Date: April 1995

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Document Title/Description:

Report on Additional Ecological Assessment of Streams in the Vicinity of Interstate Lead Company (ILCO) Superfund Site, Leeds, Alabama.
Main Facility

Superfund Site Account # TFA04D9J4

REPORT ON THE ADDITIONAL ECOLOGICAL ASSESSMENT OF STREAMS IN THE VICINITY OF INTERSTATE LEAD COMPANY SUPERFUND SITE MAIN FACILITY

LEEDS, ALABAMA

JULY 1994

PREPARED BY:

U.S. ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICES DIVISION, ECOLOGICAL SUPPORT BRANCH
AND
ESAT, BIOLOGICAL ASSISTANCE TEAM

INTRODUCTION

A preliminary ecological assessment of streams near the Interstate Lead Company (ILCO) Superfund Site Main Facility, conducted during the first two weeks of March 1994, involved the evaluation of surface water and sediments (analyzed for metals, volatile and extractable organics, pesticides, PCB's, total organic carbon, and toxicity) and forage fish tissue (analyzed for metals, extractable organics, pesticides, PCB's, and percent lipids). Rapid Bioassessments Protocol I (RBP I) were also performed at each station for the purpose of detecting aquatic life impairments. The RBP I included habitat assessments, physicochemical measurements, and qualitative benthic macroinvertebrate surveys.

Results of the March study (USEPA 1994a) revealed elevated levels of lead in sediment, water, and fish tissue samples collected from the unnamed tributary that drains the ILCO Main Facility and from Dry Creek downstream of the site.

This preliminary screening (USEPA 1994a) provided evidence that site-derived lead contamination had been transported off-site. Additional sampling at downstream locations was needed to evaluate the extent and magnitude of site-derived lead contamination and to evaluate lead accumulation in fish tissue.

Consequently, additional sampling of streams draining the ILCO Main Facility was conducted by ESB in July 1994. Since lead was determined to be the primary chemical of concern at the ILCO site, and also to provide a more complete view of site conditions, results of lead chemistry from both sampling events (March and July 1994) are presented in this report.

OBJECTIVES

Objectives of this study were to better determine the extent and magnitude of site-derived lead contamination in streams draining the ILCO Main Facility and to evaluate the bioaccumulation of lead in fish tissue downstream of the site.

METHODS

To accomplish these objectives, biologists collected water, sediment, and fish at a series of sampling stations along Dry Creek and the Little Cahaba River (Figure 1) for lead analysis.

Since a number of ILCO subsites exist, control stations (representing in-stream conditions upstream of and exclusive of contributions from the ILCO Main Facility) were selected for Dry Creek (station #3) and the Little Cahaba River (Station #9).

The lack of sample stations located between stations 6 and 7 (Figure 1) resulted from denial of access (based on safety concerns) by property owners. Time required to gain access

through proper channels would have delayed sample collection activities to a less suitable time.

Water and Sediment

Surface water and sediment samples were collected at each sample station and analyzed for total lead concentration. Samples were collected and preserved in accordance with the practices and procedures described in Environmental Compliance Branch Standard Operating Procedures (USEPA 1991) and Laboratory Operations and Quality Control Manual (USEPA 1990). Samples were packed on ice and shipped to the appropriate laboratory for metals analysis.

Fish

Fish samples (forage and sport fish) were collected at each station (where present) by electroshocking with a Smith-Root back-pack electrofishing unit. Collection and preservation techniques followed guidelines described in Fish Field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters (Klemm *et al.* 1993). Samples were packed in ice and shipped to U.S. EPA Region IV Ecological Support Branch Laboratory in Athens, Georgia for processing. Fish were identified to species (where possible), weighed, and measured. Fish were then pulverized (using a waring blender and dry ice) and maintained frozen until chemically analyzed for metals concentration by U.S. EPA Analytical Support Branch Laboratory. A bound field log book was used to record sampling activities.

Chain-of-Custody was maintained throughout sample collection and testing.

RESULTS

The results of specified chemical analyses of water, sediment, and fish tissue samples collected at 13 stream stations near the ILCO Main Facility are presented below.

Surface Water

Lead concentrations in surface water at stream sampling locations are shown in Figure 2. Table 1 provides lead concentrations in surface water, station descriptions, and the chronic and acute screening criteria used by US EPA Region IV Waste Management Division and by the State of Alabama.

Sediment

Sediment lead concentrations for stations along the stream reach are presented in Figure 3. Table 2 shows concentrations of metals found in sediments collected from the streams of interest and the shaded cells represent values that exceed the US EPA Region IV Waste Management Division sediment screening criteria (USEPA 1994b). The US EPA (1994b) sediment screening values and the National Oceanic and Atmospheric Administration (NOAA) Expected Range-Low (ER-L) sediment screening values (Long and Morgan 1991, Long *et al* 1994) are also presented in Table 2.

Fish

Results of fish tissue chemistry are shown in Table 3. The shaded values denote levels of whole body lead burden in fish tissue that are considered elevated compared to nationwide values reported by the United States Fish and Wildlife Service (USFWS) (Eisler 1988). Figures 4 (forage fish) and 5 (fish filet) show fish tissue lead levels along the study reach. The number and type of fish collected at each station are presented in table 4.

DISCUSSION

Transport, deposition and accumulation of site-derived lead is most clearly seen in sediment and fish tissue (Figures 3, 4, and 5) and to a lesser extent reflected in surface water analyses of the July 1994 sampling (Table 1 and Figure 2).

Sediment lead concentrations exceeded the US EPA (1994b) screening value (21 mg/kg) at all sampling locations except station 9 (Little Cahaba River Control). But stations 2, 5, and 6 had extremely elevated lead levels (1100, 2400, and 5400 mg/kg, respectively). These stations, located just downstream of the ILCO site, had sediment lead concentrations as much as 100 times greater than those found at the Unnamed Stream Background (47 mg/kg), the Reference Stream (46 mg/kg), Dry Creek Control (41 and 48 mg/kg), and Little Cahaba River Control (19 mg/kg) stations.

Considerable differences in sediment lead concentrations at station 5 for March (870 mg/kg) and July (2500 mg/kg) samplings may be due in part to the highly variable nature of stream sediments which are continually altered by overlying surface water conditions. However, it is also possible that contaminants migrating from the Main Facility and Parking Lot could have caused the increased concentration of lead.

Arsenic concentrations exceeded the US EPA screening value of 8 mg/kg at several stations along the stream reach including the control (station #3) on Dry Creek. This suggests that arsenic may have come from sources other than the ILCO Main Facility. Based on available information, arsenic was not considered a contaminant of concern for this portion of the site.

Nickel exceeded the EPA sediment screening value of 20.9 mg/kg at several stations including controls (station 1 and 4) which suggests sources other than the ILCO Main Facility. Nickel concentrations were within screening limits at all stations in the Little Cahaba River.

Antimony was detected at stations 5 and 6 in Dry Creek, but because quantities measured at these stations are similar to the minimum quantitation limits found at background and control stations, it is not possible to determine from this data set if antimony is being contributed by the ILCO Main Facility. The

wide range of minimum quantitation limit values for antimony may be due to the fact that the sediment matrix is very complex and interferences can limit attainment of lower values. Because antimony was not considered a contaminant of concern for the ILCO Main Facility, only routine analytical services were requested for this parameter, resulting in the higher detection limits.

Zinc and mercury concentrations in sediment exceeded the EPA screening values, however, estimated values (zinc) and inadequate detection limits (mercury) suggest these compounds may also have been present at background locations.

Analogous to sediment results, whole body lead burden in forage fish tissue was highest in samples collected at stations 2, 5, and 6 (11.0, 6.0, and 8.3 mg/kg, respectively). Lead concentrations reported for whole body fish nationwide in 1978-1979 averaged 0.2 mg/kg fresh weight with a range of 0.1 - 6.7 mg/kg. The 1980-1981 average was also 0.2 mg/kg fresh weight, but with a range of 0.1 - 1.9 mg/kg (Eisler 1988).

Schmitt *et al* (1984) reported greatly elevated whole body lead burdens of 9 to 18 mg/kg in fish collected from Big River, Missouri, near a ruptured mine tailings pond dam. Similar concentrations were detected in forage fish immediately downstream of the ILCO site at station 2 (11.0 mg/kg), station 5 (6.0 mg/kg), and station 6 (8.3 mg/kg), whereas control stations

revealed <1.0 mg/kg of lead in forage fish tissue. Although elevated lead concentrations detected, no criteria have been established for lead in fish tissues connoting dangerous levels to the organism, nor has an action level been established by the Food and Drug Administration for lead in edible fish tissue.

CONCLUSION

Based on results of the March and July 1994 studies, transport, deposition and accumulation of site-derived lead is apparent in streams draining the ILCO Main Facility. Certain "hot spots" located immediately downstream of the ILCO site have greatly elevated lead concentrations in sediment, water, and fish tissue as compared to control stations. However, results of toxicity testing, macroinvertebrate surveys (March 1994 sampling), and the number and species of fish collected indicate that site-derived contaminants, even though present, appear to be having no measurable deleterious effect on aquatic communities.

Since the ecological evaluations reported here sought to measure the extent and magnitude of site-derived contamination and the bioaccumulation of lead in fish tissue, no attempt was made to predict potential ecological or health risks, especially in the case of continuing contributions of contaminants from the site. The potential ecological and health risks will be evaluated in the baseline risk assessment which has not yet been performed for this portion of the site.

LITERATURE CITED

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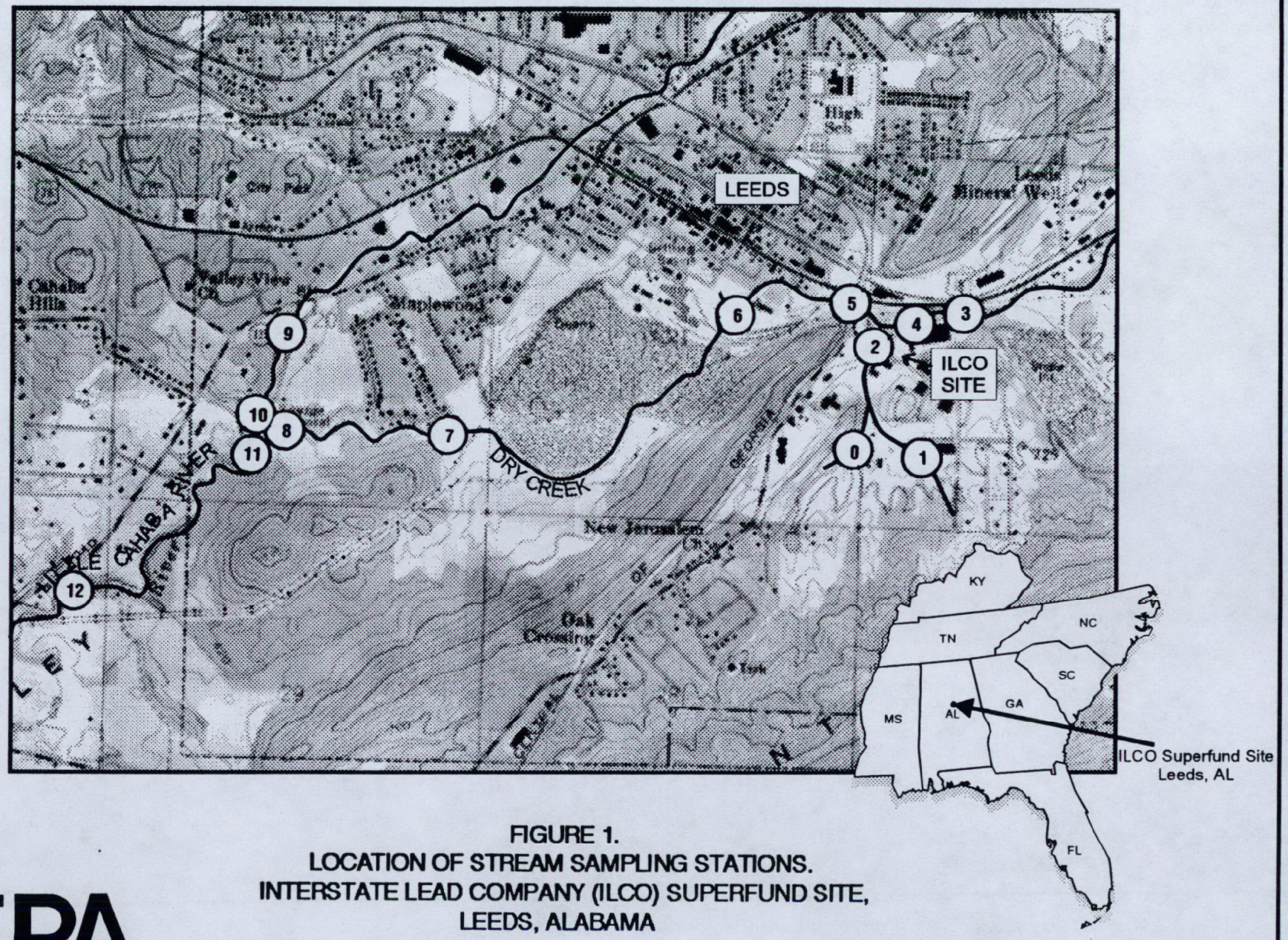
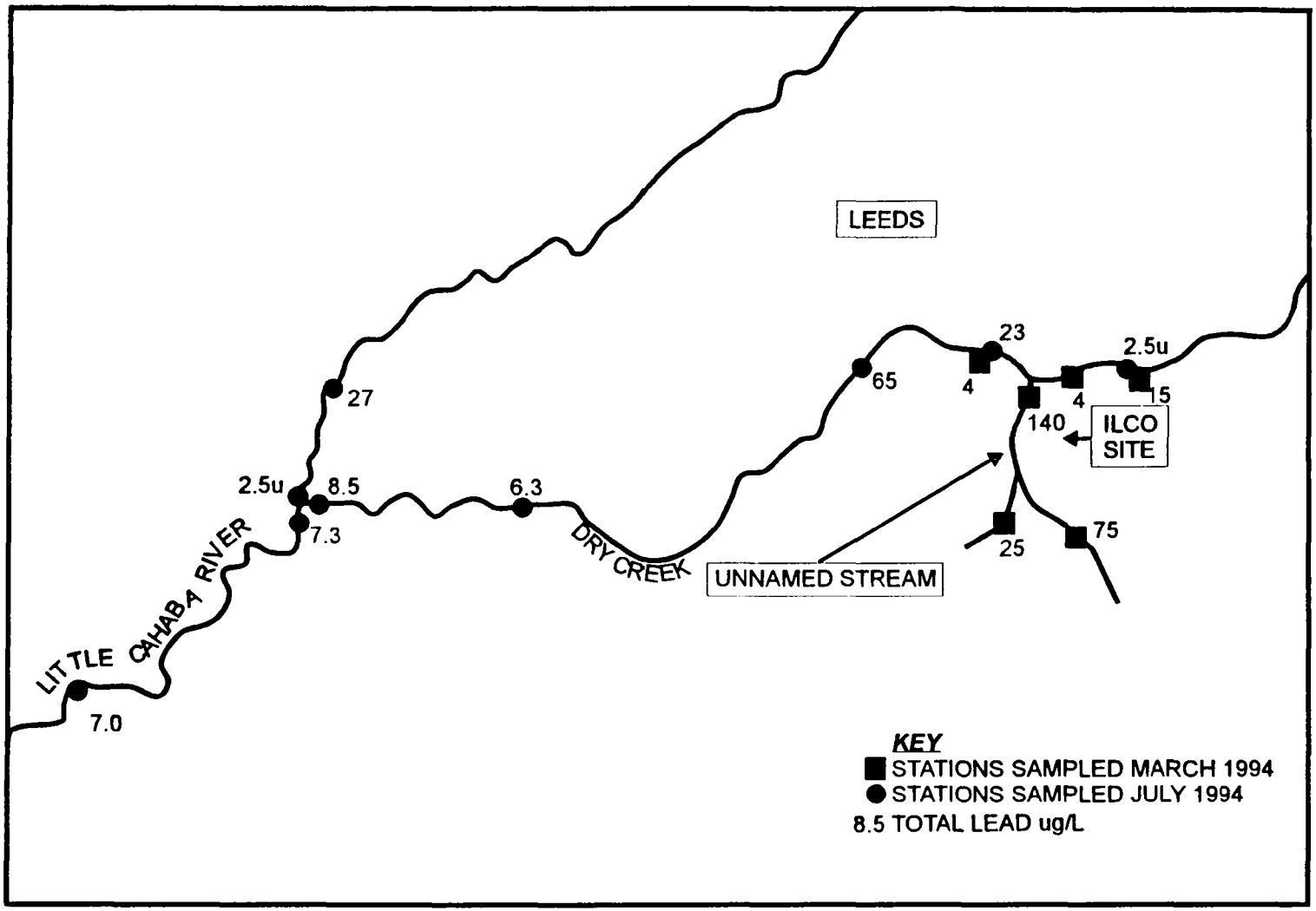


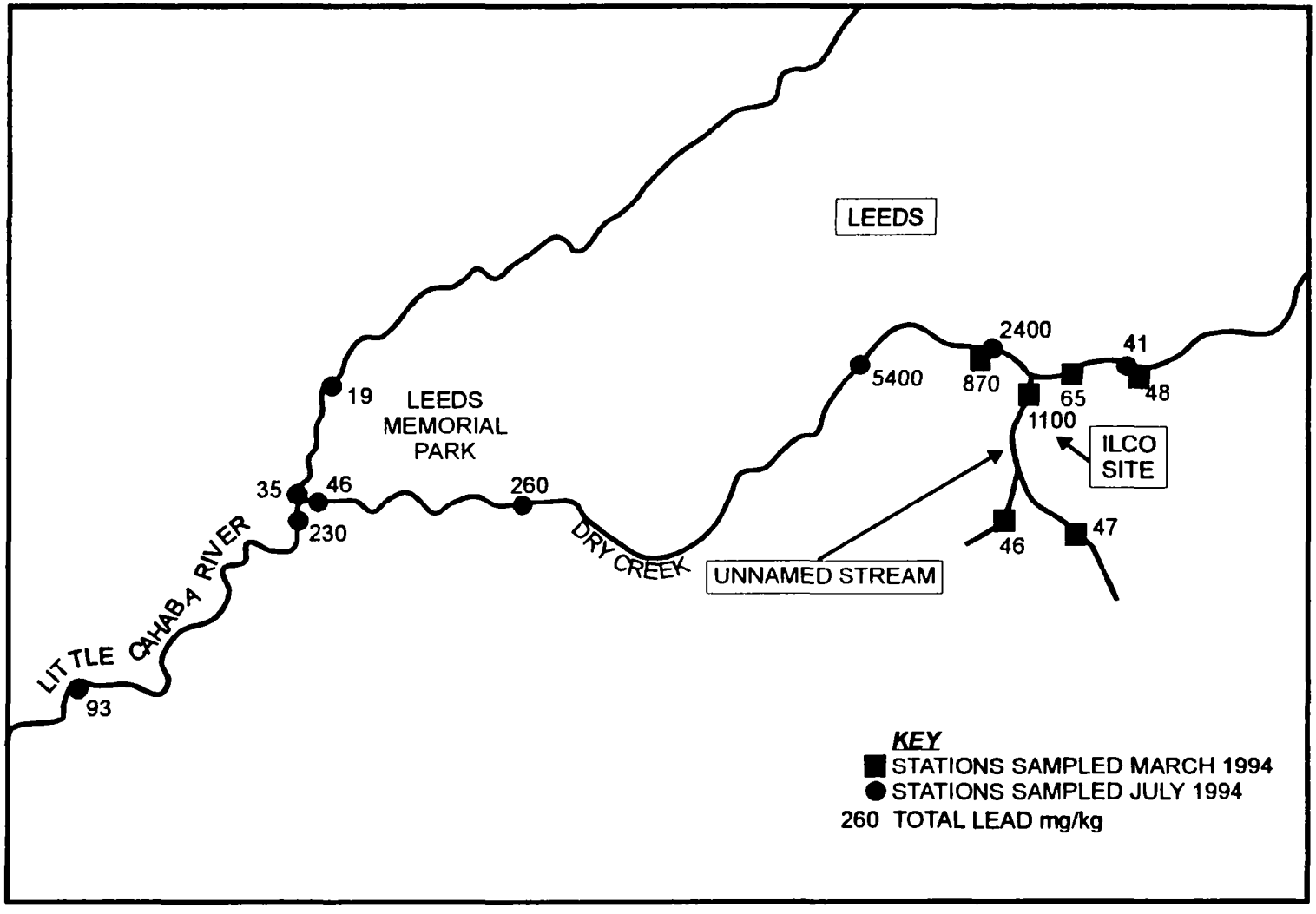
FIGURE 1.
LOCATION OF STREAM SAMPLING STATIONS.
INTERSTATE LEAD COMPANY (ILCO) SUPERFUND SITE,
LEEDS, ALABAMA

EPA



EPA

FIGURE 2.
LEAD CONCENTRATIONS IN SURFACE WATER
INTERSTATE LEAD COMPANY SUPERFUND SITE,
LEEDS, ALABAMA



EPA

FIGURE 3.
LEAD CONCENTRATIONS IN SEDIMENT
INTERSTATE LEAD COMPANY SUPERFUND SITE,
LEEDS, ALABAMA

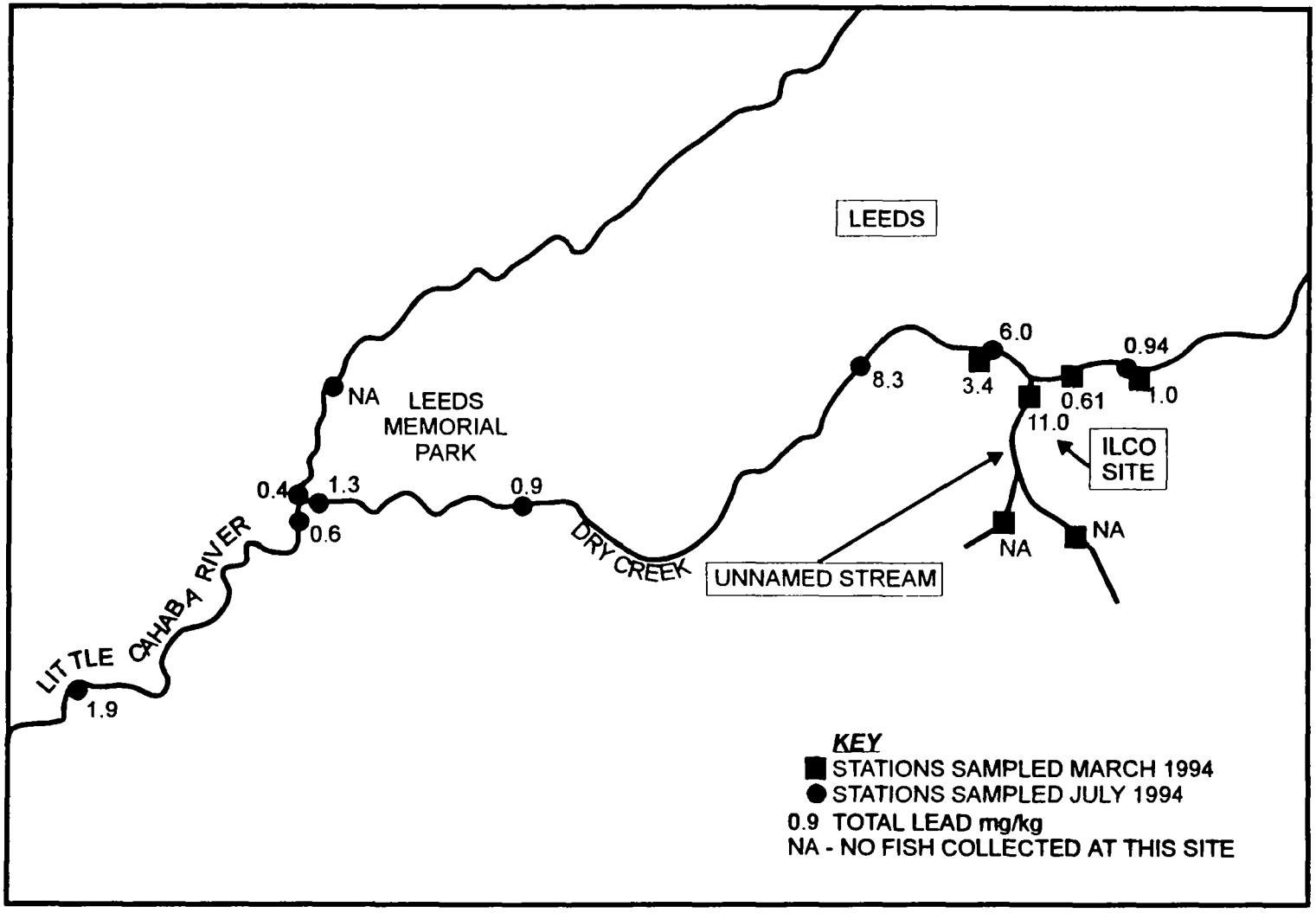


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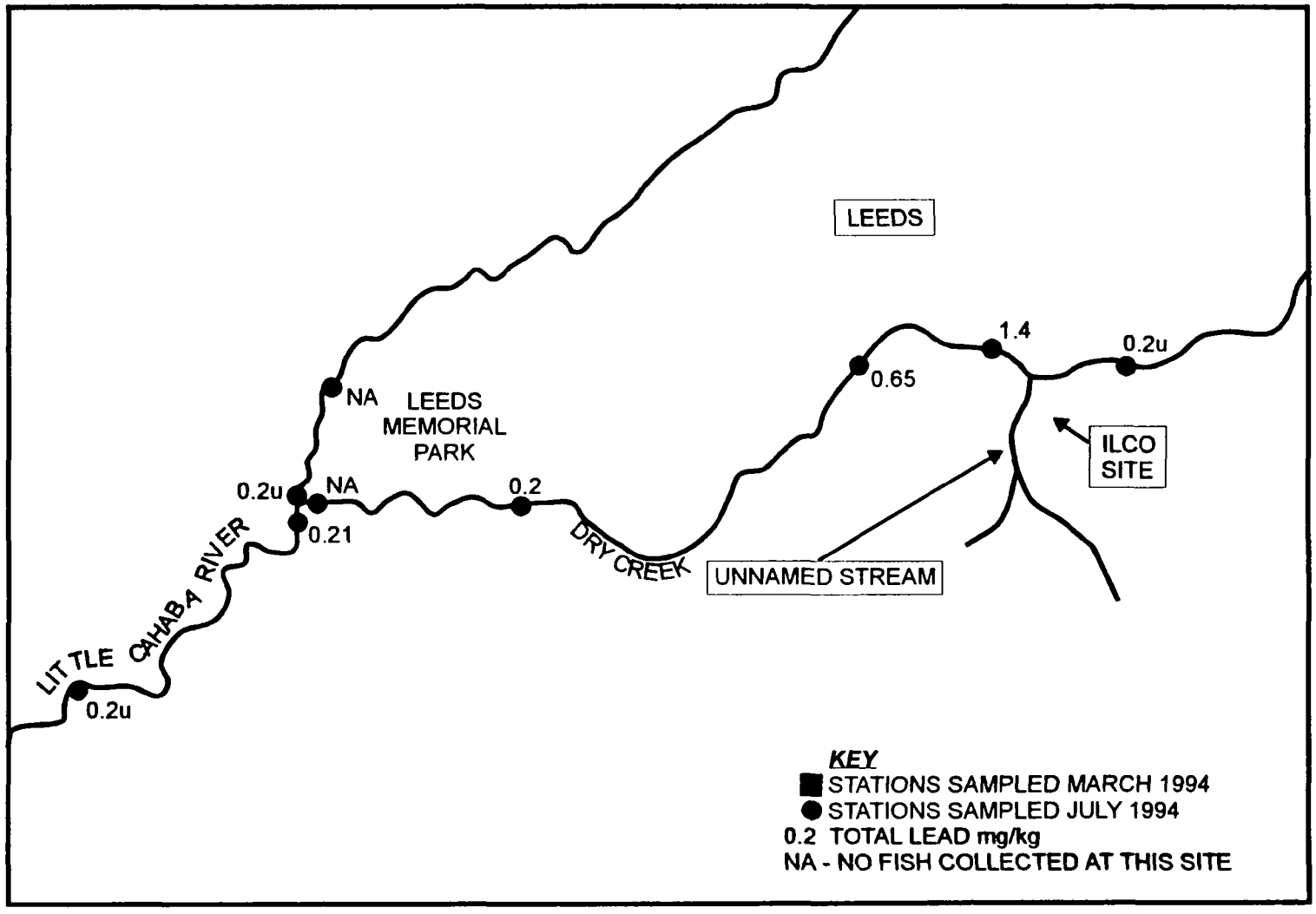
FIGURE 4.
LEAD CONCENTRATIONS IN FORAGE FISH TISSUE
INTERSTATE LEAD COMPANY SUPERFUND SITE,
LEEDS, ALABAMA



EPA

FIGURE 5.
LEAD CONCENTRATIONS IN FISH FILET TISSUE
INTERSTATE LEAD COMPANY SUPERFUND SITE,
LEEDS, ALABAMA

Table 1. Lead concentrations in surface water. Interstate Lead Company Superfund Site, Leeds, Alabama. March and July, 1994.

Samples Collected March 1994	
Station Number & Description	**Total Lead (ug/L)**
0 Reference Stream	25*
1 Unnamed tributary *background*	75*
2 Unnamed tributary downstream of ILCO	140*
3 Dry Creek *control*	15*
4 Dry Creek above confluence w/ Unnamed Trib.	4
5 Dry Creek below confluence w/ Unnamed Trib.	4
Samples Collected July 1994	
3 Dry Creek *control*	2.5U
5 Dry Creek below confluence w/ Unnamed Trib.	23
6 Dry Creek upstream of LeHigh Cement	65
7 Dry Creek downstream of LeHigh Cement	6.3
8 Dry Creek adjacent to Leeds WWTP	8.5
9 Leeds Memorial Park	27
10 Little Cahaba River *control*	2.5U
11 Little Cahaba River below confluence w/ Dry Cr.	7.3
12 Little Cahaba River at Elliot Rd.	7.0
US EPA Region IV WMD *Chronic Screening Value*	1.32**
US EPA Region IV WMD Acute Screening Value	33.78**

U - Material was analyzed for but not detected. The value reported is the minimum quantitation limit.
* - samples collected during rain event.
** - dependent on hardness.

Table 2. Metals concentrations in sediments of Dry Creek and the Little Cahaba River, Interstate Lead Company OU-3, Leeds, Alabama.

Samples Collected March 1994							
	Parameter (mg/kg)						
Station #	Lead	Arsenic	Copper	Nickel	Antimony	Zinc	Mercury
0	**46**	4.7	3.8	12	20UJ	41J	0.15U
1	**47**	5	13	**26**	20UJ	140J	0.17U
2	**1100**	5.7	13	11	20UJ	62J	0.16U
3	**48**	**17**	7	14	20UJ	62J	0.17U
4	**65**	6.4	9.4	**35**	20UJ	120J	0.15U
5	**870**	**10**	13	17	20UJ	94J	0.17U
Samples Collected July 1994							
3	**41**	**10**	7.8	14	6.09U	62	0.05U
5	**2400**	**16**	**28**	**29**	**20**	**110**	0.095
6	**5400**	**26**	**44**	**26**	**26**	**190**	**0.25**
7	**260**	**17**	18	**24**	15U	**78**	**0.13**
8	**46**	**10**	17	**21**	9.0U	64	**0.14**
9	19	6.1	9.1	6.0	3.0U	49	0.050
10	**35**	**16**	19	15	9.0U	**82**	0.085
11	**230**	**12**	13	19	15U	**81**	0.050
12	**93**	**17**	8.4	18	15U	60	0.05U
USEPA 1994	**21**	**8**	**28**	**20.9**	**12**	**68**	**0.1**
NOAA ER-L (1991)	35	33	70	30	2	120	0.15
NOAA ER-L (1994)	46.7	8.2	34	20.9	---	150	0.15

U - Material was analyzed for but not detected. The value reported is the minimum quantitation limit.

J - Estimated value.

shaded value - exceeds the US EPA Region IV Waste Management Division sediment screening values for Hazardous Waste Sites (USEPA 1994B).

ER-L (Expected Range Low) Values - sediment quality screening guidelines established by the National Oceanic and Atmospheric Administration (Long and Morgan 1991, Long *et al* 1994).

Table 3. Lead concentrations in fish tissue. Interstate Lead Company Superfund Site, Leeds, Alabama. March and July, 1994.

Station Number & Description	Total Lead (mg/kg)	
	Forage Fish	Fish Filet
0 Reference Stream	NA	NA
1 Unnamed tributary *background*	NA	NA
2 Unnamed tributary downstream of ILCO	**11.0**	NA
3 Dry Creek *control*	1.0 / 0.94	0.2U
4 Dry Creek above confluence w/ Unnamed Trib.	0.61	NA
5 Dry Creek below confluence w/ Unnamed Trib.	**3.4 / 6.0**	1.4
6 Dry Creek upstream of LeHigh Cement	**8.3**	0.65
7 Dry Creek downstream of LeHigh Cement	0.9	0.2
8 Dry Creek adjacent to Leeds WWTP	1.3	NA
9 Leeds Memorial Park	NA	NA
10 Little Cahaba River *control*	0.4	0.2U
11 Little Cahaba River below confluence w/ Dry Cr.	0.6	0.21
12 Little Cahaba River at Elliot Rd.	1.9	0.2U
Values reported for whole body fish nationwide for 1978-1979 (Eisler 1988)	0.2 (0.1-6.7)	
Values reported for whole body fish nationwide for 1980-1981 (Eisler 1988)	0.2 (0.2-1.9)	

U - Material was analyzed for but not detected. The value reported is the minimum quantitation limit.
NA - Not analyzed.

shaded value - elevated whole body lead concentration; comparison based on nationwide values reported by the U.S. Fish and Wildlife (Eisler 1988).

Table 4. Fish collected from streams near the ILCO Superfund Site, Leeds, Alabama. March and July 1994.

Fish Taxa (common name & family)	Stream Sampling Stations										
	2 # coll.	3 # coll.		4 # coll.	5 # coll.	6 # coll.	7 # coll.	8 # coll.	10 # coll.	11 # coll.	12 # coll.
minnows (Cyprinidae)	29	9	22	1	2		2				1
longear sunfish (Centrarchidae)			5		3		1			2	7
green sunfish (Centrarchidae)			4		9	2	3	8	4	9	3
bluegill (Centrarchidae)	1	16	1	20	14	10	3	2	11	15	20
largemouth bass (Centrarchidae)			2	1	3	1	1		1		
spotted bass (Centrarchidae)											2
juvenile sunfish (Centrarchidae)					18	14					
northern hogsucker (Catastomidae)								1	1	1	3
bullhead catfish (Ictaluridae)					8	8					
gambusia (Poeciliidae)							3				
darter (Percidae)											1
sculpin (Cottidae)											2
Total	30	25	34	22	57	35	13	11	17	27	39

APPENDIX A

RESULTS OF CHEMICAL ANALYSES

FOR

INTERSTATE LEAD COMPANY SUPERFUND SITE

JULY 1994

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88182 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO 1, 88
STATION ID: 1, DRY CREEK, BACKGROUND, UPSTREAM M&B (3) CITY: LEEDS ST: AL
COLLECTION START: 07/26/94 1040 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS	MG/L	ANALYTICAL RESULTS
5.0U	SILVER	27	CALCIUM
15U	ARSENIC	4.7	MAGNESIUM
NA	BORON	0.42	IRON
22	BARIUM	5.2	SODIUM
2.5U	BERYLLIUM	1.2	POTASSIUM
2.5U	CADMIUM		
5.0U	COBALT		
5.0U	CHROMIUM		
5.0U	COPPER		
5.0U	MOLYBDENUM		
10U	NICKEL		
2.5U	LEAD		
15U	ANTIMONY		
20U	SELENIUM		
12U	TIN		
82	STRONTIUM		
25U	TELLURIUM		
5.0U	TITANIUM		
50U	THALLIUM		
5.0U	VANADIUM		
5.0U	YTTRIUM		
5.0U	ZINC		
NA	ZIRCONIUM		
0.2U	MERCURY		
150	ALUMINUM		
39	MANGANESE		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88183 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO
STATION ID: DRY CREEK, DOWNSTREAM GA CENTRAL RR CITY: LEEDS ST: AL
COLLECTION START: 07/26/94 1020 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS
5.0U	SILVER
15U	ARSENIC
NA	BORON
25	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
5.0U	COBALT
5.0U	CHROMIUM
5.0U	COPPER
5.0U	MOLYBDENUM
10U	NICKEL
23	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
79	STRONTIUM
25U	TELLURIUM
5.1	TITANIUM
50U	THALLIUM
5.0U	VANADIUM
5.0U	YTTRIUM
6.7	ZINC
NA	ZIRCONIUM
0.2U	MERCURY
200	ALUMINUM
140	MANGANESE

MG/L	ANALYTICAL RESULTS
31	CALCIUM
5.0	MAGNESIUM
0.72	IRON
7.7	SODIUM
1.6	POTASSIUM

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88184 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 3 (6) DRY CREEK, UPSTREAM LEHIGH COLLECTION START: 07/26/94 1010 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS	MG/L	ANALYTICAL RESULTS
5.0U	SILVER	40	CALCIUM
15U	ARSENIC	5.0	MAGNESIUM
NA	BORON	0.89	IRON
32	*BARIUM*	*7.0*	*SODIUM*
2.5U	BERYLLIUM	1.0U	POTASSIUM
2.5U	CADMIUM		
5.0U	COBALT		
5.0U	CHROMIUM		
5.0U	COPPER		
5.0U	MOLYBDENUM		
10U	NICKEL		
65	LEAD		
15U	ANTIMONY		
20U	SELENIUM		
12U	TIN		
93	STRONTIUM		
25U	TELLURIUM		
8.0	*TITANIUM*		
50U	THALLIUM		
5.0U	VANADIUM		
5.0U	YTTRIUM		
7.0	ZINC		
NA	ZIRCONIUM		
0.2U	MERCURY		
410	ALUMINUM		
140	MANGANESE		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88185 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 4 DRY CREEK, DOWNSTREAM LEHIGH COLLECTION START: 07/26/94 0826 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS
5.0U	SILVER
15U	ARSENIC
NA	BORON
85	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
5.0U	COBALT
5.0U	CHROMIUM
5.0U	COPPER
5.0U	MOLYBDENUM
10U	NICKEL
6.3	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
120	STRONTIUM
25U	TELLURIUM
14	TITANIUM
50U	THALLIUM
5.0U	VANADIUM
5.0U	YTTRIUM
5.4	ZINC
NA	ZIRCONIUM
0.2U	MERCURY
700	ALUMINUM
26	MANGANESE

MG/L	ANALYTICAL RESULTS
54	CALCIUM
6.4	MAGNESIUM
0.95	IRON
6.9	SODIUM
35	POTASSIUM

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88186 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 8 DRY CREEK, AT LEEDS WWTP COLLECTION START: 07/25/94 1548 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS
5.0U	SILVER
15U	ARSENIC
NA	BORON
79	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
5.0U	COBALT
5.0U	CHROMIUM
5.0U	COPPER
5.0U	MOLYBDENUM
10U	NICKEL
8.5	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
110	STRONTIUM
25U	TELLURIUM
15	TITANIUM
50U	THALLIUM
5.0U	VANADIUM
5.0U	YTTRIUM
5.1	ZINC
NA	ZIRCONIUM
0.2U	MERCURY
850	ALUMINUM
28	MANGANESE

MG/L	ANALYTICAL RESULTS
56	CALCIUM
5.9	MAGNESIUM
0.97	IRON
6.1	SODIUM
26	POTASSIUM

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88187 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 6 (10) LITTLE CAHABA R., UPSTREAM DRY CRK. COLLECTION START: 07/25/94 1605 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS
5.0U	SILVER
15U	ARSENIC
NA	BORON
44	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
5.0U	COBALT
5.0U	CHROMIUM
5.0U	COPPER
5.0U	MOLYBDENUM
10U	NICKEL
2.5U	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
60	STRONTIUM
25U	TELLURIUM
7.0	TITANIUM
50U	THALLIUM
5.0U	VANADIUM
5.0U	YTTRIUM
6.6	ZINC
NA	ZIRCONIUM
0.2U	MERCURY
390	ALUMINUM
42	MANGANESE

MG/L	ANALYTICAL RESULTS
64	CALCIUM
7.0	MAGNESIUM
0.14	IRON
6.2	SODIUM
1.0U	POTASSIUM

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88188 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 7. LITTLE CAHABA RIVER, DOWNSTREAM DRY CRK. COLLECTION START: 07/25/94 1535 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS
5.0U	SILVER
15U	ARSENIC
NA	BORON
70	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
5.0U	COBALT
5.0U	CHROMIUM
5.0U	COPPER
5.0U	MOLYBDENUM
10U	NICKEL
7.3	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
96	STRONTIUM
25U	TELLURIUM
13	TITANIUM
50U	THALLIUM
5.0U	VANADIUM
5.0U	YTTRIUM
6.3	ZINC
NA	ZIRCONIUM
0.2U	MERCURY
620	ALUMINUM
34	MANGANESE

MG/L	ANALYTICAL RESULTS
57	CALCIUM
6.1	MAGNESIUM
0.74	IRON
6.0	SODIUM
20	POTASSIUM

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88189 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 8 (12) LITTLE CAHABA RIVER, AT ELLIOT RD. COLLECTION START: 07/25/94 1402 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS
5.0U	SILVER
15U	ARSENIC
NA	BORON
56	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
5.0U	COBALT
5.0U	CHROMIUM
5.0U	COPPER
5.0U	MOLYBDENUM
10U	NICKEL
7.0	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
75	STRONTIUM
25U	TELLURIUM
10	TITANIUM
50U	THALLIUM
5.0U	VANADIUM
5.0U	YTTRIUM
5.0U	ZINC
NA	ZIRCONIUM
0.2U	MERCURY
420	ALUMINUM
35	MANGANESE

MG/L	ANALYTICAL RESULTS
61	CALCIUM
6.3	MAGNESIUM
0.39	IRON
5.3	SODIUM
9.9	POTASSIUM

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/31/94

PROJECT NO. 94-0570 SAMPLE NO. 88190 SAMPLE TYPE: SURFWATER PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO ok CITY: LEEDS ST: AL
STATION ID: 9. LITTLE CAHABA RIVER, LEEDS MEMORIAL PARK COLLECTION START: 07/26/94 0745 STOP: 00/00/00

UG/L	ANALYTICAL RESULTS	MG/L	ANALYTICAL RESULTS
5.0U	SILVER	67	CALCIUM
15U	ARSENIC	6.6	MAGNESIUM
NA	BORON	0.23	IRON
47	BARIUM	4.3	SODIUM
2.5U	BERYLLIUM	1.0U	POTASSIUM
2.5U	CADMIUM		
5.0U	COBALT		
5.0U	CHROMIUM		
5.0U	COPPER		
5.0U	MOLYBDENUM		
10U	NICKEL		
27	LEAD		
15U	ANTIMONY		
20U	SELENIUM		
12U	TIN		
58	STRONTIUM		
25U	TELLURIUM		
9.7	TITANIUM		
50U	THALLIUM		
5.0U	VANADIUM		
5.0U	YTTRIUM		
5.5	ZINC		
NA	ZIRCONIUM		
0.2U	MERCURY		
210	ALUMINUM		
52	MANGANESE		

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 08/31/94

PROJECT NO. 94-0570 SAMPLE NO. 88173 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B.L. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 1/3 DRY CRK., BACKGROUND, UPSTRM M&B COLLECTION START: 07/26/94 1040 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
2.0U	SILVER
10	ARSENIC
NA	BORON
40	BARIUM
1.0U	BERYLLIUM
1.0U	CADMIUM
6.2	COBALT
22	CHROMIUM
7.8	COPPER
2.0U	MOLYBDENUM
14	NICKEL
41	LEAD
6.0U	ANTIMONY
8.0U	SELENIUM
5.8	TIN
15	STRONTIUM
10U	TELLURIUM
49	TITANIUM
20U	THALLIUM
16	VANADIUM
4.8	YTTRIUM
62	ZINC
NA	ZIRCONIUM
0.05U	MERCURY
6300	ALUMINUM
200	MANGANESE

MG/KG	ANALYTICAL RESULTS
5700	CALCIUM
1700	MAGNESIUM
19000	IRON
200U	SODIUM
550	POTASSIUM
22	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88174 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B.L. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 15 DRY CRK DOWNSTRM GA CENTRAL RR COLLECTION START: 07/26/94 1022 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
2.0U	SILVER
16	ARSENIC
NA	BORON
46	BARIUM
1.1	BERYLLIUM
8.2	CADMIUM
9.0	COBALT
40	CHROMIUM
28	COPPER
2.8	MOLYBDENUM
29	NICKEL
2400	LEAD
20	ANTIMONY
8.0U	SELENIUM
11	TIN
9.6	STRONTIUM
10U	TELLURIUM
34	TITANIUM
20U	THALLIUM
23	VANADIUM
8.2	YTTRIUM
110	ZINC
NA	ZIRCONIUM
0.095	MERCURY
7600	ALUMINUM
160	MANGANESE

MG/KG	ANALYTICAL RESULTS
6200	CALCIUM
3100	MAGNESIUM
26000	IRON
200U	SODIUM
690	POTASSIUM
25	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88175 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B.L. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 6 DRY CREEK UPSTREAM LEHIGH COLLECTION START: 07/26/94 1010 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
3.0U	SILVER
26	ARSENIC
NA	BORON
69	BARIUM
1.5U	BERYLLIUM
15	CADMIUM
11	COBALT
30	CHROMIUM
44	COPPER
3.0U	MOLYBDENUM
26	NICKEL
5400	LEAD
26	ANTIMONY
12U	SELENIUM
17	TIN
18	STRONTIUM
15U	TELLURIUM
36	TITANIUM
30U	THALLIUM
27	VANADIUM
9.6	YTTRIUM
190	ZINC
NA	ZIRCONIUM
0.25	MERCURY
11000	ALUMINUM
280	MANGANESE

MG/KG	ANALYTICAL RESULTS
12000	CALCIUM
4300	MAGNESIUM
20000	IRON
300U	SODIUM
760	POTASSIUM
44	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88176 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: (7) DRY CRK, DOWNSTREAM LEHIGH COLLECTION START: 07/26/94 0826 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
5.0U	SILVER
17	ARSENIC
NA	BORON
130	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
43	COBALT
45	CHROMIUM
18	COPPER
5.0U	MOLYBDENUM
24	NICKEL
260	LEAD
.15U	ANTIMONY
20U	SELENIUM
12U	TIN
45	STRONTIUM
25U	TELLURIUM
110	TITANIUM
50U	THALLIUM
41	VANADIUM
19	YTTRIUM
78	ZINC
NA	ZIRCONIUM
0.13	MERCURY
14000	ALUMINUM
2700	MANGANESE

MG/KG	ANALYTICAL RESULTS
48000	CALCIUM
2600	MAGNESIUM
27000	IRON
500U	SODIUM
1200	POTASSIUM
28	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88177 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO
STATION ID: 8 DRY CRK. AT LEEDS WWTP CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1548 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
3.0U	SILVER
.10	ARSENIC
NA	BORON
80	BARIUM
1.5U	BERYLLIUM
1.5U	CADMIUM
23	COBALT
37	CHROMIUM
17	COPPER
3.0U	MOLYBDENUM
21	NICKEL
46	LEAD
9.0U	ANTIMONY
12U	SELENIUM
7.5U	TIN
32	STRONTIUM
15U	TELLURIUM
75	TITANIUM
30U	THALLIUM
42	VANADIUM
18	YTTRIUM
64	ZINC
NA	ZIRCONIUM
0.14	MERCURY
13000	ALUMINUM
1500	MANGANESE

MG/KG	ANALYTICAL RESULTS
37000	CALCIUM
1600	MAGNESIUM
35000	IRON
300U	SODIUM
1000	POTASSIUM
37	PERCENT MOISTURE

FOOTNOTES
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*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88178 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO
STATION ID: 6 (10) LITTLE CAHABA R., UPSTREM DRY CRK CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1605 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
3.0U	SILVER
16	ARSENIC
NA	BORON
49	BARIUM
1.5U	BERYLLIUM
1.5U	CADMIUM
9.8	COBALT
50	CHROMIUM
19	COPPER
3.0U	MOLYBDENUM
15	NICKEL
35	LEAD
9.0U	ANTIMONY
12U	SELENIUM
7.5U	TIN
5.9	STRONTIUM
15U	TELLURIUM
87	TITANIUM
30U	THALLIUM
46	VANADIUM
10	YTTRIUM
82	ZINC
NA	ZIRCONIUM
0.085	MERCURY
9000	ALUMINUM
510	MANGANESE

MG/KG	ANALYTICAL RESULTS
4400	CALCIUM
1200	MAGNESIUM
31000	IRON
300U	SODIUM
600U	POTASSIUM
32	PERCENT MOISTURE

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88179 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: X, LITTLE CAHABA R., DOWNSTREAM DRY CRK. COLLECTION START: 07/25/94 1535 STOP: 00/00/00

(11)

MG/KG	ANALYTICAL RESULTS
5.0U	SILVER
12	ARSENIC
NA	BORON
65	BARIUM
2.5U	BERYLLIUM
2.5U	CADMIUM
12	COBALT
79	CHROMIUM
13	COPPER
5.0U	MOLYBDENUM
19	NICKEL
230	LEAD
15U	ANTIMONY
20U	SELENIUM
12U	TIN
57	STRONTIUM
25U	TELLURIUM
130	TITANIUM
50U	THALLIUM
40	VANADIUM
12	YTTRIUM
81	ZINC
NA	ZIRCONIUM
0.050	MERCURY
8000	ALUMINUM
630	MANGANESE

MG/KG	ANALYTICAL RESULTS
62000	CALCIUM
2300	MAGNESIUM
28000	IRON
500U	SODIUM
1000U	POTASSIUM
19	PERCENT MOISTURE

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88180 SAMPLE TYPE: SEDIMENT PROG ELEM: SSF COLLECTED BY: B. CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 8 (12) LITTLE CAHABA R., AT ELLIOTT RD. COLLECTION START: 07/25/94 1405 STOP: 00/00/00

MG/KG		ANALYTICAL RESULTS
5.0U	SILVER	
17	ARSENIC	
NA	BORON	
26	BARIUM	
2.5U	BERYLLIUM	
2.5U	CADMIUM	
10	COBALT	
110	CHROMIUM	
8.4	COPPER	
5.0U	MOLYBDENUM	
18	NICKEL	
93	LEAD	
15U	ANTIMONY	
20U	SELENIUM	
12U	TIN	
6.4	STRONTIUM	
25U	TELLURIUM	
100	TITANIUM	
50U	THALLIUM	
59	VANADIUM	
11	YTTRIUM	
60	ZINC	
NA	ZIRCONIUM	
0.05U	MERCURY	
7000	ALUMINUM	
460	MANGANESE	

MG/KG		ANALYTICAL RESULTS
6500	CALCIUM	
690	MAGNESIUM	
43000	IRON	
500U	SODIUM	
1000U	POTASSIUM	
22	PERCENT MOISTURE	

FOOTNOTES
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*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

08/31/94

METALS DATA REPORT

PROJECT NO. 94-0570 SAMPLE NO. 88181 SAMPLE TYPE: SEDIMENT
SOURCE: ILCO
STATION ID: 9 LITTLE CAHABA RIVER LEEDS MEMORIAL PARK
PROG ELEM: SSF COLLECTED BY: B. CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/26/94 0745 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.0U	SILVER
6.1	ARSENIC
NA	BORON
31	BARIUM
0.54	BERYLLIUM
0.50U	CADMIUM
4.4	COBALT
31	CHROMIUM
9.1	COPPER
1.0U	MOLYBDENUM
6.0	NICKEL
19	LEAD
3.0U	ANTIMONY
4.0U	SELENIUM
5.1	TIN
7.1	STRONTIUM
5.0U	TELLURIUM
88	TITANIUM
10U	THALLIUM
23	VANADIUM
6.6	YTTRIUM
49	ZINC
NA	ZIRCONIUM
0.050	MERCURY
5000	ALUMINUM
250	MANGANESE

MG/KG	ANALYTICAL RESULTS
11000	CALCIUM
1100	MAGNESIUM
14000	IRON
100U	SODIUM
200U	POTASSIUM
23	PERCENT MOISTURE

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88550 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: ~~1~~FR (3) Forage Fish COLLECTION START: 07/26/94 1055 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.4U	SILVER
0.50U	ARSENIC
NA	BORON
1.4U	BARIUM
0.69U	BERYLLIUM
0.69U	CADMIUM
1.4U	COBALT
1.4U	CHROMIUM
1.4U	COPPER
1.4U	MOLYBDENUM
2.8U	NICKEL
0.94	LEAD
4.2U	ANTIMONY
5.5U	SELENIUM
3.5U	TIN
6.4	STRONTIUM
6.9U	TELLURIUM
2.0	TITANIUM
14U	THALLIUM
1.4U	VANADIUM
1.4U	YTTRIUM
32	ZINC
NA	ZIRCONIUM
0.067	MERCURY
43	ALUMINUM
12	MANGANESE

MG/KG	ANALYTICAL RESULTS
16000	CALCIUM
490	MAGNESIUM
38	IRON
1100	SODIUM
2800	POTASSIUM

REMARKS

REMARKS

FOOTNOTES
*A-AVERAGE VALUE *NA-NOT ANALYZED *NAI-INTERFERENCES *J-ESTIMATED VALUE *N-PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL
*K-ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN *L-ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN
*U-MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. THE NUMBER IS THE MINIMUM QUANTITATION LIMIT.

SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88551 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: ZFR (5) Forage Fish

PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/26/94 1135 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.99U	SILVER
0.50U	ARSENIC
NA	BORON
1.1	BARIUM
0.50U	BERYLLIUM
0.50U	CADMIUM
0.99U	COBALT
0.99U	CHROMIUM
0.99U	COPPER
0.99U	MOLYBDENUM
2.0U	NICKEL
6.0	LEAD
3.0U	ANTIMONY
4.0U	SELENIUM
2.5U	TIN
7.6	STRONTIUM
5.0U	TELLURIUM
1.6	TITANIUM
9.9U	THALLIUM
0.99U	VANADIUM
0.99U	YTTRIUM
29	ZINC
NA	ZIRCONIUM
0.05U	MERCURY
52	ALUMINUM
10	MANGANESE

MG/KG	ANALYTICAL RESULTS
11000	CALCIUM
400	MAGNESIUM
65	IRON
900	SODIUM
2700	POTASSIUM

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 09/20/94

PROJECT NO. 94-0614 SAMPLE NO. 88552 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 3FR (6) forage fish
COLLECTION START. 07/26/94 1155 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.0U	SILVER
0.50U	ARSENIC
NA	BORON
1.1	BARIUM
0.50U	BERYLLIUM
0.50U	CADMIUM
1.0U	COBALT
1.0U	CHROMIUM
1.0U	COPPER
1.0U	MOLYBDENUM
2.0U	NICKEL
8.3	LEAD
3.0U	ANTIMONY
4.0U	SELENIUM
2.5U	TIN
7.8	STRONTIUM
5.0U	TELLURIUM
1.8	TITANIUM
1.0U	THALLIUM
1.0U	VANADIUM
1.0U	YTTRIUM
31	ZINC
NA	ZIRCONIUM
0.50U	MERCURY
43	ALUMINUM
8.4	MANGANESE

MG/KG	ANALYTICAL RESULTS
13000	CALCIUM
430	MAGNESIUM
47	IRON
890	SODIUM
2600	POTASSIUM

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88553 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 4FR (7) Forage Fish COLLECTION START. 07/26/94 0848 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.80U	SILVER
0.50U	ARSENIC
NA	BORON
2.0	BARIUM
0.40U	BERYLLIUM
0.40U	CADMIUM
0.80U	COBALT
0.80U	CHROMIUM
1.3	COPPER
0.80U	MOLYBDENUM
1.6U	NICKEL
0.9	LEAD
2.4U	ANTIMONY
3.2U	SELENIUM
2.0U	TIN
6.1	STRONTIUM
4.0U	TELLURIUM
1.4	TITANIUM
8.0U	THALLIUM
0.80U	VANADIUM
0.80U	YTTRIUM
25	ZINC
NA	ZIRCONIUM
0.067	MERCURY
43	ALUMINUM
5.0	MANGANESE

MG/KG	ANALYTICAL RESULTS
11000	CALCIUM
390	MAGNESIUM
41	IRON
830	SODIUM
2800	POTASSIUM

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 09/20/94

PROJECT NO. 94-0614 SAMPLE NO. 88554 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: SFR (8) Forage Fish COLLECTION START: 07/25/94 1722 STOP. 00/00/00

MG/KG	ANALYTICAL RESULTS
1.2U	SILVER
0.50U	ARSENIC
NA	BORON
1.6	BARIUM
0.60U	BERYLLIUM
0.60U	CADMIUM
1.2U	COBALT
1.2U	CHROMIUM
1.2U	COPPER
1.2U	MOLYBDENUM
2.4U	NICKEL
1.3	LEAD
3.6U	ANTIMONY
4.8U	SELENIUM
3.0U	TIN
8.0	STRONTIUM
6.0U	TELLURIUM
1.6	TITANIUM
12U	THALLIUM
1.2U	VANADIUM
1.2U	YTTRIUM
30	ZINC
NA	ZIRCONIUM
0.063	MERCURY
20	ALUMINUM
4.3	MANGANESE

MG/KG	ANALYTICAL RESULTS
14000	CALCIUM
430	MAGNESIUM
16	IRON
1000	SODIUM
2600	POTASSIUM

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88555 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: BFR (10) Forage Fish

PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1705 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.2U	SILVER
0.50U	ARSENIC
NA	BORON
1.2U	BARIUM
0.60U	BERYLLIUM
0.60U	CADMIUM
1.2U	COBALT
2.5U	CHROMIUM
1.2U	COPPER
1.2U	MOLYBDENUM
2.4U	NICKEL
0.4	LEAD
3.6U	ANTIMONY
4.8U	SELENIUM
3.0U	TIN
5.1	STRONTIUM
6.0U	TELLURIUM
1.7	TITANIUM
12U	THALLIUM
1.2U	VANADIUM
1.2U	YTTRIUM
26	ZINC
NA	ZIRCONIUM
0.06U	MERCURY
32	ALUMINUM
9.4	MANGANESE

MG/KG	ANALYTICAL RESULTS
15000	CALCIUM
460	MAGNESIUM
38	IRON
1000	SODIUM
2700	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88556 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: ZFR (11) Forage Fish COLLECTION START: 07/25/94 1640 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS	MG/KG	ANALYTICAL RESULTS
1.0U	SILVER	13000	CALCIUM
0.50U	ARSENIC	410	MAGNESIUM
NA	BORON	17	IRON
1.0U	BARIUM	960	SODIUM
0.50U	BERYLLIUM	2600	POTASSIUM
0.50U	CADMIUM		
1.0U	COBALT		
1.0U	CHROMIUM		
1.0U	COPPER		
1.0U	MOLYBDENUM		
2.0U	NICKEL		
0.6	LEAD		
3.0U	ANTIMONY		
4.0U	SELENIUM		
2.5U	TIN		
4.4	STRONTIUM		
5.0U	TELLURIUM		
1.4	TITANIUM		
10U	THALLIUM		
1.0U	VANADIUM		
1.0U	YTTRIUM		
26	ZINC		
NA	ZIRCONIUM		
0.060	MERCURY		
23	ALUMINUM		
5.2	MANGANESE		

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88557 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO
STATION ID: BFR (12) Forage Fish CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1448 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.99U	SILVER
0.50U	ARSENIC
NA	BORON
4.2	BARIUM
0.50U	BERYLLIUM
0.50U	CADMIUM
0.99U	COBALT
0.99U	CHROMIUM
0.99U	COPPER
0.99U	MOLYBDENUM
2.0U	NICKEL
1.9	LEAD
3.0U	ANTIMONY
4.0U	SELENIUM
2.5U	TIN
10	STRONTIUM
5.0U	TELLURIUM
2.1	TITANIUM
9.9U	THALLIUM
0.99U	VANADIUM
0.99U	YTTRIUM
34	ZINC
NA	ZIRCONIUM
0.043	MERCURY
100	ALUMINUM
16	MANGANESE

MG/KG	ANALYTICAL RESULTS
11000	CALCIUM
400	MAGNESIUM
140	IRON
950	SODIUM
2500	POTASSIUM

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88543 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: ~~FL~~ (3) Fish Fillet COLLECTION START: 07/26/94 1055 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.30U	SILVER
0.50U	ARSENIC
NA	BORON
0.20U	BARIUM
0.10U	BERYLLIUM
0.10U	CADMIUM
0.20U	COBALT
0.20U	CHROMIUM
0.48	COPPER
0.20U	MOLYBDENUM
0.81	NICKEL
0.2U	LEAD
0.60U	ANTIMONY
0.80U	SELENIUM
0.50U	TIN
1.0	STRONTIUM
1.0U	TELLURIUM
0.20U	TITANIUM
2.0U	THALLIUM
0.20U	VANADIUM
0.20U	YTTRIUM
17	ZINC
NA	ZIRCONIUM
0.086	MERCURY
2.0U	ALUMINUM
0.56	MANGANESE

MG/KG	ANALYTICAL RESULTS
1200	CALCIUM
260	MAGNESIUM
3.9	IRON
640	SODIUM
3500	POTASSIUM

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88552 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: 3FR (16) Forage Fish
PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/26/94 1155 STOP: 00/00/00

MG/KG		ANALYTICAL RESULTS
1.0U	SILVER	
0.50U	ARSENIC	
NA	BORON	
1.1	BARIUM	
0.50U	BERYLLIUM	
0.50U	CADMIUM	
1.0U	COBALT	
1.0U	CHROMIUM	
1.0U	COPPER	
1.0U	MOLYBDENUM	
2.0U	NICKEL	
8.3	LEAD	
3.0U	ANTIMONY	
4.0U	SELENIUM	
2.5U	TIN	
7.8	STRONTIUM	
5.0U	TELLURIUM	
1.8	TITANIUM	
10U	THALLIUM	
1.0U	VANADIUM	
1.0U	YTTRIUM	
31	ZINC	
NA	ZIRCONIUM	
0.50U	MERCURY	
43	ALUMINUM	
8.4	MANGANESE	

MG/KG		ANALYTICAL RESULTS
13000	CALCIUM	
430	MAGNESIUM	
47	IRON	
890	SODIUM	
2600	POTASSIUM	

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 09/20/94

PROJECT NO. 94-0614 SAMPLE NO. 88553 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: 4FR (7) Forage Fish

PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/26/94 0848 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.80U	SILVER
0.50U	ARSENIC
NA	BORON
2.0	BARIUM
0.10U	BERYLLIUM
0.40U	CADMIUM
0.80U	COBALT
0.80U	CHROMIUM
1.3	COPPER
0.80U	MOLYBDENUM
1.6U	NICKEL
0.9	LEAD
2.4U	ANTIMONY
3.2U	SELENIUM
2.0U	TIN
6.1	STRONTIUM
4.0U	TELLURIUM
1.4	TITANIUM
8.0U	THALLIUM
0.80U	VANADIUM
0.80U	YTTRIUM
25	ZINC
NA	ZIRCONIUM
0.067	MERCURY
43	ALUMINUM
5.0	MANGANESE

MG/KG	ANALYTICAL RESULTS
11000	CALCIUM
390	MAGNESIUM
41	IRON
830	SODIUM
2800	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88554 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO
STATION ID: $FR (8) Forage Fish CITY: LEEDS ST: AL
COLLECTION START. 07/25/94 1722 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.2U	SILVER
0.50U	ARSENIC
NA	BORON
1.6	BARIUM
0.60U	BERYLLIUM
0.60U	CADMIUM
1.2U	COBALT
1.2U	CHROMIUM
1.2U	COPPER
1.2U	MOLYBDENUM
2.4U	NICKEL
1.3	LEAD
3.6U	ANTIMONY
4.8U	SELENIUM
3.0U	TIN
8.0	STRONTIUM
6.0U	TELLURIUM
1.6	TITANIUM
12U	THALLIUM
1.2U	VANADIUM
1.2U	YTTRIUM
30	ZINC
NA	ZIRCONIUM
0.063	MERCURY
20	ALUMINUM
4.3	MANGANESE

MG/KG	ANALYTICAL RESULTS
14000	CALCIUM
430	MAGNESIUM
16	IRON
1000	SODIUM
2600	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88555 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: ØFR (10) Forage Fish COLLECTION START: 07/25/94 1705 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.2U	SILVER
0.50U	ARSENIC
NA	BORON
1.2U	BARIUM
0.60U	BERYLLIUM
0.60U	CADMIUM
1.2U	COBALT
2.5U	CHROMIUM
1.2U	COPPER
1.2U	MOLYBDENUM
2.4U	NICKEL
0.4	LEAD
3.6U	ANTIMONY
4.8U	SELENIUM
3.0U	TIN
5.1	STRONTIUM
6.0U	TELLURIUM
1.7	TITANIUM
12U	THALLIUM
1.2U	VANADIUM
1.2U	YTTRIUM
26	ZINC
NA	ZIRCONIUM
0.06U	MERCURY
32	ALUMINUM
9.4	MANGANESE

MG/KG	ANALYTICAL RESULTS
15000	CALCIUM
460	MAGNESIUM
38	IRON
1000	SODIUM
2700	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88556 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: YFR (11) Forage Fish

PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1640 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
1.0U	SILVER
0.50U	ARSENIC
NA	BORON
1.0U	BARIUM
0.50U	BERYLLIUM
0.50U	CADMIUM
1.0U	COBALT
1.0U	CHROMIUM
1.0U	COPPER
1.0U	MOLYBDENUM
2.0U	NICKEL
0.6	LEAD
3.0U	ANTIMONY
4.0U	SELENIUM
2.5U	TIN
4.4	STRONTIUM
5.0U	TELLURIUM
1.4	TITANIUM
10U	THALLIUM
1.0U	VANADIUM
1.0U	YTTRIUM
26	ZINC
NA	ZIRCONIUM
0.060	MERCURY
23	ALUMINUM
5.2	MANGANESE

MG/KG	ANALYTICAL RESULTS
13000	CALCIUM
410	MAGNESIUM
17	IRON
960	SODIUM
2600	POTASSIUM

REMARKS

REMARKS

FOOTNOTES
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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88557 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO
STATION ID: ~~BFR~~ (12) Forage Fish CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1448 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.99U	SILVER
0.50U	ARSENIC
NA	BORON
4.2	BARIUM
0.50U	BERYLLIUM
0.50U	CADMIUM
0.99U	COBALT
0.99U	CHROMIUM
0.99U	COPPER
0.99U	MOLYBDENUM
2.0U	NICKEL
1.9	LEAD
3.0U	ANTIMONY
4.0U	SELENIUM
2.5U	TIN
10	STRONTIUM
5.0U	TELLURIUM
2.1	TITANIUM
9.9U	THALLIUM
0.99U	VANADIUM
0.99U	YTTRIUM
34	ZINC
NA	ZIRCONIUM
0.043	MERCURY
100	ALUMINUM
16	MANGANESE

MG/KG	ANALYTICAL RESULTS
11000	CALCIUM
400	MAGNESIUM
140	IRON
950	SODIUM
2500	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88543 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 1FL (3) Fish Fillet COLLECTION START: 07/26/94 1055 STOP: 00/00/00

MG/KG		ANALYTICAL RESULTS
0.30U	SILVER	
0.50U	ARSENIC	
NA	BORON	
0.20U	BARIUM	
0.10U	BERYLLIUM	
0.10U	CADMIUM	
0.20U	COBALT	
0.20U	CHROMIUM	
0.46	COPPER	
0.20U	MOLYBDENUM	
0.81	NICKEL	
*0.2U	LEAD	
0.60U	ANTIMONY	
0.80U	SELENIUM	
0.50U	TIN	
1.0	STRONTIUM	
1.0U	TELLURIUM	
0.20U	TITANIUM	
2.0U	THALLIUM	
0.20U	VANADIUM	
0.20U	YTTRIUM	
17	ZINC	
NA	ZIRCONIUM	
0.086	MERCURY	
2.0U	ALUMINUM	
0.56	MANGANESE	

MG/KG		ANALYTICAL RESULTS
1200	CALCIUM	
260	MAGNESIUM	
3.9	IRON	
640	SODIUM	
3500	POTASSIUM	

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

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METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88544 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: ZFL (5) Fish Filet COLLECTION START: 07/26/94 1135 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.40U	SILVER
0.20U	ARSENIC
NA	BORON
0.40U	BARIUM
0.20U	BERYLLIUM
0.20U	CADMIUM
0.40U	COBALT
0.40U	CHROMIUM
0.40U	COPPER
0.40U	MOLYBDENUM
0.80U	NICKEL
1.4	LEAD
1.2U	ANTIMONY
1.6U	SELENIUM
1.0U	TIN
2.0	STRONTIUM
2.0U	TELLURIUM
0.40U	TITANIUM
4.0U	THALLIUM
0.40U	VANADIUM
0.40U	YTTRIUM
16	ZINC
NA	ZIRCONIUM
0.050	MERCURY
4.8	ALUMINUM
1.5	MANGANESE

MG/KG	ANALYTICAL RESULTS
2900	CALCIUM
280	MAGNESIUM
4.8	IRON
660	SODIUM
3400	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88545 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: 3FL (6) Fish Filet COLLECTION START: 07/26/94 1155 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.30U	SILVER
0.50U	ARSENIC
NA	BORON
0.20U	BARIUM
0.10U	BERYLLIUM
0.10U	CADMIUM
0.20U	COBALT
0.20U	CHROMIUM
0.20U	COPPER
0.20U	MOLYBDENUM
0.40U	NICKEL
0.65	LEAD
0.60U	ANTIMONY
0.80U	SELENIUM
0.50U	TIN
1.2	STRONTIUM
1.0U	TELLURIUM
0.27	TITANIUM
2.0U	THALLIUM
0.20U	VANADIUM
0.20U	YTTRIUM
18	ZINC
NA	ZIRCONIUM
0.043	MERCURY
3.5	ALUMINUM
0.91	MANGANESE

MG/KG	ANALYTICAL RESULTS
2100	CALCIUM
280	MAGNESIUM
5.2	IRON
640	SODIUM
3400	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 09/20/94

PROJECT NO. 94-0614 SAMPLE NO. 88546 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: ~~4EL~~ (7) Fish Filet COLLECTION START: 07/26/94 0848 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.30U	SILVER
0.50U	ARSENIC
NA	BORON
0.20U	BARIUM
0.10U	BERYLLIUM
0.10U	CADMIUM
0.20U	COBALT
0.20U	CHROMIUM
0.20U	COPPER
0.20U	MOLYBDENUM
0.40U	NICKEL
0.2	LEAD
0.60U	ANTIMONY
0.80U	SELENIUM
0.50U	TIN
0 79	STRONTIUM –
1.0U	TELLURIUM
0.20	TITANIUM –
2.0U	THALLIUM
0.20U	VANADIUM
0.20U	YTTRIUM
16	ZINC –
NA	ZIRCONIUM
0.090	MERCURY
4.2	ALUMINUM –
0.63	MANGANESE –

MG/KG	ANALYTICAL RESULTS
1500	CALCIUM
280	MAGNESIUM
10	IRON
580	SODIUM
3600	POTASSIUM

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

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METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88547 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: ØFL (10) Fish Filet

PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1705 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.30U	SILVER
0.50U	ARSENIC
NA	BORON
0.20U	BARIUM
0.10U	BERYLLIUM
0.10U	CADMIUM
0.20U	COBALT
0.20U	CHROMIUM
0.22	COPPER
0.20U	MOLYBDENUM
0.40U	NICKEL
0.2U	LEAD
0.60U	ANTIMONY
0.80U	SELENIUM
0.50U	TIN
0.61	STRONTIUM
0.99U	TELLURIUM
0.20U	TITANIUM
2.0U	THALLIUM
0.20U	VANADIUM
0.20U	YTTRIUM
17	ZINC
NA	ZIRCONIUM
0.22	MERCURY
2.0U	ALUMINUM
0.34	MANGANESE

MG/KG	ANALYTICAL RESULTS
1300	CALCIUM
270	MAGNESIUM
2.1	IRON
640	SODIUM
3500	POTASSIUM

REMARKS

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

09/20/94

METALS DATA REPORT

PROJECT NO. 94-0614 SAMPLE NO. 88548 SAMPLE TYPE: FISH
SOURCE: ILCO
STATION ID: XFL (11) Fish Filet

PROG ELEM: SSF COLLECTED BY: B CARTER
CITY: LEEDS ST: AL
COLLECTION START: 07/25/94 1640 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.30U	SILVER
0.50U	ARSENIC
NA	BORON
0.20U	BARIUM
0.10U	BERYLLIUM
0.10U	CADMIUM
0.20U	COBALT
0.20U	CHROMIUM
0.21	COPPER
0.20U	MOLYBDENUM
0.40U	NICKEL
0.21	LEAD
0.59U	ANTIMONY
0.79U	SELENIUM
0.49U	TIN
1.0	STRONTIUM
0.99U	TELLURIUM
0.22	TITANIUM
2.0U	THALLIUM
0.20U	VANADIUM
0.20U	YTTRIUM
17	ZINC
NA	ZIRCONIUM
0.080	MERCURY
2.0U	ALUMINUM
0.66	MANGANESE

MG/KG	ANALYTICAL RESULTS
2100	CALCIUM
260	MAGNESIUM
2.6	IRON
630	SODIUM
3100	POTASSIUM

REMARKS

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SAMPLE AND ANALYSIS MANAGEMENT SYSTEM
EPA-REGION IV ESD, ATHENS, GA.

METALS DATA REPORT 09/20/94

PROJECT NO. 94-0614 SAMPLE NO. 88549 SAMPLE TYPE: FISH PROG ELEM: SSF COLLECTED BY: B CARTER
SOURCE: ILCO CITY: LEEDS ST: AL
STATION ID: BFL (12) Fish Filet COLLECTION START: 07/25/94 1448 STOP: 00/00/00

MG/KG	ANALYTICAL RESULTS
0.30U	SILVER
0.50U	ARSENIC
NA	BORON
0.20U	BARIUM
0.10U	BERYLLIUM
0.10U	CADMIUM
0.20U	COBALT
0.20U	CHROMIUM
0.21	COPPER
0.20U	MOLYBDENUM
0.40U	NICKEL
0.2U	LEAD
0.60U	ANTIMONY
0.80U	SELENIUM
0.50U	TIN
0.62	STRONTIUM
1.0U	TELLURIUM
0.20U	TITANIUM
2.0U	THALLIUM
0.20U	VANADIUM
0.20U	YTTRIUM
16	ZINC
NA	ZIRCONIUM
0.13	MERCURY
2.1	ALUMINUM
0.67	MANGANESE

MG/KG	ANALYTICAL RESULTS
1800	CALCIUM
240	MAGNESIUM
3.4	IRON
780	SODIUM
3200	POTASSIUM

REMARKS

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