ft: Sandy SILT (ML); Dark reddish brown (10R3/4), fine to medium grained, low plasticity, wet; changing to sandstone, fine grained, weathered, blocky, brittle, iron-oxide cement at 13.0'.	
								44.8					
								44.0					
TOTAL DEPTH = 14.0 FT.													

SS = SPLIT SPOON; NG = CORE BARREL;
 MX = HAND AUGER; O = OTHER

SITE: Stepan Property

Last Update: 03-19-92
 HOLE NO.: R280



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
				FUSRAP	14501	1 OF 1	R291						
SITE		COORDINATES		ANGLE FROM HORIZ		BEARING							
Stepan Property		N 9300.0; E 10440.0		Vertical		-----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH						
12-17-90	12-17-90	Hydro Group, Inc.	Mobile B-80	8"	14.3	3.7	18.0						
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK							
9.8/54"	0	9	NA	56.0	/ NA	14.3/41.7							
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:									
140 lbs/30 in		Bore		Robert Cook <i>[Signature]</i>									
SAMP. AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SPLIT SAMPLE RECOVERY	LOSS G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
													(Template: MYMD)
SS	3.0	1.3	8				56.0				0.0 - 8.5 ft: FILL; Cinders, slag and coal; Grayish black (N2), fine to very coarse grains, no plasticity, moist to wet at 4.0'.	Complete borehole number is B3890R291.	
SS	2.0	1.3	6				54.8					Borehole sampled and gamma-logged by TMA/Eberline Corp.	
SS	2.0	0.7	4				54.0						
SS	2.0	0.8	4				52.8						
SS	2.0	0.8	4				52.0						
SS	2.0	0.8	4				51.3					OVA - 60 ppm in sewer line -10' from hole; 0 ppm in ambient air.	
SS	2.0	0.8	4				50.0						
SS	2.0	0.8	4				49.5						
SS	2.0	1.2	13				48.0						
SS	2.0	1.2	3				47.5						
SS	2.0	1.2	6				46.8				8.5 - 12.5 ft: SAND, (SM); Brownish gray (5YR4/1) changing to Olive black (5Y3/1) at 10.0', very fine to fine grains, minor silt, no plasticity, moist.		
SS	2.0	1.3	8				46.0	10					
SS	2.0	1.3	18				44.7						
SS	2.0	1.3	20				44.0						
SS	2.0	1.3	15				43.7						
SS	2.0	1.3	4				42.7				12.5 - 14.3 ft Sandy SILT, (ML); mottled fine to medium grained, silt -60%, sand -30%, clay -10%, low plasticity, moist.	Augered to total depth of 18.0'. 3" PVC casing inserted to 17.0' for gamma-logging.	
SS	2.0	1.6	11				42.0						
SS	2.0	1.6	18				41.7						
SS	2.0	1.6	31				40.4	15			14.3 - 16.8 ft: SANDSTONE; Dark reddish brown (10R3/4), fine grained, weathered, blocky, brittle, iron-oxide cement, moist.	PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.	
SS	2.0	0.8	27				40.0						
SS	2.0	0.8	18				39.2						
SS	2.0	0.8	40				38.0						
SS	2.0	0.8	30										
SS	2.0	0.8	29										
TOTAL DEPTH = 18.0 FT.											* Core recovery refers to total rock & soil sample.		
											Ground elevation estimated from site topographic map.		
											Description & classification by visual examination of sample.		
											Colors from "Rock-Color Chart" (GSA, 1948).		
SS = SPLIT SPOON; NO = CORE BARREL; NA = HAND AUGER; 0 = OTHER				SITE				Stepan Property		Last Update: 05-19-92		HOLE NO. R291	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.
SITE				COORDINATES		14501	1 OF 1	R294
Stepan Property				N 9739.0; E 10330.0		ANGLE FROM HORIZ BEARING		
BEGUN			COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)
12-17-90			12-17-90	Hydro Group, Inc.	Mobile B-80	8"	3.2	2.8
TOTAL DEPTH								
6.0								
CORE RECOVERY (FT./%)		CORE BOXES		SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
4.6/77%		0		3	NA	60.0	NA	3.2/56.8
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:		
140 lbs/30 in			none			Robert Cook		
SAND TYPE AND DIA.		SAMP. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLANKS	% CORE RECOVERY	LOSS IN G.P.N.	WATER PRESSURE TESTS	
							P.S.I.	
							TIME MIN.	
							ELEV.	
							DEPTH	
							GRAPHICS	
							SERIES	
							(Template: NYWD)	
							DESCRIPTION AND CLASSIFICATION	
							NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
SS	2.0	1.4					60.0	
							59.6	
							58.8	
							58.0	
SS	2.0	1.6	17				56.8	
			19				56.4	
			20				56.0	
			30					
SS	3.0	1.6	30				54.4	
			30				54.0	
			30					
			50					
TOTAL DEPTH = 6.0 FT.								

0.0 - 0.4 ft: FILL: Gravel and cinders; Medium dark gray (N4), fine to medium grains, no plasticity.

0.4 - 1.4 ft: Silty CLAY (CL); Moderate yellowish brown (10YR5/4), very fine to fine grained, clay -70%, silt -30%, medium plasticity, moist.

1.4 - 3.0 ft: Silty SAND (SM); Moderate brown (5YR4/4), fine to medium grained, sand -70%, silt -30%, no plasticity, moist.

3.0 - 5.6 ft: SANDSTONE; Dark reddish brown (10R3/4), weathered, blocky, brittle, iron-oxide cement, micaceous.

Augered to total depth of 6.0'.
3" PVC casing inserted to 6.0' for gamma-logging.
PVC casing was removed after logging and hole was backfilled with drilling spoils.

* Core recovery refers to total rock & soil sample.
Ground elevation estimated from site topographic map.
Description & classification by visual examination of sample.
Colors from "Rock-Color Chart" (GSA, 1946).

SS = SPLIT SPOON; NG = CORE BARREL;
HX = HAND AUGER; 0 = OTHER

SITE

Stepan Property

Last Update:
03-19-92

HOLE NO.
R294



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE				COORDINATES	14501	1 OF 1	R704						
Stepan Property				N 9690.0; E 10035.0	Vertical		-----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH						
1-7-91	1-7-91	Hydro Group, Inc.	Mobile B-80	8"	8.0	4.0	12.0						
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK							
9.1/76*	0	6	NA	57.0	NA NA	8.0/49.0							
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY:			Robert Cook <i>[Signature]</i>								
140 lbs/30 in		none											
SOIL TYPE AND DIAM.	SAMP. LEN. CORE	SAMPLER REC. CORE REC.	SOILS CORE RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS IN G.P.H.	PRESS. P.S.F.	TIME MIN.							
SS	1.3	1.1	27 45 80/4"				57.0			6.0 - 4.4 ft: FILL; Gravally Silt, Olive gray (5Y4/1) changing to Grayish black (N2) at 1.1', fine grained to pebbles up to 2 cm, silt -70-80%, gravel -20-30%; with coal and slag, fine to coarse grained below 1.1; no plasticity, moist.	Complete borehole number is B3890R704.		
SS	2.0	1.8	43 17 13 28				55.9 55.0				Borehole sampled and gamma-logged by TMA/Eberline Corp.		
SS	2.0	1.7	15 6 5 4				53.2 53.0 52.6			4.4 - 5.1 ft: Silty CLAY, (CL); Grayish brown (5YR5/3), fine grained, clay -60%, silt -40%, no plasticity, hard, moist.	Spoon refusal at 1.3'. Augered to 3.0'.		
SS	2.0	1.8	5 5 6 12				51.9 51.3 51.0			5.1 - 7.8 ft: Clayey SILT, (ML); Moderate brown (5YR5/4) changing to Dusky yellowish brown (10YR2/3) at 6.0', mottled and to Moderate reddish brown (10R4/6) at 6.5'; very fine to fine grained, silt -60-70%, clay -20-30%, up to 20% sand with depth, low plasticity, moist.			
SS	1.1	1.1	10 40 50/2"				49.3 49.0			8.0 - 11.8 ft: Sandy SILT, (ML); Dark reddish brown (10R5/4), very fine to fine grained, silt -60%, sand -30%, clay -10%, low plasticity, moist.	Spoon refusal at 9.1'. Augered to 10.0'.		
SS	2.0	1.6	8 16 19 23				47.9 47.0						
							45.4 45.0			TOTAL DEPTH = 12.0 FT.	Augered to total depth of 12.0'. 3" PVC casing inserted to 12.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.		
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>													
SS = SPLIT SPOON; HQ = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE				Stepan Property		Last Update: 03-19-92		MOLE NO. R704	



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R710				
SITE			COORDINATES			ANGLE FROM HORIZ/BEARING						
Stepan Property			N 9736.0; E 10035.0			Vertical -----						
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
1-8-91	1-8-91	Hydro Group, Inc.	Mobile B-80	8"	12.0	0.3	12.5					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK					
8.2/66°		0	7	NA	57.0	3 / NA	12.0 / 45.0					
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:							
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>							
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOBS	CORRECTION	LOSS IN G.P.M.	WATER PRESS. P.S.I.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.8	70 85 95 45					57.0			0.0 - 2.0 ft: FILL. 0.0 - 1.3 ft: Sandy SILT; Moderate reddish brown (10R4/6) changing to Moderate brown (5YR3/4) at 0.6', fine grains to trace pebbles. 1.3 - 3.0 ft: Gravel, cinders and coal; Grayish black (N2), fine grains to pebbles.	Complete borehole number is B3890R710. Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.0	49 37 24 27					55.5 55.0 54.0				
SS	2.0	0.7	13 6 2 4					53.0 52.3	5		4.0 - 4.7 ft: Clayey SILT (ML); Grayish brown (5YR3/3) changing to White (N9) and Grayish black (N2) at 4.4', fine to medium grained, no plasticity, moist.	
SS	2.0	1.1	3 2 3 3					51.0 50.5 49.9			6.0 - 6.5 ft: Sandy SILT (ML); Moderate brown (5YR3/4), fine to coarse grained, no plasticity. 6.5 - 8.4 ft: Silty CLAY (CL); Olive gray (5Y3/3), very fine to fine grained, medium plasticity, moist.	
SS	2.0	1.7	9 25 24 26					49.0 48.6			8.4 - 9.4 ft: Silty SAND (SM); Olive black (5Y3/1), fine to medium grained, well sorted, subrounded to subangular grains, no plasticity, moist.	
SS	2.0	1.9	4 9 21 37					47.6 47.3 47.0	10		9.4 - 9.7 ft: CLAY (CL); Grayish orange (10YR7/4), very fine grained, low plasticity, moist. 10.0 - 11.9 ft: SAND (SP); Dusky yellowish brown (10YR3/3) changing color to Dark yellowish brown (10YR4/3) at 10.9', fine to medium grained, well sorted, no plasticity, moist.	
SS	0.5	0.3	50/4*					45.1 45.0 44.7 44.5			12.0 - 12.5 ft: SANDSTONE; Dark reddish brown (10R3/4), fine grained, weathered, blocky, iron-oxide cement.	Augured to 12.0'. Spoon refusal at 12.3'. 3" PVC casing inserted to 12.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
TOTAL DEPTH = 12.5 FT.												

SS = SPLIT SPOON; NG = CORE BARREL;
MX = HAND AUGER; O = OTHER

SITE

Stepan Property

Last Update: 03-19-92

HOLE NO. R710



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.						
SITE				COORDINATES	14501	1 OF 1	R711						
Stepan Property				N 9650.0; E 9800.0	ANGLE FROM HORIZ		BEARING						
REGUM	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH						
1-8-91	1-8-91	Hydro Group, Inc.	Mobile B-80	8"	7.1	2.9	10.0						
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
6.5/65°		0	5	NA	57.0	3 / NA	7.1/49.9						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
140 lbs/30 in		none			Robert Cook								
SAMP. TYPE AND DIAM.	SAMP. BOX LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOKS RECOVERY	LOSS	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					G.P.M.	PRESS. P.S.I.	TIME MIN.						
SS	2.0	1.6	12 10 8 14					57.0				0.0 - 4.5 ft: FILL; Sandy Silt; Moderate brown (8YR3/4) changing to Dark reddish brown (10YR3/4) at 0.6'; Dark yellowish brown (10YR4/2) mixed with White (N9); Dark yellowish orange (10YR6/6); Medium gray (N6) and Grayish black (N2) below 2.0'; with cinders and slag below 1.1'.	Complete borahole number is B3890R711. Borahole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.3	16 14 21 21					55.8 55.0 53.7 53.0 52.3				4.5 - 7.1 ft: Silty SAND, (SM); Brownish gray (8YR4/1) changing to Black (N1) at 6.0'; very fine to fine grained, well sorted, sand -70%, silt -30%, no plasticity, moist to wet at 6.0'.	
SS	2.0	0.7	8 6 7 9					51.0 49.8 49.2 49.0				7.1 - 9.3 ft: SANDSTONE and Sandy SILT; Dark reddish brown (10YR3/4), mottled; brittle, weathered, blocky, fine grained, sandy silt content increasing with depth, no plasticity.	
SS	2.0	1.3	9 8 11 17					47.8 47.0				TOTAL DEPTH = 10.0 FT.	Augered to total depth of 10.0'. 3" PVC casing inserted to 10.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
SS = SPLIT SPOON; NQ = CORE BARREL; SITE NX = HAND AUGER; O = OTHER													Stepan Property Last Update: 03-19-92 HOLE NO. R711



GEOLOGIC DRILL LOG										PROJECT		JOB NO.		SHEET NO.		MOLE NO.									
SITE Stepan Property										COORDINATES N 9352.0; E 10310.0		14501		1 OF 1		R713									
BEGUN 1-8-91										COMPLETED 1-8-91		DRILLER Hydro Group, Inc.		DRILL MAKE AND MODEL Mobile B-80		SIZE 8"		OVERBURDEN 8.5		ROCK (FT.) 2.0		TOTAL DEPTH 10.5			
CORE RECOVERY (FT./%) 7.9/75%										CORE BOXES 0		SAMPLES 6		SEL. TOP CASING NA		GROUND EL. 53.0		DEPTH/EL. GROUND WATER NA / NA		DEPTH/EL. TOP OF ROCK 8.5 / 4.5					
SAMPLE HAMMER WEIGHT/FALL 140 lbs/30 in										CASING LEFT IN HOLE: DIA./LENGTH LOGGED BY: None Robert Cook															
SAMP. TYPE AND DIAM.	SAMP. LEN. CORE	SAMP. REC. CORE REC.	SAMPLE RECOVERY	LOSS G.P.H.	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.												
					PRESS. P.S.F.	TIME MIN.																			
SS	2.0	1.8	41 39 34 40					53.0				0.0 - 2.2 ft: FILL; Gravel, sand, silt, and glass, with clinders and coal below 0.6'. Grayish black (N2), fine sand to pebble sized fragments, no plasticity.	Complets borehole number is B3890R713.												
SS	2.0	1.7	21 15 9 6					51.2 51.0 50.8				2.2 - 7.0 ft: Sandy SILT (ML); Dark reddish brown (10R3/4), Dark yellowish brown (10YR4/2) between 3.0 - 5.0; silt with ~20% fine to medium-grained sand, 20% clay, low plasticity, moist.	Borehole sampled and gamma-logged by TMA/Eberline Corp.												
SS	1.8	1.0	4 10 50/6"					49.3 49.0					Spoon refusal at 5.5'. Augered to 6.0'.												
SS	2.0	1.6	25 23 17 23					46.0 47.0 46.0																	
SS	0.5	0.3	50/6"					45.4 45.0 44.7 44.5				7.0 - 8.3 ft: Clayey SILT (ML); Olive gray (5Y4/1), mottled with Dark reddish brown (10R3/4); some granite pebbles, Very pale orange (10YR3/2) present.	Spoon refusal at 5.5'. Augered to 5.5'.												
SS	2.0	1.5	30 27 24 19					43.0 42.5				8.5 - 10.0 ft: SANDSTONE; Dark reddish brown (10R3/4), fine grained, micaceous, weathered, blocky to fissile.	Augered to total depth of 10.5'.												
TOTAL DEPTH = 10.5 FT.												5" PVC casing inserted to 10.0' for gamma-logging.	PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.												
													* Core recovery refers to total rock & soil sample.	Ground elevation estimated from site topographic map.	Description & classification by visual examination of sample.	Colors from "Rock-Color Chart" (GSA, 1948).									

SS = SPLIT SPOON; NG = CORE BARREL; SITE
 NX = HAND AUGER; O = OTHER

Stepan Property

Last Update: 03-19-92 HOLE NO. R713



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.		
				FUSRAP		14501	1 OF 1	R714		
SITE			COORDINATES			ANGLE FROM HORIZON BEARING				
Stepan Property			N 9435.0; E 10245.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
1-8-91	1-8-91	Hydro Group, Inc.	Mobile B-80	8"	2.6	1.9	4.5			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK			
3.9/87*		0	3	NA	56.0	NA / none ATD	2.6/53.4			
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in		none			Robert Cook <i>[Signature]</i>					
SAND TYPE AND DIA.	SAMP. ADV. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE RECOVERY	WATER PRESSURE TESTS		ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESS. P.S.F.					
SS	2.0	1.7	13 21 22 14			56.0			0.0 - 0.9 ft: Silty, Sandy GRAVEL (GM); Olive gray (5Y4/1).	Complete borehole number is B3890R714.
SS	1.9	1.8	19 27 29 50/6*			55.1 54.3 54.0 53.4			0.9 - 3.8 ft: Sandy SILT (ML); Moderate reddish brown (10R4/6), fine to coarse grained, with some very coarse material.	
SS	0.5	0.4	50/6*			52.2 52.0 51.6 51.5			3.8 - 4.4 ft: SANDSTONE; Dark reddish brown (10R3/4), fine grained, weathered, blocky to basile, brittle, iron-oxide cement.	Spoon refusal at 3.9'. Augered to 4.0'. Spoon refusal at 4.5'. 3" PVC casing inserted to 4.0' for gamma-logging.
TOTAL DEPTH = 4.5 FT.									PVC casing was removed after logging and hole was backfilled with grout and drilling spoils.	
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>										
SS = SPLIT SPOON; NO = CORE BARREL; MX = HAND AUGER; O = OTHER		SITE			Stepan Property			Last Update: 03-19-92	HOLE NO. R714	



GEOLOGIC DRILL LOG				PROJECT	FUSRAP	JOB NO.	14501	SHEET NO.	1 OF 1	MOLE NO.	R715
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING			
Stepan Property			N 9435.0; E 10325.0			Vertical		-----			
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH				
1-9-91	1-10-91	Hydro Group, Inc.	Mobile B-80	8"	13.8	1.2	15.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK				
9.6/64°		0	8	NA	56.0	/ NONE ATD / NA	13.8/12.2				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:					
140 lbs/30 in			NONE			Robert Cook					

SOIL TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. LOSS %	LOSS G.P.M.	WATER PRESS. P.S.F.	TIME MIN.	ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	0.7	0.6	48				56.0			0.0 - 4.8 ft: FILL; Gravel, Sand and Silt. Moderate brown (5YR5/4); Cinders, Slag and Coal at 2.0'. Grayish black (N2) to Grayish brown (5YR5/2).	Complete borehole number is B3890R715.
SS	2.0	0.5	3				55.4				Borehole sampled and gamma-logged by TMA/Eberline Corp.
SS	2.0	1.5	1				54.0				Spoon refusal at 0.7'. Augered to 3.0'.
SS	2.0	1.7	2				53.8				Augered to 4.0'.
SS	2.0	1.7	2				52.0				Augered to 6.0'.
SS	2.0	1.9	20				51.2			4.8 - 8.3 ft: Clayey SILT, (ML); Grayish black (N2) changing to Olive gray (5Y4/1) at 6.0', silt -60%, clay -30%, sand -10%.	Augered to 8.0'.
SS	2.0	1.1	14				50.0				Augered to 10.0'.
SS	2.0	1.1	14				48.3				Augered to 12.0'.
SS	2.0	1.1	14				48.0				Spoon refusal at 13.4'.
SS	2.0	1.1	14				47.7			8.3 - 8.5 ft: Silty CLAY, (CL); Moderate brown (5YR4/4), fine grained, clay -60%, silt -40%, low plasticity, stiff, moist.	Augered to 13.5'.
SS	2.0	1.1	14				47.4			8.5 - 13.8 ft: Silty SAND, (SM); Pale brown (5YR5/2) changing to Brownish black (5YR2/1) at 12.0', very fine to medium grained; medium to very coarse grained layer between 12.2 - 13.1'; sand -80%, silt -20%, no plasticity, moist.	Spoon refusal at 15.0'.
SS	1.4	1.2	12				46.1				Augered to total depth of 15.0'.
SS	1.5	1.1	29				46.0				3" PVC casing inserted to 15.0' for gamma-logging.
SS	1.5	1.1	18				44.9				
SS	1.5	1.1	18				44.0				
SS	1.5	1.1	18				42.8				
SS	1.5	1.1	18				42.5				
SS	1.5	1.1	18				42.2				
SS	1.5	1.1	18				41.4				
SS	1.5	1.1	18				41.0			13.8 - 14.8 ft: SANDSTONE and Sandy SILT, (ML); Dark reddish brown (10R3/4), weathered, blocky, micaceous, iron cement, moist.	PVC casing was removed after logging and hole was backfilled with drilling spoils.
										TOTAL DEPTH = 15.0 FT.	

SS = SPLIT SPOON; NG = CORE BARREL; MX = HAND AUGER; O = OTHER

SITE: Stepan Property

LAST Update: 03-19-92

HOLE NO.: R715



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501	1 OF 1	R718				
SITE			COORDINATES			ANGLE FROM HORIZ		BEARING				
Stepan Property			N 9174.0; E 9972.0			Vertical		-----				
BEGUN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH			
1-10-91	1-10-91	Hydro Group, Inc.		Mobile B-80		8"	4.9	3.1	8.0			
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
6.1/76*		0	4	NA	54.0	/ none ATD / NA		4.9/49.1				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE; DIA./LENGTH LOGGED BY:									
140 lbs/30 lb			none			Robert Cook <i>[Signature]</i>						
SAND TYPE AND DIA.	SOIL. BVA. LEN. CORE	SAMPLE REC. CORE REC.	SAMPLE BLOKS % CORE RECOVERY	LOSS IN G.P.M.	WATER PRESS. P.S.I.	WATER TEMPERATURE	ELEV.	DEPTH	GRAPHICS	SPELLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.5	3 16 13 18				54.0				(Template: NYND)	
							53.2				0.0 - 0.8 ft: Clayey SILT, (ML); Moderate brown (5YR5/4), moist.	Complete borehole number is B389R718.
							52.5				0.8 - 4.9 ft: Sandy SILT, (ML); Dark reddish brown (10R3/4) changing to Moderate yellowish brown (10YR5/4) at 2.0' and to coarse grained, silt -60%, sand -40%; minor gravel between 0.8 - 1.5'; no plasticity, moist.	Borehole sampled and gamma-logged by TMA/Ebarline Corp.
SS	2.0	1.5	24 15 13 9				52.0					
							50.5					
SS	2.0	1.5	9 16 19 20				50.0					Augered to 4.0'.
							49.1					
							48.5					
SS	2.0	1.6	25 17 20 21				48.0				4.9 - 7.6 ft: Sandy SILT and SANDSTONE, (ML); Dark reddish brown (10R3/4), fine grained, weathered, blocky to fissile, micaceous.	Augered to 6.0'.
							46.4					
							46.0					
											TOTAL DEPTH = 8.0 FT.	Augered to total depth of 8.0'.
												3" PVC casing inserted to 8.0' for gamma-logging.
												PVC casing was removed after logging; hole was backfilled with grout and drilling spoils.
												* Core recovery refers to total rock & soil sample.
												Ground elevation estimated from site topographic map.
												Description & classification by visual examination of sample.
												Colors from "Rock-Color Chart" (GSA, 1948).

SS = SPLIT SPOON; HQ = CORE BARREL;
HX = HAND AUGER; 0 = OTHER

SITE

Stepan Property

Last Update: 03-19-92

HOLE NO. R718



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
SITE				COORDINATES	FUSRAP	14501	1 OF 1 R719					
Stepan Property				N 9493.0; E 10405.0	ANGLE FROM HORIZ BEARING Vertical -----							
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
1-11-91	1-11-91	Hydro Group, Inc.	Mobile B-80	8"	6.4	2.1	8.5					
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
6.1/72*	0	5	NA	57.0	none ATD NA	6.4/50.6						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		none		Robert Cook								
SAMP TYPE AND DIAM.	SAMP. LEN.	REC. CORE	SAMPLE IN CORE	RECOVERY	WATER PRESSURE TESTS			ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.H.	PRESS. P.S.F.	TIME MIN.					
SS	1.0	0.8	46	60/6*				57.0			(Template: NYWD)	
								56.2			0.0 - 4.5 ft: FILL; Gravel, Sand and Silt. Silt with Cinders and Coal at 0.3 ft., Grayish black (N2), silt -80%, coal and cinders -20%.	Complete borehole number is B3890R719.
SS	2.0	1.5	27	16				55.0				Borehole sampled and gamma-logged by TMA/Eberline Corp.
			10	8				53.5				Spoon refusal at 1.0'. Augered to 2.0'. Augered to 4.0'.
SS	2.0	1.8	6	3				53.0				
			2	3				51.5			4.5 - 6.4 ft: Silty CLAY, (CL); Olive black (SY2/1) mottled with Black (N1), very fine grained, high plasticity, moist.	
			3	3				51.2				
SS	2.0	1.5	27	28				51.0				Augered to 6.0'.
			29	27				49.5			6.4 - 8.5 ft: SANDSTONE and Sandy SILT, (ML); Dark reddish brown (10RS/4), fine grained, weathered, blocky to fissile, iron cement, moist.	
SS	0.5	0.5	50/6*					49.0				Augered to 8.0'.
								48.5				Spoon refusal at 8.5'. 3" PVC casing inserted to 8.0' for gamma-logging.
TOTAL DEPTH = 8.5 FT.											PVC casing was removed after logging; hole was grouted to -0.5' below surface and remaining hole backfilled with drilling spoils.	
											* Core recovery refers to total rock & soil sample.	
											Ground elevation estimated from site topographic map.	
											Description & classification by visual examination of sample.	
											Colors from "Rock-Color Chart" (GSA, 1948).	
SS = SPLIT SPOON; NG = CORE BARREL; MX = HAND AUGER; O = OTHER				SITE			Stepan Property		Last Update: 03-19-92		HOLE NO. R719	



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP	14501	1 OF 1	R722					
SITE		COORDINATES			ANGLE FROM HORIZ			BEARING				
Stepan Property		N 9922.0; E 10389.0			Vertical			-----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH					
1-14-91	1-14-91	Hydro Group, Inc.	Mobile B-80	8"	3.0	2.0	5.0					
CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK						
3.7/74*	0	3	NA	67.0	NA	3.0/64.0						
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH		LOGGED BY:								
140 lbs/30 in		NONE		Robert Cook								
SAMP. TYPE AND DIAM.	SAMP. BOX LEN. CORE	SAMP. REC. CORE REC.	SAMP. REC. CORE REC.	LOSS IN G.P.M.	WATER PRESS. P.S.I.	TIN. MIN.	ELEV.	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.4	3				67.0					
			4				66.4				0.0 - 0.8 ft: Sandy SILT, (ML); Moderate brown (5YR5/4), with grass moist.	Complete borehole number is B3890R722.
			21				65.6				0.8 - 3.0 ft: Clayey SILT, (ML); Light brown (5YR5/6), fine grained, silt -70%, clay -20%, sand -10%, no plasticity, moist.	
SS	2.0	1.5	3				65.0					Borehole sampled and gamma-logged by TMA/Eberline Corp.
			27				64.0					
SS	0.9	0.8	25				63.8					Spoon refusal at 4.8'. Augered to total depth of 5.0'. 3" PVC casing inserted to 5.0' for gamma-logging.
			50/4*				63.0					
							62.2					PVC casing was removed after logging; hole was backfilled with drilling spoils.
							62.0					
TOTAL DEPTH = 5.0 FT.												
<p>* Core recovery refers to total rock & soil sample.</p> <p>Ground elevation estimated from site topographic map.</p> <p>Description & classification by visual examination of sample.</p> <p>Colors from "Rock-Color Chart" (GSA, 1948).</p>												
SS = SPLIT SPOON; NR = CORE BARREL; MX = HAND AUGER; O = OTHER		SITE		Stepan Property				Last Update: 03-19-92		HOLE NO. R722		



GEOLOGIC DRILL LOG				PROJECT	JOB NO.	SHEET NO.	HOLE NO.		
Stepan Property				FUSRAP	14501	1 OF 1	R723		
SITE		COORDINATES			ANGLE FROM HORIZ/BEARING				
Stepan Property		N 9258.0; E 10458.0			Vertical -----				
BEGUN	COMPLETED	DRILLER	DRILL MAKE AND MODEL	SIZE	OVERBURDEN	ROCK (FT.)	TOTAL DEPTH		
1-14-91	1-14-91	Hydro Group, Inc.	Mobile B-80	8"	10.8	1.2	12.0		
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	SEL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK		
4.8/40*		0	6	NA	56.0	NA / NA	10.8/45.2		
SAMPLE HAMMER WEIGHT/FALL		CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:				
140 lbs/30 in		none			Stephen Knuttel				
SAMP. TYPE AND DIAM.	SAMP. ADV. LEN. CORE	SAMP. REC. CORE REC.	SAMP. BLOWS / CORE RECOVERY	WATER PRESSURE TESTS	ELEV.	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	2.0	1.0	6 9 11 18		56.0			0.0 - 0.3 ft: FILL.	Complete borehole number is B3890R723. Borehole sampled and gamma-logged by TMA/Eberline Corp. Spoon refusal at 9.7'. Augured to 10.0'. Spoon refusal at 11.7'. Augured to total depth of 12.0'. 3" PVC casing inserted to 12.0' for gamma-logging. PVC casing was removed after logging; hole was backfilled with grout and drilling spoils. * Core recovery refers to total rock & soil sample. Ground elevation estimated from site topographic map. Description & classification by visual examination of sample. Colors from "Rock-Color Chart" (GSA, 1948).
SS	2.0	0.7	10 16 11 12		54.0 53.3		0.0 - 3.7 ft: Debris; red brick fragments; slag, white (N9) to Black (N1), with sand and gravel.		
SS	2.0	1.3	6 5 10 14		52.0 50.7	8	4.0 - 5.0 ft: Sandy Gravel; Black (N1), mixed composition, trace sandstone, gravel up to 5 cm, loose, wet.		
SS	2.0	0.3	12 18 15 16		50.0 49.7		5.0 - 10.0 ft: Slag fragments, Light brown (5YR5/6) to Moderate brown (5YR4/4) - 5YR3/4 to Pale brown (5YR5/6), with Black (N1) and White (N9), fragments are hard, loose, moist; cement fragments between 6.0 - 6.3'; with fine sand, Black (N1), between 8.0 - 8.3'.		
SS	1.7	0.3	8 18 50 50/3*		48.0 47.7				
SS	1.7	1.2	20 30 47 50/3*		46.0 45.2 44.8 44.0	10	10.0 - 10.8 ft: SAND, (SW); Moderate reddish brown (10R4/6), fine grained, moderately sorted, firm, moist. 10.8 - 11.3 ft: Gravely, Silty SAND, (SM); Dark reddish brown (10R3/4), sand is fine with sandstone gravel, poorly sorted, firm, moist.		
TOTAL DEPTH = 12.0 FT.									

SS = SPLIT SPOON; N9 = CORE BARREL; SITE
 MX = HAND AUGER; O = OTHER

Stepan Property

Last Update: 03-19-92 HOLE NO. R723



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.						
				FUSRAP		14501-138	1 of 1	MISS-45C						
SITE			COORDINATES			ANGLE FROM HORIZ.		BEARING						
MAYWOOD INTERIM STORAGE SITE			N10,000 E10,030			90		N/A						
BEGIN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH					
5-12-86	5-12-86	MOPE TRENCH ENVIRONMENTAL SERVICES		MOBLE B-33		6 IN	8.0	2.0	10.0 FT.					
CORE RECOVERY FT./20		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/VEL. GROUND WATER		DEPTH/VEL. TOP OF ROCK						
N/A		N/A	1	N/A	60.0 FT.	9.0/51.0 FT.		8.0/52.0 FT.						
SAMPLE NUMBER		WEIGHT/PALL	CASING LEFT IN HOLE DIA./DEPTH			LOGGED BY								
N/A		N/A	N/A			P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES							
SS 1.5" 24"	N/A	N/A						60.0						
REAMED HOLE WITH 6 INCH AUGER														
								52.0	8.0			0-8.0 FT. SAND (SC-SM) DUSKY BROWN (5YR 2/2, 0-2.0 FT.) PALE BROWN (5YR 5/2, 2.0-3.0 FT.) VERY PALE ORANGE (10YR 8/4, 3.0-5.0 FT.), GRAYISH BROWN (5YR 3/2, 5.0-8.0 FT.) FINE-GRAINED, SILTY, MOIST. 0-2.0 FT. WITH BRICK AND RUBBLE. 3.0-5.0 FT. WITH THIN LAYERS OF CEMENT MORTAR, MODERATELY HARD, AND INTERMEDIATE LAYERS OF SLUDGE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
								50.0	10.0			8.0-10.0 FT. SANDSTONE VERY DARK RED (5R 2/5) SOFT, FINE-GRAINED, MODERATELY WEATHERED, SATURATED.	5/14/86	
												BOTTOM OF HOLE AT 10.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5/14/86.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.	
SS-SPLT SPOON ST-SHELBY TUBE D-CORING P-PITCHER O-OTHER								SITE				MAYWOOD INTERIM STORAGE SITE		HOLE NO. MISS-45C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.		
				FLUSRAP		14501-138		1 of 1		MISS-46C		
SITE				COORDINATES				ANGLE FROM MERID.		BEARING		
MAYWOOD INTERIM STORAGE SITE				N9850		E10, 050		90		N/A		
BEGIN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		HOLE SIZE		COVERED/UNCOVERED FT.		
5-12-86		5-12-86		MORETRENCH ENVIRONMENTAL SERVICES		MOBILE B-33		6 IN		10.0		
CORE RECOVERY(FT./%)		CORE BOXES		SAMPLES		EL. TOP OF CASING		GROUND EL.		DEPTH/EL. GROUND WATER		
N/A		N/A		1		N/A		60.0 FT.		10.0/50.0 FT.		
SAMPLE NUMBER WEIGHT/FALL				CASING LEFT BY HOLE/DIA./LENGTH				LOGGED BY:				
N/A				N/A				P. YEN				
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE, LENGTH CORE RUN	SAMPLE RECOVERY, CORE RECOVERY	SAMPLE BLOW, PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF SILLING, ETC.
				LOSS IN Q/JAL	PRESSURE P.S.I.	TIME IN MINUTES						
SS 1.5" 24"	N/A	N/A	N/A				60.0				0-10.0 FT. SAND (SC-SM) GRAYISH BLACK (N2, 0-3.0 FT.) MEDIUM DARK GRAY (N4, 3.0-7.0 FT.) GRAYISH BLACK (N2, 7.0-10.0 FT.) FINE-GRAINED, SILTY, MOIST. 7.0-10.0 FT. WITH SLUDGE, SOFT.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
							50.0	10.0		10.0-12.0 FT. SANDSTONE GRAYISH BLACK (N2), SOFT, FINE-GRAINED, HIGHLY WEATHERED, SATURATED, MIXED WITH SLUDGE.		
							48.0	12.0			BOTTOM OF HOLE AT 12.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5/14/86.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.
SS-SPLIT SPOON ST-SHELLY TUBE D-CORONOR P-PITCHER OTHER				SITE				MAYWOOD INTERIM STORAGE SITE				HOLE NO. MISS-46C

5/14/86

GEOLOGIC DRILL LOG

PROJECT				FUSRAP		JOB NO.	14501-138		SHEET NO.	1 of 1		HOLE NO.	MISS-48C	
SITE				COORDINATES				ANGLE FROM MERID.		BEARING				
MAYWOOD INTERIM STORAGE SITE				N9850		E10,150		90		N/A				
BEGAN	COMPLETED	DRILLER	MOPE TRENCH ENVIRONMENTAL SERVICES		DRILL MAKE AND MODEL	MOBILE B-33		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH			
5-13-86	5-13-86							6 IN	7.0	4.5	11.5 FT.			
CORE RECOVERY (%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	CIRCLING EL.	DEPTH/VEL. GROUND WATER		DEPTH/VEL. TOP OF ROCK						
N/A		N/A	1	N/A	60.0 FT.	5.0/55.0 FT.		7.0/53.0 FT.						
SAMPLE NUMBER DEPTH/FT. ALL			CASING LEFT IN HOLE: DIA./LENGTH			LOGGED BY:								
N/A			N/A			P. YEN								

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE INCH	SAMPLE RECOVERY CORE RECOVERY %	SAMPLE BLINDS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	BMPAC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.			
					LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES									
SS	1.5"	24"	N/A	N/A				60.0								
REAMED HOLE WITH 6 INCH AUGER													0-0.5 FT. SILT (ML) MODERATE BROWN (5YR 3/4) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.		
													0.5-7.0 FT. SAND (SC-SM) DUSKY BROWN (5YR 2/2, 0.5-4.5 FT.) DUSKY YELLOWISH BROWN (10YR 2/6, 4.5-7.0 FT.), FINE-GRAINED, SILTY, MOIST. 4.5-7.0 FT. WITH SLUDGE, SOFT.			
													7.0-11.5 FT. SANDSTONE DUSKY RED (5R 3/2), SOFT TO MODERATELY HARD, FINE-GRAINED SILTY, WEATHERED, SATURATED.			
													BOTTOM OF HOLE AT 11.5 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT 5/14/86.			
SS-SPLIT SPOON ST-DEBY TUBE D-ODDSON P-PITCHER O-OTHER													SITE	MAYWOOD INTERIM STORAGE SITE	HOLE NO.	MISS-48C

5/14/86



GEOLOGIC DRILL LOG

PROJECT: **FUSRAP** JOB NO.: **14501-138** SHEET NO.: **1 of 1** HOLE NO.: **MISS-49C**

SITE: **MAYWOOD INTERIM STORAGE SITE** COORDINATES: **N9900 E10,200** ANGLE FROM NORTH: **90** BEARING: **N/A**

BEGIN: **5-13-86** COMPLETED: **5-13-86** DRILLER: **MORETRENCH ENVIRONMENTAL SERVICES** DRILL MAKE AND MODEL: **MOBILE B-33** HOLE SIZE: **6 IN** OVERBURDEN (FT.): **8.0** ROCK (FT.): **2.0** TOTAL DEPTH: **10.0 FT.**

CORE RECOVERY (FT./2): **N/A** CORE BOXES: **N/A** SAMPLES: **1** EL. TOP OF CASING: **N/A** GROUND EL.: **60.0 FT.** DEPTH/EL. GROUND WATER: **9.0/51.0 FT.** DEPTH/EL. TOP OF ROCK: **8.0/52.0 FT.**

SAMPLE NUMBER: **N/A** CASING LEFT IN HOLE: **N/A** LOGGED BY: **P. YEN**

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORE RUN)	SAMPLE RECOVERY (CORE RECOVERY)	SAMPLE BLOW BY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESSURE P.S.F.	TIME IN MINUTES						
SS 1.5" 24" REAMED HOLE WITH 6 INCH AUGER	N/A	N/A	N/A				60.0				0-1.0 FT. SILT (ML) MODERATE BROWN (5YR 3/4) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
							59.0	1.0	1	1.0-8.0 FT. SAND (SC-SM) DUSKY BROWN TO WHITE (5YR 2/2-M9, 1.0-2.5 FT.), BLACK TO DUSKY BROWN (M1-5YR 2/2, 2.5-6.0 FT.), GRAYISH BROWN (5YR 3/2, 6.0-8.0 FT.) FINE-GRAINED, VERY SILTY, MOIST. 2.5 FT. CONCRETE RUBBLE 2.5-6.0 FT. WITH ASH, MIXED.		
							52.0	8.0		8.0-10.0 FT. SANDSTONE, MODERATE YELLOWISH BROWN (10YR 5/4), SOFT TO MODERATELY HARD, FINE-GRAINED, MODERATELY WEATHERED, SATURATED.		
							50.0	10.0		BOTTOM OF HOLE AT 10.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5/14/86.		

5/13/86

SS-SPLIT SPOON ST-SHELBY TUBE; D-CORING DR. P-PITCHER; O-OTHER SITE: **MAYWOOD INTERIM STORAGE SITE** HOLE NO.: **MISS-49C**

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
				FUSRAP		14501-138	1 of 1	MISS-51C					
SITE			COORDINATES			ANGLE FROM HORIZ.		BEARING					
MAYWOOD INTERIM STORAGE SITE			N9950 E10,250			90		N/A					
BEGIN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
5-14-86	5-14-86	MOFETRENCH ENVIRONMENTAL SERVICES		MOSSILE B-33		6 IN	6.8	0.2	7.0 FT.				
CORE RECOVERY (FT./70)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A		N/A	2	N/A	60.0 FT.	7.0/53.0 FT.		6.8/53.2 FT.					
SAMPLE NUMBER		DEPTH/FALL		CASING LEFT IN HOLE (DIA./LENGTH)		LOGGED BY:							
N/A		N/A		N/A		P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLE ADVANCE LENGTH (CORRECTION)	SAMPLE RECOVERY (CORRECTION)	SAMPLE BELOW PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF COLLARS, ETC.	
				LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES							
SS	1.5°	24"	N/A	N/A			60.0						
REAMED HOLE WITH 6 INCH AUGER							59.5	0.5		1	0-0.5 FT. SILT (ML) MODERATE BROWN (5 YR 3/4) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
								5.0			0.5-6.8 FT. SAND (SC-SM) DUSKY RED (5R 3/4, 0.5-1.0 FT.), DUSKY BROWN TO BLACK (5YR 2/2-N1, 1.0-6.8 FT.), FINE-GRAINED, SILTY, CONTAINS SLUDGE, PLASTIC TO SLIGHTLY PLASTIC, MOIST.		
	12"	N/A	N/A				53.2 53.8	6.8 7.0		2	6.8-7.0 FT. SANDSTONE DUSKY RED (5R 3/4), SOFT TO MODERATELY HARD, FINE-GRAINED, SILTY, WEATHERED, SATURATED.		
								10.0			BOTTOM OF HOLE AT 7.0 FT.		
											BACKFILLED WITH CEMENT-BENTONITE GROUT, 5/14/86.		
SS-SPLIT SPOON ST-SHELBY TUBE D-CORRECTION P-PITCHER O-OTHER											NOTE	MAYWOOD INTERIM STORAGE SITE	HOLE NO. MISS-51C

5/14/86

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501-13B	1 of 1	MISS-53C				
SITE			COORDINATES				ANGLE FROM HORIZ.	SLANT				
MAYWOOD INTERIM STORAGE SITE			N9910		E9600		90	N/A				
BEGAN	COMPLETED	DRIER	DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
5-14-86	5-14-86	MORETRENCH ENVIRONMENTAL SERVICES	MOBILE B-33		6 IN	5.0	5.0	10.0 FT.				
CORE RECOVERY (%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
N/A		N/A	1	N/A	59.0 FT.	6.0/53.0 FT.		5.0/54.0 FT.				
SAMPLE NUMBER (HOLE/DEPTH)		CASING LEFT IN HOLE (DIAM./LENGTH)			LOGGED BY:							
N/A		N/A			P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORRECTION)	SAMPLE RECOVERY (%)	SAMPLE BLOW BY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	DRIVING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
SS 1.5" 24" REAMED HOLE WITH 6 INCH AUER	N/A	N/A				59.0					0-1.5 ASPHALT PAVING, CRUSHED ROCK AND SAND, GRAYISH BLACK TO DARK GRAY (N2-N3) AND GRAYISH ORANGE (10YR 7/4).	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
						57.5	1.5			1.5-5.0 FT. SAND AND SLUDGE (SC-SM) VERY LIGHT GRAY TO WHITE (N8-N9), SOFT VERY SILTY AND CLAYEY, PLASTIC, MOIST.		
						54.0	3.0			5.0-10.0 FT. SANDSTONE BLACK (N1), SOFT, FINE-GRAINED, SILTY, HIGHLY WEATHERED, SATURATED.		
						49.0	10.0				BOTTOM OF HOLE AT 10.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5/14/86.	
											DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.	

5/14/86

SS-SPLIT SPOON ST-SHELBY TUBE
B-CORRECTION P-PITCHER O-OTHER

NOTE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-53C



GEOLOGIC DRILL LOG										PROJECT FLSRAP		JOB NO. 14501-138	SHEET NO. 1 of 1	HOLE NO. MISS-60C		
SITE MAYWOOD INTERIM STORAGE SITE					COORDINATES N9600 E9700					ANGLE FROM HORIZ. 90		BEARING N/A				
BEGIN 5/16/86		COMPLETED 5/16/86		DRILLER MORETRENCH ENVIRONMENTAL SERVICES			DRILL MAKE AND MODEL MOBILE B-33		HOLE SIZE 6 IN	OVERBURDEN (FT.) 5.5	ROCK (FT.) 0.5	TOTAL DEPTH 6.0 FT				
CORE RECOVERY %/L/D N/A			CORE BOXES N/A		SAMPLES 1	EL. TOP OF CASING N/A		GROUND EL. 55.9 FT		DEPTH/EL. BOUNDING WATER 4.5/51.4 FT		DEPTH/EL. TOP OF ROCK 5.5/50.4 FT				
SAMPLE NUMBER IDENT./FALL N/A				CASING LEFT IN HOLE: DIA./LENGTH N/A				LOGGED BY: P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF CUTTINGS, ETC.			
					LOGS IN C/P.A.	PRESSURE P.S.I.	TIME IN MINUTES									
SS 1.5" 24"	N/A	N/A	N/A	N/A				55.9								
								54.9	1.0	1	0-1.0 FT. SILT (ML) GRAYISH BROWN (SYR 3/2), RESIDUAL SOIL	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. 5/21/86				
								50.4	5.0		1.0-5.5 FT. SAND (SC-SM) LIGHT GRAY (N7, 1.0-4.0 FT), DUSKY BROWN AND BLACK (SYR 2/2, N1, 4.0-5.5 FT), FINE-GRAINED, NON-COHESIVE, DRY					
								49.9	5.5		5.5-6.0 FT. SANDSTONE, DUSKY BROWN (SYR 2/2).					
				6.0		BOTTOM OF HOLE AT 6.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5/21/86	AUGER REFUSAL AT 6.0 FT.									
3-SPLIT SPOON ST-SHBY TUBE 0-DEFORM P-PITCHER 0-OTHER												WTL		MAYWOOD INTERIM STORAGE SITE		HOLE NO. MISS-60C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
				FLISRAP		14501-138	1 OF 2	MISS-62C					
SITE			COORDINATES				ANGLE FROM HORIZ.	BEARING					
MAYWOOD INTERIM STORAGE SITE			N9570		E9605		90	N/A					
BEGIN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
5-19-86	5-19-86	MORETRENCH ENVIRONMENTAL SERVICES		MOBILE B-40L		6 IN	6.0	9.0	15.0 FT				
CORE RECOVERY (% L/D)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/VEL. GROUND WATER		DEPTH/VEL. TOP OF ROCK					
N/A		N/A	1	N/A	59.5 FT	8.0/51.5 FT		6.0/53.5 FT					
SAMPLE NUMBER WEIGHT/FULL		CASING LIST IN WELLS (DIA./DEPTH)			LOGGED BY:								
N/A		N/A			P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE WALK	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CHANGING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.H.	PRESSURE P.S.I.	TIME IN MINUTES						
REAMED HOLE WITH 6 IN AUGER	SS	24"	N/A	N/A				59.5	0.5		1	0-0.5 FT. <u>SILT</u> (ML) GRAYISH BROWN (5YR 3/2), RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
												0.5-6.0 FT. <u>SAND</u> (SC-SM), GRAYISH BROWN (5YR 3/2, 0.5-3.5 FT), DUSKY BROWN (5YR 2/2, 3.5-6.0 FT), FINE-GRAINED, SILTY, DRY.	
												3.5-4.0 FT. LEATHER HIDES, GRAYISH GREEN (10GY 5/2).	
								53.5	6.0			6.0-15.0 FT. <u>SANDSTONE</u> , DUSKY BROWN (5YR 2/2), SOFT, FINE-GRAINED, HIGHLY WEATHERED, SATURATED SLUDGE.	
									10.0				

▽ 5/21/86

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS AND SAMPLES.

SS-SPLIT SPOON ST-SHELBY TUBE
D-DIAMOND POINT CHISEL OTHER


SITE

MAYWOOD INTERIM STORAGE SITE

FILE NO.

MISS-62C



GEOLOGIC DRILL LOG							PROJECT	JOB NO.	SHEET NO.	HOLE NO.		
							FLSRAP	14501-138	2 of 2	MISS-62C		
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY %	SAMPLE BLOWS	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN S.P.A.	PRESSURE P.S.F.	TIME IN MINUTES						
							44.5	15.0				
AUGER 6 IN											<p>BOTTOM OF HOLE AT 15.0 FT.</p> <p>BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-21-86.</p>	

SS-SPLIT SPOON; ST-SHELBY TUBE;
 B-BENSON; P-PITNEY; O-OTHER

SITE
 MAYWOOD INTERM STORAGE SITE

HOLE NO.
 MISS-62C

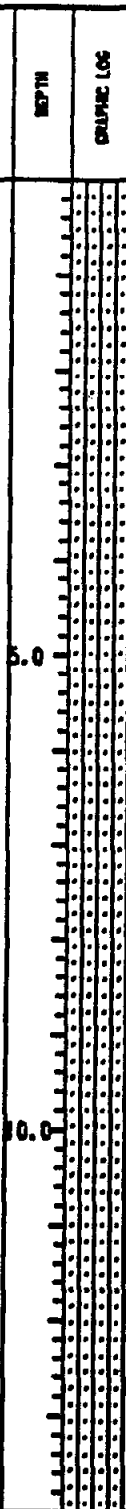


GEOLOGIC DRILL LOG

PROJECT FUSRAP		JOB NO. 14501-138	SHEET NO. 1 of 2	HOLE NO. MISS-64C
SITE MAYWOOD INTERIM STORAGE SITE		COORDINATES N9595 E9400		ANGLE FROM NORTH 90
DRILLER MOPETRENCH ENVIRONMENTAL SERVICES	DRILL MAKE AND MODEL MOBILE B-40L	HOLE SIZE 5 IN.	OVERBURDEN (FT.) 14.0	ROCK (FT.) 6.0
DATE 5-19-86	COMPLETED 5-19-86	EL. TOP OF CASING N/A	GROUND EL. 59.5 FT.	DEPTH/EL. GROUND WATER 12.0/47.5 FT.
CORE RECOVERY (FT./20) N/A	CORE BOXES N/A	SAMPLES 1	DEPTH/EL. TOP OF ROCK 14.0/45.5 FT.	TOTAL DEPTH 20.0 FT.
SAMPLE NUMBER N/A	WEIGHT/FULL N/A	CASING LEFT IN HOLE/DIAL LENGTH N/A	LOGGED BY: P. YEN	

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH/ CORE RUN	SAMPLE RECOVERY PERCENT	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
SS	1.5" 24"	N/A	N/A				59.5					0-14.0 FT. SAND (SC-SM) WHITE (N9, 0-11.0 FT.), LIGHT GRAY (N7, 11-14.0 FT.), VERY FINE-GRAINED, SILTY, MOIST TO SATURATED, SLIGHTLY PLASTIC TO NON-PLASTIC, WITH ASH AND SLUDGE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.

REAMED HOLE WITH 6 INCH AUGER



SS-SPLIT SPOON ST-SHELBY TUBE B-ROBINSON P-PITCHER O-OTHER	SITE MAYWOOD INTERIM STORAGE SITE	HOLE NO. MISS-64C
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5-21-86

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
										FLSRAP	14501-138	2 of 2	MISS-64C
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BLOW BY PERCENT CORRECTION	WATER PRESSURE TESTS			ELEVATION	DEPTH	BORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS IN O.P.M.	PRESSURE P.S.I.	TIME IN MINUTES							
AUGER 5 INCH							45.5	14.0					
								15.0			14.0-20.0 FT. SANDSTONE LIGHT GRAY (M7), SOFT, FINE TO MEDIUM-GRAINED, VERY SILTY, POORLY CEMENTED, WEATHERED SATURATED.		
							39.5	20.0					
											BOTTOM OF HOLE AT 20.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-21-86.		

SS-SPLIT SPOON ST-SHELBY TUBE;
D-DODSON; P-PITCHER; O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-64C



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
										FLSRAP		14501-134	1 of 2	MISS-65C
SITE					COORDINATES					ARISE FROM HORIZ.		READING		
MAYWOOD INTERIM STORAGE SITE					N9300		E9700			90		N/A		
BEGIN		COMPLETED		DRILLER			DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH		
5-20-86		5-21-86		MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-40L		6 IN	10.0	8.0	18.0 FT		
CORE RECOVERY (%)			CORE BOXES		SAMPLES	EL. TOP OF CASING		GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
N/A			N/A		1	N/A		56.0 FT	12.0/44.0 FT		10/46.0 FT			
SAMPLE NUMBER BEGIN/END				CASING LEFT IN HOLE (IN./DEPTH)				LOGGED BY:						
N/A				N/A				P. YEN						
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE INCH	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRABING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.H.	PRESSURE P.S.I.	TIME IN MINUTES							
SS 1.5" 24"	N/A	N/A	N/A	N/A				56.0				0-10.0 FT. SILT (ML) WHITE (N9), SOFT, SLIGHTLY CLAYEY, SLIGHTLY PLASTIC, MOIST, WITH ASH AND SLUDGE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. BOREHOLE COMPLETED 5-20-86 WITH THE EXCEPTION OF GAMMA LOGGING, WHICH WAS COMPLETED 5-21-86.	
								46.0	10.0			10.0-18.0 FT. SAND (SC-SM) MEDIUM GRAY (N5), SOFT, FINE TO MEDIUM-GRAINED, SILTY, NONCOHESIVE, MODERATELY WEATHERED, SATURATED.		

▽ 5-21-86

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS AND SAMPLES.

SS-SPLIT SPOON ST-SHELBY TUBE
B-CORING P-PITCHER O-OTHER

NOTE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-65C



GEOLOGIC DRILL LOG										PROJECT	JOB NO.	SHEET NO.	HOLE NO.
										FUSRAP	14501-138	2 of 2	MISS-65C
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BLOW BY PERCENT CORRECTION	WATER TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
				LOSS IN R.P.M.	PRESSURE P.S.I.	TIME IN MINUTES							
ALGER 6 IN							38.0	18.0					
											BOTTOM OF HOLE AT 18.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-21-86.		

SS-SPLIT SPOON STICKLEBY TOOL
D-DEBRIS P-PITCHED O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-65C



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
SITE										COORDINATES		14501-138	1 of 2	MISS-66C					
MAYWOOD INTERIM STORAGE SITE										N9400 E9615		90	N/A	N/A					
BEGIN		COMPLETED		DRILLER		DRILL NAME AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH								
5-21-86		5-21-86		MORETRENCH ENVIRONMENTAL SERVICES		MOBILE B-40L		6 IN	18.0	0.0	18.0 FT								
CORE RECOVERY (%)		CORE BOXES		SAMPLES	EL. TOP OF CASING		GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK									
N/A		N/A		1	N/A		56.1 FT	UNABLE TO MEASURE		N/A									
SAMPLE NUMBER WEIGHT/FALL				CASING LEFT IN HOLE DR./S.M.				LOGGED BY											
N/A				N/A				P. YEN											
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE MIN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BELONGS TO PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CHANGING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.							
				LOSS IN O.P.A.	PRESSURE P.S.I.	TIME IN MINUTES													
SC	1.5" 24"	N/A	N/A				56.1				0-11.0 FT. SILT (ML) WHITE (N9) TO VERY LIGHT GRAY (N8), SOFT, SLIGHTLY CLAYEY, SLIGHTLY PLASTIC, WITH DRY, THINLY BEDDED ASH.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.							
REAMED HOLE WITH 6 IN AUGER																			
							45.1	5.0			11.0-18.0 FT. SAND (SC-SM) BLACK (N1), SOFT, NONCOHESIVE, FINE TO MEDIUM-GRAINED, SILTY, WEATHERED, SATURATED.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS AND SAMPLES.							
SS-SPLIT SPOON ST-SHELBY TUBE PO-CORNING P-PITCHER O-OTHER												SITE		MAYWOOD INTERIM STORAGE SITE		HOLE NO.		MISS-66C	



GEOLOGIC DRILL LOG

PROJECT: FUSRAP
 JOB NO. 14501-138
 SHEET NO. 2 of 2
 HOLE NO. MISS-66C

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRADING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF BOLLING, ETC.
					LOSS IN GAL	PRESSURE P.S.I.	TIME IN MINUTES						
Auger 6 in								38.1	18.0				
												<p>BOTTOM OF HOLE AT 18.0 FT.</p> <p>BECAUSE OF RIG TOWING OPERATIONS, THE BOREHOLE WAS LOST AND NOT BACKFILLED WITH CEMENT-BENTONITE GROUT.</p>	

SS-SPLIT SPOON STAGNANT TIME
 D-DENISON P-PITCHER O-OTHER

SITE: MAYWOOD INTERM STORAGE SITE

HOLE NO. MISS-66C



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
										FLSRAP		14501-130	1 of 1	MISS-67C
SITE					COORDINATES					ANGLE FROM HORIZ.		BEARING		
MAYWOOD INTERIM STORAGE SITE					N9397 E9715					90		N/A		
BEGIN		COMPLETED		DRILLER			DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	RICK (FT.)	TOTAL DEPTH		
5-22-86		5-22-86		MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-40L		6 IN	8.0	2.0	10.0 FT		
CORE RECOVERY (%)			CORE BOXES		SAMPLES	EL. TOP OF CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF RICK		
N/A			N/A		1	N/A		57.2 FT		10.0/47.2 FT		8.0/49.2 FT		
SAMPLE HAMMER WEIGHT/FALL				CASING LEFT IN HOLE/DIA./LENGTH				LOGGED BY:						
N/A				N/A				P. YEN						
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES							
SS 1.5" 24" REAMED HOLE WITH 6 IN AUGER	N/A	N/A	N/A					57.2				0-6.0 FT. SILT (ML) DUSKY BROWN (5YR 2/2) SOFT, SILTY, NON-PLASTIC, WITH BRICK AND RUBBLE FRAGMENTS.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. VAPOR WAS EMITTED FROM THE HOLE ON COMPLETION OF DRILLING.	
								51.2	5.0		6.0-8.0 FT. SAND (SC-SM) PALE BROWN (5YR 5/2) SOFT, SILTY, FINE-GRAINED, UNCOHESIVE, MOIST.			
								49.2	8.0		8.0-10.0 FT. SANDSTONE, BLACK (M1), SOFT, FINE GRAINED, SILTY MODERATELY WEATHERED, SATURATED.			
								47.2	10.0					
BOTTOM OF HOLE AT 10.0 FT.												5-23-86		
BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-23-86.														
DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS AND SAMPLES.														

SS-SPLIT SPOON ST-SHELBY TUBE
D-DEBRIS P-PITCHER O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-67C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.		SHEET NO.		HOLE NO.		
MAYWOOD INTERIM STORAGE SITE				N9930 E9800		14501-138		1 of 1		MISS-68C		
SITE		COORDINATES				ANGLE FROM MON.		BEARING				
MAYWOOD INTERIM STORAGE SITE		N9930 E9800				90		N/A				
BEGIN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		HOLE SIZE		TOTAL DEPTH		
5-22-86		5-22-86		MORTRENC ENVIRONMENTAL SERVICES		MOBILE B-40L		6 IN		12.5 FT		
CORE RECOVERY(FT./%)		CORE BOXES		SAMPLES		EL. TOP OF CASING		GROUND EL.		DEPTH/EL. GROUND WATER		
N/A		N/A		1		N/A		59.9 FT		12.5/47.4 FT		
SAMPLE NUMBER (BOHNT/FT.)			CASING LEFT IN HOLE (IN./LENGTH)			LOGGED BY:						
N/A			N/A			P. YEN						
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BELOW PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOGS IN (G.P.A.)	PRESSURE (P.S.I.)	TIME IN MINUTES						
SS 1.5" REAMED HOLE WITH 6 IN AUGER	24"	N/A	N/A				59.9					
							59.4	0.5		0-0.5 FT. CRUSHED ROCK, MEDIUM GRAY (NS) CRUSHED BASALT ROAD BASE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
									0.5-8.0 FT. SAND (SC-SM) DUSKY RED (5YR 3/4, 0.5-5.0 FT), WHITE (N9, 5.0-6.0 FT), BLACK (N1, 6.0-8.0 FT), SOFT, NONCOHESIVE TO SLIGHTLY PLASTIC, SILTY AND CLAYEY, MOIST. 5.0-6.0 FT. MAINLY SLUDGE. 6.0-8.0 FT. VERY SILTY.			
			51.9	8.0		8.0-12.5 FT. SANDSTONE, DUSKY RED (5YR 3/4), SOFT TO MODERATELY HARD, FINE-GRAINED, SILTY, SLIGHTLY CLAYEY, WEATHERED, SATURATED.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS AND SAMPLES.					
						47.4	12.5					5/22/86
BOTTOM OF HOLE AT 12.5 FT.												
BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-23-86.												

SS-SPLIT SPOON ST-SHELBY TUBE
P-DEBISON P-PITCHER Q-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-68C



GEOLOGIC DRILL LOG				PROJECT			JOB NO.	SHEET NO.	HOLE NO.					
MAYWOOD INTERIM STORAGE SITE				N9420 E10,005			14501-13B	1 of 1	MISS-69C					
BEGIN		COMPLETED		DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH			
5/23/86		5/23/86		MORTRENTCH ENVIRONMENTAL SERVICES		MOBILE B-40L		6 IN	7.0	2.0	9.0 FT.			
CORE RECOVERY (T./D)			CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.		DEPTH/VEL. GROUND WATER		DEPTH/VEL. TOP OF ROCK				
N/A			N/A	N/A	N/A	56.1 FT.		5.5/50.6 FT.		7.0/49.1 FT.				
SAMPLE BARREL HEIGHT/ALL				CASING LEFT IN HOLE/DAL/LENGTH				LOGGED BY:						
N/A				N/A				P. YEN						
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CRUISING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.	
					LOGS IN G.P.A.L.	PRESSURE P.S.I.	TIME IN MINUTES							
AUGER 6 INCH.								56.1						
								55.6	0.5			0-0.5 FT. CRUSHED ROCK MEDIUM GRAY (M5), SILTY CRUSHED BASALT ROAD BASE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
									5.0			0.5-7.0 FT. SAND (SC-SM) GRAYISH BROWN (5YR 3/2, 0.5-5.0 FT.), MODERATE BROWN (5YR 3/4, 5.0-7.0 FT.) FINE TO MEDIUM GRAINED, SILTY, SLIGHTLY CLAYEY, MOIST.		
								49.1	7.0			7.0-9.0 FT. SANDSTONE DUSKY RED (SR 3/4), SOFT TO MODERATELY HARD, FINE TO MEDIUM GRAINED, MODERATELY WEATHERED, SATURATED.		
							47.1	9.0				BOTTOM OF HOLE AT 9.0 FT.		
												BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-28-86.		
SS-SPLIT SPOON ST-SHEDDY TUBE; B-DODGSON PAPER/CHZ; POTTER												NOTE	MAYWOOD INTERIM STORAGE SITE	HOLE NO. MISS-69C

5-28-86



GEOLOGIC DRILL LOG

PROJECT: **FUSRAP** JOB NO.: **14501-138** SHEET NO.: **1 of 2** HOLE NO.: **MISS-71C**

SITE: **MAYWOOD INTERIM STORAGE SITE** COORDINATES: **N9755 E9270** ANGLE FROM HORIZ.: **90** BEARING: **N/A**

DRILLER: **MORETRENCH ENVIRONMENTAL SERVICES** DRILL MAKE AND MODEL: **MOBILE B-40L** HOLE SIZE: **6 IN** OVERBURDEN (FT.): **9.0** ROCK (FT.): **8.5** TOTAL DEPTH: **17.5 FT.**

DATE: **5/23/86** COMPLETED: **5/23/86** CORE RECOVERY (%): **N/A** CORE BOXES: **N/A** SAMPLES: **1** EL. TOP OF CASING: **N/A** GROUND EL.: **58.5 FT.** DEPTH/EL. GROUND WATER: **12.0/46.5 FT.** DEPTH/EL. TOP OF ROCK: **9.0/49.5 FT.**

SAMPLE NUMBER: **N/A** DEPTH/FALL: **N/A** CASING LEFT IN HOLE/DIA./LENGTH: **N/A** LOGGED BY: **P. YEM**

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BELOW PERCENT CORRECTION	WATER PRESSURE TESTS			ELEVATION	DEPTH	CHANGING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN A.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
SS 1.5" 24"	N/A	N/A	N/A				58.5				0-1.0 FT. SILT (ML) PALE YELLOWISH BROWN (10YR 6/2) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
							57.5	2.0	1	1.0-9.0 FT. SAND (SC-SM) GRAYISH ORANGE PINK (5YR 7/2), WHITE (N9), LIGHT GRAY (N7), FINE-GRAINED, SILTY AND CLAYEY, THINLY STRATIFIED, VARVE LIKE DEPOSIT OF SLIGHTLY PLASTIC SLUDGE, DAMP TO VERY MOIST.		
REAMED HOLE WITH 6 INCH AUGER							49.5	9.0			9.0-17.5 FT. SANDSTONE BLACK (M1) SOFT, FINE-GRAINED, SILTY, MODERATELY TO HIGHLY WEATHERED, SATURATED.	5-28-86 DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.
							40.0					

SS-SPLIT SPOON ST-SHELBY TUBE; P-PEZOMETER; P-PITCHER; O-OTHER SITE: **MAYWOOD INTERIM STORAGE SITE** HOLE NO.: **MISS-71C**



GEOLOGIC DRILL LOG

PROJECT

FUSRAP

JOB NO.
14501-138

SHEET NO.
2 OF 2

HOLE NO.
MISS-71C

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS BY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	CRUISE LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN S.P.A.	PRESSURE P.S.F.	TIME IN MINUTES						
AUGER 6 INCH.							410	17.5				
											BOTTOM OF HOLE AT 17.5 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT 5-28-86.	AUGER REFUSAL AT 17.5 FT.

SS=SPLIT SPOON ST=SHREYB TUBE
D=DENISON P=PITCHER O=OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.
MISS-71C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FLISRAP		14501-138	1 of 2	MISS-76C				
SITE			COORDINATES			ANGLE FROM HORIZ.		BEARING				
MAYWOOD INTERIM STORAGE SITE			N9100 E9740			90		N/A				
BEGIN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
5/27/86	5/27/86	MORETRENCH ENVIRONMENTAL SERVICES	MOBILE B-40L		6 IN	5.0	10.0	15.0				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
N/A		N/A	1	N/A	53.0 FT.	UNABLE TO DETERMINE		5.0/48.0 FT.				
SAMPLE NUMBER WEIGHT/FALL			CASING LEFT IN HOLE/DIA./LENGTH			LOGGED BY						
N/A			N/A			P. YEN						
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BELOW PERCENT CORE RECOVERY	UNTER PRESSURE TESTS			ELEVATION	DEPTH	CORING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOGS IN G.P.A.	PRESSURE P.L.J.	TIME IN MINUTES						
SS 1.5" 24"	N/A	N/A	N/A				53.0					SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
							52.0	1.0	1	0-1.0 FT. SILT (ML) MODERATE BROWN (5YR 3/4), RESIDUAL SOIL.		
							48.0	5.0		1.0-5.0 FT. SAND (SC-SM) WHITE (M9, 1.0-3.0 FT.) GRAYISH ORANGE (10YR 7/3, 3.0-5.0 FT.), FINE-GRAINED SILTY, NON-PLASTIC WITH ASH AND SLUDGE MOIST.		
												5.0-15.0 FT. SANDSTONE BLACK (M1, 5.0-15.0 FT.) SOFT, FINE TO MEDIUM-GRAINED, SILTY NON-PLASTIC TO POORLY CEMENTED, HIGHLY WEATHERED, MOIST TO SATURATED, WITH STRONG H ₂ S ODOOR.
												DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

SS-SPLIT SPOON STANDARD TUBE
DECISION PATCHES OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-76C



GEOLOGIC DRILL LOG

PROJECT

FLSRAP

JOB NO.
14501-138

SHEET NO.
2 OF 2

HOLE NO.
MISS-76C

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE FEET	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESSURE P.S.F.	TIME IN MINUTES						
AUGER 6 INCH							38.0	15.0			BOTTOM OF HOLE AT 15.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-28-86.	

SS=SPLIT SPOON ST=SHELBY TUBE
D=DINSON P=PTCULN O=OTHER

SITE

MAYWOOD INTERM STORAGE SITE

HOLE NO.

MISS-76C



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
										FUSRAP		14501-138	1 of 1	MISS-77C
SITE					COORDINATES					ANGLE FROM MERID.		BEARING		
MAYWOOD INTERIM STORAGE SITE					N8980 E9930					90		N/A		
BEGIN		COMPLETED		DRILLER			DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN FT.	ROCK FT.	TOTAL DEPTH		
5/28/86		5/28/86		MORETRENCH ENVIRONMENTAL SERVICES			MOBILE B-40L		6 IN	1.0	5.0	6.0 FT.		
CORE RECOVERY %			CORE BOXES	SAMPLES	EL. TOP OF CASING		GROUND EL.		DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK			
N/A			N/A	1	N/A		51.0 FT.		DRY		1.0/50.0 FT.			
SAMPLE NUMBER (RIGHT/ALL)				CASING LEFT IN HOLE (IN./LENGTH)				LOGGED BY:						
N/A				N/A				P. YEN						
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORE RUN)	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS				ELEVATION	DEPTH	CORRECTION (CG)	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOGS IN O.P.A.L.	PRESSURE P.S.I.	TIME IN MINUTES							
SS 1.5" 24"	N/A	N/A	N/A	N/A					51.0				0-1.0 FT. SILT (ML) MODERATE BROWN (SYR 3/4), RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. GROUND WATER LEVEL MEASURED ON 5-28-86.
									50.0	1.0	1	1.0-6.0 FT. SANDSTONE DISKY RED (SR 3/4) SOFT TO MODERATELY HARD, FINE TO MEDIUM-GRAINED, UNCEMENTED TO POORLY CEMENTED, VERY SILTY, DRY TO MOIST.		
									45.0	6.0				
REAMED HOLE WITH 6 INCH AUGER													BOTTOM OF HOLE AT 6.0 FT.	
													BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-28-86.	
														DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

SS-SPLIT SPOON ST-SHELBY TUBE
IN-CORRECTION PATCHES-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

FILE NO.

MISS-77C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.					
MAYWOOD INTERIM STORAGE SITE				FLURAP		14501-138	1 of 1	MISS-78C					
SITE				COORDINATES			ANGLE FROM NODAL	BLASING					
MAYWOOD INTERIM STORAGE SITE				N9135 E10,035		90		N/A					
BEGIN	COMPLETED	DRILLER	DRILL MAKE AND MODEL		HOLE SIZE	OVERLAP (FT.)	ROCK (FT.)	TOTAL DEPTH					
5/28/86	5/28/86	MORETRENCH ENVIRONMENTAL SERVICES	MOBILE B-40L		6 IN	0.5	5.5	6.0 FT.					
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK					
N/A		N/A	1	N/A	53.0 FT.	DRY		0.5/52.5 FT.					
SAMPLE NUMBER		DEPTH/FEET	CASING LEFT IN HOLE (OD)/LENGTH		LOGGED BY:								
N/A			N/A		P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE INCH	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLINDS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN O.P.A.L.	PRESSURE P.S.I.	TIME IN MINUTES						
SS 1.5" 24"	N/A	N/A	N/A	N/A				53.0					
								52.5	0.5	0-0.5 FT. SILT (ML) MODERATE BROWN (SR 3/4), RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. GROUND WATER LEVEL MEASURED ON 5/28/86.		
										0.5-6.0 FT. SANDSTONE, DUSKY RED (SR 3/4) SOFT, FINE TO MEDIUM-GRAINED, SILTY, NON-PLASTIC, DRY TO MOIST, GENERALLY UNCEMENTED. 5.0-6.0 FT. MODERATELY HARD, CEMENTED.			
			47.0	6.0	BOTTOM OF HOLE AT 6.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-28-86.								
												DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.	

SS-SPLIT SPOON ST-SHELBY TUBE
D-DEWISON P-PITCHER O-OTHER

NOTE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-78C



GEOLOGIC DRILL LOG										PROJECT		JOB NO.	SHEET NO.	HOLE NO.
MAYWOOD INTERIM STORAGE SITE										N9350 E9550		14501-138	1 of 2	MISS-80C
DATE		COMPLETED		DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH			
5-29-86		5-29-86		MORETRENCH ENVIRONMENTAL SERVICES		MOBILE B-4CL		6 IN	9.0	6.0	15.0 FT.			
CORE RECOVERY (%)		CORE BOGGS	SAMPLES	BL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK						
N/A		N/A	1	N/A	56.8 FT.	8.0/48.8 FT.		9.0/47.8 FT.						
SAMPLE NUMBER			CASING LEFT IN HOLE (DIA./DEPTH)			LOGGED BY								
N/A			N/A			P. YEN								
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORE DIA.)	SAMPLE RECOVERY (%)	SAMPLE RECOVERY (%)	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.		
				LOGS IN C.P.A.	PRESSURE (P.S.I.)	TIME IN MINUTES								
SS 1.5" 24" REAMED HOLE WITH 6 INCH AUGER	N/A	N/A	N/A				56.8							
							56.3	0.5	0-0.5 FT. SILT (ML) MODERATE BROWN (5R 3/4), RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.				
								5.0	0.5-9.0 FT. SAND (SC-SM) WHITE (N9) AND TRACE OF BLACK (N1), SOFT, FINE-GRAINED, VERY SILTY AND CLAYEY, STRATIFIED, WITH ASH AND SLUDGE.					
							47.8	9.0	9.0-15.0 FT. SANDSTONE BLACK (N1, 9.0-14.0 FT.), DUSKY RED (5R 3/4, 14.0-15.0 FT.), SOFT, FINE-GRAINED, VERY SILTY UNCEMENTED TO SLIGHTLY CEMENTED, WEATHERED, SATURATED.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.				
								10.0						

5/30/86

SS-SPL? SPOON ST-SHELBY TUBS
M-CORRECTION PAPER OR OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-80C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501-138	2 of 2	M155-80C				
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS IN PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
							4.9	15.0			M.0-15.0 MODERATELY HARD, CEMENTED.	
AUGER 6 INCH											BOTTOM OF HOLE AT 15.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-30-86.	

SS=SPLIT SPOON ST=SHELBY TUBE
 D=DEWSON P=PITCHER O=OTHER

SITE MAYWOOD INTERIM STORAGE SITE

HOLE NO. M155-80C



GEOLOGIC DRILL LOG

PROJECT

FLSRAP

JOB NO.

14501-138

SHEET NO.

1 of 2

HOLE NO.

MISS-82C

SITE

MAYWOOD INTERIM STORAGE SITE

COORDINATES

N9300

E9600

ANGLES FROM HORIZ.

90

BEARING

N/A

BEGAN

5-29-86

COMPLETED

5-29-86

DRILLED BY

MORE TRENCH
ENVIRONMENTAL SERVICES

DRILL MAKE AND MODEL

MOBILE B-40L

HOLE SIZE

5 IN.

OVERLAP/INCH FT/J

10.0

ROCK FT/J

5.0

TOTAL DEPTH

15.0 FT.

CORE RECOVERY %/T/J

N/A

CORE BOXES

N/A

SAMPLES

1

EL. TOP OF CASING

N/A

GROUND EL.

56.6 FT.

DEPTH/EL. GROUND WATER

10.0/46.6 FT.

DEPTH/EL. TOP OF ROCK

10.0/46.6 FT.

SAMPLE RAMMER WEIGHT/ALL

N/A

CASING LEFT IN HOLE/DIA./LENGTH

N/A

LOGGED BY:

P. YEN

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BLOWS	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	DRIVING LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
SS	1.5'	24"	N/A	N/A				56.6				0-10.0 FT. SAND (SC-SM) WHITE (N9), FINE TO MEDIUM-GRAINED, VERY SILTY, CLAYEY, MOIST, WITH ASH AND SLUDGE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
								46.6	10.0			10.0-15.0 FT. SANDSTONE BLACK (M1), SOFT, FINE-GRAINED, SILTY, WEATHERED, SATURATED.	

5/30/86

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

 SS=SPILT SPONS ST=SMELBY TUBE
 0=COMMON PITCHER 0=OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-82C



GEOLOGIC DRILL LOG

PROJECT

FLURAP

JOB NO.
14501-138

SHEET NO.
2 of 2

HOLE NO.
MISS-82C

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWS OR PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOGS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
AUGER 5 INCH							4.6	15.0			<p>BOTTOM OF HOLE AT 15.0 FT.</p> <p>BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-30-86.</p>	

SS-SPLIT SPOON ST-SHELBY TUBE
D-DENISON P-PITCHER O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.
MISS-82C



GEOLOGIC DRILL LOG				PROJECT		JOB NO.	SHEET NO.	HOLE NO.				
				FUSRAP		14501-138	1 of 2	MISS-83C				
SITE			COORDINATES			ANGLE FROM HORIZ.		BEARING				
MAYWOOD INTERIM STORAGE SITE			N9350 E9475			90		N/A				
BEGIN	COMPLETED	DRILLER		DRILL MAKE AND MODEL		HOLE SIZE	OPEN/LENGTH (FT.)	ROCK (FL)	TOTAL DEPTH			
5-29-86	5-29-86	MORETRENCH ENVIRONMENTAL SERVICES		MOBLE B-40L		5 IN.	10.0	5.0	15.0 FT.			
CORE RECOVERY(FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
N/A		N/A	1	N/A	57.3 FT.	UNABLE TO DETERMINE		10.0/47.3 FT.				
SAMPLE NUMBER WEIGHT/FULL		CASING LEFT IN HOLE (OD/LIN/WT)			LOGGED BY:							
N/A		N/A			P. YEN							
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE INCH	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BELONGS TO PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN A.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
SS	1.5" 24"	N/A	N/A				57.3				0-10.0 FT. SAND (SC-SM) PALE BROWN (5YR 5/2, 0-6.0 FT.), GRAYISH BROWN (5YR 3/2, 6-10.0 FT.) FINE GRAINED, VERY SILTY, SLIGHTLY CLAYEY, SLIGHTLY CLAYEY, SLIGHTLY PLASTIC TO NON-PLASTIC, MOIST.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. GROUND WATER LEVEL MEASURED ON 5/30/86
REAMED HOLE WITH 5 INCH AUGER												
							47.3	10.0			10.0-15.0 FT. SANDSTONE BLACK (M1) TO GRAYISH BLACK (M2), SOFT, FINE TO MEDIUM-GRAINED, POORLY CEMENTED, SILTY WEATHERED, MOIST.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

SS-SPLIT SPOON ST-SHELBY TUBE
 O-OTHER PITCHED O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.

MISS-83C



GEOLOGIC DRILL LOG

PROJECT

FLUSRAP

JOB NO.
145D1-138

SHEET NO.
2 of 2

HOLE NO.
WISS-83C

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOWBY	PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.A.	PRESSURE P.S.I.	TIME IN MINUTES						
AUGER 5								42.3	15.0				
												<p>BOTTOM OF HOLE AT 15.0 FT.</p> <p>BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-30-86.</p>	

SS-SPLIT SPOON ST-SHELBY TUBE
D-DEWSON P-PITCHER O-OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO.
WISS-83C



GEOLOGIC DRILL LOG

PROJECT: FUSRAP
 JOB NO.: 14501-138
 SHEET NO.: 1 of 2
 HOLE NO.: MISS-84C

SITE: MAYWOOD INTERIM STORAGE SITE
 COORDINATES: N9400 E9500
 ANGLE FROM HORIZ: 90
 BEARING: N/A

BEHIN: 5-29-86
 COMPLETED: 5/30/86
 DRILLER: MORETRENCH ENVIRONMENTAL SERVICES
 DRILL MAKE AND MODEL: MOBILE B-40L
 HOLE SIZE: 5 IN.
 OVERBURDEN (FT.): 11.0
 ROCK (FT.): 5.0
 TOTAL DEPTH: 16.0 FT.

CORE RECOVERY (%): N/A
 CORE BOXES: N/A
 SAMPLES: 1
 EL. TOP OF CASING: N/A
 GROUND EL.: 56.5 FT.
 DEPTH/VEL. GROUND WATER: 10.0/46.5 FT.
 DEPTH/VEL. TOP OF ROCK: 11.0/45.5 FT.

SAMPLE NUMBER WEIGHT/FULL: N/A
 CASING LEFT IN HOLE/DIA./LENGTH: N/A
 LOGGED BY: P. YEN

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOW BY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
SS 1.5"	24"	N/A	N/A				56.5					
							56.0	0.5			1-0.5 FT. SILT (ML) GRAYISH BROWN (SYR 3/2), RESIDUAL SOIL. 0.5-11.0 FT. SAND (SC-SM) WHITE (N9) TO LIGHT GRAY (N7), FINE-GRAINED, SILTY, CLAYEY, SLIGHTLY PLASTIC TO NON-PLASTIC, MOIST TO SATURATED, WITH ASH AND SLUDGE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.
REAMED HOLE WITH 5 INCH AUGER												
							45.5	11.0			11.0-16.0 FT. SANDSTONE BLACK (M1) SOFT, FINE TO MEDIUM-GRAINED, SILTY, POORLY CEMENTED, WEATHERED, SATURATED.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

ADVANCED HOLE BY AUGER DRILLING ON 5-30-86.

5/30/86

SE-SPLIT SPOON ST-SHLEY TUBE; BODINSON PATCHED OTHER
 SITE: MAYWOOD INTERIM STORAGE SITE
 HOLE NO.: MISS-84C



GEOLOGIC DRILL LOG							PROJECT	JOB NO.	SHEET NO.	HOLE NO.		
							FLSRAP	14501-138	2 of 2	MJSS-84C		
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BLOWS IN PERCENT CORRECTION	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.A.	PRESSURE P.S.F.	TIME IN MINUTES						
Auger 5 inch							40.5	15.0 16.0				
											<p>BOTTOM OF HOLE AT 16.0 FT.</p> <p>BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-30-86.</p>	

SS=SPLIT SPOON ST=SHELBY TUBE
D=DEWISON P=PITCHER O=OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO. MJSS-84C



GEOLOGIC DRILL LOG

PROJECT FUSRAP		JOB NO. 14501-138	SHEET NO. 1 OF 2	HOLE NO. MISS-85C
SITE MAYWOOD INTERIM STORAGE SITE		COORDINATES N9430 E9415		ANGLE FROM NORD. 90
BEGAN 5-30-86	COMPLETED 5-30-86	DRILLER MORETRENCH ENVIRONMENTAL SERVICES		DRILL MAKE AND MODEL MOBILE B-40L
CORE RECOVERY (%) N/A		CORE BOXES N/A	SAMPLES 1	EL. TOP OF CASING N/A
GROUND EL. 56.0 FT.		DEPTH/EL. GROUND WATER UNABLE TO MEASURE		DEPTH/EL. TOP OF ROCK 11.0/45.0 FT.

SAMPLE NUMBER BERTH/FALL N/A	CASING LEFT IN HOLE DRILL LENGTH N/A	LOGGED BY: P. YEN
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SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORE RUN	SAMPLE RECOVERY CORE RECOVERY	SAMPLE BLOSS %	PERCENT CORE RECOVERY	WATER PRESSURE TESTS		ELEVATION	DEPTH	CHANGES LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LESS IN G.P.A.	PRESSURE P.S.I.						
SS 1.5" 24"	N/A	N/A	N/A				56.0				0-11.0 FT. SAND (SC-SM) PALE YELLOWISH BROWN (10YR 7/2), FINE-GRAINED, SILTY, DRY TO MOIST.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. GROUND WATER LEVEL MEASURED ON 5/30/86
							45.0	11.0	11.0-15.0 FT. SANDSTONE DUSKY BROWN (5YR 2/2) TO DUSKY RED (5R 3/4), SOFT, FINE-GRAINED, SILTY, POORLY CEMENTED, WEATHERED, SATURATED.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.		

SS-SPLIT SPOON ST-SHELBY TUBE D-DIAMETER P-PITCHER O-OTHER	DATE MAYWOOD INTERIM STORAGE SITE	HOLE NO. MISS-85C
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GEOLOGIC DRILL LOG							PROJECT	JOB NO.	SHEET NO.	HOLE NO.		
							FUSRAP	14501-138	2 of 2	MISS-85C		
SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH CORRECTION	SAMPLE RECOVERY CORRECTION	SAMPLE BLOWS % PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF WELLING, ETC.
				LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
AUGER 5 INCH							410	15.0			BOTTOM OF HOLE AT 15.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-30-86.	

SS=SPLIT SPOON ST=SHREIBY TUBE
D=DENISON P=PITCHER O=OTHER

SITE

MAYWOOD INTERIM STORAGE SITE

HOLE NO. MISS-85C



GEOLOGIC DRILL LOG

PROJECT: **FLSRAP** JOB NO.: **14501-138** SHEET NO.: **1 of 2** HOLE NO.: **MISS-06C**

SITE: **MAYWOOD INTERIM STORAGE SITE** COORDINATES: **N9500 E9600** ANGLE FROM HORIZ.: **90** BEARING: **N/A**

BEGIN: **5-30-86** COMPLETED: **5-30-86** DRILLER: **MORETRENCH ENVIRONMENTAL SERVICES** DRILL MAKE AND MODEL: **MOBILE B-40L** HOLE SIZE: **5 IN.** OVERBURDEN (FT.): **15.0** ROCK (FT.): **0** TOTAL DEPTH: **15.0 FT.**

CORE RECOVERY (%): **N/A** CORE BOXES: **N/A** SAMPLES: **1** EL. TOP OF CASING: **N/A** GROUND EL.: **57.0 FT.** DEPTH/VEL. GROUND WATER: **UNABLE TO MEASURE** DEPTH/VEL. TOP OF ROCK: **N/A**

SAMPLE NUMBER: **N/A** CASING LEFT IN HOLE (IN./LENGTH): **N/A** LOGGED BY: **P. YEN**

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORE RUN)	SAMPLE RECOVERY (%)	SAMPLE BLIND	LOSS IN G.P.A.	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
					LOSS IN G.P.A.	PRESSURE (P.S.I.)	TIME IN MINUTES						
SS 1.5" 24"	N/A	N/A					57.0					0-7.0 FT. SILT AND ASH (ML) WHITE (N9) CLAYEY, SANDY, SLIGHTLY PLASTIC, MOIST WITH SLUDGE.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION. EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING. GROUND WATER LEVEL MEASURED ON 5-30-86.
							50.0	7.0				7.0-15.0 FT. SAND (SC-SM) GRAYISH BROWN (5YR 3/2, 7.0-10.0 FT.) BLACK (M), 10.0-15.0 FT.) FINE-GRAINED, SILTY, NON-PLASTIC, WEATHERED, SATURATED.	

SS-SPLIT SPONGE ST-DELTA TUBE; B-CERAMIC P-PITCHER 0-OTHER SITE: **MAYWOOD INTERIM STORAGE SITE** HOLE NO.: **MISS-06C**

DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.



GEOLOGIC DRILL LOG							PROJECT	JOB NO.	SHEET NO.	HOLE NO.		
							FUSRAP	14501-138	2 of 2	MISS-86C		
SAMPLE TYPE AND DIAMETER	SAMPLER AVAILABLE LENGTH CORRECTION	SAMPLE RECOVERY CORE RECOVERY	SAMPLE LOSS %	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.M.	PRESSURE P.S.I.	TIME IN MINUTES						
AUGER 5 INCH							42.0	15.0			BOTTOM OF HOLE AT 15.0 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 5-30-86.	
SS-SPLIT SPOON ST-SHELBY TUBE; D-DEWISON P-PITCHER O-OTHER							SITE MAYWOOD INTERIM STORAGE SITE				HOLE NO. MISS-86C	



GEOLOGIC DRILL LOG			PROJECT	FUSRAP	JOB NO.	14501-138	SHEET NO.	1 OF 1	HOLE NO.	MISS-90C		
SITE		COORDINATES			MAYWOOD INTERIM STORAGE SITE		NS200 E9900		ANGLE FROM MERID.	90	SLANT	N/A
DRILLER	COMPLETED	DRILLER		DRILL MAKE AND MODEL	HOLE SIZE	OVERBURDEN (FT.)	ROCK (FT.)	TOTAL DEPTH				
6-3-86	6-3-86	MORETRENCH ENVIRONMENTAL SERVICES		MOBILE B-ACL	5 IN	7.0 FT.	4.5 FT.	11.5 FT.				
CORE RECOVERY (FT./%)		CORE BOXES	SAMPLES	EL. TOP OF CASING	GROUND EL.	DEPTH/EL. GROUND WATER		DEPTH/EL. TOP OF ROCK				
N/A		N/A	1	N/A	55.0 FT.	9.0/46.0 FT.		7.0/46.0 FT.				
SAMPLE HAMMER WEIGHT/FALL			CASING LEFT IN HOLE/DIA./LENGTH			LOGGED BY						
N/A			N/A			P. YEN						

SAMPLE TYPE AND DIAMETER	SAMPLER ADVANCE LENGTH (CORRECTION)	SAMPLE RECOVERY CORRECTION	SAMPLE BLOW BY PERCENT CORE RECOVERY	WATER PRESSURE TESTS			ELEVATION	DEPTH	GRAPHIC LOG	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
				LOSS IN G.P.A.	PRESSURE P.S.F.	TIME IN MINUTES						
SS 1.5" 24" REAMED HOLE WITH 5 INCH AUGER	N/A	N/A	N/A				55.0					
							54.0	1.0		0-1.0 FT. <u>SILT</u> (ML) MODERATE BROWN (5YR 3/4) RESIDUAL SOIL.	SITE CHECKED FOR RADIOACTIVE CONTAMINATION BY EBERLINE ANALYTICAL CORPORATION.	
							53.0	2.0		1.0-2.0 FT. <u>SANDSTONE</u> BLACKISH RED (5R 2/4), MODERATELY HARD, WITH 2 INCH GRAVEL.		
										2.0-7.0 FT. <u>SAND</u> (SC-5M) GRAYISH BROWN TO DUSKY BROWN (5YR 3/2, TO 5YR 2/2) FINE TO MEDIUM-GRAINED, SILTY, MOIST.	EBERLINE ANALYTICAL CORPORATION PERFORMED GAMMA LOGGING.	
						48.0	3.0			7.0-11.5 FT. <u>SANDSTONE</u> VERY DARK RED (5R 2/5), SOFT TO MODERATELY HARD, FINE TO MEDIUM-GRAINED, SILTY, WEATHERED, MOIST TO SATURATED.		
						43.5	11.5				BOTTOM OF HOLE AT 11.5 FT. BACKFILLED WITH CEMENT-BENTONITE GROUT, 6-6-86.	DESCRIPTION AND CLASSIFICATION BY VISUAL EXAMINATION OF CUTTINGS.

▽ 6/6/86

SS-SPLIT SPONS ST-SHELBY TUBE
B-CORRECTION PARTIAL BLOW BY

NOTE

HOLE NO.