

APPENDIX C

Closure Plans (ODSA and ASB)



Waycross Post - Closure Notices
Local Recording of Restrictions

DRAFT

WHEREAS, the Atlantic Coast Line Railroad Company, now CSX Transportation, Inc., a Virginia corporation, acquired certain real property by deed dated January 13, 1906 from A. W. Gilchrist and recorded in Ware County, Georgia in Deed Book 27, Page 269 and by deed dated January 10, 1906, from George W. Dean and Leon A. Wilson recorded in Ware County, Georgia, in Deed Book "Y", Page 370, and

WHEREAS, a portion of this property was used as an "Old Drum Storage Area" and is described on a survey prepared by H. W. Williams and Associates, Inc. dated July 8, 1987, which survey is attached as Exhibit A hereto and

WHEREAS, S. F. and W. Railway Company, now CSX Transportation, Inc., a Virginia corporation, acquired certain real property from Susan Lott, recorded in Book 1-F, Page 145, Ware County, Georgia by deed dated July 3, 1888 and from L. B. Yopp and C. W. Sauls by deed dated June, 1920, recorded in Book 3-C, Page 112, Ware County, Georgia records and

WHEREAS, a portion of this property was used as an "Alum Sludge Basin" and is described on survey prepared by H. W. Williams and Associates, Inc. dated July 8, 1987, which survey is attached as Exhibit B hereto,

NOW THEREFORE, this is to place the world on notice that the Old Drum Storage Area and the Alum Sludge Basin properties have been used to manage hazardous waste and that use of said properties is restricted under 40CFR Subpart G and that the survey plat and record of the type, location, and quantity of hazardous wastes disposed of on the Old Drum Storage Area and the Alum Sludge Basin Area have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Regional Administrator of the EPA.

IN WITNESS WHEREOF, CSX Transportation, Inc. has set to signature this 18th day of April, 1989.

Signed, sealed and delivered
in our presence as witnesses:

CSX TRANSPORTATION, INC.

Robert H. White
Witness
Nancy E. Gabriszeski
Notary Public

John H. Miller
Vice President Property Services
ATTEST: Lynn B. Klop (SEAL)
Asst. Secretary

Notarized this 18th day of
April, 1989
NOTARY PUBLIC, STATE OF FLORIDA
My commission expires May 18, 1992
Bonded thru Fidelity Bond Agency

NANCY E. GABRISZESKI

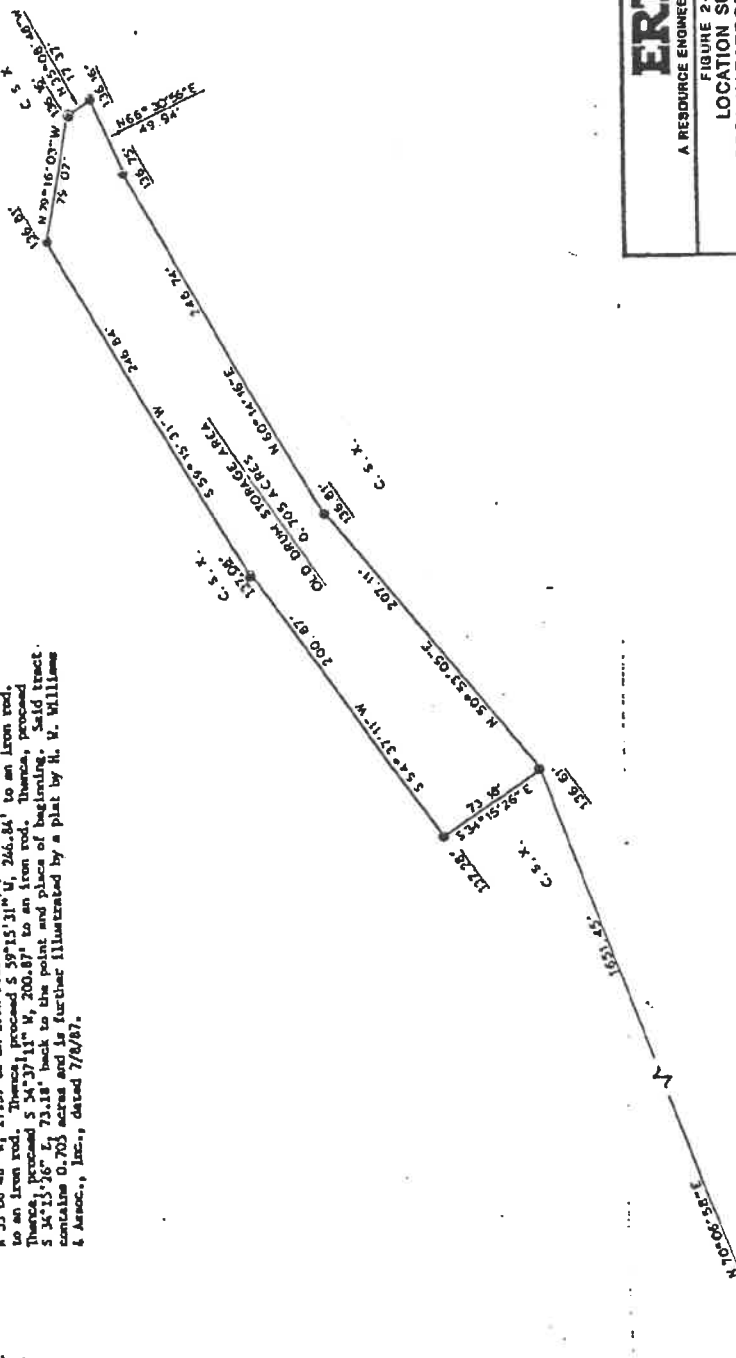
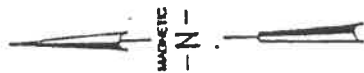
RECORDED May 4 1989
Boyle B. Presley

Exhibit A recorded in Plat Book A,
Page 1852
Exhibit B recorded in Plat Book A,
Page 1853



LEGAL DESCRIPTION: "OLD IRON STORAGE AREA"

All that tract or parcel of land lying and being in Ware County, Georgia, and being further described as follows: Commence at CSX Railroad Mile Post marker (44-589). Thence, proceed N 70°06'58" E, 1651.43' to an iron rod marking the southeast corner and the point and place of beginning for this subject tract. From said beginning point proceed N 50°53'03" E, 207.11' to an iron rod. Thence, proceed N 60°14'16" E, 248.74' to an iron rod. Thence, proceed N 66°30'46" E, 49.94' to an iron rod. Thence, proceed N 35°08'48" W, 17.37' to an iron rod. Thence, proceed N 79°16'03" W, 79.07' to an iron rod. Thence, proceed S 59°15'31" W, 266.84' to an iron rod. Thence, proceed S 54°37'11" W, 200.87' to an iron rod. Thence, proceed S 34°15'36" E, 73.18' back to the point and place of beginning. Said tract contains 0.703 acres and is further illustrated by a plat by H. W. Williams & Assoc., Inc., dated 7/8/87.



LEGEND	
○	5/8" Iron Ref. Rod Set
●	Iron Corner Found
○	Wooden Corner Found
□	Concrete Corner Set
■	Concrete Corner Found
○	No Corner Marker
△	GROUND ELEVATIONS AT CORNERS

EQUIPMENT USED FOR MEASUREMENTS:
ANGULAR: TOPCON GTS-2
LINEAR: ELECTRONIC DISTANCE METER & STEEL TAPE

THIS PLAT WAS RECORDED IN PLAT BOOK _____
PAGE _____, IN THE OFFICE OF THE CLERK OF THE
SUPERIOR COURT OF _____ COUNTY, GA.
THIS _____ DAY OF _____, 1987.
CLERK OF THE SUPERIOR COURT



H. W. WILLIAMS & ASSOCIATES, INC.
CONSULTING FORESTERS • LAND SURVEYORS
WAYCROSS, GEORGIA
PHONE 863-9040

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND SEAL OF OFFICE, AND THE SEAL OF SAID COUNTY, THIS _____ DAY OF _____, 1987.

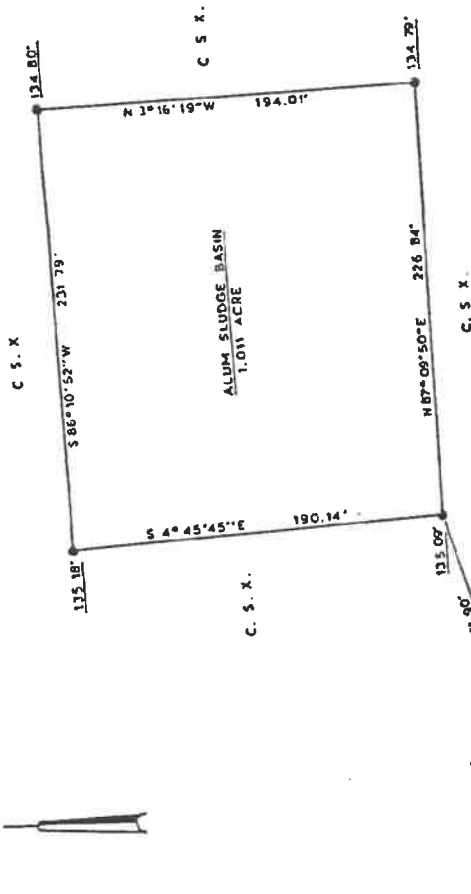
H. W. Williams, Jr.
Surveyor

ERT A RESOURCE ENGINEERING COMPANY	
FIGURE 2-2 LOCATION SURVEY ODSA HAZARDOUS WASTE MANAGEMENT AREA CSX TRANSPORTATION WAYCROSS, GEORGIA	
DRAWN BY: _____	DATE: 7-28-87
CHECKED BY: _____	PROJECT NO: 440-03
DWG. NO: _____	
CSX TRANSPORTATION	
DATE: 7/8/87	BY: _____
SCALE: 1" = 60'	STATE: GEORGIA
REFERENCES	
FIELD WORK BY: H.W. INC.	



LEGAL DESCRIPTION: "ALUM SLUDGE BASIN"

All that tract or parcel of land lying and being in Ware County, Georgia, and being further described as follows: Commence at CSX Railroad Mile Post number (44-589). Thence, proceed N 71°37'41" E, 5071.90' to an iron rod marking the point and place of beginning for this subject tract. Thence, said beginning point proceed N 87°09'30" E, 226.84' to an iron rod. Thence, proceed N 71°15'19" E, 190.14' to an iron rod. Thence, proceed S 4°45'43" E, 190.14' back to the point and place of beginning. Said tract contains 1.011 acres and is further illustrated by a plat by H. W. Williams & Assoc., Inc., dated 7/8/87.



RAILROAD MILE POST
(44-589)

LEGEND	
○	5/8" Iron Ref. Rod Set
●	Iron Corner Found
○	Wooden Corner Found
○	Concrete Corner Set
○	Concrete Corner Found
○	No Corner Marker
176.09'	GROUND ELEVATIONS AT CORNER

EQUIPMENT USED FOR MEASUREMENTS:
ANGULAR: TOPCON GTS-2
LINEAR: ELECTRONIC DISTANCE MEASURING TAPE
THIS PLAT HAS BEEN RECORDED IN PLAT BOOK PAGE _____ IN THE OFFICE OF THE CLERK OF THE SUPERIOR COURT OF _____ COUNTY, GA.
THIS _____ DAY OF _____, 19____; TIME: _____
CLERK OF THE SUPERIOR COURT



H W WILLIAMS & ASSOCIATES, INC.
CONSULTING FORESTERS - LAND SURVEYORS
WATERBURY, GEORGIA
PHONE 888-8040
WE MAY OPINION THAT THIS IS A TRUE AND CORRECT REPRESENTATION OF THE PROPERTY AND HAS BEEN PREPARED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND REQUIREMENTS OF THE LAW
Witness my hand and seal this 13th day of July, 1987.
H. Williams, Jr.

ERT
A RESOURCE ENGINEERING COMPANY

FIGURE 2-3

LOCATION SURVEY - ALUM SLUDGE BASIN
HAZARDOUS WASTE MANAGEMENT AREA

DESIGNED BY:	DATE:	REVISION:	PROJECT NO.
DRAWN BY:	7/8/87	1" = 50'	DWG NO.:
CSX TRANSPORTATION			
LOCATION NO.	811	WARE	GEORGIA
REFERENCES			
1.011 ACRES OF LAND			
MADE BY: H. W. WILLIAMS & ASSOCIATES, INC.			
FIELD WORK BY: H. W. WILLIAMS & ASSOCIATES, INC.			

Closure Plan for Old Drum Storage Hazardous Waste Management Area Waycross, Georgia Facility

Prepared for:

**Georgia Environmental
Protection Division
Atlanta, Georgia**

For:

**CSX Transportation
Jacksonville, Florida**

Revised - August 1987

*351.02 Waycross
8-13-87*

ERT[®]

A RESOURCE ENGINEERING COMPANY



A RESOURCE ENGINEERING COMPANY

3000 RICHMOND AVE., HOUSTON, TX 77098, (713) 520-9900

environmental and engineering excellence

August 25, 1987

Mr. Tim Cash
Environmental Specialist
Georgia Environmental Protection Division
205 Bulter Street, S.E., Floyd Towers East
Room 1152
Atlanta, Georgia 30334

Dear Mr. Cash:

Please find enclosed the revised pages for the Closure Plans for the Alum Sludge Basin and the Old Drum Storage Area at CSX Transportation's Waycross, Georgia Facility. These pages replace existing pages with the same numbers, and should be inserted at the appropriate locations. Page 7-2 for the Alum Sludge Basin and the Old Drum Storage Area should be discarded, as the completed closure schedule is presented on Page 7-1.

If you have any questions, please call me at (713) 520-9900.

Sincerely,

ERT, A RESOURCE ENGINEERING COMPANY

Hoyt C. Clark / HCT

Hoyt C. Clark
Sr. Project Manager

HCC/ars

*351.02 Waycross
8.27.87*

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2-2	Soil Sampling - Old Drum Storage Area Analytical Results
8-1	OSDA Closure Cost Estimates

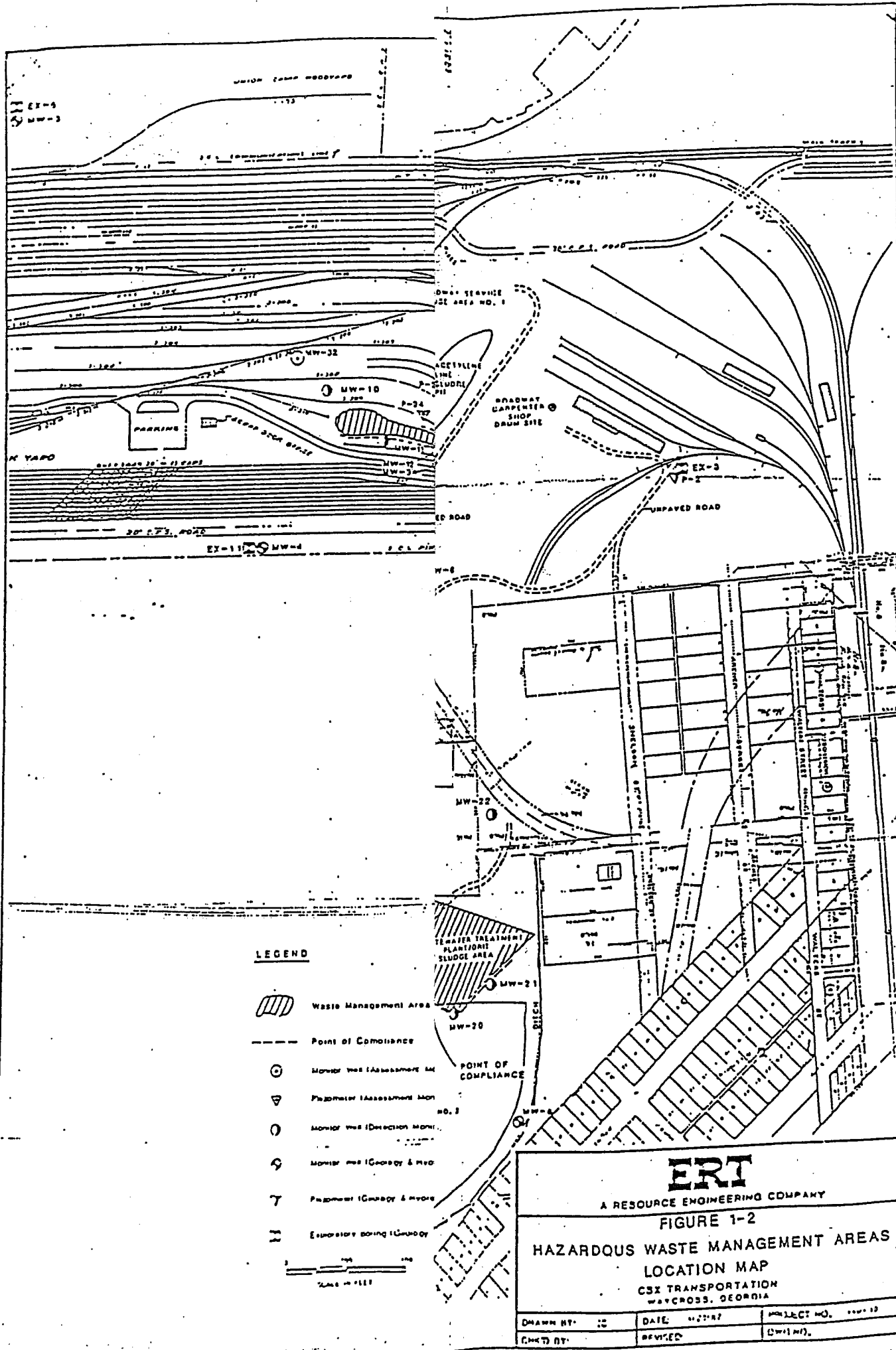
1.0 INTRODUCTION

1.1 General Background

ERT, A Resource Engineering Company, was retained by CSX Transportation to assess certain aspects of the environmental status of their Waycross, Georgia railyard facility (see Site Location Map on Figure 1-1) and to assist in developing and implementing a long range plan for the necessary improvements in those aspects of facility operations. Guidance for this assessment was provided in a Consent Order executed June 30, 1986 between CSX Transportation and the State of Georgia Environmental Protection Division (GAEPD).

The initial task of the Environmental Assessment Program was to perform a waste identification survey at the Waycross facility to characterize solid and hazardous waste streams being generated by current operations, and to identify locations at the facility where land disposal or spills of solid and hazardous materials occurred.

This survey was completed and documented in a report titled "Waste Identification Survey - Waycross Georgia Facility - August 1986," which was submitted to GAEPD on August 29, 1986. This survey report, combined with subsequent discussions with GAEPD resulted in the identification of three (3) locations where land disposal of hazardous wastes occurred at the facility after 1980. The use of these three (3) land disposal units ceased in 1985. There are no other hazardous waste treatment, storage, or disposal (TSD) units at the facility, and no plans for constructing or operating hazardous waste TSD units in the future.



The location of the three (3) HWMA's are shown in Figure 1-2, and they are designated as the Old Drum Storage Area (ODSA), Alum Sludge Basin (ASB), and the Wastewater Treatment Plant Sludge Area (WWTPA).

Since completion of the Waste Identification Survey several additional investigations have been completed with appropriate reports being submitted to the GAEPD. A listing of these reports has been submitted to the GAEPD in the report titled REVISED PART "B" POST-CLOSURE PERMIT APPLICATION WAYCROSS, GEORGIA FACILITY - AUGUST, 1987, and a copy of each of the reports is included in the Part "B" Application Report Appendices.

The post-closure permit application for the ODSA provides for groundwater corrective action and groundwater monitoring, as the detection monitoring performed during 1986 and 1987 has indicated the site has affected groundwater quality.

Separate closure plan are being submitted for GAEPD approval, for each of the three (3) HWMA's. This plan details the closure plan for the ODSA.

2.0 SITE DESCRIPTION

The Old Drum Storage Area (ODSA) presently a vacant field that lies south of the Waycross Train Receiving Yard as shown on Figure 1-2. Prior to 1985, as many as 4,000 empty drums were temporarily stored at this site awaiting sale to off-site drum recovery contractors. An unknown number of these drums contained residual "heels" of hazardous materials that varied from zero (0) to two (2) or three (3) inches in depth. Drum handling activities at the site resulted in occasional spills of an unknown quantity of hazardous materials, which contaminated the soils.

2.1 Soil Contamination Investigation

Since 1985, two field investigations have been completed to establish a database describing any soils contamination that might exist in the ODSA.

The first soil contamination investigation was performed as a part of the 1985 activities performed by CSX Transportation (then named Seaboard System Railroad) and submitted to the GAEPD in a report titled Environmental Audit for Waycross, Georgia Shop/Yard/Terminal - December 1985. During this investigation a total of five (5) composite soil samples were taken at random locations in the ODSA. The EP Toxicity Metals Analysis reported normal results for soils in this region, and a Volatile Organic Gas Chromatograph/Mass Spectrometer (GC/MS) Priority Pollutant Analysis reported constituents as described in Table 2-1.

TABLE 2-1

OLD DRUM STORAGE AREA1985 SOILS ANALYSIS

(VOLATILE ORGANIC PRIORITY POLLUTANTS ABOVE DETECTION LIMITS)

<u>Parameter</u>	<u>Concentration (ppm)</u>					
	<u>Sample</u>	<u>Sample</u>	<u>Sample</u>	<u>Sample</u>	<u>Sample</u>	<u>Sample</u>
	<u>14549</u>	<u>14550</u>	<u>14551</u>	<u>14552</u>	<u>14553</u>	
Methylene Chloride	0.175	0.251	0.091	0.160	0.019	
1,1,1-Trichloroethane	0.002	0.003	0.019	0.011	0.002	
Trichloroethene	0.002	<0.001	0.015	0.126	0.002	
Tetrachloroethene	0.002	0.021	0.006	21.500	0.006	
Toluene	0.007	0.002	0.003	0.174	0.013	
Xylenes	0.003	<0.001	0.136	0.013	4.490	

A second investigation was conducted, and the results submitted to the GAEFD in a report titled Contaminated Soils Investigation Report for Hazardous Waste Land Disposal Units - Waycross, Georgia Facility - January 1987.

In this investigation a total of eleven soil borings numbered SB-200 through SB-210 were drilled and sampled at the ODSA. Locations of soil borings are shown on Figure 2-1. Each boring was drilled and continuously sampled to a total depth of five feet. Soils encountered from each boring were examined, classified and logged by the field geologist in accordance with the Unified Soil Classification System (USCS). Boring logs prepared from the field information are provided in the contaminated soil investigation report, and cross-sections constructed from the boring logs showing the stratigraphy for the ODSA are presented in Figures 2-1 and 2-2.

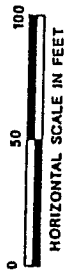
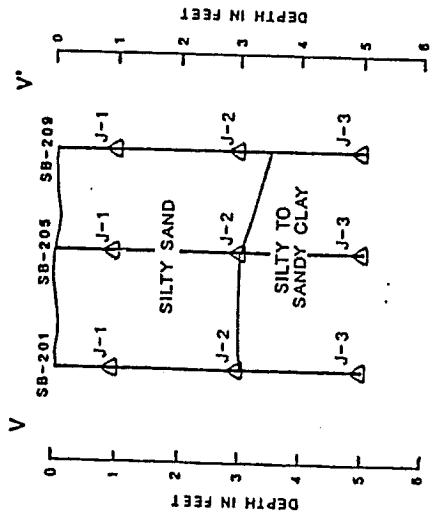
To determine the horizontal and vertical migration of contamination in the soils beneath the Old Drum Storage Area, soil samples were collected and analyzed from each boring at the depths shown on Figures 2-1 and 2-2.

All soil samples collected from each boring drilled at the Old Drum Storage Area were analyzed for Volatile Organics (VOA), and seven (7) of the samples were analyzed for EP Toxicity (EPT). Analytical results obtained are summarized in Table 2-2.

2.2 Legal Description of Site

The legal boundaries and location description of the ODSA area is presented on the following survey drawing (Figure 2-3) prepared by H.W. Williams and Associates, Inc.

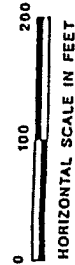
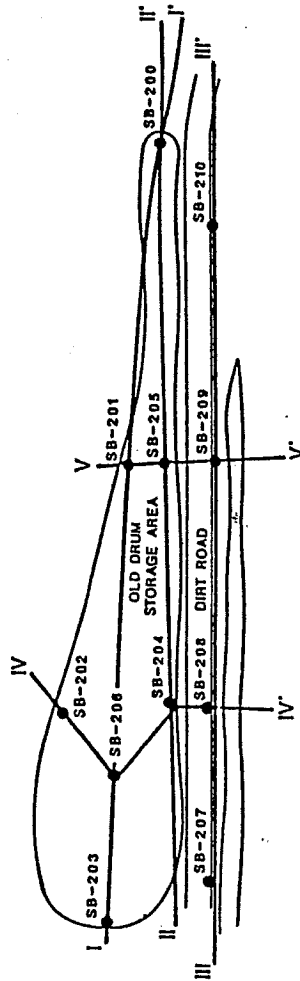
CROSS-SECTION V-V'



LEGEND

- SOIL BORING LOCATION
- △ SAMPLE LOCATION

OLD DRUM STORAGE AREA
CROSS-SECTION PLAN VIEW



Note: See Figure 2-2 for
Cross Sections I-I', II-II', III-III', IV-IV'

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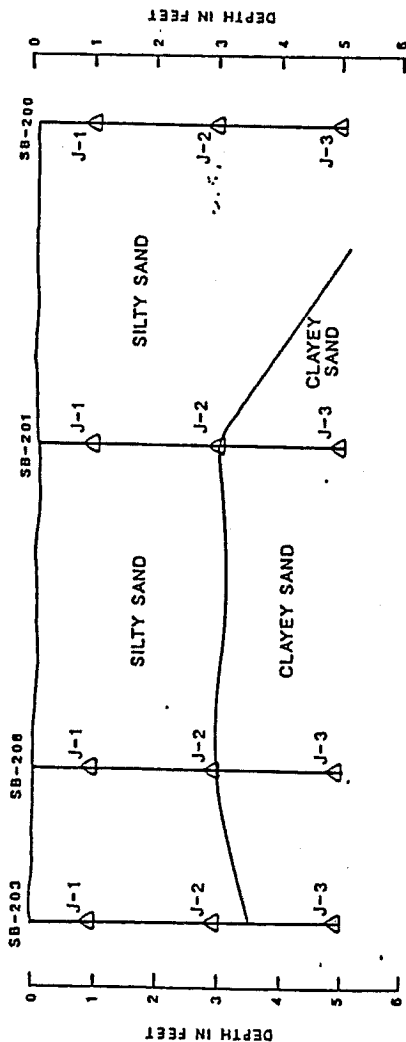
FIGURE 2-1

SOIL SAMPLING LOCATIONS
OLD DRUM STORAGE AREA

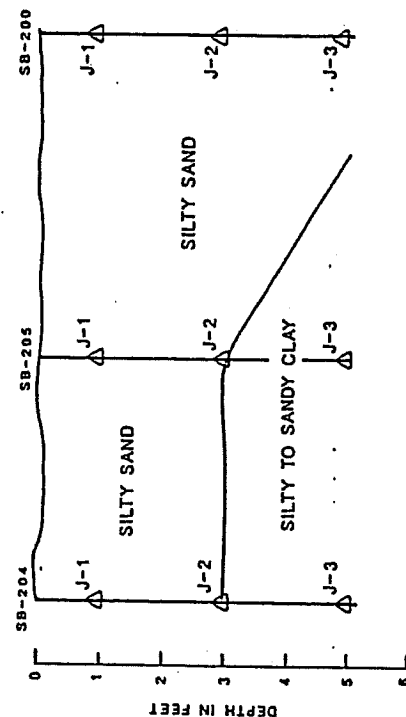
CSX TRANSPORTATION
WAYCROSS, GEORGIA

DRAWN BY	CC	DATE	11/14/92	PROJECT NO.	440-01
CHECKED BY		REVISION		DWG. NO.	

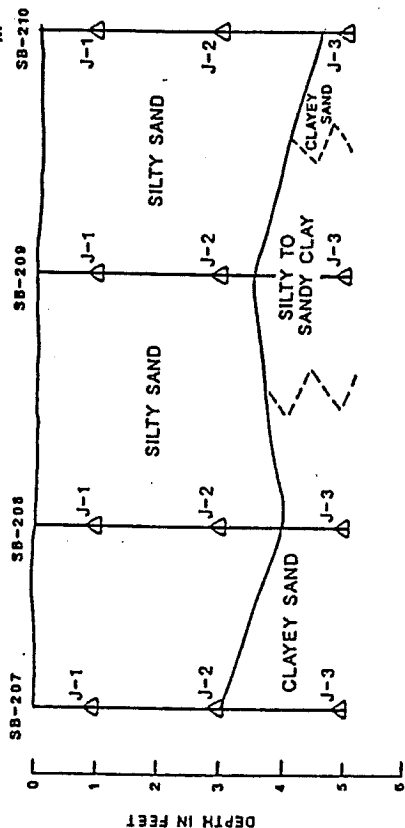
CROSS-SECTION I-I'



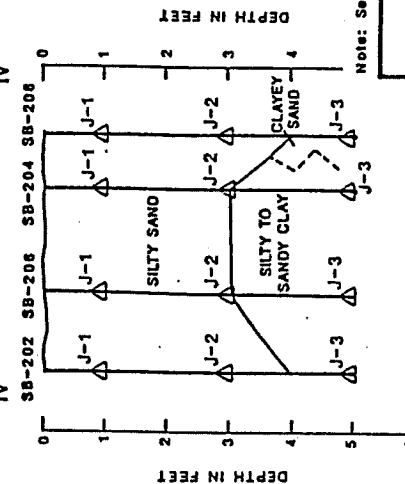
CROSS-SECTION II-II'



CROSS-SECTION III-III'



CROSS-SECTION IV-IV'



LEGEND

△ SAMPLE LOCATION

Note: See Figure 2-1 for location of cross section.

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FIGURE 2-2

SOIL SAMPLING LOCATIONS
OLD DRUM STORAGE AREA

CSX TRANSPORTATION
WAYCROSS, GEORGIA

DRAWN BY	CC	DATE	11/14/87	PROJECT NO.	430
CHECKED BY		REVISION		DWG. NO.	

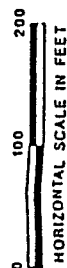


TABLE 2-2
Summary of Analytical Results, Old Drum Storage Area
Soil Sampling, November 1986
CSX Transportation
Waycross, Georgia

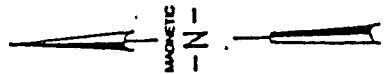
Boring No. Sample No.	SB-200			SB-201			SB-202			SB-203			SB-204			SB-205			SB-206			SB-207			SB-208			SB-209			SB-210		
	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1	J2	J3			
Parameter (ppm)																																	
Chloromethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Vinyl Chloride	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Methylene Chloride	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Carbon Disulfide	BIL	0.50	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
1,1-Dichloroethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Chloroform	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
2-Butanone	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Carbon Tetrachloride	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Bromodichloromethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Trans-1,3-Dichloropropene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Dibromochloromethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Benzene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
2-Chloroethyl Vinyl Ether	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
2-Hexanone	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Tetrachloroethene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Toluene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Ethyl Benzene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Total Xylenes	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Bromomethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Chloroethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Acetone	BIL	BIL	BIL	SI	12	BIL	BIL	BIL	BIL	53	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
1,1-Dichloroethene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
1,1,1-Trichloroethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Vinyl Acetate	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
1,2-Dichloropropane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Trichloroethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
1,1,2-Trichloroethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
CIS-1,3-Dichloropropene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Bromoform	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
4-Methyl-2-Pentanone	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
1,1,2,2-Tetrachloroethane	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Chlorobenzene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Styrene	BIL	BIL	BIL	SI	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL	BIL			
Detection Limits: (ppm)																																	
Acetone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
2-Hexanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
3-Pentyl-2-Pentanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
All Other VOC's	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5			

SI - SMOLE INTERFERENCE

TABLE 2-2 (cont'd)

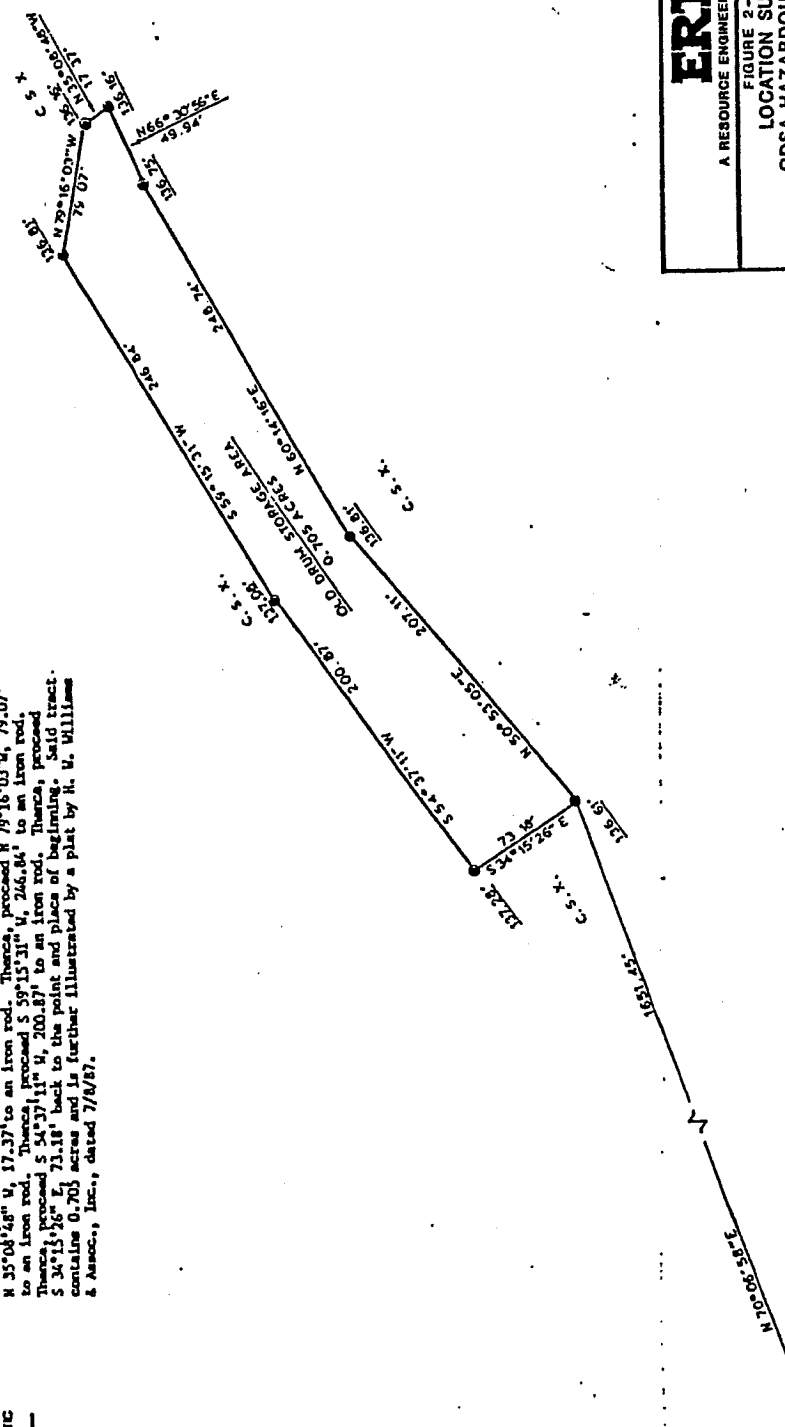
Parameter (ppm)

Within 60 days after certification of closure of the ODSA, CSX Transportation will notify the local land use authorities (City of Waycross, and Ware County) that closure of this Hazardous Waste Management Unit has been completed. A copy of the legal description (Survey Plat) of the site (Figure 2-3) will accompany this notification. This notice will also state that CSX Transportation must restrict disturbance of the site in accordance with applicable subpart G regulations.



LEGAL DESCRIPTION: "OLD DRUM STORAGE AREA"

All that tract or parcel of land lying and being in Ware County, Georgia, and being further described as follows: Commence at CSX Railroad Mile post number (44-589). Thence, proceed N 70°06'58" E, 1631.45' to an iron rod marking the southeast corner and the point and place of beginning for this subject tract. From said beginning point, proceed S 50°53'03" E, 207.11' to an iron rod. Thence, proceed N 60°14'16" E, 248.74' to an iron rod. Thence, proceed N 66°30'36" E, 49.94' to an iron rod. Thence, proceed N 79°16'03" W, 79.07' to an iron rod. Thence, proceed S 59°15'31" W, 246.84' to an iron rod. Thence, proceed S 54°37'11" W, 200.87' to an iron rod. Thence, proceed S 34°13'26" E, 73.18' back to the point and place of beginning. Said tract contains 0.705 acres and is further illustrated by a plat by H. W. Williams & Assoc., Inc., dated 7/8/87.



- LEGEND**
- 5/8" Iron Rod, Red Set
 - Iron Corner Found
 - Wooden Corner Found
 - Concrete Corner Set
 - Concrete Corner Found
 - No Corner Marker
 - GROUND ELEVATIONS AT CORNERS

EQUIPMENT USED FOR MEASUREMENTS:
ANGULAR: TOPCON GTS-2
LINEAR: ELECTRONIC DISTANCE METER & STEEL TAPE

THIS PLAT HAS BEEN RECORDED IN PLAT BOOK
PAGE _____ IN THE OFFICE OF THE CLERK OF THE
SUPERIOR COURT OF _____ COUNTY, GA.
THIS _____ DAY OF _____, 19____, TIME: _____
CLERK OF THE SUPERIOR COURT



H. W. WILLIAMS & ASSOCIATES, INC.
CONSULTING FORESTERS • LAND SURVEYORS
WAYCROSS, GEORGIA
PHONE 883-8040

IN MY OPINION THIS PLAT IS A TRUE AND CORRECT
REPRESENTATION OF THE PROPERTY PLATTED
AND HAS BEEN PREPARED IN ACCORDANCE WITH
THE MINIMUM STANDARDS AND REQUIREMENTS OF
THE LAW

H. Williams

ERT A RESOURCE ENGINEERING COMPANY	
FIGURE 2-3 LOCATION SURVEY ODSA HAZARDOUS WASTE MANAGEMENT AREA CSX TRANSPORTATION WAYCROSS, GEORGIA	
DRAWN BY:	DATE: 7-29-87
CHECKED BY:	PROJECT NO: 440-
DWG. NO:	
CSX TRANSPORTATION	
1" = 40'	8 1/2" WARE
7/8/87	1" = 60'
REFERENCES:	
GEORGIA	
FIELD WORK BY	
H. W. WILLIAMS & ASSOCIATES, INC.	

3.0 CLOSURE OBJECTIVES

This closure plan for the Old Drum Storage Area (ODSA) provides for closing the site in accordance with the interim status requirements of 40 CFR 265.111 through 265.115 and 265.310 as regulated by the GAEFD. The closure objectives of the plan are described as follows:

- Eliminate all potential threat to human health and the environment by eliminating the potential for escape of hazardous waste, hazardous waste constituents, leachate, rainfall runoff, or waste decomposition products to the groundwater, surface water, or to the atmosphere.
- Minimize the need for future maintenance activity during and after the post-closure period.
- Provide post-closure care under a hazardous waste facility permit and conduct corrective action for groundwater contamination. Delisting will be sought for those waste remaining in place once the corrective action program is successful and compliance with groundwater protection standard has been achieved.

4.0 MAXIMUM INVENTORY OF WASTE

The Old Drum Storage Area (ODSA), presently a vacant field south of the Waycross Train Receiving Yard, covers a total area of approximately 33,000 square feet. Prior to 1985, as many as 4,000 empty drums were temporarily stored at this site awaiting sale to off-site drum recovery contractors. An unknown number of these drums contained residual "heels" of hazardous materials that varied from zero (0) to two (2) or three (3) inches in depth. Drum handling activities at the site resulted in occasional spills of an unknown quantity of hazardous materials, which contaminated the soils.

Two field investigations have been completed since 1985 to establish a database describing any soil contamination that might exist in the ODSA. The results of these investigations are provided in Section 2.0 of this report.

5.0 CURRENT STATUS OF CLOSURE

The drums which were stored at this site have been removed and sold off-site to drum recovery contractors. Small amounts of hazardous materials residues that were left in some of the "empty" drums were combined with similar waste materials being generated by current operations, drummed, manifested, and transported off-site for disposal at an approved hazardous waste disposal facility. This disposal activity was performed in accordance with normal hazardous waste disposal procedures approved for the facility.

The empty drums were then transported off-site by the drum recovery contractors for cleaning and recycling.

This is the only closure activity that has occurred, or will occur prior to approval of this closure plan.

Groundwater detection monitoring^{*} was performed in accordance with plans approved by the GAEPD. These plans are described in the report titled Final Groundwater Detection Monitoring Plan for Hazardous Waste Land Disposal Units - Waycross, Georgia Facility - October 1986. Two (2) quarterly sampling events of the one (1) upgradient and three (3) downgradient monitor wells resulted in CSX Transportation determining the ODSA had affected the groundwater quality, and subsequently a groundwater assessment investigation was completed to define the extent of the contamination plume. The resulting Corrective Action/Groundwater Monitoring Plan is described in the Part "B" Post-Closure Permit Application Report for the ODSA.

6.0 CLOSURE PROCESS

6.1 General Description

Based on the results of the soil contamination investigations discussed in Section 2.1 of this Closure Plan, no further soil, or waste residue removal actions are proposed for the ODSA area.

The latest soils investigation reports low concentrations of 1,1-Dichloroethane (0.50 and 1.6 ppm) in only two (2) of the twenty-nine (29) samples that were analyzed. Additionally, three (3) samples reported 12, 53, and 4 ppm of Acetone. Acetone is a common solvent used in laboratory analyses and has been detected in other soil samplings at the Waycross site. In those cases, upon resampling acetone was not detected. It is presumed that other hazardous constituents that may have been spilled on to the soil have either volatilized, biodegraded, or flushed into the groundwater during the life of the site.

Based on this soil analysis results, no contaminated soils or waste residue removal is proposed for the ODSA.

Because the site has affected groundwater quality, the regulations require the installation of a cap to minimize future migration of contaminants from the site into the groundwater. The proposed cap design is described in Section 6.2 of this report.

6.2 ODSA Site Cap-Conceptual Design

The ODSA is not a landfill that is intended to provide longterm storage and isolation for a quantity of concentrated hazardous waste. The site is a place where small spills of hazardous materials occurred, incidental to the handling of a large number of "Empty Barrels". Generally the spilled materials

were very volatile, and also mobile in soils. The detailed soil investigation discussed in Section 6.1 above reports minimum concentrations of Hazardous Materials remaining in the soil at the site. It is logical to presume that materials spilled at the site have either volatilized, biodegraded, or flushed through the soil to the groundwater.

CSX Transportation believes that from a technical viewpoint, the site should be closed as it is, without a cap. This would allow rainfall to complete the flushing of the minimal quantities of residual contaminants remaining the soil. These would then be flushed to the groundwater, and removed during the corrective action pumping and treating program that is described in the Part "B" Application Report.

However, regulatory requirements dictate that a cap is required to finalize site closure.

Because of the above described background, and the minimal threat of future groundwater contamination that is possible from the residual contaminants remaining in the soil, the cap design proposed for the ODSA is based on reduced specifications, as compared to the RCRA cap requirements for a waste management unit that is designed to store and isolate large quantities of concentrated hazardous materials.

The conceptual design of the cap is shown on Figure 6-1 Sheets 1 and 2, and is described in the following paragraphs.

1. The survey boundaries of the site will be identified and staked to outline the area to be capped.
2. A one (1) foot deep ditch will be excavated around the perimeter of the ODSA. This ditch will have a cross section as shown in Detail "A" on Figure 6-1 sheet 2.

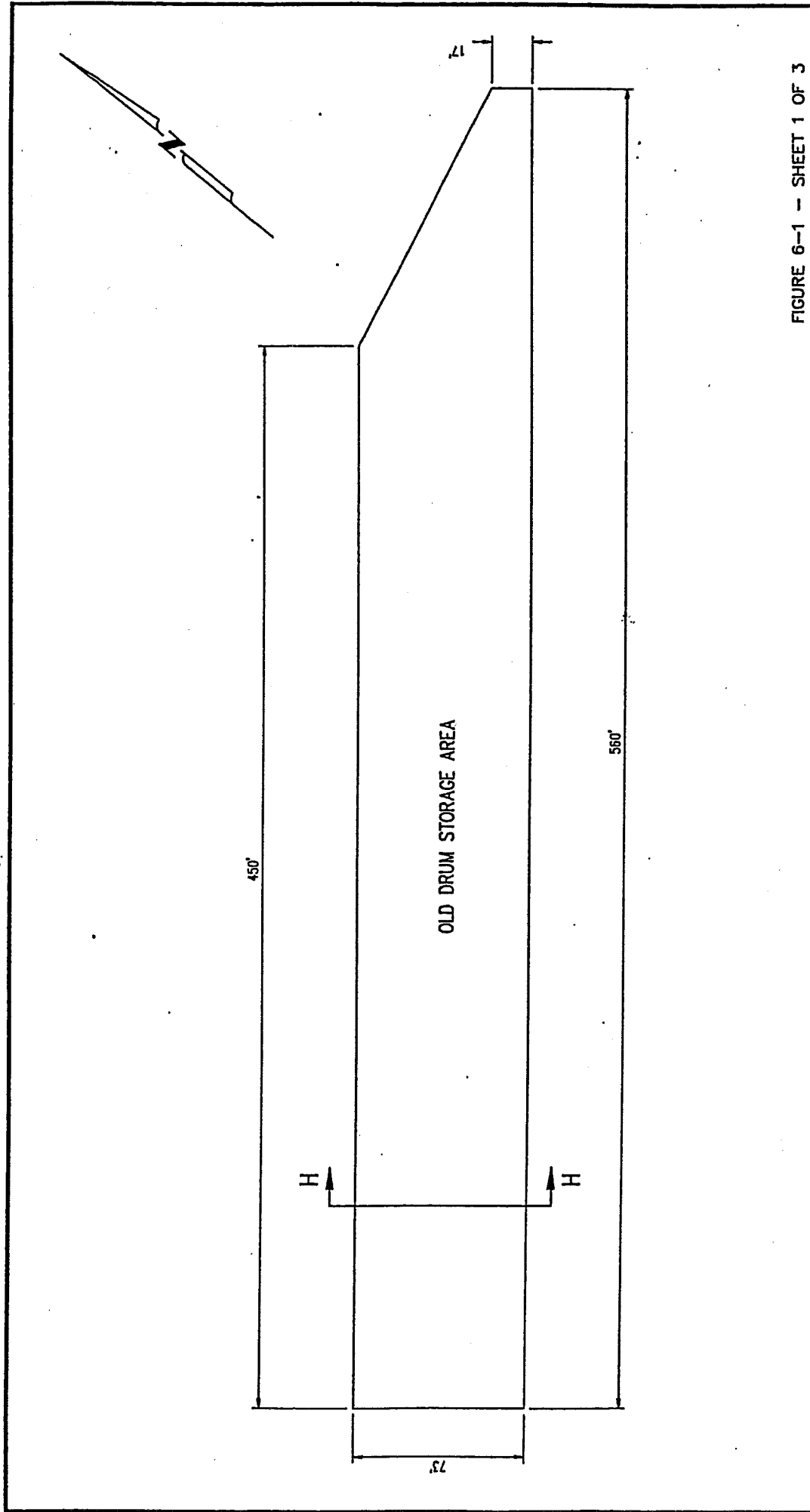
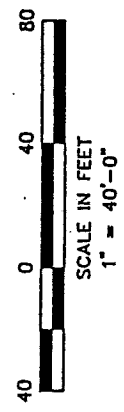
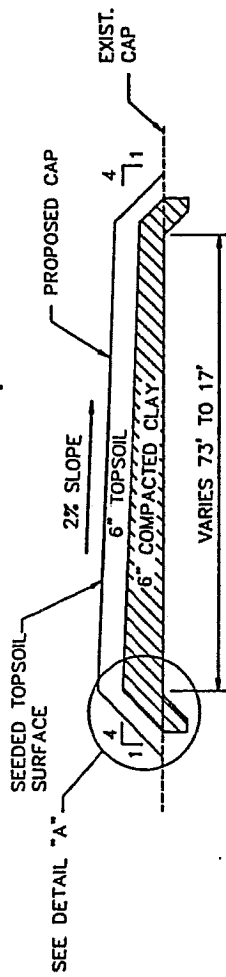


FIGURE 6-1 - SHEET 1 OF 3

ERT[®]	
A. RESOURCE ENGINEERING COMPANY	
CONCEPTUAL DESIGN	
OLD DRUM STORAGE AREA CLOSURE	
CSX TRANSPORTATION WAYCROSS, GEORGIA	
DRAWN BY:	PROJECT NO.
N.L. JONES	440-06
DATE:	
7-16-87	

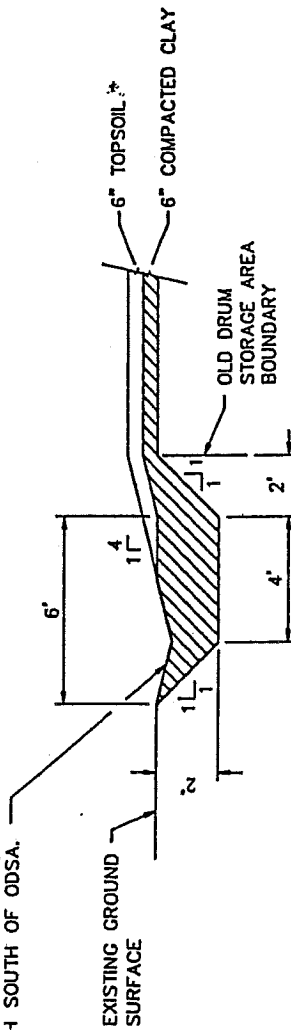




SHOWING NEW PROPOSED ODSA CAP SECTION H-H

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

SURFACE WATER RUNOFF DRAINAGE
SWALE - SLOPED AT MAXIMUM OF
3 TO 1 SLOPE AROUND PERIMETER,
TO NEAREST DITCH SOUTH OF ODSA.



DETAIL "A"

NOT TO SCALE

FIGURE 6-1 - SHEET 2 OF 3

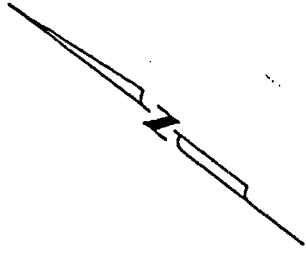
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SECTIONS

OLD DRUM STORAGE AREA
CSX TRANSPORTATION WAYCROSS, GEORGIA

DATE	DATE	PROJECT NO.
N.L. JONES	7-17-87	440-06



PROPOSED DITCH

PROPOSED DITCH

PROPOSED DITCH

EXIST. DITCH

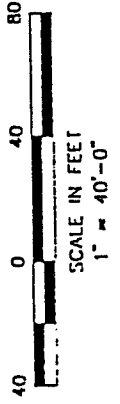


FIGURE 6-1 SHEET 3 OF 3

ERT[®]

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FINAL DRAINAGE

OLD DRUM STORAGE AREA CLOSURE
CSX TRANSPORTATION WAYCROSS, GEORGIA

DATE	REV	PROJECT NO.
N.L./JNL.S	7-16-87	440-06

The excavated soil will be placed inside the ODSA boundaries, spread evenly across the ground surface and compacted into place.

3. A clay cap will then be installed over the ODSA site, and into the excavated ditch surrounding the site. The cap will have a minimum thickness of six (6) inches and will have a cross section and arrangement as shown of Figures 6-1, sheets 1 and 2. The clay will be compacted with a sheepsfoot or pneumatic roller to achieve a field density of 95% of standard proctor within $\pm 2\%$ of optimal moisture content. A minimum of one (1) test per 1000 square feet of cap surface will be performed to verify field density of the installed cap. (Nuclear Density Gauge Method ASTM D 2922).

Representative samples will be collected from all materials sources used for cap construction, prior to placement of the cap. The minimum specifications of material used for the cap are as follows:

Atterberg Limits

- Liquid Limit: 30% (ASTM D423)
- Plastic Limit: 30% Minimum (ASTM D424)
- Plasticity Index: 15% Minimum

Minimum Permeability: 10^{-7} cm/sec.
(EM 1110-2 - 1906)

Sieve Analysis: At least 60% passing #220
Sieve (ASTM D-422)

The cap thickness will be tested with one (1) test per 10,000 square feet of cap area. Thickness verification will be performed by surveying methods compared to a fixed benchmark near the site.

4. The topsoil cap will then be installed over the clay cap. The topsoil will have a minimum thickness of six (6) inches and will have a cross-section and arrangement as shown in Figure 6-1 sheets 1 and 2. The topsoil will be smoothed to a flat surface and shaped to a finished contour as shown in Figure 6-1.
5. A minimum depth surface water runoff control ditching will be installed around the northwest side of the finished cap as shown in Detail "A" of Figure 6-1 Sheet 2, to carry rainwater to the nearest existing drainage ditch, approximately 40 feet southwest of the ODSA.
6. The cap will be seeded to achieve grass coverage suitable to provide erosion prevention protection.
7. The perimeter of the cap will be provided with a barricade to prevent access to the site by vehicles, etc. This will be suitable to protect the cap from mechanical damage due to operational activities at the Waycross Facility.
8. The ODSA cap will be inspected and maintained as described in the Part "B" Post Closure Permit Application.

7.0 CLOSURE SCHEDULE

Based on the proposed closure process, installation of the cap is the only closure activity to be performed. This installation will begin in 1987 and within 60 days after approval of this closure plan by the GAEPD. The activities associated with the cap installation at the site, as described on Page 6-2 through 6-6, along with estimated completion period for each are tabulated as below.

Closure Activities	Week							
	0	4	8	12	16	20	24	
1	---							
2		---		*				
3		---						
4			---					
5				---				
6					---			
7						---		
8								
Description and schedule for this activity is provided in the revised Part B - Post-Closure Permit Application Report submitted to GAEPD in August, 1987.								

Note: Week 0 starts 60 days after approval of closure plan by the GAEPD.

8.0 CLOSURE COST ESTIMATE

The estimated total cost for the ODSA is \$55,300. This includes the cost for the closure process proposed in Section 6.0 of this closure plan.

All post-closure inspections; and maintenance activities for the site are described in the revised Part "B" permit application report dated August 4, 1987.

The detailed breakdown of the closure cost estimate is presented in Table 8-1.

TABLE 8-1
OLD DRUM STORAGE AREA
CLOSURE COST ESTIMATE

1. Excavate clay cap ditch around ODSA (1 day backhoe)		\$ 800
2. Identify clay material source, haul, spread, and compact ODSA cap, perform all specified test for dimensional and material specifications		
o 968 cubic yards clay - Purchase and Haul	\$17,500	
- Spread	5,800	
o perform specified tests	<u>1,200</u>	
		\$24,500
3. Install topsoil cap layer, perform all dimensional inspections, seed, fertilize and install barricade around ODSA perimeter		
o 900 cubic yards topsoil - Purchase and Haul	\$21,600	
- Spread	5,400	
o Seed and fertilize - 1 acre	1,800	
o Install Barricade		<u>1,200</u>
		<u>\$30,000</u>
		\$55,300

9.0 AMENDMENT OF CLOSURE PLAN

The closure plan for the ODSA Area at the Waycross Facility is based on the current knowledge of the site. If results from future investigations indicate that revisions are required, an amended closure plan will be submitted to the GAEPD within 60 days of the decision to change the plan.

Additionally if an unexpected event occurs during closure which requires a modification of the approved closure plan or its schedule, an amended plan will be submitted to GAEPD no later than 30 days after the unexpected event.

Additionally, if modifications must be made to the approved closure plan which cause a change in the estimated cost of closure, the amended cost estimate will be submitted to the GAEPD within 30 days after approval of the amended closure plan.

10.0 CERTIFICATION OF CLOSURE

Within sixty (60) days after closure activities are completed (ie: CAP Installation and completion of all items contained in page 6-2 through 6-6) at the ODSA, certification will be made by CSX Transportation and by an independent registered professional engineer that closure was performed according to the approved closure plan. Documentation supporting the engineering certification will be furnished upon request until CSX Transportation has been released from financial assurance requirements.

11.0 FINANACIAL ASSURANCE

The financial assurance documentation will be submitted under separate cover, but will be based on providing for the cost estimate described in Section 8.0 of this report.

Closure Plan for Alum Sludge Basin Hazardous Waste Management Area Waycross, Georgia Facility

Prepared for:

**Georgia Environmental
Protection Division
Atlanta, Georgia**

For:

**CSX Transportation
Jacksonville, Florida**

Revised - August 1987

*351.02 Waycross
8-13-87*

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A RESOURCE ENGINEERING COMPANY



RESOURCE ENGINEERING COMPANY

1000 RICHMOND AVE., HOUSTON, TX 77098, (713) 520-9900

environmental and engineering excellence

August 25, 1987

Mr. Tim Cash
Environmental Specialist
Georgia Environmental Protection Division
205 Bulter Street, S.E., Floyd Towers East
Room 1152
Atlanta, Georgia 30334

Dear Mr. Cash:

Please find enclosed the revised pages for the Closure Plans for the Alum Sludge Basin and the Old Drum Storage Area at CSX Transportation's Waycross, Georgia Facility. These pages replace existing pages with the same numbers, and should be inserted at the appropriate locations. Page 7-2 for the Alum Sludge Basin and the Old Drum Storage Area should be discarded, as the completed closure schedule is presented on Page 7-1.

If you have any questions, please call me at (713) 520-9900.

Sincerely,

ERT, A RESOURCE ENGINEERING COMPANY

Hoyt C. Clark/gct

Hoyt C. Clark
Sr. Project Manager

HCC/ars

351.02 Waycross
8.27.87

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2.2 Legal Description of Site	2-9
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5.0 CURRENT STATUS OF CLOSURE	5-1
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1-2	Hazardous Waste Management Areas - Location Map
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2-2	ASB Soil Sample Locations

LIST OF TABLES

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2-1	ASB - Soil Sampling Analytical Results
8-1	ASB - Closure Cost Estimate

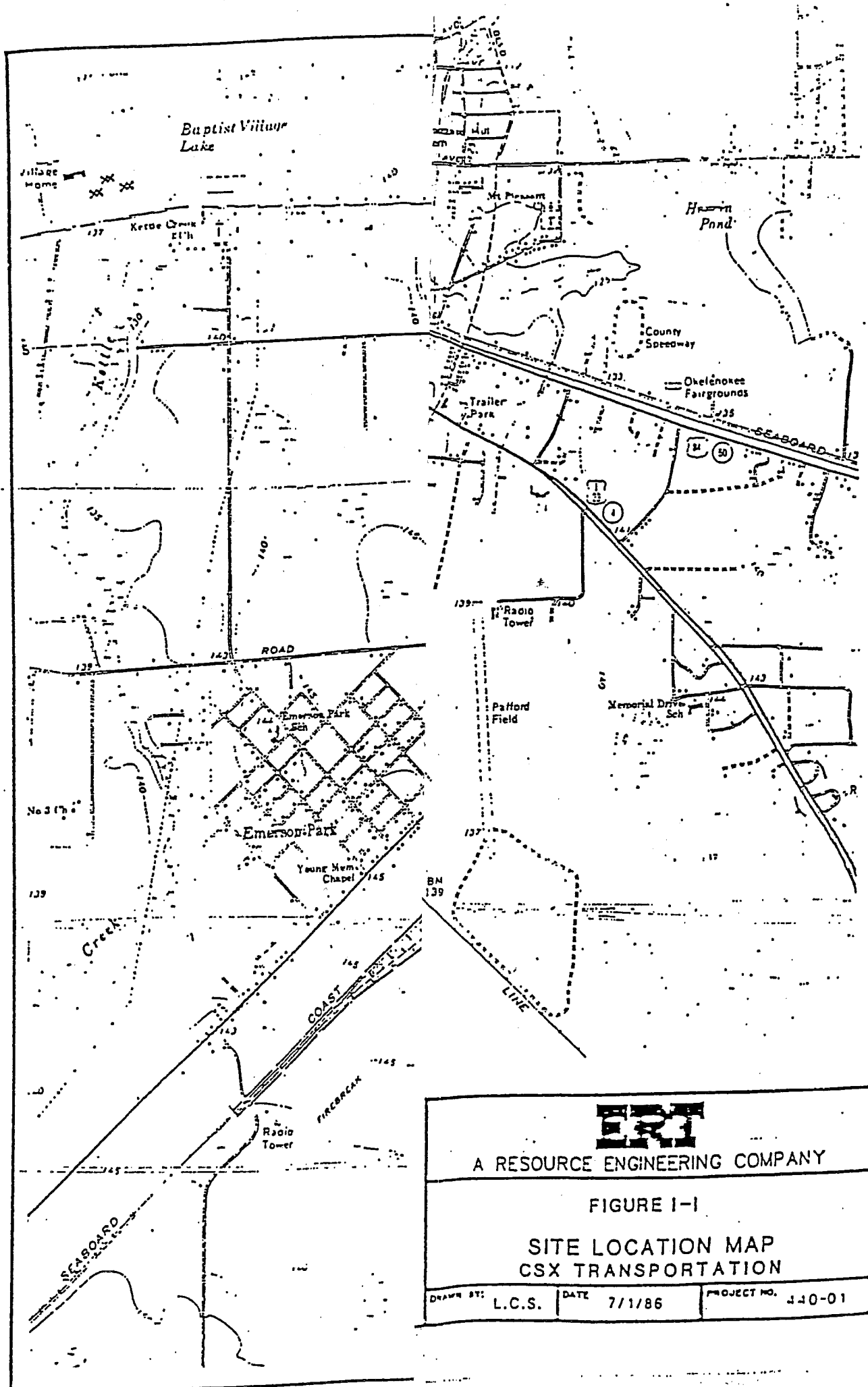
1.0 INTRODUCTION

1.1 General Background

ERT, A Resource Engineering Company, was retained by CSX Transportation to assess certain aspects of the environmental status of their Waycross, Georgia railyard facility (see Site Location Map on Figure 1-1) and to assist in developing and implementing a long range plan for the necessary improvements in those aspects of facility operations. Guidance for this assessment was provided in a Consent Order executed June 30, 1986 between CSX Transportation and the State of Georgia Environmental Protection Division (GAEPD).

The initial task of the Environmental Assessment Program was to perform a waste identification survey at the Waycross facility to characterize solid and hazardous waste streams being generated by current operations, and to identify locations at the facility where land disposal or spills of solid and hazardous materials occurred.

This survey was completed and documented in a report title "Waste Identification Survey - Waycross Georgia Facility - August 1986," which was submitted to GAEPD on August 29, 1986. This survey report, combined with subsequent discussions with GAEPD resulted in the identification of three (3) locations where land disposal of hazardous wastes occurred at the facility after 1980. The use of these three (3) land disposal units ceased in 1985. There are no other hazardous waste treatment, storage, or disposal (TSD) units at the facility, and no plans for constructing or operating hazardous waste TSD units in the future.



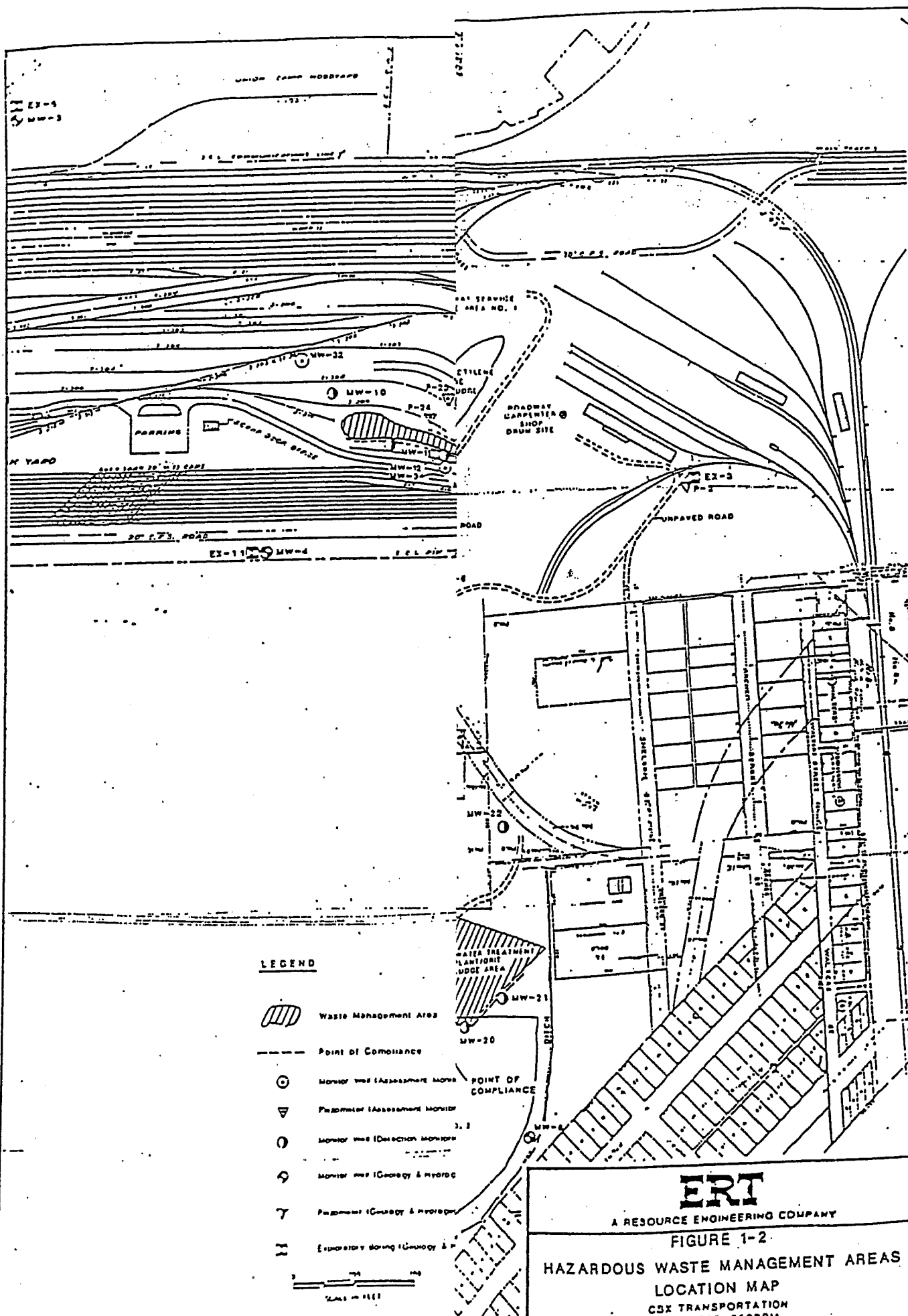
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






FIGURE I-1

SITE LOCATION MAP
CSX TRANSPORTATION

DRAWN BY: L.C.S.	DATE: 7/1/86	PROJECT NO. J40-01
------------------	--------------	--------------------



LEGEND

-  Waste Management Area
-  Point of Compliance
-  Monitor well (Assessment Monitor)
-  Preliminary Assessment Monitor
-  Monitor well (Detection Monitor)
-  Monitor well (Geology & Hydrology)
-  Preliminary (Geology & Hydrology)
-  Extraction during (Geology & Hydrology)

Scale = 1" = 100'

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FIGURE 1-2

**HAZARDOUS WASTE MANAGEMENT AREAS
LOCATION MAP
CSX TRANSPORTATION
WAYCROSS, GEORGIA**

DRAWN BY: CC	DATE: 01/19/87	PROJECT NO.: 1000110
CHECKED BY:	REVISED:	DATE:

2.0 SITE DESCRIPTION

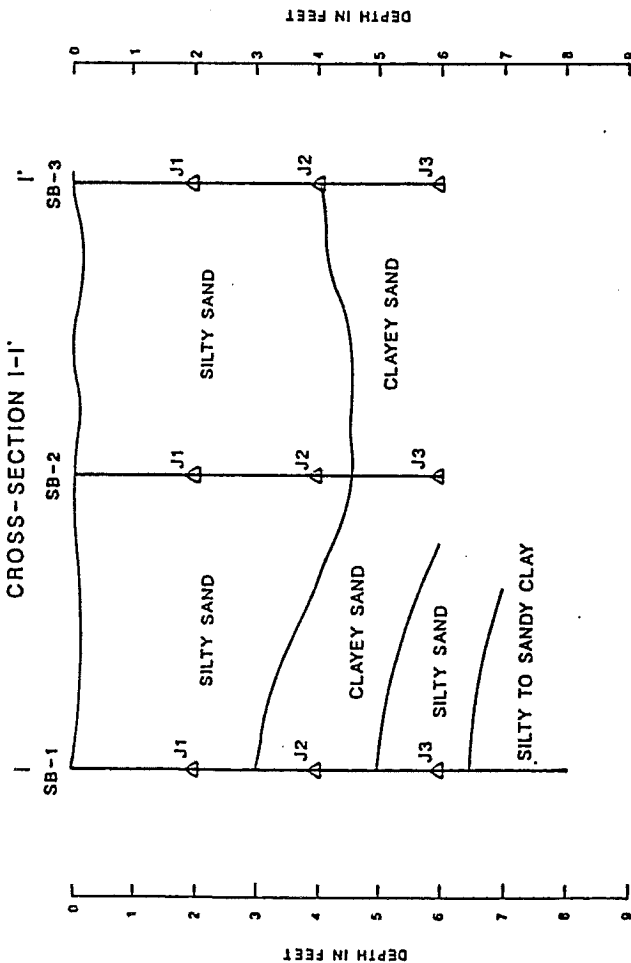
The Alum Sludge Basin (ASB) is located south of the Maintenance Shop Area as shown on Figure 1-2. It was used through January 1985 to deposit sludges from water treating operations at the facility. It is approximately 194 feet by 230 feet in size and is estimated to have received approximately 7,500 cubic yards of the water treatment plant sludges. On one occasion, a CSX employee was observed placing paint stripper sludges in the basin, in violation of site management policy and procedure.

2.1 Soil Contamination Investigation

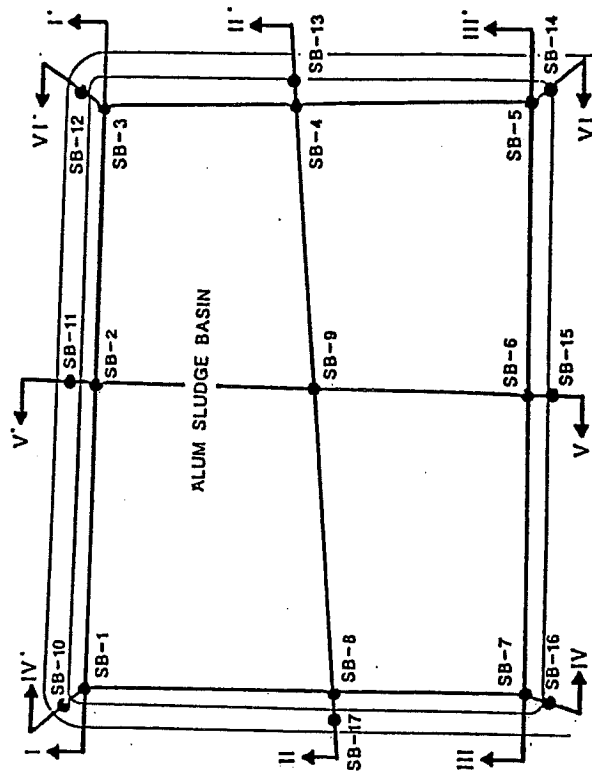
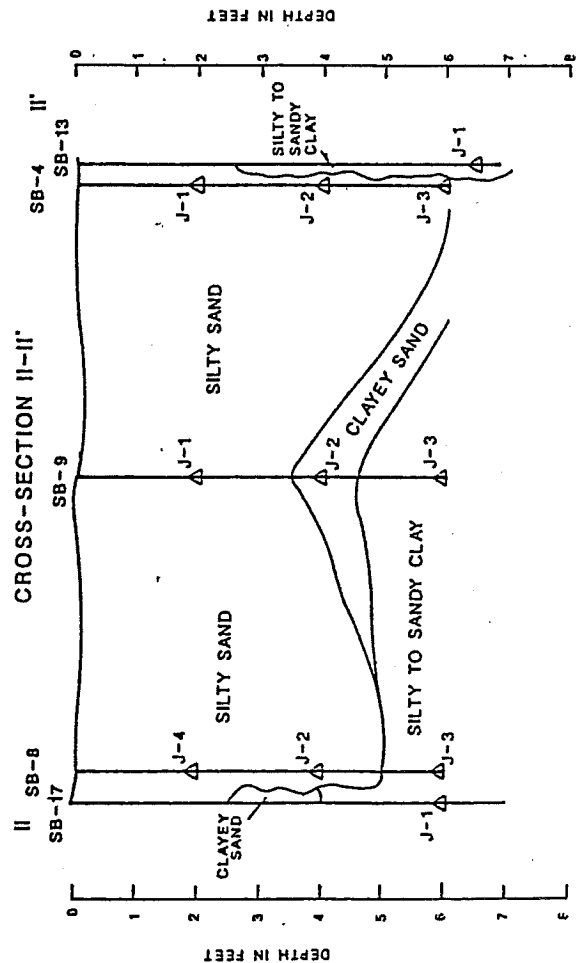
In a previous study performed by ERT at the site, traces of methylene chloride were detected in the ASB. This information was submitted to the GAEPD in a report titled "Waste Identification Survey - Waycross Georgia Facility" dated August 1986. In order to determine the horizontal and vertical extent of contamination in the soil, a shallow soil boring program was performed during November, 1986. The results of this investigation was reported to the GAEPD in a report titled Contaminated Soils Investigation Report for Hazardous Waste Land Disposal Units - Waycross, Georgia Facility - January 1987.

A total of seventeen shallow soil borings from SB-1 through SB-17 were located in a grid pattern at the site. The locations of these borings are presented in Figure 2-1 and Figure 2-2. Each boring was drilled and continuously sampled to a depth two feet below the pit bottom. Soils encountered from each boring were logged by the field geologist. Boring logs prepared from the field information are provided in the original report referenced above. Cross-sections constructed from the boring information

CROSS-SECTION I-I'



CROSS-SECTION II-II'



CROSS-SECTION PLAN VIEW
ALUM SLUDGE BASIN

LEGEND

- SOIL BORING LOCATION
- △ SAMPLE LOCATION

NOTE: Elevation of dike surface with respect to basin have been estimated for these drawings pending a future elevation survey, if required.



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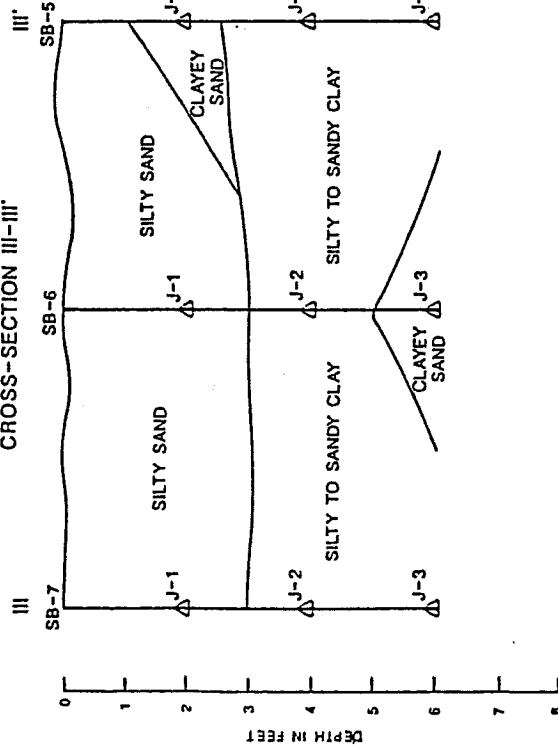
FIGURE 2-1

SOIL SAMPLING LOCATIONS
ALUM SLUDGE BASIN

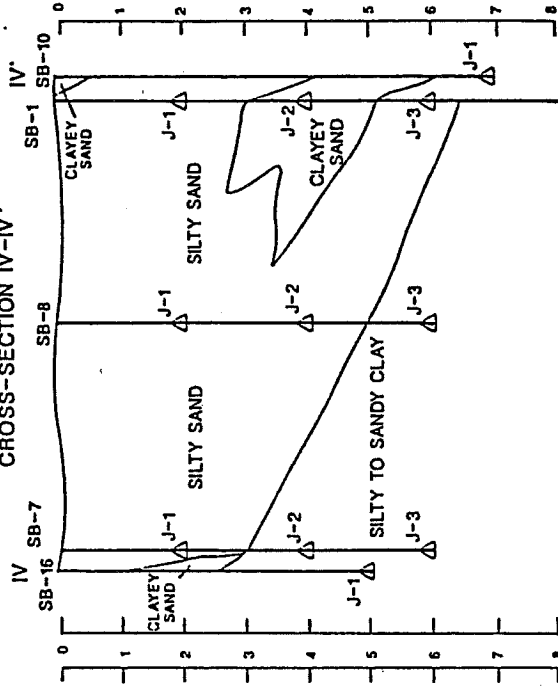
CSX TRANSPORTATION
WAYCROSS, GEORGIA

DRAWN BY	C.C.	DATE	11/12/87	PROJECT NO.	4-211
CHK'D BY		REVISED		DWG. NO.	

CROSS-SECTION III-III'

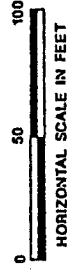


CROSS-SECTION IV-IV'



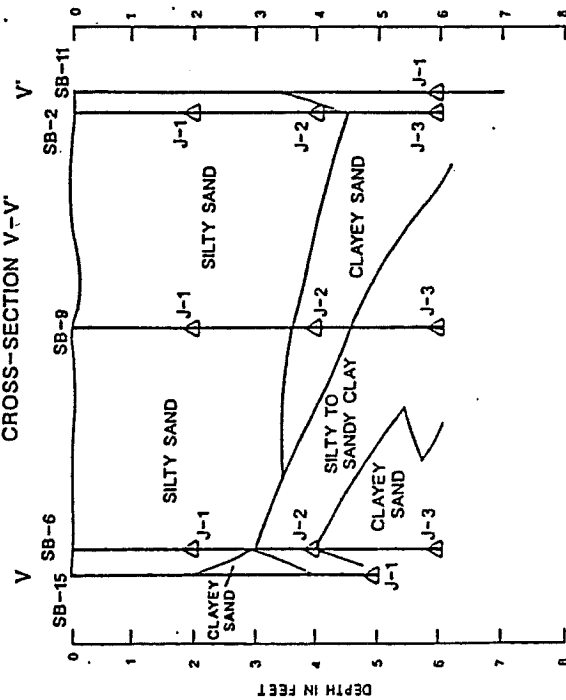
LEGEND

△ SAMPLE LOCATION

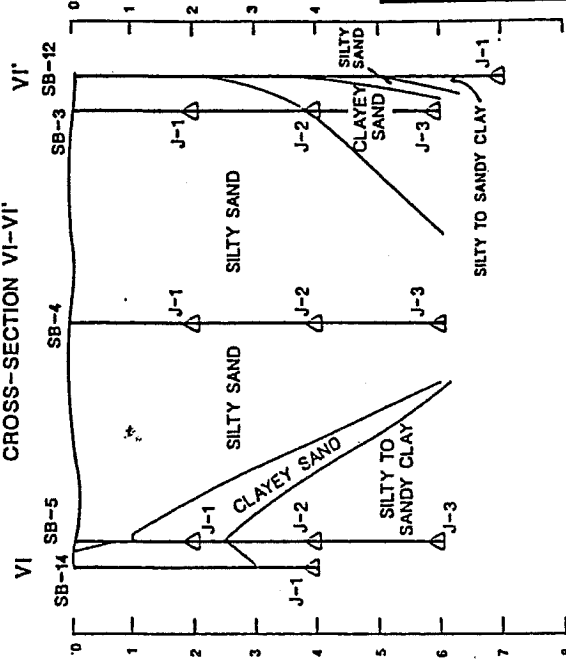


NOTE: Elevation of dike surface with respect to datum have been estimated for these drawings pending a future elevation survey if required.

CROSS-SECTION V-V'



CROSS-SECTION VI-VI'



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FIGURE 2-2
SOIL SAMPLING LOCATIONS
ALUM SLUDGE BASIN

CSX TRANSPORTATION
WAYCROSS, GEORGIA

DRAWN BY	CC	DATE	1/13/87	PROJECT NO.	4
CHECKED BY		REVISION		DWG. NO.	

are shown on Figure 2-1 and Figure 2-2. They provide stratigraphic information and sample locations for this site.

In order to determine the horizontal and vertical extent of contamination in the soils beneath the Alum Sludge Basin, samples were obtained from each boring as tabulated below.

<u>Boring No.</u>	<u>Sample Depth</u>
SB-1 through SB-9	2 and 4 feet, and 2 feet below pit bottom
SB-10 through SB-17	Bottom sample (2 feet below projected pit bottom)

Soil samples obtained from borings drilled at the Alum Sludge Basin were analyzed for VOA and EPT as outlined in the following table.

<u>Boring No.</u>	<u>Sample Depth</u> (ft)	<u>Analyses</u>	
		VOA	EPT
SB-1 through SB-9	2	x	x
	4	x	x
	2 feet below pit bottom	x	*
SB-10 through SB-17	Bottom Sample (2 feet below projected pit bottom)	x	*

NOTE: * - Retained for future use.

Analytical results on each soil sample is presented on Table 2-1.

TABLE 2-1

Summary of Analytical Results, Alum Sludge Basin
Soil Sampling, November 1986
CSX Transportation
Waycross, Georgia

Parameter (ppm)	SB-1		SB-2		SB-3		SB-4		SB-5	
	J1	J2	J1	J2	J1	J2	J1	J2	J1	J2
Boring No.										
Sample No.										
Chloromethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Vinyl Chloride	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Methylene Chloride	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Carbon Disulfide	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
1,1-Dichloroethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Chloroform	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
2-Butanone	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Carbon Tetrachloride	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Bromodichloromethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Trans-1,3-Dichloropropene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Dibromochloromethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Benzene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
2-Chloroethyl Vinyl Ether	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
2-Hexanone	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Tetrachloroethene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Toluene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Ethyl Benzene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Total Xylenes	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Bromomethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Chloroethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Acetone	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
1,1-Dichloroethene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
1,1,1-Trichloroethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Vinyl Acetate	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
1,2-Dichloropropene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Trichloroethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
1,1,2-Trichloroethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
CIS-1,3-Dichloropropene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Bromoform	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
4-Methyl-2-Pentanone	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
1,1,2,2-Tetrachloroethane	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Chlorobenzene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Styrene	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL	BUL
Detection Limits: (ppm)										
Acetone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2-Hexanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4-Methyl-2-Pentanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All other VOC's	0.4	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.6

TABLE 2-1 (Cont'd)

Summary of Analytical Results, Alum Sludge Basin
Soil Sampling, November 1986
CSX Transportation
Waycross, Georgia

Parameter (ppm)	SB-6		SB-7		SB-8		SB-9		SB-10	
	J1	J2	J3	J1	J2	J3	J1	J2	J3	J1
Chloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Carbon Tetrachloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trans-1,3-Dichloropropene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibromochloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Chloroethyl Vinyl Ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Hexanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromomethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acetone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Acetate	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloropropane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CIS-1,3-Dichloropropene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromoform	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4-Methyl-2-Pentanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Detection limits: (ppm)										
Acetone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2-Hexanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4-Methyl-2-Pentanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All other VOC's	0.5	0.5	0.5	11.0	2.8	0.5	0.5	0.4	0.05	0.5

TABLE 2-1 (Cont'd)

Summary of Analytical Results, Alum Sludge Basin
Soil Sampling, November 1986
CSX Transportation
Waycross, Georgia

Boring No. Sample No.	SB-11 J1	SB-12 J1	SB-13 J1	SB-14 J1	SB-15 J1	SB-16 J1	SB-17 J1
Parameter (ppm)							
Chloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	BDL	BDL	BDL	BDL	BDL	0.60	BDL
Carbon Disulfide	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Carbon Tetrachloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trans-1,3-Dichloropropene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibromochloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Chloroethyl Vinyl Ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Hexanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromomethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acetone	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Acetate	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloropropane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
CIS-1,3-Dichloropropene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromoform	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4-Methyl-2-Pentanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Detection limits: (ppm)							
Acetone	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2-Hexanone	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4-Methyl-2-Pentanone	0.6	0.5	0.5	0.5	0.5	0.5	0.5
All other VOC's							

**Summary of Analytical Results, Alum Sludge Basin
Soil Sampling, November 1986
CSX Transportation
Waycross, Georgia**

Detection Limits (ppm)

Adjacent to the ASB, is the Alum Sludge Pond, that formerly received water from the Alum Sludge Basin. Analysis has confirmed that no hazardous materials are present in the pond bottom sediments. This investigation was reported to the GAEPD in the Waste Identification Survey dated August, 1986.

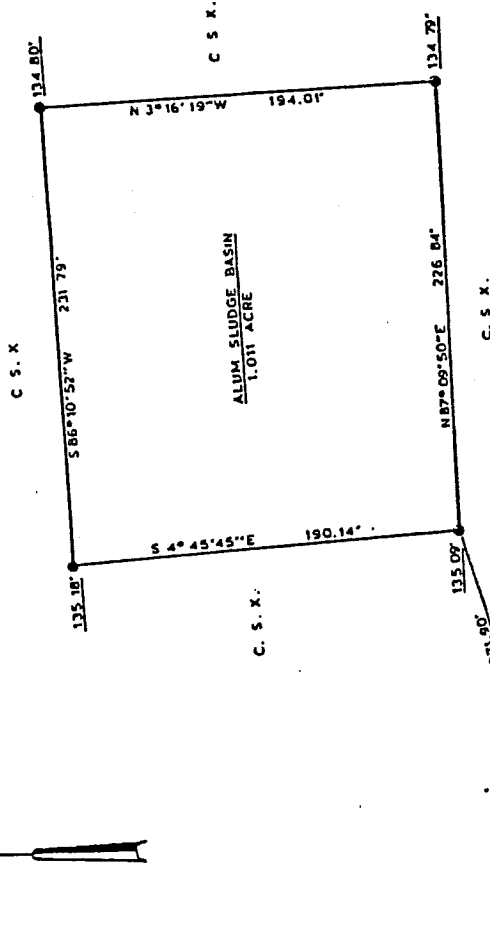
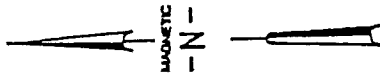
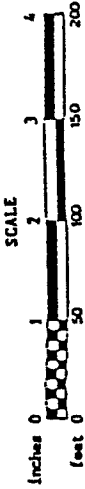
2.2 Legal Description of Site

The legal description of the boundaries and location of the ASB area is presented on the following survey drawing prepared by H.W. Williams and Associates, Inc.

Within 60 days after certification of closure of the ASB, CSX Transportation will notify the local land use authorities (City of Waycross, and Ware County) that closure of this Hazardous Waste Management Unit has been completed. A copy of the legal description (Survey Plat) of the site (Figure 2-3) will accompany this notification. This notice will also state that CSX Transportation must restrict disturbance of the site in accordance with applicable subpart G regulations.

LEGAL DESCRIPTION: "ALUM SLUDGE BASIN"

All that tract or parcel of land lying and being in Ware County, Georgia, and being further described as follows: Commencing at CSX Railroad Mile Post number (44-589). Thence, proceed N 71°37'41" E, 5071.90' to an iron rod marking the point and place of beginning for this subject tract. Thence, said beginning point proceed N 87°09'50" E, 226.84' to an iron rod. Thence, proceed N 3°16'19" W, 194.01' to an iron rod. Thence, proceed S 88°10'32" W, 231.79' to an iron rod. Thence, proceed S 4°45'45" E, 190.14' back to the point and place of beginning. Said tract contains 1.011 acres and is further illustrated by a plat by H. W. Williams & Assoc., Inc., dated 7/8/87.



RAILROAD MILE POST
(44-589)

- LEGEND**
- 5/8" Iron Ref. Rod Set
 - Iron Corner Found
 - Wooden Corner Found
 - Concrete Corner Set
 - Concrete Corner Found
 - No Corner Marked
 - 135.09' ... GROUND ELEVATIONS AT CORNER

THIS PLAT HAS BEEN RECORDED IN PLAT BOOK
PAGE _____ IN THE OFFICE OF THE CLERK OF THE
SUPERIOR COURT OF _____ COUNTY, GA.
THIS _____ DAY OF _____, 19____, TIME _____
CLERK OF THE SUPERIOR COURT _____

EQUIPMENT USED FOR MEASUREMENTS:
ANGULAR: TOPCON GTS-2
LINEAR: ELECTRONIC DISTANCE
METER & STEEL TAPE

PLAT CLOSURE: 1 in 222,000



H W WILLIAMS & ASSOCIATES, INC.
CONSULTING SURVEYORS - LAND SURVEYORS
WAYCROSS, GEORGIA
PHONE 383-8040

WE HEREBY CERTIFY THAT THIS PLAT IS A TRUE AND CORRECT
REPRESENTATION OF THE PROPERTY PLATTED
AND HAS BEEN PREPARED IN ACCORDANCE WITH
THE MINIMUM STANDARDS AND REQUIREMENTS OF
THE LAW

H. Williams

ERT
A RESOURCE ENGINEERING COMPANY

FIGURE 2-3

LOCATION SURVEY - ALUM SLUDGE BASIN
HAZARDOUS WASTE MANAGEMENT AREA

DRAWN BY:		DATE:	REVISION:	PROJECT NO.:	DWGNO.:
CHECKED BY:		DATE:	REVISION:	PROJECT NO.:	DWGNO.:
C/SX TRANSPORTATION					
C/SX NO.	DATE	BY	REVISION	DATE	BY
134	7/8/87	WARE	1	7/8/87	WARE
STATE OF GEORGIA					
COUNTY OF WAYCROSS					
1 IN 10000					
H W WILLIAMS & ASSOCIATES, INC.					
BY H W WILLIAMS					

3.0 CLOSURE OBJECTIVES

This closure plan for the Alum Sludge Basin (ASB) provides for closing the site in accordance with the interim status requirements of 40 CFR 265.111 through 265.115 and 265.310 as regulated by the GAEPD. The closure objectives of the plan are described as follows:

- Eliminate all potential threat to human health and the environment by eliminating the potential for escape of hazardous waste, hazardous waste constituents, leachate, rainfall runoff, or waste decomposition products to the groundwater, surface water, or to the atmosphere.
- Minimize the need for future maintenance activity during and after the post-closure period.
- Provide post-closure care under a hazardous waste facility permit and conduct corrective action for groundwater contamination. Delisting will be sought for those waste remaining in place once the corrective action program is successful and compliance with groundwater protection standard has been achieved.

4.0 MAXIMUM INVENTORY OF WASTE

The type and quantity of hazardous constituents that may have been placed in the ASB is unknown. Analysis of typical Wastewater Treatment Plant (WWTP) sludge was reported in the Waste Identification Survey Report dated August, 1986 and is also provided on the following page.

The ASB is estimated to have received approximately 7,500 cubic yards of the WWTP sludge, during the period of it's use and based on this estimate the type of waste's received at the site fall into EPA Hazardous Waste Code F-005.

Slug for Wastewater Sludge and Grit Analyses
(Total 6 Pages)

WASTEWATER SLUDGE AND GRIT
ANALYSES



TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761

Laboratory No. 69465

November 21, 1985

Sample of oil Sledge

Page 1 of 2

Date Received October 18, 1985

DATE ANALYZED 11/20/85

for Seaboard Systems Railroad, Inc., 3019 Warrington Street, Jacksonville, FL

Marks: Sample No. 14438 14538
SLUDGE & GRIT

PLANT #3

CERTIFICATE OF ANALYSIS OR TESTS

EPA METHOD 8240

PURGEABLES; all units ppb:

CONCENTRATION

DETECTION
LIMIT

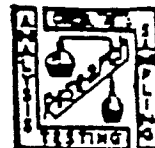
Benzene	BDL	50
Bromodichloromethane	BDL	100
Bromoform	BDL	100
Bromomethane	BDL	100
Carbon Tetrachloride	BDL	100
Chlorobenzene	112	100
Chloroethane	BDL	100
2-Chloroethylvinylether	BDL	100
Chloroform	BDL	100
Chloromethane	BDL	100
Dibromochloromethane	BDL	100
1,2-Dichlorobenzene	BDL	100
1,3-Dichlorobenzene	BDL	100
1,4-Dichlorobenzene	BDL	100
1,1-Dichloroethane	553	100
1,2-Dichloroethane	361	100
1,1-Dichloroethene	BDL	100
trans-1,2-Dichloroethene	BDL	100
1,2-Dichloropropane	BDL	100
cis-1,3-Dichloropropene	BDL	100
trans-1,3-Dichloropropene	BDL	100
Ethyl benzene	2,370	100
Methylene chloride	52,000	100
1,1,2,2-Tetrachloroethane	BDL	100
Tetrachloroethene	1,010	100
Toluene	6,780	100
1,1,1-Trichloroethane	455	100

Respectfully submitted,

BDL=Below Detection Limit

TECHNICAL SERVICES, INC.

Harvey C. Gray, Jr.



TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761

Jan 20, 1986

Laboratory No. 70607

Sample of Sludge

Date Received 12-17-85

For Seaboard Systems Railroad, Inc., 3019 Warrington Street,
Attn. Mr. H. Mowry Jacksonville, Fla. 32205

Marks: SLUDGE & GRIT
PLANT #4

CERTIFICATE OF ANALYSIS OR TESTS

Grit Chamber

c

G

	(1) SBD-A1 14673	(2) SBD-C1 14674	(3) SBD-G1 14675	(4) SBD-Cov1 14676	(5) SBD 146
<u>E.P. Toxicity, mg/l</u>					
Arsenic	<0.002	<0.002	<0.002	0.002	0.0
Barium	0.218	0.256	0.211	0.622	0.1
Cadmium	<0.005	<0.005	<0.005	0.036	0.0
Chromium	<0.01	<0.01	<0.01	<0.01	0.1
Lead	<0.03	<0.03	<0.03	<0.03	0.0
Mercury	<.0002	<.0002	<.0002	<.0002	.1
Selenium	<0.003	<0.003	<0.003	<0.003	.1
Silver	<0.005	<0.005	<0.005	<0.005	<0.1
pH	7.4	6.9	7.7	9.7	11.

Respectfully submitted,

TECHNICAL SERVICES, INC.



TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5781



Laboratory No. 70607-1

Jan 20, 1986

Sample of Sludge

Date Received 12-17-85

For Seaboard Systems Railroad, Inc. 3019 Warrington Street,
Attn: Mr. H. Mowry Jacksonville, Fla. 32205

Marks: 14673

CERTIFICATE OF ANALYSIS OR TESTS

<u>EPA Method 601</u>	<u>CONCENTRATION, ppb</u>	<u>DETECTION LIMIT, ppb</u>
Bromodichloromethane	BDL*	10
Bromoform	BDL	10
Bromomethane	BDL	10
Carbon tetrachloride	BDL	10
Chlorobenzene	BDL	10
Chloroethane	863	10
2-Chloroethylvinyl ether	BDL	10
Chloroform	BDL	10
Chloromethane	BDL	10
Dibromochloromethane	BDL	10
1,2-Dichlorobenzene	BDL	10
1,3-Dichlorobenzene	BDL	10
1,4-Dichlorobenzene	BDL	10
Dichlorodifluoromethane	BDL	10
1,1-Dichloroethane	205	10
1,2-Dichloroethane	BDL	10
1,1-Dichloroethene	BDL	10
trans-1,2-Dichloroethene	BDL	10
1,2-Dichloropropane	BDL	10
cis-1,3-Dichloropropene	BDL	10
trans-1,3-Dichloropropene	BDL	10
Methylene chloride	BDL	10
1,1,2,2-Tetrachloroethane	BDL	10
Tetrachloroethene	15.6	10
1,1,1-Trichloroethane	36.3	10
1,1,2-Trichloroethane	BDL	10
Trichloroethene	17.7	10
Trichlorofluoromethane	BDL	10
Vinyl chloride	BDL	10

*BDL = Below Detection Limit

Respectfully submitted,

TECHNICAL SERVICES, INC.

Harvey C. Gray, Jr.



TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS
OFFICE 2471 SWAN ST. — P.O. BOX 52329
LABORATORIES 103-107 STOCKTON STREET
JACKSONVILLE, FLORIDA 32201
(904) 353-5781



Jan 20, 1986

Laboratory No. 70607-2

Sample of Sludge

Date Received 12-17-85

For Seaboard Systems Railroad, Inc. 3019 Warrington Street
Attn: Mr. H. Mowry Jacksonville, Fla. 32205

Marks: 14674 SBD

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 601

CONCENTRATION, ppb

DETECTION LIMIT, ppb

Bromodichloromethane	BDL*	10
Bromoform	BDL	10
Bromomethane	BDL	10
Carbon tetrachloride	BDL	10
Chlorobenzene	BDL	10
Chloroethane	BDL	10
2-Chloroethylvinyl ether	BDL	10
Chloroform	20.1	10
Chloromethane	BDL	10
Dibromochloromethane	BDL	10
1,2-Dichlorobenzene	BDL	10
1,3-Dichlorobenzene	BDL	10
1,4-Dichlorobenzene	BDL	10
Dichlorodifluoromethane	BDL	10
1,1-Dichloroethane	16.7	10
1,2-Dichloroethane	BDL	10
1,1,2-Dichloroethane	BDL	10
1,1,1,2-Tetrachloroethane	BDL	10
1,1,2,2-Tetrachloroethane	BDL	10
1,1,3,3-Tetrachloropropane	BDL	10
trans-1,3-Dichloropropene	BDL	10
Methylene chloride	BDL	10
1,1,2,2-Tetrachloroethane	BDL	10
Tetrachloroethene	BDL	10
1,1,1-Trichloroethane	10.4	10
1,1,2-Trichloroethane	BDL	10
Trichloroethene	BDL	10
Trichlorofluoromethane	BDL	10
Vinyl chloride	BDL	10

*BDL = Below Detection Limit

Respectfully submitted,

TECHNICAL SERVICES, INC.

Harvey C. Gray



TECHNICAL SERVICES, INC.

ENVIRONMENTAL CONSULTANTS — INDUSTRIAL CHEMISTS

OFFICE 2471 SWAN ST. — P.O. BOX 52329

LABORATORIES 103-107 STOCKTON STREET

JACKSONVILLE, FLORIDA 32201

(904) 353-5761



Laboratory No. 70607-3

Jan 20, 1986

Sample of Sludge

Date Received 12-17-85

For Seaboard Systems Railroad, Inc. 3019 Warrington Street
Attn: Mr. H. Mowry Jacksonville, Fla. 32205

Marks: 14675 SBD-G1

CERTIFICATE OF ANALYSIS OR TESTS

EPA Method 601

CONCENTRATION, ppb

DETECTION LIMIT, ppb

- Bromodichloromethane	BDL*	10
Bromoform	BDL	10
Bromomethane	BDL	10
Carbon tetrachloride	BDL	10
Chlorobenzene	BDL	10
Chloroethane	BDL	10
2-Chloroethylvinyl ether	BDL	10
Chloroform	16.3	10
Chloromethane	BDL	10
Dibromochloromethane	BDL	10
1,2-Dichlorobenzene	BDL	10
1,3-Dichlorobenzene	BDL	10
1,4-Dichlorobenzene	BDL	10
Dichlorodifluoromethane	BDL	10
1,1-Dichloroethane	BDL	10
1,2-Dichloroethane	BDL	10
1,1-Dichloroethene	BDL	10
trans-1,2-Dichloroethene	BDL	10
1,2-Dichloropropene	BDL	10
1,3-Dichloropropene	BDL	10
trans-1,3-Dichloropropene	BDL	10
Methylene chloride	BDL	10
1,1,2,2-Tetrachloroethane	BDL	10
Tetrachloroethene	BDL	10
1,1,1-Trichloroethane	16.2	10
1,1,2-Trichloroethane	BDL	10
Trichloroethene	BDL	10
Trichlorofluoromethane	BDL	10
Vinyl chloride	BDL	10

*BDL = Below Detection Limit

Respectfully submitted,

TECHNICAL SERVICES, INC.

Harvey C. Gray, Jr.

5.0 CURRENT STATUS OF CLOSURE

No closure activity has been performed at the ASB, and none will occur prior to approval of this closure plan.

Groundwater monitoring was performed in accordance with plans approved by the GAEPD. These plans are described in the report titled Final Groundwater Detection Monitoring Plan for Hazardous Waste Land Disposal Units - Waycross, Georgia Facility - October 1986. Two (2) quarterly sampling events of the one (1) upgradient and three (3) downgradient monitor wells resulted in CSX Transportation determining the site had affected the groundwater quality, and subsequently a groundwater investigation was completed to define the extent of the contamination plume. This has been completed and the Corrective Action/Groundwater Monitoring Plan is described in the revised Part "B" Post-Closure Permit Application Report.

6.0 CLOSURE PROCESS

6.1 General Description

Based on the results of the soil contamination investigations discussed in Section 2.1 of this Closure Plan, no further soil, or waste residue removal actions are proposed for the ASB area. The latest soils investigation reports low concentration of Methylene Chloride in only two (2) of the thirty-five (35) samples that were analyzed. It is presumed that other hazardous constituents that may have been placed in the ASB have either volatilized, biodegraded, or flushed into the groundwater during the life of the site.

Based on this soil analysis results, no contaminated soils or waste residue removal is proposed for the ASB.

Because the site has affected groundwater quality, the regulations require the installation of a cap to minimize the sites future impact on groundwater quality. The proposed cap design is described in the following section 6.1.

6.2 ASB Site Cap-Conceptual Design

The ASB is not a landfill that is intended to provide long-term storage and isolation for a quantity of concentrated hazardous waste. The site is a basin where wastewater treatment plant sludge containing low concentrations of hazardous constituents were placed. Generally the hazardous constituents were very volatile, and also mobile in soils. The detailed soil investigation discussed in Section 6.1 above reports minimum

concentrations of hazardous materials remaining in the soil at the site. It is logical to presume that hazardous constituents originally in the WWTP sludge have either volatilized, biodegraded, or flushed through the soil to the groundwater.

CSX Transportation believes that from a technical viewpoint, the site should be closed as it is, without a cap. This would allow rainfall to complete the flushing of the minimal quantities of residual contaminants remaining in the soil. This would then be flushed to the groundwater, and removed during the corrective action pumping and treating program that is described in the Part "B" Application Report.

Because of the above described background, and the minimal threat of future groundwater contamination that is possible from the residual contaminants remaining in the soil, the cap design proposed from the ASB is based on reduced specifications, as compared to the RCRA cap requirements for a waste management unit that is design to store and isolate large quantities of concentrated hazardous materials.

The conceptual design of the cap is shown in Figure 6-1, Sheets 1, 2 and 3, and is described in the following paragraphs.

1. The survey boundaries of the site will be identified and staked to outline the area to be capped. *time in days*
2. The adjacent Alum Sludge Pond dike will be breached on the south dike, allowing the accumulated rainwater currently existing in the pond to drain to the surface water drainage ditch located approximately 20 feet south of the dike. The water is estimated to be 1-2 feet deep in the pond. The dike breach will be controlled to assure the water drainage occurs slowly and in a controlled manner.

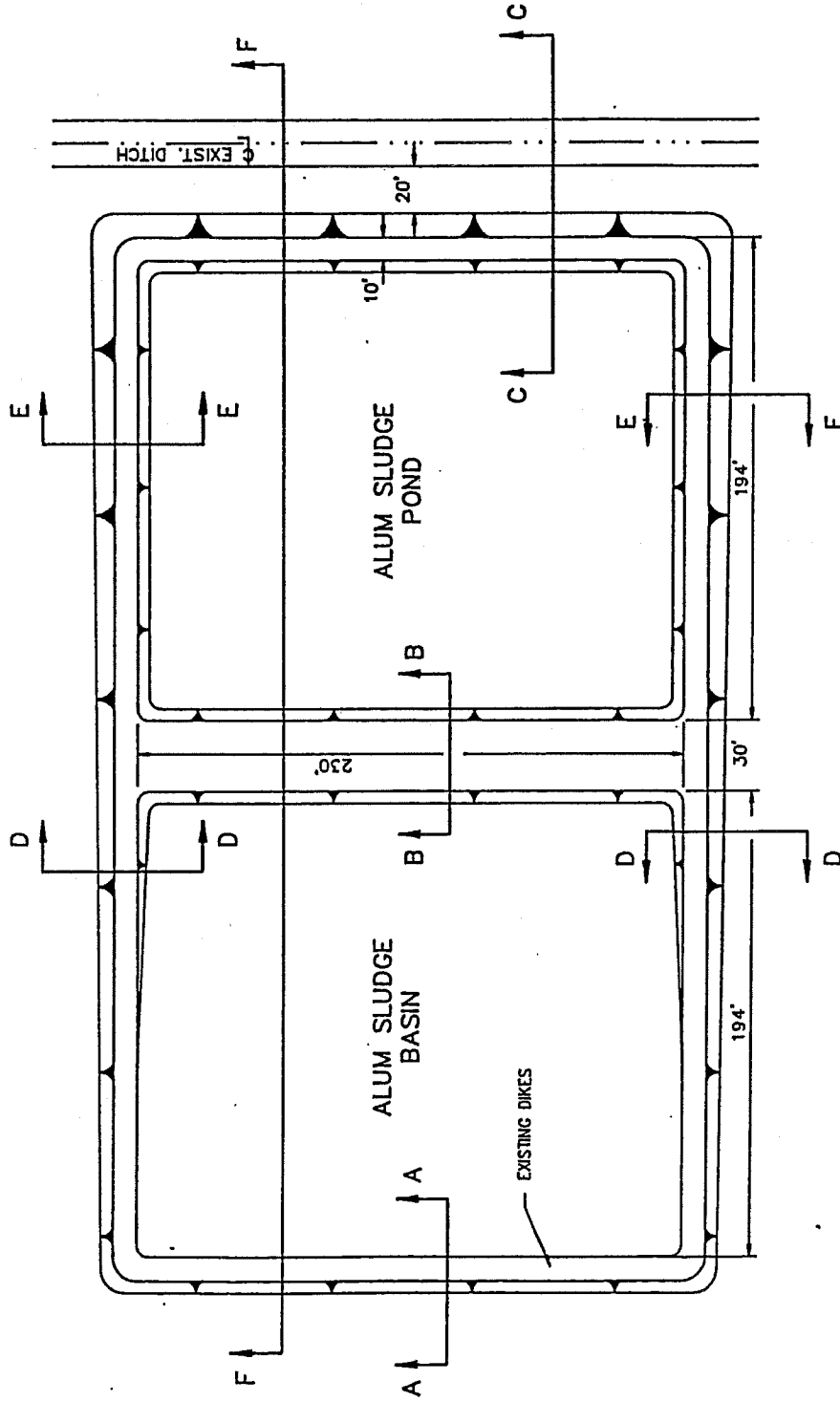


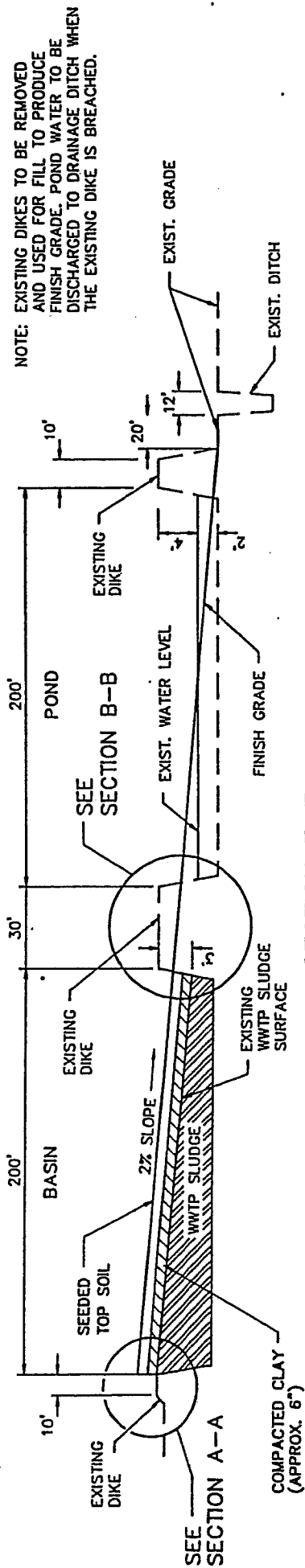
FIGURE 6-1 - SHEET 1 OF 4



A RESOURCE ENGINEERING COMPANY

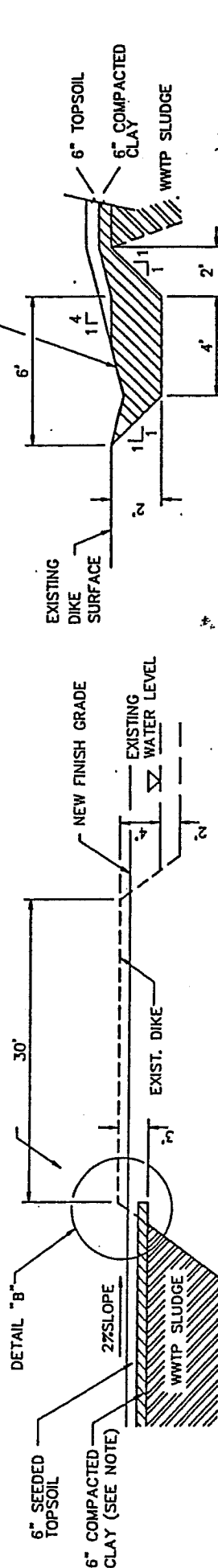
EXISTING CONDITIONS
ALUM SLUDGE BASIN CLOSURE
CSX TRANSPORTATION WAYCROSS, GEORGIA

DATE	PROJECT NO.
7-16-87	440-06



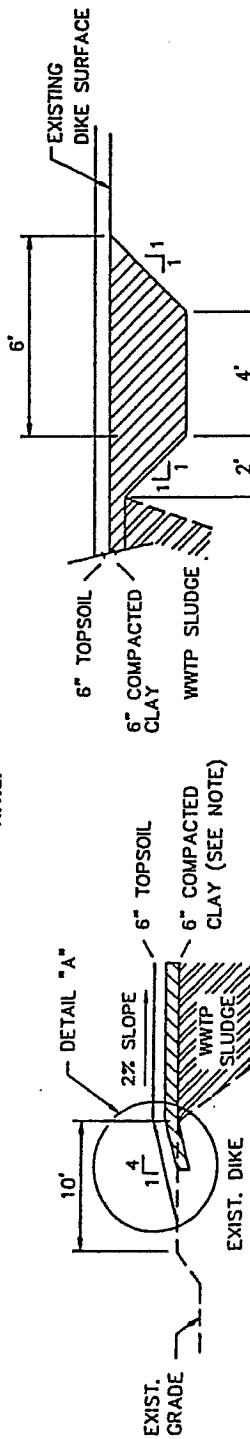
SECTION F-F

NOT TO SCALE



SECTION B-B

N.T.S.



SECTION A--A

N.T.S.



NOT TO SCALE

DETAIL "A"

NOT TO SCALE

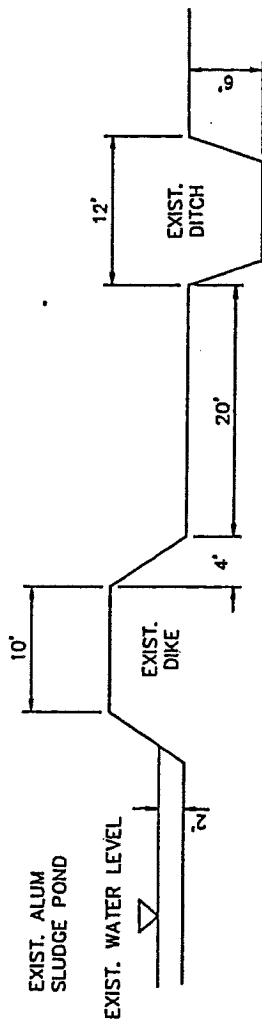
FIGURE 6-1 - SHEET 2 OF 4

LEP

A RESOURCE ENGINEERING COMPANY

SECTIONS & DETAILS

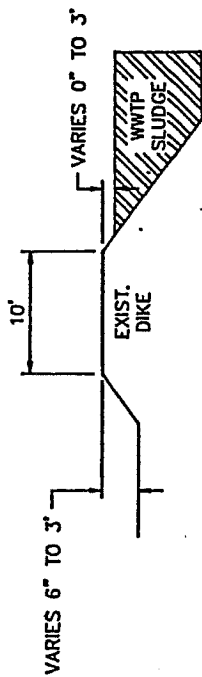
AND BY:	DATE:	PROJECT NO.
N.L. JONES	7-17-87	44006



EXISTING ALUM SLUDGE POND DIKE

SECTION C-C

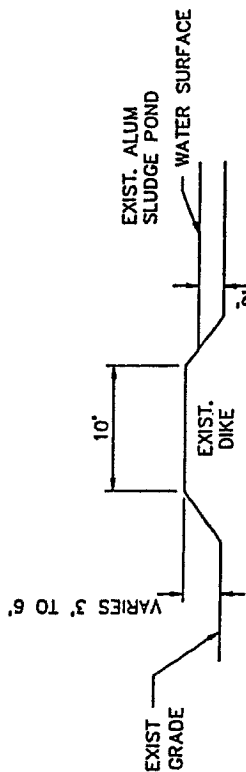
SCALE: 1" = 10'



EXISTING ALUM SLUDGE BASIN DIKE

SECTION D-D

SCALE: 1" = 10'



EXISTING ALUM SLUDGE POND DIKE

SECTION E-E

SCALE: 1" = 10'

FIGURE 6-1 - SHEET 3 OF 4

ERI

A RESOURCE ENGINEERING COMPANY

SECTIONS

ALUM SLUDGE BASIN
CSX TRANSPORTATION WAYCROSS, GEORGIA

DATE	PROJECT NO.
7-17-87	440-06

RECEIVED JUL 11 1987

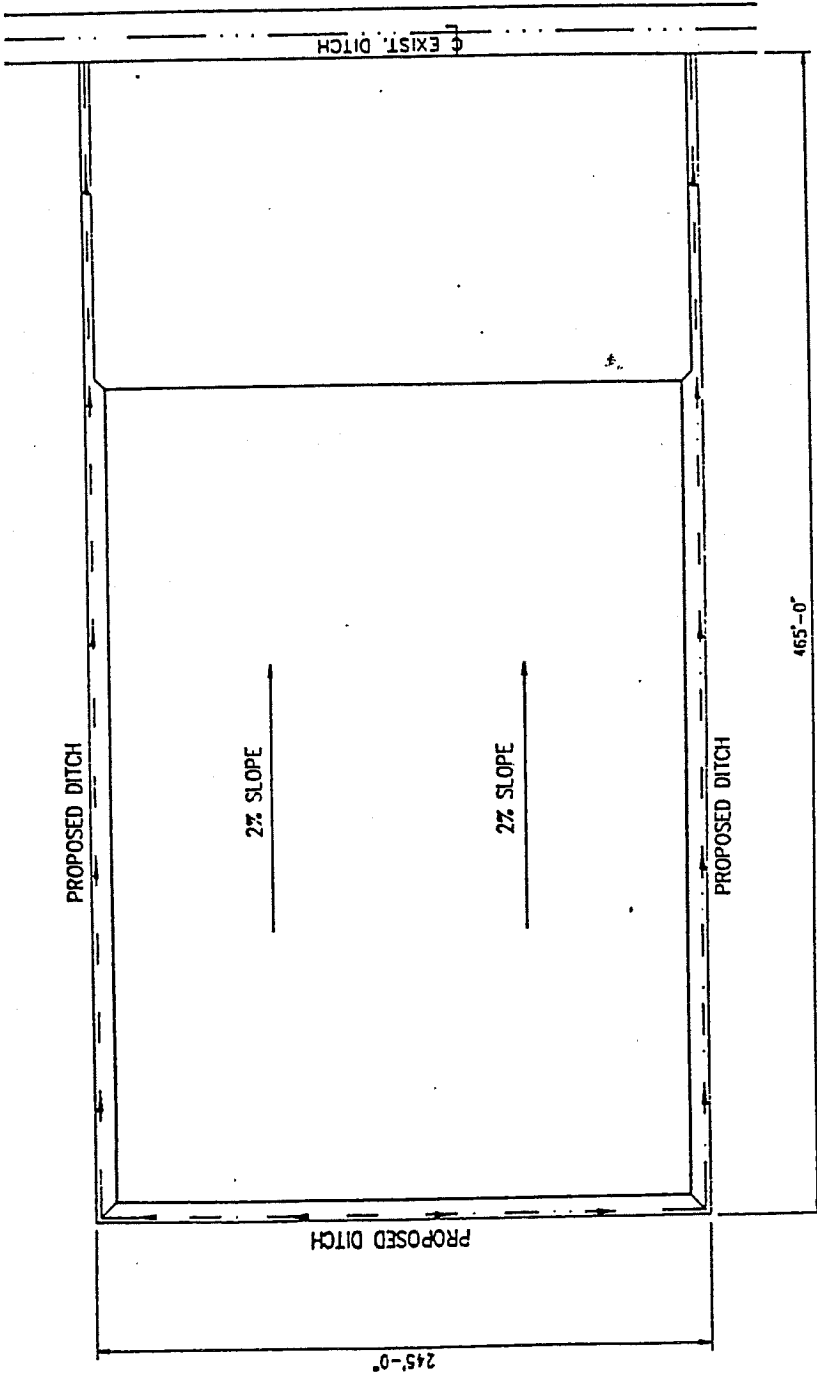


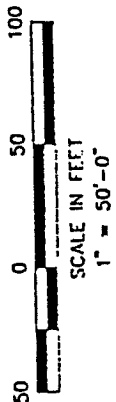
FIGURE 6-1 SHEET 4 OF 4



A RESOURCE ENGINEERING COMPANY

FINAL DRAINAGE PLAN
ALUM SLUDGE BASIN CLOSURE
CSX TRANSPORTATION WAYCROSS, GEORGIA

DATE	7-16-87	PROJECT NO.	440-016
BY	RL	DATE	JUN 5



14055068

3. The existing dikes of the Alum Sludge Basin will be bulldozed down to the level of the WWTP sludge in the basin. All the removed dike material within five (5) feet of the basin perimeter will be spread evenly on top of the sludge, within the confines of the ASB boundaries. All other dike material removed will be retained and use for fill materials in the final shaping of the ground surface after installation of the cap.
4. The existing dikes for the adjacent Alum Sludge Pond will be bulldozed down, and the material retained and used for fill material in the final shaping of the ground surface after installation of the ASB cap.
5. A one (1) foot deep ditch will be excavated around the perimeter of the ASB boundary. This ditch will have a cross section as shown Detail "A" on Figure 6-1 Sheet 2. The excavated soil will be placed inside the ASB boundaries, spread evenly across the sludge surface and the basin surface compacted into place.
6. A clay cap will then be installed over the ASB site, and into the excavated ditch surrounding the site. The cap will have a minimum thickness of six (6) inches and will have a cross section and arrangement as shown of Figure 6-1, Sheets 1, 2 and 3. The clay will be compacted with a sheepsfoot or pneumatic roller to achieve a field density of 95% of standard proctor within $\pm 2\%$ of optimal moisture content. A minimum of one (1) test per 1000 square feet of cap surface will be performed to verify field density of the installed cap. (Nuclear Density Gauge Method ASTM D 2922)

Representative samples will be collected from all materials sources used for cap construction, prior to placement of the cap. The minimum specifications of materials used for the cap are as follows:

Atterberg Limits

- Liquid Limits: 30% (ASTM D423)
- Plastic Limit: 30% Minimum (ASTM D424)
- Plasticity Index: 15% Minimum

Minimum Permeability: 10⁻⁷ cm/sec.
(EM 1110-2 - 1906)

Sieve Analysis: At least 60% passing #220
Sieve (ASTM D422)

The cap thickness will be tested with one (1) test per 10,000 square feet of cap area. Thickness verification will be performed by surveying methods compared to a fixed benchmark near the site.

7. The topsoil cap will then be installed over the clay cap. The topsoil will have a minimum thickness of six (6) inches and will have a cross-section and arrangement as shown in Figure 6-1 Sheets 1, 2 and 3. The topsoil will be smoothed and shaped to a finished contour as shown in Figure 6-1 Sheet 2. The Alum Sludge Pond Area will then be contoured to slope from the top of the ASB cap to the existing natural elevation on the south side of the pond. The finish grade arrangement for the ASB cap and the Alum Sludge Pond is shown in Figure 6-1 Sheet 2 - Section "F-F".

8. A minimum depth surface water runoff control ditch will be installed around the north, east, and west side of the finished cap as shown in Detail "A" - Figure 6-1 - Sheet 2, to carry rainwater to the nearest existing drainage ditch, approximately 20 feet south of the Alum Sludge Pond.
9. The cap and the general area will be seeded and fertilized to achieve grass coverage suitable to provide erosion prevention protection.
10. The perimeter of the ASB cap will be provided with a barricade to prevent access to the site by vehicles, etc.. This will be suitable to protect the cap from mechanical damage due to operational activities at the Waycross Facility.
11. The ASB cap will be inspected and maintained as described in the Part "B" Post Closure Permit Application.

7.0 CLOSURE SCHEDULE

Based on the proposed closure process, installation of the cap is the only closure activity to be performed. This installation will begin in 1987 and within 60 days after approval of this closure plan by the GAEPD. The activities associated with cap installation at the site, as described on page 6-2 through 6-8, along with estimated completion period for each are tabulated as below.

Closure Activities	Week	0	4	8	12	16	20	24
1		---						
2		-----						
3			-----					
4				-----				
5					---			
6					-----			
7						-----		
8							---	
9							-----	
10								---
11 -	Description and schedule for this activity is provided in the revised Part B - Post-Closure Permit Application Report submitted to GAEPD in August, 1987.							

Note: Week 0 starts 60 days after approval of closure plan by the GAEPD.

8.0 CLOSURE COST ESTIMATE

The estimated total cost of closure for the ASB is \$61,500. This includes the cost for the closure process proposed in Section 6.0 of this closure plan.

The costs for all post-closure inspections; and maintenance activities for the site are described in the revised Part "B" permit application report dated August 4, 1987.

The detailed breakdown of the ASB closure cost estimate is presented in Table 8-1.

TABLE 8-1
ALUM SLUDGE BASIN
CLOSURE COST ESTIMATE

1.	Breech pond dike, and drain rainwater, bulldoze dikes to specified elevations and dig clay cap ditch around ASB		
	(3 days bulldozer plus 1 day backhoe)		\$ 3,000
2.	Identify clay material source, haul, spread and compact ASB cap. Perform all specified test for dimension and material specifications		
	● 929 cubic yards clay - Purchase and Haul	\$16,700	
	- Spread	5,600	
	● Perform specified tests	<u>1,200</u>	
			\$23,500
3.	Install topsoil cap layer, perform all dimensional inspection, seed, fertilize and install barricade around ASB perimeter		
	● 1000 cubic yards topsoil - Purchase and Haul	\$24,000	
	- Spread	8,000	
	● Seed and Fertilize 1 acre	1,800	
	● Install Barricade	<u>1,200</u>	
			<u>\$35,000</u>
			\$61,500

9.0 AMENDMENT OF CLOSURE PLAN

The closure plan for the ASB Area at the Waycross Facility is based on the current knowledge of the site. If results from future investigations indicate that revisions are required, an amended closure plan will be submitted to the GAEPD within 60 days of the decision to change the plan.

Additionally if an unexpected event occurs during closure which requires a modification of the approved closure plan or its schedule, an amended plan will be submitted to GAEPD no later than 30 days after the unexpected event.

Additionally, if modifications must be made to the approved closure plan which cause a change in the estimated cost of closure, the amended cost estimate will be submitted to the GAEPD within 30 days after approval of the amended closure plan.

10.0 CERTIFICATION OF CLOSURE

Within sixty (60) days after closure activities are completed (ie: CAP Installation and completion of all items contained in page 6-2 through 6-8) at the ASB, certification will be made by CSX Transportation and by an independent registered professional engineer that closure was performed according to the approved closure plan. Documentation supporting the engineering certification will be furnished upon request until CSX Transportation has been released from financial assurance requirements.

11.0 FINANCIAL ASSURANCE

The financial assurance documentation will be submitted under separate cover, but will be based on providing for the cost estimate described in Section 8.0 of this report.