POST-CLOSURE MONITORING AND MAINTENANCE PLAN INTERIM REMEDIAL MEASURE

STRIPPIT, INC. AKRON, NEW YORK

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Date: February, 1995

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1.0 INTRODUCTION

Strippit, Inc., a Unit of IDEX Corporation (Strippit), has implemented an Interim Remedial Measure (IRM) approved by the New York State Department of Environmental Conservation (NYSDEC) at a former disposal area (Site) located south of their 12975 Clarence Center Road, Akron, New York facility (see Locus Plan, Figure 1). This IRM included the construction of a final cover system consisting of a 40-mil HPDE geomembrane and associated soil/topsoil cover over the disposal area. The cover system is graded such that precipitation flows to a surrounding drainage trench which transmits surface water away from the Site.

This document presents the post-closure monitoring and maintenance plan for the Site. The intent of this plan is to outline procedures to monitor groundwater quality in the vicinity of the Site during the post-closure period. Additionally, procedures to monitor and maintain the integrity of the cover system, monitoring well network and the associated surface water drainage system are presented herein.

1.1 Site History

The approximately 2.3-acre former disposal area is located in the southwest corner of the Strippit property (see Figure 2, Site Plan). Available historic information indicates that this disposal area was used from approximately 1940 to 1975 to dispose of waste materials generated at the Strippit facility or its predecessors.

To date, various studies have been completed to characterize conditions at and around the former disposal area. These studies determined that the fill within the disposal area consists of a heterogeneous mixture of clayey silts, sand, gravel, cobbles, isolated pockets of grinding fines, metal pieces, slag, wood debris, brick fragments, concrete fragments, rusted and broken 55-gallon drums and electrical wiring. Underlying the fill material, the native soils consist of lacustrine silts and sands with varying amounts of gravel and clay. The uppermost water bearing zone was encountered at a depth of 50 to 55 feet beneath the fill. Based upon measurements made in monitoring wells sealed within this zone, groundwater flow is from the south to the northwest.

1.2 Previous Studies

Reports discussing conditions at the Site and the remedial activities completed to date are summarized in Section 6.00 of this submittal.

2.0 GROUNDWATER MONITORING

Five (5) existing monitoring wells are located in the vicinity of the former disposal area (see Site Plan, Figure 2). Two (2) of these wells, GW-2 and GW-5, are located upgradient of the Site and the remaining wells, GW-1, GW-3 and GW-4, are located downgradient of the Site. Copies of the boring logs and well installation diagrams for each of these wells are included in Appendix A of this submittal. Post-closure monitoring will include the sampling and testing of these wells for a period of thirty (30) years or less if deemed appropriate. Specific aspects of this monitoring are discussed in subsequent sections of this document.

2.1 Previous Testing

Two (2) groundwater sampling rounds (June 1990 and February 1993) have been completed for monitoring wells GW-1, GW-2, GW-3 and GW-4. One (1) groundwater sampling round (February 1993) has been completed for GW-5. The June, 1990 sampling round included testing for Target Compound List (TCL) organic compounds (volatile, semi-volatile pesticides and PCBs), and Target Analyte List (TAL) metals and cyanide. The February, 1993 sample round included testing for TCL volatile organics, TCL semi-volatile organics, cyanide and selected total and soluble metals (i.e., aluminum, barium, cobalt, iron, magnesium, manganese, vadium and zinc).

Parameters for which detectable concentrations were measured during the June 1990 and February 1993 sample rounds are summarized on the tables included on the following pages. Table I-3 is a reprint of a table included in the Phase II Investigation Report prepared by Engineering-Science ("Engineering Investigations at Inactive Hazardous Waste Sites, Phase II Investigations, Houdaille-Industries-Strippit Division, Village of Akron, Site No. 915053, Erie County; March 1991). [Note: GW-5 was not installed until February 1991, and thus it is not included on Table I-3.] Table 2 is a reprint from a July 1993 report by Day Engineering, P.C. entitled "Field Investigation Report, Strippit, Inc., Akron, New York, DEC Site No. 915053".

2.2 Post-Closure Test Parameters

Based upon the results of the previous testing and the nature of the materials within the disposal area (i.e., predominately soil fill with intermixed construction and demolition debris with lesser amounts of industrial waste), site specific test parameters will be monitored. These parameters, which were presented in an October 1993 document prepared by Day Engineering, P.C. entitled "Interim Remedial Measure Work Plan, Strippit, Inc., Akron, New York, DEC Site No. 915053" and approved by the NYSDEC, include:

JUNE 1990
SAMPLING ROUND

TABLE I-3
HOUDAILLE - STRIPPIT
GROUNDWATER RESULTS
TCL ORGANIC COMPOUNDS (UG/L) / TAL METALS (UG/L)

ANALYTE	(3) NYS STANDARD GROUNDWATER (UG/L)	GW-1	GW-2	GW-3	GW-4	GW-5
METHYLENE CHLORIDE	5 b	3 BJR	6 BR	6 BR	-	-
ACETONE	50 b	11	35	-	-	-
CHLOROFORM	100 be	-	3 J	-	-	-
2-BUTANONE	50 b	-	11	-	-	-
TOLUENE	5 b	3 J	3 J	-	-	-
ALUMINUM	NS	513	838	1,770	5,680	5,370
ANTIMONY	3 e	44.3 B	48.0 B	40.9 B	35.7 B	25.7 B
ARSENIC	25 a	-	-	-	3.0 SN	-
BARIUM	1,000 a	191 B	1,120	121 B	221	206
CALCIUM	NS	93,500	268,000	55,000	265,000	239,000
CHROMIUM (total)	50 b	-	-	-	10.7	9.3 B
COPPER	<200 c	-	5.4 B	-	4.8 B	4.1 B
IRON	300 b*	465	462	3,360	14,000	12,900
LEAD	25 a	9.1	1.9 B	4.3 B	12.6	13.7
MAGNESIUM	35,000 e	8,760	789 B	30,000	47,100	40,500
MANGANESE	300 b*	34.3	12.0 B	153	326	281
NICKEL	700 f	12.4 B	-	10.9 B	-	8.2 B
POTASSIUM	NS	303,000	96,800	3,300 B	59,800	59,500
SODIUM	<20,000 c	161,000	229,000	38,000	40,100	37,900
VANADIUM	NS	13.2 B	6.7 B	6.0 B	15.6 B	14.7 B
ZINC	<300 c	-	-	19.8 B	42.0	36.9

Note: GW-5 is a duplicate of GW-4.

Footnote and qualifier list on Table I-7.

Note: CRDL for Antimony is 60 ug/l.

TABLE I-1
FOOTNOTE / QUALIFIER LIST

FOOTNOTES:

(1) USGS, 1984, Professional Paper 1270: New York State Soils.

(2) Booz, Allen & Hamilton, Inc. (1983): Range in U.S. Soils.

(3) New York State quality standard for class GA (source of potable water supply) groundwaters are the most stringent of applicable standards, criteria, or guidelines listed below:

a - NYSDEC Groundwater Quality Regulations, 6 NYCRR, Part 703, dated September 1990.

b - NYSDOH Maximum Contaminant Levels, Public Water Supplies, 10 NYCRR, Subpart 5-1, dated January 1989.

c - NYSDOH Standards, Sources of Water Supply, 10 NYCRR, Part 170.

d - USEPA Maximum Contaminant Levels, 40 CFR 141.

e - NYS Ambient Water Quality Guidance Values, TOGS 1.1.1 dated September 1990.

f - USEPA Health-based Criteria for Systemic Toxicants, dated May 1989.

* - If iron and manganese are present, total concentration of both should not exceed 500 ug/l.

(4) NYSDEC Surface Water Quality Standards, 6 NYCRR, part 701 and 702.

NS: No standard or guidance value established.

ND: The standard for this compound is below detection limit.

DATA QUALIFIERS (ORGANIC COMPOUNDS):

B: This flag is used when the analyte is found in the blank as well as the sample. It indicates possible or probable blank contamination and warns the data user to take appropriate action.

J: Indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero.

--: Indicates compound was analyzed for but not detected. Refer to Appendix D for detection limit.

X or T: Mass spectrum does not meet CLP criteria for confirmation, but compound presence is strongly suspected.

E: This flag is used to indicate that the quantitation of the analyte is outside the curve and that dilution was required to properly quantitate.

D: Flag is used to indicate the value for the target analyte was calculated from a dilution (see E flag above).

Y: Flag used when a matrix spike compound is also confirmed present in the unspiked sample.

R: Data Validation recommends that this value be rejected due to blank contamination.

@: This value, due to speadsheet characteristics, appears as boxed. The value DOES NOT exceed quoted standards.

NS: No standard or guidance value established.

F: Surrogate recovery values were outside the CLP criteria windows. Value is considered an estimated concentration.

NA: Not analyzed.

Values bolded and/or boxed exceed quoted standards.

DATA QUALIFIERS (METALS):

B: Reported value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).

U or -: Reported value is less than IDL.

N: Spiked sample recovery not within control limits.

*: Duplicate analysis (Relative Percent Difference) not within control limits.

W: Post digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

S: The reported value was determined by the Method of Standard Additions (MSA).

+: Correlation coefficient for the MSA is less than 0.995.

E: Reported value is estimated because of the presence of interference.

M: Duplicate injection precision not met.

@: This value, due to speadsheet characteristics, appears as boxed. The value DOES NOT exceed quoted standards.

NS: No standard or guidance value established.

NA: Not analyzed.

Values bolded and/or boxed exceed quoted standards.

February 1993
Sampling Round

TABLE 2
DETECTABLE ANALYTICAL RESULTS
GROUND WATER SAMPLES

STRIPPIT, INC.
AKRON, NEW YORK

		MONITORING WELL SAMPLE NUMBER				
COMPOUND	UNITS	GW-1	GW-2	GW-3	GW-4	GW-5
acetone	µg/l	10 U	17	10 U	10 U	30
phenol	µg/l	10 U	12	10 U	10 U	10 U
phenanthrene	µg/l	10 U	10 U	10 U	10 U	1 J
Total aluminum	µg/l	247	389	1090	8260	1550
Soluble aluminum	µg/l	48.9 U	327	48.9 U	48.9 U	51.6 B
Total barium	µg/l	116 B	466	77.8 B	124 B	114 B
Soluble barium	µg/l	102 B	409	1.1 U	36.8 B	107 B
Total iron	µg/l	181	89.6 B	1460	11,300	1680
Soluble iron	µg/l	5.3 B	21.8 B	5.3 U	5.3 U	26.5 B
Total magnesium	µg/l	9720	129 U	30,000	66,700	3560 B
Soluble magnesium	µg/l	8520	129 U	129 U	65,000	153 B
Total manganese	µg/l	3.3 B	1.6 B	127	224	37.8
Soluble manganese	µg/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total vanadium	µg/l	13.6 U	13.6 U	13.6 U	15.9 B	13.6 U
Soluble vanadium	µg/l	13.6 U	13.6 U	13.6 U	13.6 U	15.6 B
Total zinc	µg/l	5.1 B	10.2 B	12.0 B	31.6	32.2
Soluble zinc	µg/l	16.8 B	47.9	2.8 U	3.2 B	4.0 B

NOTE:

U - compound analyzed but not detected

J - estimated concentration of organic compound which is less than the sample quantitation limit but greater than zero

B - concentration of inorganic compound that is less then the contract required detection limit, but greater than the instrument detection limit

Field Parameters

- Water level
- pH
- Specific conductance
- Turbidity
- Temperature

Analytical Laboratory Parameters

- Volatile organic compounds (USEPA Method 8240)
- Semi-volatile organic compounds (USEPA Method 8270: acid extractable only)
- Total barium
- Soluble barium
- Total iron
- Soluble iron
- Total magnesium
- Soluble magnesium

At the request of the NYSDEC, the following parameters will also be included.

- Total manganese
- Soluble manganese
- Total cyanides
- Soluble cyanides

Analytical laboratory testing will be done by a laboratory approved by the New York State Department of Health (NYSDOH) to test for the above parameters. The specific laboratory proposed will be identified prior to the sample event. Laboratory deliverables will be in accordance with NYSDEC Analytical Service Protocols (ASP), September 1989 (Revised 12/91). An ASP Category A data package will be submitted for each of the quarterly sampling rounds. During the fourth sampling round, Category B QA/QC procedures will be implemented. However, a Category B data package will only be submitted if the QA/QC results indicate a potential problem with the test data. If discrepancies are noted, the data package will include information for the impacted group of parameters (e.g., if metals are determined to be a problem the Category B data package for metals will be submitted and the Category A data package will be provided for the other fractions).

2.3 Sampling Frequency

Initially, samples will be collected quarterly, beginning within thirty (30) days of the NYSDEC's acceptance/approval of this post-closure monitoring and maintenance plan. Test parameters and sample frequency will be reviewed annually by Strippit and NYSDEC. If appropriate, the test parameter list and/or sample frequency will be adjusted at this time. It is expected that the post-closure groundwater monitoring will continue for a period of thirty (30) years or a shorter period mutually agreed to by Strippit and NYSDEC.

2.4 Sampling Procedures

Groundwater samples will be collected utilizing the following procedures:

1. Initially, pertinent information will be completed on the monitoring well sampling logs (see example log on the next page) for each of the wells to be sampled.

2. The condition of the well casing and surrounding surface seal will be observed and any deficiencies noted on the sampling log.

3. An electronic tape water level indicator will be used to measure the depth of the top of the water within the well casing and to the bottom of the well. These measurements will be noted on the sampling log. The affected portion of the electronic tape will be wiped clean and rinsed with distilled water prior to measurements in other monitoring wells.

4. A centrifugal pump equipped with disposable polyethylene tubing, or other suitable method, will be used to purge a minimum of three well volumes (as determined based on the measurements made in Step 3) from each well. To reduce turbulence and to assure that the entire water column is pumped, the HPDE tubing will only be placed several feet into the top of the water table and the pump rate will be adjusted to preclude draw down beneath the tubing. Purge water collected will be initially placed in a calibrated 5-gallon bucket and discharged on the ground surface in proximity to the well head when full.

5. The amount of water purged and the corresponding water volume removed from the well will be recorded on the sampling log.

6. Following purging and recovery of water within the well to within 10% of its static level, samples will be collected for analytical testing. These samples will be collected utilizing a separate disposable HPDE bailer attached to a monofilament cord for each well. The initial sample retrieved by the bailer will be used to fill 40 ml containers designated for volatile organic compound testing. Subsequent bailers will be used to randomly fill containers for other parameters.

DAY ENGINEERING
MONITORING WELL SAMPLING LOG

MW - ID#: _____

SECTION 1

SITE LOCATION: _____ JOB #: _____

PROJECT NAME: _____ DATE : _____

SAMPLE COLLECTOR(S): _____

WEATHER CONDITIONS: _____

SECTION 2 - PURGE INFORMATION

DEPTH OF WELL [FT]: _____ (MEASURED FROM TOP OF CASING - T.O.C.)

STATIC WATER LEVEL(SWL) [FT]: _____ (MEASURED FROM T.O.C.)

HEIGHT OF WATER COLUMN [FT]: _____ (DEPTH OF WELL - SWL)

CALCULATED VOL. OF H_2O PER WELL CASING [GAL]: _____ ; CASING DIA. ____

CALCULATIONS:

CASING DIA.(FT)	WELL CONSTANT(GAL/FT)
2" (0.1667)	0.1632
4" (0.3333)	0.6528
6" (0.5000)	1.4688

CALCULATIONS

VOL. OF H_2O IN CASING = DEPTH OF WATER COLUMN x WELL CONSTANT

CALCULATED PURGE VOLUME [GAL]: _____ (3 - 5 TIMES CASING VOLUME - SPECIFY)

ACTUAL VOLUME PURGED [GAL]: _____

PURGE METHOD: _____ PURGE START: _____ END: _____

SECTION 3 - SAMPLE IDENTIFICATION

SAMPLE ID #	TIME	SAMPLING METHOD	ANALYTICAL SCAN(S)	SAMPLE APPEARANCE

SECTION 4 - SAMPLE DATA

SWL (FT)	TEMP (^{0}C)	pH	CONDUCTIVITY (uMHOS/CM)	TURBIDITY (NTU)	VISUAL	PID/FID READING

COMMENTS:

FILE:WELLSM1

7. During the sample collection, a field sample will be collected for the in-situ testing of pH, specific conductance, temperature and turbidity. These parameters will be tested utilizing the following equipment (or similar) which will be calibrated according to manufacturers requirements before use.

   - Ph: Cole-Parmer Model 05985-80 Digi-Sensepit Ph Meter
   - Specific conductance and temperature: Cole-Parmer Model 1481-5 Conductivity/Temperature Meter
   - Turbidity: LaMotte Model 2008 Turbidity Meter

8. Samples collected for analytical testing will be placed in containers provided by the analytical laboratory. A label will be completed for each container including a unique sample identification code. A typical code to be used is presented below:

   2430-09014-GW1
   Where:
   2430 = job designation
   09014 = sample date
   GW1 = sample location

9. Following collection and labeling of the sample containers, they will be placed in a plastic cooler containing ice. At the completion of the sample round, these coolers will be transported to the analytical laboratory following chain-of-custody protocols to document a continuous chain of possession. A typical chain-of-custody form to be completed is included on the following page.

10. The analytical laboratory will be contacted the day following the sampling event to assure that the containers were received and that they are adequate for testing (i.e., no broken containers, sufficient labeling, etc.)

2.5 QA/QC Samples

In addition to the samples collected from the monitoring wells, the following samples will also be analyzed during each sample round.

Field Samples

- One (1) duplicate sample
- One (1) trip blank sample
  Note: Since disposable equipment will be used to collect samples, no field rinse blank samples will be required.

CHAIN-OF-CUSTODY RECORD

Station Number	Time (24 hr.)	Container ID	Sampler ID	Location Description	Sample Type	ANALYSES REQUIRED	Total # of Cont.	Note #
TOTAL NUMBER OF CONTAINERS								

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

NOTES:

ANALYTICAL LABORATORY: _____

LABORATORY CONTACT: _____

CONTACT: _____

_____

DAY ENVIRONMENTAL, INC.
AN AFFILIATE OF DAY ENGINEERING, P.C.

SUITE 210
338 HARRIS HILL ROAD
WILLIAMSVILLE, NEW YORK 14221

FILE NO. _____ P.O. NO. _____

PROJECT _____

LOCATION _____

COLLECTOR _____

DATE OF COLLECTION _____ SHEET _____ OF _____

Laboratory Samples

- Category A
  The daily method blank sample results for each fraction tested (i.e., volatiles, semi-volatiles and metals) will be reported.

- Category B (These samples will be tested during the fourth sampling round. If discrepancies are detected, a Category B data package will be submitted.)

  - One (1) method blank
  - One (1) matrix spike
  - One (1) matrix spike duplicate

The field duplicate sample will be collected from one of the monitoring wells and labeled such that the analytical laboratory is unaware of the sample's origin. This sample will be analyzed for the same list of parameters as the monitoring well samples.

The trip blank sample will consist of a 40 ml vial filled with deionized water. This sample will be prepared by the analytical laboratory and delivered with the complete set of sample containers. The trip blank sample will be carried throughout the sample round and handled similar to other analytical samples. The trip blank sample will be analyzed for the volatile organic fraction only.

2.6 Reporting

Following receipt of the analytical results for each quarterly sample round, a report will be prepared and submitted to NYSDEC. This report will include the following:

- a narrative section describing the sampling event and discussing the results, particularly with respect to variations and potential trends when compared to previous results;

- tables summarizing groundwater elevation measurements and in-situ test results;

- copies of field sampling logs prepared for each well; and

- a copy of the complete report submitted by the analytical laboratory (including required ASP deliverables).

An annual summary report will be submitted that summarizes the results of the quarterly sampling rounds. The annual report will be submitted following receipt of the test results from the fourth quarter sampling event. This report will include a table presenting the quarterly analytical test results and groundwater level measurements. Additionally, as an

adequate data base is developed a statistical evaluation comparing upgradient and downgradient test results will be presented in this report. The statistical evaluation will utilize a Student's T-test at the 0.05 level of significance (or other appropriate method) to determine statistically significant increases. For purpose of comparison, the measure of the mean and variance at each downgradient point will be determined and these values will be compared to background conditions. Background conditions will be based upon an average of existing parameter concentrations plus measurements made during the preceding year.

In the event a statistically significant change is determined, the NYSDEC will be notified. Strippit and NYSDEC will meet to assess the significance of the change and to determine whether, and to what extent, the groundwater program should be modified.

3.0 MAINTENANCE PLAN

The integrity of the cover system and monitoring well network will be evaluated each time groundwater samples are collected. This evaluation will include an observation of the cap, particularly side slope areas, for evidence of sloughing, cracking, erosion, settlement, stressed vegetation, and the presence of seeps. Additionally the vegetative cover will be observed to assure adequate growth and the drainage trench inspected for evidence of blockage or other potential problems. Since a crown vetch cover is planned for the Site, it is not expected that cutting or other maintenance of the vegetative cover will be required.

The results of the quarterly monitoring and the resolution of problems noted (if any) will be submitted to NYSDEC in conjunction with the groundwater sampling report. A example of typical quarterly monitoring report to be completed and submitted is included on the next page. Depending upon the results of this inspection process, the inspection frequency may be altered after one (1) year. The NYSDEC will be consulted if a modified schedule is deemed appropriate.

3.1 Site Inspection and Maintenance

Site inspections and maintenance/repairs to be undertaken to assure proper function of the cover system are discussed in the following sections.

3.1.1 Sloughing

Areas of sloughing can occur in topsoil and barrier soil layers. If areas requiring remediation are observed, they will be repaired in accordance with the requirements of the IRM.

3.1.2 Cracks

The location and size (width, length, and depth) of cracks (if encountered) will be documented on the inspection log. A site sketch, showing the approximate location and orientation of cracks will also be prepared and submitted. Inspection for cracks is particularly important after extended dry periods.

The appropriate maintenance procedure depends on the size and depth of the crack. Small shallow cracks in the topsoil will be repaired via minor regrading of the cracked area and reseeding. Larger cracks that appear to extend into the compacted barrier soil will be filled with low permeability soil, covered with topsoil and reseeded.

LONG-TERM QUARTERLY MONITORING REPORT
INTERIM REMEDIAL MEASURE
STRIPPIT, INC.
AKRON, NEW YORK

Date of Inspection: _____

Inspected By: _____

Summary of Observation:
General Condition of Cover: _____
_____
_____

Evidence of Erosion, sloughing or other degradation: ☐ Yes ☐ No

Explain: _____
_____

Evidence of cracking: ☐ Yes ☐ No

Explain (include measurements and site sketch): _____
_____

Evidence of water seepage: ☐ Yes ☐ No

Explain: _____
_____

Evidence of Settlement: ☐ Yes ☐ No

Explain: _____
_____

Condition of monitoring wells and gas wells: _____
_____
_____

Condition of Vegetative Cover: _____

_____

Condition of drainage ways (discuss amount of water/sediments present, vegetative growth, unusual staining, blockage, etc.) _____

_____

_____

Additional Comments: _____

_____

_____

_____

_____

_____

Action Item(s) Required: _____

_____

_____

Action Item(s) completed since last inspection: _____

_____

_____

Signatures: _____

_____

_____

3.1.3 Erosion

Erosion features such as gullies can be a problem on portions of cover systems where the slope exceeds five percent. The cover system is especially susceptible to gulling when it has no vegetation, so gully erosion processes have an advantage in the time before vegetation is mature. Shallow gullies will be repaired by backfilling to the original grade with topsoil and reseeding. Deeper gullies require topsoil removal, cap reconstruction, topsoil replacement and reseeding. If gullies continue to develop in a particular area then an alternative method of repair will be required. This may include placing coarse stone in the gully to limit future erosion.

3.1.4 Settlement

Settlement features such as depressions and puddles will be regraded by placing additional cover soil such that surface water drains to the appropriate direction. Areas of settlement may be regraded using topsoil. Vegetative cover will be established over each area repaired.

3.1.5 Stressed Vegetation

Chronically weak and vulnerable vegetation sometimes signals a need for a revitalization of a vegetative soil layer. The characteristics of possible concern are:

a. Texture
b. Water-holding properties and drainage
c. Nutrient content
d. Accumulations of gases
e. Accumulations of toxic salts

If deemed necessary, samples of the topsoil will be taken and tested for pH and organic content. The soil will then be reconditioned as appropriate, mulched and seeded. If this procedure does not result in establishment of a suitable cover, then further evaluation of the cause for the stress will be made and an appropriate solution proposed to NYSDEC.

3.1.6 Seepage

If conditions indicative of seepage such as wet spots, precipitate, or surface sloughing are observed during the inspection, then further investigation is warranted to evaluate the condition the determine the appropriate remedial measure(s).

3.2 Monitoring Wells

All monitoring wells will be inspected at the time of sampling for signs of damage and tampering. The following is a list of items to check during monitoring well inspections.

- Positive identification of well;
- Protective casing intact and perpendicular to ground surface;
- Concrete surface seal intact;
- Lock present; and
- Riser cap present;
- Condition of paint.

The condition of the wells will be noted on the inspection form. Well repair/maintenance will be done as necessary to maintain the integrity of the wells. In the event wells are found to be unsuitable for the collection of samples, they will be repaired/replaced, as necessary. Should such determinations be made, the NYSDEC will be consulted.

3.3. Inspections Following a Significant Earthquake

Should a significant earthquake occur that could potentially impact the Site, an inspection following the format outlined herein will be done as soon as practical. Depending upon conditions encountered, emergency response actions will be implemented as necessary (e.g., construction of temporary berms to reduce exfiltration/drainage). Thereafter, long-term corrective actions will be undertaken to restore the Site to its condition prior to the earthquake.

4.0 NOTIFICATIONS AND EMERGENCY RESPONSE

In the event of an emergency at the Site and/or a condition that warrants immediate attention, the following individual shall be notified:

Mr. Robert Johnson
Strippit, Inc.
A Unit of IDEX Corporation
12975 Clarence Center Road
Akron, New York 14001
Telephone #: (716) 542-4511

If Mr. Johnson is not available, Mr. Greg Selip should be contacted. Mr. Selip can be contacted at the address and telephone number listed above.

Problems encountered during sampling events and/or Site inspections shall be reported to the NYSDEC as soon as practical. The NYSDEC contact person in listed below.

Jaspal S. Walia
Environmental Engineering II
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203
Telephone #: (716) 851-7220

Copies of quarterly and annual reports generated shall also be transmitted to the above individual, as soon as they are available.

5.0 REPORTING TO THE COMMUNITY

The IRM is complete and will perform its remedial functions passively over time. Moreover, there was little community interest in the development of the IRM and its construction. Consequently, Strippit will not report to the community on any systematic or regular periodic basis concerning the performance of the IRM. Instead, Strippit will rely on the NYSDEC to provide whatever reports or communications to the community it determines are appropriate under the circumstances. However, Strippit will provide appropriate reports to the community concerning any significant developments concerning the performance of the IRM.

6.0 REFERENCES

The following documents were referenced in the development of this "Post-Closure Monitoring and Maintenance Plan; Interim Remedial/Measure; Strippit, Inc.; Akron, New York".

- "Engineering Investigations at Inactive Hazardous Waste Sites, Phase II Investigations, Houdaille-Industries-Strippit Division, Village of Akron, Site No. 915053, Erie County' March 1991" prepared by Engineering-Science.

- "Field Investigation Report, Strippit, Inc., Akron, New York, DEC Site No. 915053; July 1993" prepared by Day Engineering, P.C.

- "Interim Remedial Measure Work Plan, Strippit, Inc., Akron, New York, DEC Site No. 915053; October 1993" prepared by Day Engineering, P.C.

- "Site Specific Health & Safety Plan; Strippit, Inc.; Akron, New York; DEC Site No. 91503" July 1994; prepared by Haseley Trucking Co., Inc.

- Quality Assurance/Quality Control; Interim Remedial Measure; Strippit, Inc.; Akron, New York" August 1994; prepared by Day Engineering, P.C.

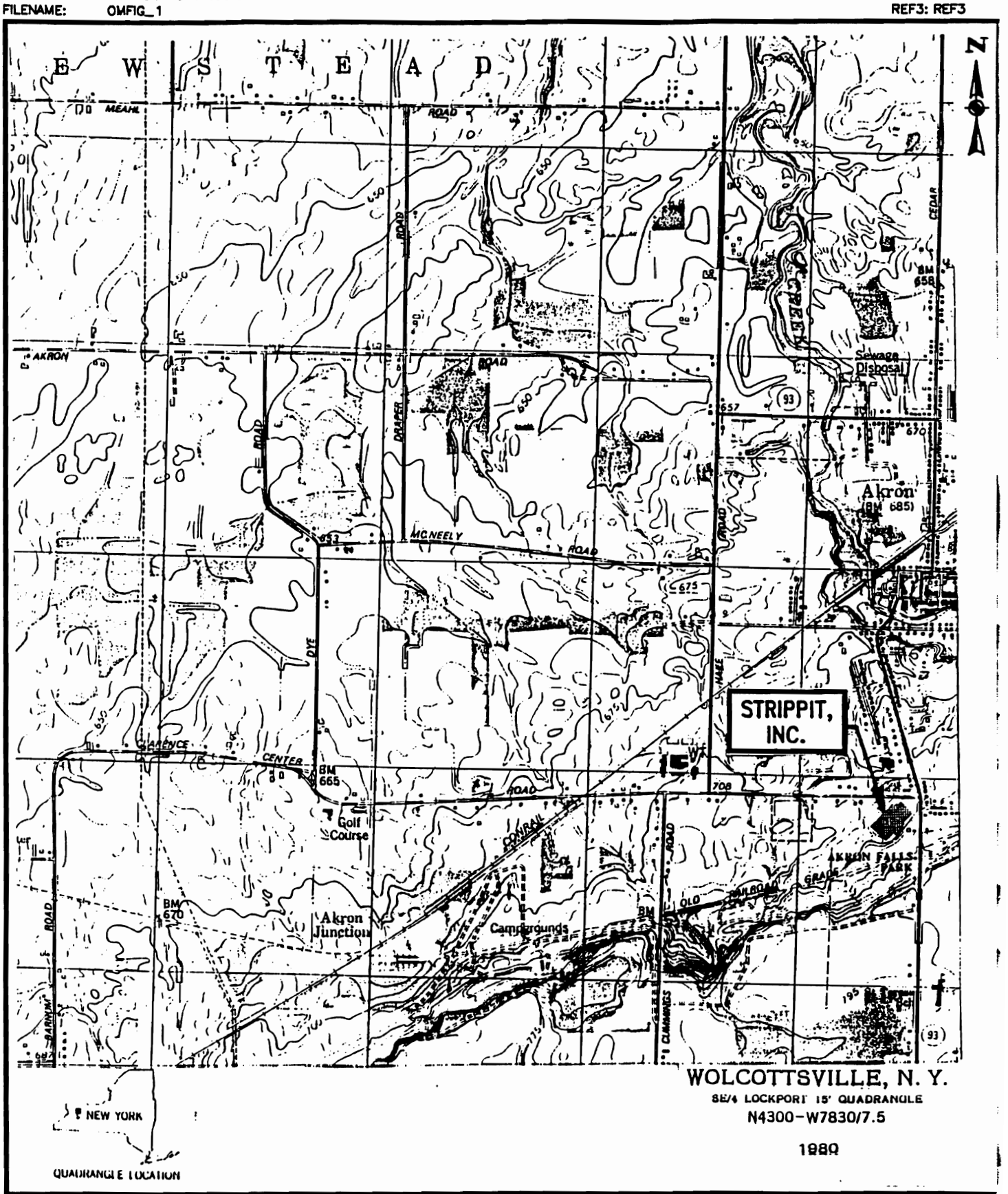
- "Construction Documentation Report Interim Remedial Measure, Strippit, Inc.; Akron, New York" December 1994; prepared by Day Engineering, P.C.

FIGURE 1

LOCUS PLAN

TIME PLOTTED: MON OCT 3 14:00:00 1994
FILENAME: OMFIG_1

REF1: REF1
REF2: REF2
REF3: REF3

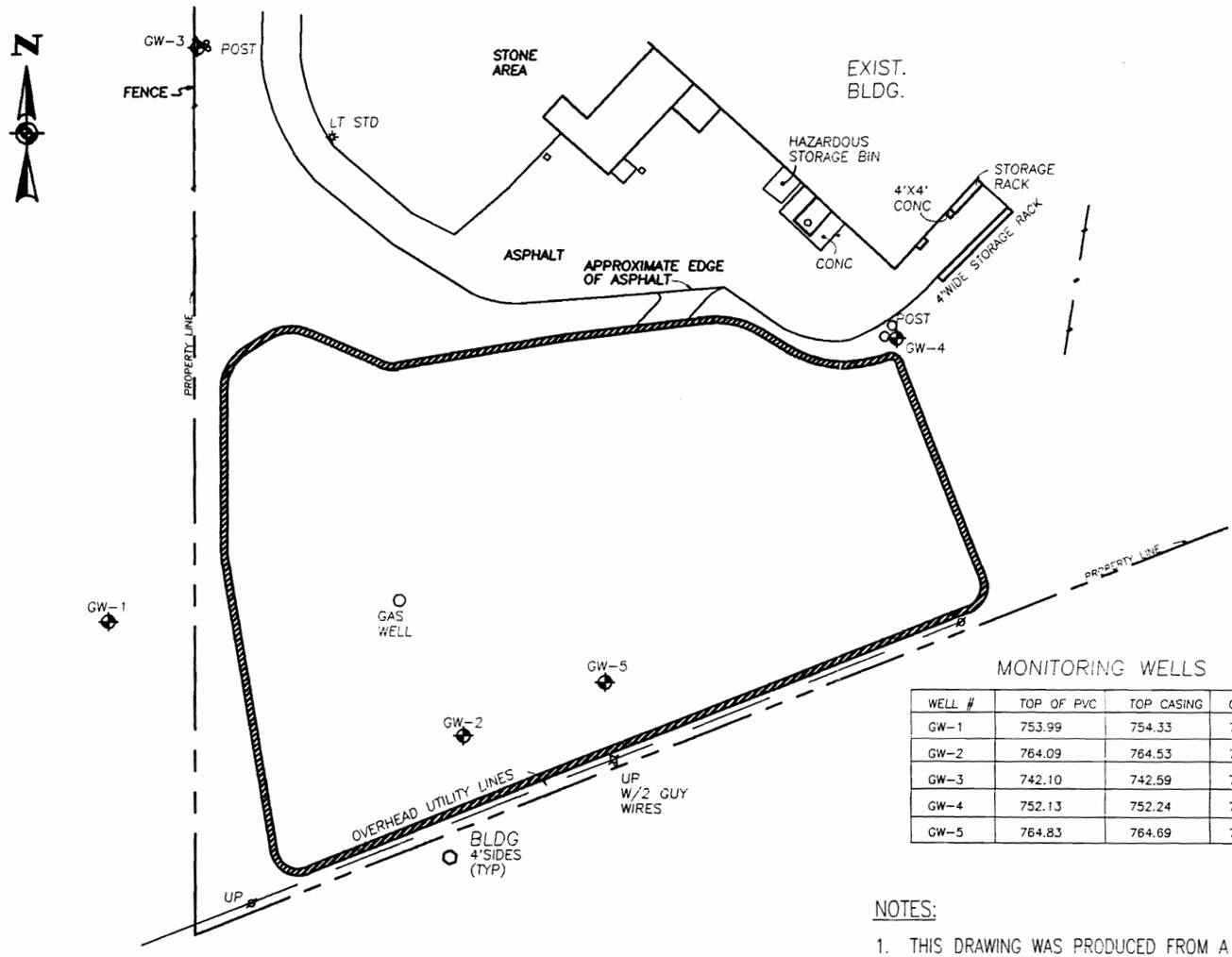


WOLCOTTSVILLE, N. Y.
SE/4 LOCKPORT 15' QUADRANGLE
N4300-W7830/7.5
1980

PROJECT NO. 94-2430R FIGURE 1	PROJECT TITLE STRIPPIT, INC. 12975 CLARENCE CENTER ROAD AKRON, NEW YORK DRAWING TITLE LOCUS PLAN	DAY ENGINEERING, P.C. ENVIRONMENTAL ENGINEERING CONSULTANTS ROCHESTER, NEW YORK	DATE 10/3/94 DRAWN BY JJD SCALE 1"=2000'

FIGURE 2

SITE PLAN



MONITORING WELLS

WELL #	TOP OF PVC	TOP CASING	GROUND ELEV
GW-1	753.99	754.33	751.41
GW-2	764.09	764.53	762.43
GW-3	742.10	742.59	739.67
GW-4	752.13	752.24	750.75
GW-5	764.83	764.69	762.63

LEGEND

GW-1 MONITORING WELL

APPROXIMATE GEOMEMBRANE LIMITS

NOTES:

1. THIS DRAWING WAS PRODUCED FROM A DRAWING PROVIDED BY: DEBORAH A. NAYBOR PLS, PC. ENTITLED "TOPOGRAPHIC MAP PART OF LOT 5, TWP. 12, RGE. 5, SEC. 6, TOWN OF NEWSTEAD COUNTY OF ERIE, NEW YORK" DATED 3/4/93 & REVISED 3/26/93.

N OCT 3 14:00:00 1994
FIG1

APPENDIX A

BORING LOGS/WELL INSTALLATION DIAGRAMS

Contractor: KDC
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. GW-1
Sheet 1 of 3

PROJECT NAME Hounsville
PROJECT NO. SYO 53.04.00

Location approx 200' W. of geophysics reference hub in open field to the west of the landfill area

GROUNDWATER OBSERVATIONS		
Water Level	38.1' T.O.C.	38.14'
Time	910	844
Date	5/22	6/7

Weather: Sunny 50°

Date/Time Start 5/17/90 3:45 pm

Date Time Finish 5/21/90 4:30 pm

Plot Plan
See sample location map FIGURE III-1

Recovered Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
				55			Protective casing with lock
							2.5' stick-up
							0'
0		0-2'	30	5	dark silty soil with organic debris, wet		
				8			
				5			
				6			
							3'
0		5-7'	65	20	brown fine-med sand with a trace of silt and a little fine to coarse gravel, moist to dry		
				34			
				51			
				74			
0		10-11.5'	60	40			
				61			
				100			
0		15-16.5'	65	15			
				25			
				29			

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 0-3' ⇒ Soil
3 → 14' ⇒ Sandy till

Contractor: EDC
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Hazardville
PROJECT NO. SY053.09.00

Weather: Sunny, 50°
Date/Time Start 5/17/90 3:45 pm
Date Time Finish 5/21/90 4:30 pm

BORING NO. GW-1
Sheet 2 of 3
Location approx. 200' W. of geophysics ref. hub in open field W. of landfill area
Plot Plan

Pheovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0		20-22'	65	65			
				39			
				33			
				43			
0		25-27'	5	22			
				31			
				51			
				63			
					(upper Sandy till)		
					30'		
0		30-32'	40	25			
				32			
				44			
				76			
0		35-37'	50	14			
				72			
				35			
				50			
					brown. very fine sand and silt with a little clay and fine to medium gravel - moist		
					(lower silty till)		

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 18-30' ⇒ Sandy till
30-39' ⇒ Silty till

ENGINEERING-SCIENCE DRILLING RECORD

Contractor: ADC
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/6" HSA

BORING NO. GW-1
Sheet 3 of 3

PROJECT NAME Houdaille
PROJECT NO. SY053.09.00

Location approx 200' w. of geophysics ref. hole in open field west of the landfill area

GROUNDWATER OBSERVATIONS

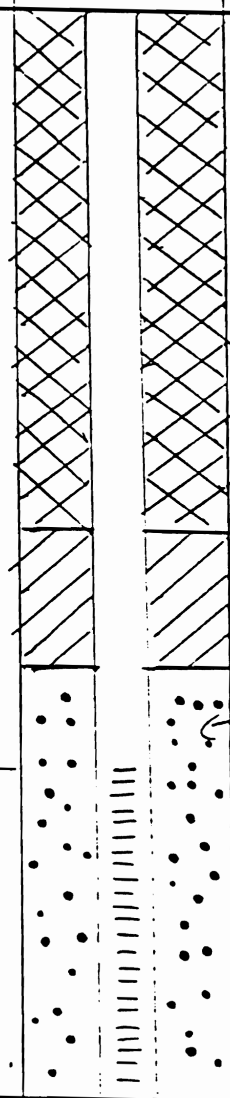
Water Level			
Time			
Date			

Weather: Sunny 50°
Date/Time Start 5/17/90 3:45 pm
Date Time Finish 5/21/90 4:30 pm

Plot Plan

Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
0		40-42'	90	17, 23, 27, 35	(lower silty till) ↓	Cement bentonite mix
0		45-47'	75	18, 31, 45, 50		46.5' Bentonite Seal
0		48-50	2	19, 17, 80, 105		48.5' Sand pack
0		50-52'	60	31, 38, 47, 51	50' fine brown sand and silt Saturated	50'
0		52-54'	95	15, 32, 39, 100		5' prepack Screen
					55' 55' well bottom	

WELL SCHEMATIC



STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 39 - 50' ⇒ Silty till
50 - 55' ⇒ fine brown sand and silt

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

61

Site Name: Houdaille Straight Date: 5-21-90
Job Number: SY053.09 00 By: D. Nickerson
Boring Number: GW-1

****

Depth of Hole: 55' Comments

Diameter of Hole: 11"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: prepacked PVC 2" ID inside 4" ID Sch. 40
Slot Size: 0.01"
Length: 5'
Threaded: Yes X No ____

RISER PIPE
Material: PVC 2" ID Sch. 40
Total Length of Well - Screen Length = 53' (includes 3' stick-up)
Threaded: Yes X No ____

END CAP
Material: PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.)
58'

SAND PACK
Type/Size: #4 Q Rok Around prepacked screen
Amount (Calculated): 200 lb
Amount (Actual): 200 lb
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: pellets 3/8"
Amount (Calculated): 100 lb
Amount (Actual): 100 lb
Installed with Tremie: Yes ____ No X
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT

94 lbs cement / 3 lbs bentonite

Mixture (#Cement/#Bentonite): _____

Mixture (Gal. water/#dry mix): 7 gal. water / 97 lb dry mix

Amount (calculated): 130 gal.

Amount (actual): 130 gal

Installed with TREMIE: Yes ____ No X

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ____

Locked immediately after installation: Yes X No ____

Grout sloped at surface to allow run-off: Yes X No ____

Drain hole drilled prior to development: Yes X No ____

Stick-up: 2.63'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ____ No X

If yes:

(1) What was lost:

(2) Depth:

(3) Stage of well installation:

(4) Was object retrieved: Yes ____ No ____

(All or part/how):

_____

_____

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS:

Left in pile: _____

Spread out: _____ (Hnu reading: _____ ppm)

Containerized: _____

Other: Containerized and moved to landfill

DISPOSAL OF FLUIDS:

Run off on ground surface: X

Containerized: _____

Other: _____

D. Pickens

Engineering-Science Representative

5-16-90

Contractor: RDC
Driller: Steve Kahn
Inspector: D Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

GROUNDWATER OBSERVATIONS

Water Level	29.5' T.O.C.		40.2'
Time	900		934
Date	5/29		6/7

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Howdaille
PROJECT NO. 5Y053.09.00

Weather: Cloudy 52°
Date/Time Start 5/23/90 8:45 am
Date Time Finish 5/25/90 10:40 am

BORING NO. GW-2
Sheet 1 of 4
Location landfill area approx. 100' SE of SE fence around gas well just beyond berm to the South of the gaswell
Plot Plan See sample location map FIGURE III-1

Pressure Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
							← protective casing with lock
							2' Stick-up
						0	0'
10		0-2'	0	2	brown sandy soil with organic debris (cuttings) moist		
				1			
				1			
				1			
						3	
					brown, med. sand and gravel fill with some dark black silt, moist		
0		5-7'	40	7			
				6			
				5			
				5			
						8	
					fine - very fine brown sand with some fine to med. gravel, moist (till)		
0		10-11'	30	25			
				100			
0		15-17'	95	24			
				54			
				57			
				55			

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 0 - 9' ⇒ Soil / fill
9 - 18' ⇒ Sandy fill

Contractor: KDC
Driller: Steve Kohn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 3/8" HSA

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Hovdal/le
PROJECT NO. 51053.07.00

Weather: Cloudy ≈ 20°
Date/Time Start ≈ 1/23/90 8:45 am
Date Time Finish ≈ 1/25/90 10:40 am

BORING NO. GW-2
Sheet 2 of 4
Location landfill area approx 100' SE of SE fence around gas well just beyond berm to the south
Plot Plan of the gas well

Pioneer Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0		20-22'	95	11			
				16			
				16			
				36			
0		25-27'	65	18			
				38			
				52			
				54			
4.7		30-32'	65	13			
				21			
				37			
				36			
0		35-37'	95	7			
				13			
				14			
				14			

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 18-39' ⇒ Sandy fill

Contractor: KDC
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Houdaille
PROJECT NO. 5403.09.00

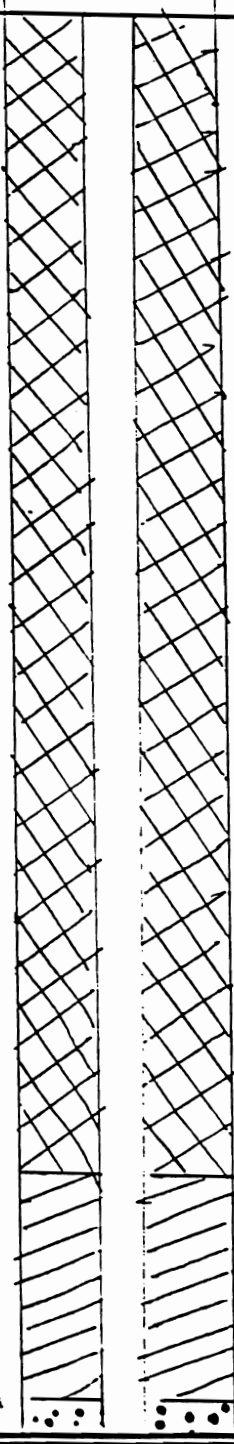
Weather: Cloudy 52°
Date/Time Start 5/23/90 8:45 am
Date Time Finish 5/25/90 10:45 am

BORING NO. GW-2
Sheet 3 of 4
Location

Plot Plan

Photovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
					↓ 40'
0		40-42'	70	6	
				29	
				14	
				21	
					brown silt and fine gravel with a little v. fine sand and trace of clay, moist (lower till)
0		45-47'	0	8	
				13	
				14	
				32	
0		50-52'	90	WH/100	
				23	
				25	
				29	
0		53-55'	50	14	
				11	
				17	
				21	
0		55-57'	65	6	
				13	
				14	
				22	
0		58-60'	65	9	
				16	
				19	
				22	
					60'

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 40 - 60 ⇒ Silty till

Contractor: R D C
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. GW-2
Sheet 4 of 4
Location

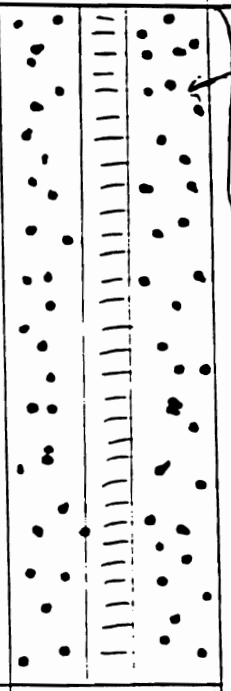
PROJECT NAME Houdaille
PROJECT NO. 5405.3.09.00

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

Weather: Cloudy 52°
Date/Time Start 5/23/90 8 45 am
Date Time Finish 5/25/90 10:40 am

Plot Plan

Recovery Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0		60-62'	70	7	very fine to medium brown Sand and silt, Saturated		Sand pack; 10' Screen 60-70'
				15			
				17			
				15			
0		63-65'	65	10			
				14			
				16			
				16			
0		68-70'	70	24			
				35			
				57			
				77	70'		
					70' well bottom		

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 60 - 70' => brown fine sand and silt

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

Site Name: Houdaille Str. Pit Date: 5/25/90

Job Number: S70530900 By: WD L. Hoy

Boring Number: GW - 2

****

Comments

Depth of Hole: 70'

Diameter of Hole: 11"

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: 2" ID SCH 40 PVC
Slot Size: 0.01"
Length: 10
Threaded: Yes X No ____

RISER PIPE
Material: 2" ID PVC SCH 40
Total Length of Well - Screen Length = 60
Threaded: Yes X No ____

END CAP
Material: 2" PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.)

SAND PACK
Type/Size: #40 Ron
Amount (Calculated): 500 #
Amount (Actual): 300 #
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: Bentonite
Amount (Calculated): 50 #
Amount (Actual): 50 #
Installed with Tremie: Yes X No ____
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT
Mixture (#Cement/#Bentonite): 94 # cement / 3 # bentonite
Mixture (Gal. water/#dry mix): 7 gal H_2O / 97 # dry mix
Amount (calculated): 120 gal
Amount (actual): 120 gal
Installed with TREMIE: Yes X No ____

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ____
Locked immediately after installation: Yes X No ____
Grout sloped at surface to allow run-off: Yes X No ____
Drain hole drilled prior to development: Yes X No ____
Stick-up: 2'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ____ No X
If yes:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ____ No ____
(All or part/how):

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS:
Left in pile: X
Spread out: ____ (Hnu reading: ____ ppm)
Containerized: ____
Other: ____

DISPOSAL OF FLUIDS:
Run off on ground surface: X
Containerized: ____
Other: ____

M D Kelley
Engineering-Science Representative
5/25/90

Contractor: Rochester Drilling
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" ID HSA

GROUNDWATER OBSERVATIONS

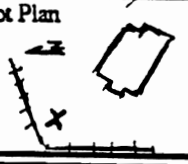
Water Level	30.9' from TOC	31' T.o.f.
Time	830	1115
Date	5-15	5-22

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Houdaille Strippit
PROJECT NO. 5Y053.09.00

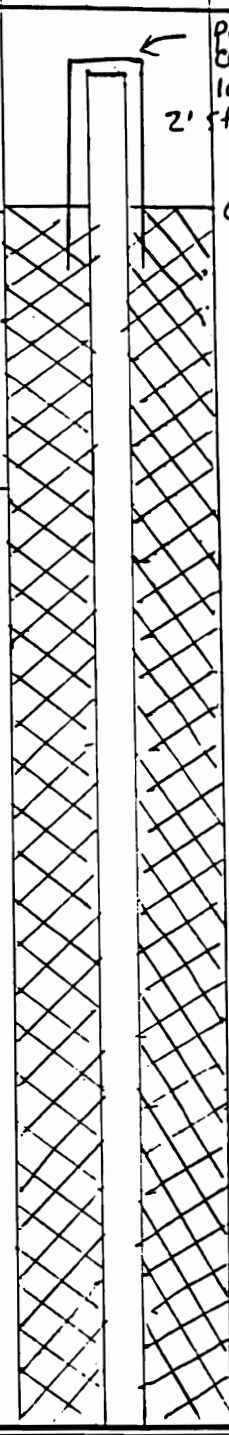
Weather: Cool, windy, 50°, cloudy
Date/Time Start 5-11-90 0830
Date Time Finish 5-14-90 1500

BORING NO. GW-3
Sheet 1 of 3
Location approx 175' NW of NW corner of building (rear-fence)
Plot Plan



Recovery / Rec.	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
0		0-2'	5	8	brown, silty soil with organic matter and pebbles/cobbles
				9	
				8	
				4	
4		5-7'	60	13	olive greenish brown to brown densely packed fine sand and silt with some fine gravel, moist (till)
				13	
				28	
				32	
0		10-11'	40	50	
				105	
0		15-16'	50	40	
				105	

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 0-4' soil/packing for fill
4-18' ⇒ silty till, moist

Contractor: Rochester Drilling
Driller: Steve Kalan
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" ID HSA

GROUNDWATER OBSERVATIONS

Water Level	30.91		
Time	8:07		
Date	6/7		

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Houdaille Strippit
PROJECT NO. 5Y053.09.00

Weather: Cool cloudy windy 50°
Date/Time Start 5-11-90 830
Date Time Finish 5-14-90 1500

BORING NO. GW-3
Sheet 2 of 3
Location approx 175' NW of NW corner of building (near fence)

Plot Plan

Pieces Recovered	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
					20'		
0		20-21.5'	50	47			
				53			
				106			
					brown, v. fine sand and silt with some fine gravel and trace angular pebbles, compact, dry (till)		Cement/ bentonite mix
0		25-26.5'	50	38			
				64			
				100			
2.5		30-32'	0	15			
				17			
				25			
				44			
					35'		
11.2		35-36.5'	30	25			
				40			
				100			
					v. fine sand and silt some medium gravel, dry		35.7' bentonite seal
							37.7'

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 1' - 20' ⇒ silty till, moist
20 - 39 ⇒ silty till, dry

Contractor: Rochester Drilling
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" ID HSA

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			

ENGINEERING-SCIENCE DRILLING RECORD

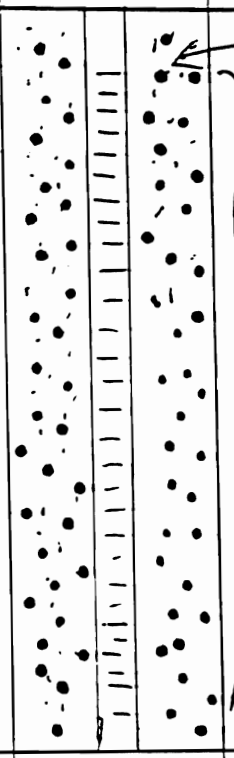
PROJECT NAME Houdaille Strippit
PROJECT NO. 5Y053.09.00

Weather: Cool, cloudy, windy 50°
Date/Time Start 5-11-90 08.30
Date Time Finish 5-14-90 15⁰⁰

BORING NO. GW-3
Sheet 3 of 3
Location approx 175' NW of NW corner of building (near fence)
Plot Plan

Recovery / Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
					40'
0		40-42'	65	8	brown fine sand, trace silt
				15	
				14	saturated
				25	
0		43-45'	65	23	
				20	
				25	
				35	
2.5		45-47'	70	13	
				23	
				23	
				31	
0		49-50'	90	20	
				28	
				38	
				100	50'
					50' well bottom

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 39-40' ⇒ silty fill (drv)
40-50' ⇒ brown fine sand, trace silt

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT
Mixture (#Cement/#Bentonite): 94 lb cement / 31b bentonite
Mixture (Gal. water/#dry mix): 7 gal. H2O / 97 lb. dry mix
Amount (calculated): 30 gal
Amount (actual): 30 gal
Installed with TREMIE: Yes X No ____

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ____
Locked immediately after installation: Yes X No ____
Grout sloped at surface to allow run-off: Yes X No ____
Drain hole drilled prior to development: Yes X No ____
Stick-up: 2.1'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ____ No X
If yes:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ____ No ____
(All or part/how):

WELL CAPPED: Yes X No ____

WELL IDENTIFIED: Yes X No ____

DISPOSAL OF CUTTINGS:
Left in pile: ____
Spread out: ____ (Hnu reading: ____ ppm)
Containerized: ____
Other: Moved to landfill area

DISPOSAL OF FLUIDS:
Run off on ground surface: ✓
Containerized: ____
Other: ____

David C. Mickelson
Engineering-Science
Representative
5-14-90

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

Site Name: Houdaille Strippit Date: 5-14-90

Job Number: SY053.09.00 By: D. Nickerson

Boring Number: GW-3

****

Depth of Hole: 50'

Diameter of Hole: 11"

Comments

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: Pvc sch 40 2" ID
Slot Size: 0.01"
Length: 10'
Threaded: Yes X No ____

RISER PIPE
Material: PVC sch 40 2" ID
Total Length of Well - Screen Length = 42' (includes 2' stick up)
Threaded: Yes X No ____

END CAP
Material: PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.)
52'

SAND PACK
Type/Size: #4 Q Rock
Amount (Calculated): 4001b
Amount (Actual): 400 lb
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: pellets 3/8 Size
Amount (Calculated): 100 lbs
Amount (Actual): 100 lbs
Installed with Tremie: Yes ____ No X
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

ENGINEERING-SCIENCE DRILLING RECORD

Contractor: KDC
Driller: Steve Kahn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

BORING NO. GW-4
Sheet 1 of 3
Location approx 60' SE of SE corner of Stripat building

PROJECT NAME Houdaille
PROJECT NO. SY053.04.CU

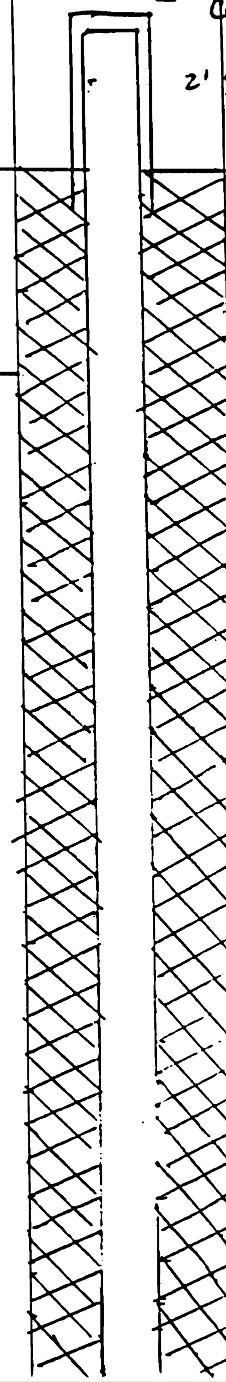
GROUNDWATER OBSERVATIONS		
Water Level	35.65' T.O.C (pvc)	35.15'
Time	11 15	8:15
Date	5-22	6/7

Weather: Rain 65°
Date/Time Start 5/15/90 9 15 am
Date Time Finish 5/16/90 1:00 pm

Plot Plan: See sample location map FIGURE III-1

Field Screening Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
				55		protective casing with lock; 2' stick up
0		0-2'	auger cuttings		brown sandy and silty soil with organic debris and some medium gravel, moist	
0.8	SS-1	5-7'	60	20 / 33 / 44 / 51	brown fine - v. fine sand, little silt, some fine gravel (moist) (upper till) ↓	
0.2	SS-1	10-12'	35	20 / 30 / 46 / 56		
12	SS-1	15-17'	70	10 / 14 / 16 / 20		

WELL SCHEMATIC



STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 0-3' Soil
3-18' → Sandy till

Contractor: ROC
Driller: Steve Kahn
Inspector: O. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6 5/8" HSA

GROUNDWATER OBSERVATIONS

Water Level	35.65'	T.O.C. (PVC)	
Time	1115		
Date	5-22		

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Houdaille
PROJECT NO. 5406 3.09.00

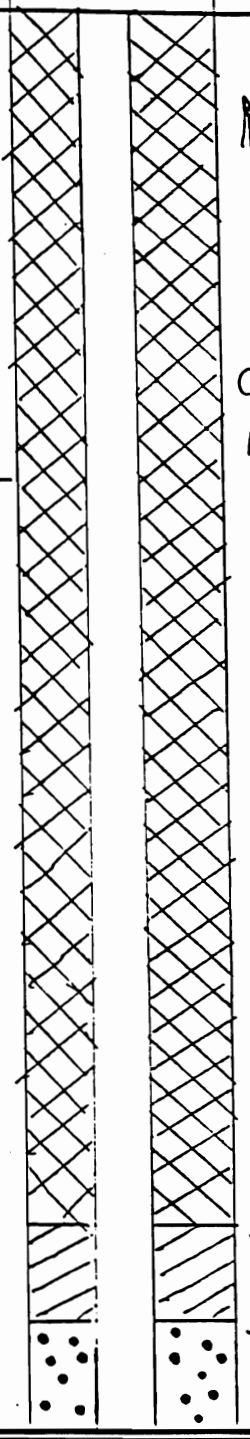
BORING NO. GW-4
Sheet 2 of 3
Location Approx. 60' SE of SE corner of Striegel building

Weather: Rain 65°
Date/Time Start 5/15/90 915 am
Date Time Finish 5/16/90 100 pm

Plot Plan

Recovery / Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL
15.5	SS-1	20-22'	70	8	
				10	
				14	
				22	
7.3		25-26.5'	65	12	brown fine to v. fine sand and silt with some fine gravel and trace of clay, moist (lower fill)
				11	
				15	
4.2		30-32'	65	9	
				15	
				26	
				24	
0		35-37'	20	18	
				20	
				23	
				23	

WELL SCHEMATIC



COMMENTS

STANDARD PENETRATION TEST
SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 14 - 25' => SANDY fill
25 - 39' => SILTY fill

Contractor: RDC
Driller: Steve Kuhn
Inspector: D. Nickerson
Rig Type: Mobile B-61
Drilling Method: 6¼ I HSA

ENGINEERING-SCIENCE DRILLING RECORD

BORING NO. GW-4
Sheet 3 of 3

PROJECT NAME Moodaille
PROJECT NO. 54057.09.00

Location approx 60' SE of SE corner of Stringpit building

GROUNDWATER OBSERVATIONS

Water Level	35.65' T.O.C		
Time	1115		
Date	5-22		

Weather: Rain 65°

Date/Time Start 5/15/90 9:15 am

Date Time Finish 5/16/90 1:00 pm

Plot Plan

Pheovac Reading	Sample I.D.	Sample Depth	% Recovery	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
							Sand pack
0		40-42'	95	9	↓		
				11			
				13			
				33			
					fine brown sand and silt, saturated		
0		43-45'	95	12			
				16			
				20			
				24			
0		45-47'	65	10	fine brown sand, wet interm ixed with layers of silt and fine gravel (till)		10' Screen 40-50'
				13			
				16			
				20			
0		48-50'	65	12			
				24			
				30			
				29			
					50' well bottom		

STANDARD PENETRATION TEST

SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED

SUMMARY 39-42' ⇒ Silty Till
42-45' ⇒ fine brown sand and silt 45-50 ⇒ intermixed layers of fine brown wet sand & silt and till

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

Site Name: Houdaille Strapit Date: 5-16-90
Job Number: SY053.09.00 By: D. Nickerson
Boring Number: GW-4

****

Depth of Hole: 50'

Diameter of Hole: 11"

Comments

ALL MATERIALS INSPECTED PRIOR TO INSTALLATION?
Yes X No ____

SCREEN
Material: 2" ID SCH 40 PVC
Slot Size: 0.01"
Length: 10'
Threaded: Yes X No ____

RISER PIPE
Material: PVC sch 40
Total Length of Well - Screen Length = 42' (includes 2' stick up)
Threaded: Yes X No ____

END CAP
Material: PVC
Threaded: Yes X No ____

ALL JOINTS TEFLON TAPED: Yes ____ No X

TOTAL LENGTH OF WELL CASING (Includes screen and stick-up.)
52'

SAND PACK
Type/Size: # 4 G ROK
Amount (Calculated): 500 lbs
Amount (Actual): 500 lbs
Installed with Tremie: Yes ____ No X

BENTONITE SEAL(S):
Type/Size: Pellets 3/8"
Amount (Calculated): 50 lbs
Amount (Actual): 50 lbs
Installed with Tremie: Yes ____ No X
Secondary Seal(s) Used: Yes ____ No X
Explain: ____

WELL INSTALLATION CHECKLIST
PHASE II INVESTIGATIONS

GROUT/CEMENT
Mixture (#Cement/#Bentonite): 94lb Cement / 3 lb bentonite
Mixture (Gal. water/#dry mix): 7 gal. water / 97 lb dry mix
Amount (calculated): 130 gal.
Amount (actual): 130 gal
Installed with TREMIE: Yes ___ No X

LOCKING PROTECTIVE CASING INSTALLED: Yes X No ___
Locked immediately after installation: Yes X No ___
Grout sloped at surface to allow run-off: Yes X No ___
Drain hole drilled prior to development: Yes X No ___
Stick-up: 1.92'

ANY FOREIGN OBJECTS LOST IN THE WELL: Yes ___ No X
If yes:
(1) What was lost:
(2) Depth:
(3) Stage of well installation:
(4) Was object retrieved: Yes ___ No ___
(All or part/how):

WELL CAPPED: Yes X No ___

WELL IDENTIFIED: Yes X No ___

DISPOSAL OF CUTTINGS:
Left in pile: ___
Spread out: ✓ (Hnu reading: 0 ppm)
Containerized: ___
Other: ___

DISPOSAL OF FLUIDS:
Run off on ground surface: ✓
Containerized: ___
Other: ___

D. Thatcher
Engineering-Science Representative
5-21-90

DAY ENGINEERING, P.C.
DAY ENVIRONMENTAL, INC.

Project: Strippit, Inc.
Project Location: Akron, N.Y.

Soil Boring No.: GW-5
Monitoring Well No.: GW-5
Geologist: Andrew J. Kucserik
Date: Feb. 3, 4, 5, 1993
Project No.: 92-1652S

Drilling Firm: BUFFALO DRILLING Co. INC.
Driller: Larry Schroeder
Helper: Don Rimbeck

Drill Rig Type: CME-55
Drilling Method: HSA
Weather: Sunny 35°-40° F

DEPTH	SAMPLE NUMBER	BLOW COUNTS PER 6 INCHES		PID	WELL DETAILS	SOIL / BEDROCK DESCRIPTION	NOTES / REMARKS
1	1	4	14	0.0	CEMENT/BENTONITE GROUT; 2" ø I.D. PVC WELL	Brown Clayey SILT, some fine - coarse Sand, little Gravel (moist, FILL)	PID = Photoionization Detector Reading (in HNu units, parts per million, ppm)
2		10					
3						3.3'±	FSW = Free Standing Water Level
4						Brown SILT, some fine-coarse Gravel, some Sand (moist)	
5	2	3	7				
6		16	13	0.0			
7							
8						8.5'±	
9						Brown fine SAND and Silt (wet)	
10	3	16	29				
11		33	27	0.0			
12							
13						13.5'±	
14						Red-brown SILT and fine - coarse Sand, some Gravel, trace clay (moist)	Soil/Bedrock Description via Visual-Manual identification methods and ASTM 1586D.
15	4	37	45	0.0			
16		70					

DAY ENGINEERING, P.C.
DAY ENVIRONMENTAL, INC.

Project: _____
Project Location: _____

Soil Boring No.: GW-5 (CONT.)
Monitoring Well No.: GW-5 (CONT.)
Geologist: _____
Date: _____
Project No.: _____

Drilling Firm: _____
Driller: _____
Helper: _____

Drill Rig Type: _____
Drilling Method: _____
Weather: _____

DEPTH	SAMPLE NUMBER	BLOW COUNTS PER 6 INCHES		PID	WELL DETAILS	SOIL / BEDROCK DESCRIPTION	NOTES / REMARKS
-17							PID = Photoionization Detector Reading (in HNu units, parts per million, ppm)
-18							
-19							
-20							FSW = Free Standing Water Level
-21	5	37	31	0.0		Becomes gray-brown	
-22		35	33				
-23							
-24							
-25							
-26	6	25	37	0.0			
-27		41	45				
-28							
-29							
-30							
-31	7	30	27	0.0			Soil/Bedrock Description via Visual-Manual identification methods and ASTM 1586D.
-32		33	38				

DAY ENGINEERING, P.C.
DAY ENVIRONMENTAL, INC.

Project: _____
Project Location: _____

Soil Boring No.: GW-5 (CONT.)
Monitoring Well No.: GW-5 (CONT.)
Geologist: _____
Date: Feb. 4, 1993
Project No.: _____

Drilling Firm: _____
Driller: _____
Helper: _____

Drill Rig Type: _____
Drilling Method: _____
Weather: _____

DEPTH	SAMPLE NUMBER	BLOW COUNTS PER 6 INCHES		PID	WELL DETAILS	SOIL / BEDROCK DESCRIPTION	NOTES / REMARKS
33							PID = Photoionization Detector Reading (in HNu units, parts per million, ppm)
34							
35							
36	8	26	21	0.0			FSW = Free Standing Water Level
37		30	30				
38						38.5'±	
39						Gray-brown Clayey SILT and fine-coarse Sand (moist)	
40							
41	9	7	14	0.0			
42		16	21				
43							
44							
45							
46	10	15	21	6.0			Soil/Bedrock Description via Visual-Manual identification methods and ASTM 1586D.
47		14	19				
48							

DAY ENGINEERING, P.C.
DAY ENVIRONMENTAL, INC.

Project: _____
Project Location: _____

Soil Boring No.: GW-5 (CONT.)
Monitoring Well No.: GW-5 (CONT.)
Geologist: _____
Date: Feb. 4, 1993
Project No.: _____

Drilling Firm: _____
Driller: _____
Helper: _____

Drill Rig Type: _____
Drilling Method: _____
Weather: _____

DEPTH	SAMPLE NUMBER	BLOW COUNTS PER 6 INCHES		PID	WELL DETAILS	SOIL / BEDROCK DESCRIPTION	NOTES / REMARKS
49							PID = Photoionization Detector Reading (in HNu units, parts per million, ppm)
50	11	10	14	0.0			
51		15	15			51.5'	FSW = Free Standing Water Level
52						(Bentonite Seal)	
53						53.1'	
54						53.5' Brown and gray SILT and fine Sand (wet)	
55	12	21	52	6.0	54.8'		
56		45	68				
57	13	11	12	0.0		57' Gray & brown laminated SILT and CLAY, some fine-coarse Sand (moist)	
58		19	24				
59	14	12	15	0.0		59' Gray SILT and fine Sand (wet)	
60		15	15		2" I.D. PVC SCREEN		
61	15	21	31	6.0			Soil/Bedrock Description via Visual-Manual identification methods and ASTM 1586D.
62		35	21				
63	16	15	17	0.0			
64		17	18			64.8'	

DAY ENGINEERING, P.C.
DAY ENVIRONMENTAL, INC.

Project: _____
Project Location: _____

Soil Boring No.: GW-5 (CONT.)
Monitoring Well No.: GW-5 (CONT.)
Geologist: _____
Date: Feb. 5, 1993
Project No.: _____

Drilling Firm: _____
Driller: _____
Helper: _____

Drill Rig Type: _____
Drilling Method: _____
Weather: _____

DEPTH	SAMPLE NUMBER	BLOW COUNTS PER 6 INCHES	PID	WELL DETAILS	SOIL / BEDROCK DESCRIPTION	NOTES / REMARKS
65						PID = Photoion-izationDetector Reading (in HNu units, parts per million, ppm)
66					BORING COMPLETE @ 66.0' AUGERED TO 66.0'	FSW = Free Standing Water Level
						Soil/Bedrock Description via Visual-Manual identification methods and ASTM 1586D.