

## **APPENDIX D**

# **RESULTS OF CHEMICAL TESTING OF RESERVOIR AND GROUNDWATER**

HARTWELL LAKE PROJECT  
SAVANNAH RIVER, GEORGIA AND SOUTH CAROLINA  
DESIGN MEMORANDUM 32  
REHABILITATION OF CLEMSON LOWER DIVERSION DAM

APPENDIX VIII  
LABORATORY WATER CHEMICAL ANALYSIS

U.S. ARMY ENGINEER DISTRICT, SAVANNAH  
CORPS OF ENGINEERS  
SAVANNAH, GEORGIA

<b>GENERAL TEST REPORT</b> U. S. ARMY ENGINEER DIVISION LABORATORY, SOUTH ATLANTIC CORPS OF ENGINEERS MARIETTA, GEORGIA		<b>DISTRICT/OFFICE</b> Savannah		
		<b>CONTRACT NO.</b> ---		
<b>PROJECT:</b> Lower Dam Hartwell Lake Clemson, SC	<b>DATE REPORTED</b> 3 Apr 1981		<b>WORK ORDER NO.</b> 2570	
	<b>TYPE SAMPLE</b> Water 4 (1) One gallon plastic containers		<b>REQN. NO.</b> EN-FS-81-63	
<b>SOURCE</b> Project Site		<b>BASE UNIT COST</b> --		
<b>FOR USE AS:</b> Concrete Mixing Water		<b>DATE SAMPLE RECEIVED</b> 6 Feb 1981		
<b>TESTED FOR:</b> CRD-C-400		<b>LAB NO.</b> 2M-403 thru 406		
<input type="checkbox"/> MEETS SPECIFICATIONS		N/A	<input type="checkbox"/> FAILS SPECIFICATIONS (See below)	
<b>Lab. No.</b>	<u>2M-403</u>	<u>2M-404</u>	<u>2M-405</u>	<u>2M-406</u>
<b>Field No.</b>	1	2	3	4
<b>Location</b>	Lake STA 6+77	Lake STA 15+00	Sediment Basin	French drain outfall
<b>pH</b>	6.7	6.9	6.9	6.7
<b>Iron, Total as Fe, ppm</b>	0.35	0.51	9.0	2.0
<b>Iron, Dissolved as Fe, ppm</b>	<0.10	<0.10	<0.10	<0.10
<b>Sodium and Potassium as Na, ppm</b>	20.	2.3	6.2	4.7
<b>Chlorides, ppm</b>	34.	3.0	4.0	47.
<b>Sulfates as SO<sub>4</sub>, ppm</b>	5.5	<0.2	<0.2	.002
<b>Structural Strength, % of          that obtained with          specimen containing          distilled water.</b>				
7 days	84.9	87.3	90.2	93.8
28 days (minimum at 90%) required	100.0	100.0	100.0	100.0
<b>REMARKS:</b>				
<b>REPORTED BY:</b>		<b>TESTED BY</b> DU, MK, KB		<b>CHECKED BY</b> JN, WLT
<b>DATE</b> _____		<b>SAMPLED BY</b> Jack Phillips SASEN-FS		

# TEXIDYNE, INC.

Box 1646, Hwy. 93  
Clemson, South Carolina 29633  
PHONE 864-639-6207, FAX 864-639-3207

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## REPORT OF ANALYSIS

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### COVER PAGE - ANALYSIS DATA PACKAGE

**CLIENT NAME:** Mr. Ben C. Foreman,

Re: Clemson Dams

<u>CLIENT SAMPLE I.D.</u>	<u>LAB I.D.</u>
Lake Hartwell @ Upper Dam	98-2178
Relief Well @ Upper Dam	98-2179
PC-104 @ Lower Dam	98-2180
PW-2 @ Lower Dam	98-2181
PC-102 @ Lower Dam	98-2182
PC-210 @ Upper Dam	98-2183

Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or the manager's designee, as verified by the following signature.

  
Maut Goldman

# TEXIDYNE, INC.

Box 1646, Hwy. 93  
Clemson, South Carolina 29633  
PHONE 864-639-6207, FAX 864-639-3207

## REPORT OF ANALYSIS

October 16, 1998

CESAS-GS Dept. of the Army  
Savannah District, Corps of Engineers  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Mr. Ben C. Forman

Sample I. D Lake Hartwell @ Upper Dam  
Sample Date: 9/30/98  
Date Received: 9/30/98  
Collected by: Client  
Sample No.: 98-2178

Analyses Requested:	Results	Date/Time Analyzed	Method No.
pH	6.98	09/30/98-Field	EPA 150.1
Temperature °C	26.7	09/30/98-Field	EPA 180.1
Color, Pt-Co	12.2	10/01/98-1530	EPA NCPIA
Turbidity, NTU	1.5	10/05/98-1030	SM 2130B
Sp. Conductivity, μmhos/cm	29.1	09/30/98-1625	SM 2510B
TDS	16	10/01/98-0950	SM 2540C
Alkalinity, Total	9.0	10/05/98-1530	SM 2320B
Alkalinity, Carbonate	0	10/05/98-1530	SM 2320B
Alkalinity, Bicarbonate	9.0	10/05/98-1530	SM 2320B
Alkalinity, Hydroxide	0	10/05/98-1530	SM 2320B
Chloride	1.30	10/09/98-0930	SM 4500CIB
Fluoride	.103	10/12/98-1545	SM 4500FC
Nitrate	<0.2	10/01/98-1200	EPA 352.1
O-Phosphate	<0.5	10/01/98-0900	SM 4500E
Hardness, EDTA	6.0	10/13/98-1100	SM 2340C
Sulfate	<5.0	10/13/98-0830	SM 426C
Calcium Hardness	0.774	10/06/98-1015	EPA 215.1
Magnesium Hardness	2.85	10/08/98-1530	EPA 242.1
Iron, Total	.162	10/05/98-1500	EPA 236.1
Manganese, Total	.039	10/07/98-1515	EPA 243.1
Copper	<.020	10/02/98-1330	EPA 220.1
Silica, SiO <sub>2</sub>	14.0	10/15/98-0800	EPA 200.7

< = less than. All results expressed as milligrams per liter (mg/l) unless otherwise noted.

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---

## REPORT OF ANALYSIS

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October 16, 1998

CESAS-GS Dept. of the Army  
Savannah District, Corps of Engineers  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Mr. Ben C. Forman

-----  
Sample I. D      Relief Well @ Upper Dam  
Sample Date:      9/30/98  
Date Received:    9/30/98  
Collected by:    Client  
Sample No.:      98-2179  
-----

Analyses Requested:	Results	Date/Time Analyzed	Method No.
pH	6.46	09/30/98-Field	EPA 150.1
Temperature °C	21.3	09/30/98-Field	EPA 180.1
Color, Pt-Co	<5.0	10/01/98-1530	EPA NCPIA
Turbidity, NTU	3.5	10/05/98-1030	SM 2130B
Sp. Conductivity, μmhos/cm	129	09/30/98-1625	SM 2510B
TDS	56	10/01/98-0950	SM 2540C
Alkalinity, Total	45.0	10/05/98-1530	SM 2320B
Alkalinity, Carbonate	0	10/05/98-1530	SM 2320B
Alkalinity, Bicarbonate	45.0	10/05/98-1530	SM 2320B
Alkalinity, Hydroxide	0	10/05/98-1530	SM 2320B
Chloride	0.86	10/09/98-0930	SM 4500CIB
Fluoride	.101	10/12/98-1545	SM 4500FC
Nitrate	<0.2	10/01/98-1200	EPA 352.1
O-Phosphate	<0.5	10/01/98-0900	SM 4500E
Hardness, EDTA	36.0	10/13/98-1100	SM 2340C
Sulfate	<5.0	10/13/98-0830	SM 426C
Calcium Hardness	2.52	10/06/98-1015	EPA 215.1
Magnesium Hardness	11.8	10/08/98-1530	EPA 242.1
Iron, Total	17.5	10/05/98-1500	EPA 236.1
Manganese, Total	1.47	10/07/98-1515	EPA 243.1
Copper	<.020	10/02/98-1330	EPA 220.1
Silica, SiO <sub>2</sub>	19.1	10/15/98-0800	EPA 200.7

-----  
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## REPORT OF ANALYSIS

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October 16, 1998

CESAS-GS Dept. of the Army  
Savannah District, Corps of Engineers  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Mr. Ben C. Forman

-----  
Sample I. D      PC-104 @ Lower Dam  
Sample Date:     9/30/98  
Date Received:   9/30/98  
Collected by:   Client  
Sample No.:      98-2180  
-----

Analyses Requested:	Results	Date/Time Analyzed	Method No.
pH	6.14	09/30/98-Field	EPA 150.1
Temperature °C	20.4	09/30/98-Field	EPA 180.1
Color, Pt-Co	<5.0	10/01/98-1530	EPA NCPIA
Turbidity, NTU	18	10/05/98-1030	SM 2130B
Sp. Conductivity, μmhos/cm	430	09/30/98-1625	SM 2510B
TDS	152	10/01/98-0950	SM 2540C
Alkalinity, Total	110	10/05/98-1530	SM 2320B
Alkalinity, Carbonate	0	10/05/98-1530	SM 2320B
Alkalinity, Bicarbonate	110	10/05/98-1530	SM 2320B
Alkalinity, Hydroxide	0	10/05/98-1530	SM 2320B
Chloride	3.03	10/09/98-0930	SM 4500CIB
Fluoride	.177	10/12/98-1545	SM 4500FC
Nitrate	0.62	10/01/98-1200	EPA 352.1
O-Phosphate	<0.5	10/01/98-0900	SM 4500E
Hardness, EDTA	78.0	10/13/98-1100	SM 2340C
Sulfate	<5.0	10/13/98-0830	SM 426C
Calcium Hardness	2.20	10/06/98-1015	EPA 215.1
Magnesium Hardness	24.5	10/08/98-1530	EPA 242.1
Iron, Total	99.2	10/05/98-1500	EPA 236.1
Iron, Dissolved	.890	10/05/98-1500	EPA 236.1
Manganese, Total	9.03	10/07/98-1515	EPA 243.1
Manganese, Dissolved	8.64	10/07/98-1515	EPA 243.1
Copper	<.020	10/02/98-1330	EPA 220.1
Silica, SiO <sub>2</sub>	40.2	10/15/98-0800	EPA 200.7

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Clemson, South Carolina 29633  
PHONE 864-639-6207, FAX 864-639-3207

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## REPORT OF ANALYSIS

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October 16, 1998

CESAS-GS Dept. of the Army  
Savannah District, Corps of Engineers  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Mr. Ben C. Forman

-----  
Sample I. D      PW-2 @ Lower Dam  
Sample Date:     9/30/98  
Date Received:   9/30/98  
Collected by:   Client  
Sample No.:      98-2181  
-----

Analyses Requested:	Results	Date/Time Analyzed	Method No.
pH	6.51	09/30/98-Field	EPA 150.1
Temperature °C	19.2	09/30/98-Field	EPA 180.1
Color, Pt-Co	23.7	10/01/98-1530	EPA NCPIA
Turbidity, NTU	12	10/05/98-1030	SM 2130B
Sp. Conductivity, μmhos/cm	254	09/30/98-1625	SM 2510B
TDS	132	10/01/98-0950	SM 2540C
Alkalinity, Total	114	10/05/98-1530	SM 2320B
Alkalinity, Carbonate	0	10/05/98-1530	SM 2320B
Alkalinity, Bicarbonate	114	10/05/98-1530	SM 2320B
Alkalinity, Hydroxide	0	10/05/98-1530	SM 2320B
Chloride	2.16	10/09/98-0930	SM 4500CIB
Fluoride	.127	10/12/98-1545	SM 4500FC
Nitrate	<0.2	10/01/98-1200	EPA 352.1
O-Phosphate	<0.5	10/01/98-0900	SM 4500E
Hardness, EDTA	96.0	10/13/98-1100	SM 2340C
Sulfate	<5.0	10/13/98-0830	SM 426C
Calcium Hardness	20.4	10/06/98-1015	EPA 215.1
Magnesium Hardness	27.8	10/08/98-1530	EPA 242.1
Iron, Total	20.1	10/05/98-1500	EPA 236.1
Manganese, Total	10.5	10/07/98-1515	EPA 243.1
Copper	<.020	10/02/98-1330	EPA 220.1
Silica, SiO <sub>2</sub>	20.7	10/15/98-0800	EPA 200.7

-----  
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## REPORT OF ANALYSIS

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October 16, 1998

CESAS-GS Dept. of the Army  
Savannah District, Corps of Engineers  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Mr. Ben C. Forman

-----  
Sample I. D        PC-102 @ Lower Dam  
Sample Date:       9/30/98  
Date Received:     9/30/98  
Collected by:     Client  
Sample No.:        98-2182  
-----

Analyses Requested:	Results	Date/Time Analyzed	Method No.
pH	6.23	09/30/98-Field	EPA 150.1
Temperature °C	20.6	09/30/98-Field	EPA 180.1
Color, Pt-Co	58.1	10/01/98-1530	EPA NCPIA
Turbidity, NTU	25	10/05/98-1030	SM 2130B
Sp. Conductivity, μmhos/cm	233	09/30/98-1625	SM 2510B
TDS	108	10/01/98-0950	SM 2540C
Alkalinity, Total	86.0	10/05/98-1530	SM 2320B
Alkalinity, Carbonate	0	10/05/98-1530	SM 2320B
Alkalinity, Bicarbonate	86.0	10/05/98-1530	SM 2320B
Alkalinity, Hydroxide	0	10/05/98-1530	SM 2320B
Chloride	2.16	10/09/98-0930	SM 4500CIB
Fluoride	.167	10/12/98-1545	SM 4500FC
Nitrate	<0.2	10/01/98-1200	EPA 352.1
O-Phosphate	<0.5	10/01/98-0900	SM 4500E
Hardness, EDTA	70.0	10/13/98-1100	SM 2340C
Sulfate	<5.0	10/13/98-0830	SM 426C
Calcium Hardness	12.8	10/06/98-1015	EPA 215.1
Magnesium Hardness	13.4	10/08/98-1530	EPA 242.1
Iron, Total	43.4	10/05/98-1500	EPA 236.1
Iron, Dissolved	.239	10/05/98-1500	EPA 236.1
Manganese, Total	5.55	10/07/98-1515	EPA 243.1
Manganese, Dissolved	5.55	10/07/98-1515	EPA 243.1
Copper	<.020	10/02/98-1330	EPA 220.1
Silica, SiO <sub>2</sub>	23.3	10/15/98-0800	EPA 200.7

-----  
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## REPORT OF ANALYSIS

October 16, 1998

CESAS-GS Dept. of the Army  
Savannah District, Corps of Engineers  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Mr. Ben C. Forman

Sample I. D PC-210 @ Upper Dam  
Sample Date: 9/30/98  
Date Received: 9/30/98  
Collected by: Client  
Sample No.: 98-2183

Analyses Requested:	Results	Date/Time Analyzed	Method No.
pH	5.61	09/30/98-Field	EPA 150.1
Temperature °C	20.7	09/30/98-Field	EPA 180.1
Color, Pt-Co	247	10/01/98-1530	EPA NCPIA
Turbidity, NTU	100	10/05/98-1030	SM 2130B
Sp. Conductivity, μmhos/cm	194	09/30/98-1625	SM 2510B
TDS	136	10/01/98-0950	SM 2540C
Alkalinity, Total	86.0	10/05/98-1530	SM 2320B
Alkalinity, Carbonate	0	10/05/98-1530	SM 2320B
Alkalinity, Bicarbonate	86.0	10/05/98-1530	SM 2320B
Alkalinity, Hydroxide	0	10/05/98-1530	SM 2320B
Chloride	1.73	10/09/98-0930	SM 4500CIB
Fluoride	<.1	10/12/98-1545	SM 4500FC
Nitrate	<0.2	10/01/98-1200	EPA 352.1
O-Phosphate	<0.5	10/01/98-0900	SM 4500E
Hardness, EDTA	68.0	10/13/98-1100	SM 2340C
Sulfate	<5.0	10/13/98-0830	SM 426C
Calcium Hardness	.517	10/06/98-1015	EPA 215.1
Magnesium Hardness	27.0	10/08/98-1530	EPA 242.1
Iron, Total	15.2	10/05/98-1500	EPA 236.1
Iron, Dissolved	.398	10/05/98-1500	EPA 236.1
Manganese, Total	.304	10/07/98-1515	EPA 243.1
Manganese, Dissolved	.274	10/07/98-1515	EPA 243.1
Copper	<.020	10/02/98-1330	EPA 220.1
Silica, SiO <sub>2</sub>	99.3	10/15/98-0800	EPA 200.7

< = less than. All results expressed as milligrams per liter (mg/l) unless otherwise noted.

Draft - Design Summary Report  
Clemson Upper and Lower Diversion Dams  
Department of the Army, Savannah District  
Corps of Engineers  
April 2002

## **B4 – Water Quality Testing**



January 04, 2002

RECEIVED

JAN 07 2002

GEI CONSULTANTS INC

Paul Silva  
GEI Consultants, Inc.  
1021 Main Street  
Winchester, MA 01890  
TEL: (781) 721-4098  
FAX: (781) 721-4073

RE: Clemson Remediation Design 01282: Upper Dam

Order No.: 0112120

Dear Paul Silva:

AMRO Environmental Laboratories Corp. received 3 samples on 12/13/01 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds National Environmental Laboratory Accreditation Conference (NELAC), state, and EPA requirements. A copy of the appropriate state and/or NELAC Certificate is attached. Please see the enclosed Case Narrative for quality control deviations that were encountered during the analyses associated with this project.

The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This report consists of a total of 19 pages. This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart  
Vice President / Lab Director

# AMRO Environmental Laboratories Corp.

Date: 28-Dec-01

**CLIENT:** GEI Consultants, Inc. **Client Sample ID:** S1-01282-7+95  
**Lab Order:** 0112120  
**Project:** Clemson Remediation Design 01282: Upper Da **Collection Date:** 12/6/01  
**Lab ID:** 0112120-01A **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>ION CHROMATOGRAPHY</b>		<b>E300</b>				Analyst: APL
Chloride	2.6	0.50		mg/L	1	12/20/01 8:34:01 PM
Sulfate	2.5	1.0		mg/L	1	12/20/01 8:34:01 PM

**Qualifiers:** ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank E - Value above quantitation range  
 H - Method prescribed holding time exceeded # - See Case Narrative  
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

**AMRO Environmental Laboratories Corp.**

Date: 28-Dec-01

**CLIENT:** GEI Consultants, Inc. **Client Sample ID:** S2-01282-7+95  
**Lab Order:** 0112120  
**Project:** Clemson Remediation Design 01282: Upper Da **Collection Date:** 12/6/01  
**Lab ID:** 0112120-02A **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPHY		E300			Analyst: APL	
Chloride	2.9	0.50		mg/L	1	12/20/01 8:52:32 PM
Sulfate	2.8	1.0		mg/L	1	12/20/01 8:52:32 PM

**Qualifiers:** ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits  
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank E - Value above quantitation range  
 H - Method prescribed holding time exceeded # - See Case Narrative  
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

**AMRO Environmental Laboratories Corp.**

Date: 28-Dec-01

---

**CLIENT:** GEI Consultants, Inc. **Client Sample ID:** S3-01282-7+95  
**Lab Order:** 0112120  
**Project:** Clemson Remediation Design 01282: Upper Da **Collection Date:** 12/6/01  
**Lab ID:** 0112120-03A **Matrix:** AQUEOUS

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Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>ION CHROMATOGRAPHY</b>		<b>E300</b>				Analyst: APL
Chloride	2.7	0.50		mg/L	1	12/20/01 9:11:04 PM
Sulfate	1.8	1.0		mg/L	1	12/20/01 9:11:04 PM

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**Qualifiers:** ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits  
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank E - Value above quantitation range  
H - Method prescribed holding time exceeded # - See Case Narrative  
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.



January 04, 2002

Paul Silva  
GEI Consultants, Inc.  
1021 Main Street  
Winchester, MA 01890  
TEL: (781) 721-4098  
FAX: (781) 721-4073

RECEIVED  
JAN 07 2002  
GEI CONSULTANTS, INC.

RE: Clemson Remediation Design 01282: Lower Dam

Order No.: 0112113

Dear Paul Silva:

AMRO Environmental Laboratories Corp. received 3 samples on 12/13/01 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds National Environmental Laboratory Accreditation Conference (NELAC), state, and EPA requirements. A copy of the appropriate state and/or NELAC Certificate is attached. Please see the enclosed Case Narrative for quality control deviations that were encountered during the analyses associated with this project.

The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This report consists of a total of 19 pages. This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart  
Vice President / Lab Director

**AMRO Environmental Laboratories Corp.**

Date: 28-Dec-01

---

<b>CLIENT:</b>	GEI Consultants, Inc.	<b>Client Sample ID:</b>	S1-01282-CLD
<b>Lab Order:</b>	0112113		
<b>Project:</b>	Clemson Remediation Design 01282: Lower Da	<b>Collection Date:</b>	12/6/01
<b>Lab ID:</b>	0112113-01A	<b>Matrix:</b>	AQUEOUS

---

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>ION CHROMATOGRAPHY</b>		<b>E300</b>				Analyst: <b>APL</b>
Chloride	2.8	2.0		mg/L	4	12/24/01 1:16:39 PM
Sulfate	1.2	1.0		mg/L	1	12/20/01 6:05:46 PM

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<b>Qualifiers:</b>	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	H - Method prescribed holding time exceeded	# - See Case Narrative
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

**AMRO Environmental Laboratories Corp.**

Date: 28-Dec-01

**CLIENT:** GEI Consultants, Inc. **Client Sample ID:** S2-01282-CLD  
**Lab Order:** 0112113  
**Project:** Clemson Remediation Design 01282: Lower Da **Collection Date:** 12/6/01  
**Lab ID:** 0112113-02A **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>ION CHROMATOGRAPHY</b>		<b>E300</b>			Analyst: APL	
Chloride	3.2	0.50		mg/L	1	12/20/01 7:56:56 PM
Sulfate	1.2	1.0		mg/L	1	12/20/01 7:56:56 PM

**Qualifiers:** ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits  
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank E - Value above quantitation range  
H - Method prescribed holding time exceeded # - See Case Narrative  
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

**AMRO Environmental Laboratories Corp.**

Date: 28-Dec-01

<b>CLIENT:</b>	GEI Consultants, Inc.	<b>Client Sample ID:</b>	S3-01282-CLD
<b>Lab Order:</b>	0112113		
<b>Project:</b>	Clemson Remediation Design 01282: Lower Da	<b>Collection Date:</b>	12/6/01
<b>Lab ID:</b>	0112113-03A	<b>Matrix:</b>	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>ION CHROMATOGRAPHY</b>		<b>E300</b>				Analyst: APL
Chloride	3.2	0.50		mg/L	1	12/20/01 8:15:29 PM
Sulfate	ND	1.0		mg/L	1	12/20/01 8:15:29 PM

**Qualifiers:**

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
H - Method prescribed holding time exceeded	# - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

**TEXIDYNE, INC.**  
Box 1646, Hwy. 93  
Clemson, South Carolina 29633  
PHONE 864-639-6207, FAX 864-639-3207

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REPORT OF ANALYSIS

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November 8, 2002

Corps of Engineers  
CESAS-ENGS  
P.O. Box 889  
Savannah, GA 31402-0889

Attn: Ben Forman

-----  
Sample I. D      1 = Upstream of Upper Dam  
                  2 = Upstream of Lower Dam  
Sample Date:     10/30/02  
Date Received:   10/30/02  
Collected by:   Client  
Sample No.:      02-3448  
-----

Analyses			Date/Time	Method No.
Requested:	1	2	Analyzed	
TDS	35.0	16.0	11/04/02-1400	SM 2540C
Hardness, EDTA	63.5	47.0	11/08/02-1030	SM 2340C
pH	6.84	6.85	10/30/02-1550	SM4500H <sup>+</sup> B

-----  
< = less than. All results expressed as milligrams per liter (mg/l)  
unless otherwise noted.

Approved \_\_\_\_\_

*Grant Forman*

**TEXIDYNE, INC.**  
Box 1646, Hwy. 93  
Clemson, South Carolina 29633  
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REPORT OF ANALYSIS

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November 8, 2002

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P.O. Box 889  
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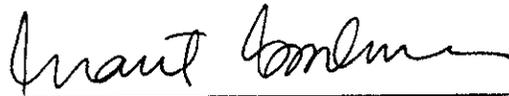
Attn: Ben Forman

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Sample I. D        1 = Upstream of Upper Dam  
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Sample Date:       10/30/02  
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Hardness, EDTA	63.5	47.0	11/08/02-1030	SM 2340C
pH	6.84	6.85	10/30/02-1550	SM4500H <sup>+</sup> B

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REPORT OF ANALYSIS

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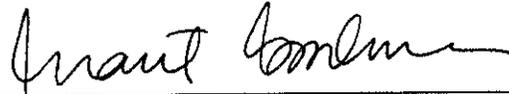
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