

246004330
HWCA
Ozark

CONSTRUCTION DOCUMENTATION REPORT
FOR THE IMMACULATE CONCEPTION CHURCH PROPERTY (AOC 5)
SAUKVILLE, WISCONSIN

PREPARED FOR
GEORGIA GULF CORPORATION
ATLANTA, GEORGIA

PREPARED BY
RMT, INC.
MADISON, WISCONSIN

OCTOBER 1996

*Construction samples
2nd half of Proc's
chlorinated analyzed?*



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TO: Tim Mulholland
Wisconsin Department of Natural Resources
101 S. Webster Street
Madison, WI 53705

DATE: 10/18/96	JOB NO.: 3974.06
ATTENTION: Tim Mulholland	
RE: Construction Documentation Report	

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Contract Documents
- Purchase Order
- Waiver of Lien
- Laboratory Analysis Report
- Certificates of Insurance
- Copy of letter
- Plans
- Report

COPIES	DATE	NO.	DESCRIPTION
1	10/18/96		Construction Documentation Report

RECEIVED

OCT 21 1996

**BUREAU OF SOLID
HAZARDOUS WASTE MANAGEMENT**

THESE ARE TRANSMITTED as checked below:

- FOR APPROVAL
- APPROVED AS NOTED
- APPROVED AS SUBMITTED
- SIGN AND RETURN
- FOR REVIEW AND COMMENT
- RETURNED FOR CORRECTIONS
- FOR YOUR USE
- AS REQUESTED
- _____

REMARKS:

Tim - Here is a copy of the Construction Documentation Report for the Immaculate Conception Church Property in Saukville, Wisconsin. Please call me if you have any questions. I look forward to discussing this report with you and Carol Geiger at RMT on Wednesday. - Gene

COPY TO Carol Geiger, File

SIGNED Gene McJim

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. INTRODUCTION	1
1.1 Background	1
1.2 Purpose and Scope	3
2. PRECONSTRUCTION ACTIVITIES	4
2.1 Preparation of Construction Plans and Specifications	4
2.2 Access Agreements	4
2.3 Site Survey	4
2.4 Soil Data - Geoprobess®	4
2.5 Water Level Measurements	7
2.6 Contractor Selection	7
3. CONSTRUCTION ACTIVITIES	8
3.1 Site Preparation and Approvals	8
3.2 Excavation and Disposal	8
3.3 Final Confirmation Sampling	9
3.4 In-Field Plan Modifications	11
3.4.1 Abandonment of W-37	11
3.4.2 Extension of Ranney Collector Trench	12
3.5 Vapor Barrier	12
3.5.1 Bedding Layer	12
3.5.2 Geomembrane Liner	13
3.5.3 Drainage Layer	13
3.6 Backfill	13
3.7 Topsoil	14
3.8 Revegetation/Site Closure	14
4. CERTIFICATION STATEMENT	15
5. REFERENCES	16

List of Tables

Table 1 Summary of BTEX Concentrations in Soil - Preconstruction	5
Table 2 In-Field Soil Screening Results	10

List of Figures

Figure 1 Site Location Map	2
Figure 2 Site Plan	6

List of Appendices

Appendix A	Preconstruction Data
Appendix B	Approval of Biological Treatment of Soil
Appendix C	Soil Cleanup Confirmation Results
Appendix D	Photographs of Construction Activities
Appendix E	Documentation of W-37 Abandonment
Appendix F	Geomembrane Documentation

Section 1
INTRODUCTION

*Churchyard
@ 145 W.
Church St.*

1.1 Background

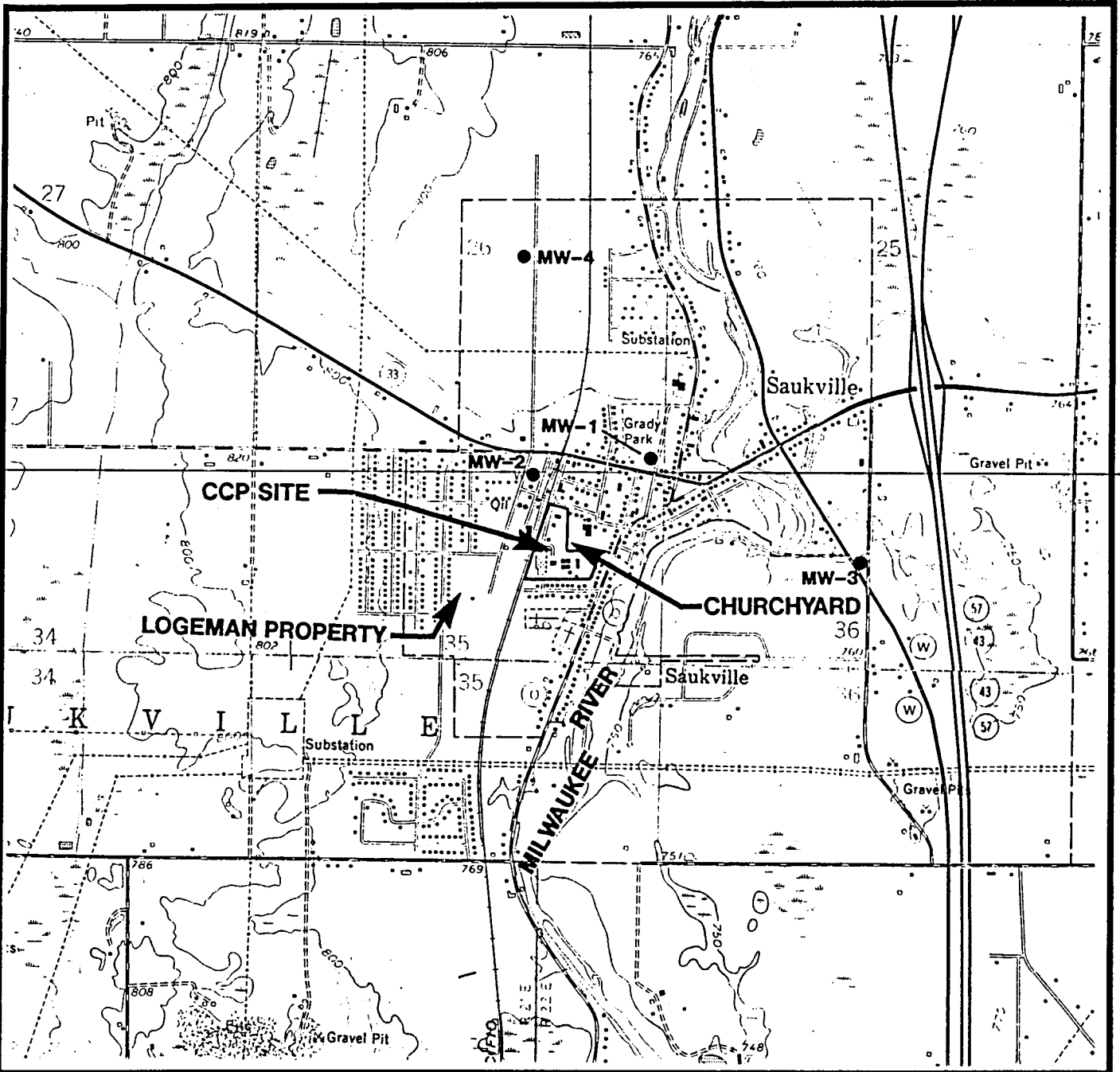
Georgia Gulf Corporation (Georgia Gulf) is a previous owner of the former Freeman Chemical Corporation (FCC) facility in Saukville, Wisconsin (Figure 1). This facility is now owned by Cook Composites and Polymers (CCP). Georgia Gulf developed an NR 700 Remedial Action Options Report and Remedial Action Plan (RAP) to address two off-site locations near the CCP plant—the Logemann Brothers property and the Immaculate Conception Church property (hereafter referred to as “Churchyard”) (RMT, 1996). The RAP for the Churchyard was approved by the WDNR in a letter dated September 9, 1996, and is included in Appendix A.

Prior to development of the RAP, investigative work was initiated at these off-site locations as part of a comprehensive RCRA Facility Investigation (RFI) conducted by CCP (RMT, 1995). In both the RAP and the RFI, the two locations were identified as Areas of Concern (AOCs) and were denoted as AOC 4 for the Logemann Brothers property and AOC 5 for the Churchyard.

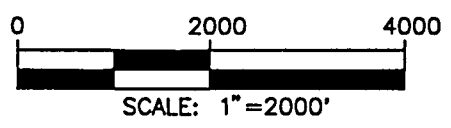
Although remedial actions were identified for both the Logemann Property and the Churchyard in the RAP, to date, only the remedial action for the Churchyard has been completed. This report discusses the remediation of the Churchyard only.

The Churchyard is an area that was contaminated by the migration of solvents from the former FCC facility. Both the soil and groundwater in this area are contaminated with high levels of volatile organic compounds (VOCs) and low levels of semivolatile organic compounds (SVOCs). Groundwater in the Churchyard is already captured by an active recovery system that was constructed in 1987 and is maintained by CCP (RMT, 1995).

The primary objective of the RAP for the Churchyard was to prevent exposure to contaminated soil, and a secondary objective was to reduce the mass of contaminants available to leach to groundwater. These objectives were met by implementing a remedial action consisting of soil excavation and the installation of a low-permeability liner to reduce the likelihood of recontamination of the clean backfilled soil.



STATE LOCATION



**SITE LOCATION MAP
GEORGIA GULF CORPORATION
SAUKVILLE, WISCONSIN**

SOURCE: BASE MAP FROM PORT WASHINGTON WEST AND CEDARBURG, WISCONSIN 7.5 MIN. USGS QUADRANGLE.



DWN. BY: DSS
APPROVED BY: ELM
DATE: MAY 1996
PROJ. # 3974.03
FILE # 39740302

FIGURE 1

1.2 Purpose and Scope

The purpose of this report is to document the construction activities implemented for the remedial action for the Churchyard and to document that the WDNR generic residential cleanup criteria was met for the southern, northern, and eastern boundaries of the excavation. The remedial action was performed in general accordance with the requirements of WAC NR 700.

The scope of this report is intended to satisfy the content requirements of NR 724.15 (documentation of construction and completion). It includes the following components:

- Summary of pre-construction and construction activities
- Confirmation that sampling results meet NR 700 generic residential soil cleanup standards
- As-built drawings
- Summary of modifications to the remediation plan implemented in the field

Section 2
PRECONSTRUCTION ACTIVITIES

2.1 Preparation of Construction Plans and Specifications

Following by the Wisconsin Department of Natural Resources of the NR 700 Remedial Action Options Report and Remedial Action Plan, RMT proceeded with development of construction plans and specifications. Again, these plans and specifications were developed only for the Churchyard.

2.2 Access Agreements

Access agreements were required to perform the remedial action site activities. An access agreement was negotiated between Georgia Gulf and the IMC on June 29, 1996. Father Karl Acker was the contact from the IMC.

2.3 Site Survey

A topographical survey was performed at the Churchyard prior to construction. The purpose of this survey was to provide horizontal and vertical control during construction and to provide a reference for documentation purposes. This survey was performed by a Wisconsin Registered Land Surveyor from RMT.

2.4 Soil Data - Geoprobe®

A site characterization was initiated at the Churchyard to better delineate the area of contamination, thereby setting the boundaries of remediation. Eleven Geoprobe® boreholes were drilled at the site during pre-construction activities. Soil samples were screened in the field for the presence of VOCs using a photoionization detector (PID), and a sample from nine of the eleven borings was submitted to a laboratory for PVOC analysis. The soil chemistry data were consistent with the data obtained during the RFI and are summarized in Table 1. Boring logs from this activity are located in Appendix A and are shown on Figure 2. All boreholes were backfilled with a bentonite slurry in accordance with NR 141. Laboratory reports for chemical analysis of Geoprobe® soil samples are included in Appendix A.

TABLE 1
SUMMARY OF BTEX CONCENTRATIONS IN SOIL - PRECONSTRUCTION
SAUKVILLE, WISCONSIN
(all units in $\mu\text{g}/\text{kg}$)

Sample Point	Benzene	Ethylbenzene	Toluene	Xylenes (total)
A5-1	320	450,000	420,000	2,800,000
A5-2	230	300,000	310,000	1,400,000
A5-3	960	560,000	430,000	2,600,000
A5-4	1.3	80,000	36,000	1,300,000
A5-5	< 730	4,200	240	74,000
A5-6	< 1.3	< 1.3	< 1.3	4.1
A5-7	< 5,600	210,000	150,000	95,000
A5-8	< 5,300	450,000	270,000	2,400,000
A5-9	< 1.2	4.4	1.9	25
A5-10	< 1.2	< 1.2	< 1.2	< 3.5
A5-11	< 1.1	< 1.1	< 1.1	< 3.2
A5-12	< 57	< 57	30	50
A5-13	< 57	< 57	< 57	170
A5-14	< 60	40	50	1,600
A5-15	< 56	< 56	20	30
A5-16	< 56	< 56	< 56	< 170
A5-17	< 56	< 56	20	40
A5-18	< 5,800	91,000	17,000	1,300,000
W-1	< 59	40	110	280
W-3	< 58	20	40	120

NOTES:

Soil samples for chemical analysis were collected from borings A5-1 through A5-11 during the RFI (RMT, 1995). Laboratory reports for the remaining soil samples in this table are included in Appendix A. Sample depths for all the soil samples in the table are between 2 and 6 feet below grade.

2.5 Water Level Measurements

Historically, the depth to the water table in the Churchyard has varied from 5 to 15 feet below grade based on water level measurements collected since 1987 in monitoring wells in and adjacent to the Churchyard (RMT, 1995). As outlined in the RAP, contaminated soil was to be excavated to the historical high water table, which was determined to be at 5 feet below grade. To verify depth to the water table prior to construction activities, water level measurements were taken from six temporary observation wells in the area to be excavated. The measurements recorded can be found in Appendix A. The temporary wells were removed during soil excavation.

2.6 Contractor Selection

Superior Special Services, Inc. (Superior), located at 1622 S. 162nd Street, New Berlin, Wisconsin, was the contractor selected to perform the remedial action activities. Superior provided site construction services, and the excavated soil was treated/disposed at their Horicon, Wisconsin, "biopile" facility at the Glacier Ridge Landfill. The letter from the WDNR approving biological treatment of soil at the Glacier Ridge Landfill is included in Appendix B.

Section 3 CONSTRUCTION ACTIVITIES

3.1 Site Preparation and Approvals

Initial site preparation began on July 22, 1996, and continued through July 26, 1996. Activities included mobilization of equipment and construction of the entry road and staging area. Two job trailers and one mobile laboratory (EnChem, Inc.) were set up in the staging area. Changes from the design site plan to the actual site plan implemented can be seen on Figure 2.

Local permits and approvals were obtained by Superior where necessary. The power drop and telephone line were handled by the appropriate personnel; however, the actual power was not hooked up until August 2, 1996. A fencing subcontractor installed the security fence along the eastern and northern edge of the construction area to limit public access to the area being excavated. During site preparation, RMT established the grid system for the excavation of soil.

3.2 Excavation and Disposal

Excavation of the Churchyard began on Saturday, July 27, 1996, and ended on Friday, August 2, 1996. The boundaries of the excavated area to the south, east, and north were determined by the generic residential cleanup criterion set forth in NR 700 for the constituents of concern (see Subsection 3.3). As previously stated, the depth of the excavated area was established at the historical high groundwater level. Excavation was initiated at the southern end of the site and proceeded across the site to the north. The affected area was excavated to an elevation of 762 feet in most areas, which is 5 to 6.5 feet below surface grade. The northwestern corner of the excavation was graded to 763 feet, due to the presence of a localized groundwater high, as determined during the preconstruction investigation (Subsection 2.5). Originally, all sidewalls were to be sloped at 2:1; however, to remove as much contaminated soil as possible, the western and eastern sidewalls were excavated to nearly vertical walls. The final area excavated was approximately 98 feet by 212 feet, and the total volume excavated was approximately 4,000 cubic yards (7,000 tons).

Typically, on each construction day, Superior, working with a backhoe, would excavate to the design depth within the limits of the excavation area, as defined in the plans and specifications. Excavated material was transferred to covered dump trucks and transported to the Glacier Ridge

Landfill. At the landfill, the soil was placed in biopiles for biological treatment. Superior kept track of the amount of material being transported via load tickets. A photograph of typical excavation activities is located in Appendix D, as Photograph 1.

As the excavation proceeded, soil samples were collected from the southern, eastern, and northern sidewalls for preliminary confirmation that the affected soil had been removed. The western wall was not sampled because the excavation was not to proceed beyond the CCP fence line. Soil samples were immediately brought to the on-site mobile laboratory, EnChem, for analysis of benzene, toluene, ethylbenzene, and xylene (BTEX) by gas chromatography. The analytical methodologies for screening analysis were consistent with those specified in EPA Method 8020. The report from the mobile laboratory is included in Appendix C. If the results of the analysis showed no contamination above the NR 700 generic residential contaminant levels, then further excavation beyond the sidewalls did not occur. Table 2 contains the results of the screening analysis. The sample ID refers to the sidewall grid location, according to Figure 2. For sample D,8, samples were taken directly north of well W-37 and directly south of the well. For samples A, B, and C, 9, the +10' refers to 10 feet beyond the number 9 (2+25N) grid, where the northern edge of the excavation terminated. In all cases, initial excavation limits were sufficient to remove the affected soil and to meet NR 700 cleanup standards.

On the second day of excavation, while attempting to grade to the necessary elevation of 762 feet, the dozer snagged a buried electrical line. This situation and the resulting solution will be further discussed in Subsection 3.4.

3.3 Final Confirmation Sampling

Final soil samples were collected from the Churchyard excavation to confirm that the soil cleanup standards were attained after the soil excavation was completed. Samples were collected along the southern, eastern, and northern walls of the excavation. Confirmatory VOC samples were preserved with methanol, and confirmatory SVOC samples were collected in amber containers. All samples were stored on ice, and shipped that same day to the EnChem Laboratory in Green Bay, Wisconsin, with proper chain-of-custody documentation. Fifteen samples were analyzed for VOCs and four for SVOCs.

TABLE 2

**IN-FIELD SOIL SCREENING RESULTS
SAUKVILLE, WISCONSIN**

Sample ID ¹	Concentration (µg/kg)				
	Benzene	Toluene	Ethylbenzene	m/p-Xylene	o-Xylene
A, 1	ND	ND	ND	8.5	2.6
A, 1 duplicate	ND	ND	ND	6.7	2.1
Clean fill	ND	ND	ND	ND	ND
B,1	ND	ND	ND	1.7	ND
B,1 duplicate	ND	ND	ND	ND	ND
D,1	ND	ND	ND	ND	ND
D,2	ND	ND	ND	ND	ND
D,2 duplicate	ND	ND	ND	ND	ND
C,1	ND	ND	ND	2.0	ND
C,1 duplicate	ND	ND	ND	ND	ND
D,3	ND	ND	ND	ND	ND
D,4	ND	ND	ND	ND	ND
D,5	ND	ND	ND	ND	ND
D,6	ND	ND	ND	1.4	ND
D,7	ND	ND	ND	56.0	16.6
D,7 duplicate	ND	2.0	5.5	53.6	17.3
D,8 north	ND	1.5	4.9	25.3	9.1
D,8 north deep	ND	ND	1.7	1.6	ND
D,8 south	ND	ND	ND	14.1	5.5
D,8 south deep	ND	ND	ND	10.6	3.3
B,9+10'	ND	ND	ND	5.9	1.9
C,9+10'	ND	ND	ND	ND	ND
D,9	ND	ND	ND	2.7	ND
A,9+10'	ND	ND	1.0	14.7	5.7
NR 700 Generic Residential Cleanup Criterion	5.5	2,900	1,500	4,100 ²	

NOTES:

ND Not detected; detection limit is 1 µg/kg.

¹ Sample I.D.s are keyed to the site construction grid (Figure 2).

² Value is for total xylenes.

Parameters to be analyzed included SVOCs and VOCs that were detected in the Churchyard during the RFI. SVOC analytes included acetophenone; 1,2-dichlorobenzene; 2,4-dimethylphenol; 2-methylnaphthalene; 2-methylphenol; 3-methylphenol; naphthalene; and phenanthrene. VOC analytes included benzene, ethylbenzene, isobutanol, styrene, tetrachloroethene, toluene, and xylene. Compounds for which the laboratory did not have a method were analyzed using a library search, which consists of detection or nondetection. Laboratory reports are located in Appendix C. None of the analytes were detected in the verification samples. Thus, all sample parameters were well below the NR 700 soil cleanup standards.

3.4 In-Field Plan Modifications

Several in-field plan modifications were performed during construction activities, none of which negatively affected the remedial action objectives. During excavation of contaminated soil in the Churchyard, the electrical and water transfer lines for recovery well W-37 were damaged. These lines were known to exist; however, the depth to the lines was unknown. After discussing the options with the WDNR, during the week of July 29, the final decision was made to abandon well W-37 in accordance with NR 141; well abandonment documentation is included in Appendix E. This recovery well had historically operated on only an occasional basis because the level controls for the pump were set at a shallow depth. To replace the effect of the abandoned recovery well, the existing groundwater recovery Ranney collector trench was extended to the area of former well W-37 as shown on Figure 2. This modification to the groundwater recovery system will result in improved hydraulic control in this area.

3.4.1 Abandonment of W-37

Well W-37 was abandoned on Friday, August 2, 1996, by Environmental Foundation and Drilling (EFD). Prior to abandonment, Superior removed the concrete vault surrounding the well and capped off the electrical and water transfer lines. Superior and EFD pulled the pump and piping from the well. This equipment was returned to CCP. The total well depth from the top of the casing was 18 feet, and the diameter of the casing was 18 inches. At the time of the well abandonment, the depth to water was determined to be approximately 6 feet. EFD backfilled the well with a cement/bentonite slurry in accordance with NR 141. Photograph 2, in Appendix D, documents these activities. The well abandonment form is located in Appendix E.

3.4.2 Extension of Ranney Collector Trench

The trench construction was also completed on August 2, 1996. The existing Ranney Collector trench was located approximately 100 feet to the south of W-37 (at 1+00 N, 0+90 E). The trench consisted of a 4-inch steel wire-wrapped well screen surrounded by pea gravel. The gravel appeared to be placed from 1 foot above the pipe to a depth of 2 feet below it, at a width of 3 feet. From the existing base of the Ranney collector trench (758.86), the Ranney collector extension was constructed to W-37 at an increasing slope of approximately 0.5 percent. The trench was backfilled with clean washed pea gravel. The Ranney collector lateral was extended to W-37 where it intersected existing gravel from the well water transfer lines, to provide hydraulic continuity. The final dimensions of the constructed trench were approximately 3 feet wide by 90 feet long, and 3 feet deep. The elevations and the horizontal location of the existing and final trench are documented on Figure 2. Photograph 3, in Appendix D documents the final trench extension.

3.5 Vapor Barrier

As stated in the RAP, the installation of a vapor barrier system was part of the remedial action at the Churchyard. The purpose of the vapor barrier was to reduce the chance for future re-contamination of the backfilled soil. The vapor barrier consisted of a synthetic membrane, XR-5[®], manufactured by Seaman of Wooster, Ohio. XR-5[®] was selected for its strength, durability, and chemical resistance. Also associated with the vapor barrier system was a bedding material layer to protect the membrane and a sand layer above the membrane to promote drainage. The construction of the vapor barrier system began on August 2, 1996, and was completed on August 8, 1996.

3.5.1 Bedding Layer

The bedding layer consisted of a minimum 6 inches of sand, and was placed in the excavated area on all surfaces that were covered by the geomembrane. The sand layer was graded at a slope decreasing by 0.5 percent from west to east to allow drainage off of the membrane (from 763.5 to 762.5). Extra sand was placed in some locations to bring the elevations up to required values. After the sand layer was placed, it was smoothed with a smooth drum roller. Because the western sidewall was excavated vertically, it was rebuilt with the sand bedding material at a slope of 2:1.

3.5.2 Geomembrane Liner

The geomembrane construction was performed by GSI, Inc., a subcontractor to Superior. A 40-mil geomembrane liner (XR-5[®]), Model #8138, was placed over the base of the excavation on top of the bedding material. The liner extended up the slopes of the excavation to the north, west, and east, where it was anchored in 1-foot-deep anchor trenches. The eastern edge of the liner was left at the base of the excavation so that it would not trap water.

~~The liner was factory-seamed into three large panels. The field installation consisted of~~ deploying the panels, from the south to the north; anchoring the liner in the trenches with sandbags; and field-seaming the two seams. Inspection and testing of the seams and patches also were conducted. The installation and testing of the geomembrane were completed in 1 day. Details of the as-built panel layout, subbase acceptance form, and testing logs are contained in Appendix F. Photographs 4, 5, and 6, located in Appendix D, document the placement, seaming, and field testing of the geomembrane, respectively.

3.5.3 Drainage Layer

A 1-foot-thick sand drainage layer was placed directly over the geomembrane on August 8, 1996. The material was placed using low-ground pressure equipment, operating on at least 1 foot of sand. No vehicle or equipment was allowed to operate directly on the membrane. The sand was placed using a cascading method to minimize the propagation of wrinkles in the membrane.

During placement of the sand drainage layer, two tears were made in the geomembrane. GSI was immediately contacted by Superior, and the tears were repaired in accordance with the specifications. Patches were pick-tested to verify the edge seal.

The anchor trenches were backfilled with the sand material to reduce the potential for damage to the liner. The sand was compacted with a small plate-type compactor.

3.6 Backfill

General backfill placement began on Friday, August 9, 1996. The backfill material was obtained from a nearby borrow source (Cedarburg, Wisconsin) and consisted of a clayey silty loam. The initial loads of fill contained large cobbles, 6 inches to 24 inches in diameter. Superior removed these cobbles prior to placing the fill. The excavation was backfilled in 6-inch lifts by placing soil with the dozer. Compaction was performed with a small footed compactor to minimize settling. The excavation was backfilled to within 6 to 12 inches of final grades by Monday, August 12, 1996. On Thursday, August 15, 1996, the final backfill material was placed and compacted.

3.7 Topsoil

The surface of the backfilled material was scarified to a depth of 3 inches with a cultivator prior to placement of the topsoil. A 6-inch-thick topsoil layer was then placed over the disturbed area, to within 2 inches of the pre-construction conditions, per the request of the landscaping subcontractor (Frank's Landscaping).

3.8 Revegetation/Site Closure

Prior to revegetation, Superior removed the temporary chain-link fence and replaced it with temporary snow fencing. Removal of the gravel entry road and staging area was also initiated so that landscaping could be completed in those areas. Revegetation of the Churchyard began on Monday, August 19, 1996, and was performed by Frank's Landscaping. Activities consisted of site grading to achieve pre-construction conditions, removing tree stumps, trimming vines along the CCP fence line, and placing sod. It was decided by Georgia Gulf that all disturbed areas (to the temporary fence line) would receive sod. Final sodding was completed on Wednesday, August 28, 1996.

Section 4
CERTIFICATION STATEMENT

I, hereby certify that this project was constructed in substantial conformance with the NR 700 Remedial Action Plan and the Final Plans and Specifications.

Name

J. M. Amelf

Date

10-18-96

Section 5
REFERENCES

RMT, Inc. 1995. RCRA facilities investigation additional studies report. Cook Composites and Polymers. Saukville, Wisconsin. October 1995.

RMT, Inc. 1996. NR 700 remedial action options report and remedial action plan for the Churchyard and Logemann Brothers property. Saukville, Wisconsin. June 1996.

APPENDIX A
PRECONSTRUCTION DATA

- **WDNR ACCEPTANCE LETTER FOR RAP**
- **BORING LOGS**
- **WATER LEVEL DATA**
- **LABORATORY REPORTS - GEOPROBE® BOREHOLE SAMPLES**



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary

Box 7921
101 South Webster Street
Madison, Wisconsin 53707-7921
TELEPHONE 608-266-2621
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September 9, 1996

File Reference: 246004330
Ozaukee
HW/CA

Ms. Carol Geiger
Georgia Gulf Corporation
400 Perimeter Center Terrace, Suite 595
Box 105197
Atlanta, GA 30348

SUBJECT: Churchyard Remediation, Saukville, WI

Dear Ms. Geiger:

For the past several months, Georgia Gulf Corporation has actively pursued the remediation of off-site properties associated with the corrective action program required of Cook Composites & Polymers. On May 24, 1996, Georgia Gulf Corporation submitted to the Department a draft report entitled: "NR 700 Remedial Action Options Report and Remedial Action Plan for the Churchyard and Logemann Brothers Property, Saukville, WI." This report was prepared by RMT, Inc. for Georgia Gulf Corporation. Department staff met with Georgia Gulf and RMT on June 5, 1996 to discuss our comments on the preliminary remediation plans. It was agreed that a final remedial action plan that addresses DNR comments would be prepared and submitted in accordance with the provisions of the NR 700 series. On June 17, 1996, Georgia Gulf submitted the final remedial action plan and on June 27, 1996 Department staff met with Georgia Gulf and RMT to provide final comments on the remediation plan for the churchyard property. Revisions addressing these comments were submitted by Georgia Gulf to the Department as technical memoranda 1 through 4 in a letter dated July 10, 1996.

In mid-July, the Department provided Georgia Gulf with verbal approval to proceed with remediation of the churchyard property and during late July and August of 1996, Georgia Gulf implemented the remediation plan. This letter serves to provide formal written approval of Georgia Gulf's final remedial action plan for the churchyard. The Department believes that the actions taken by Georgia Gulf will significantly reduce any potential human and environmental threat due to inhalation or ingestion of contaminated soil that was found above ground water on the Churchyard.

Ms. Geiger: Georgia Gulf's Remedial Action Plan for the Churchyard -
September 9, 1996

2

We look forward to continuing to work with Georgia Gulf as it considers the remediation of the Logemann Brothers' property. If you have any questions on this matter, please contact me at 608/266-0061.

Sincerely,



Timothy S. Mulholland, PhD
Waste Management Engineer
Hazardous Waste Management Section
Bureau of Waste Management

cc: M. Gordon — RR/3
P. Brady — SER
Rev. K. Acker - Immaculate Conception Church, Saukville
G. McLinn — RMT
C. Bostwick — CCP
J. Knight — President, Village of Saukville

RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name <i>Georgia Gulf</i>		Start Date <i>6/13/96</i>	End Date <i>6/13/96</i>	Boring Number <i>W-1</i>
Boring Drilled By <i>Metco</i>		Drilling Method <i>2" Geoprobe</i>		
Drill Rig <i>Geoprobe</i>	Common Well Name <i>—</i>	Initial Water Level	Surface Elevation	Borehole Diameter <i>2</i> Inches
Boring Location State Plane		Easting		Northing
1/4 of		1/4 of Section	T	N,R
County		State	DNR County Code	Civil Town/City/ or Village
		Local Grid Location (If applicable)		
		<input type="checkbox"/> N <input type="checkbox"/> S		<input type="checkbox"/> E <input type="checkbox"/> W

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RDD/ Comments
			1	<i>Sandy lean clay; slightly plastic; dark yellow brown (10%); No odor; moist; stiff; topsoil</i>	<i>CL</i>	<i>2</i>			
			2	<i>Poorly graded sand w/ silt and gravel (at 4'); brownish yellow (10%); wet at 3.5'; loose; No odor; plastic.</i>	<i>SP</i>	<i>2</i>			
		3							
		4							
			5	<i>lean clay; plastic; gray (10%); slight solvent odor; wet; lacustrine.</i>	<i>CL</i>	<i>30</i>			
		6							
				<i>- temporary well installed</i> <i>- backfilled w/ bentonite.</i>					

Logged By: *Richard C. Ford*

Checked By:

RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name <i>Georgia Gulf</i>		Start Date <i>6/13/96</i>	End Date <i>6/13/96</i>	Boring Number <i>W-2</i>
Boring Drilled By <i>MSTCO</i>		Drilling Method <i>2" Geoprobe</i>		
Drill Rig <i>Geoprobe</i>	Common Well Name —	Initial Water Level —	Surface Elevation —	Borehole Diameter <i>2"</i> Inches
Boring Location State Plane <i>1/4 of 1/4 of Section T N,R</i>		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W		
County	State	DNR County Code	Civil Town/City/ or Village	

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			1	<i>fill: silty clay</i>			<i>40</i>		
			2	<i>lean clay w/ silt; gravel; slightly plastic; brown; (104r^{5/2}); Strong solvent odor; moist</i>	<i>CL</i>		<i>500</i>		
			3	<i>lean clay; plastic; strong solvent odor; grey; moist to wet; lacustrine</i>			<i>200</i>		
		4							
			5						
			6	<i>EOB @ 6'</i>					
				<i>- temporary well installed</i>					
				<i>- backfilled w/ bentonite</i>					

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name Georgia Gulf		Start Date 6/13/96	End Date 6/13/96	Boring Number W-3
Boring Drilled By METCO		Drilling Method 2" Geoprobe		
Drill Rig Geoprobe	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter 2" Inches
Boring Location State Plane		Easting		Northing
1/4 of		1/4 of Section	T	N,R
County		State	DNR County Code	Civil Town/City/ or Village
Local Grid Location (If applicable)				
Feet		<input type="checkbox"/> N	<input type="checkbox"/> E	
Feet		<input type="checkbox"/> S	<input type="checkbox"/> W	

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			1	Topsoil					
			2	Poorly graded Sand w/ clay & gravel; slightly plastic; no odor; moist; loose.			<2		
			3						
			4	well graded Sand w/ silt & gravel; n. plastic; dk. yellow brown (10yr 4/r); NO odor; moist to wet; glacial till(?).			<2		
			5						
			6						
			7	Refusal at 7'					
				- temporary well installed					
				- back filled with bentonite					

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name Georgia Gulf		Start Date 6/13/96	End Date 6/13/96	Boring Number WC-2
Boring Drilled By METCO		Drilling Method 2" Geoprobe		
Drill Rig Geoprobe	Common Well Name _____	Initial Water Level _____	Surface Elevation	Borehole Diameter 2" Inches
Boring Location State Plane		Easting		Northing
1/4 of		1/4 of Section	T	N,R
County		State	DNR County Code	Civil Town/City/ or Village
		Local Grid Location (If applicable)		
		Feet <input type="checkbox"/> N		Feet <input type="checkbox"/> E
		Feet <input type="checkbox"/> S		Feet <input type="checkbox"/> W

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			1	Topsoil					
			2	lean clay alternating w/ fine sand; plastic; Brown; Strong Solvent Odor; soft; lacustrine fill.	CL/SP	7500			
			3						
			4	EOB @ 4'; backfill w/ Bentonite					

Logged By: *Richard M. Mohr*

Checked By:

RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name Georgia Gulf		Start Date 6/13/96	End Date 6/13/96	Boring Number A5-12
Boring Drilled By METCO		Drilling Method 1" Geoprobe		
Drill Rig Geoprobe	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter 1 Inches
Boring Location State Plane		Easting 1/4 of		Northing 1/4 of Section
County		State	DNR County Code	Civil Town/City/ or Village
		Local Grid Location (If applicable)		
		<input type="checkbox"/> N <input type="checkbox"/> S		<input type="checkbox"/> E <input type="checkbox"/> W

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/	Comments
				TOPSOIL						
			1	poorly graded sand w/ clay; slightly plastic;						
			2	yellow brown (10%); moist; no odor, loose	SP	<2				
			3							
			4	well graded SAND & gravel; yellow brown (10%);						
			5	moist; no odor; fragments of dolomite.	SW	<2				
				EOB at 5'						
				Back filled w/ bentonite						

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name <i>Georgia Gulf</i>		Start Date <i>6/13/96</i>	End Date <i>6/13/96</i>	Boring Number <i>A5-13</i>
Boring Drilled By <i>METCO</i>		Drilling Method <i>1" Geoprobe</i>		
Drill Rig <i>Geoprobe</i>	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter <i>1" Inches</i>
Boring Location State Plane <i>1/4 of</i> Easting <i>1/4 of Section</i> T <i>N,R</i> Northing		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W Feet Feet		
County	State	DNR County Code	Civil Town/City/ or Village	

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/Comments
			1	<i>Topsoil</i>					
			2	<i>Poory graded SAND w/ clay; Non plastic; yellow brown (10% w/w); moist; slight solvent odor at 3' (spoon tip).</i>	<i>SP</i>	<i>10</i>			
			4	<i>Poory graded Sand w/ gravel & silt; Non plastic, Strong solvent odor; moist.</i>		<i>150</i>			
			5	<i>EOB @ 5'; Backfilled w/ Bentonite</i>					

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RMT Field Soil Boring Log Information

RMT Project No: _____

Page _____ of _____

Project Name <i>Georgia Gulf</i>		Start Date <i>6/13/96</i>	End Date <i>6/13/96</i>	Boring Number <i>A5-14</i>
Boring Drilled By <i>METCO</i>		Drilling Method <i>1" Geoprobe</i>		
Drill Rig <i>Geo probe</i>	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter <i>1" Inches</i>
Boring Location State Plane		Easting		Northing
1/4 of _____		1/4 of Section _____		T _____
County _____		State _____	DNR County Code _____	Civil Town/City/ or Village _____
				Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/Comments
			1	<i>lean clay; plastic; brown; no odor; moist</i>	CL	42			
			2						
			3	<i>AS Above; wet @ 4.8' (more gravel).</i>	CL	42			
			4						
			5	<i>EOB @ 5'; Backfilled w/ Bentonite</i>					

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name Georgia Gulf		Start Date 6/13/96	End Date 6/13/96	Boring Number A5-15
Boring Drilled By METCO		Drilling Method 1' Geoprobe		
Drill Rig Geoprobe	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter 1" Inches
Boring Location State Plane		Easting		Northing
1/4 of		1/4 of Section		T
				N,R
County		State	DNR County Code	Civil Town/City/ or Village

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			1	lean clay; plastic; brown (10yr ^{5/3}); no odor; moist; loose.	CL	L2			
			2	poorly graded sand with silt; n. plastic;					
			3	brown (10yr ^{5/3}); no odor; moist to wet.	SP	L2			
			4						
			5						
				EOB @ 5'; Backfilled w/ bentonite.					

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name Georgia Aulf Start Date 6/13/96 End Date 6/13/96 Boring Number A5-16

Boring Drilled By METCO Drilling Method 1" Geo probe

Drill Rig GEO probe Common Well Name Initial Water Level Surface Elevation Borehole Diameter 1" Inches

Boring Location State Plane Easting Northing Local Grid Location (If applicable)
 N E
 S W

County State DNR County Code Civil Town/City/ or Village

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	ROD/Comments
			1	Silty SAND grading to poorly graded Sand; Brown (10γ r ⁵ /4); n. plastic; No odor; wet at ≈ 4; loose.	sm				
			2				<2		
			3						
			4			sn/SP	<2		
			5		EOB @ 5; Backfill w/ Bentonite				

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name Georgia Gulf		Start Date 6/13/96	End Date 6/13/96	Boring Number A5-17
Boring Drilled By Metco		Drilling Method 1" Geoprobe		
Drill Rig Geoprobe	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter 1" Inches
Boring Location State Plane 1/4 of Easting 1/4 of Section T N,R		Local Grid Location (If applicable) Feet <input type="checkbox"/> N <input type="checkbox"/> E Feet <input type="checkbox"/> S <input type="checkbox"/> W		
County	State	DNR County Code	Civil Town/City/ or Village	

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RQD/ Comments
			1	Silty Sand grading to gravelly SAND; Not plastic; Brown (10yr 5/4); NO odor; MOIST; loose.	SM aw				
			2						
			3						
			4	gravelly SAND; no odor. moist.					
			5	EOB @ 5'; Backfill w/ Bentonite					

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Richard G. Gabe

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RMT Field Soil Boring Log Information

RMT Project No:

Page of

Project Name <i>Georgia Gulf</i>		Start Date <i>6/13/96</i>	End Date <i>6/13/96</i>	Boring Number <i>A5-18</i>
Boring Drilled By <i>METCO</i>		Drilling Method <i>1" Geoprobe</i>		
Drill Rig <i>Geoprobe</i>	Common Well Name	Initial Water Level	Surface Elevation	Borehole Diameter <i>1" Inches</i>
Boring Location State Plane		Easting		Northing
1/4 of		1/4 of Section	T	N,R
County		State	DNR County Code	Civil Town/City/ or Village
		Local Grid Location (If applicable)		
		Feet <input type="checkbox"/> N <input type="checkbox"/> E		
		Feet <input type="checkbox"/> S <input type="checkbox"/> W		

Number	Length (In) Recovered	Blow Counts	Depth In Feet	Group Name, Percent & Range of Particle Sizes, Plasticity, Color, Odor, Moisture, Density/Consistency, Additional Comments, Geologic Origin (Stratigraphic Unit)	Sample Type	PID/FID	Standard Penetration	Well Diagram	RDD/Comments
			1	<i>SAND and gravel mix; moist, n. plastic; slight solvent odor; fill.</i>	<i>SP/G</i>	<i>10</i>			
			2						
			3	<i>AS ABOVE; Strong Solvent Odor, met at 4.5'</i>					
			4						
			5						
				<i>EOB @ 5; backfill w/ Bentonite</i>		<i>100</i>			

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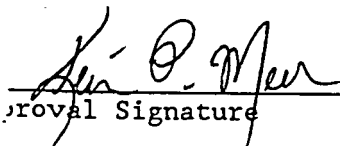
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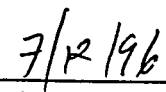
PROJECT NAME: GEORGIA GULF
PROJECT NO: 03974.06
WORK ORDER NO: 1334

REPORT DATE: 07/12/96
PAGE NO: 1

<u>SAMPLE NO.</u>	<u>STATION ID</u>	<u>COLL. DATE</u>	<u>SAMPLE NO.</u>	<u>STATION ID</u>	<u>COLL. DATE</u>
1334-001	W-1(2-4')	06/13/96			
1334-003	W-3(3-4')	06/13/96			
1334-006	A5-12(2-3')	06/13/96			
1334-007	A5-13(2-3')	06/13/96			
1334-008	A5-14(4-5')	06/13/96			
1334-009	A5-15(4-5')	06/13/96			
1334-010	A5-16(4-5')	06/13/96			
1334-011	A5-17(2-3')	06/13/96			
1334-012	A5-18(4-5')	06/13/96			

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample narrative. Release of this Final Report is authorized by Laboratory management, as is verified by the following signature.


Approval Signature


Date

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-001
STATION ID: W-1(2-4')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<59	59		ug/kg dry wt.
Toluene	110	59		ug/kg dry wt.
Ethylbenzene	40	59	Q	ug/kg dry wt.
Xylene, total	280	180		ug/kg dry wt.

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-003
STATION ID: W-3(3-4')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<58	58		ug/kg dry wt.
Toluene	40	58	Q	ug/kg dry wt.
Ethylbenzene	20	58	Q	ug/kg dry wt.
Xylene, total	120	170		ug/kg dry wt.

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-006
STATION ID: A5-12(2-3')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<57	57		ug/kg dry wt.
Toluene	30	57	Q	ug/kg dry wt.
Ethylbenzene	<57	57		ug/kg dry wt.
Xylene, total	50	170	Q	ug/kg dry wt.

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PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-007
STATION ID: A5-13(2-3')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<57	57		ug/kg dry wt.
Toluene	<57	57		ug/kg dry wt.
Ethylbenzene	<57	57		ug/kg dry wt.
Xylene, total	170	170		ug/kg dry wt.

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-008
STATION ID: A5-14(4-5')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<60	60		ug/kg dry wt.
Toluene	50	60	Q	ug/kg dry wt.
Ethylbenzene	40	60	Q	ug/kg dry wt.
Xylene, total	1600	180		ug/kg dry wt.

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-009
STATION ID: A5-15(4-5')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<56	56		ug/kg dry wt.
Toluene	20	56	Q	ug/kg dry wt.
Ethylbenzene	<56	56		ug/kg dry wt.
Xylene, total	30	170	Q	ug/kg dry wt.

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-010
STATION ID: A5-16(4-5')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<56	56		ug/kg dry wt.
Toluene	<56	56		ug/kg dry wt.
Ethylbenzene	<56	56		ug/kg dry wt.
Xylene, total	<170	170		ug/kg dry wt.

Repeated surrogate failure (see Sample Narrative).

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-011
STATION ID: A5-17(2-3')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<56	56		ug/kg dry wt.
Toluene	20	56	Q	ug/kg dry wt.
Ethylbenzene	<56	56		ug/kg dry wt.
Xylene, total	40	170	Q	ug/kg dry wt.

Repeated surrogate failure (see Sample Narrative).

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PAGE: 1

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 03974.06
LAB SAMPLE NUMBER: 1334-012
STATION ID: A5-18(4-5')
WI DNR LAB ID: 113138520

REPORT DATE: 07/12/96
COLLECTION DATE: 06/13/96
ANALYSIS DATE: 06/27/96
METHOD: 8260

VOLATILE ORGANICS ANALYSIS REPORT

<u>COMPOUND</u>	<u>RESULT</u>	<u>EQL</u>	<u>CODE</u>	<u>UNITS</u>
Benzene	<5800	5800		ug/kg dry wt.
Toluene	17000	5800		ug/kg dry wt.
Ethylbenzene	91000	5800		ug/kg dry wt.
Xylene, total	1300000	17000		ug/kg dry wt.

Madison Office & Laboratory
802 Deming Way
Madison, WI 53717
608-827-5501 • Fax: 608-827-5503
1-888-5-ENCHEM



Corporate Office & Laboratory
1795 Industrial Drive
Green Bay, WI 54302
414-469-2436 • Fax: 414-469-8827
1-800-7-ENCHEM

SAMPLE NARRATIVE
VOLATILE ORGANIC ANALYSIS

PROJECT NAME: GEORGIA GULF
PROJECT NUMBER: 3974.06
WORKORDER NUMBER: 1334
DATE: 07/11/96

Sample numbers 1334-010 and 1334-011 were each analyzed twice. Each of these analyses failed surrogates' ^{**} percent recovery criteria. The first analysis was reported for each of the samples.

** Surrogates are organic compounds that are similar to analytes of interest in chemical composition, extraction, and chromatography, but that are not normally found in environmental samples. These compounds are spiked into all blanks, standards, samples, and spiked samples before analysis (USEPA SW846 9/86 3rd edition).

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1-888-5-ENCHEM



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1795 Industrial Drive
Green Bay, WI 54302
414-469-2436 • Fax: 414-469-8827
1-800-7-ENCHEM

Organic GC/MS Data Qualifier Sheet

- B(n)** Analyte is present in the method blank. If the processes that were applied to the sample were applied to the method blank, the value of the analyte in the method blank would likely be 'n'.
- D** Analyte value from diluted analysis.
-
- E** Analyte concentration exceeds calibration range (see Sample Narrative).
- H(n)** Analysis performed 'n' days past holding time.
- J** Estimated concentration to tentatively identified compounds (TICs).
- K** Concentration may be elevated due to the presence of an unrequested analyte (see Sample Narrative).
- N** Presumptive evidence of a compound based on mass spectral library search.
- NR** Not required.
- Q** Qualitative mass spectral evidence of analyte present: concentration is less than the reporting limit.
- U** Analyte undetected.
- W** Sample received with headspace.

APPENDIX B

APPROVAL OF BIOLOGICAL TREATMENT OF SOIL

Phil



George E. Meyer
Secretary

State of Wisconsin

Post-It™ brand fax transmittal memo 767 # of pages > 17

To TODD WATERMOLEN	From LAKSHMI SRIDHARAN
Co. SSI W. ALLES	Co. DNR
Dept.	Phone #
Fax # 414-328-2899	Fax # 267-2768

DNR TDD 608-267-6897
SOLID WASTE MGMT 608-268-2111
SOLID WASTE TELEFAX 608-267-2768

JUN 23 1995

FID #: 114063950
Dodge County
SW - PROC

Mr. Hank Hechimovich, General Manager
Hechimovich Sanitary Landfill, Inc.
N 7296 Highway V
Horicon, WI 53032

CONFIDENTIAL

SUBJECT: Plan of Operation for the Solid Waste Processing Facility;
Treatment of Contaminated Soil; Hechimovich Sanitary Landfill;
License No. 3792

Dear Mr. Hechimovich:

We have completed our review of the plan of operation for the solid waste processing facility located at the Superior Services, Inc., (SSI) Hechimovich Sanitary Landfill. The processing facility will utilize bioremediation methods to treat hydrocarbon-contaminated soils from offsite sources. Based on our review, we have determined that the plan of operation is consistent with Wisconsin's solid waste regulations. If implemented in accordance with the approved plans and this approval, the plan of operation will be compatible with environmentally acceptable construction, operation, and monitoring of this facility. Therefore, the plan of operation is approved, subject to compliance with chs. NR 500 to 520, Wis. Adm. Code, and the conditions in this approval. This approval should be maintained with the plan of operation approval dated July 14, 1986.

The Department is aware of the general nature of scientific research on the aerobic degradation of petroleum hydrocarbons by use of bioremediation methods. In recent years, some commercial landfill operators have used pilot plant work to demonstrate the level of development of operating facilities that achieved defined remediation goals. Research results published in technical literature and reports of pilot plant and full scale facilities provide part of the basis for review and regulation of the plan of operation for the processing facility.

Contaminated soil which is accepted for treatment will be screened by the use of investigative data or the enclosed protocols 1 through 4. Screening for treatment will not be identical to screening for disposal. As long as the contaminants in soil are treatable by the bioremediation process, there is no upper limit on contaminant concentrations that can be accepted for treatment.

This approval contains no requirements for construction documentation. Construction and operation of the soil piles will require no special or complex activities that need Department oversight and will follow a standard

Hechimovich San. Lf. - Contaminated Soil Processing Facility Approval 2.

procedure detailed in supporting documentation. If the site operator should propose to set up a processing facility off of the landfill area, a plan modification to this plan of operation approval will have to be prepared. The plan modification should include a proposed location, details of liner and drainage, treatment and documentation of runoff, and any changes in operation. Construction documentation requirements will be required for the liner and drainage features of a lined facility located off of the landfill area.

Use of treated soil within the landfill property will be subject to separate approval as a modification to the landfill plan of operation approval.

Depending on final concentration of hydrocarbons in the treated soil, uses include daily cover, grading layer or rooting zone material in the final cover, road base, and berm construction within the landfill.

This approval limits treatment to soils contaminated with nonhalogenated fuels and similar substances and imposes limits on the tonnages of oil dry materials and industrial solid wastes that can be included with the contaminated soils. The treatment technology may be able to treat other substances, soils contaminated by multiple or unknown sources, soils from cleanups of industrial properties, or soils with larger proportions of admixed solid wastes. Conditions in this approval require notification of the Department prior to acceptance of these types of contaminated soils. Some materials may require review and approval of a plan modification prior to acceptance and treatment.

Any proposed uses of the processed soil off of the landfill property will have to be proposed in more detail through a request for a grant of exemption under s. 144.44(7)(g), Stats., for low hazard wastes. Justification for the grant of exemption can include, by reference, the documentation developed for the processing facility plan of operation but will have to be supplemented with proposed offsite locational limits and types of reuses.

If you have any questions about this approval, please call Robert Grefe at (608) 266-2178 or Dave Edwards at (414) 387-7870.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

attachments

cc. Dave Edwards - Horicon Area
Mike Degen - SD
Todd Watermolen - SSI, West Allis
Dennis Iverson - Applied Env. Sciences, Inc.

APPENDIX C

SOIL CLEANUP CONFIRMATION RESULTS

- MOBILE LABORATORY RESULTS
- FINAL CONFIRMATION RESULTS

EN CHEM INC. MOBILE LAB					
LOCATION: SAUKVILLE,WI					
CLIENT: RMT.					
DATE: 07/27/96 - 08/02/96					
ANALYST: CHAD KONKOL AND BRANDON PODHOLA					
SAMPLE ID	BENZENE	TOLUENE	ETHYLBENZENE	M/P XYLENE	O-XYLENE
A,1	ND	ND	ND	8.5	2.6
A,1 DUPLICATE	ND	ND	ND	6.7	2.1
CLEAN FILL	ND	ND	ND	ND	ND
B,1	ND	ND	ND	1.7	ND
B,1 DUPLICATE	ND	ND	ND	ND	ND
D,1	ND	ND	ND	ND	ND
D,2	ND	ND	ND	ND	ND
D,2	ND	ND	ND	ND	ND
C,1	ND	ND	ND	2.0	ND
C,1 DUP	ND	ND	ND	ND	ND
D,3	ND	ND	ND	ND	ND
D,4	ND	ND	ND	ND	ND
D,5	ND	ND	ND	ND	ND
D,6	ND	ND	ND	1.4	ND
D,7	ND	2.0	5.5	56.0	16.6
D,7 DUPLICATE	ND	1.5	4.9	53.6	17.3
D,8 NORTH	ND	ND	1.7	25.3	9.1
D,8 NORTHDEEP(5FT)	ND	ND	ND	1.6	ND
D,8 SOUTH	ND	ND	ND	14.1	5.5
D,8 SOUTHDEEP(5FT)	ND	ND	ND	10.6	3.3
B, 9+10	ND	ND	ND	5.9	1.9
C, 9+10	ND	ND	ND	ND	ND
D,9	ND	ND	ND	2.7	ND
A, 9+10	ND	ND	1.0	14.7	5.7
ALL RESULTS EXPRESSED IN PPB					
DETECTION LIMITS FOR SAMPLES RUN WITHOUT DILUTIONS ARE 1 PPB					

ANALYTICAL PROCEDURE

1. QA/QC

The GC was calibrated using a minimum of 5 calibration concentrations. These concentrations ranged from 1 ppb to 200 ppb for PVOCs and 40 ppb to 2000 ppb for GRO. The calibration curve for PVOCs and halogenated VOC's was processed using percent relative standard deviation.

Daily QC consisted of a check standard and a blank for every 10-20 samples and one duplicate per day.

2. SAMPLE PREPARATION

SOILS

5 g. of soil and 5 ml. of deionized water are added to a 40 ml. vial. The vial is shaken to break up any soil clumps. If the soil sample is severely contaminated, a methanol shakeout may be necessary. 5 g. of soil and 5 ml. of methanol are added to a 40 ml vial. The vial is shaken for 2 minutes and an aliquot of the methanol is injected into 5 ml. of water for analysis.

WATERS

5 ml. of the water sample are added to a 40 ml. vial. If the water requires a dilution, smaller volumes of the water sample are added to an appropriate volume of deionized water. The final volume of the dilution is 5 ml.

In both cases, the Dynatech autosampler adds an additional 5 ml. of deionized water with the Internal Standard.

3. SAMPLE ANALYSIS

Samples were run by purge and trap analysis. Equipment used consisted of a Dynatech Dynatrap and an Hewlett Packard 5890 Series II Gas Chromatograph with O/I PID and FID detectors. Data was acquired with an IBM compatible 386 computer with HP Chemstation software.

DETECTION LIMITS

PVOCs and Halogenated VOC's = 1 ppb
GRO = 50 ppb

If low level contamination exists in blank, it is left to the discretion of the analyst to elevate the detection limit as needed.

COMMENTS

All QC passed within established limits. No out of control circumstances to report.

EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,7
Sample Desc. : 3 SAMPLES FROM SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608070 Date Received : 08/02/1996
En Chem Lab # : 192746 Date Reported : 08/07/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzer By
TOTSOLID	Total Solids	87	percent				SM2540G	08/05/1996	PHS
8270-SOIL	1,2-Dichlorobenzene	ND	ug/kg	290	SW846 3510	08/05/1996	SW846 8270	08/06/1996	NJS
	2-Methylphenol	ND	ug/kg	290					
	3-Methylphenol	ND	ug/kg	290					
	2,4-Dimethylphenol	ND	ug/kg	290					
	Naphthalene	ND	ug/kg	290					
	2-Methylnaphthalene	ND	ug/kg	290					
	Phenanthrene	ND	ug/kg	290					
	2-Fluorophenol (ss)	56.4	% recov	1					
	Phenol-d5 (ss)	60.3	% recov	1					
	2-Chlorophenol-d4 (ss)	63.6	% recov	1					
	1,2-Dichlorobenzene-d4 (ss)	65.9	% recov	1					
	Nitrobenzene-d5 (ss)	49.6	% recov	1					
	2-Fluorobiphenyl (ss)	55.5	% recov	1					
	2,4,6-Tribromophenol (ss)	65.1	% recov	1					
	Terphenyl-d14 (ss)	64.9	% recov	1					
8260+-S-ME	Benzene	ND	ug/kg	25	SW846 5030	08/05/1996	SW846 8260	08/05/1996	RJN
	Ethyl Benzene	ND	ug/kg	25					
	Styrene	ND	ug/kg	25					
	Tetrachloroethene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Silva



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,8
Sample Desc. : 3 SAMPLES FROM SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608070 Date Received : 08/02/1996
En Chem Lab # : 192747 Date Reported : 08/06/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	85	percent				SM2540G	08/05/1996	PHS
8260+-S-ME	Benzene	ND	ug/kg	25	SW846 5030	08/05/1996	SW846 8260	08/05/1996	RJN
	Ethyl Benzene	ND	ug/kg	25					
	Styrene	ND	ug/kg	25					
	Tetrachloroethene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Silva



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,9
Sample Desc. : 3 SAMPLES FROM SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608070 Date Received : 08/02/1996
En Chem Lab # : 192748 Date Reported : 08/06/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	87	percent				SM2540G	08/05/1996	PHS
8260+-S-ME	Benzene	ND	ug/kg	25	SW846 5030	08/05/1996	SW846 8260	08/05/1996	RJN
	Ethyl Benzene	ND	ug/kg	25					
	Styrene	ND	ug/kg	25					
	Tetrachloroethene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Selha



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: C,9&10
Sample Desc. : 3 SAMPLES FROM SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608070 Date Received : 08/02/1996
En Chem Lab # : 192749 Date Reported : 08/06/1996

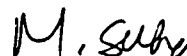
Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyst
TOTSOLID	Total Solids	87	percent				SM2540G	08/05/1996	PHS
8260+-S-ME	Benzene	ND	ug/kg	25	SW846 5030	08/05/1996	SW846 8260	08/05/1996	RJN
	Ethyl Benzene	ND	ug/kg	25					
	Styrene	ND	ug/kg	25					
	Tetrachloroethene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:





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1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: B,9&10
Sample Desc. : 3 SAMPLES FROM SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj#: 9608070 Date Received : 08/02/1996
En Chem Lab # : 192750 Date Reported : 08/07/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	84	percent				SM2540G	08/05/1996	PHS
8270-SOIL	1,2-Dichlorobenzene	ND	ug/kg	300	SW846 3510	08/05/1996	SW846 8270	08/06/1996	NJS
	2-Methylphenol	ND	ug/kg	300					
	3-Methylphenol	ND	ug/kg	300					
	2,4-Dimethylphenol	ND	ug/kg	300					
	Naphthalene	ND	ug/kg	300					
	2-Methylnaphthalene	ND	ug/kg	300					
	Phenanthrene	ND	ug/kg	300					
	2-Fluorophenol (ss)	55.9	% recov	1					
	Phenol-d5 (ss)	65.7	% recov	1					
	2-Chlorophenol-d4 (ss)	70.9	% recov	1					
	1,2-Dichlorobenzene-d4 (ss)	78.6	% recov	1					
	Nitrobenzene-d5 (ss)	74.1	% recov	1					
	2-Fluorobiphenyl (ss)	88.4	% recov	1					
	2,4,6-Tribromophenol (ss)	82.1	% recov	1					
	Terphenyl-d14 (ss)	85.7	% recov	1					
8260+-S-ME	Benzene	ND	ug/kg	25	SW846 5030	08/05/1996	SW846 8260	08/05/1996	RJM
	Ethyl Benzene	ND	ug/kg	25					
	Styrene	ND	ug/kg	25					
	Tetrachloroethene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Selha



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: A,9&10
Sample Desc. : 3 SAMPLES FROM SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608070 Date Received : 08/02/1996
En Chem Lab # : 192751 Date Reported : 08/06/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzer By
TOTSOLID	Total Solids	87	percent				SM2540G	08/05/1996	PHS
8260+-S-ME	Benzene	ND	ug/kg	25	SW846 5030	08/05/1996	SW846 8260	08/05/1996	RJN
	Ethyl Benzene	ND	ug/kg	25					
	Styrene	ND	ug/kg	25					
	Tetrachloroethene	ND	ug/kg	25					
	Toluene	ND	ug/kg	25					
	Xylenes, m + p	ND	ug/kg	25					
	Xylene, o	ND	ug/kg	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Saha



Company Name: RMT
 Branch or Location: Madison
 Project Contact: Gene McLinn
 Telephone: 608-831-1989 ext 3196
 Project Number: 3479.06
 Project Name: Georgia Gulf
 Project Location: Saukville, WI
 Sampled By (Print): Stacey Koch



CHAIN OF CUSTODY

1241 Bellevue St., Suite 9
 Green Bay, WI 54302
 414-469-2436 • 1-800-736-2436
 FAX 414-469-8827

2231 Catlin Ave., Suite 420
 Superior, WI 54880
 715-392-5844 • 1-800-837-8238
 FAX 715-392-5843

802 Deming Way
 Madison, WI 53717
 608-827-5501 • 1-888-5 ENCHEM
 Fax: 608-827-5503

P.O. # _____ Quote # _____ Page 1 of 50

Mail Report To: Gene McLinn
 Company: RMT
 Address: 744 Heartland Trail
 Madison, WI 53708

Invoice To: Same
 Company:
 Address:

Mail Invoice To:

Regulatory Program (circle): UST RCRA CLP SDWA
 NPDES/WPDES CAA NR 700 Other _____

NR720 Confirmation Analysis Required?
 (En Chem will confirm unless otherwise instructed.)

Field ID	Sample Description	Collection		Field Screen	Matrix	Filt'd Y/N	Preserv'	Analysis Requested	SHADED AREA FOR LABORATORY USE ONLY			
		Date	Time						Good Cond.	Total Bottles	Comments	Laboratory Number
A,1	2 samples at same location	8/2	11:00A		Soil		A	SVOCs - see attached Dry wt.	X	186	192752	
B,1	" " " "	8/2	"		Soil		A	"			192753	
C,1	" " " "	8/2	"		Soil		A	"			192754	
D,1	" " " "	8/2	"		Soil		A	"			192755	
D,2	" " " "	8/2	"		Soil		A	"			192756	
D,3	" " " "	8/2	"		Soil		A	"			192757	
D,4	" " " "	8/2	"		Soil		A	"			192758	
D,5	" " " "	8/2	"		Soil		A	"			192759	
D,6	" " " "	8/2	"		Soil		A	"			192760	

***Preservation Code**
 A=None B=HCL C=H2SO4
 D=HN03 E=EnCore F=Methanol**
 G=NaOH O=Other (Indicate)

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By: Stacey Koch
 Date/Time: 8/2/96 3:10 PM

Relinquished By: [Signature]
 Date/Time: 8/2/96 17:05

Relinquished By: [Signature]

Received By: [Signature]
 Received By: [Signature]
 Received By (En Chem): [Signature]

En Chem Project No. 9608071
 Sample Receipt Temp. (Must be rec'd at 4°C)
 RQT

EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
En Chem Proj# : 9608071
Date Reported : 08/07/1996

Report to: RMT, INC

Thank you for using En Chem! Samples were analyzed according to strict EPA or Wisconsin DNR methodology. Any comments or problems associated with the receipt of or analysis are reported below:

Sample nos. 192753 and 192757: No Acetophenone was detected through the use of a library search on 8270 GC/MS.



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: A,1
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192752 Date Reported : 08/06/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	88	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

J. Duranseau



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: B,1
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192753 Date Reported : 08/07/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
TOTSOLID	Total Solids	90 percent					SM2540G	08/05/1996	PHS
8270-SOIL	1,2-Dichlorobenzene	ND	ug/kg	280	SW846 3510	08/05/1996	SW846 8270	08/06/1996	NJS
	2-Methylphenol	ND	ug/kg	280					
	3-Methylphenol	ND	ug/kg	280					
	2,4-Dimethylphenol	ND	ug/kg	280					
	Naphthalene	ND	ug/kg	280					
	2-Methylnaphthalene	ND	ug/kg	280					
	Phenanthrene	ND	ug/kg	280					
	2-Fluorophenol (ss)	59.7 % recov		1					
	Phenol-d5 (ss)	60.4 % recov		1					
	2-Chlorophenol-d4 (ss)	72.4 % recov		1					
	1,2-Dichlorobenzene-d4 (ss)	92 % recov		1					
	Nitrobenzene-d5 (ss)	75.1 % recov		1					
	2-Fluorobiphenyl (ss)	87.2 % recov		1					
	2,4,6-Tribromophenol (ss)	71.1 % recov		1					
	Terphenyl-d14 (ss)	89.9 % recov		1					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

J. Duran



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: C,1
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192754 Date Reported : 08/06/1996

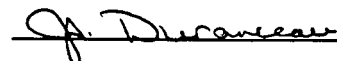
Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	88	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:





EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,1
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192755 Date Reported : 08/06/1996

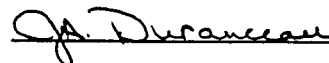
Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	88	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:





EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,2
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192756 Date Reported : 08/06/1996

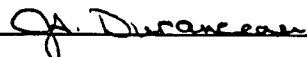
Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	92	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:





EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,3
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192757 Date Reported : 08/07/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	86	percent				SM2540G	08/05/1996	PHS
8270-SOIL	1,2-Dichlorobenzene	ND	ug/kg	290	SW846 3510	08/05/1996	SW846 8270	08/06/1996	NJS
	2-Methylphenol	ND	ug/kg	290					
	3-Methylphenol	ND	ug/kg	290					
	2,4-Dimethylphenol	ND	ug/kg	290					
	Naphthalene	ND	ug/kg	290					
	2-Methylnaphthalene	ND	ug/kg	290					
	Phenanthrene	ND	ug/kg	290					
	2-Fluorophenol (ss)	55.9	% recov	1					
	Phenol-d5 (ss)	58.2	% recov	1					
	2-Chlorophenol-d4 (ss)	59.1	% recov	1					
	1,2-Dichlorobenzene-d4 (ss)	59.9	% recov	1					
	Nitrobenzene-d5 (ss)	56.2	% recov	1					
	2-Fluorobiphenyl (ss)	60.7	% recov	1					
	2,4,6-Tribromophenol (ss)	67.7	% recov	1					
	Terphenyl-d14 (ss)	54	% recov	1					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

JA. Duncan



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,4
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192758 Date Reported : 08/06/1996

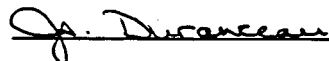
Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	Total Solids	89	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:





EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,5
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192759 Date Reported : 08/06/1996

Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyses By
TOTSOLID	Total Solids	82	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

JA. Duncan



EN CHEM INC.

...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : GEORGIA GULF PRJ#3479.06
Your Sample ID: D,6
Sample Desc. : 2 SAMPLES AT SAME LOCATION
Sample Matrix : SOIL Date Collected: 08/02/1996
En Chem Proj# : 9608071 Date Received : 08/02/1996
En Chem Lab # : 192760 Date Reported : 08/06/1996

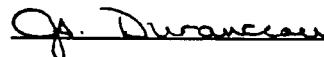
Report to: RMT, INC
744 HEARTLAND TRAIL
P.O. BOX 8923
MADISON, WI 53708-8923

Bill to: RMT, INC

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyze By
TOTSOLID	sl Solids	79	percent				SM2540G	08/05/1996	PHS

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:





Company Name: RMT
 Branch or Location: Madison
 Project Contact: Gene McLinn
 Telephone: 608-831-1989 ext 3196
 Project Number: 3479.06
 Project Name: Georgia Gulf
 Project Location: Saukville, WI
 Sampled By (Print): Stacey Koch



CHAIN OF CUSTODY

1241 Bellevue St., Suite 9
 Green Bay, WI 54302
 414-469-2436 • 1-800-736-2436
 FAX 414-469-8827

2231 Catlin Ave., Suite 420
 Superior, WI 54880
 715-392-5844 • 1-800-837-8238
 FAX 715-392-5843

802 Deming Way
 Madison, WI 53717
 608-827-5501 • 1-888-5 ENCHEM
 Fax: 608-827-5503

P.O. # _____ Quote # _____ Page 61

Mail Report To: Gene McLinn
 Company: RMT
 Address: 744 Heartland Trail
 Madison, WI 53708
 Invoice To: Same
 Company:
 Address:
 Mail Invoice To:

Regulatory Program (circle): UST RCRA CLP SDWA
 NPDES/WPDES CAA NR 700 Other _____

NR720 Confirmation Analysis Required?
 (En Chem will confirm unless otherwise instructed.)

Field ID	Sample Description	Collection		Field Screen	Matrix	Filt'd Y/N	Preserv'	Analysis Requested	SHADED AREA FOR LABORATORY USE ONLY		
		Date	Time						Good Cond.	Total Bottles	Comments
D, 7	3 samples from same location	8/2/96	12 PM		Soil		F	(Quick turn # 1504) VOCs (see attached), SVOCs, Dry wt. (for list) (attached for list)			192 746
D, 8	3 samples from same location	8/2/96	1:30 P		Soil		F	VOCs, SVOCs, Dry wt.			192 747
D, 9	3 " " " "	8/2/96	1:30 P		Soil		F	VOCs, SVOCs, Dry wt.			192 748
C, 9+10	" " " " "	8/2	2 PM		Soil		F	" " "			192 749
B, 9+10	" " " " "	8/2	2 PM		Soil		F	" " "			192 750
A, 9+10	" " " " "	8/2			Soil		F	" " "			192 751

***Preservation Code**
 A=None B=HCL C=H2SO4
 D=HN03 E=EnCore F=Methanol**
 G=NaOH O=Other (Indicate)

**If not using En Chem's methanol, indicate volume of methanol added and mark the appropriate samples.

Relinquished By: Stacey Koch
 Date/Time: 8/2/96 3:10 PM

Relinquished By: [Signature]
 Date/Time: 8/2/96 17:05

Relinquished By: [Signature]

Received By: [Signature]
 Received By: [Signature]
 Received By (En Chem): [Signature]

En Chem Project No. 9608070
 Sample Receipt Temp. (Must be rec'd at 4°C)
 ROT

APPENDIX D

PHOTOGRAPHS OF CONSTRUCTION ACTIVITIES



PHOTO NO. 1: TYPICAL EXCAVATION ACTIVITIES



PHOTO NO. 2: ABANDONMENT OF WELL W-37 - BACKFILLING WITH BENTONITE SLURRY



PHOTO NO. 3: RANNEY COLLECTOR TRENCH CONSTRUCTION AT W-37 LOOKING NORTH



PHOTO NO. 4: GEOMEMBRANE LINER CONSTRUCTION - PANEL DEPLOYMENT



PHOTO NO. 5: GEOMEMBRANE LINER CONSTRUCTION - IN-FIELD SEAMING OF PANELS



PHOTO NO. 6: GEOMEMBRANE LINER CONSTRUCTION - IN-FIELD SEAM TESTING

APPENDIX E

DOCUMENTATION OF W-37 ABANDONMENT

- LETTER DOCUMENTATION TO WDNR
- WELL ABANDONMENT FORM

August 13, 1996

Mr. Timothy S. Mulholland, Ph.D.
Bureau of Solid & Hazardous Waste Management
Wisconsin Department of Natural Resources
Box 7921
101 South Webster Street
Madison, WI 53707-7921

RE: Abandonment of well W-37 and extension of the Ranney collector system at
The Immaculate Conception Church in Saukville, Wisconsin
DNR File Reference 246004330, Ozaukee, HW/CA

Dear Tim:

This letter is to provide a summary of the telephone conversations between you, Carol Geiger of Georgia Gulf Corporation, and myself on July 31, 1996, regarding the abandonment of well W-37 and extension of the Ranney collector system in the Churchyard at Saukville, Wisconsin. During the excavation of contaminated soil in the Churchyard, the electrical and water transfer lines for recovery well W-37 were destroyed. We agreed that well W-37 will be abandoned in accordance with NR 141, and that a Ranney collector trench that connects to the existing groundwater recovery system will be extended to the area of well W-37. Elimination of well W-37 and the extension of the Ranney collector trench to the area of former well W-37 will result in no decrease in the hydraulic control afforded by the groundwater recovery system in this area. Documentation of the well abandonment and of the construction of the extension of the recovery trench will be included in the Construction Documentation report, which will be prepared after the soil removal action in the Churchyard is complete.

The above is my understanding of the discussion during our July 31 telephone conversation. If you have any comments or questions about this summary, please contact me.

Sincerely,


Eugene L. McLinn, P.G.
Project Manager

gjs

cc: Carol Geiger - Georgia Gulf
Craig Bostwick - CCP



RMT, INC. — MADISON, WI
744 HEARTLAND TRAIL - 53717-1934
P.O. Box 8923 - 53708-8923
608/831-4444 - 608/831-3334 FAX

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location W-37	County Ozaukee	Original Well Owner (If Known)	
<input type="checkbox"/> E _____ 1/4 of _____ 1/4 of Sec. _____; T. _____ N; R. _____ <input type="checkbox"/> W (If applicable)		Present Well Owner Cook Composites & Polymers Co.	
Gov't Lot _____	Grid Number _____	Street or Route 340 Railroad Street	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City/State/Zip Code Saukville WI 53080	
Civil Town Name Saukville		Facility Well No. And/or Name (If Applicable)	WI Unique Well No.
Street Address of Well 340 Railroad Street		Reason for Abandonment No Longer Part of the sampling program	
City, Village Saukville		Date of Abandonment 08-02-96	

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) _____ <input checked="" type="checkbox"/> Monitoring Well Construction Report Available? <input type="checkbox"/> Water Well <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Drillhole <input type="checkbox"/> Borehole Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(4) Depth to Water (Feet) _____ 6.0 Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____ Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle after 24 hours? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Formation Type: <input checked="" type="checkbox"/> Unconsolidation Formation <input type="checkbox"/> Bedrock Total Well Depth (ft.) <u>18.0</u> Casing Diameter (ins.) <u>18"</u> (From ground surface) Casing Depth (ft.) _____ Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet		(5) Required Method of Placing Sealing Material <input checked="" type="checkbox"/> Conductor Pipe-Gravity <input checked="" type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
(6) Sealing Materials <input checked="" type="checkbox"/> Neat Cement Grout For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Chipped Bentonite			

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards (Circle Sealant or Volume)	Mix Ratio or Mud Weight
Cement/Bentonite Slurry	Surface	18.0	20 bags/98#	14.3#/gal

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work Environmental & Foundation Drilling, Inc. Signature of Person Doing Work _____ Date Signed 08-06-96 Street or Route 217 Raemisch Road Telephone Number (608) 849-9896 City, State, Zip Code Waunakee WI 53597		(10) FOR DNR OR COUNTY USE ONLY Date Received/Inspected _____ District/County _____ Reviewer/Inspector _____ <input type="checkbox"/> Complying Work <input type="checkbox"/> Noncomplying Work Follow-up Necessary _____	
--	--	--	--

APPENDIX F

GEOMEMBRANE DOCUMENTATION

- **PANEL LAYOUT SKETCH**
- **RMT QC FORMS**
- **DESTRUCTIVE SEAM TEST RESULTS**
- **MANUFACTURER'S CERTIFICATE OF COMPLIANCE AND QC REPORT**

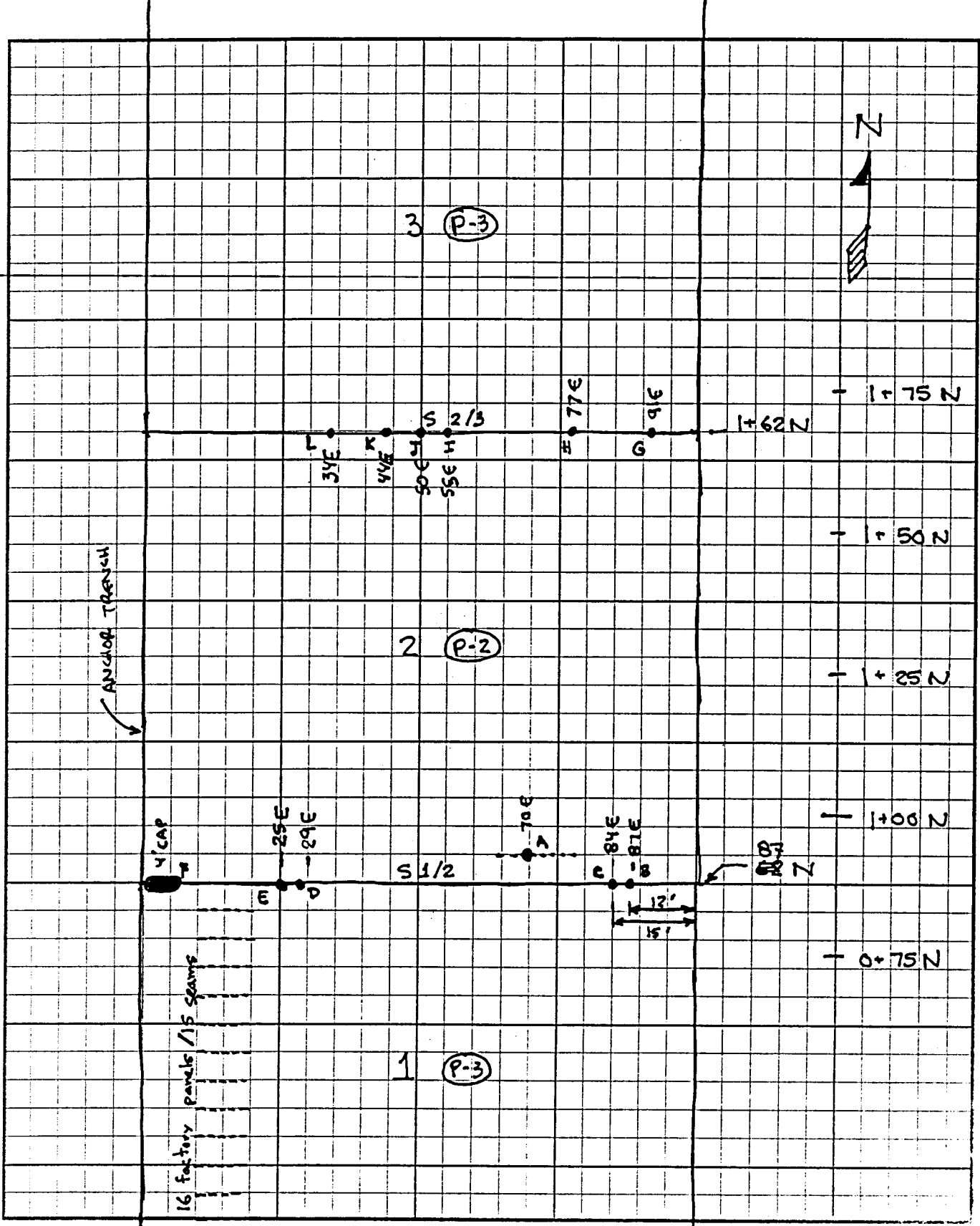


AS-BUILT PANEL LAYOUT DIAGRAM

COMPUTATION SHEET

744 Heartland Trail P.O. Box 8923 Madison, WI 53708-8923 (608) 831-4444 FAX: (608) 831-3334 VOICE: (608) 831-1989

PROJECT / PROPOSAL NAME ANCHOR TRENCH	PREPARED		CHECKED		PROJECT / PROPOSAL NO.
	By:	Date:	By:	Date:	



0+12N CANAL

SUBBASE ACCEPTANCE FORM

Project Name: Georgia Gulf
Project Location: Saukville, WI
Installer: GSI

Project Number: 3479.06
Date: 8/6/96
Page: 1 of 1

I, CHUCK SIGRIST a duly appointed representative of
GSI, have visually observed the soil subgrade
surface described below, and found it to be an acceptable surface on which to install XR-5 8138

Subbase Acceptance Area: Entire sand subbase (base and sideslopes).
Installation to be completed today.

Installer's Representative

Signature: Chuck Sigrist

Title: SUPT

Date: 8/6/96

RMT Representative

Pete Creamer

Senior Project Engineer

8/6/96

Remarks: Sand subbase rolled smooth with small smooth drum roller
and after grading with a dozer and back-dragging with a
loader.



GEOMEMBRANE SEAM AND PANEL REPAIR LOG

Project Name: Georgia Gulf
 Project Location: Saukville, WI
 Material Description: Seamans XR-5 (EIA)
 Installer: GSI

Project Number: 3476.06
 Date: 8/6/96
 RPR: Pete Creamer
 Page: 1 of 1

Defect/Repair No.	Location (Seam #/Panel #)	Defect Cause/Type	Repair Type	Repair Size	Repair Date	Operator I.D.	Machine Number	Testing Date	Comments	
A	P-2	FM	P	15" Dia	8/6	T.K.	Leister	8/6	(Southern Factory Seam on P-2)	
B	S-1/2	BO	P	12" Dia	8/6	T.K.	↓	↓	Initial air lance failed → patch rewelded/pick test	
C	S-1/2	FM	P	12" Dia	8/6	T.K.			ALOK	
D	S-1/2	FM	P	15" Dia	8/6				Initial air lance failed → patch rewelded/pick test	
E	S-1/2	BO	P	12" Dia	8/6				ALOK	
F	S-1/2	BO	C	4'x2.5'	8/6				ALOK	
G	S-2/3	BO	P	24"x15"	8/6				ALOK	
H	S-2/3	BO	P	12" Dia	8/6				AL Failed → patch rewelded/pick test	
I	S-2/3	BO	P	9" Dia	8/6				ALOK	
J	S-2/3	BO	P	12" Dia	8/6				ALOK	
K	S-2/3	BO	P	15" Dia	8/6				ALOK	
L	S-2/3	BO	P	9" Dia	8/6				AL Failed → patch rewelded/pick test	
M										
N										
O										
P										
Q										
R										
S										
T										

Defect Type: AL - Air Leak, B - Blemish, BO - Burnout, CR - Crease, CS - Cross Seam, D - Damage, DT - Dest. Test, FM - Fishmouth
 Repair Type: C - Cap, Ext - Extrusion Weld/Bead, P - Patch



RMT, Inc.
Destructive Seam Analysis

Date: 08-Aug-96		Longyear Model LG-200 Tensiometer												by <u> </u> date <u> </u>				
Project: GEORGIA GULF		Geomembrane Type: XR-5, 8138, 46 mil				Technician: DEO				QC: <u> </u> <u>8/8/96</u>								
Project No.: 3974.06		Seam Type: TH (HOT AIR)				File: 397401				QA: <u> </u> <u>8/10/96</u>								
Strain Rate:	Shear: 12.00lpm Peel: 2.00lpm	Rep	PEEL (outer weld)					PEEL (inner weld)					SHEAR					
			Strength		Peel	Break		Strength		Peel	Break		Strength		Elongation		Break	
			@yld	@brk	%	Code	Class	@yld	@brk	%	Code	Class	@yld	@brk	@yld	@brk	Code	Class
Sample #:	DT-1	1	83			DEL	FTB											
		2	90			DEL	FTB										BRK	FTB
Gauge Length:	6.00"	3	90			DEL	FTB										BRK	FTB
		4	87			DEL	FTB										BRK	FTB
		5	96			DEL	FTB										BRK	FTB
		AVG	89															
Comments:																		
Sample #:		1																
		2																
Gauge Length:		3																
		4																
		5																
		AVG																
Comments:																		
Sample #:		1																
		2																
Gauge Length:		3																
		4																
		5																
		AVG																
Comments:																		

SEP - 3 1996



Seaman Corporation

Innovative Customer Solutions through Fiber and Polymer Technology

1000 VENTURE BLVD. • WOOSTER, OHIO 44691 • TELEPHONE (330) 262-1111 • FAX (330) 263-6950

August 28, 1996

MID AMERICAN LININGS
P.O. Box 458
420 E. Jackson St.
Union City, TN 38251
Attention: Lisa
Fax: 901/885-8007

CERTIFICATE OF COMPLIANCE

ORDER: 34800
P.O: 68989
RUN NO: 219767

This is to certify that 1,679 yards of 8130 XR-50 DC-7 Black 58" fabric shipped to you on July 26, 1996, reference order indicated above, has been tested and meets the requirements of our published specification.

Susan Uhler
Quality Assurance

cc: Sales/file/lab

Tag Numbers: 219767027 219767035 219767047 219767196
219767197 219767198 219767199 219767200
219767201

MID-AMERICA LINING CO
 420 EAST JACKSON STREET
 P.O. BOX 458
 UNION CITY, TENNESSEE 38281
 (901) 885-8888

COPY



QUALITY CONTROL REPORT

PANEL #: P-3

PANEL SIZE: 75.46' x 108'

MFG: Seaman Corp

PROJECT NAME: <u>GS1</u>		MATERIAL: <u>XR5 8138 1" x 6" BORE</u>					PROJECT NUMBER: <u>1103-00</u>				
DATE	ROLL	BATCH #	SEAM #	MACH NO.	WEDGE TEMP.	SET SPEED	SEAM APPEAR	PEEL LBS.	SHEAR LBS.	EXT INCHES	QC
7-31-96	35-35-21	219767	1	1	485	10	OK	55.1			
	27-27		2	1	"	"	OK	54.3			
	27-27		3	3	"	"	OK	54.7			
	27-27		4	4	"	"	OK	57.3			OK
	27-27-27	8W	5	1	"	"	OK	54.3			
	27-27		6	2	"	"	OK	47.5			
	27-27		7	3	"	"	OK	57.6			
	27-27		8	4	"	"	OK	41.9			OK
	27-27-20	8W	9	1	"	"	OK	49.3			
	201-201		10	2	"	"	OK	46.9			
	201-201		11	3	"	"	OK	54.3			
	201-201		12	4	"	"	OK	48.6			OK
	201-201		13	1	"	"	OK	55.7			
	201-201		14	2	"	"	OK	43.1			
	201-201		15	3	"	"	OK	55.9			OK
	---						4 x 12 SHEAR TEST	505			
	---							512			
	---							509			OK
	---							515			
	---							509			

	---										OK

SEP-03-1996 16:23 FROM GS1 TO 97801080 P.03

MID-AMERICA LINING COMPANY
 420 EAST JACKSON STREET
 P.O. BOX 458
 UNION CITY, TENNESSEE 38281
 (901) 885-8886

COPY MAL
 QUALITY CONTROL REPORT

PANEL #: P-2
 PANEL SIZE: 75.46' x 108'
 MFG: Seaman Corp

PROJECT NAME: GSI		MATERIAL: XRS 8138 1" x 6" BONE					TEST PROJECT NUMBER: 1103-00				
DATE	ROLL	BATCH #	SEAM #	MACH NO.	WEDGE TEMP.	SET SPEED	SEAM APPEAR	PEEL LBS.	SHEAR LBS.	EXT INCHES	QC
7-31-96	197 - 197	219767	1	1	485	10	OK	51.1			☺
	197 - 197-800 BW		2	2	"	"	OK	53.8			
	200 - 198		3	3	"	"	OK	53.1			
	198 - 198-198 BW		4	4	"	"	OK	51.0			
	198 - 196		5	1	"	"	OK	44.6			OK
	196 - 196		6	2	"	"	OK	41.8			
	196 - 198		7	3	"	"	OK	55.9			
	198 - 198		8	4	"	"	OK	54.8			
	198 - 196		9	1	"	"	OK	55.5			OK
	196 - 196		10	2	"	"	OK	51.8			
	196 - 198-35 BW		11	3	"	"	OK	58.8			
	35 - 35		12	1	"	"	OK	56.3			
	35 - 35		13	1	"	"	OK	59.9			OK
	35 - 35		14	2	"	"	OK	54.8			
	35 - 35		15	3	"	"	OK	51.2			
	-										
	-						4x12 SHORTEST		511		OK
	-								503		
	-								515		
	-								512		
	-								507		OK
	-										
	-										
	-										

MID-AMERICA LINING COMPANY
 420 EAST JACKSON STREET
 P.O. BOX 458
 UNION CITY, TENNESSEE 37206
 (901) 885-8888

COPY



QUALITY CONTROL REPORT

PANEL #: P-1

PANEL SIZE: 75.46' x 108'





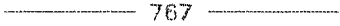

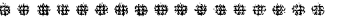










MFG: Seaman Corp.

PROJECT NAME: GSI		MATERIAL: XR 5 8138				TEST 1" x 6" BONE		PROJECT NUMBER: 1103-00			
DATE	ROLL	BATCH #	SEAM #	MACH NO.	WEDGE TEMP.	SET SPEED	SEAM APPEAR	PEEL LBS.	SHEAR LBS.	EXT INCHES	QC
7-31-96	199-199	219767	1	1	485	10	OK	51.5			
	199-199		2	2	"	"	OK	49.1			yes
	199-200		3	3	"	"	OK	53.7			
	200-200		4	4	"	"	OK	43.1			
	200-199		5	1	"	"	OK	48.1			
	199-199		6	2	"	"	OK	49.8			yes
	199-200		7	3	"	"	OK	62.5			
	200-200		8	4	"	"	OK	55.2			
	200-199		9	1	"	"	OK	44.7			
	199-199-200 BW		10	2	"	"	OK	45.1			yes
	200-200		11	3	"	"	OK	58.7			
	200-200		12	4	"	"	OK	51.8			
	200-197		13	1	"	"	OK	55.8			
	197-197		14	2	"	"	OK	55.3			yes
	197-197		15	3	"	"	OK	50.4			
	-		16	4	"	"					
	-						4" x 12" SHEAR TEST		512		
	-							508			yes
	-							504			
	-							510			
	-								506		
	-										yes
	-										
	-										

TOTAL P.05

SEP-03-1996 16:25 FROM GSI 10 5/8/01083 P.05

LEGEND

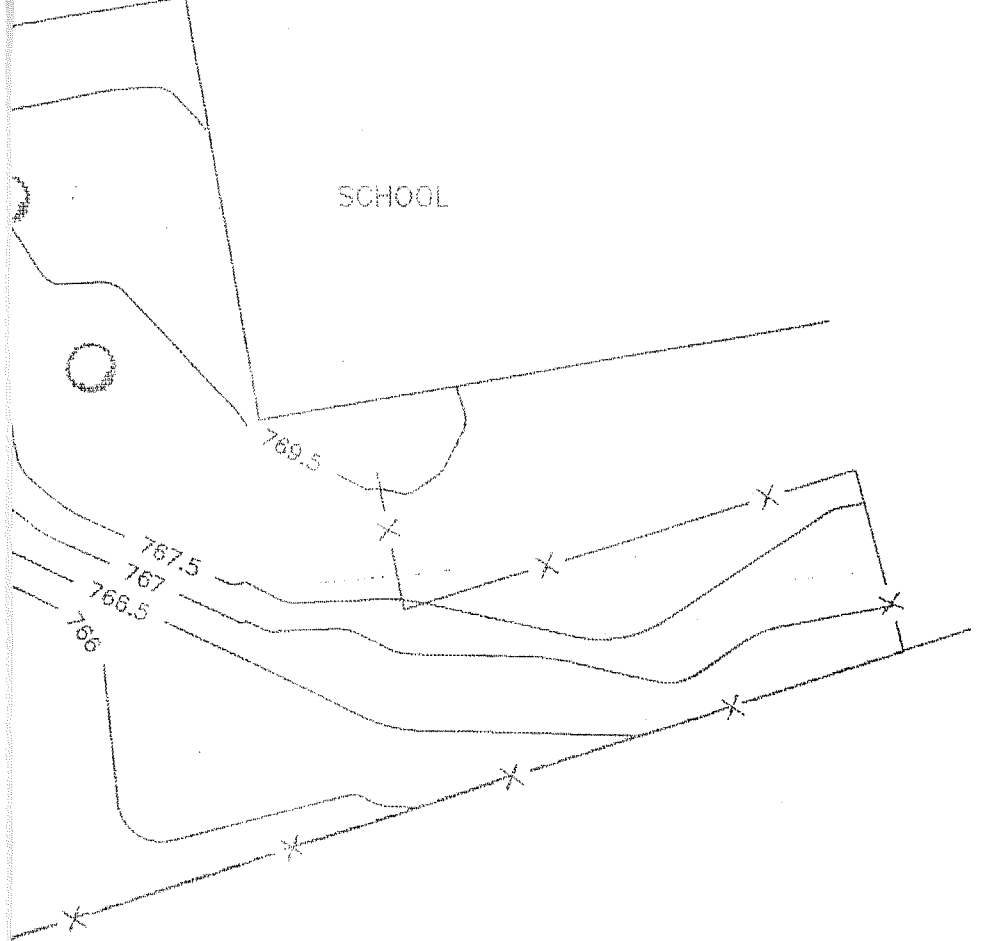
	A5-1	BORING LOCATION
	TW2	TEMPORARY WELL
	MW40	MONITORING WELL LOCATION
	MH	EXISTING MANHOLE LOCATION
	767	LAND SURFACE CONTOUR
		PROPERTY LINE
		LIMIT OF EXCAVATION
		LIMIT OF EXCAVATION (ACTUAL)
	X	FENCE
		MUELLER FENCE
		SEDIMENT FENCE
		CONTRACT LIMIT LINE AND TEMPORARY FENCING
		TEMPORARY FENCING (ACTUAL)
		JOB TRAILER
		BUILDING
		CATCH BASIN
		TREE

NOTES

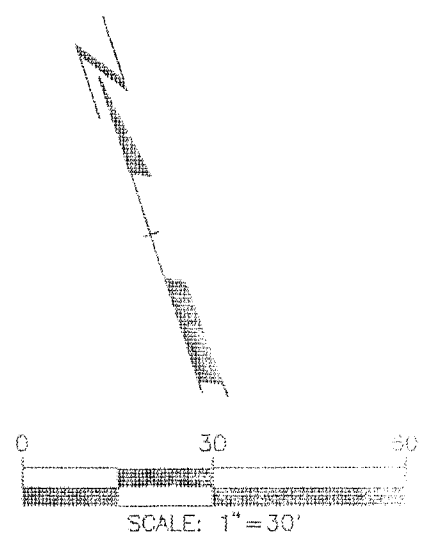
1. BASE MAP BASED ON TOPOGRAPHIC SURVEY PERFORMED BY RMT, INC. ON JUNE 11, 1996.
2. CONTOUR INTERVAL IS 0.5 FEET AND ELEVATIONS ARE BASED ON USGS MEAN SEA LEVEL.
3. PROPERTY LINES BASED ON FIELD VERIFICATION AND REGISTERED DOCUMENTS BY NORTH SHORE ENGINEERING, MILWAUKEE, WISCONSIN, DATED JUNE 11, 1996.

CONSTRUCTION NOTES

1. CONTRACTOR SHALL NOTIFY AREA UTILITIES IN ACCORDANCE WITH LOCAL REQUIREMENTS BEFORE COMMENCING WITH WORK ON THIS PROJECT.
2. EXISTING FEATURES ARE APPROXIMATE. NOTIFY ENGINEER OF CONFLICTS.
3. MAINTAIN CONSTRUCTION ACTIVITIES AND TEMPORARY FENCING WITHIN CONTRACT LIMIT LINE.



4. LOCATION OF ADDITIONAL SILT FENCE TO BE DETERMINED BY FIELD ENGINEER DURING AND PRIOR TO FIELD ACTIVITIES AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
5. MAINTAIN EXISTING ROAD, CONTRACTOR SHALL REPAIR OR REPLACE ASPHALT AND/OR CURB AND GUTTER DAMAGED OR REMOVED DURING CONSTRUCTION AT NO ADDITIONAL EXPENSE TO ENGINEER.
6. CONTRACTOR SHALL OBTAIN ALL LOAD LIMIT VARIANCE NEEDED FOR TRANSPORTATION ON AREA STREETS.
7. EXTEND ACCESS ROAD AND GRAVEL STAGING AREA AS NEEDED TO ACCOMMODATE LOAD-OUT OF TRUCKS.
8. TEMPORARY FENCING FOLLOWS CONTRACT LIMIT LINE ACROSS CHURCHYARD, EXCEPT AS INDICATED HERE. PROVIDE 24' TRUCK GATE.
9. PRESERVE AND PROTECT EXISTING PUMP VAULT AND ELECTRICAL SERVICE.



FINAL SURVEY		
	BOTTOM OF EXCAVATION	XR-5 LINER
25	762.24	763.12
75	761.89	762.52
25	762.10	763.32
75	761.90	762.72
25	762.43	763.31
75	761.96	762.46
25	762.61	763.91
75	761.97	762.63

EXISTING RANNEY COLLECTOR TRENCH				
LOCATION	N	E	ELEVATION	
INVERT OF PIPE	1+00	0+90	759.80	
BOTTOM OF GRAVEL TRENCH	1+00	0+90	758.86	
SURFACE OF WATER	1+00	0+90	758.29	
INVERT OF PIPE	0+35	0+15	758.75	
BOTTOM OF GRAVEL TRENCH	0+35	0+15	UNABLE TO LOCATE	
SURFACE OF WATER	0+35	0+15	758.57	

NEW EXTENSION TO RANNEY COLLECTOR TRENCH		
N	E	BOTTOM CENTER OF GRAVEL TRENCH
1+00	0+95	758.86
1+25	0+95	759.0
1+50	0+95	759.24
1+75	0+95	759.45
1+90	0+95	759.56

NOTE: THESE PLANS ARE ACCOMPANIED BY SPECIFICATIONS OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED TOGETHER.

NO.	BY	DATE	REVISION
3.			
2.	DSS	9/96	CONSTRUCTION DOCUMENTATION
1.	JEZ	6-96	ISSUE FOR BID

PROJECT: **GEORGIA GULF AOC 5 SOIL REMEDIAL ACTION SAUKVILLE, WISCONSIN**

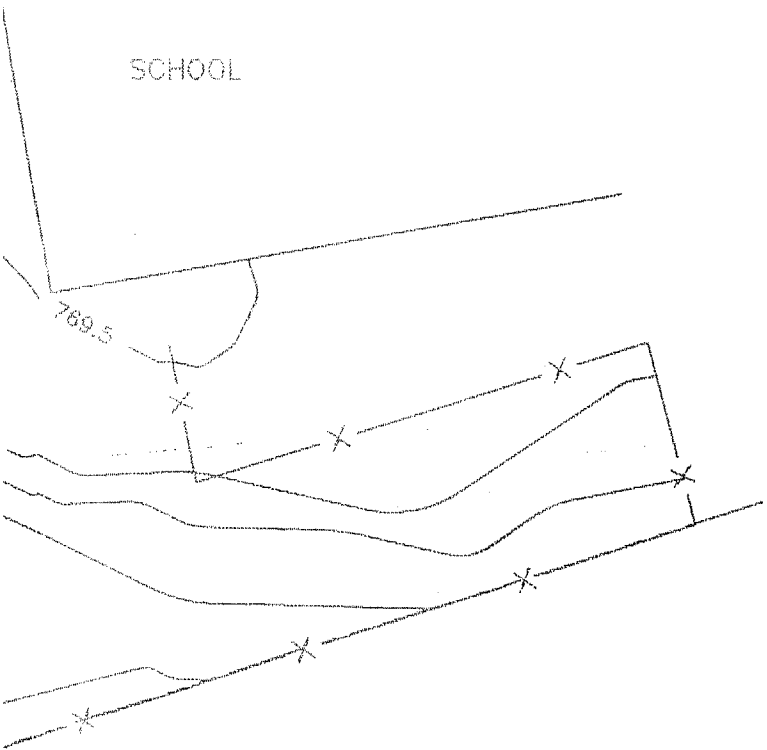
SHEET TITLE: *10/96 RMT Churchyard Report* **SITE PLAN**

DRAWN BY: DSS	SCALE: 1"=30'	PROJ. NO. 3974.0
CHECKED BY: RPR		FILE NO. 3974050
APPROVED BY: FMS	DATE PRINTED:	FIGURE 2
DATE: JUNE 1996		

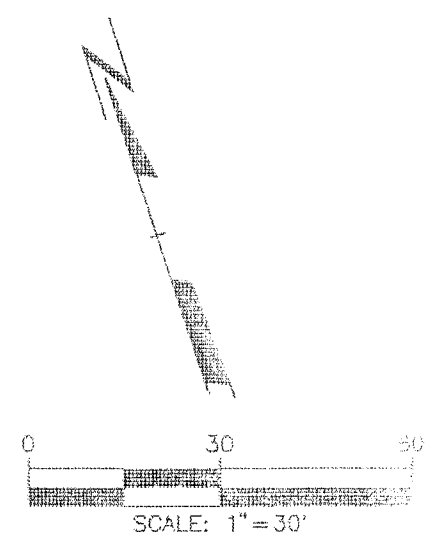
ELEVATIONS BASED ON W37 TOP OF IRON MANHOLE CASTING = 766.93.
 ELEVATION OF STORMWATER INLET IN SE CORNER OF CHURCHYARD = 765.39.



744 Heartland Trail
 Madison, WI 53717
 P.O. Box 8923
 Madison, WI 53708
 Phone: 608/831-1111



4. LOCATION OF ADDITIONAL SILT FENCE TO BE DETERMINED BY FIELD ENGINEER DURING AND PRIOR TO FIELD ACTIVITIES AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
5. MAINTAIN EXISTING ROAD, CONTRACTOR SHALL REPAIR OR REPLACE ASPHALT AND/OR CURB AND GUTTER DAMAGED OR REMOVED DURING CONSTRUCTION AT NO ADDITIONAL EXPENSE TO ENGINEER.
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8. TEMPORARY FENCING FOLLOWS CONTRACT LIMIT LINE ACROSS CHURCHYARD, EXCEPT AS INDICATED HERE. PROVIDE 24' TRUCK GATE.
9. PRESERVE AND PROTECT EXISTING PUMP VAULT AND ELECTRICAL SERVICE.



NOTE: THESE PLANS ARE ACCOMPANIED BY SPECIFICATIONS OF THE SAME TITLE. THESE DOCUMENTS ARE INTERRELATED AND INTENDED TO BE USED TOGETHER.

KEY	XR-5 LINER
1	763.12
2	762.52
3	763.32
4	762.72
5	763.31
6	762.46
7	763.91
8	762.63

EXISTING RANNEY COLLECTOR TRENCH				
LOCATION	N	E	ELEVATION	
INVERT OF PIPE	1+00	0+90	759.80	
BOTTOM OF GRAVEL TRENCH	1+00	0+90	758.86	
SURFACE OF WATER	1+00	0+90	758.29	
INVERT OF PIPE	0+35	0+15	758.75	
BOTTOM OF GRAVEL TRENCH	0+35	0+15	UNABLE TO LOCATE	
SURFACE OF WATER	0+35	0+15	758.57	

NEW EXTENSION TO RANNEY COLLECTOR TRENCH		
N	E	BOTTOM CENTER OF GRAVEL TRENCH
1+00	0+95	758.86
1+25	0+95	759.0
1+50	0+95	759.24
1+75	0+95	759.45
1+90	0+95	759.56

NO.	BY	DATE	REVISION	APP'D.
3.				
2.	DSS	9/96	CONSTRUCTION DOCUMENTATION	
1.	JEZ	6-96	ISSUE FOR BID	FMS

PROJECT: **GEORGIA GULF AOC 5 SOIL REMEDIAL ACTION SAUKVILLE, WISCONSIN**

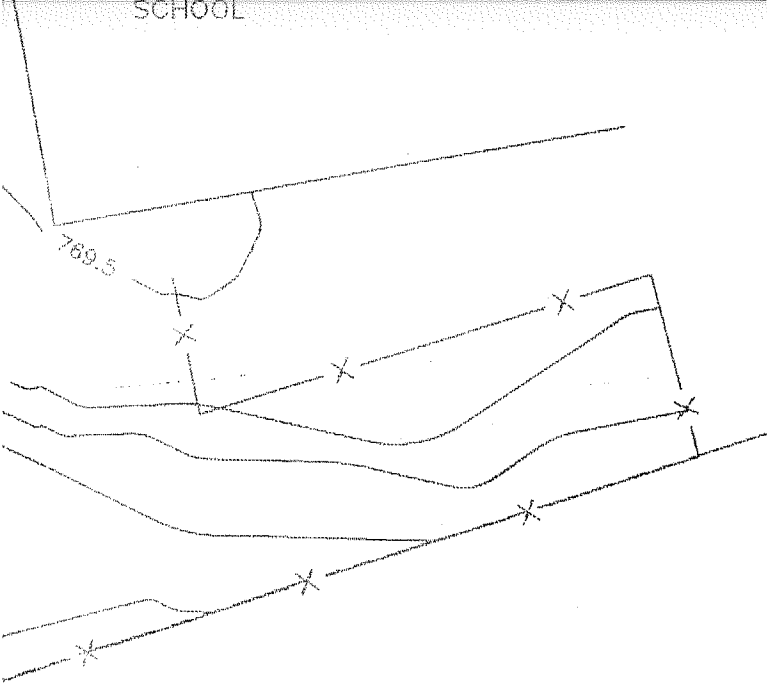
SHEET TITLE: *10/96 RMT Churchyard Report* **SITE PLAN**

DRAWN BY: DSS	SCALE: 1"=30'	PROJ. NO. 3974.05
CHECKED BY: RPR		FILE NO. 39740507.DWG
APPROVED BY: FMS	DATE PRINTED:	FIGURE 2
DATE: JUNE 1996		

ON W37 TOP OF IRON MANHOLE CASTING = 766.93.
R INLET IN SE CORNER OF CHURCHYARD = 765.39.



744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923
Madison, WI 53708-8923
Phone: 608/231-1111



STATION	ELEVATION
1	763.12
2	762.52
3	763.32
4	762.72
5	763.31
6	762.46
7	763.91
8	762.63

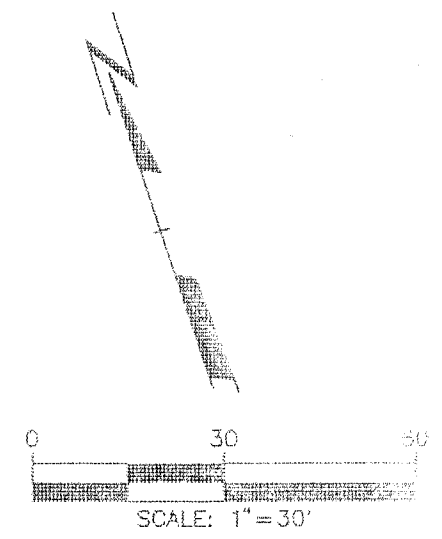
EXISTING RANNEY COLLECTOR TRENCH			
LOCATION	N	E	ELEVATION
INVERT OF PIPE	1+00	0+90	759.80
BOTTOM OF GRAVEL TRENCH	1+00	0+90	758.86
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NEW EXTENSION TO RANNEY COLLECTOR TRENCH		
N	E	BOTTOM CENTER OF GRAVEL TRENCH
1+00	0+95	758.86
1+25	0+95	759.0
1+50	0+95	759.24
1+75	0+95	759.45
1+90	0+95	759.56

ON W37 TOP OF IRON MANHOLE CASTING = 766.93.
 INLET IN SE CORNER OF CHURCHYARD = 765.39.

OR REPLACE ASPHALT AND/OR CURB AND GUTTER DAMAGED OR REMOVED DURING CONSTRUCTION AT NO ADDITIONAL EXPENSE TO ENGINEER.

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NO.	BY	DATE	REVISION	APP'D.
3.				
2.	DSS	9/96	CONSTRUCTION DOCUMENTATION	
1.	JEZ	6-96	ISSUE FOR BID	FMS

PROJECT: **GEORGIA GULF
 AOC 5 SOIL REMEDIAL ACTION
 SAUKVILLE, WISCONSIN**





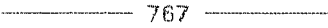

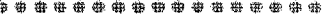


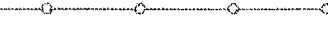







SHEET TITLE:
10/96 RMT Churchyard Report **SITE PLAN**

DRAWN BY: DSS	SCALE: 1"=30'	PROJ. NO. 3974.05
CHECKED BY: RPR		FILE NO. 39740507.DWG
APPROVED BY: FMS	DATE PRINTED:	FIGURE 2
DATE: JUNE 1996		



744 Heartland Trail
 Madison, WI 53717-1934
 P.O. Box 8923
 Madison, WI 53708-8923
 Phone: 608/831-4444

LEGEND

	A5-1	BORING LOCATION
	TW2	TEMPORARY WELL
	MW40	MONITORING WELL LOCATION
	MH	EXISTING MANHOLE LOCATION
	767	LAND SURFACE CONTOUR
		PROPERTY LINE
		LIMIT OF EXCAVATION
		LIMIT OF EXCAVATION (ACTUAL)
	X	FENCE
		MUELLER FENCE
		SEDIMENT FENCE
		CONTRACT LIMIT LINE AND TEMPORARY FENCING
		TEMPORARY FENCING (ACTUAL)
		JOB TRAILER
		BUILDING
		CATCH BASIN
		TREE

NOTES

1. BASE MAP BASED ON TOPOGRAPHIC SURVEY PERFORMED BY RMT, INC. ON JUNE 11, 1996.
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3. MAINTAIN CONSTRUCTION ACTIVITIES AND TEMPORARY FENCING WITHIN CONTRACT LIMIT LINE.

TEMPORARY ACCESS ROAD

SEE DETAIL $\frac{3}{2}$

Scale 1" = 60'

2+25N (9)

2+00N (8)

1+75N (7)

1+50N (6)

1+25N (5)

1+00N (4)

CROSS SECTION A-A'

SEE DETAIL $\frac{1}{2}$

0+75N (3)

0+50N (2)

ACTUAL LIMIT OF EXCAVATION

0+25N (1)

0+00N

0+00E

0+25E (A)

0+50E (B)

0+75E (C)

1+00E (D)

1+25E (E)

A5-18

A5-5

WC-2

A5-4

WC-3

A5-3

TW2

A5-2

A5-1

W-2

A5-14

A5-13

A5-12

TW3

A5-12

A5-7

TW3

A5-6

A5-1

A5-13

A5-12

0+75E (C)

0+50E (B)

0+75E (C)

1+00E (D)

1+25E (E)

VAPOR BARRIER

SEE DETAIL $\frac{2}{2}$

W-3

A5-10

CONTRACT LIMIT LINE AND TEMPORARY FENCING

ACTUAL TEMPORARY FENCING

NEW EXTENSION TO RANNEY COLLECTOR TRENCH (NO PIPE)

EXISTING RANNEY COLLECTOR TRENCH ENCOUNTERED DURING EXCAVATION

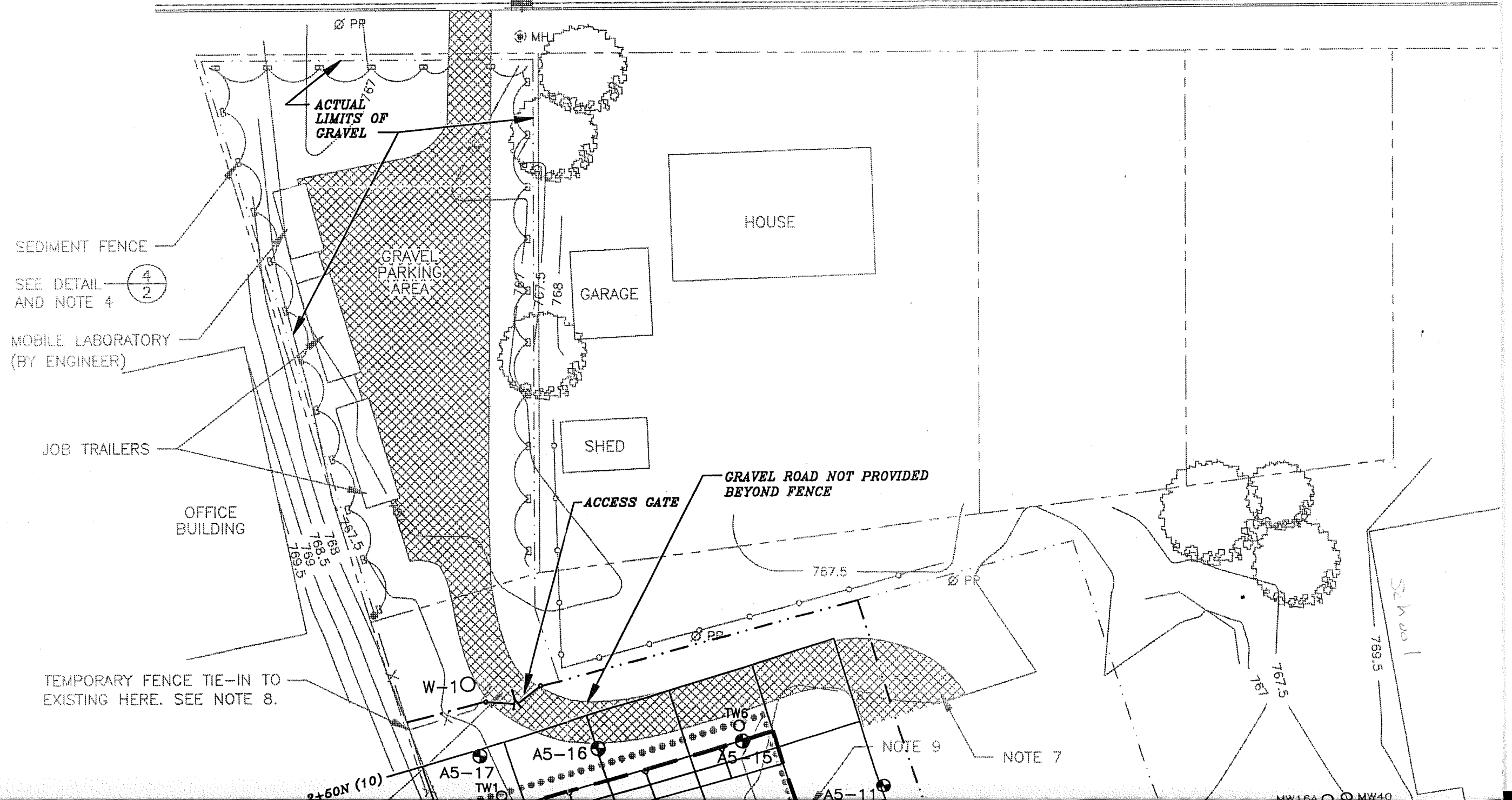
LIMIT OF EXCAVATION

N	L
0+75	0+
0+75	0+
1+25	0+
1+25	0+
1+75	0+
1+75	0+
2+00	0+
2+00	0+

NOTE: EL RII

Date: Time: Attached Xref's Attached.

CHURCH STREET (NOTE 6)



ACTUAL LIMITS OF GRAVEL

SEDIMENT FENCE

SEE DETAIL $\frac{4}{2}$ AND NOTE 4

MOBILE LABORATORY (BY ENGINEER)

JOB TRAILERS

OFFICE BUILDING

TEMPORARY FENCE TIE-IN TO EXISTING HERE. SEE NOTE 8.

GRAVEL PARKING AREA

HOUSE

GARAGE

SHED

ACCESS GATE

GRAVEL ROAD NOT PROVIDED BEYOND FENCE

W-10

A5-16

A5-15

A5-17

TW1

TW6

A5-11

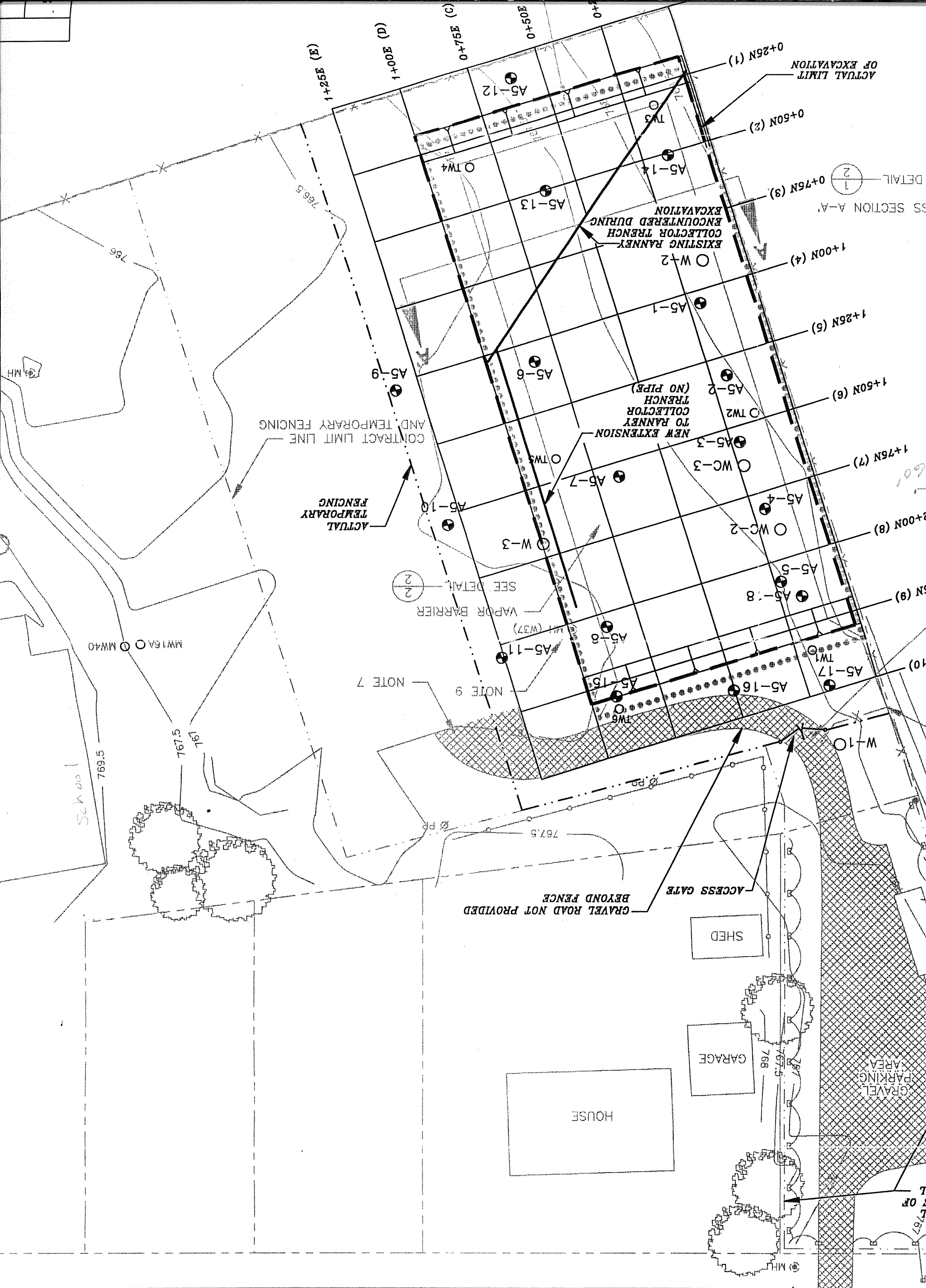
NOTE 9

NOTE 7

2+50N (10)

MW16A MW40

See also



CHURCH STREET (NOTE 6)

ACTUAL LIMIT OF EXCAVATION

0+50N (2)

DETAIL 1
2
SS SECTION A-A

EXISTING RANNEY COLLECTOR TRENCH ENCOUNTERED DURING EXCAVATION

1+00N (4)

1+25N (5)

NEW EXTENSION TO RANNEY COLLECTOR TRENCH (NO PIPE)

1+50N (6)

CONTRACT LIMIT LINE AND TEMPORARY FENCING

ACTUAL TEMPORARY FENCING

SEE DETAIL 2
VAPOR BARRIER

MW15A
MW40

NOTE 7

NOTE 9

School

GRAVEL ROAD NOT PROVIDED BEYOND FENCE

ACCESS GATE

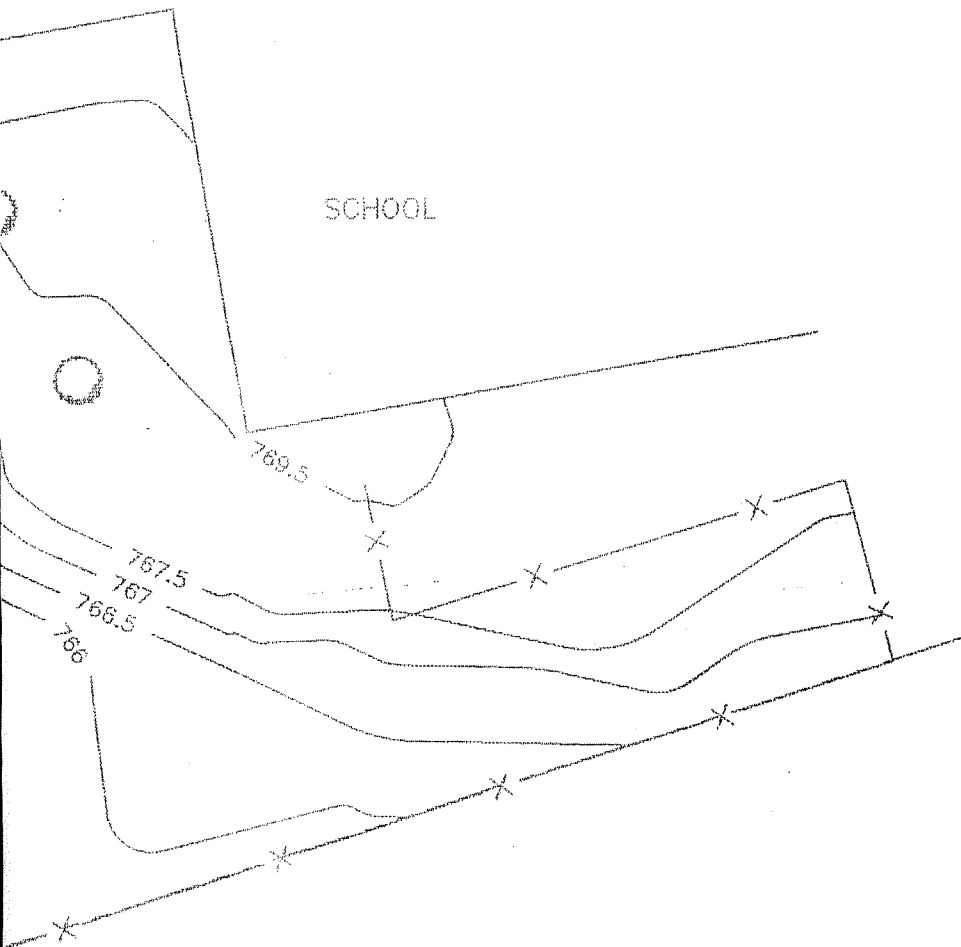
SHED

GARAGE

HOUSE

GRAVEL PARKING AREA

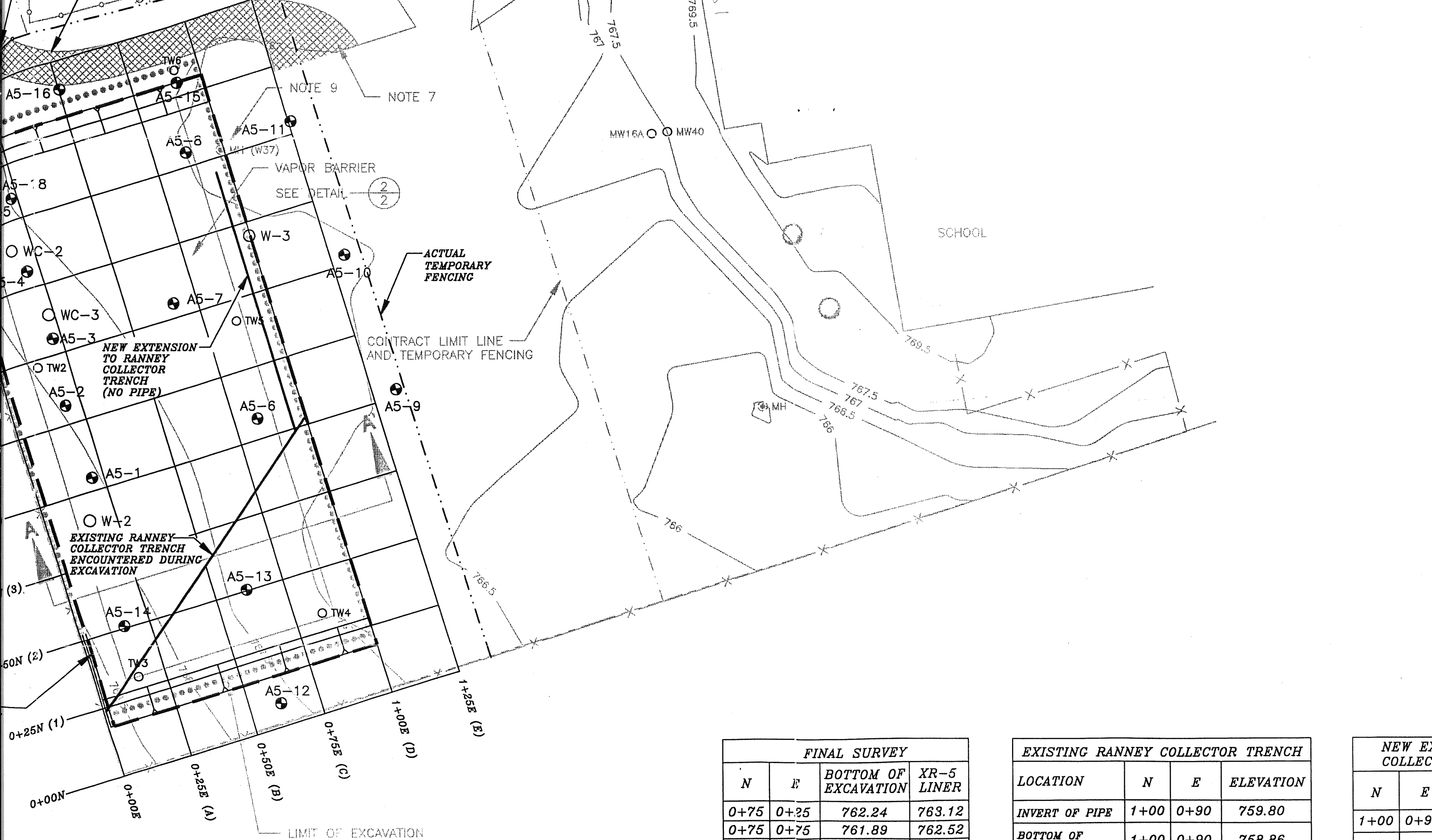
M.H.



FINAL SURVEY		
	BOTTOM OF EXCAVATION	XR-5 LINER
25	762.24	763.12
75	761.89	762.52
25	762.10	763.32
75	761.90	762.72
25	762.43	763.31
75	761.96	762.46

EXISTING RANNEY COLLECTOR TRENCH			
LOCATION	N	E	ELEVATION
INVERT OF PIPE	1+00	0+90	759.80
BOTTOM OF GRAVEL TRENCH	1+00	0+90	758.86
SURFACE OF WATER	1+00	0+90	758.29
INVERT OF PIPE	0+35	0+15	758.75

NEW EXTENSION TO RANNEY COLLECTOR TRENCH		
N	E	BOTTOM CENTER OF GRAVEL TRENCH
1+00	0+95	758.86
1+25	0+95	759.0
1+50	0+95	759.24
1+75	0+95	759.45



FINAL SURVEY			
N	E	BOTTOM OF EXCAVATION	XR-5 LINER
0+75	0+25	762.24	763.12
0+75	0+75	761.89	762.52
1+25	0+25	762.10	763.32
1+25	0+75	761.90	762.72
1+75	0+25	762.43	763.31
1+75	0+75	761.96	762.46
2+00	0+25	762.61	763.91

EXISTING RANNEY COLLECTOR TRENCH			
LOCATION	N	E	ELEVATION
INVERT OF PIPE	1+00	0+90	759.80
BOTTOM OF GRAVEL TRENCH	1+00	0+90	758.86
SURFACE OF WATER	1+00	0+90	758.29
INVERT OF PIPE	0+35	0+15	758.75
BOTTOM OF	0+35	0+15	UNABLE TO

NEW EXISTING COLLECTOR TRENCH	
N	E
1+00	0+9
1+25	0+9
1+50	0+9
1+75	0+9
1+90	0+9