

APPENDIX I

Sediment Survey dated November 2004

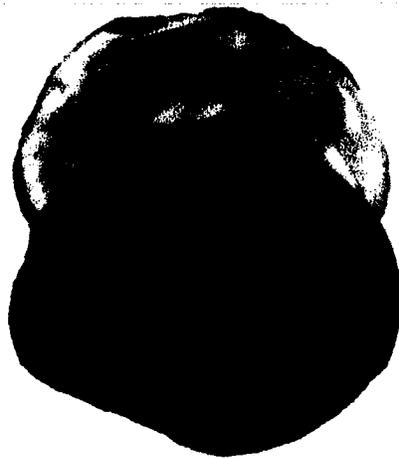
and

Mussel Survey dated October 2005

File No. 53937-00
Nucor Steel Decatur, LLC

**A Qualitative Mussel Survey in the Tennessee River
at River Mile 296.5 in Morgan County, Alabama**

Douglas N. Shelton



**A Qualitative Mussel Survey in the Tennessee River
at River Mile 296.5 in Morgan County, Alabama**

Douglas N. Shelton

**Prepared for:
Underwater Construction Company
8494 Gulf View Drive
Soddy Daisy, Tennessee 37379**

October, 2005

**Alabama Malacological Research Center
2370 Hillcrest Road, Suite G, PMB 236
Mobile, Alabama 36695-3838**

CONTENTS

Introduction.....	1
Description of Study Area.....	2
Methods.....	2
Results.....	4
Discussion.....	4
Acknowledgments.....	5
Literature Cited.....	6
Figures.....	7
Figure 1: Map of Study Area and vicinity.....	7
Figure 2: Upstream of Study Area.....	8
Figure 3: Area downstream of Study Site.....	8
Figure 4: Left descending bank downstream of study area.....	8
Figure 5: Close-up of Brown's Ferry Nuclear Power Plant.....	8
Figure 6: Vincent Mitchell and John Houseman preparing dive gear.....	9
Figure 7: Diver Brandon Wheeler suiting up.....	9
Figure 8: Video monitor where malacologist watches collections in progress.....	9
Figure 9: <i>Potamilus alatus</i> , the first mussel found during this study.....	9
Figure 10: <i>Amblyma plicata</i>	10

Figure 11: <i>Potamilus alatus</i>	10
Figure 12: <i>Quadrula quadrula</i>	10
Figure 13: <i>Corbicula fluminea</i>	10
Figure 14: <i>Viviparus subpurpureus</i>	10
Figure 15: <i>Pleurocera nobilis</i>	10
Tables.....	11
Table One: Species encountered during this study.....	11
Table Two: Results of this survey by species.....	12

INTRODUCTION

The Tennessee River is the largest tributary in the Ohio River drainage. From Knoxville, the Tennessee River flows generally southwestward into the state of Alabama, then bends abruptly to the northwest, for a time forming the border between Alabama and Mississippi. Then it flows back into the state of Tennessee to flow almost due north. Crossing its namesake state, the river flows into Kentucky and finally empties into the Ohio River. It's 652 miles of navigation channel are maintained by the US Army Corps of Engineers.

In the 1930s and '40s, the Tennessee Valley Authority was created, and the Tennessee River was harnessed in the most massive river navigation project in history. Nine lock and dam structures converted the river to a series of nine pools, each an enormous reservoir. This immense system is open from end to end for navigational use and as such is much in demand by barge traffic.

The Tennessee Valley Authority (TVA) plans construction in the Tennessee River at this study area in Morgan County, Alabama (Figure 1). This construction includes two cells which are to be positioned fifty (50) feet off the left descending side of the shipping channel and spaced approximately 145 feet on center. The U. S. Fish and Wildlife Service (USFWS) required surveys for the Tennessee River at this site due to recent collections of federally protected mussel species nearby.

Representatives of Underwater Construction Corporation (UCC) in representing the TVA, contracted the Alabama Malacological Research Center (AMRC) to assist in a habitat assessment and mussel survey of the Tennessee River at River Mile 296.5. This reports documents that study and its results.

DESCRIPTION OF THE STUDY AREA

The study area is located at Tennessee River mile 296.5 upstream of the Brown's Ferry Nuclear Power Plant and downstream of the Brown's Ferry transmission lines running from Limestone County into Morgan County, Alabama (see Figure One). The river at this site is impounded by the Wheeler Lock and Dam downstream. This section of the river is known as the Wheeler Reservoir (see Figures Two through Nine). The upstream end of the study area (Point A) was located at approximately $34^{\circ}40'14.1296''\text{N}$ $87^{\circ}05'31.7065''\text{W}$. The downstream end of the study area (Point B) was located at approximately $34^{\circ}40'09.6689''\text{N}$ $87^{\circ}05'26.4892''\text{W}$. The substrate within the study area is primarily silty sand overlaying hardpan clay. The depth was ranged from 4 to 10 feet during the survey. Visibility on site averaged less than one meter.

METHODS

The study area was visited by Doug Shelton, a malacologist from the Alabama Malacological Research Center and divers from Underwater Construction Corporation in Chattanooga, Tennessee on September 22, 2005. Transect lines were laid from 195 feet upstream of the proposed upstream cell location (Point A) to 195 feet downstream of the proposed downstream cell location (Point B). The transect lines ran parallel with a plane between the two cell locations and ten (10) feet on each side of the plane for a spacing of twenty (20) feet between the lines. A total area of 535 feet (163 meters) was

surveyed.

Each transect line was marked every ten meters. Samples for mussels were collected from an area one (1) meter wide by ten (10) meters long along one side of transect line, alternating (staggering) sides each ten (10) meters along the length of the transects.

All samples were sent to the surface where tenders then turned them over to the malacologist on board where each specimen was identified, counted, and recorded as living, fresh dead, or weathered dead. No federally protected species were encountered, but if encountered would have been recorded, photographed and returned to the substrate.

During the course of the survey the malacologist monitored the divers activities and via video and audio communication instructed the diver and along with diver's description recorded habitat/substrate type.

All live mussels were returned to the substrate. Voucher specimens of each species were retained for curation in the reference collection of the Alabama Malacological Research Center. Identifications were made by sight while in the field and later confirmed using the illustrations and keys found in (Burch, 1975 and 1989; and Parmalee and Bogan, 1998). Taxonomy generally corresponds with the standardized list of the American Fisheries Society (Turgeon et al, 1998). Additional information regarding these species and the target species was found at the NatureServe website (NatureServe, 2005).

RESULTS

The habitat within the study area was found to be marginal for mussels in general. Much of the habitat within the study area was deemed to be generally unsuitable for most mussel species as it was found to consist of silty sand overlaying impenetrable hardpan clay. All mussels encountered were found laying on the layer of sand or crawling on this thin layer. No mussels were found buried in the substrate though every effort was made to find any there. Three common mussel species were found within the study area; *Amblema plicata*, *Potamilus alatus* and *Quadrula quadrula* (see Figures 10-15; Tables One and Two). *Potamilus alatus* was the only mussel encountered alive. The Asian clam, *Corbicula fluminea* was found to be abundant within the study area as were two species of gastropods (see Tables One and Two). Each of these species were found alive and dead. They comprised the largest number of mollusks encountered during the course of this study. It was also noted that there was no evidence of the invasive Zebra Mussel, *Dreissenia polymorpha* within the study area. No federally protected mussels were observed in the study area. No evidence of shells of federally protected species were recovered during survey efforts.

DISCUSSION

The habitat at the study was marginal for mussels. Low diversity and low numbers were found in comparison to other nearby sites. No federally protected mussel species were observed during the course of this study.

ACKNOWLEDGMENTS

Mr. Darrell Moody of Underwater Construction Corporation (UCC), Chattanooga, Tennessee provided basic information related to the project. Brandon Wheeler, Mike La Rue, John Houseman, and Vincent Mitchell provided field assistance and diving services. Chris Hutt of the Tennessee Valley Authority provided logistical information and other instructions relative to the project.

LITERATURE CITED

- Burch, J. B. 1975. *Freshwater Unionacean Clams (Mollusca: Pelecypoda) of North America*, revised edition. Malacological Publications. Hamburg, Michigan.
- Burch, J. B. 1989. *North American Freshwater Snails*. Malacological Publications. Hamburg, Michigan. viii+365 pp.
- McGregor, S.W., T. E. Shepard, T. D. Richardson, and J. F. Fitzpatrick, Jr. 1999. A survey of the primary tributaries of the Alabama and Tombigbee rivers for freshwater mussels, snails, and crayfish. *Geological Survey of Alabama, Circular 196*. 29 pp.
- NatureServe, 2005. *NatureServe Explorer: An online encyclopedia of life [web application]*, Version 4.2 NatureServe, Arlington, Virginia. Available at <http://www.natureserve.org/explorer> (Accessed: May 18, 2005)
- Parmalee, P. W. and A. E. Bogan. 1998. *The freshwater mussels of Tennessee*. University of Tennessee Press, Knoxville, Tennessee. 328 pp.
- Turgeon, D. D., J. F. Quinn, Jr., A. E. Bogan, E. V. Coan, F. G. Hochberg, W. G. Lyons, P. M. Mikkelsen, R. J. Neves, C. F. E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F. G. Thompson, M. Vecchione, and J. D. Williams. 1998. *Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks*, 2nd edition. American Fisheries Society, Special Publication 26, Bethesda, Maryland. x + 526 pp.

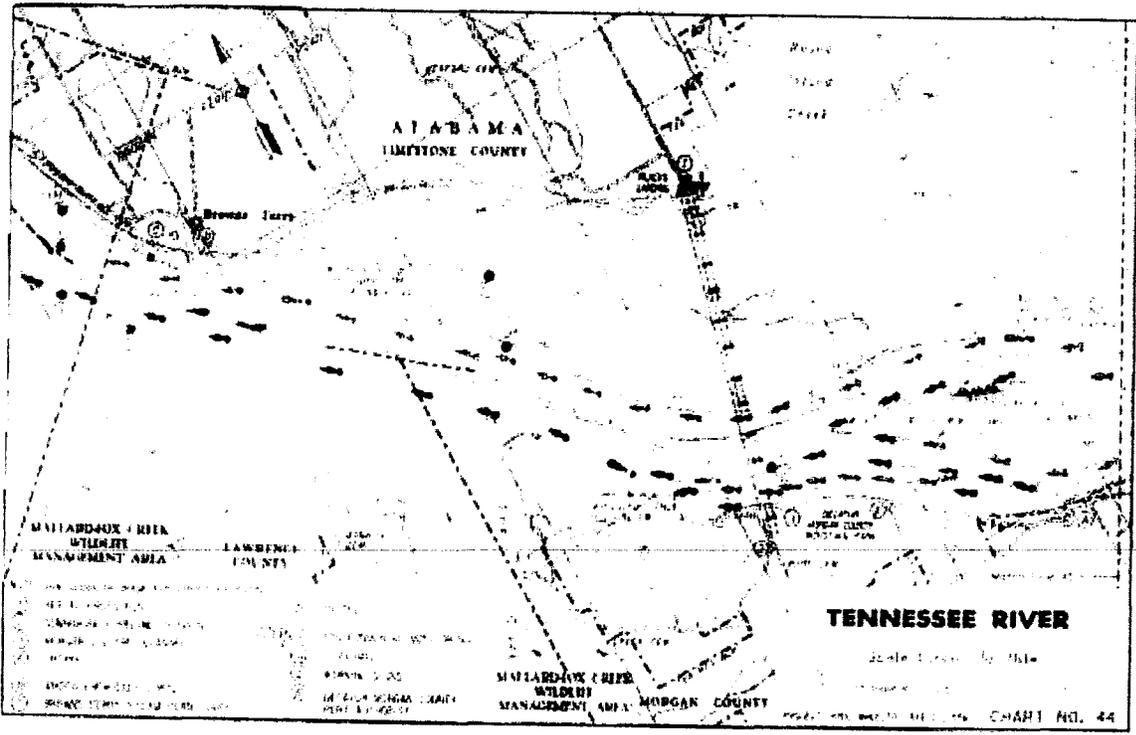


Figure 1: Map of Study Area and vicinity

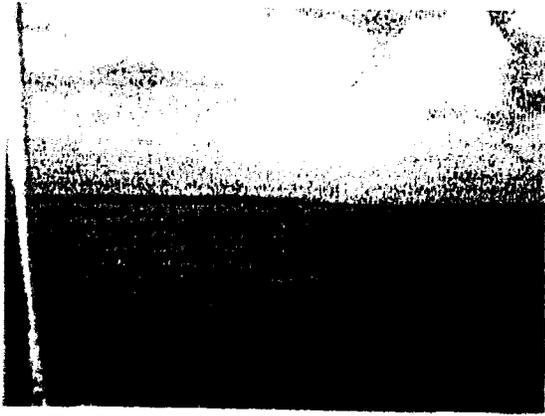


Figure 2: Upstream of Study Area.



Figure 3: Browns Ferry Nuclear Power Plant as seen downstream of study area.



Figure 4: Left descending bank downstream of study area.

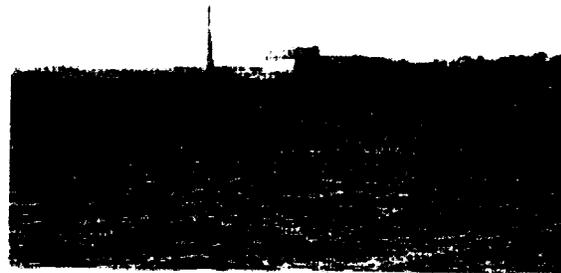


Figure 5 : Close up of Brown's Ferry Nuclear Facility.



Figure 6: Vincent Mitchell and John Houseman preparing dive gear.

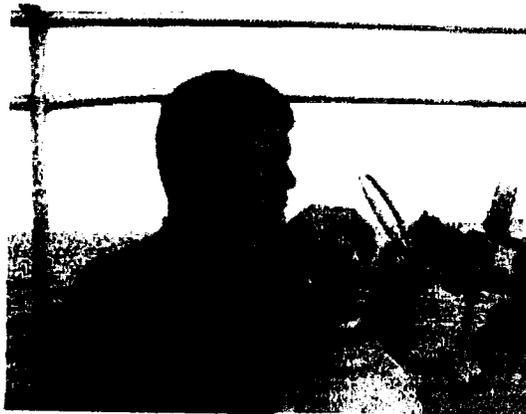


Figure 7: Diver Brandon Wheeler suiting up for dive.

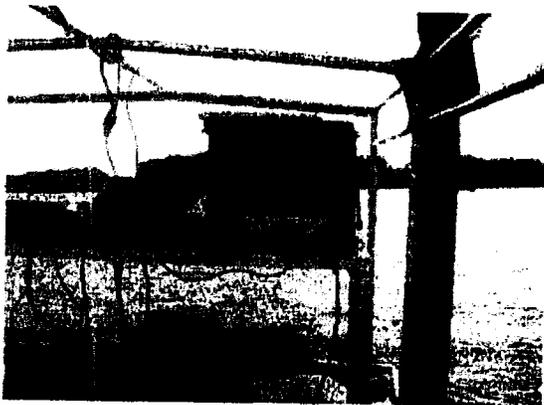
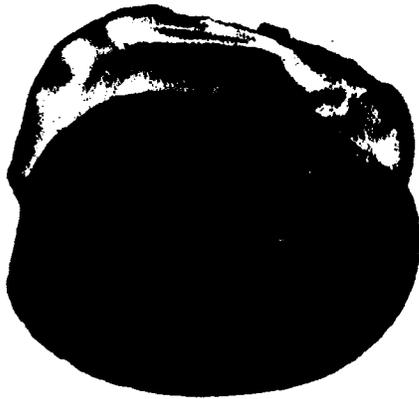


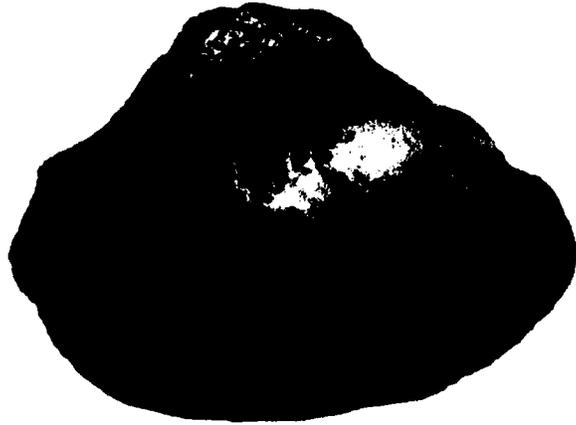
Figure 8: Video monitor where malacologist watches the collections in progress.



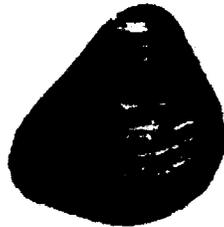
Figure 9: *Potamilus alatus*, the first mussel found during this study.



10



12



13



14



Figures 10-15: 10 - *Amblema plicata* 11 - *Potamilus alatus* 12 - *Quadrula quadrula*
13 - *Corbicula fluminea* 14 - *Viviparus subpurpureus* 15 - *Pleurocera nobilis*

TABLE ONE: List of Species encountered during this study

No.	Scientific Name	Common name
Class BIVALVIA		
Family UNIONIDAE		
1	<i>Amblema plicata</i> (Say, 1817)	threeridge
2	<i>Potamilus alatus</i> (Say, 1817)	pink heelsplitter
3	<i>Quadrula quadrula</i> (Rafinesque, 1820)	mapleleaf
Family CORBICULIDAE		
4	<i>Corbicula fluminea</i> (Müller, 1774)	Asian clam
Class GASTROPODA		
Family VIVIPARIDAE		
5	<i>Viviparus subpurpureus</i> (Say, 1829)	olive mysterysnail
Family PLEURO CERIDAE		
6	<i>Pleurocera nobilis</i> (L. Lea, 1845)	noble hornsnail

TABLE TWO: Results of this survey by species

No.	Scientific Name	Live	Freshdead	Weathered
Class BIVALVIA				
Family UNIONIDAE				
1	<i>Amblema plicata</i> (Say, 1817)	0	1	0
2	<i>Potamilus alatus</i> (Say, 1817)	6	5	2
3	<i>Quadrula quadrula</i> (Rafinesque, 1820)	0	2	3
Family CORBICULIDAE				
4	<i>Corbicula fluminea</i> (Müller, 1774)	A	A	A
Class GASTROPODA				
Family VIVIPARIDAE				
5	<i>Viviparus subpurpureus</i> (Say, 1829)	A	A	A
Family PLEUROCERIDAE				
6	<i>Pleurocera canaliculata</i> (Say, 1821)	A	A	A
* A = Abundant				



November 30, 2004

TVA/River Operations
Navigation & Hydraulic Engineering
400 W. Summit Hill Drive
Knoxville, Tennessee 37902-1499

Attention: Ms. Debbie Ruth

Subject: **DRILLING AND SAMPLING REPORT**
Tennessee River at Decatur Harbor
Decatur, Alabama
S&ME Project No. 1432-04-720

NOV 30 2004

Dear Ms. Ruth:

S&ME, Inc. (S&ME) is pleased to provide this report to the Tennessee Valley Authority (TVA) for drilling and sampling services at proposed mooring cell locations in the Decatur, Alabama harbor area. This report has been developed based on the scope of work outlined in S&ME Proposal No. 3204895 dated October 5, 2004 for Drilling & Environmental Services. The purpose of these services was to determine the depth to bedrock, the stiffness of the overburden, the depth of sediment, and to obtain environmental samples beneath the riverbed at these locations for laboratory screening. This information is intended to allow TVA to determine a suitable location to construct two new mooring cells in the Decatur harbor area.

Field Work

S&ME personnel conducted drilling and sampling activities within the Tennessee River in the Decatur, Alabama harbor area on October 19 and 20, 2004. Three proposed mooring cell locations were pre-selected by TVA for investigation. A work platform with spuds and survey coordinates at each boring location was provided by TVA aboard the M/V Sideview. Drilling was conducted by S&ME personnel using an ATV mounted CME 550 drill rig. Boring logs including location, depth of water, depth to bedrock, and generalized drilling conditions are

S&ME, Inc., Knoxville Branch
1413 Topside Road
Louisville, Tennessee 37777

(865) 970-0003
(865) 970-2312 fax
www.smeinc.com

attached. Standard Penetration Testing (SPT) was used to determine blow counts and overburden lithology at select borings as directed by Mr. Minchew. Survey coordinates for each boring location are provided in Table 1 (attached). The boring locations are shown on the Site Location Map included as Figure 1 (attached).

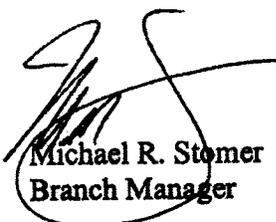
Analytical Results

Environmental samples from the top of river sediment were obtained from the split spoon samples at each potential mooring location. The samples were placed in laboratory prepared jars, refrigerated, and submitted to Environmental Science Corporation (ESC) in Mt. Juliet, Tennessee for PCB's, RCRA metals, TCLP metals, and EPH analysis. The analytical reports from ESC and the chain of custody forms are attached. A summary of the analytical results is provided in Table 2 (attached). None of the samples submitted for analysis exceeded the EPA Region 9 2002 Industrial Preliminary Remediation Goals (PRGs) or the Toxicity Characteristic Leaching Procedure (TCLP) Action Levels [40 CFR 261.24]. All samples were handled in general compliance with S&ME quality assurance/control protocol to ensure sample integrity and prevent cross-contamination.

S&ME appreciates the opportunity to be of service to TVA. If you have any questions regarding this report, please feel free to call us at (865) 970-0003.

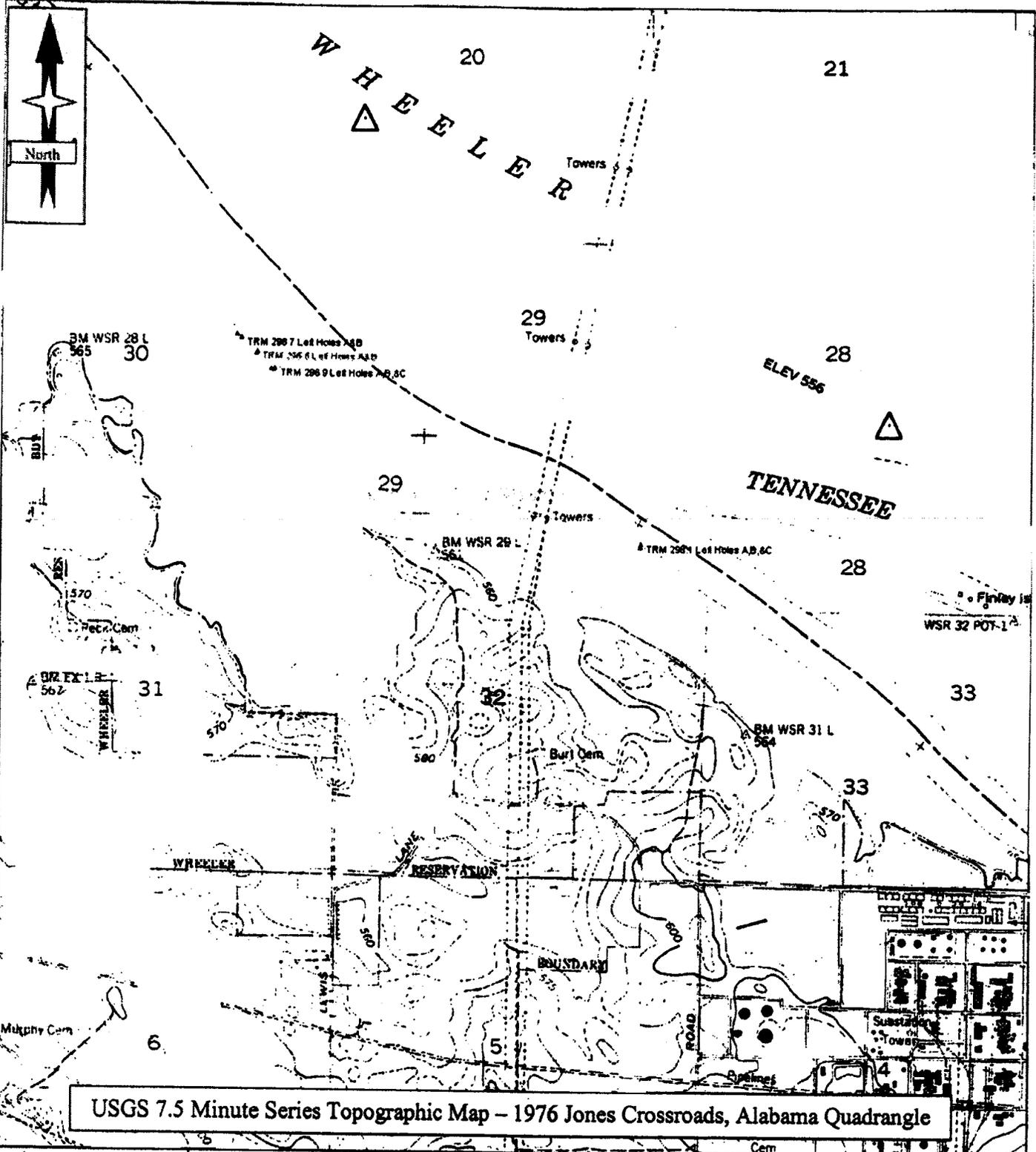
Sincerely,
S&ME, Inc.


J. Curt Watson
Project Professional


Michael R. Stomer
Branch Manager

JCW/MRS/jcw

S:\2004 Interoffice Projects\720 TN River - Decatur\1432\Reports\Drilling-Sampling Report.doc



0 2000'
Scale: 1:24,000

Checked By: JCW

Date: 11-08-04



SITE LOCATION MAP
TN River at Decatur Harbor
Decatur, Alabama

Project No.: 1432-04-720

Figure
1

PROJECT: Tennessee River at Decatur Harbor Decatur, Tennessee S&ME Project No. 1432-04-720		BORING LOG TRM 296.8 Left Hole A								
DATE DRILLED: 10/20/04		ELEVATION: 555		NOTES: Boring in the Tennessee River. Approximate water elevation 555.2 ft.						
DRILLING METHOD: GME 550; 3/4" H.S.A.		BORING DEPTH: 24.0 feet								
LOGGED BY: C. Watson		WATER LEVEL @ TOB: N/A								
DRILLER: T. Hall/A. Jennings		WATER LEVEL @ 24 hrs: N/A								
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO. SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)				N-VALUE
						10	20	30	60 80	
5		Water		550						
10				545						
15		Sediment		540	1	X				16
20		Silty Clay - brown; with gray mottling		535						
		Auger Refusal at 24 ft.								

BORING LOG NEW 04-720.GPJ S&ME.GPJ 10/20/04

NOTES:

1. THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT: Tennessee River at Decatur Harbor
 Decatur, Tennessee
 S&ME Project No. 1432-04-720

BORING LOG TRM 296.9 Left Hole A

DATE DRILLED: 10/20/04 ELEVATION: 555
 DRILLING METHOD: CME 550; 3/4" H.S.A. BORING DEPTH: 29.0 feet
 LOGGED BY: C. Watson WATER LEVEL @ TOB: N/A
 DRILLER: T. Hall/A. Jennings WATER LEVEL @ 24 hrs: N/A

NOTES: Boring in the Tennessee River.
 Approximate water elevation 555.2 ft.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO. SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
0 - 10		Water		550							
10 - 25		Silty Clay - brown; with gray mottling		540	1	X					17
25 - 29		Weathered Limestone - light gray; angular		530	2	X					16
29 - 29.0		Auger Refusal at 29 ft.									

BORING LOG NEW 04-720.GPJ SAME.GDT 12/1/04

NOTES:

1. THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT: Tennessee River at Decatur Harbor
 Decatur, Tennessee
 S&ME Project No. 1432-04-720

BORING LOG TRM 296.8 Left Hole B

DATE DRILLED: 10/20/04 **ELEVATION:** 555

DRILLING METHOD: CME 550; 3 1/4" H.S.A. **BORING DEPTH:** 26.0 feet

LOGGED BY: C. Watson **WATER LEVEL @ TOB:** N/A

DRILLER: T. Hall/A. Jennings **WATER LEVEL @ 24 hrs:** N/A

NOTES: Boring in the Tennessee River.
 Approximate water elevation 555.2 ft.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
							10	20	30	60	80	
0 - 5		Water		555								
5 - 15		Silty Clay - brown; with gray mottling		545	1	X						2
15 - 20		Silty Clay - brown; with gray and dark brown mottling. Weathered rock fragments-light brown angular fragments.		540	2	X						12
20 - 25		Silty Clay - brown; with gray and dark brown mottling. Weathered rock fragments-light brown angular fragments.		535	3	X						11
25 - 26		Silty Clay - brown; with gray and dark brown mottling. Weathered rock fragments-light brown angular fragments.		530	4	X						20
26		Auger Refusal at 26 ft.			5	X						6
					6	X						5
					7	X						43

BORING LOG NEW 04-720 GPJ S&ME.GDT 2/7/04

- NOTES:**
- THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
 - BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
 - STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
 - WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



PROJECT:		Tennessee River at Decatur Harbor Decatur, Tennessee S&ME Project No. 1432-04-720			BORING LOG TRM 298.1 Left Hole B							
DATE DRILLED: 10/19/04		ELEVATION: 554			NOTES: Boring in the Tennessee River. Approximate water elevation 553.6 ft.							
DRILLING METHOD: CME 550; 3/4" H.S.A.		BORING DEPTH: 29.0 feet										
LOGGED BY: C. Watson		WATER LEVEL @ TOB: N/A										
DRILLER: T. Hall/A. Jennings		WATER LEVEL @ 24 hrs: N/A										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)				N VALUE	
							10	20	30	60	80	
5		Water		549								
10				544								
15				539								
20		Sediment and Silt		534								
25		Silt - gray		529	1	X						3
					2	X						1
		Auger Refusal at 29 ft.										

NOTES:

1. THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



BORING LOG NEW 04-720.GPJ - S&ME.GDT 12/1/04

DEPTH (feet)		GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO.	SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
								10	20	30	60	80	
0	5	Water			550								
5	10	Silt and Sediment			545	1	X						7
10	15	Silty Clay - brown; with gray mottling			540	2	X						20
15	20	Silty Clay - brown; with gray and dark brown mottling			535	3	X						12
20	25	Silty Clay - brown; with weathered rock fragments-light gray angular fragments			530	4	X						20
25	30	Silty Clay - brown to greenish gray; with rounded coarse gravel-light gray			525	5	X						10
30	35	Silty Clay - brown				6	X						10
35	40	Silty Clay - brown to light gray				7	X						34
40	45	Weathered Limestone - light gray; angular				8	X						15
45	50	Auger Refusal at 33 ft.				9	X						2
50	55					10	X						10
55	60					11	X						42

BORING LOG NEW 34-720 (P.1) S&ME (07/17) 7/04

NOTES: Boring in the Tennessee River.
Approximate water elevation 555.2 ft.

NOTES:

1. THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
2. BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
3. STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.



TABLE 1

**Borehole Survey Coordinates
Tennessee River at Decatur Harbor
Decatur, Alabama
S&ME Project No. 1432-04-720**

Borehole Location ID	Surveyors ID	Drilling Date	Surface Water Elevation (ft msl)	Survey Coordinates	
				Northing	Easting
TRM 298.1 Left Hole A	Hole 6	10/19/2004	553.6	N 1696435.03	E 2096979.64
TRM 298.1 Left Hole B	Hole 6A	10/19/2004	553.6	N 1696400.96	E 2096969.29
TRM 298.1 Left Hole C	Hole 6B	10/19/2004	553.6	N 1696388.70	E 2096963.86
TRM 296.9 Left Hole A	Hole 5	10/20/2004	555.2	N 1698962.21	E 2091612.67
TRM 296.9 Left Hole B	Hole 5A	10/20/2004	555.2	N 1698934.09	E 2091598.47
TRM 296.9 Left Hole C	Hole 5B	10/20/2004	555.2	N 1698946.65	E 2091571.68
TRM 296.8 Left Hole A	Hole 4	10/20/2004	555.2	N 1699194.99	E 2091364.65
TRM 296.8 Left Hole B	Hole 4A	10/20/2004	555.2	N 1699172.29	E 2091349.59
TRM 296.7 Left Hole A	Hole 7	10/20/2004	555.2	N 1699395.84	E 2091134.09
TRM 296.7 Left Hole B	Hole 7A	10/20/2004	555.2	N 1699445.80	E 2091071.21

Note: Coordinate System is State Plane (F) NAD 83 Datum



**ENVIRONMENTAL
SCIENCE CORP.**

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Curt Watson
S&ME - Hixon, Tn.
2733 Kanasita Dr. Suite A
Hixon, TN 37343

November 02, 2004

Date Received : October 22, 2004
Description : TVA Decatur
Sample ID : TRM 298.1 LHA 22 FT
Collected By : Curt Watson
Collection Date : 10/19/04 11:50

ESC Sample # L174641-01
Site ID TN RIVER DECATUR HARBO
Project # 143204720

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	69.7		%	2540G	10/28/04	1
Mercury	0.14	0.020	mg/kg	7471	10/26/04	1
Arsenic	1.5	0.50	mg/kg	6010B	10/30/04	1
Barium	48.	0.25	mg/kg	6010B	10/30/04	1
Cadmium	0.47	0.25	mg/kg	6010B	10/30/04	1
Chromium	23.	0.50	mg/kg	6010B	10/30/04	1
Lead	10.	0.25	mg/kg	6010B	10/30/04	1
Selenium	BDL	0.50	mg/kg	6010B	10/30/04	1
Silver	0.49	0.25	mg/kg	6010B	10/30/04	1
Extractable Petroleum Hydrocarb	15	4.0	mg/kg	EPH	10/25/04	1
Surrogate Recovery	97.		% Rec.	EPH	10/25/04	1
Polychlorinated Biphenyls						
PCB 1016	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1221	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1232	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1242	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1248	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1254	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1260	BDL	0.085	mg/kg	8082	10/29/04	5
PCBs Surrogates						
Decachlorobiphenyl	97.3		% Rec.	8082	10/29/04	5
Tetrachloro-m-xylene	76.8		% Rec.	8082	10/29/04	5

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742

Note:

The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 11/02/04 06:33 Printed: 11/02/04 06:34



**ENVIRONMENTAL
SCIENCE CORP.**

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

November 02, 2004

Curt Watson
S&ME - Hixon, Tn.
2733 Kanasita Dr. Suite A
Hixon, TN 37343

Date Received October 22, 2004
Description TVA Decatur
Sample ID TRM 296.9 LHA 12 FT
Collected By Curt Watson
Collection Date 10/20/04 08:50

ESC Sample # L174641-02
Site ID TN RIVER DECATUR HARBO
Project # 143204720

Parameter	Result	Det. Limit	Units	Method	Date	Dil
Total Solids					10/21/04	
Mercury		0.020			10/21/04	
Arsenic		0.50			10/31/04	
Barium		0.25			10/31/04	1
Cadmium		0.25			10/31/04	1
Chromium		0.50			10/31/04	1
Lead		0.25			10/31/04	1
Selenium		0.50			10/31/04	1
Silver		0.25			10/31/04	1
Extractable Petroleum Hydrocarb		4.0			10/21/04	
Surrogate Recovery					10/21/04	
o-Terphenyl					10/21/04	
Polychlorinated Biphenyls						
PCB 1016	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1221	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1232	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1242	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1248	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1254	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1260	BDL	0.085	mg/kg	8082	10/29/04	5
PCBs Surrogates						
Decachlorobiphenyl	98.1		% Rec.	8082	10/29/04	5
Tetrachloro-m-xylene	73.6		% Rec.	8082	10/29/04	

Tom Mellette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742

Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 11/02/04 06:33 Printed: 11/02/04 06:34



**ENVIRONMENTAL
SCIENCE CORP.**

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Curt Watson
S&ME - Hixon, Tn.
2733 Kanasita Dr. Suite A
Hixon, TN 37343

November 02, 2004

Date Received October 22, 2004
Description TVA Decatur
Sample ID TRM 296.8 LHA 12 FT
Collected By Curt Watson
Collection Date 10/20/04 13:05

ESC Sample # L174641-03
Site ID TN RIVER DECATUR HARBO
Project # 143204720

Parameter	Result	Det. Limit	Units	Method	Date	Dil
Total Solids						
Mercury		0.020				
Arsenic		0.50				
Barium		0.25				
Cadmium		0.25				
Chromium		0.50				
Lead		0.25				
Selenium		0.50				
Silver		0.25				
Extractable Petroleum Hydrocarb		4.0				
Surrogate Recovery						
o-Terphenyl						
Polychlorinated Biphenyls						
PCB 1016	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1221	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1232	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1242	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1248	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1254	BDL	0.085	mg/kg	8082	10/29/04	5
PCB 1260	BDL	0.085	mg/kg	8082	10/29/04	5
PCBs Surrogates						
Decachlorobiphenyl	91.5		µ Rec	8082	10/29/04	5
Tetrachloro-m-xylene	75.2		µ Rec	8082	10/29/04	5

Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 11/02/04 06:33 Printed: 11/02/04 06:34



**ENVIRONMENTAL
SCIENCE CORP.**

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

November 02, 2004

Curt Watson
S&ME - Hixon, Tn.
2733 Kanasita Dr. Suite A
Hixon, TN 37343

Date Received October 22, 2004
Description TVA Decatur
Sample ID TRM 298.1 LHA 22 FT
Collected By Curt Watson
Collection Date 10/19/04 11:50

ESC Sample # L174641-04
Site ID TN RIVER DECATUR HARBOR
Project 143204720

Parameter	Result	Det. Limit	Units	Limit	Method	Date	Dil
TCLP Extraction						10/30/04	1
Mercury	BDL	0.0010	mg/l	0.20		10/30/04	1
Arsenic	BDL	0.050	mg/l	5.0		11/01/04	1
Barium	0.060	0.050	mg/l	100		11/01/04	1
Cadmium	BDL	0.050	mg/l	1.0		11/01/04	1
Chromium	BDL	0.050	mg/l	5.0		11/01/04	1
Lead	BDL	0.050	mg/l	5.0		11/01/04	1
Selenium	BDL	0.050	mg/l	1.0		11/01/04	1
Silver	BDL	0.050	mg/l	5.0		11/01/04	1

Tom Mallette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Notes:

The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 11/02/04 06:33 Printed: 11/02/04 06:34



**ENVIRONMENTAL
SCIENCE CORP.**

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Curt Watson
S&ME - Hixon, Tn.
2733 Kanasita Dr. Suite A
Hixon, TN 37343

November 02, 2004

Date Received : October 22, 2004
Description : TVA Decatur
Sample ID : TRM 296.9 LHA 12 FT
Collected By : Curt Watson
Collection Date : 10/20/04 08:50

ESC Sample # L174641-05
Site ID TN RIVER DECATUR HARBOR
Project 143204720

Parameter	Result	Det. Limit	Units	Limit	Method	Date	Dil
TCLP Extraction							
Mercury	BDL	0.0010	mg/l	0.20	1311 7470A	10/30/04	1
Arsenic	BDL	0.050	mg/l	5.0	6010B	11/01/04	1
Barium	0.060	0.050	mg/l	100	6010B	11/01/04	1
Cadmium	BDL	0.050	mg/l	1.0	6010B	11/01/04	1
Chromium	BDL	0.050	mg/l	5.0	6010B	11/01/04	1
Lead	BDL	0.050	mg/l	5.0	6010B	11/01/04	1
Selenium	BDL	0.050	mg/l	1.0	6010B	11/01/04	1
Silver	BDL	0.050	mg/l	5.0	6010B	11/01/04	1


Tom Mellette, ESC Representative

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:

AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:

The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 11/02/04 06:33 Printed: 11/02/04 06:34



**ENVIRONMENTAL
SCIENCE CORP.**

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Curt Watson
S&ME - Hixon, Tn.
2733 Kanasita Dr. Suite A
Hixon, TN 37343

November 02, 2004

Date Received : October 22, 2004
Description : TVA Decatur
Sample ID : TRM 296.8 LHA 12 FT
Collected By : Curt Watson
Collection Date : 10/20/04 13:05

ESC Sample # : L174641-06
Site ID : TN RIVER DECATUR HARBOR
Project : 143204720

Parameter	Result	Det. Limit	Units	Limit	Method	Date	Dil
TCLP Extraction	-				1311	10/30/04	1
Mercury	BDL	0.0010	mg/l	0.20	7470A	10/30/04	1
Arsenic	BDL	0.050	mg/l	5.0	6010B	11/01/04	1
Barium	0.054	0.050	mg/l	100	6010B	11/01/04	1
Cadmium	BDL	0.050	mg/l	1.0	6010B	11/01/04	1
Chromium	BDL	0.050	mg/l	5.0	6010B	11/01/04	1
Lead	BDL	0.050	mg/l	5.0	6010B	11/01/04	1
Selenium	BDL	0.050	mg/l	1.0	6010B	11/01/04	1
Silver	BDL	0.050	mg/l	5.0	6010B	11/01/04	1

Tom Mallette, ESC Representative

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit (EQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233

Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 11/02/04 06:33 Printed: 11/02/04 06:34

Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier	
L174641-01	PCB 1016	O	
	PCB 1221	O	
	PCB 1232	O	
	PCB 1242	O	
	PCB 1248	O	
	PCB 1254	O	
	PCB 1260	O	
	Decachlorobiphenyl	O	
	Tetrachloro-m-xylene	O	
	Barium	B	
	L174641-02	PCB 1016	O
		PCB 1221	O
		PCB 1232	O
PCB 1242		O	
PCB 1248		O	
PCB 1254		O	
PCB 1260		O	
Decachlorobiphenyl		O	
Tetrachloro-m-xylene		O	
Barium		B	
L174641-03		PCB 1016	O
		PCB 1221	O
		PCB 1232	O
	PCB 1242	O	
	PCB 1248	O	
	PCB 1254	O	
	PCB 1260	O	
	Decachlorobiphenyl	O	
	Tetrachloro-m-xylene	O	
	Barium	B	

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- | | | Control Limits | | | (AQ) | (SS) |
|----------------------|--------|------------------|--------|----------------------|--------|--------|
| 2-Fluorophenol | 31-119 | Nitrobenzene-d5 | 43-118 | Dibromfluoromethane | 79-126 | 83-119 |
| Phenol-d5 | 12-134 | 2-Fluorobiphenyl | 45-128 | Toluene-d8 | 81-114 | 82-116 |
| 2,4,6-Tribromophenol | 51-141 | Terphenyl-d14 | 43-137 | 4-Bromofluorobenzene | 65-129 | 72-126 |
- TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
11/02/04 at 06:34:58

TSR Signing Reports: 690
R5 - Desired TAT

Sample: L174641-01 Account: SMEHTN Received: 10/22/04 09:00 Due Date: 10/29/04 00:00 RPT Date: 11/02/04 06:33
Sample: L174641-02 Account: SMEHTN Received: 10/22/04 09:00 Due Date: 10/29/04 00:00 RPT Date: 11/02/04 06:33
Sample: L174641-03 Account: SMEHTN Received: 10/22/04 09:00 Due Date: 10/29/04 00:00 RPT Date: 11/02/04 06:33
Sample: L174641-04 Account: SMEHTN Received: 10/22/04 09:00 Due Date: 10/29/04 00:00 RPT Date: 11/02/04 06:33
Sample: L174641-05 Account: SMEHTN Received: 10/22/04 09:00 Due Date: 10/29/04 00:00 RPT Date: 11/02/04 06:33
Sample: L174641-06 Account: SMEHTN Received: 10/22/04 09:00 Due Date: 10/29/04 00:00 RPT Date: 11/02/04 06:33

S&ME - Hixon, Tn.

2733 Kanasita Dr. Suite A
Hixon, TN 37343

Report to: **Scott Watson**

Project Description: **TVA Decatur**

Phone: (423) 826-2110
FAX: (423) 870-1005

Collected by (print): **Scott Watson**

Collected by (signature): 

Packaged on Job: **N Y J**

Client Project #: **1432 04720**

City/State: **Decatur, AL**

Lab Project #: **SMEHTN-TVADECATUR**

Site/State: **TH River @ Decatur, Ala**

Post Office: **604012**

Filter? (Lab MUST be notified)

Same Day: **20%**

Next Day: **100%**

Two Day: **50%**

Date Results Needed

2 wks Standard

Email? **No X Yes**

FAX? **No Yes**

Depth

Master

Comp/Grab

Sample ID

Date

Time

No. of

Crits

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

TRM 296.8 Left Hole A

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

Alternate billing information:

City/State: **Decatur, AL**

Lab Project #: **SMEHTN-TVADECATUR**

Site/State: **TH River @ Decatur, Ala**

Post Office: **604012**

Filter? (Lab MUST be notified)

Same Day: **20%**

Next Day: **100%**

Two Day: **50%**

Depth

Master

Comp/Grab

Sample ID

Date

Time

No. of

Crits

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

TRM 296.8 Left Hole A

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

TRM 298.1 Left Hole A

TRM 296.9 Left Hole A

Chain of Custody
Page 1 of 2

Prepared by:



ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Road

Mt. Juliet, TN 37122

Phone (600) 767-5859

FAX (615) 758-5859

Account: **SMEHTN**

Telephone: **727-1393**

Fax: **727-1393**

Address: **1013 DS**

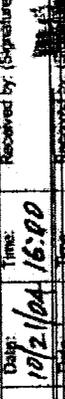
Support Vrs: **ROCK CRIMINAL**

Remarks/Contaminant	Sample # (job only)
L177647-d	
702	
703	
704	
705	

pH _____ Temp _____
Flow _____ Other _____

Remarks:

8446 7381 48-47

Requested by (Signature)	Date:	Time:	Received by (Signature)	Time:	Condition:
	10/21/04	16:00			
					
					

Sample returned via:	Condition:
<input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> UPS	
Bill of Lading Received:	
Bill of Lading No.:	
Bill of Lading Date:	
Bill of Lading Time:	
Bill of Lading Location:	

S&ME - Hixon, Tn.

2733 Kanasita Dr. Suite A
Hixon, TN 37343

Report to: **Curt Watson**
Email: **CWatson@smetric.com**

Project Description: **TVA Decatur**

Client Project #: **143204720**

City/State Collected: **Decatur, AL**

Lab Project #: **SMEHTN-TVADBCATUR**

Phone: (423) 826-2110

FAX: (423) 870-1005

Collected by (print): **Curt Watson**

Collected by (signature): *[Signature]*

PO# **604012**

Site/Agency Use: **TR River @ Decatur/Hixon**

Result? (Lab MUST Be Notified)

Same Day 200%

Next Day 100%

Two Day 50%

Packed on Ice: **N** **Y**

Date Results Needed: **2 wks standard**

Email? No Yes

FAX? No Yes

Date: **10/20/04**

Time: **13:05**

Depth: **12 ft**

Matrix: **SS**

Comp/Grab: **Grab**

Sample ID: **TRM 296.8 Left Hole A**

*Metric: **SS - Sol GW - Groundwater WW - Waste Water DW - Drinking Water OT - Other**

Remarks:

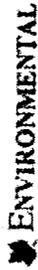
pH _____ Temp _____

Flow _____ Other _____

Alternate Billing Information

Chain of Custody
Page **2** of **2**

Prepared by:



ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Road

Me. Juliet, TN 37122

Phone (800) 767-5559

FAX (615) 758-5859

System: **SMEHTN** (12/1/04-07/07)
 Analyte: **TCMP METALS 802CI-NOPres**
 Date: **10/13/04**
 Location: **TRM 296.8 Left Hole A**
 Method: **FeDEX Growth**

Remarks/Contaminant: **LTMB4 -04**

Sample # (this only)

Matrix	Depth	Matrix	Comp/Grab	Sample ID	TCMP METALS 802CI-NOPres	RCA METALS 802CI-NOPres	PCB's 402CI-NOPres	EPHIN 402CI-NOPres
SS	12 ft	SS	Grab	TRM 296.8 Left Hole A	X	X	X	X
SS		SS			X	X	X	X
SS		SS			X	X	X	X
SS		SS			X	X	X	X
SS		SS			X	X	X	X

Resequenced by (Signature)	Day	Time	Received by (Signature)	Conclusion
<i>[Signature]</i>	10/21/04	16:00	<i>[Signature]</i>	OK
<i>[Signature]</i>			<i>[Signature]</i>	
<i>[Signature]</i>			<i>[Signature]</i>	

Samples returned via:	Conclusions
<input checked="" type="checkbox"/> UPS	
<input type="checkbox"/> FedEx	
<input type="checkbox"/> Counter	
Time: 3:00	
Date: 10/21/04	
Time: 9:00	
Date: 10/21/04	

TABLE 2
Summary of Analytical Results
Tennessee River at Decatur Harbor
Decatur, Alabama
S&ME Project No. 1432-04-720

Sample ID Sample Date Depth (ft)	TRM 298.1 LHA 10/19/04 22	TRM 296.9 LHA 10/20/04 12	TRM 296.8 LHA 10/20/04 12	TCLP Action Levels ¹	Industrial PRGs ²
TCLP Metals (mg/l)					
Mercury	<0.0010	<0.0010	<0.0010	0.2	
Arsenic	<0.050	<0.050	<0.050	5.0	
Barium	0.060	0.060	0.054	100.0	
Cadmium	<0.050	<0.050	<0.050	1.0	
Chromium	<0.050	<0.050	<0.050	5.0	
Lead	<0.050	<0.050	<0.050	5.0	
Selenium	<0.050	<0.050	<0.050	1.0	
Silver	<0.050	<0.050	<0.050	5.0	
RCRA Metals (mg/kg)					
Mercury	0.14	0.041	0.042		310
Arsenic	1.5	1.4	1.3		260
Barium	48	130	110		67000
Cadmium	0.47	<0.25	1.2		450
Chromium	23	40	40		450
Lead	10	9.5	8.4		750
Selenium	<0.50	<0.50	<0.50		5100
Silver	0.49	<0.25	<0.25		5100
TPH-EPH (mg/kg)	15	<4.0	<4.0		100 ³
PCBs (mg/kg)					
PCB 1016	<0.085	<0.085	<0.085		21
PCB 1221	<0.085	<0.085	<0.085		0.74
PCB 1232	<0.085	<0.085	<0.085		0.74
PCB 1242	<0.085	<0.085	<0.085		0.74
PCB 1248	<0.085	<0.085	<0.085		0.74
PCB 1254	<0.085	<0.085	<0.085		0.74
PCB 1260	<0.085	<0.085	<0.085		0.74

Notes: ¹ - Toxicity Characteristic Leaching Procedure (TCLP) Action Levels [40 CFR 261.24]

² - U.S. EPA Region 9 2002 Industrial Preliminary Remediation Goals (PRGs).

³ - TDEC "Drinking Water Supply" Cleanup Level.