Offsite Remedial
Investigation
Final Report
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OFFSITE
REMEDIAL INVESTIGATION
VERTAC, Inc., Jacksonville, AR
FINAL REPORT
VOLUME II
TABLES & APPENDICES

Project No. CH313-6
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TABLE 3-1
Generalized Geologic Section in The Vertac, Inc. Study Area
(Adopted from Counts, H.B., 1957)

Era	System	Series	Subdivision	Thickness (feet)	Character of Materials	Water Supply
Cenozoic	Quaternary	Recent (?)	Alluvium	0-50	Clay, commonly red, in places gray; silt, generally sandy to gravelly.	Generally non-water-bearing. Locally domestic water supplies are obtained from basal part.
		Pleistocene (?)	Alluvium and terrace deposits	0-156	Sand and gravel in basal part, commonly overlain by fine sand, silt, and clay.	Basal part is most important aquifer in this area. Irrigation-well yields are as high as 2,000 gpm.
	Tertiary	Eocene	Wilcox formation	0-800	Clay, chocolate-brown or speckled light-gray and black; lignitic clay and lignitic fine sand.	Probably contains fresh water in narrow belt across area, but wells were not developed in formation at time report was written.
		Paleocene	Midway formation	0-500	Clay, dark-blue-gray to black, non-calcareous to very calcareous. A few very thin beds of white clay and dense fine-grained sandstone.	Generally non-water-bearing in this area.
Mesozoic	Cretaceous	Upper Cretaceous (Gulf)	Undifferentiated deposits	0-150	Sandstone, light-gray to white, fossiliferous, calcareous, glauconitic, overlain and underlain by sandy clay, shale, and marl.	Deeply buried where present and probably contains only salty water.
Paleozoic	Pennsylvanian	Atoka	Atoka formation	500?-1500?	Shale and sandstone interbedded. Sandstone generally tightly cemented. "Slate-rock" of drillers.	Water bearing only in area of outcrop. Locally contains small quantities of water in joints and other fractures, generally within 150 feet of the surface. Wells commonly yield 1-10 gpm.

Table 3-2 Summary of Soil Units found in Vertac, Inc. Study Area

Soil Series (map units)	Depth to Bedrock (inches)	Depth to Seasonal High Water (feet)	Depth (inches)	USDA Texture	Permeability (inches per hr.)	pH	Parent Material
Amy (Ao, Au, Am)	>72	0-1	0-12 12-72	silt loam silt loam and silty clay loam	0.6-2.0 0.06-0.2	4.5-5.5 4.5-5.5	Loamy sediment from Jurassic Gulf.
Leadvale (LeB, LeC, LdB)	>72	1.5-2.5	0-7 7-16 16-72	silt loam silt loam silt loam and silty clay loam	0.6-2.0 0.6-2.0 0.2-0.6	4.5-7.3 4.5-5.5 4.5-5.5	Loamy sediments washed from Ouachita Mountains
Linker (Lnc, LkC)	20-40	>4	0-4 4-9	gravelly fine sandy loam Fine sandy loam	0.6-2.0 0.6-2.0	4.5-6.0 4.5-5.5	Regolith weathered from nephelite seyenite igneous rock
Moreland (Me)	>72	1-2	0-41 41-43 43-58 58-92	silty clay loam silty clay loam silty clay loamy sand	<0.06 0.06-6.2 <0.06 <6.0	6.1-8.4 6.1-8.4 6.1-8.4 6.1-8.4	Slack-water bay sediments
Rexor (Re)	>72	3-4	0-66	silt loam	0.6-2.0	4.5-6.0	Same as Leadvale
Smithdale (StC)	>72	>6	0-5 5-16 16-72	fine sandy loam clay loam sandy loam	0.6-2.0 0.6-2.0	5.1-6.0 5.1-6.0	Same as Amy

TABLE 3-3
WATER WELLS IN PULASKI AND LONOKE COUNTIES*

County	Location (Lat & Long)	Location Number	Residents Name	Use of Well	Date Water Level Was Measured	Depth of Well (ft)	Water Level (ft)	Finish	Casing Material	Depth Cased (ft)	Casing Diameter (inches)	Principle Aquifer	Discharge (GPM)
Pulaski	34° 50' 13"N 92° 06' 28"W	1	City of Jacksonville	Public	1/30/59	100.00	23.34	Screen	Unknown	-	-	Ill Alvm	-
	34° 50' 11"N 92° 06' 36"W	2	City of Jacksonville	Public	1/30/59	-	19.93	Screen	Unknown	-	-	Ill Alvm	-
	34° 50' 10"N 92° 05' 33"W	3	City of Jacksonville	Public	2/06/59	-	60.73	Screen	Unknown	-	-	Ill Alvm	700
	34° 49' 56"N 92° 05' 21"W	4	Mitchett	Irrigation	-	72.00	-	Screen	Steel	-	10	Ill Alvm	600
	34° 49' 56"N 92° 05' 21"W	5	Mitchett	Domestic	2/06/59	-	4.20	Open Hole	Steel	-	-	Ill Alvm	-
	34° 50' 00"N 92° 06' 29"W	6	City of Jacksonville	Public	1/30/59	-	-	Screen	Unknown	-	-	Ill Alvm	-
	34° 49' 53"N 92° 06' 35"W	7	City of Jacksonville	Public	3/31/70	-	12.81	Gravel Screen	Steel	-	18	Ill Alvm	234
	34° 48' 57"N 92° 05' 56"W	8	Mrs. Ray Parker	Unused	8/62	-	14.00	-	Unknown	-	1	-	-
	34° 47' 52"N 92° 06' 34"W	9	George McCain	Irrigation	3/03/55	76.00	18.90	Screen	Steel	-	18	Ill Alvm	800
	34° 47' 52"N 92° 47' 52"W	10	City of Jacksonville	Public	1/30/59	76.00	19.57	-	Steel	-	18	Ill Alvm	-
	34° 48' 38"N 92° 05' 31"W	11	Martin Timm	Domestic	8/09/62	40.00	19.19	-	Galvanized Iron	-	1.25	Ill Alvm	-
	34° 48' 36"N 92° 05' 31"W	12	Martin Timm	Unused	8/62	40.00	19.00	-	Steel	-	1.00	-	-
	34° 48' 19"N 92° 05' 16"W	13	Hal Young	Irrigation	04/53	97.00	7.00	-	Unknown	-	-	-	-
	34° 48' 07"N 92° 05' 17"W	14	Hal Young	Irrigation	-	-	-	-	Unknown	-	-	Ill Alvm	-
	34° 48' 09"N 92° 05' 11"W	15	Harold Young	Irrigation	9/23/59	-	15.82	Screen	Steel	-	16	Ill Alvm	903
	34° 47' 41"N 92° 05' 35"W	16	George Keller	Irrigation	4/58	-	17.00	-	Unknown	-	16	-	1130
	34° 51' 49"N 92° 05' 30"W	17	H.W. Stewart	Domestic	5/11/55	28.00	15.76	Open Hol	Concrete	-	8	120 TRTR	-

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TABLE 3-3 (cont.)
WATER WELLS IN PULASKI AND LONOKE COUNTIES*

County	Location (Lat & Long)	Location Number	Residents Name	Use of Well	Date Water Level Was Measured	Depth of Well (ft)	Water Level (ft)	Finish	Casing Material	Depth Cased (ft)	Casing Diameter (inches)	Principle Aquifer	Discharge (GPM)
Pulaski	34° 50' 16"N 92° 06' 58"W	18	City of Jacksonville	Public	-	90.00	-	Screen	Steel	-	30	111 Alvm	-
	34° 51' 07"N 92° 05' 18"W	19	Johnson, C.S.	Domestic	5/16/55	69.00	47.68	Open End	Tile	69	8	120 TRTR	-
	34° 51' 06"N 92° 05' 25"W	20	John T. Reynolds	Domestic	5/18/55	44.00	30.25	Open End	Tile	44	8	120 TRTR	-
	34° 48' 58"N 92° 01' 45"W	21	-	Irrigation	8/62	-	14.00	-	Unknown	-	18	-	-
	34° 47' 50"N 92° 09' 10"W	22	John Crapup	Domestic	8/62	30.00	9.00	-	Unknown	-	1	-	-
Lonoke	34° 47' 41"N 92° 03'-38"W	23	Templeton, P.C.	Irrigation	06/61	96.00	18.00	Screen	Steel	66	8	110 Alvm	-
	34° 48' 38"N 92° 03' 20"W	24	Dr. Joe Shuffield	Irrigation	08/28/73	-	33.62	-	Unknown	-	-	111 Alvm	-
	34° 48' 32"N 92° 03' 36"W	25	Dr. Joe Shuffield	Irrigation	-	98.00	-	Screen	Unknown	-	-	110 Alvm	1040
	34° 47' 01"N 92° 03' 40"W	26	Harold Young	Irrigation	08/08/61	-	19.01	Screen	Unknown	-	-	110 Alvm	-
	34° 47' 25"N 92° 03' 21"W	27	J.H. Rye	Irrigation	01/28/70	-	29.22	-	Unknown	-	-	112 Alvm	-
	34° 46' 31"N 92° 03' 59"W	28	H.A. Young	Irrigation	06/09/58	-	16.44	-	Unknown	-	-	110 Alvm	-
	34° 52' 08"N 92° 04' 02"W	29	Aaron Taylor	Unused	05/02/55	12.00	10.26	-	Unknown	-	-	110 Alvm	-
	34° 50' 58"N 92° 03' 56"W	30	R.S. Ayres	Irrigation	02/16/54	116.00	28.62	Screen	Unknown	-	-	110 Alvm	-
	34° 51' 00"N 92° 03' 51"W	31	R.S. Ayres	Unused	01/29/70	116.00	65.48	-	Steel	-	6	111 Alvm	450
	34° 51' 01"N 92° 04' 10"W	32	C.L. Jarry	Domestic	1953	86.00	40.00	Screen	Unknown	-	2	110 Alvm	-
	34° 51' 02"N 92° 04' 22"W	33	J.D. Sumate	Domestic	07/12/51	40.80	25.89	Screen	Galvanized Steel	-	-	110 Alvm	-

TABLE 3-3 (cont.)
WATER WELLS IN PULASKI AND LONOKE COUNTIES*

County	Location (Lat & Long)	Location Number	Residents Name	Use of Well	Date Water Level Was Measured	Depth of Well (ft)	Water Level (ft)	Finish	Casing Material	Depth Cased (ft)	Casing Diameter (inches)	Principle Aquifer	Discharge (GPM)
Lonoke	34° 50' 47"N 92° 04' 03"W	34	Ed Green	Domestic	-	84.00	-	Sand Point	Galvanized Steel	-	2	112 TRRC	-
	34° 51' 40"N 92° 04' 12"W	35	A.R. Collins	Domestic	-	96.00	-	Sand Point	Galvanized Steel	-	2	111 Alva	-
	34° 50' 54"N 92° 02' 52"W	36	Elmer Jones	Domestic	-	100.00	-	Sand Point	Galvanized Steel	-	2	112 TRRC	-
	34° 50' 55"N 92° 03' 24"W	37	U.S.G.S.	Unused	03/02/59	105.00	31.36	Sand Point	Galvanized Steel	-	2	112 TRRC	-
	34° 50' 54"N 92° 03' 14"W	38	Barney E. Fanner	Livestock	-	85.00	-	Sand Point	Galvanized Steel	-	2	112 TRRC	-
	34° 50' 50"N 92° 03' 18"W	39	J. Diaz	Domestic	-	95.00	-	Sand Point	Galvanized Steel	-	2	111 Alva	-
	34° 50' 51"N 92° 03' 06"W	40	Sherman Hill	Domestic	-	85.00	-	Sand Point	Galvanized Steel	-	2	111 Alva	-
	34° 50' 57"N 92° 02' 23"W	41	R.W. Cole	Domestic	-	95.00	-	Sand Point	Galvanized Steel	-	2	112 TRRC	-

*U.S.G.S. Records

TABLE 3-3(cont.)
WATER WELLS IN PULASKI AND LONDON COUNTIES**

Location (Township, Range, Section)	Location Number	Residents Name	Use of Well	Depth of Well (ft)	Water Level (Below land surface in ft)	Finish (Not Available)	Casing Material	Depth Cased (ft)	Casing Diameter (inches)	New (N) or Replacement (R) Well	Discharge (GPM)
3N 10W 17	42	D.R. Beldon	Domestic	50	40	-	PVC	50	4	N	5
3N 10W 15	43	Chad Norman	Domestic	120	35	-	Plastic	15	6	N	5
3N 10W 23	44	G.L. Denter	Domestic	103	45	-	PVC	103	2	N	20
3N 10W 22	45	Taylor Farms	Domestic	90	42	-	PVC	75	4	N	5
3N 10W 26	46	Richard Barbie	Domestic	80	5	-	PVC	26	6	N	5
3N 10W 25	47	Larry Dickerson	Domestic	120	40	-	PVC	20	6	N	15
3N 10W 25	48	J & J Contractors	Domestic	125	10	-	PVC	25	6	N	20
3N 10W 25	49	Thomas P. Weber	Domestic	150	40	-	PVC	15	5	N	4
3N 10W 29	50	John Miner	Domestic	19	12	-	Concrete	19	-	N	50
3N 10W 29	51	Alfred Henry	Irrigation	106	70	-	Plastic	74	8	N	400
3N 10W 28	52	Charles Rabe	Domestic	170	150	-	PVC	170	4	N	2
3N 10W 27	53	Floyd Davis	Domestic	87	30	-	PVC	87	4	N	5
3N 10W 27	54	Danny Gloves	Domestic	100	33	-	PVC	100	4	N	30
3N 10W 27	55	South Bend Fire Dept	Domestic	98	72	-	PVC	98	2	N	20
3N 10W 26	56	T.L. Thuster	Domestic	100	68	-	PVC	100	2	N	20
3N 10W 26	57	Peterson	Domestic	90	60	-	PVC	90	2	N	20
3N 10W 26	58	Joe Thomas	Domestic	95	50	-	PVC	95	2	N	20
3N 10W 35	59	Hutson	Domestic	100	56	-	PVC	100	2	N	20
3N 10W 35	60	Gary Plank	Domestic	95	52	-	PVC	95	2	N	20
3N 10W 35	61	Shelton Bury	Domestic	88	30	-	PVC	88	2	N	20
3N 10W 35	62	William Bain	Domestic	89	45	-	PVC	89	2	N	20
3N 10W 35	63	H.L. Rice	Domestic	80	35	-	PVC	80	2	N	20
3N 10W 35	64	Mike Tredwell	Domestic	97	60	-	PVC	97	2	N	20
3N 10W 35	65	Ernest Stokie	Domestic	89	45	-	PVC	89	2	N	20
3N 10W 35	66	Ken Shell	Domestic	100	50	-	PVC	100	2	N	20
3N 10W 35	67	Partington	Domestic	99	50	-	PVC	99	2	N	20

TABLE 3-3 (cont.)
WATER WELLS IN PULASKI AND LONOKE COUNTIES**

Location (Township, Range, Section)	Location Number	Residents Name	Use of Well	Depth of Well (ft)	Water Level (Below land surface in ft)	Finish (Not Available)	Casing Material	Depth Cased (ft)	Casing Diameter (inches)	New (N) or Replacement (R) Well	Discharge (GPM)
3N 10W 31	68	James Bughmore	Domestic	105	75	-	Plastic	100	2	N	10
3N 10W 31	69	Pittman	Domestic	115	2	-	PVC	25	6	N	4.5
3N 11W 36	70	T.C. Jones	Domestic	130	15	-	PVC	20	5	N	5
3N 11W 35	71	Ardnell Carter	Domestic	203	7	-	Plastic	15	6	N	8
2N 11W 02	72	Jan Thompson	Domestic	46	18	-	Galv.	41	2	N	25
2N 11W 01	73	Pas Golden	Domestic	65	-	-	PVC	65	2	N	-
2N 11W 01	74	James Milam	Irrigation	79.2	7.83	-	Steel	60.45	18	N	600
2N 11W 01	75	Ken Tucker	Domestic	95	50	-	PVC	95	4	R	30
2N 11W 01	76	Guy Tucker	Domestic	95	40	-	PVC	95	2	N	20
2N 11W 01	77	Guy Tucker	Domestic	97	40	-	PVC	97	2	N	20
2N 10W 06	78	John Harris	Domestic	95	65	-	PVC	95	2	N	20
2N 10W 06	79	Frank Mourdin	Domestic	93	50	-	PVC	93	2	N	20
2N 10W 06	80	Harold Childers	Domestic	100	65	-	PVC	100	2	R	20
2N 10W 06	81	W.R. McDonald	Domestic	105	70	-	Plastic	100	2	N	10
2N 10W 06	82	Merell Wood	Domestic	105	70	-	Plastic	100	2	N	10
2N 10W 06	83	Fletchek Omble	Domestic	105	70	-	Plastic	100	2	N	10
2N 10W 05	84	John Janley	Domestic	98	60	-	Plastic	93	2	N	11
2N 10W 05	85	Mr. Rye	Domestic	88	45	-	Plastic	83	2	N	10
2N 10W 05	86	City of Jacksonville	Municipal	81.41	34	-	Welded	60.08	20	-	500
2N 10W 02	87	B. Fincett	Domestic	99	45	-	PVC	99	2	N	20
2N 10W 02	88	C. Morris	Domestic	95	45	-	PVC	95	2	N	20
2N 10W 02	89	Pearson	Domestic	100	53	-	PVC	100	2	N	20
2N 10W 02	90	C.L. Cash	Domestic	90	48	-	PVC	90	2	N	20
2N 10W 02	91	May	Domestic	95	-	-	PVC	95	2	N	20
2N 10W 02	92	R.L. Wilson	Domestic	97	45	-	PVC	97	2	N	20
2N 10W 02	93	Mr. Sellers	Domestic	98	50	-	PVC	98	2	R	20

TABLE 3-3(cont.)
WATER WELLS IN PULASKI AND LONOKE COUNTIES**

Location (Township, Range, Section)	Location Number	Residents Name	Use of Well	Depth of Well (ft)	Water Level (Below land surface in ft)	Finish (Not Available)	Casing Material	Depth Cased (ft)	Casing Diameter (inches)	New (N) or Replacement (R) Well	Discharge (GPM)
2N 10W 02	94	J.H. Hutson	Domestic	100	45	-	PVC	95	2	N	20
2N 10W 02	95	Tommy Lee	Domestic	90	47	-	PVC	90	2	N	20
2N 10W 02	96	Gerald Smith	Domestic	95	45	-	PVC	95	2	N	20
2N 10W 02	97	Clyde Vail	Domestic	85	40	-	PVC	85	2	N	20
2N 10W 02	98	Edwin Ivy	Domestic	85	45	-	PVC	85	2	N	20
2N 10W 02	99	Arthur Phillips	Domestic	95	48	-	PVC	95	2	N	20
2N 10W 02	100	Darriel Bailey	Domestic	87	45	-	PVC	87	2	N	20
2N 10W 02	101	Unknown	Domestic	92	48	-	PVC	92	2	N	20
2N 10W 02	102	Doylen	Domestic	100	60	-	PVC	100	2	N	20
2N 10W 08	103	Mrs. Freddie Smith	Domestic	56	23	-	Steel	53	2	N	15
2N 10W 07	104	City of Jacksonville	Municipal	120.3	61	-	-	89.92	-	N	65
2N 10W 07	105	City of Jacksonville	Municipal	118.3	61	-	-	93.92	-	N	600
2N 11W 10	106	W.A. Tucker	Domestic	28	14	-	Steel	25	1.25	N	11.6
2N 11W 10	107	70 Club (Mr. Penny)	Domestic	29	19	-	Steel	26	1.25	N	9.6
2N 10W 15	108	Marcus Rye	Irrigation	93.1	28	-	-	62.42	16	N	1000
2N 10W 14	109	John Marcus Rye	Irrigation	93.3	38	-	-	-	-	N	-
2N 10W 21	110	J.O. Benell & Sons	Irrigation	119	40	-	Steel	80	12	N	1600
2N 10W 19	111	Power Vac	Other	67.75	-	-	-	57.75	6	N	100
2N 10W 19	112	Maybelline Co.	Other	74.66	13.5	-	Plastic	60	6	N	50
3N 11W 26	113	Ray Brown	Domestic	85	10	-	PVC	24	6	N	12

**Arkansas Geological Commission

Table 4-1 -- Summary of Backwater Profiles on Bayou Meto

[Dashed line in elevation column indicates water surface is above lower part of bridge deck]

Cross-section	Stream stationing, (feet)	2-year flood		5-year flood		10-year flood		25-year flood		50-year flood	
		discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)
1	684,605	2,550	236.9	9,300	240.3	12,100	241.3	19,400	243.2	23,800	244.2
2	688,512	2,550	236.3	9,300	240.4	12,100	241.4	19,400	243.3	23,800	244.3
3	691,680	2,550	236.8	9,300	241.0	12,100	241.8	19,400	243.6	23,800	244.5
4	693,264	2,550	238.1	9,300	241.6	12,100	242.3	19,400	243.9	23,800	244.8
5	694,320	2,550	238.3	9,300	242.0	12,100	242.8	19,400	244.3	23,800	245.1
6	694,320	2,550	238.3	9,300	242.0	12,100	242.8	19,400	244.4	23,800	246.0
7	694,475	2,550	238.4	9,300	242.8	12,100	243.9	19,400	247.0	23,800	248.5
8	695,904	2,550	238.6	9,300	243.1	12,100	244.3	19,400	247.4	23,800	248.9
9	695,904	2,550	238.6	9,300	243.1	12,100	244.3	19,400	247.4	23,800	--
10	696,432	2,610	238.7	9,300	243.7	12,100	245.4	19,400	249.5	23,800	250.1
11	704,352	2,610	240.2	10,500	244.4	13,700	245.9	22,300	249.7	27,500	250.4
12	704,352	2,610	240.2	10,500	244.4	13,700	245.9	22,300	--	27,500	--
13	704,880	2,610	240.4	10,500	246.2	13,700	248.1	22,300	249.7	27,500	250.4
14	706,992	2,610	241.1	10,500	246.3	13,700	248.1	22,300	249.8	27,500	250.4
15	712,800	2,610	241.9	10,500	246.5	13,700	248.2	22,300	249.9	27,500	250.6

Table 4-2 -- Summary of Backwater Profiles on Rocky Branch

[Dashed line in elevation column indicates water surface is above lower part of bridge deck]

Cross-section	Stream stationing (feet)	2-year flood		5-year flood		10-year flood		25-year flood		50-year flood	
		discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)
1	0	521	235.0	940	235.5	1,230	236.0	4,150	240.0	5,560	241.0
2	500	521	235.4	940	236.1	1,230	236.9	4,150	240.4	5,560	241.4
3	1,000	521	235.7	940	236.4	1,230	237.4	4,150	240.7	5,560	241.7
4	1,500	521	236.1	940	237.2	1,230	237.9	4,150	241.1	5,560	242.1
5	1,950	521	236.8	940	238.0	1,230	238.5	4,150	241.5	5,560	242.5
6	2,400	521	237.6	940	238.7	1,230	239.1	4,150	241.9	5,560	242.9
7	2,400	521	237.6	940	238.7	1,230	239.1	4,150	--	5,560	--
8	2,420	521	237.6	940	238.6	1,230	243.7	4,150	247.6	5,560	247.8
9	2,800	521	240.2	940	242.1	1,230	243.7	4,150	247.6	5,560	247.9
10	3,175	521	241.8	940	242.7	1,230	243.8	4,150	247.7	5,560	248.0
11	3,995	521	243.0	940	243.7	1,230	244.3	4,150	248.0	5,560	248.4
12	4.575	521	243.3	940	244.0	1,230	244.6	4,150	248.2	5,560	248.8
13	4,870	521	243.4	940	244.2	1,230	244.8	4,150	248.4	5,560	249.0
14	5,165	521	243.6	940	244.4	1,230	245.0	4,150	248.6	5,560	249.2
15	5,165	521	243.6	940	244.4	1,230	245.0	4,150	--	5,560	--
16	5,227	521	243.9	940	245.3	1,230	246.2	4,150	250.7	5,560	251.2
17	5,308	521	243.9	940	245.3	1,230	--	4,150	250.7	5,560	251.2
18	5,308	521	243.9	940	245.5	1,230	247.6	4,150	--	5,560	--
19	5,360	521	244.3	940	246.1	1,230	247.6	4,150	250.8	5,560	251.3
20	5,423	521	244.2	940	246.1	1,230	247.6	4,150	250.9	5,560	251.3
21	5,466	521	244.2	940	245.5	1,230	247.6	4,150	250.9	5,560	251.3
22	5,466	521	244.2	940	245.5	1,230	247.6	4,150	--	5,560	--
23	5,596	521	245.1	940	247.4	1,230	247.8	4,150	251.0	5,560	251.4
24	6,352	521	245.5	940	247.6	1,230	248.0	4,150	251.5	5,560	252.0
25	7,108	521	249.4	940	250.2	1,230	250.7	4,150	253.9	5,560	255.0

Table 4-2 -- Summary of Backwater Profiles on Rocky Branch--Continued

[Dashed line in elevation column indicates water surface is above lower part of bridge deck]

Cross-section	Stream stationing, (feet)	2-year flood		5-year flood		10-year flood		25-year flood		50-year flood	
		discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)
26	7,108	521	--	940	--	1,230	--	4,150	--	5,560	--
27	7,380	521	249.8	940	250.7	1,825	251.2	4,150	254.5	5,560	255.3
28	7,599	349	250.1	629	251.1	825	251.6	3,120	254.6	4,240	255.4
29	7,639	349	250.2	629	251.2	825	251.6	3,120	254.6	4,240	255.4
30	7,949	349	250.5	629	251.4	825	251.8	3,120	254.9	4,240	255.7
31	8,204	349	253.0	629	253.2	825	253.4	3,120	255.2	4,240	255.9
32	8,459	349	255.0	629	255.9	825	256.2	3,120	257.3	4,240	257.4
33	8,959	349	255.7	629	256.4	825	256.8	3,120	258.6	4,240	259.2
34	9,409	349	256.0	629	256.6	825	256.9	3,120	258.9	4,240	259.5
35	9,634	349	256.0	629	256.7	825	257.0	3,120	259.0	4,240	259.6
36	9,859	349	256.0	629	256.7	825	257.0	3,120	259.1	4,240	259.7
37	10,259	349	256.0	629	256.7	825	256.1	3,120	259.1	4,240	259.8

TABLE 4-3
IMPOUNDMENT SEDIMENT QUANTITIES

Impoundment	Volume		
	Water (cu.yd.)	Sediment (cu.yd.)	At Depth (ft.) (maximum)
Aeration Basin	34,000	8,000	12.0
Lake DuPree	64,000	33,000	7.5
North Unnamed Impoundment	21,000	6,000	7.0
Middle Unnamed Impoundment	19,000	4,000	12.0
South Unnamed Impoundment	76,000	35,000	9.0
North Oxidation Pond	72,000	110,000	6.0
South Oxidation Pond	74,000	96,000	6.0

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TABLE 4-4
SURFACE AND GROUNDWATER DATA FOR PULASKI AND LONOKE COUNTIES (MGD)*

County Year	Public Supply Ground	Public Supply Surface	Self-Supplied Industrial Ground	Self-Supplied Industrial Surface	Rural Domestic Ground	Livestock Ground	Livestock Surface	Irrigation Rice Ground	Irrigation Rice Surface	Row Crops Ground	Row Crops Surface	Fish & Minnow Farming Ground	Fish & Minnow Farming Surface	Wildlife National Ground	Impoundment & Fish Hatcheries Surface	Fuel-Electric Power Ground	Fuel-Electric Power Surface
Pulaski																	
1960	2.20	14.32	6.73	.63	.14	.20	.46	2.62	.14	2.75	.43	-	-	-	-	-	-
1965	3.17	28.79	0	1.19	.18	.17	.25	2.56	.45	3.01	.53	.92	1.65	-	-	2.98	-
1970	3.76	33.07	0	1.31	2.31	.14	.21	3.68	.72	4.48	.10	2.76	1.59	-	-	1.63	-
1975	4.19	37.97	.74	1.30	1.80	.34	.28	9.99	1.26	3.51	.60	2.09	1.59	-	-	.76	-
1980	3.38	52.68	.71	1.44	5.80	.11	.16	13.55	2.97	9.75	1.13	1.25	1.59	-	-	1.03	-
Lonoke																	
1960	.69	0	5.92	.48	.55	.25	.38	56.40	.57	35.88	3.61	-	-	-	-	-	-
1965	.74	0	0	0	.59	.19	.28	56.90	6.32	43.79	1.61	53.66	6.73	-	-	-	-
1970	1.38	0	.82	0	.90	.26	.35	66.97	3.52	37.09	3.32	70.33	1.92	-	-	-	-
1975	2.10	0	.52	-	1.30	.51	.32	127.06	30.88	31.68	2.39	95.15	1.91	-	-	-	-
1980	2.54	0	1.28	-	1.42	.30	.46	206.31	45.29	40.52	2.79	0	.16	-	-	-	-

*USGS Data

TABLE 4-5
SURFACE WATER WITHDRAWAL IN JACKSONVILLE AREA*

Year	Withdrawer	Source	Method of Diversion	Point of Diversion	Total Acre Ft. Diverted (Estimate)	Use of Water	Crops Irrigated
Records Began 1969-1976	(none)						
1977	1	Bayou Two Tributary	Portable Pump	3N 10W Sec. 22 SE 1/4 of NW 1/4 Lonoke County	200	Irrigation	Rice 80 Acres, Soybeans
1978	Repeat Location	Bayou Two Tributary	Portable Pump	3N 10W Sec. 22 SE 1/4 of NW 1/4 Lonoke County	250	Irrigation	Rice 120 Acres
1979	Off Map Near Site	Jack Bayou	Siphon	3N 10W Sec. 24 SW 1/4 of NW 1/4 Lonoke County	270	Irrigation	Rice 270 Acres, Soybeans 140 Acres
	Off Map Near Site	Two Prairie Bayou	Portable Pump	3N 10W Sec. 13 NW 1/4 of SW 1/4 Lonoke County	250	Irrigation	Rice 100 Acres
	2	Two Prairie Bayou	Portable Pump	3N 10W Sec. 26 NW 1/4 of NW 1/4 Lonoke County	60	Irrigation	Rice 20 Acres, Soybeans 20 Acres
1980	3	Two Prairie Bayou	Portable Pump	3N 10W Sec. 22 SE 1/4 of NW 1/4 Lonoke County	400	Irrigation	Rice 100 Acres, Soybeans 150 Acres
	4	Two Prairie Bayou	Portable Pump	3N 10W Sec. 21 SE 1/4 Lonoke County	320	Irrigation	Rice 160 Acres
	Off Map Near Site	Drainage Ditch	Portable Pump	3N 10W Sec. 25 Lonoke County	120	Irrigation	Rice
	5	Bayou Meto	Portable Pump	2N 10W Sec. 11 SE 1/4 of NW1/4 Lonoke County	150	Irrigation	Rice 50 Acres
	Off Map Near Site	Two Prairie Bayou	Portable Pump	3N 10W Sec. 13 NW 1/4 of SW 1/4 Lonoke County	200	Irrigation	Rice 65 Acres
	6	Ink Bayou Tributary	Portable Pump	3N 10W Sec. 34 SW 1/4 of SE 1/4 Pulaski County	500	Irrigation	Rice 200 Acres
	7	Ink Bayou Tributary	Portable Pump	2N 10W Sec. 4 SW 1/4 of SE 1/4 Pulaski County	500	Irrigation	Rice 500 Acres
	8	Ink Bayou Tributary	Portable Pump	2N 10W Sec. 9 SW 1/4 of NW 1/4 Pulaski County	1000	Irrigation	Rice 400 Acres
	9	Ink Bayou Tributary	Portable Pump	3N 10W Sec. 32 SW 1/4 of SW 1/4 Pulaski County	625	Irrigation	Rice 250 Acres

TABLE 4-5 (cont.)
SURFACE WATER WITHDRAWAL IN JACKSONVILLE AREA*

Year	Withdrawer	Source	Method of Diversion	Point of Diversion	Total Acre Ft. Diverted (Estimate)	Use of Water	Crops Irrigated
1980	10	Bayou Meto	Portable Pump	3N 10W Sec. 33 NW 1/4 of SW 1/4 Pulaski County	325	Irrigation	Rice 130 Acres
	11	Bayou Meto	Portable Pump	3N 10W Sec. 32 NW 1/4 of SE 1/4 Pulaski County	700	Irrigation	Rice 280 Acres
	12	Bayou Meto Tributary	Portable Pump	3N 10W Sec. 33 SW 1/4 of SE 1/4 Pulaski County	1250	Irrigation	Rice 500 Acres
	13	Bayou Meto	Portable Pump	3N 10W Sec. 31 NE 1/4 of SW 1/4 Pulaski County	120	Irrigation	Rice 60 Acres
	14	Bayou Meto	Portable Pump	3N 11W Sec. 26 SW 1/4 of SW 1/4 Pulaski County	-	-	-
	15	Tributary to Ink Bayou	Portable Pump	2N 10W Sec. 8 SW 1/4 of NW 1/4 Pulaski County	-	Irrigation	Rice, Soybeans
	16	Tributary to Forty Point	Portable Pump	2N 10W Sec. 17 SE 1/4 of Sec. 17 Pulaski County	-	Irrigation	Soybeans
	17	Forty Point Lake	Portable Pump	2N 10W Sec. 17 NW 1/4 of NW 1/4 Pulaski County	-	Irrigation	Soybeans
	18	Ink Bayou	Portable Pump	2N 10W Sec. 8 NW 1/4 of SE 1/4 Pulaski County	-	Irrigation	Soybeans
	19	Forty Point Lake	Portable Pump	2N 10W Sec. 17 SE 1/4 of SE 1/4 Pulaski County	-	Irrigation	Soybeans
1981	Repeat Location	Bayou Two Tributary Tributary	Stationary Pump	3N 10W Sec. 22 SE 1/4 of NW 1/4 Lonoke County	400	Irrigation	Rice 125 Acres, Soybeans 150 Acres
	Off Map Near Site	Drainage Ditch	Portable Pump	3N 10W Sec. 25 N 1/2 of NW 1/2 Lonoke County	120	Irrigation	Rice
	Off Map Near Site	Two Prairie Bayou	Portable Pump	3N 10W Sec. 13 SW 1/4 of NW 1/4 Lonoke County	310	Irrigation	Rice 125 Acres
	Off Map Near Site	Two Prairie Bayou	Portable Pump	3N 10W Sec. 25 NW 1/4 of NW 1/4 Lonoke County	200	Irrigation	Rice 100 Acres

TABLE 4-5 (cont.)
SURFACE WATER WITHDRAWAL IN JACKSONVILLE AREA*

Year	Withdrawer	Source	Method of Diversion	Point of Diversion	Total Acre Ft. Diverted (Estimate)	Use of Water	Crops Irrigated
1981	Repeat Location	Two Prairie Bayou	Portable Pump	3N 10W Sec. 21 1/4 Sec. of SE 1/4 Lonoke County	320	Irrigation	Rice 50 Acres
	Off Map Near Site	Two Prairie Bayou	Portable Pump	3N 10W Sec. 12 - Lonoke County	120	Recreation, Fish Farming	-
	Repeat Location	Bayou Meto	Portable Pump	3N 10W Sec. 31 NE 1/4 of SW 1/4 Pulaski County	720	Irrigation	Rice 360 Acres
1982	20	Ink Bayou	Portable Pump	2N R10W S10 NW 1/4 of NW 1/4 Pulaski County	300	Irrigation	Soybeans 400 Acres
	Repeat Location	Bayou Meto	Portable Pump	T2N R10W S11 SE 1/4 of NW 1/4 Pulaski County	100	Irrigation	Rice 40 Acres Soybeans 150 Acres
	21	Forty Point Lake	Portable Pump	T2N R10W S16 SE 1/4 of NW 1/4 Lonoke County	180	Irrigation	Rice 70 Acres
	22	Forty Point Lake	Portable Pump	T2N R10W S17 NW 1/4 of SE 1/4 Lonoke County	-	Irrigation	-
	23	Ink Bayou	Portable Pump	T2N R10W S03 SW 1/4 of NE 1/4 Pulaski County	500	Irrigation	Rice 80 Acres
	24	Ink Bayou	Portable Pump	T2N R10W S04 NW 1/4 of SW 1/4 Lonoke County	200	Irrigation	Rice 80 Acres
	Repeat Location	Forty Point Lake	Portable Pump	T2N R10W S08 NW 1/4 of NE 1/4 Lonoke County	500	Irrigation	Rice 80 Acres
	No Use	Forty Point Lake	Portable Pump	T2N R10W S09 SW 1/4 of SW 1/4 Lonoke County	0	Irrigation	-
	Repeat Location	Ink Bayou	Portable Pump	T2N R10W S09 SW 1/4 of NW 1/4 Lonoke County	400	Irrigation	Rice 160 Acres
	Repeat Location	Bayou Two Tributary	Stationary Pump	T3N R10W S22 SE 1/4 of NW 1/4 Pulaski County	360	Irrigation	Rice 120 Acres, Soybeans 150 Acres
	Repeat Location	Drainage Ditch	Gravity Pump	T3N R10W S25 - Pulaski County	189	Irrigation	Rice 58 Acres

TABLE 4-5 (cont.)
SURFACE WATER WITHDRAWAL IN JACKSONVILLE AREA*

Year	Withdrawer	Source	Method of Diversion	Point of Diversion	Total Acre Ft. Diverted (Estimate)	Use of Water	Crops Irrigated
1982	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S31 Lonoke County	650	Irrigation	Rice 150 Acres, Soybeans 100 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S32 SE 1/4 of NW 1/4 Lonoke County	700	Irrigation	Rice 280 Acres
	Repeat Location	Bayou Meto	Stationary Pump	T3N R10W S33 NW 1/4 of SW 1/4 Lonoke County	100	Irrigation	Soybeans 127 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S33 NW 1/4 of SW 1/4 Lonoke County	100	Irrigation	Rice 40 Acres
	Repeat Location	Forty Point Lake	Portable Pump	T2N R10W S08 NW 1/4 of NE 1/4 Lonoke County	500	Irrigation	Rice 80 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S31 NW 1/4 of SE 1/4 Lonoke County	200	Irrigation	Rice 60 Acres
	25	Bayou Meto	Portable Pump	T3N R10W S34 SE 1/4 of SW 1/4 Pulaski County	120	Waterfowl	-
1983	Repeat Location	Ink Bayou	Portable Pump	T2N R10W S10 NW 1/4 of NW 1/4 Lonoke County	1920	Irrigation	Rice 437 Acres
	Repeat Location	Bayou Meto	Portable Pump	T2N R10W S11 SE 1/4 of NW 1/4 Pulaski County	130	Irrigation	Rice 40 Acres
	Repeat Location	Forty Point Lake	Portable Pump	T2N R10W S16 SE 1/4 of NW 1/4 Lonoke County	70	Irrigation	Rice 70 Acres
	Repeat Location	Forty Point Lake	Portable Pump	T2N R10W S17 NW 1/4 of SE 1/4 Lonoke County	30	Irrigation	Soybeans 30 Acres
	Repeat Location	Ink Bayou	Portable Pump	T2N R10W S03 SW 1/4 of NE 1/4 Lonoke County	500	Irrigation	Rice 200 Acres
	Repeat Location	Ink Bayou	Portable Pump	T2N R10W S04 SE 1/4 of NE 1/4 Lonoke County	433	Irrigation	Rice 135 Acres, Soybeans 80 Acres
	Repeat Location	Ink Bayou	Portable Pump	T2N R10W S04 NW 1/4 of SW 1/4 Lonoke County	120	Irrigation	Soybeans 80 Acres

TABLE 4-5 (cont.)
SURFACE WATER WITHDRAWAL IN JACKSONVILLE AREA*

Year	Withdrawer	Source	Method of Diversion	Point of Diversion	Total Acre Ft. Diverted (Estimate)	Use of Water	Crops Irrigated
1983	Repeat Location	Forty Point Lake	Portable Pump	T2N R10W S03 SE 1/4 of NW 1/4 Lonoke County	850	Irrigation	Rice 40 Acres, Soybeans 150 Acres
	26	Forty Point Lake	Portable Pump	T2N R10W S09 SW 1/4 of SW 1/4 Lonoke County	140	Irrigation	Soybeans 140 Acres
	Repeat Location	Ink Bayou	Portable Pump	T2N R10W S09 SW 1/4 of NW 1/4 Lonoke County	620	Irrigation	Rice 170 Acres, Soybeans 130 Acres
	Off Map Near Site	Bayou Two Prairie	Gravity Pump	T3N R10W S13 SW 1/4 of NW 1/4 Pulaski County	306	Irrigation	Rice 100 Acres
	27	Little Ditch, Bayou Two Tributary	Portable Pump	T3N R10W S22 SE 1/4 of NW 1/4 Pulaski County	250	Irrigation	Rice 65 Acres
	Off Map	Drainage Ditch	Gravity Pump	T3N R10W S25 - Pulaski County	189	Irrigation	Rice 58 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S31 - Lonoke County	260	Irrigation	Rice 100 Agres
	Repeat Location	Bayou Meto	Gravity Pump	T3N R10W S31 - Lonoke County	450	Irrigation	Rice 125 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S32 SE 1/4 of NW 1/4 Lonoke County	420	Irrigation	Soybeans 280 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S33 NW 1/4 of SE 1/4 Lonoke County	200	Irrigation	Rice 80 Acres
	Repeat Location	Bayou Meto	Stationary Pump	T3N R10W S33 NW 1/4 of SW 1/4 Lonoke County	191	Irrigation	Soybeans 127 Acres
	Repeat Location	Bayou Meto	Portable Pump	T3N R10W S33 NW 1/4 of SW 1/4 Lonoke County	100	Irrigation	Rice 40 Acres
	Repeat Location	Bayou Meto	-	T3N R10W S34 SE 1/4 of SW 1/4 Pulaski County	120	Waterfowl	-
	28	Bayou Meto	Portable Pump	T3N R10W S35 - Pulaski County	468	Irrigation	Rice 180 Acres

*Arkansas Water and Soil Commission

Table 4-6
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
2	14'	24"/clay/15'			9" water in flowline
3	14'	24"/clay/25'			Plug for old interceptor is missing
4	14'	24"/clay/89'	Trace		9" water in flowline
5	14'	14"/clay/371'			9" water in flowline
6	12'	6"/conc/15'			9" water in flowline
1423	10.3'		1"		1/4" sewage on wall invert clean
6	-----	24"/D.I./189'	------	----------	----------
7	12.5'	12"/conc/300'			Trace of sediment on MH floor Line constantly runs near capacity
301	6.6'		1"		Manhole overflows
301		12"/conc/400'			Pipe flows nearly to capacity
302	8.5'		1.5'		MH walls covered with dirt and roots
7	------	8"/clay/15'	-------	----------	1/2" flow
4	8.5'	8"/clay/290'	2"		Invert blocked by sewage-MH, to narrow to enter-No steps. Pipe 1"out of alignment toward MH5 no light through line
5	4.1'		1/2"		1/2" dirt and gravel on floor
7	------	20"/D.I./202'	-------	----------	Line flowing 9"

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Table 4-6 (Cont.)
*RESULTS OF SEWER LAMPING**

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
8	9.4'	21"/clay/390'	1/4"		Line flowing 9"
9	7.5'	21"/clay/399'			
10	8.8'	18"/clay/371'	1/2"		12" line enters from east
11	9'				3" water on MH floor
11	------	18"/clay/344'	-------	----------	Line flowing 9"
12	10'	18"/D.I./138'			Sewage on MH floor, line flowing 9"
13	7'	18"/clay/226	Trace		Sewage standing in 6" service line from east flowing 9"
14	13'	19"/clay/340'	Trace		Line flowing 9"
15	8.2'	18"/clay/280'	Trace		Line flowing 8"
16	7.1'	15"/clay/281'			Line flowing 7"
17	10.2'	15"/clay/270'			Line flowing 6"
18	6'	15"/clay/336'			Line flowing 6"
19	8.2'				
19	------	15"/clay/8'	-------	----------	----------
20	7.5'	12"/clay/8'			Line flowing 6"
70	6.7'	12"/clay/300'			Line crooked, no light passing

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Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
105	6.6'	12"/clay/300'			Line flowing 6"
106	8.4'	12"/clay/400'	Trace		Manhole overflows 200' +/- south of Vertac Boundary, line flowing 3"
119	4.0'	12"/clay/330'			Scattered sewage on floor, steam in line - light not passing, flowing 3"
120	6'	12"/clay/270'			6" line from plant splashing approximately 5' - invert and floor being destroyed. Obstructio in line possibly concrete from MH 121 Rim
121	6'	12"/clay/100'			Invert blocked by concrete rim loose cover missing. Pipe full from MH 121
122	------				Manhole in lake, MH sealed off above invert
122	------	12"/clay	-------	----------	----------
125		12"/clay			MH missing, line flowing 3"
126	6'	12"/clay/250'			MH located in diversion stream - rim damaged stream water infiltration, flowing 3"
127	7'	12"/clay/350'	1"		Roots and trash through line
134	6'		1"		
127	------	10"/clay	-------	----------	Line plugged at MH 127
128	7'	10"/clay			MH missing or destroyed flowing 2" line - apparently broken between 127 and 129
129	5'				Rim loose, debris on floor and invert
122	------	----------	-------	----------	----------

007277

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
124					MH destroyed - rim lying on ground
106	------	8"/conc.	-------	----------	Flowing 3" line okay from 106
107	------				MH not found-in area of dense brush with high silt buildup
70		10"/clay/400'			Obstruction in line 50' from 70, flowing 1"
1531	5'				Line clean toward MH70, light not passing line
70	------	10"/clay/300'	-------	----------	Obstruction in line 15' from MH71 - line flowing 4"
71	3.2'	10"/clay/330'	1/2"		MH in street, line flowing 4"
72	7.3'	10"/clay/300'			Clean, Clean - line flowing 5"
73	11.1'		Trace		
73	------	10"/clay/380'	-------	----------	Line flowing 5"
75	14'	10"/clay/340'			Debris on floor-mud and water seeping through wall, flowing 5"
76	13'	10"/clay/180'			Sewage of floor from services. Trash and roots in line, line flowing 5"
76-1	9.5'	10"/clay/270'			Sewage on floor, trash and roots in line, line flowing 6"
77	5.8'	8"/clay/270'	1"	.25	Sewage on floor, flowing 1"
78	8.3'	8"/clay/320'	1" / 6"	3.30	Weir in MH holding 2" gravel and sediment in line to MH 79. Line full of mud and water

007278

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
79	6'	6"/clay/970'	4"		Invert full of mud, small amount of water flowing
80	6'				Full of water end of line
73	------	6"/clay/350'	-------	----------	Line broke 3' from MH 73 3" out of line
74	7'		2"		Invert full, debris in MH ring and cover missing surface infiltration
73	------	6"/conc/150'	3"	.54	3" dirt, 1" standing water line crooked
1190	8.3'	6"/conc/120'			Line open - crooked
1191	3.9'				End of line
1190	------	6"/conc/300	-------	----------	Flowing 3" - sluggish line crooked
1189	3'		1"		End of line
71	------	6"/conc/180'	1/2"	.07	Flowing 1"-line crooked
1196	4.4'	6"/conc/250'	1" / 1/2"	.09	Line crooked
1197	5.2'				Scattered sewage on floor-end of line
71	------	6"/conc/180'	-------	----------	----------
1198	2.8'	6"/conc/350'	2"		MH overflows, line crooked - sewage in pipe - low floor
1199	3.7'		1"		End of line
71	------	6"/conc/100'	-------	----------	Infiltration 10' out of flowing 2"-MH 1195 - crooked line

007279

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
1195	3'	6"/conc/180'			Flowing 1"- line crooked
1192	5.1'	6"/conc/200'	1/2"	.08	Sewage on floor, line flowing 1" - line crooked
1201	5.8'	6"/conc/230'	1/2"	.09	Line flowing 1" - line crooked
1200	2.4'				End of line
1192	------	6"/conc/230'	-------	----------	Line flowing 1/2" - line crooked
1193	4.5'				
1193	------	6"/conc/250'	-------	----------	Line flowing 1/2" - line crooked
1194	4.4'				End of line
18	------	6"/conc/130'	-------	----------	Line crooked
1202	3.9'	6"/conc/350'	2"	.74	Sewage on floor - MH overflows, line crooked
1203	4'				End of line
16	------	16"/clay/370'	-------	----------	No light passing, flowing 8"
1206	5.4'	6"/conc/160'	2" / 1"	.13	MH overflows, line crooked
1205	6'	6"/conc/320'	1"	.25	Line crooked
1205A	4.4		1"		End of line

007280

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
1206	------	16"/clay/430'	-------	----------	Line flowing 8", lines clogged with grease
1215	6.7'	16"/clay/190	1" / 1"	.26	Lines clogged with grease, flowing 9"
1214	7.7'	16"/clay/100'	2"		1" water on floor, line clogged with grease, flowing 9"
1213	5.2'	16"/clay/140'	1"		2" water on floor, grease in line - flowing 9"
1212	7.8'	8"/conc/100'	2" / 2"	.25	Grease in line - line flowing 2"
1211	7.6'	6"/conc/90'	2"		Grease in line - line flowing 2"
1210	5.5'	6"/conc/90'	2" / 1"	.07	Grease in line - line flowing 2"
1207	5'	6"/conc/90'			Sewage on floor, grease in line - flowing 1 1/2"
1209	2.7'				End of line
1207	------	6"/conc/170'	1"	.13	Line flowing 1"
1208	6.6'	6"/conc/480'			Sewage backs up in MH
1183	6.6	6"/conc/260'			Sewage on floor, flowing 1/2"
1184	5.3'	6"/conc/260'			No steps, clean line
1185	6.8'				End of line MH in driveway
1183	------	6"/conc/320'	1"	.25	Line flowing 1" - line crooked

007281

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
1186	3.2'	6"/conc/260'	1"	.21	Line crooked - flowing 1/2"
1187	3.4'	6"/conc/230'			Line crooked
1188	3.3'				Sewage on floor, end on line
1212		16"/clay/140'	2"	.52	Line clogged with grease, flowing 9"
1152	9.3'	6"/clay/200'	1"		Line clogged with grease, flowing 1"
1153	6.3'	6"/clay/330'	2"		Light not passing, line flowing 1"
1154	4.1'	6"/clay/90'	1" / 1"	.07	Light not passing, line flowing 1"
1154A	6.2'	6"/clay/80'	1/2" / 2"	.17	Line flowing 1", line clear
1154B	4.5'	6"/clay/110'	1" / 1"	.09	Line crooked
1155	2.7'				MH in floor conc ditch receives inflow from ditch, end of line
13	------	10"/conc/10'	-------	----------	Line dirty - encrusted with sewage - good flow
1520	7.3'		2"		Line plugged to MH 64 and 65
1520	------	10"/conc/100'	-------	----------	Line encrusted with sewage - good flow
1519	7.5'	8"/conc/170'	1" / 1"	.15	Flowing 1/2"-grease in flow line - slight misalignment
1517	4.2'	8"/conc	trace		1" standing sewage in invert, line good toward MH 1516

007282

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
1516	------	----------	-------	----------	Not able to locate - MH under fill for parking lot
20	------	15"/clay/305'	3"	1.97	Trash and debris in line, line sealed at MH 20
1204	6'	15"/clay/270'	2" / 12"	10.52	Water 1.2' above flow - line before pumping out trash and silt in line
69	8.6'	15"/clay/280'	4" / 12"	10.91	Water 1.9' above FL before pumping out - line to MH 68 sealed, dirt and debris in line
68	5.5'				Water 1.8' above FL before pumping out, line plugged to MH 1206, ring broke loose allowing water & dirt to run in
68	------	15"/clay/180'	2"	.65	----------
67	6.1'	15"/clay/100'	15"	4.54	Water 3.1' above FL before pumping out
66	2'	15"/clay/340'	12" / 3"	.19	Ring & cover missing MH top 1/2' below ground surface, dirt in line
65	10.5'	15"/clay/275'	2"		Roots of tree in MH water 3.8' above FL before pumping, line plugged at MH 1520
1520	------	15"/clay/130'	8"	3.41	Obstruction in pipe
64	5.2'	15"/clay/360'			Water 5.1' above FL before pumping out, rim loose and shifted, line plugged at MH 63 infiltration 10' from MH 64
63	5.2'	15"/clay/360'			6" service line from Lamanco clean - 15" line sealed
13		18"/clay/390'			MH destroyed, plug at MH 7 leaks
7	7.5'				Invert blocked by sewage, sewage on floor
7	------	8"/clay	-------	----------	Material hanging from top of pipe

007283

Table 4-6 (Cont.)
RESULTS OF SEWER LAMPING*

Manhole Number	Manhole Depth	Line Size/Type/Length	Sediment Depth MH/Line	Cubic Yards of Sediment in line	Remarks
8	------	----------	-------	----------	----------
9		8"/clay			Sewage on floor, vines growing in MH
7	------	8"/clay/20'	-------	----------	Line flowing 1"
9	------	----------	-------	----------	----------
7	------	18"/clay/400'	1"	.56	Debris in flowline
6	8.7'	18"/clay/210'	4"		Water 2.1' above FL before pumping out, line plugged at MH 4
4	------	18"/clay/180'	-------	----------	Line plugged at MH 4 and 1423
1423	------	18"/clay/390'	3"	2.8	Line plugged at MH 1423 6"-8" standing water
2	13.7'	18"/clay/90'	3"		
8		8"/clay			Line flowing 3"
2	------	18"/clay/90'	-------	----------	6"-8" standing water
3	14'				Plug at MH 3 damaged

*Source: Bond Consulting Engineers.

007284

TABLE 4-7*

LENGTH OF SEWER LINE
BY SIZE AND MATERIAL

Sewer Line Size
(in inches)

	6	8	10	12	15	16	18	20	21	24
Clay Pipe	2130	915	2500	2398	3495	1000	3221		789	500
Concrete Pipe	5595	170	100	700						
Ductile Iron Pipe							138	202		189
Total Pipe All Materials	7725	1085	2600	3098	3495	1000	3359	202	789	689

Total Length of Lines Lamped 24,042 LF

*Source: Bond Engineering

007285

Table 4-8
SUMMARY OF PCDD ANALYTICAL RESULTS-AQUATIC BIOTA SAMPLING

Sample Station	Laboratory Sample Number	Sample Description	Sample Weight (grams)	Percent Lipid (%)	Analytical Results Polychlorinated Dibenzodioxins pg/g (ppt)	
BMO2--Bayou Meto at the Cato Bridge (approximately 3 miles upstream of Rocky Branch Creek)	1322F-03	4 Gizzard shad, whole fish	722.1	11.13	2,3,7,8-TCDD	176
					Total TCDD	170
					Total PeCDD	34
					Total HxCDD	<23[d]
					Total HpCDD	<26[d]
					Total OCDD	24
BMO2--Bayou Meto at the Cato Bridge (upsteam of Rocky Branch Creek)	1322F-04	5 Flyers, whole fish	267.5	2.69	2,3,7,8-TCDD	18.2
					Total TCDD	16
					Total PeCDD	<5.6[d]
					Total HxCDD	<2.0[d]
					Total HpCDD	<4.5[d]
					Total OCDD	16
RBOI--Rocky Branch Creek at its confluence with Bayou Meto	1322F-01	1 Carp, whole fish	635.4	6.25	2,3,7,8-TCDD	798
					Total TCDD	780
					Total PeCDD	150
					Total HxCDD	11
					Total HpCDD	32
					Total OCDD	95
RBOI--Rocky Branch Creek at its confluence with Bayou Meto	1322F-02	2 Carp, whole fish	1146	5.12	2,3,7,8-TCDD	88.8(71.8)[b]
					Total TCDD	87(66)[b]
					Total PeCDD	<7.0 (<12)[b]
					Total HxCDD	<3.0 (<1.4)[b]
					Total HpCDD	7.0 (19)[b]
					Total OCDD	53(48)[b]
BMO3--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-05	1 Largemouth buffalo, whole fish	1,111	10.96	2,3,7,8-TCDD	863
					Total TCDD	830
					Total PeCDD	<75[d]
					Total HxCDD	<1.8[d]
					Total HpCDD	<50[d]
					Total OCDD	<53[d]
BMO3--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-06	1 Largemouth buffalo, whole fish	989.4	7.48	2,3,7,8-TCDD	559
					Total TCDD	550
					Total PeCDD	<8.0[d]
					Total HxCDD	9.4
					Total HpCDD	<2.4[d]
					Total OCDD	<30[d]
BMO3--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-07	3 Largemouth buffalo, skin-off fillets	622.3	1.35	2,3,7,8-TCDD	136
					Total TCDD	139
					Total PeCDD	<10[d]
					Total HxCDD	<2.7[d]
					Total HpCDD	<310[d]
					Total OCDD	<343[d]

Table 4-8
(continued)

Sample Station	Laboratory Sample Number	Sample Description	Sample Weight (grams)	Percent Lipid (%)	Analytical Results Polychlorinated Dibenzodioxins pg/g (ppt)	
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-08	1 Yellow bullhead and 1 channel catfish, whole fish minus fillets	365.1	4.62	2,3,7,8-TCDD	704
					Total TCDD	745
					Total PeCDD	59
					Total HxCDD	<3.4[d]
					Total HpCDD	<20[d]
					Total OCDD	<21[d]
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-09	1 Yellow bullhead and 1 channel catfish, skin-on fillets	170.5	1.93	2,3,7,8-TCDD	306
					Total TCDD	310
					Total PeCDD	35
					Total HxCDD	<2.6
					Total HpCDD	<29
					Total OCDD	<32
BM04--Bayou Meto at Highway 31 (approximately 15 miles downstream of Rocky Branch Creek)	1322F-10	1 Drum, whole fish minus fillets	1,104	8.72	2,3,7,8-TCDD	10
					Total TCDD	13
					Total PeCDD	<2.5[d]
					Total HxCDD	<1.4[d]
					Total HpCDD	<25[d]
					Total OCDD	<38[d]
BM04--Bayou Meto at Highway 31 (approximately 15 miles downstream of Rocky Branch Creek)	1322F-11	1 Drum, skin-off fillets	304.9	0.83	2,3,7,8-TCDD	<5.7[d]
					Total TCDD	<2.4[d]
					Total PeCDD	<16[d]
					Total HxCDD	<8.0[d]
					Total HpCDD	<1,840[d]
					Total OCDD	<2,025[d]
BM04--Bayou Meto at Highway 31	1322F-12	1 Flathead catfish, whole fish minus fillets	188.2	1.40	2,3,7,8-TCDD	157
					Total TCDD	165
					Total PeCDD	34
					Total HxCDD	<3.6[d]
					Total HpCDD	<26[d]
					Total OCDD	190
BM04--Bayou Meto at Highway 31	1322F-13	1 Flathead catfish, skin on fillets	107.5	0.35	2,3,7,8-TCDD	30
					Total TCDD	31
					Total PeCDD	<3.8[d]
					Total HxCDD	<1.4[d]
					Total HpCDD	<79[d]
					Total OCDD	<280[d]

Table 4-8
(continued)

Sample Station	Laboratory Sample Number	Sample Description	Sample Weight (grams)	Percent Lipid (%)	Analytical Results Polychlorinated Dibenzodioxins pg/g (ppt)	
BM05--Bayou Meto at Highway 79 (approximately 50 miles downstream of Rocky Branch Creek)	1322F-14	2 Carp and 1 grass carp, whole fish samples	2,341	34.4	2,3,7,8-TCDD	<7.9[d]
					Total TCDD	<5.4[d]
					Total PeCDD	<3.6[d]
					Total HxCDD	<1.8[d]
					Total HpCDD	<64[d]
					Total OCDD	<108[d]
BM05--Bayou Meto at Highway 79	1322F-15	1 Largemouth and 1 smallmouth buffalo, right side skin-off fillets	593.9	3.49	2,3,7,8-TCDD	<9.3[d]
					Total TCDD	9.5
					Total PeCDD	<3.0[d]
					Total HxCDD	<2.7[d]
					Total HpCDD	<22[d]
					Total OCDD	<35[d]
BM05--Bayou Meto at Highway 79	1322F-25	1 Largemouth and 1 smallmouth buffalo, left side skin-off fillets	623.8	2.21	2,3,7,8-TCDD	<7.1[d]
					Total TCDD	<5.3[d]
					Total PeCDD	<3.4[d]
					Total HxCDD	<4.7[d]
					Total HpCDD	<14[d]
					Total OCDD	57
BM05--Bayou Meto at Highway 79	1322F-16	1 Largemouth bass, whole fish minus fillets	845.5	3.69	2,3,7,8-TCDD	11.4
					Total TCDD	12
					Total PeCDD	<4.3[d]
					Total HxCDD	<2.0[d]
					Total HpCDD	<8.1[d]
					Total OCDD	35
BM05--Bayou Meto at Highway 79	1322F-17	1 Largemouth bass, skin-off fillets	444	1.81	2,3,7,8-TCDD	<2.8[d]
					Total TCDD	<2.6[d]
					Total PeCDD	<1.1[d]
					Total HxCDD	<1.3[d]
					Total HpCDD	<0.79[d]
					Total OCDD	<42[d]
BM06--Bayou Meto at Highway 152 (approximately 75 miles downstream of Rocky Branch Creek)	1322F-18	2 Gizzard shad and 1 drum, whole fish minus fillets	633.4	11.31	2,3,7,8-TCDD	5.1
					Total TCDD	4.8
					Total PeCDD	<4.0[d]
					Total HxCDD	<1.3[d]
					Total HpCDD	<4.9[d]
					Total OCDD	149
BM06--Bayou Meto at Highway 152	1322F-19	2 Gizzard shad and 1 drum, skin-off fillets	318.4	2.04	2,3,7,8-TCDD	5.0
					Total TCDD	<3.6[d]
					Total PeCDD	<28[d]
					Total HxCDD	<1.4[d]
					Total HpCDD	<236[d]
					Total OCDD	<392[d]

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Table 4-8
(continued)

Sample Station	Laboratory Sample Number	Sample Description	Sample Weight (grams)	Percent Lipid (%)	Analytical Results Polychlorinated Dibenzodioxins pg/g (ppt)	
BM06--Bayou Meto at Highway 152	1322F-20	1 Channel catfish, whole fish minus fillet	1,074	6.73	2,3,7,8-TCDD	36.1
					Total TCDD	37
					Total PeCDD	<4.2[d]
					Total HxCDD	<2.1[d]
					Total HpCDD	<11[d]
					Total OCDD	<140[d]
BM06--Bayou Meto at Highway 152	1322F-21	1 Channel catfish, right side skin-on fillet	327.4	3.31	2,3,7,8-TCDD	10.6
					Total TCDD	13
					Total PeCDD	<9.6[d]
					Total HxCDD	<3.8[d]
					Total HpCDD	<92[d]
					Total OCDD	<470[d]
BM06--Bayou Meto at Highway 152	1322F-26	1 Channel catfish, left side skin-on fillet	237.6	5.6	2,3,7,8-TCDD	<9.9(9.4)[b]
					Total TCDD	8(11)[b]
					Total PeCDD	<2.8[d](<1.2[d])[b]
					Total HxCDD	<1.4[d](<0.4[d])[b]
					Total HpCDD	<1.1[d](<5.6[d])[b]
					Total OCDD	6,200(2,300)[b]
BM07--Bayou Meto Wildlife Management Area	1322F-22	1 Carp, whole fish minus fillets	1992	8.96	2,3,7,8-TCDD	28.8
					Total TCDD	30
					Total PeCDD	<5.3[d]
					Total HxCDD	<2.2[d]
					Total OCDD	150
BM07--Bayou Meto Wildlife Management Area	1322F-23	1 Carp, right side skin-on fillets	378.6	4.0	2,3,7,8-TCDD	9.6
					Total TCDD	<10[d]
					Total PeCDD	<3.4[d]
					Total HxCDD	<2.7[d]
					Total HpCDD	<11[d]
					Total OCDD	<770[d]
BM07-Bayou Meto Wildlife Management Area	1322F-27	1 Carp, left side skin-on fillets	341.2	2.0	2,3,7,8-TCDD	9.6
					Total TCDD	6.0
					Total PeCDD	<2.1[d]
					Total HxCDD	<6.7[d]
					Total HpCDD	<0.2[d]
					Total OCDD	2,600

Table 4-8
(continued)

Sample Station	Laboratory Sample Number	Sample Description	Sample Weight (grams)	Percent Lipid (%)	Analytical Results Polychlorinated Dibenzodioxins pg/g (ppt)	
BH07--Bayou Meto Wildlife Management Area	1322F-24	1 Aligator gar, whole fish	305.6	4.02	2,3,7,8-TCDD	19.0
					Total TCDD	<18[d]
					Total PeCDD	<6.2[d]
					Total HxCDD	<2.6[d]
					Total HpCDD	<29[d]
					Total OCDD	<490[d]

[a]Only those compounds for which positive results were reported are listed.
[b]The value in parenthesis is from duplicate analysis of the sample.
[c]Indicates estimated value.
[d]<5.7 denotes not detected at a method detection limit of 5.7 pg/g.

DE/VERTC4/013

Table 4-9
SUMMARY OF SEMIVOLATILE AND PCB/PESTICIDE ANALYTICAL RESULTS-AQUATIC BIOTA SAMPLING

Sample Station	Laboratory Sample Number[a]	Analytical Results[b] Semivolatiles mg/kg (ppb)		Pesticides/PCBs mg/kg (ppb)	
BM02--Bayou Meto at the Cato Bridge (approximately 3 miles upstream of Rocky Branch Creek)	1322F-03	benzyl alchohol	560	alpha-BHC	18
		napthalene	1,500	p,p'-DDE	80
		tetrachlorobenzene	410	dieldrin	270
				endrin	300
BM02--Bayou Meto at the Cato Bridge (approximately 3 miles upstream of Rocky Branch Creek)	1322F-04	benzoic acid	2,300	p,p'-DDE	40
				p,p'-DDD	20
				Chlordane	250
RB01--Rocky Branch Creek at its confluence with Bayou Meto (upstream of Rocky Branch Creek)	1322F-01	1,2-dichlorobenzene	180	alpha-BHC	87
		2,4-dichlorophenol	3,000	p,p'-DDE	48
		1,2,4-trichlorobenzene	550	o,p'-DDE	180
		napthalene	390	Chlordane	600
		2-methylnapthalene	220		
		trichlorophenol	2,400		
		tetrachlorobenzene	2,300		
		di-n-butyl phthalate	78		
RB01--Rocky Branch Creek at its confluence with Bayou Meto	1322F-02	2,4-dichlorophenol	670	alpha-BHC	22
		napthalene	110	p,p'-DDE	140
		2,4,6-trichlorophenol	2,200	Chlordane	120
		tetrachlorobenzene	390		
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-05	2,4-dichlorophenol	500	p,p'-DDE	90
		1,2,4-trichlorobenzene	300	p,p'-DDD	80
		napthalene	250	p,p'-DDT	100
		2-methylnapthalene	50	o,p'-DDE	140
		trichlorophenol	920	Chlordane	1,200
		tetrachlorobenzene	720		

Table 4-9
(Continued)

Sample Station	Laboratory Sample Number[a]	Analytical Results[b] Semivolatiles mg/kg (ppb)		Pesticides/PCBs mg/kg (ppb)	
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-06	2,4-dichlorophenol	1,000	p,p'-DDE	70
		1,2,4-trichlorobenzene	170	o,p'-DDE	110
		napthalene	1,100		
		2-methylnapthalene	60		
		trichlorophenol	4,800		
		tetrachlorobenzene	490		
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-07	1,2,4-trichlorobenzene	50[b]	p,p'-DDE	38
		2,4,6-trichlorophenol	100	p,p'-DDD	13
		tetrachlorobenzene	185	p,p'-DDT	20
				Chlordane	190
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-08	2,4,6-trichlorophenol	1,000	p,p'-DDE	68
		tetrachlorobenzene	400	p,p'-DDD	140
				Chlordane	730
BM03--Bayou Meto 2-1/2 miles downstream from the mouth of Rocky Branch Creek	1322F-09	tetrachlorobenzene	180	p,p'-DDE	25
				p,p'-DDD	59
				Chlordane	260
BM04--Bayou Meto at Highway 31 (approximately 15 miles downstream of Rocky Branch Creek)	1322F-10	napthalene	780	p,p'-DDE	1,700
				p,p'-DDD	200
BM04--Bayou Meto at Highway 3	1322F-11	napthalene	50[b]	p,p'-DDE	140
				p,p'-DDD	20

Table 4-9
(Continued)

Sample Station	Laboratory Sample Number	Analytical Results[a] Semivolatiles mg/kg (ppb)		Pesticides/PCBs mg/kg (ppb)	
BM04--Bayou Meto at Highway 31	1322F-12	None Detected		p,p'-DDE p,p'-DDD	330 40
BM04--Bayou Meto at Highway 131	1322F-13	None Detected		p,p'-DDE	34
BM05--Bayou Meto at Highway 79 (approximately 50 miles downstream of Rocky Branch Creek)	1322F-14	None Detected		p,p'-DDE p,p'-DDD	1,700 220
BM05--Bayou Meto at Highway 79	1322F-15	di-n-butyl phthalate	77	p,p'-DDE p,p'-DDD	480 72
BM05--Bayou Meto at Highway 79	1322F-25	None Detected		p,p'-DDE p,p'-DDD	200 38
BM05--Bayou Meto at Highway 79	1322F-16	None Detected		p,p'-DDE p,p'-DDD	2,500 280
BM07--Bayou Meto at Highway 79 (approximately 50 miles downstream of Rocky Branch Creek)	1322F-17	None Detected		p,p'-DDE p,p'-DDD	88 20
BM06--Bayou Meto at Highway 152 (approximately 75 miles downstream of Rocky Branch Creek)	1322F-18	None Detected		p,p'-DDE p,p'-DDD	4,100 840

Table 4-9
(Continued)

Sample Station	Laboratory Sample Number	Analytical Results[a] Semivolatiles mg/kg (ppb)		Pesticides/PCBs mg/kg (ppb)	
BM06--Bayou Meto at Highway 152	1322F-19	None Detected		p,p'-DDE p,p'-DDD	1,200 220
BM06--Bayou Meto at Highway 152	1322F-20	None Detected		p,p'-DDE p,p'-DDD	1,000 200
BM06--Bayou Meto at Highway 152	1322F-21	napthalene	50	p,p'-DDE p,p'-DDD	420 58
BM06--Bayou Meto at Highway 152	1322F-26	benzoic acid pyrene benzo(b) fluoranthene benzo(k) fluoranthene indeno (1,2,3-cd) pyrene dibenzo (a,h) anthracene benzo (g,h,i) perylene	540 81 160 160 120 130 69	p,p'-DDE p,p'-DDD	840 130
BM07--Bayou Meto at the State Wildlife Area	1322F-22	None Detected		p,p'-DDE p,p'-DDD	2,700 460
BM07--Bayou Meto at the State Wildlife Area	1322F-23	None Detected		p,p'-DDE p,p'-DDD	760 120
BM07--Bayou Meto at the State Wildlife Area	1322F-27	napthalene	50[c]	p,p'-DDE p,p'-DDD	700 96
you Meto at the State Wildlife Area	1322F-24	None Detected		p,p'-DDE p,p'-DDD	880 130

[a]See Table 4-8 for sample descriptions
[b]Only those compounds for which positive results were reported are listed.
[c]Indicates estimated value.

DE/VERTC5/004

Table 5-1

CONCENTRATIONS OF DIOXIN AND PRIMARY POLLUTANTS (ppb)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F-1	12/15/83	5-1	<0.024	<50	<10	<10	<200				
	4/?/81		ND	<10	<10			<100	<130		Bayou Meto at W. Main St. Extension (Cato Rd.)
	9/?/79		<0.018								Bayou Meto at W. Main St. Extension (Cato Rd.)
F002C	8/14/84	5-6	(0.73)							Other	
F-2	12/16/83	5-2	0.130	<50	<10	<10	<200				
	9/?/79		0.384								Rocky Branch at Hwy 167. Duplicate <0.100
F003C	8/20/84	5-5	(0.06)	<100	<100					9-12	
F-3	12/15/83	5-2	<0.020	<50	<10	<10	<200				
F-4	12/14/83	5-2	<0.010	<50	<10	<10	<200				
F-5	12/15/83	5-2	<0.11								
F006A	8/15/84	5-5	0.74	290	110		20				
F-6	12/14/83	5-2	0.032	<50	<10	<10	400				
F-7	12/14/83	5-2	<0.009	<50	<10	<10	<200				
F-8	12/14/83	5-2	<0.011	<50	<10	<10	470				
F-9	12/14/83	5-2	1.2								
F010A	8/20/84	5-6	0.16								
F010X	8/20/84	5-6	(0.02)							3-6	
F-10	12/15/83	5-2	1.15	130	96	34	220			3-6	
	9/?/79		2.5								Rocky Branch at Hwy. 167. Duplicate 0.205
F011C	8/23/84	5-6	[0.05]	<10	<10					6-9	
F-11	12/16/83	5-2	0.20								
F-12	12/15/83	5-2	<0.17								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007295

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F013A	8-24	5-7	0.27								
F013X	8-24	5-7	[0.04]								
F-13	12/16/83	5-1	<0.020	<50	<10	<10	210				
	12/?/81		0.600								Bayou Meto at Hwy. 167
	4/?/81		ND								Bayou Meto at Hwy. 167
	3/?/81		0.25								Bayou Meto at Hwy. 167
	9/?/79		0.07								Bayou Meto at Hwy. 167
F014A	8/16/84	5-7	0.74								Duplicate (1.01)
F-14	12/15/83	5-1	0.580	<500	<100	<100	<200				
F-15		5-1									
F016A	8/20/84	5-8	0.86								
F-16	12/15/83	5-1	0.044	<50	<10	<10	<200				
F017A	8/20/84	5-8	0.34								
F-17	12/15/83	5-1	1.02	55	<10	21	<200				
	12/?/81		0.500								Bayou Meto at Hwy. 161
	4/?/81		<0.010	<11	<11			<100	<120		Bayou Meto at Hwy. 161
	3/?/81		0.300								Bayou Meto at Hwy. 161
	9/?/79		1.600								Bayou Meto at Hwy. 161 Duplicates 1.500, 0.720
F018A	8/21/84	5-8	(0.79)								
F018X	8/21/84	5-8	(0.08)								
F-18	12/15/83	5-1	0.35	<50	<10	<10	<200				
F-19	12/16/83	5-1	<0.009	<50	<10	<10	<200				

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007296

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F018X (Cont.)											
F-20	12/16/83	5-1	0.014	<50	<10	<10	<200				
F-21	12/15/83	5-1	<0.010	<50	<10	<10	1300				
F-22	12/15/83	5-1	<0.011	<50	<10	<10	<200				
F-23	12/13/83	5-1	<0.014	<5	<1	<1	2100				
F-24	12/14/83	5-1	<0.007	<50	<10	<10	<200				
F-25	12/14/83	5-1	<0.010	<5	<1	<1	<200				
F-26	12/14/83	5-1	<0.008	<5	<1	<1	780				
F-27	12/14/83	5-1	<0.015	<5	<1	<1	<200				
F-28	12/14/83	5-1	<0.005	<510	<1	<1	510				
F-29	12/15/83	5-1	<0.010	<50	<10	<10	<200				
F-30	12/14/83	5-1	<0.012	<5	<1	<1	<200				
F-31	12/13/83	5-1	<0.009	<5	<1	<1	<200				
F-32	12/15/83		0.015	<50	<10	<10	400				Not in RI area, located in Bayou Meto at Interstate 40
F-33	12/15/83		<0.010	<50	<10	<10	1900				Background sample
F-34	12/15/83		<0.012	<50	<10	<10	<200				Background sample
F-35	12/15/83		<0.011	<50	<10	<10	<200				Background sample
F-36	12/15/83		<0.10								Background sample
	5/13/80		0.228								Soil, W side shoreline of Lake DuPree. Duplicate 0.050
	5/13/80		<0.022								Soil, W of ball park
	5/8/80		<0.012								Soil, E of ball park
F037C	8/14/84	5-6	(0.83)	<10	<10					6-9	
F038C	8/14/84	5-6	(0.15)							6-9	

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007297

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F039C	8/14/84	5-6	(0.32)							6-9	
F040C	8/27/84	5-11	(0.052)							6-9	
F041C	8/24/84	5-12	(0.063)	<10	<10						
F042C	8/24/84	5-12	(0.13)								
	4/?/83		<0.1								Indian Head Lake & Kellogg Creek
F043C	8/24/84	5-11	(0.082)								Clay directly at surface
F044A	8/23/84	5-6	0.37	<100	<100					6-9	Replicate [0.07]
F044X	8/23/84	5-6	0.18							6-9	
F045A	8/23/84	5-6	[0.10]							0-6	
F045X	8/23/84	5-6	[0.05]								
F046A	8/13/84	5-5	[2.0]							6-9	
F046B	8/13/84	5-5	(0.15)							6-9	
F046C	8/13/84	5-5	(0.15)							6-9	
F047A	8/13/84	5-5	[3.5]							12-15	
F047B	8/13/84	5-5	1.1							12-15	
F047C	8/13/84	5-5	2.1							12-15	

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007298

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F048X	8/13/84	5-5	(0.30)								Duplicate 0.26
F049A	8/13/84	5-5	(0.40)							12-15	
F049B	8/13/84	5-5	(0.13)							12-15	
F049C	8/13/84	5-5	(0.15)							12-15	
F050C	8/13/84	5-5	(0.10)	<10	<10					12-15	
F051A	8/13/84	5-6	(0.05)								
F052A	8/13/84	5-6	(0.17)	<10	<10						
F052B	8/13/84	5-6	(0.05)								
F052C	8/13/84	5-6	(0.08)								
F053A	8/13/84	5-6	0.27								
F053B	8/13/84	5-6	(0.13)								
F053C	8/13/84	5-6	(0.08)								
F054A	8/13/84	5-6	(0.70)								
F055C	8/14/84	5-6	(0.19)							0-3	
F056A	8/14/84	5-6	(0.08)								
F056B	8/14/84	5-6	(0.10)								
F056C	8/14/84	5-6	(0.06)								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007299

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F057A	8/14/84	5-6	0.41								Duplicate 0.17
F057B	8/14/84	5-6	0.10	30	20						
F057C	8/14/84	5-6	(0.11)								
F058C	8/14/84	5-6	(0.12)								
F059C	8/14/84	5-8	1.3	40	60						
F060A	8/14/84	5-8	1.1								
F060B	8/14/84	5-8	1.52								
F060C	8/14/84	5-8	0.4								
F061A	8/14/84	5-8	0.54								
F061B	8/14/84	5-8	0.78								
F061C	8/14/84	5-8	(0.16)								
F062X	8/14/84	5-8	0.2								
F063A	8/14/84	5-8	0.81								
F063B	8/14/84	5-8	1.2								
F063C	8/14/84	5-8	1.1								
F064A	8/14/84	5-6	0.15							9-12	
F064B	8/14/84	5-6	0.39							9-12	

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007300

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F064C	8/14/84	5-6	[0.18]	10	20					9-12	
F065A	8/14/84	5-6	(0.11)							12-15	
F065B	8/14/84	5-6	(0.02)							12-15	
F065C	8/14/84	5-6	(0.20)	<10	<10					12-15	
F066A	8/14/84	5-6	0.23							9-12	
F066B	8/14/84	5-6	0.24							9-12	
F066C	8/14/84	5-6	[0.07]	<10	<10					9-12	Duplicate (0.08)
F067A	8/20/84	5-8	0.22							0-8	
F067X	8/20/84	5-8	0.12							0-8	
F068A	8/16/84	5-7	(0.47)								
F068B	8/16/84	5-7	(0.21)								
F068C	8/16/84	5-7	(0.33)								
F069A	8/24/84	5-7	[0.53]								
F069X	8/24/84	5-7	0.88								
F070A	8/20/84	5-8	0.10								
F070X	8/20/84	5-8	0.10								
F071A	8/21/84	5-8	0.31								Replicate (0.10)

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007301

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F071X	8/21/84	5-8	1.10								
F072C	8/14/84	5-6	(0.02)	<10	<10					6-9	
F073X	8/24/84	5-7	(0.80)								
F074X	8/24/84	5-7	[0.19]								
F075X	8/24/84	5-7	(0.082)	<10	<10						
F076A	8/20/84	5-8	0.37	<100	<100						
F076X	8/20/84	5-8	(0.04)								
F077A	8/20/84	5-8	0.39								
F078A	8/21/84	5-8	0.25								Duplicate 0.24
F079X	8/21/84	5-9	0.59							12-15	
F080X	8/21/84	5-4	(0.03)								Duplicate (0.03)
F081X	8/21/84	5-4	(0.03)								
F082C	8/14/84	5-6	(0.17)							12-15	
F083A	8/16/84	5-6	(0.90)							9-12	
F084C	8/17/84	5-5	(0.10)								
F085C	8/20/84	5-8	1.58								
F086A	8/28/84	5-5	(0.03)								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007302

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F087A	8/28/84	5-5	(0.04)								
F088A	8/28/84	5-5	(0.04)	<10	<10						
F088X	8/28/84	5-5	(0.05)								Duplicate (0.03)
F089A	8/17/84	5-5	(0.02)							6-9	
F090A	8/17/84	5-7	(0.06)							6-9	Duplicate (0.03)
F091A	8/17/84	5-7	(0.13)							6-9	
F092A	8/16/84	5-5	(0.27)								
F093A	8/20/84	5-5	(0.07)							6-9	
F094A	8/20/84	5-5	(0.05)	<100	<100					6-9	
F095C	8/20/84	5-7	(0.03)							9-12	
F096C	8/20/84	5-7	(0.03)							9-12	
F097A	8/16/84	5-7	(0.64)								
F098A	8/16/84	5-7	(0.55)	40	<10						
F099C	8/20/84	5-8	(0.08)								
F100C	8/20/84	5-8	(0.06)								
F101A	8/21/84	5-8	0.61								
F102X	8/21/84	5-4	(0.02)								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007303

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F103A	8/23/84	5-6	0.11								
F104A	8/27/84	5-6	1.7								
F104C	8/27/84	5-6	(0.33)	30	20					0-4	
F105C	8/27/84	5-6	1.5							6-9	
F106C	8/27/84	5-6	(0.094)							6-9	
F107A	8/28/84	5-5	(0.05)	<100	<100						
F107X	8/28/84	5-5	(0.03)								
F120											Missing native spike
F121			100%	0.13							Background sample, native spike recovery
F122			86%	0.10							Background sample, native spike recovery
F123			100%								Background sample, native spike recovery
F124			93%								Background sample, native spike recovery
F125			104%								Background sample, native spike recovery
F126			98%								Background sample, native spike recovery
F127			64%								Background sample, native spike recovery

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007304

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
F128			108%								Background sample, native spike recovery
F129			89%								Background sample, native spike recovery
F130			96%								Background sample, native spike recovery

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007305

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
FS001	6/30/84	5-3	0								
FS002	6/30/84	5-3	0								
FS003	6/30/84	5-3	0								
FS004	6/30/84	5-3	0								
FS005	6/30/84	5-3	0								
FS006	6/30/84	5-3	0								
FS007	6/30/84	5-3	0								
FS008	6/30/84	5-3	0								
FS009	6/30/84	5-3	0								
FS010	6/30/84	5-3	0								
FS011	6/30/84	5-3	0								
FS012	6/30/84	5-3	0								
FS013	6/30/84	5-3	0								
FS014	6/30/84	5-3	0								
FS015A	8/21/84	5-16	(0.02)	<100	<100						
FS015	6/31/84	5-3	0.43								
FS016	6/31/84	5-3	0								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007306

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
FS017	6/31/84	5-3	0								
FS018	6/31/84	5-3	0								
FS019A	8/21/84	5-4	(0.09)								
FS019	6/31/84	5-3	0								
FS020	6/31/84	5-3	0								
FS021	6/31/84		100%								Background sample, native spike recovery
FS022C	8/27/84	5-12	(0.054)	<10	<10						Clay at surface Duplicate (0.055)
FS023C	8/27/84	5-12	(0.060)								
FS024C	8/21/84	5-15	(0.01)	<100	<100					0-6	
FS025C	8/21/84	5-9	1.08								
FS026C	8/21/84	5-4	(0.04)	<100	<100					9-12	
FS027C	8/21/84	5-4	(0.22)								
FS028A	8/21/84	5-13	(0.02)	<100	<100					0-3	
FS029A	8/21/84	5-14	(0.02)							3-6	
FS030A	8/21/84	5-15	(0.01)							0-4	
FS031A	8/21/84	5-16	(0.04)	<100	<100						
FS032A	8/21/84	5-10	(0.06)								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007307

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
FS033A	8/21/84	5-17	(0.03)								
FS034A	8/21/84	5-18	(0.04)								
FS035A	8/21/84	5-4	(0.02)								
FS036A	8/21/84	5-4	(0.01)								
FS037C	8/20/84	5-7	(0.20)							6-9	
FS038C	8/20/84	5-7	(0.06)							0-2	
FS039A	8/17/84	5-8	(0.44)								
FS040A	8/17/84	5-8	0.9								
FS041A	8/17/84	5-8	(0.22)	<100	<100						
FS042C	8/20/84	5-8	(0.07)	<100	<100						
FS043A	8/16/84	5-8	(0.16)								
FS044A	8/21/84	5-10	(0.09)								
FS045C	8/27/84	5-13	(0.062)								
FS046A	8/21/84	5-13	(0.01)								
FS047C	8/17/84	5-7	(7.79)								
FS048C	8/17/84	5-8	(0.14)	<100	<100						
FS049C	8/20/84	5-7	(0.06)								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007308

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
FS050C	8/27/84	5-7	(0.04)								
FS051A	8/27/84	5-7	(0.052)								
FS052A	8/27/84	5-7	(0.041)								
FS053A	8/27/84	5-7	(0.026)								
FS054A	8/27/84	5-7	(0.042)								
FS054X	8/27/84	5-7	(0.044)	<10	<10						
FS055A	8/16/84	5-8	(0.05)	<100	<100						
FS056A	8/16/84	5-8	(0.06)								
	6/?/83		<0.021								Bayou Meto at I-40
	12/?/81		0.023	<310	<230						Bayou Meto at I-40
	3/?/81		<0.07								Bayou Meto at I-40
	9/?/79		0.036								Bayou Meto at I-40
	6/?/83		<0.021								Bayou Meto at Hwy. 31
	12/?/81		<0.02	<250	640						Bayou Meto at Hwy. 31
	4/?/81		<0.1	<10		<10		<100	<150		Bayou Meto at Hwy. 31
	3/?/81		<0.07								Bayou Meto at Hwy. 31
	9/?/79		0.036								Bayou Meto at Hwy. 31
	12/?/81		<0.02	<250	<210						Hwy. 13 at Bayou Meto
	3/?/81		<0.085								Hwy. 13 at Bayou Meto
	9/?/79		0.040								Hwy. 13 at Bayou Meto
	12/?/81		<0.02	<250	<190						Hwy. 79 at Bayou Meto
	3/?/81		<0.08								Hwy. 79 at Bayou Meto

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007309

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
FS056A (Cont.)											
	9/?/79		<0.018								Hwy. 79 at Bayou Meto
	12/?/81		<0.02	<320	<230						Benson Bridge at Bayou Meto
	3/?/81		<0.02								Benson Bridge at Bayou Meto
	9/?/79		ND								Benson Bridge at Bayou Meto
	12/?/81		<0.02	<190	810						Hwy. 152 at Bayou Meto
	3/?/81		<0.03								Hwy. 152 at Bayou Meto
	9/?/79		0.034	<0.03							Hwy. 152 at Bayou Meto
	12/?/81		<0.02	<250	<190						Hwy. 11 at Bayou Meto
	3/?/81		<0.02								Hwy. 11 at Bayou Meto
	9/?/79		<0.025								Hwy. 11 at Bayou Meto
	9/?/79		<0.009								1.5 miles above mouth of Bayou Meto
	9/?/79		<0.02								Arkansas River at Bayou Meto

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007310

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
I001A	8/24/84	5-20									No sediment available for sample
I-1	12/15/83	5-2	4.54	26000	<100	<100	6700				
I003A	8/16/84	5-20	(1.8)							3-6	
I-3	12/15/83	5-2	1.770	<500	<100	<100	2.7×10^5				
I004A	8/15/84	5-20	70.5							0-3	
I-4	12/15/83	5-2	33.10	$<5.0 \times 10^5$	$<1.0 \times 10^5$	$<1.0 \times 10^5$	58000				
	4/?/81		10.9			14500					Manhole, combined sewer-line at Braden-Alta Ln.
	9/?/79		0.159								Manhole, combined sewer-line at Braden-Alta Ln.
	9/?/79		1.13								Sewerline, Vertac to Jacksonville STP
I005A	8/16/84	5-20	(3.81)							3-4	
I-5	12/15/83	5-2	18.40	2.4×10^5	6.2×10^5	67000	2.1×10^5				
I006A	8/23/84	5-20	30.9	1.2×10^5	7.7×10^4					0-3	Replicate 15.8
I007A	8/16/84	5-20	3.5								
I-7	12/15/83	5-2	0.110	<50	<10	<10	<200				

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007311

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
I008A I-8	8/15/84 12/15/83	5-20 5-2	1.98 1.92								
I009A	8/15/84	5-20	7.8	740	980						Manhole full of rocks and dirt
I010A	8/23/84	5-20	[6.60]							0-3	Water flowing rapidly, no sediment
I011A	8/16/84	5-20	3.2								
I012B	8/28/84	5-20	1.7	90	20		780			3-6	
I013A	8/23/84	5-20	119.4								
I014A	8/22/84	5-20	0.09							0-3	
I015A	8/23/84	5-20	[0.61]								
I016A	8/15/84	5-20	>200	2.0×10^7	7.2×10^6					3-6	
I017A	8/23/84	5-20	(0.06)								
I018A	8/14/84	5-20	(0.46)	<100	<100						
I019X	8/14/84	5-20									Analyzed for pesticides only
I020A	8/15/84	5-20	4.5							0-3	
N011A	8/22/84	5-20	22.3	5800	2700					0-3	Manhole sample Duplicate 33.9

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007312

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
N-1	12/15/83	5-2	<0.011	<5	<1	<1	350				
N-2	12/13/83	5-2	<0.008	<5	<1	<1	<200				Duplicate <0.007
N-3	12/14/83	5-2	0.064								Duplicate <0.056
N-4	12/13/83	5-2	<0.013	<5	<1	<1	3400				
N-5	12/13/83	5-2	0.042								
N-6	12/14/83	5-2	0.030								
N-7	12/14/83	5-2	<0.010	<5	<1	<1	<200				
N-8	12/14/83	5-2	0.170	<5	4.6	<1	<200				
N-9	12/14/83	5-2	0.47								
N-10	12/14/83	5-2	0.90	150	240	<10	<200				
N-11	12/14/83	5-2	33.4	10000	8500	<1000	<200				Manhole at Braden - Alta Lanes
N-12	12/14/83	5-2	0.110	<5	5.8	<1	<200				Duplicate 0.083
N-13	12/14/83	5-2	0.94	6200	8100	<1000	<200				
N-14	12/14/83	5-2	0.012	<5	<1	<1	<200				
N-15	12/14/83	5-2	0.77	1400	1200	<1000	<200				
N-16	12/14/83	5-2	0.10	<50	<10	<10	<200				
N-17	12/14/83	5-2	0.410	220	320	<10	<200				

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007313

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
N-18	12/14/83	5-2	0.019	<50	<10	<10	420				
N-19	12/14/83	5-2	0.128	<50	<10	<40	790				
N-20	12/14/83	5-2	0.250	290	260	<10	<200				
N021A	8/21/84	5-19		<100	<100		66				No TCDD sample
N021C	8/21/84	5-19	0.14								
N-21	12/14/83	5-2	3.2	700	<100	<100	<200				
N-22	12/14/83	5-2	0.246	360	340	<100	<200				
N-23	12/16/83	5-2	<0.074								Duplicate <0.065
N-24	12/16/83	5-2	<0.077								
	4/?/81		0.27								Rocky Branch at West Main Street
N025A	8/14/84	5-19	(0.65)	<10	<10						
N025C	8/14/84	5-19	(0.19)								
	4/?/81		<0.035	<10	<10			<100	<120		Rocky Branch east leg at Smithwick Drive
	4/?/81		0.535	605	265			<120	<100		Rocky Branch east leg at Hill Road
	4/?/81		0.8	310	187			<100	<120		Rocky Branch east leg at SE corner of Vertac property
	4/?/81		<0.07	<11	<11			<100	<120		Rocky Branch west leg General Samuel Rd. Duplicates <0.020, <0.030
	9/?/79		<0.050								Rocky Branch west leg General Samuel Rd. Duplicates <0.020, <0.030

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007314

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
N025C (Cont.)											
	11/4/82		<0.025								1446 Rebel Dr. (under building)
	11/4/82		<0.025								1519 Rebel Dr. (soil from boring)
	11/4/82		<0.025								1515 Rebel Dr. front yard
	11/4/82		<0.025								1515 Rebel Dr. backyard
	11/4/82		<0.025								Drainage ditch behind Rebel Dr.
	4/14/81		<0.030								E side ditch Redmond Rd. 1 mile N of W. Main Duplicate <0.025
	4/14/81		<0.088								Intersection Marshall & Rebel Rds. Duplicate <0.050
	4/14/81		0.610								Drainage ditch at Marshall Rd. Duplicate 0.535
	9/21/79		<0.042								Marshall Rd., Lutheran residence
	8/23/79		<0.021								End of Redmond Rd.
	?/79		<0.040								E of Marshall, S of Gregory
N026A	8/14/84	5-19	[0.84]	220	560						
N026C	8/14/84	5-19	3.01								
	5/31/83					<500		<16000	<4000		625 Carpenter Ln., backyard 4.5 feet depth
	5/31/83			2	1	<50		<400	<100		625 Carpenter Ln., 3 locations, in front yard
	5/31/83					<500		<16000	<4000		624 Carpenter Ln., backyard 5 feet depth
	5/31/83			<1	<1	<50		<400	<100		621 Carpenter Ln., 3 locations, in front yard
	5/31/83					<500		<16000	<4000		625 Cheryl Ln., front yard 5 feet depth

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
ND26C (Cont.)											
	5/31/83			<1	<1	<50		<300	<100		616 Cheryl Ln., 3 locations, in backyard
	5/31/83			<1	<1	<50		<400	<100		617 Cheryl Ln., 3 locations, in backyard
	5/31/83			<1	<1	<50		<400	<100		620 Cheryl Ln., 3 locations, in backyard
	5/31/83			<1	<1	<50		<400	<100		625 Cheryl Ln., 3 locations, in front yard
	4/14/81		0.055								620 Alta Cove, NW corner of backyard
	4/14/81		<0.085								2113 Braden, garden soil
	4/14/81		<0.045								2113 Braden, SW corner of backyard
	4/14/81		<0.070								1704 Hill Rd., backyard
	?/81		0.069								620 Alta Cove, garden soil
	?/81		0.030								2200 Braden, yard soil
	?/81		0.013								624 Oakley, garden soil
	9/?/79		0.236								Rocky Branch Creek west keg at Braden St. Duplicate 0.236
	8/23/79		0.058								Alta Cove, Lot 36
	8/23/79		<0.021								Braden & Hines, SE corner
	8/23/79		<0.041								Hines Drive, Lot 11
	8/23/79		2.600								West Lane, Lot 21
	7/19/79		0.004								3026 Hines, garden
	7/2/79		0.470								620 Alta Cove: near S fence. Duplicate 0.257

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007316

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
N026C (Cont.)											
	7/2/79		<0.027								N end of Alta Ln. Duplicate <0.021
	7/2/79		<0.021								625 Alta Ln., N end of house
	7/2/79		0.456								Lawn, W end of Braden St.
	7/2/79		<0.029								628 Carpenter, N end of house
	7/2/79		0.028								3002 Hines, right edge of lawn
	6/29/79		4.200								2113 Braden, rose garden
	?/79		0.052								1709 Hill Rd., garden soil
	?/79		<0.040								3105 Hines, garden soil
N027A	8/16/84	5-19	(0.69)	90	70						Duplicate (0.84)
N027C	8/16/84	5-19	(0.37)								
N028A	8/15/84	5-19	(0.23)	<100	<100						
N028C	8/15/84	5-19	(0.12)								
N029C	8/21/84	5-19	0.10								
N030A	8/21/84	5-19		1500	2700						No TCDD sample
N030C	8/21/84	5-19	7.58								
N031	8/28/84		(0.58)								Water sample from Rocky Branch at Braden St.
N031	8/29/84		(0.06)								Water sample from Rocky Branch at Braden St.

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007317

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
S-1	12/16/83	5-2	0.750	<500	<100	<100	<200				
S002A	8/15/84	5-5	(0.57)	<100	<100						
S002X	8/16/84	5-5	0.20								
S-2	12/16/83	5-2	2.52	<500	<100	<100	<200				
S-3	12/16/83	5-2	0.870	<500	<100	<100	<200				
S-4	12/16/83	5-2	0.670	<50	<10	<10	<200				
S-5	12/16/83	5-2	0.93	<50	<10	<10	<200				
S-6	12/16/83	5-2	0.590	<50	<10	<10	<200				
S007A	8/15/84	5-5	[0.19]								
S-7	12/15/83	5-2	<0.080	<50	<10	<10	450				
S-8	12/15/83	5-2	<0.10							6-9	
S009A	8/16/84	5-5	3.0							6-9	
S009X	8/16/84	5-5	(0.70)	<100	<100					6-9	
S010A	8/16/84	5-5	(1.98)								
S010X	8/16/84	5-5	(0.34)								
S011A	8/16/84	5-5	3.6	170	80						
S011X	8/16/84	5-5	(0.98)							12-15	
S012A	8/16/84	5-5	(0.92)								
S012X	8/16/84	5-5	(0.44)								
S013A	8/16/84	5-5	1.30								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007318

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
S013X	8/16/84	5-5	(0.15)	<100	<100						Replicate (0.12)
S014A	8/16/84	5-5	1.8							9-12	
S014X	8/16/84	5-5	(0.51)								
	4/?/81		3.40	1400		1550		650	<240		Composite N and S oxidation ponds
	9/?/79		8.37								South oxidation pond. Duplicate 3.30
	9/?/79		7.57								North oxidation pond. Duplicates 4.30, 2.88, 1.90
S015C	8/15/84	5-5	(0.13)								
S016A	8/15/84	5-5	(0.07)								
S017C	8/15/84	5-5	(0.14)								
S018A	8/16/84	5-5	37.9								
S019A	8/16/84	5-5	16.2	2100	<1000		49000				
S019X	8/18/84	5-5	2.08	390	100						
S020A	8/16/84	5-5	6.5								
S021A	8/24/84	5-6	(0.076)								
S021X	8/24/84	5-6	(0.048)								
S021E	8/24/84	5-6	(0.21)								
S022A	8/28/84	5-6	(0.05)								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007319

Table 5-1 (Cont.)

Sample Code	Date	Map. No.	Dioxin	2,4-D	2,4,5-T	2,4,5-TP	Toluene	Total Chlorinated Phenols	Total Chlorinated Benzenes	Total Depth of Sediment	Remarks
S022X	8/28/84	5-6	1.19	<10	<10						
S022E	8/28/84	5-6	0.42								
S024B	8/28/84	5-6	5.30	<1000	<1000		54				
S025B	8/28/84	5-6	12.46	<1000	<1000		910				
S026A	8/28/84	5-6	1.62	<10	<10						
S027A	8/28/84	5-6	0.23								
S028A	8/21/84	5-6	(0.01)								
S028B	8/21/84	5-6	6.59								
S029A	8/21/84	5-6	0.77								
S029B	8/21/84	5-6	0.58								

( ) = Detection limit [ ] = Estimated maximum concentration < = Quantification limit (less than)

007320

TABLE 5-2

CONCENTRATIONS OF OTHER POLLUTANTS
DECEMBER 1983 SAMPLING

Sample Code	Date	Chlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,3,5-Tetrachlorobenzene	Pentachlorobenzene	Hexachlorobenzene	2-Chlorophenol	3,4-Dichlorophenol	2,3,5-Trichlorophenol	2,3,5,6-Tetrachlorophenol	Pentachlorophenol	M-Chloroanisole	3,5-Bichloroanisole	2,4,6-Trichloroanisole	Tetrachloroanisole	Pentachloroanisole	OTHER: Trichlorophenol (Isomer)	Trichlorophenol (Isomer)	Dichlorophenol (Isomer)	Tetrachlorobenzene (Isomer)	Tetrachlorophenol (Isomer)
F-1	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-2	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-3	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-4	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-6	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-7	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-8	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-10	12/15/83	a	a	a	a	a	a	a	a	a	220	a	a	a	a	a	a	a					
F-13	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-14	12/15/83	a	a	a	a	a	a	a	a	120	400	a	a	a	a	a	a	a					
F-16	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-17	12/15/83	a	a	a	a	a	a	a	a	a	160	a	a	a	a	a	a	a					
F-18	12/15/83	a	a	a	a	a	a	a	a	a	110	a	a	a	a	a	a	a					
F-19	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-20	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-21	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-22	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					

[1] < 200 ppb [a] < xxx

007321

TABLE 5-2 (Cont.)

CONCENTRATIONS OF OTHER POLLUTANTS
DECEMBER 1983 SAMPLING

Sample Code	Date	Chlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,3,5-Tetrachlorobenzene	Pentachlorobenzene	Hexachlorobenzene	2-Chlorophenol	3,4-Dichlorophenol	2,4,5-Trichlorophenol	2,3,5,6-Tetrachlorophenol	Pentachlorophenol	M-Chloroanisole	3,5-Dichloroanisole	2,4,6-Trichloroanisole	Tetrachloroanisole	Pentachloroanisole	OTHER: Trichlorophenol (Isomer)	Trichlorophenol (Isomer)	Dichlorophenol (Isomer)	Tetrachlorobenzene (Isomer)	Tetrachlorophenol (Isomer)
F-23	12/13/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-24	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-25	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-26	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-27	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-28	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-29	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-30	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-31	12/13/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-32	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-33	12/15/83	a	a	a	a	a	a	a	a	a	230	a	a	a	a	a	a	a					
F-34	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
F-35	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
1-1	12/15/83	a	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *	2.0×10^5 *					
1-3	12/15/83	a	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5	3.0×10^5					
1-4	12/15/83	a	a	a	a	19000	3000	a	4800	13000	1.6×10^5	14000	7500	a	a	a	a	a	1.3×10^4	8.0×10^4	1.4×10^6	36000	1.7×10^3

a < 200 ppb * < xxx

TABLE 5-2 (Cont.)

CONCENTRATIONS OF OTHER POLLUTANTS
DECEMBER 1983 SAMPLING

Sample Code	Date	Chlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,3,5-Tetrachlorobenzene	Pentachlorobenzene	Hexachlorobenzene	2-Chlorophenol	3,4-Dichlorophenol	2,4,5-Trichlorophenol	2,3,5,6-Tetrachlorophenol	Pentachlorophenol	N-Chloroanisole	3,5-Dichloroanisole	2,4,6-Trichloroanisole	Tetrachloroanisole	Pentachloroanisole	OTHER: / Trichlorophenol (Isomer)	Trichlorophenol (Isomer)	Dichlorophenol (Isomer)	Tetrachlorobenzene (Isomer)	Tetrachlorophenol (Isomer)
I-5	12/15/83	a	4900	1900	5.3×10^4	1.2×10^5	1.1×10^4	a	a	9.1×10^4	1.9×10^5	a	a	a	a	a	a	a			5.3×10^4	3.6×10^5	
I-7	12/15/83	a	a	a	a	a	a	a	a	a	230	a	a	a	a	a	a	a					
N-1	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-2	12/13/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-4	12/13/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-7	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-8	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-10	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-11	12/14/83	a	a	a	a	190	a	a	a	a	4800	a	a	a	a	a	a	a	1800				
N-12	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-13	12/14/83	a	160	a	70	180	a	a	a	a	150	a	a	a	a	a	a	a					
N-14	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-15	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-16	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-17	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-18	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					

a < 200 ppb * < xxx

007323

TABLE 5-2 (Cont.)

CONCENTRATIONS OF OTHER POLLUTANTS
DECEMBER 1983 SAMPLING

Sample Code	Date	Chlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2,3,5-Tetrachlorobenzene	Pentachlorobenzene	Hexachlorobenzene	2-Chlorophenol	3,4-Dichlorophenol	2,4,5-Trichlorophenol	2,3,5,6-Tetrachlorophenol	Pentachlorophenol	M-Chloroanisole	3,5-Bichloroanisole	2,4,6-Trichloroanisole	Tetrachloroanisole	Pentachloroanisole	OTHER: Trichlorophenol (Isomer)	Trichlorophenol (Isomer)	Dichlorophenol (Isomer)	Tetrachlorobenzene (Isomer)	Tetrachlorophenol (Isomer)
N-19	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-20	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
N-21	12/14/83	a	60*	a	160	a	a	a	80	650	4440	a	a	a	a	a	a	a	4000	500			
N-22	12/14/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
S-1	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
S-2	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
S-3	12/16/83	a	90	a	a	a	a	a	a	a	330	a	a	a	a	a	a	a					
S-4	12/16/83	a	190	a	a	a	a	a	a	a	660	a	a	a	a	a	a	a					
S-5	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
S-6	12/16/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					
S-7	12/15/83	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a					

a: < 200 ppb *: < xxx

TABLE 5-3

CONCENTRATIONS OF OTHER POLLUTANTS
AUGUST 1984 SAMPLING (ppb)

Sample Code	Date	Methylene Chloride	4-Methyl-2-Pentanone	Tetrachloroethene	Endrin	4,4'DDT	4,4'DDD	Endosulfan	4,4'DDE	Acetone	Bis(2-Ethylhexyl)phthalate	1,1,1-Trichloroethane	2-Butanone	Benzene	Alpha-BHC	Delta-BHC	Dieldrin	Heptachlor Epoxide	Endrin Aldehyde	Heptachlor	1-Bromo-3-Fluorobenzene	Di-N-Butyl Phthalate	Fluoranthene	Pyrene	Endosulfan Sulfate	Additional Compounds:
F01EC	8/20/84	200																								
F02VA	8/15/84	85	5647	12						315	K	242	292	64												
F03EC	8/23/84	28																								
F01EC	8/14/84	36			33.6	210	K	173	309	470																
F04EC	8/24/84	28									900											1300				
F04VA	8/23/84									86																
F05EC	8/13/84	19	40	K					1	110	K															
F05EA	8/13/84	21										K			7.6	K										
F05EB	8/14/84	10					K		1								17.4									
F05EC	8/14/84	36				76.2	K		9.02	521							14.1	K	K							
F06EC	8/14/84	21	34				2.3		4.3							K	10.7	K		K	65					
F06EC	8/14/84	19					K			K					4.35					K						
F06EC	8/14/84	K	71							43																
F07EC	8/14/84	35	K					K		K	K				4.18	K										
F07EC	8/24/84	28									320J											280J				
F08VA	8/20/84										140J											140J				
F08VA	8/28/84	118									140J															
F09VA	8/20/84	1 um							11.05																0.221	
F09VA	8/16/84	418																								
F10EC	8/27/84	28																				80J				
F10VA	8/28/84										190J															

K: present in sample below quantitation limit J: Indicates an estimated value for tentatively identified compounds or for compounds found below detection limit.

TABLE 5-3 (Cont.)

CONCENTRATIONS OF OTHER POLLUTANTS
AUGUST 1984 SAMPLING (ppb)

Sample Code	Date	Methylene Chloride	4-Methyl-2-Pentanone	Tetrachloroethene	Endrin	4,4'DDT	4,4'DDD	Endosulfan	4,4'DDE	Acetone	Bis(2-Ethylhexyl)phthalate	1,1,1-Trichloroethane	2-Butanone	Benzene	Alpha-BHC	Delta-BHC	Dieldrin	Heptachlor Epoxide	Endrin Aldehyde	Heptachlor	1-Bromo-3-Fluorobenzene	Di-N-butyl Phthalate	Fluoranthene	Pyrene	Endosulfan Sulfate	Additional Compounds:
FS015A	8/21/84										70J											40J				
FS02[illegible]	8/27/84	28									120J											240J		10J		
FS024C	8/21/84	88									130J											170J				
FS026C	8/21/84	28									90J											40J				
FS028A	8/21/84	38									120J															
FS031A	8/21/84	18							2.0		80J											40J				
FS041A	8/17/84	118				2.3			0.9J		40J							0.09J								
FS042C	8/20/84	168					0.05J				40J											40J				
FS048C	8/17/84	148					0.29J		1.4J																6.13	
FS054K	8/27/84	68								34	130											580	160J			Phenanthrene - 160J
FS055A	8/16/84	38								130																
1006A	8/23/84	28									1000															Chlordane - 48,277 2,4-dinitrotoluene - 150J
1009A	8/15/84	51	394J							28J	K	78					107			K						
1012B	8/28/84										1200															2-Hexanone - 34
1016A	8/15/84	228								800J										7224						2,4-dichlorophenol - 2.2x10^5 2,4,6-trichlorophenol - 5700
1018A	8/14/84		51							77	K															
1019K	8/14/84	40	688	K								65														
1021A	8/22/84	28									3200												5800	2100J		
1023A	8/21/84	238								3300	980J															
1025A	8/14/84	15	50	K							K															

K: present in sample below quantification limit J: Indicates an estimated value for tentatively identified compounds or 6th compounds found below detection limit.
R: the analyte is found in the lab blank

007326

TABLE 5-3 (Cont.)

CONCENTRATIONS OF OTHER POLLUTANTS
AUGUST 1984 SAMPLING (ppb)

Sample Code	Date	Methylene Chloride	4-Methyl-2-Pentanone	Tetrachloroethene	Endrin	4,4'DDT	4,4'DDD	Endosulfan	4,4'DDE	Acetone	Bis(2-Ethylhexyl)phthalate	1,1,1-Trichloroethane	2-Butanone	Benzene	Alpha-BHC	Delta-BHC	Dieldrin	Heptachlor Epoxide	Endrin Aldehyde	Heptachlor	1-Bromo-3-Fluorobenzene	Di-N-butyl Phthalate	Fluoranthene	Pyrene	Endosulfan Sulfate	Additional Compounds:
N026C	8/14/84	15	56																							
N027C	8/16/84	5B															0.34J								4.8	
N028C	8/15/84																	0.26J							6.3	
N030A	8/21/84	2B																								Arochlor - 1254: 2759 ppb
S002A	8/15/84	670B									1300J		110													Carbondisulfide - 280
S009K	8/16/84	8B							0.67J		40J											40J			13.5J	
S011A	8/16/84	68B									380J											400J		200J		
S013X	8/16/84	27B											38									142J				Carbondisulfide - 21
S019A	8/16/84	200B	620						15.3J	60	1200J		260					157J				610J	300J	610J	1316	Chloroform - 45 Ethyl benzene - 2403 Total xylenes - 1900 Gamma-BHC(Lindane) - 292 Methyl cyclohexane - 6188 4-methylphenol - 19,000 1,2,4-trichlorobenzene - 1200J
S019K	8/18/84	7B																				2200		40J		
S022X	8/28/84	5B									350J															
S024B	8/28/84	21B									1700															
S025B	8/28/84									1100	7100J											14000J				
S026A	8/28/84									2400	4800J											1000J				Carbon disulfide - 600

K: present in sample below quantification limit
B: the analyte is found in the lab blank

J: Indicates an estimated value for tentatively identified compounds or for compounds found below detection limit.

TABLE 6-1
ROCKY BRANCH IN-STREAM DATA SEGREGATION

	Dioxin Concentrations (ppb) Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
F002			(0.73)	
F010	0.16			(0.02)
F014	0.74			
F051	(0.05)			
F052	(0.17)	(0.05)	(0.08)	
F056	(0.08)	(0.10)	(0.06)	
F057	0.41	0.10	(0.11)	
F064	0.15	0.39	[0.18]	
F065	(0.11)	(0.02)	(0.20)	
F067	0.22			0.12
F072			(0.02)	
N021			0.14	
N029			0.10	

( ) = Detection limit
[ ] = Estimated maximum concentration

007328

TABLE 6-2
ROCKY BRANCH NEAR-STREAM DATA SEGREGATION

	Dioxin Concentrations (ppb) Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
F053	0.27	(0.13)	(0.08)	
F054	(0.70)			
F055			(0.19)	
F058			(0.12)	
N025	(0.65)		(0.19)	
N026	⌊0.84⌋		3.01	
N027	(0.69)		(0.37)	
N028	(0.23)		(0.12)	
N030			7.58	

( ) = Detection limit
⌊ ⌋ = Estimated maximum concentration

007329

TABLE 6-3
BAYOU METO IN-STREAM DATA SEGREGATION

Sample Code	Dioxin Concentrations (ppb) Sampling Depth (inches) 0-3	3-6	6-9	Other
F003			(0.06)	
F013	0.27			[0.04]
F017	0.34			
F018	(0.79)			(0.08)
F048				(0.30)
F062				0.2
F068	(0.47)	(0.21)	(0.33)	
F069	[0.53]			0.88
F070	0.10			0.10
F071	0.31			1.10
F073				(0.80)
F074				[0.19]
F075				(0.082)
F076	0.37			(0.04)
F077	0.39			
F078	0.25			
F079				0.59

( ) = Detection limit
[ ] = Estimated maximum concentration

007330

TABLE 6-4
BAYOU METO NEAR-STREAM DATA SEGREGATION

	Dioxin Concentrations (ppb) Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
F006	0.74			
F046	2.0	(0.15)	(0.15)	
F047	[3.5]	1.1	2.1	
F049	(0.40)	(0.13)	(0.15)	
F050			(0.10)	
F059			1.3	
F060	1.1	1.52	0.4	
F061	0.54	0.78	(0.16)	
F063	0.81	1.2	1.1	
FS015	(0.02)			
FS025			1.08	
FS044	(0.09)			

( ) = Detection limit
[ ] = Estimated maximum concentration

007331

TABLE 6-5
NORTH OF BAYOU METO WITHIN 2-YEAR FLOODPLAIN
DATA SEGREGATION

	Dioxin Concentrations (ppb) Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
F011			[0.05]	
F016	0.86			
F039			(0.32)	
F041			(0.063)	
F042			(0.13)	
F043			(0.082)	
F044	0.37			0.18
F045	[0.10]			[0.05]
F066	0.23	0.24	[0.07]	
F084			(0.10)	
F085			1.58	
F092	(0.27)			
F093	(0.07)			
F097	(0.64)			
F098	(0.55)			
F099			(0.08)	
F100			(0.06)	
F101	0.61			
F103	0.11			
F104	1.7		(0.33)	
F105			1.5	
F106			(0.094)	

( ) = Detection limit
[ ] = Estimated maximum concentration

007332

TABLE 6-6
NORTH OF BAYDU METO BETWEEN THE 2-YEAR AND
5-YEAR FLOODPLAIN DATA SEGREGATION

	Dioxin Concentrations (ppb)			
	Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
F037			(0.83)	
F038			(0.15)	
F040			(0.052)	
F082			(0.17)	
F083	(0.90)			
F086	(0.03)			
F087	(0.04)			
F088	(0.04)			(0.05)
F089	(0.02)			
F090	(0.06)			
F091	(0.13)			
F096			(0.03)	
F107	(0.05)			(0.03)

( ) = Detection limit
[ ] = Estimated maximum concentration

007333

TABLE 6-7
SOUTH OF BAYOU METO WITHIN THE 2-YEAR FLOODPLAIN
DATA SEGREGATION

	Dioxin Concentrations (ppb) Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
F094	(0.05)			
F095			(0.03)	
FS022			(0.054)	
FS023			(0.06)	
FS024			(0.01)	
FS037			(0.20)	
FS038			(0.06)	
FS039	(0.44)			
FS040	0.9			
FS041	(0.22)			
FS042			(0.07)	
FS043	(0.16)			
FS045			(0.062)	
FS047			(7.79)	
FS048			(0.14)	
FS051	(0.052)			
FS052	(0.041)			
FS053	(0.26)			
FS054	(0.042)			(0.044)
FS055	(0.05)			
FS056	(0.06)			

( ) = Detection limit
[ ] = Estimated maximum concentration

007334

TABLE 6-8
SOUTH OF BAYOU METO BETWEEN THE 2-YEAR AND
5-YEAR FLOODPLAIN DATA SEGREGATION

	Dioxin Concentrations (ppb) Sampling Depth (inches)			
Sample Code	0-3	3-6	6-9	Other
FS028	(0.02)			
FS029	(0.02)			
FS030	(0.01)			
FS031	(0.04)			
FS032	(0.06)			
FS033	(0.03)			
FS034	(0.04)			
FS046	(0.01)			
FS049			(0.060)	
FS050			(0.04)	

( ) = Detection limit
[ ] = Estimated maximum concentration

007335

TABLE 6-9
SEWAGE COLLECTION AND TREATMENT SYSTEM DATA SEGREGATION

Description	0-3"		3"-6"		6"-9"		X/E (Other)		Total
	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	No. of Samples
Sewage Collection System	I003A	(1.8)							
	I004A	70.5							
	I005A	(3.81)							
	I006A	30.9							
	I007A	3.5							
	I008A	1.98							
	I009A	7.8							
	I010A	[6.60]							
	I011A	3.2							
			I012B	1.7					
	I013A	119.4							
	I014A	0.09							
	I015A	[0.61]							
	I016A	>200.00							
	I017A	(0.06)							
	I018A	(0.46)							
	I020A	4.5							
	N011A	22.3							
New STP-Aeration Basin	S018A	37.9							4
	S019A	16.2					S019x	2.08	
	S020A	6.5							
New STP-N. Oxidation pond	S009A	3.0					S009x	(0.70)	6
	S011A	3.6					S011x	(0.98)	
	S014A	1.8					S014x	(0.51)	
New STP-S. Oxidation pond	S002A	(0.57)					S002x	0.20	8
	S010A	(1.98)					S010x	(0.34)	

007336

TABLE 6-9 (cont.)
SEWAGE COLLECTION AND TREATMENT SYSTEM DATA SEGREGATION

Description	0-3"		3"-6"		6"-9"		X/E (Other)		Total
	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	No. of Samples
New STP-S. Oxidation pond (cont.)	S012A	(0.92)					S012X	(0.44)	
	S013A	1.30					S013X	(0.15)	
New STP-Outfall ditch	S007A	[0.19]							4
					S015C	(0.13)			
	S016A	(0.07)							
					S017C	(0.14)			
Old STP-Sludge Digester			S024B	5.30					2
			S025B	12.46					
Old STP-Clarifiers	S026A	1.62							2
	S027A	0.23							
Old STP-Sludge Drying Beds	S028A	(0.01)	S028B	6.59					4
	S029A	0.77	S029B	0.58					
Old STP-Sludge Collection Area	S021A	(0.076)					S021E	(0.21)	6
							S021X	(0.048)	
	S022A	(0.05)					S022E	0.42	
							S022X	1.19	
Total No. of Samples									54

007337

ROCKY BRANCH, BAYOU METO AND FLOODPLAIN SAMPLES
0-3" LEVEL
AUGUST 1984

No of Samples	RB In-Stream		RB Near-Stream		BM In-Stream		BM Near-Stream		2-Yr. Floodplain		Between 2-Yr. & 5-Yr.FP		Total No.
	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	
	F010A	0.16	F053A	0.27	F013A	0.27	F006A	0.74	F016A	0.86	F083A	(0.90)	
	F014A	0.74	F054A	(0.70)	F017A	0.34	F046A	[2.0]	F044A*	0.37	F086Ax	(0.03)	
	F051A	(0.05)	N025A	(0.65)	F018A	(0.79)	F047A	[3.5]	F045A*	[0.10]	F087Ax	(0.04)	
	F052A	(0.17)	N026A	[0.84]	F068A	(0.47)	F049A	(0.40)	F066A	0.23	F088A#	(0.04)	
	F056A	(0.08)	N027A	(0.69)	F069A	[0.53]	F060A	1.1	F092A	(0.27)	F089A#	(0.02)	
	F057A	0.41	N028A	(0.23)	F070A	0.10	F061A	0.54	F093A	(0.07)	F090A#	(0.06)	
	F064A	0.15			F071A	0.31	F063A	0.81	F094A	(0.05)	F091A#	(0.13)	
	F065A	(0.11)			F076A	0.37	FS015A	(0.02)	F097A	(0.64)	F107A	(0.05)	
	F067A	0.22			F077A	0.39	FS044A	(0.09)	F098A	(0.55)	FS028A	(0.02)	
					F078A	0.25			F101A	0.61	FS029A	(0.02)	
									F103A*	0.11	FS030A	(0.01)	
									F104A	1.7	FS031A	(0.04)	
									FS039A	(0.44)	FS032A	(0.06)	
									FS040A	0.9	FS033A	(0.03)	
									FS041A	(0.22)	FS034A	(0.04)	
									FS043A	(0.16)	FS046A	(0.01)	
									FS051A†	(0.052)			
									FS052A†	(0.041)			
									FS053A†	(0.26)			
									FS054A†	(0.042)			
									FS055A†	(0.05)			
									FS056A†	(0.06)			
DL		4		4		2		3		14		16	43
EM		0		1		1		2		1		0	5
MC		5		1		7		4		7		0	24
Total		9		6		10		9		22		16	72

DL = (Detection Limit)
EM = [Estimated Maximum Concentration]
MC = Measured Concentration

*Lake DuPree
†South Impoundment
#Middle Impoundment
xNorth Impoundment

ROCKY BRANCH, BAYOU METO AND FLOODPLAIN SAMPLES
3"-6" LEVEL
AUGUST 1984

No of Samples	RB In-Stream		RB Near Stream		BM In-Stream		BM Near Stream		2-Yr. Floodplain		Between 2-Yr. & 5-Yr.FP		Total No
	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	
	F052B	(0.05)	F053B	(0.13)	F068B	(0.21)	F046B	(0.15)	F066B	0.24			
	F056B	(0.10)					F047B	1.1					
	F057B	0.10					F049B	(0.13)					
	F064B	0.39					F060B	1.52					
	F065B	(0.02)					F061B	0.78					
							F063B	1.2					
DL		3		1		1		2		0		0	7
EM		0		0		0		0		0		0	0
MC		2		0		0		4		1		0	7
Total		5		1		1		6		1		0	14

ROCKY BRANCH, BAYOU METO AND FLOODPLAIN SAMPLES
6"-9" LEVEL
AUGUST 1984

No of Samples	RB In-Stream		RB Near Stream		BM In-Stream		BM Near Stream		2-Yr. Floodplain		Between 2-Yr. & 5-Yr.FP		Total No
	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	
	F002C	(0.73)	F053C	(0.08)	F003C	(0.06)	F046C	(0.15)	F011C	[0.05]	F037C	(0.83)	
	F052C	(0.08)	F055C	(0.19)	F068C	(0.33)	F047C	2.1	F039C	(0.32)	F038C	(0.15)	
	F056C	(0.06)	F058C	(0.12)			F049C	(0.15)	F041C	(0.063)	F040C	(0.052)	
	F057C	(0.11)	N025C	(0.19)			F050C	(0.10)	F042C	(0.13)	F082C	(0.17)	
	F064C	[0.18]	N026C	3.01			F059C	1.3	F043C	(0.082)	F096C	(0.03)	
	F065C	(0.20)	N027C	(0.37)			F060C	0.4	F066C	[0.07]	FS049C	(0.06)	
	F072C	(0.02)	N028C	(0.12)			F061C	(0.16)	F084C	(0.10)	FS050C	(0.04)	
	N021C	0.14	N030C	7.58			F063C	1.1	F085C	1.58			
	N029C	0.10					FS025C	1.08	F095C	(0.03)			
									F099C	(0.08)			
									F100C	(0.06)			
									F104C	(0.33)			
									F105C	1.5			
									F106C	(0.094)			
									FS022C	(0.054)			
									FS023C	(0.060)			
									FS024C	(0.01)			
									FS037C	(0.20)			
									FS038C	(0.06)			
									FS042C	(0.07)			
									FS045C*	(0.062)			
									FS047C	(7.79)			
									FS048C	(0.14)			
DL		6		6		2		4		19		7	44
EM		1		0		0		0		2		0	3
MC		2		2		0		5		2		0	11
Total		9		8		2		9		23		7	58

DL = (Detection Limit)
EM = [Estimated Maximum Concentration]
MC = Measured Concentration

*Lake DuPree
†South Impoundment
#Middle Impoundment
xNorth Impoundment

ROCKY BRANCH, BAYOU METO AND FLOODPLAIN SAMPLES
X-LEVEL (OTHER DEPTH)
AUGUST 1984

No of Samples	RB In-Stream		RB Near Stream		BM In-Stream		BM Near Stream		2-Yr. Floodplain		Between 2-Yr. & 5-Yr.FP		Total No
	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	Sample Code	Dioxin ppb	
	F010X	(0.02)			F013X	[0.04]			F044X*	0.18	F088Xx	(0.05)	
	F067X	0.12			F018X	(0.08)			F045X*	[0.05]	F107X	(0.03)	
					F048X	(0.30)			FS054X+	(0.044)			
					F062X	0.2							
					F069X	0.88							
					F070X	0.10							
					F071X	1.10							
					F073X	(0.80)							
					F074X	[0.19]							
					F075X	(0.082)							
					F076X	(0.04)							
					F079X	0.59							
DL		1		0		5		0		1		2	9
EM		0		0		2		0		1		0	3
MC		1		0		5		0		1		0	7
Total		2		0		12		0		3		2	19

DL = (Detection Limit)
EM = [Estimated Maximum Concentration]
MC = Measured Concentration

*Lake DuPree
+South Impoundment
xNorth Impoundment

TABLE 7-5

MEASURED DIOXIN CONCENTRATIONS -
ROCKY BRANCH, BAYOU METO, AND FLOODPLAINS
AUGUST 1984

	Number of Samples Taken	Number of Measured Concen-trations	Number of Measured Concen-trations >1 ppb
Rocky Branch			
o In-Stream	25	10	0
o Near-Stream	15	3	2
Bayou Meto			
o In-Stream	25	12	1
o Near-Stream	24	13	9
North of Bayou Meto			
o 2-year floodplain	27	10	3
o 5-year floodplain (outside 2-year)	15	0	0
South of Bayou Meto			
o 2-year floodplain	22	1	0
o 5-year floodplain (outside 2-year)	10	0	0
TOTALS	163	49	15

007342

Appendix

1 SUPPLEMENTAL SAMPLING LOCATION DESCRIPTIONS FOR DECEMBER 1983

2 SUPPLEMENTAL SAMPLING LOCATION DESCRIPTIONS FOR JUNE 1984

3 SUPPLEMENTAL SAMPLING LOCATION DESCRIPTIONS FOR AUGUST 1984

4 CONVERSION LIST. LABORATORY CODES TO SAMPLE NUMBERING SYSTEM CODES, SAMPLE NUMBER SYSTEM CODES TO LABORATORY CODES

5 CONVERSION LIST. ORGANIC TRAFFIC FORM NUMBER TO SAMPLE NUMBER SYSTEM CODE, SAMPLE NUMBER SYSTEM CODE TO ORGANIC TRAFFIC FORM NUMBER

6 CONVERSION LIST. SAMPLE TAG NUMBER TO SAMPLE NUMBER SYSTEM CODE, SAMPLE NUMBER SYSTEM CODE TO SAMPLE TAG NUMBER

7 DIOXIN CONCENTRATIONS IN LAKE DUPREE. ADAPTED FROM "FINAL TECHNICAL REPORT FOR ROCKY BRANCH, BAYOU METO, AND LAKE DUPREE," ENVIRONMENTAL AND TOXICOLOGICAL CONSULTANTS, INC., 1983

8 WATER-SURFACE PROFILES ALONG BAYOU METO AND ROCKY BRANCH NEAR JACKSONVILLE, ARKANSAS. USGS ADMINISTRATIVE REPORT BY BRAXTEL L. NEELY, JR.; FINITE-ELEMENT SURFACE-WATER-FLOW MODELING SYSTEM (FESWMS), PROPOSAL, USGS

9 JACKSONVILLE WASTEWATER UTILITY LETTER REGARDING REPAIRS AT VERTAC PLANT

10 QUALITY CONTROL

007344

APPENDIX 1

SUPPLEMENTAL SAMPLING LOCATION
DESCRIPTIONS FOR DECEMBER 1983

007346

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
F1	12-15	Bayou Meto (BM), 100' downstream of West Main St. bridge (Cato Rd. or West Main extension).
F2	12-16	Rocky Branch (RB) at Redmond Road.
F3	12-15	Unnamed tributary of BM W of the north oxidation pond, 50' upstream of confluence.
F4	12-14	Drainage course tributary to RB, approximately 300' E of the south oxidation pond.
F5	12-15	Drainage course tributary to BM W of the south oxidation pond.
F6	12-14	Outfall drain 50' upstream of junction with BM.
F7	12-14	Depression 100' S of SW corner of south oxidation pond.
F8	12-14	Depression 500' SE of the SE corner of south oxidation pond.
F9	12-14	Junction of drainage courses tributary to RB 500' upstream of Hwy. 167.
F10	12-15	RB at Hwy. 167.
F11	12-15	Unnamed tributary to BM 400' E of Lake DuPree.
F12	12-15	Outflow area near SE corner of Lake DuPree.
F13	12-16	BM at Hwy. 167.
F14	12-15	RB 100' upstream of confluence with BM.
F15	12-15	Floodplain area 1/4 mile SW of Lake DuPree.
F16	12-15	Unnamed trubutary to BM S of Lake DuPree, 50' upstream of confluence with BM.
F17	12-15	BM at the Missouri Pacific Railroad bridge.
F18	12-15	BM at Hwy. 161 (N bank, 75' upstream of bridge).
F19	12-16	BM at E section road of Sec. 32.
F20	12-16	NW corner of NW fishpond, S of BM.

007347

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
F21	12-15	Kellog Creek 50' downstream of bridge.
F22	12-15	Kellog Creek at confluence with south tributary.
F23	12-13	Waterway connecting North Lake and Indianhead Lake.
F24	12-14	E edge of Indianhead Lake at W side of road connecting N and S subdivision.
F25	12-14	NW end of Indianhead Lake lagoon in E corner of Section 33.
F26	12-14	W lagoon of Indianhead Lake near south center of Section 33.
F27	12-14	W lagoon of Indianhead Lake in north center of Section 4.
F28	12-14	E lagoon of Indianhead Lake opposite sample F25.
F29	12-15	E embayment of Indianhead Lake 200' S of conjuction of Sections 3, 4, 33, and 34.
F30	12-14	S lagoon of Indianhead Lake in the NE quadrant of Section 4.
F31	12-13	SE corner of North Lake.
F33	12-15	Background - Quadruple Culvert, 100' N of LRAFB Hwy. 161, 1/4 mile W of Hwy. 167.
F34	12-15	Background - LRAFB golf course, 400' NW of NW corner of corporate limits, at confluence of drainage paths.
F35	12-15	Background - Confluence of water course 500' E of LRAFB.
F36	12-15	Background - Picnic area, NW corner of Harris Road School.

007348

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
I1	12-15	New Rocky Branch (RB) interceptor, manhole #5.
I3	12-15	New RB interceptor, manhole #12.
I4	12-15	New RB interceptor, manhole #19.
I5	12-15	Abandoned RB interceptor, manhole #2.
I7	12-15	Abandoned RB interceptor, manhole #64.
I8	12-15	Abandoned RB interceptor, manhole #20.

007349

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
N1	12-13	Upstream W leg of Rocky Branch (RB), 50' downstream from culvert in General Samuels Rd.
N2	12-13	Upstream E leg of RB, 25' from culvert under Smithwick Rd.
N3	12-14	1/3 mile W of Marshall Rd., N of N fence of Vertac site.
N4	12-13	W ditch of Marshall Rd. at NE corner of Vertac site.
N5	12-13	E side ditch of Redmond Rd., one mile N of West Main Street.
N6	12-14	1/3 mile S of NW corner of fence, between RR tracks and fence.
N7	12-14	E ditch of Marshall Rd. at intersection of South Phillip Drive.
N8	12-14	E leg of RB, 5' N of culvert under Hill Rd.
N9	12-14	NW corner of backyard of 620 Alta Cove, outside of fence, on E bank of RB.
N10	12-14	RB W leg at Braden St.
N11	12-14	Manhole #71 at Braden and Alta Lanes.
N12	12-13	E leg of RB 5' N of culvert under Braden.
N13	12-14	RB W leg at West Lane.
N14	12-14	E branch of E leg of RB, 10' E of culvert under Marshall Rd.
N15	12-14	RB W leg 100' S of Hines Cove.
N16	12-14	E leg of RB, 50' downstream of confluence with E branch.
N17	12-14	RB, 20' downstream of confluence with E leg.
N18	12-14	Floodplain area W of RB.

007350

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
N19	12-14	Floodplain area E of RB.
N20	12-14	RB, 75' S of West Main St.
N22	12-14	Drainage course form Reasor Hill area, near SW corner of fence, outside fence line.
N23	12-16	122 paces from NE corner of Vertac N fence, under fence at N end of culvert.
N24	12-16	217 paces from NE corner of Vertac N fence at second culvert.

007351

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
S1	12-16	NW corner of N oxidation pond.
S2	12-16	Center of N oxidation pond along N edge.
S3	12-16	N oxidation pond at end bridge.
S4	12-16	Center of N oxidation pond.
S5	12-16	Center of N oxidation pond along E edge.
S6	12-16	NW corner of S oxidation pond.
S7	12-15	Center of S oxidation pond along N edge.
S8	12-15	250' W of E edge of S oxidation pond along N edge.

007352

APPENDIX 2

SUPPLEMENTAL SAMPLING LOCATION DESCRIPTIONS FOR JUNE 1984

007353

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
FS001	6-30	One-half mile SSW of Highway 5 bridge.
FS002	6-30	W of Bayou Meto (BM) and 1 mile SW of Highway 5 bridge.
FS003	6-30	One mile S of BM.
FS004	6-30	Three-quarters of a mile S of Highway 5 bridge.
FS005	6-30	NE side of levee near NE side of stream.
FS006	6-30	Low area at NE corner of pond.
FS007	6-30	500' NW of highway next to stream.
FS008	6-30	500' W of BM bridge.
FS009	6-30	SE of highway near treeline on NE side of levee.
FS010	6-30	S side of levee near NE side of stream.
FS011	6-30	Near NE corner of large rice field.
FS012	6-30	Along NE side of large rice field.
FS013	6-30	250' W of road bend.
FS014	6-30	350' SSE of road bend.
FS015	6-31	600' from Highway 161.
FS016	6-31	4000' SE from BM.
FS017	6-31	4000' SE from BM.
FS018	6-31	300' S of BM bridge.
FS019	6-31	500' W of levee.
FS020	6-31	500' S of levee.
FS021	6-31	Background sample.

007354

APPENDIX 3

SUPPLEMENTAL SAMPLING LOCATION DESCRIPTIONS FOR AUGUST 1984

007355

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
F002CVTC	8-14	Directly under Redmond Rd. bridge at Rocky Branch (RB) about 1' from water's edge, in a sand bar.
F003CVTC	8-20	Approx. 1200' W of N oxidation pond, NW corner. Entrance of small stream into Bayou Meto (BM). Approx. 15' up from the mouth of BM in middle of stream bed.
F006AVTC	8-15	Mouth of outfall ditch and BM.
F010AVTC	8-20	Intersection of RB creek and Hwy. 167 sampled center, beside bridge on W side of Hwy.
F011CVTC	8-20	Intersection of RB creek and Hwy. 167 sampled center, beside bridge on W side of Hwy.
F011CVTC	8-23	Approx. 400' E of Dupree Lake and 200' S of the N edge of lake.
F013AVTC	8-24	50' NW of BM bridge at Hwy. 167.
F013XVTC	8-24	50' NW of BM bridge at Hwy. 167.
F014AVTC	8-16	Approx. 500 yds. E of Hwy. 167 bridge and 100' E of the confluence of BM and its E to NE branch.
F016AVTC	8-20	Approx. 950' S of Lake Dupree located in woodland 50' W of BM.
F017AVTC	8-20	50' NW of MPRR bridge in BM.
F018AVTC	8-21	Approx. 40' NW of Hwy. 161 bridge in BM.
F018XVTC	8-21	Approx. 40' NW of Hwy. 161 bridge in BM.
F037CVTC	8-14	Dupree Park, approx. 25' W from road near 1st baseball diamond and 75' E of shelter.
F038CVTC	8-14	Approx. 50' W of centerfield fence of 2nd baseball diamond in low area.
F039CVTC	8-14	Dupree Park, approx. 10' W of telephone pole behind centerfield of 4th baseball field in low wet area.
F040CVTC	8-27	Approx. 1/2 mile S from West Main St., and 500' E of Benchmark 252 following old roadway.
F041CVTC	8-24	Approx. 500' N of dry stream/flood area and 1 mile S of West Main St. bridge.
F042CVTC	8-24	Approx. 100' N of BM in low area and 2000' S of large curve in BM heading S from West Main St.

007356

F043CVTC	8-24	N of BM in field with drainage leading to BM. Just south of log jam approx. 1/2 mile S of West Main Bridge.
F044AVTC	8-23	Dupree Lake approx. 100' from each bank of NE corner.
F044XVTC	8-23	Dupree Lake approx. 100' from each bank of NE corner.
F045AVTC	8-23	Dupree Lake 40' W of E bank, 500' S of N bank.
F045XVTC	8-23	Dupree Lake 40' W of E bank, 500' S of N bank.
F046AVTC	8-13	BM cross section 25' downstream from mouth of sewage treatment plant outfall ditch, left bank 150' from water's edge. Surface 2' above water level.
F046BVTC	8-13	BM cross section 25' downstream from mouth of sewage treatment plant outfall ditch, left bank 150' from water's edge. Surface 2' above water level.
F046CVTC	8-13	BM cross section 25' downstream from mouth of sewage treatment plant outfall ditch, left bank 150' from water's edge. Surface 2' above water level.
F047AVTC	8-13	BM cross section 25' downstream from mouth of the outfall ditch left bank, 12' from water's edge, surface 1' above water level.
F047BVTC	8-13	BM cross section 25' downstream from mouth of the outfall ditch left bank, 12' from water's edge, surface 1' above water level.
F047CVTC	8-13	BM cross section 25' downstream from mouth of the outfall ditch left bank, 12' from water's edge, surface 1' above water level.
F048XVTC	8-13	BM cross section 25' downstream from mouth of outfall ditch, center of stream, 4' below water level.
F049AVTC	8-13	BM cross section; 25' downstream from mouth of outfall ditch, right bank 5' from water's edge, surface approx. 1' above water level.
F049BVTC	8-13	BM cross section; 25' downstream from mouth of outfall ditch, right bank 5' from water's edge, surface approx. 1' above water level.
F049CVTC	8-13	BM cross section; 25' downstream from mouth of outfall ditch, right bank 5' from water's edge, surface approx. 1' above water level.

007357

F050AVTC	8-13	BM cross section; 25' downstream from mouth of outfall ditch, right bank 10' from water's edge, surface approx. 1' above water level.
F050CVTC	8-13	BM cross section; 25' downstream from mouth of outfall ditch, right bank 10' from water's edge, surface approx. 1' above water level.
F051AVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge near water's edge on N bank.
F052AVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge in middle of stream bed.
F052BVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge in middle of stream bed.
F052CVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge in middle of stream bed.
F053AVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge in the middle of dry stream bed near the S bank.
F053BVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge in the middle of dry stream bed near the S bank.
F053CVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge in the middle of dry stream bed near the S bank.
F054AVTC	8-13	RB cross section; 200 yds. SSW from Redmond Rd. bridge approx. 3' from bottom of stream bed on N bank.
F055CVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, sediment sample along N bank.
F056AVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, sediment sample along N bank.
F056BVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, sediment sample along N bank.
F056CVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, sediment sample along N bank.
F057AVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, midstream sediment layers.
F057BVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, midstream sediment layers.

007358

F057CVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB, midstream sediment layers.
F058CVTC	8-14	RB cross section; approx. 600' S of Hwy. 167 bridge in RB on S bank at water level.
F059CVTC	8-14	Approx. 400' E of power lines on N bank, 12' from water.
F060AVTC	8-14	Approx. 400' E of power lines on N bank of BM, 7' from water.
F060BVTC	8-14	Approx. 400' E of power lines on N bank of BM, 7' from water.
F060CVTC	8-14	Approx. 400' E of power lines on N bank of BM, 7' from water.
F061AVTC	8-14	Approx. 400' E of power lines in BM on N bank 1' above water surface.
F061BVTC	8-14	Approx. 400' E of power lines in BM on N bank 1' above water surface.
F061CVTC	8-14	Approx. 400' E of power lines in BM on N bank 1' above water surface.
F062XVTC	8-14	Approx. 400' E of power lines in BM, 3 feet N of S bank. Sample taken for sediment under water.
F063AVTC	8-14	Approx. 400' E of powerlines on S bank of BM, 1' above water level.
F063BVTC	8-14	Approx. 400' E of powerlines on S bank of BM, 1' above water level.
F063CVTC	8-14	Approx. 400' E of powerlines on S bank of BM, 1' above water level.
F064AVTC	8-14	RB approx. 200 yds. from Hwy. 167 bridge and 100 feet downstream from pipe crossing RB, middle of stream bed.
F064BVTC	8-14	RB approx. 200 yds. from Hwy. 167 bridge and 100 feet downstream from pipe crossing RB, middle of stream bed.
F064CVTC	8-14	RB approx. 200 yds. from Hwy. 167 bridge and 100 feet downstream from pipe crossing RB, middle of stream bed.

007359

F065AVTC	8-14	RB depth sample; 8' from S bank on sand bar, approx. 30' SW of small stream entrance leading to sewage treatment plant.
F065BVTC	8-14	RB depth sample; 8' from S bank on sand bar, approx. 30' SW of small stream entrance leading to sewage treatment plant.
F065CVTC	8-14	RB depth sample; 8' from S bank on sand bar, approx. 30' SW of small stream entrance leading to sewage treatment plant.
F066AVTC	8-14	Next to small bridge (near entrance ramp) on Hwy. 167 approx. 1' from bridge edge near stream edge.
F066BVTC	8-14	Next to small bridge (near entrance ramp) on Hwy. 167 approx. 1' from bridge edge near stream edge.
F066CVTC	8-14	Next to small bridge (near entrance ramp) on Hwy. 167 approx. 1' from bridge edge near stream edge.
F067AVTC	8-20	1400' at 278° from S end of Dupree Park.
F067XVTC	8-20	1400' at 278° from S end of Dupree Park.
F068AVTC	8-16	On BM, SE of Hwy. 167, approx. 3' from water. (No sand bars present).
F068BVTC	8-16	On BM, SE of Hwy. 167, approx. 3' from water. (No sand bars present).
F068CVTC	8-16	On BM, SE of Hwy. 167, approx. 3' from water. (No sand bars present).
F069AVTC	8-24	Approx. 300 yds. E of Hwy. 167 bridge from BM.
F069XVTC	8-24	Approx. 300 yds. E of Hwy. 167 bridge from BM.
F070AVTC	8-20	1400' S of Lake Dupree in BM.
F070XVTC	8-20	1400' S of Lake Dupree in BM.
F071AVTC	8-21	340' NW of Hwy. 161 bridge in BM.
F071XVTC	8-21	340' NW of Hwy. 161 bridge in BM.
F072CVTC	8-14	Approx. 50' NE of pipe crossing RB, about 6' from S bank (middle of stream).
F073XVTC	8-24	Approx. 1100' NW of BM bridge in main stream.
F074XVTC	8-24	500' W of Bayou Meto bridge on Hwy. 167.

007360

F075XVTC	8-24	Approx. 600' E of Hwy. 167 bridge from BM.
F076AVTC	8-20	Approx. 1100' N of intersecting RR tracks and dirt road.
F076XVTC	8-20	Approx. 1100' N of intersecting RR tracks and dirt road.
F077AVTC	8-20	Approx. 800' due W of MPRR bridge in BM.
F078AVTC	8-21	Approx. 800' SE of MPRR bridge in BM.
F079XVTC	8-21	Just on the edge of BM, 5' from bank.
F080XVTC	8-21	Close to BM at Ink Bayou Meto confluence.
F081XVTC	8-21	Approx. 1/2 mile S of Johnson Cemetery, very close to BM.
F082CVTC	8-14	Dupree Park approx. 30' E of "Mexico Chiquto" billboard, and 50' W from children's play area in park.
F083AVTC	8-16	Approx. 1000' N of Hwy. 167 bridge at RB and 600' W of RB (near pipeline crossing).
F084CVTC	8-17	Approx. 500' down from outfall ditch of oxidation pond. 60' from BM in dry creek bed.
F085CVTC	8-20	Approx. 750' S of Lake Dupree located in woodland.
F086AVTC	8-28	Middle of pond just N of weigh station on Hwy. 167.
F087AVTC	8-28	South corner of pond just N of weigh station on Hwy. 167.
F088AVTC	8-28	Near small stream entrance at SE corner of pond N of weigh station on Hwy. 167.
F088XVTC	8-28	Near small stream entrance at SE corner of pond N of weigh station on Hwy. 167.
F089AVTC	8-17	Pond E of BM, NE corner.
F090AVTC	8-17	Pond E of BM, in the middle, 10 ft. of water.
F091AVTC	8-17	Pond E of BM, southern end in 6 ft. of water.
F092AVTC	8-16	Approx. 400' N of N corner of 1st oxidation pond.
F093AVTC	8-20	Approx. 50' E from BM in low wet area and 400' S of sample location F003.

007361

F094AVTC	8-20	Approx. 100' from the BM curve and 400' W of outfall ditch from sewage treatment plant.
F095CVTC	8-20	Approx. 1700' S on Hwy. 167 from BM bridge and 600' SE of Hwy. 167.
F096CVTC	8-20	100' SE of BM bridge at Hwy. 167 on N side of Hwy. 167, approx. 20' from road edge.
F097AVTC	8-16	Open field at woodedge near power lines SE of Hwy. 167/67.
F098AVTC	8-16	N of BM approx. 200', lowland area.
F099CVTC	8-20	Approx. 700' S of second set of power line poles, located in dense trees.
F100CVTC	8-20	Approx. 400' due N of bend in dirt road that leads to rice fields. In woods.
F101AVTC	8-21	200' NW of end of trailer park road, woodland sample.
F102XVTC	8-21	Approx. 1 mile N of NW corner of Shuffield Lake.
F103AVTC	8-23	100' W of E bank, 500' S of N bank of Dupree Lake.
F104AVTC	8-27	Approx. 100' NW of RB in abandoned stream channel; sample taken parallel with sample No. F051.
F104XVTC	8-27	Approx. 100' NW of RB in abandoned stream channel; sample taken parallel with sample No. F051.
F105CVTC	8-27	Approx. 100' NW of RB in abandoned stream bed.
F106CVTC	8-27	Approx. 150' NW of RB, where pipe crosses the creek in low area.
F107AVTC	8-28	In low swampy area, NW of pond just N of weigh station on Hwy. 167.
F120VTC thru F131VTC		Background. Take Hwy. 167/67 N to AFB exit. W on AFB road approximately 1/4 mile. 50' off road and 25' N of 4 drain culvert.

007362

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
FS015AVTC	8-21	200' S of Bayou Meto (BM) and approx. 500' E of Hwy. 161.
FS019AVTC	8-21	Approx. 250' S of BM and 300' E of dirt road.
FS022CVTC	8-27	S of BM approx. 500' S of power lines, 50' from edge of Bayou.
FS023CVTC	8-27	N of levee, approx. 100' W of large curve and swampy pond to the south.
FS024CVTC	8-21	Near RR tracks NW of Adkins School on N side of tracks.
FS025CVTC	8-21	Just S of Bayou Meto, 1/2 mile from Hwy. 161.
FS026CVTC	8-21	At the edge of Ink Bayou near the farming road.
FS027CVTC	8-21	Approx. 1100' E of county line and 200' S of BM.
FS028AVTC	8-21	Approx. 1000' NW of Hwy. 167 next to farmer's dirt road near low wet area.
FS029AVTC	8-21	S of Hwy. 167, off of farming road, just past wooden bridge.
FS030AVTC	8-21	Approx. 200' NW of the dead end of Vaun Street.
FS031AVTC	8-21	Near fenceline approx. 700' N of road near bend and 1000' S of BM.
FS032AVTC	8-21	Approx. 300' S of BM where the irrigation ditch is located.
FS033AVTC	8-21	Approx. 3' from farmer's road in a wet area of the rice field. Sediment sample in 2' of water.
FS034AVTC	8-21	Approx. 200' E of dirt road and halfway between the 2 houses on the western side.
FS035AVTC	8-21	Midway of E rice field, S of Hwy. 161.
FS036AVTC	8-21	30' S of RR track and 1200' E of Kerr Rd.
FS037CVTC	8-20	Approx. 1300' SE of Hwy. 167 bridge and 100' N of the bend of the SE bound branch of BM.

007363

FS038CVTC	8-20	Approx. 1/2 mile SE of Hwy. 167 bridge of BM and 100' adjacent to the confluence of the S and E bound branches.
FS039AVTC	8-17	In bottom lands, approx. 500' E of railroad tracks.
FS040AVTC	8-17	Dry creek bed bottom approx. 500' SE of RR tracks.
FS041AVTC	8-17	In bean field SE of RR tracks, approx. 50 yds.
FS042CVTC	8-20	Approx. 600' NW of E end of rice field by knoll, 100' W of BM.
FS043AVTC	8-16	In field close to slough approx. 250' S of dirt road.
FS045CVTC	8-27	In small stream approx. 1/2 mile W from where levee and BM are close together.
FS046CVTC	8-21	Approx. 3000' NW of radio tower in farmer's field.
FS047AVTC	8-16	Approx. 275' W of dirt road, 525' S of interstate.
FS047CVTC	8-17	Approx. 275' W of dirt road, 525' S of interstate.
FS048AVTC	8-16	Field close to holding pond.
FS048CVTC	8-17	Field close to holding pond.
FS049CVTC	8-20	From the SW corner of the pond, 90 paces S into rice field.
FS050CVTC	8-27	1000' S of SE corner of pond, 30' W of Hwy. 167 between mile post 798, 20' W of drainage ditch in rice field.
FS051AVTC	8-27	Unnamed lake S of BM, 50' from W and S shores; approx. 300' W of F073.
FS052AVTC	8-27	130' from N shore of unnamed lake.
FS053AVTC	8-27	130' from S shore in unnamed lake.
FS054AVTC	8-27	NW end of pond at the mouth of the tributary.
FS054XVTC	8-27	NW end of pond at the mouth of the tributary.

007364

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
I001AVTC	8-24	Manhole #5; 200 ft. E of sewage treatment plant. No sediment to take sample.
I003AVTC	8-16	Manhole #13; 130' S of West Main Street on Trix Rd.
I004AVTC	8-15	Manhole #70; W of Rocky Branch (RB) Creek and Middleton sub-division.
I005AVTC	8-16	Manhole #2; 200' E of sewage treatment plant.
I006AVTC	8-23	Manhole #1204; W of RB.
I007AVTC	8-16	Manhole #64; 30' S of West Main Street on Trix Rd.
I008AVTC	8-15	Manhole #70; W of RB and Middleton subdivision.
I009AVTC	8-15	Manhole #67; W of RB.
I010AVTC	8-23	Manhole #18; W of RB.
I011AVTC	8-16	Manhole #65; 200' N of West Main Street and Trix Rd.
I012BVTC	8-28	Manhole #9; Westside of Trix Lane as it turns East. Taken on both sides of high ridge.
I013AVTC	8-23	Manhole #76; Front yard of Dr. Sidwell, 1804 West Hill Street.
I014AVTC	8-22	Manhole #1194; Backyard of 617 Okalay Street.
I015AVTC	8-23	Mnahole #1206; 50' S of Hines Street dead end.
I016AVTC	8-15	Manhole #77; Outside fence surrounding backyard of Dr. Choke.
I017AVTC	8-23	Manhole #1088; Located at the turnaround of Cheryl Lane.
I018AVTC	8-14	Manhole #126; First manhole N of manhole #125.
I019XVTC	8-14	Manhole #125; 200' N of Vertac's northern fence line.
I020AVTC	8-15	Manhole #106; 25' S of Vertac southern boundary.
N011AVTC	8-22	Manhole at the intersection of Alta Lane and Braden Street.

007365

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
N021AVTC	8-21	35 ft. S of West Main Street, in center of Rocky Branch (RB) Creek.
N021CVTC	8-21	35 ft. S of West Main Street, in center of RB Creek.
N025AVTC	8-14	25' N of manhole No. 125 in center of drainage ditch.
N025CVTC	8-14	25' N of manhole No. 125 in center of drainage ditch.
N026AVTC	8-14	Near the West Lane dead end.
N026XVTC	8-14	Near the West Lane dead end.
N026CVTC	8-14	Near the West Lane dead end.
N027AVTC	8-16	25' S by SE of manhole No. 69 and 5' from W bank of RB.
N027CVTC	8-16	25' S by SE on manhole No. 69 and 5' from W bank of RB.
N028AVTC	8-15	10' E of manhole No. 1206; 260' E of manhole No. I009. Overflow soil sample around manhole No. 1206.
N028CVTC	8-15	10' E of manhole No. 1206; 260' E of manhole No. I009. Overflow soil sample around manhole No. 1206.
N029CVTC	8-21	23' S of culvert under Willow Bend Apartments in center of RB.
N030AVTC	8-21	20' from W and E banks of RB, 120' on a 220° azimuth from sampling point to manhole No. I009 and No. I010.
N030CVTC	8-21	20' from W and E banks of RB, 120' on a 220° azimuth from sampling point to manhole No. I009 and No. I010.

007366

SAMPLE CODE	DATE	DESCRIPTION OF SAMPLING LOCATION
S002AVTC	8-16	Center of S oxidation pond.
S002XVTC	8-16	Center of S oxidation pond.
S007AVTC	8-15	Near southwest corner of S oxidation pond, near stream and dry stream bed.
S009XVTC	8-16	N oxidation pond; SW corner approx. 50' from each bank.
S009AVTC	8-16	N oxidation pond; SW corner approx. 50' from each bank.
S009CVTC	8-16	N oxidation pond; SW corner approx. 50' from each bank.
S010AVTC	8-16	S oxidation pond, 50' E of outfall ditch.
S010XVTC	8-16	S oxidation pond, 50' E of outfall ditch.
S011XVTC	8-16	S oxidation pond along the southern edge.
S012XVTC	8-16	S oxidation pond along the southern edge.
S013AVTC	8-16	SE corner of S oxidation pond.
S013XVTC	8-16	SE corner of S oxidation pond.
S014AVTC	8-16	N oxidation pond; SE corner approx. 50' from each bank.
S014XVTC	8-16	N oxidation pond; SE corner approx. 50' from each bank.
S015CVTC	8-15	Outfall ditch approx. 200' from oxidation pond.
S016CVTC	8-15	Outfall ditch approx. 300' from S oxidation pond.
S017CVTC	8-15	Outfall ditch approx. 450' from S oxidation pond.
S018XVTC	8-16	NE corner of aeration basin.
S019XVTC	8-16	Middle of aeration basin.
S019XVTC	8-28	Middle of aeration basin (hard sediment sample).
S020XVTC	8-16	SW corner of aeration basin.

007367

S021AVTC	8-24	Midpoint of the S end of sludge collection area from old sewage treatment plant in use until 1969.
S021XVTC	8-24	Midpoint of the S end of sludge collection area from old sewage treatment plant in use until 1969.
S021EVTC	8-24	Midpoint of the S end of sludge collection area from old sewage treatment plant in use until 1969.
S022AVTC	8-28	Midpoint of the N end of sludge collection area from old sewage treatment plant in use until 1969.
S022XVTC	8-28	Midpoint of the N end of sludge collection area from old sewage treatment plant in use until 1969.
S022EVTC	8-28	Midpoint of the N end of sludge collection area from old sewage treatment plant in use until 1969.
S024BVTC	8-28	N rim of sludge digester.
S025BVTC	8-28	W rim of sludge digester.
S026AVTC	8-28	E primary clarifier.
S027AVTC	8-28	W primary clarifier.
S028AVTC	8-21	Center of eastern sludge bed.
S028BVTC	8-21	Center of eastern sludge bed.
S029AVTC	8-21	Center of western sludge bed.
S029BVTC	8-21	Center of western sludge bed.

007368

007369

APPENDIX 4

CONVERSION LIST. LABORATORY CODES TO SAMPLE NUMBERING SYSTEM CODES, SAMPLE NUMBER SYSTEM CODES TO LABORATORY CODES

Dioxin Samples

CONVERSION LIST FROM LABORATORY CODE (LC) TO SAMPLE NUMBERING SYSTEM CODE (SNSC)

Batch No. 01		Batch No. 02		Batch No. 03		Batch No. 04	
LC	SNSC	LC	SNSC	LC	SNSC	LC	SNSC
DF003301	F052A	DF003401	F065A	DF003501	F056A	DF003601	I004A
DF003302	F052B	DF003402	F065B	DF003502	F056B	DF003602	I020A
DF003303	F052C	DF003403	F065C	DF003503	F056C	DF003603	I009A
DF003304	F053A	DF003404	F060A	DF003504	F055C	DF003604	I016A
DF003305	F053B	DF003405	F060B	DF003505	F058C	DF003605	N028A
DF003306	F053C	DF003406	F060C	DF003506	F066C	DF003606	N028C
DF003307	F051A	DF003407	F063A	DF003507	F064A	DF003607	S020A
DF003308	F054A	DF003408	F063B	DF003508	F064B	DF003608	S019A
DF003309	Blank	DF003409	F063C	DF003509	F064C	DF003609	S018A
DF003310	Equip. Rinse	DF003410	F061A	DF003510	F066A	DF003610	Blank
DF003311	F047A	DF003411	F061B	DF003511	F066B	DF003611	F123
DF003312	F047B	DF003412	F061C	DF003512	I018A	DF003612	S011A
DF003313	F046A	DF003413	F062X	DF003513	N026A	DF003613	S009A
DF003314	F046B	DF003414	F059C	DF003514	N026C	DF003614	S009X
DF003315	F047C	DF003415	Blank	DF003515	N025A	DF003615	S014X
DF003316	F048X	DF003416	F038C	DF003516	N025C	DF003616	S014A
DF003317	F049A	DF003417	F039C	DF003517	F122	DF003617	S011X
DF003318	F046C	DF003418	F037C	DF003518	F006A	DF003618	F068A
DF003319	F049C	DF003419	F082C	DF003519	S007A	DF003619	I011A
DF003320	F049B	DF003420	Equip. Rinse	DF003520	S015C	DF003620	F014A
DF003321	F050C	DF003421	F057A	DF003521	S016A	DF003621	F097A
DF003322	F120	DF003422	F121	DF003522	S017C	DF003622	F098A
DF003323	F002C	DF003423	F057B	DF003523	I008A	DF003623	F068C
DF003324	F072C	DF003424	F057C	DF003524	Equip. Rinse	DF003624	F068B

Dioxin Samples

CONVERSION LIST FROM LABORATORY CODE (LC) TO SAMPLE NUMBERING SYSTEM CODE (SNSC)

Batch No. 05		Batch No. 06		Batch No. 07		Batch No. 08	
LC	SNSC	LC	SNSC	LC	SNSC	LC	SNSC
DF003701	N027A	DF003801	Blank	DF003901	F067A	DF004001	F071X
DF003702	N027C	DF003802	Equip. Rinse	DF003902	F070A	DF004002	F018A
DF003703	S010X	DF003803	F084C	DF003903	F070X	DF004003	F018X
DF003704	S010A	DF003804	F091A	DF003904	F076A	DF004004	FS025C
DF003705	S002A	DF003805	F089A	DF003905	F076X	DF004005	FS015A
DF003706	S002X	DF003806	F090A	DF003906	F077A	DF004006	F079X
DF003707	S012A	DF003807	F125	DF003907	F017A	DF004007	FS035A
DF003708	S012X	DF003808	F093A	DF003908	Equip. Rinse	DF004008	FS036A
DF003709	S013A	DF003809	F003C	DF003909	FS055A	DF004009	S028A
DF003710	S013X	DF003810	F010X	DF003910	FS056A	DF004010	S028B
DF003711	S013X	DF003811	F010A	DF003911	F126	DF004011	S029A
DF003712	I005A	DF003812	F095C	DF003912	N029C	DF004012	S029B
DF003713	F124	DF003813	FS038C	DF003913	N030C	DF004013	F127
DF003714	F092A	DF003814	FS042C	DF003914	N021C	DF004014	FS027C
DF003715	F083A	DF003815	FS037C	DF003915	FS026C	DF004015	FS019A
DF003716	FS043A	DF003816	F016A	DF003916	FS031A	DF004016	FS024C
DF003717	I003A	DF003817	F085C	DF003917	FS033A	DF004017	FS046A
DF003718	I007A	DF003818	F099C	DF003918	FS044A	DF004018	FS030A
DF003719	Equip. Rinse	DF003819	F100C	DF003919	FS034A	DF004019	FS029A
DF003720	FS040A	DF003820	F096C	DF003920	FS032A	DF004020	FS028A
DF003721	FS047C	DF003821	F094A	DF003921	F101A	DF004021	F080X
DF003722	FS039A	DF003822	FS050C	DF003922	F078A	DF004022	F081X
DF003723	FS048C	DF003823	F067X	DF003923	F071A	DF004023	F102X
DF003724	FS041A	DF003824	FS049C	DF003924	F071A	DF004024	Equip. Rinse

Dioxin Samples

CONVERSION LIST FROM LABORATORY CODE (LC) TO SAMPLE NUMBERING SYSTEM CODE (SNSC)

Batch No. 09

LC	SNSC
DF004101	F128
DF004102	F044A
DF004103	F044X
DF004104	I014A
DF004105	N011A
DF004106	Equip. Rinse
DF004107	I017A
DF004108	F045A
DF004109	F045X
DF004110	F103A
DF004111	F011C
DF004112	F044A
DF004113	I010A
DF004114	I006A
DF004115	I015A
DF004116	I013A
DF004117	I006A
DF004118	Equip. Rinse
DF004119	F073X
DF004120	F074X
DF004121	F013X
DF004122	F013A
DF004123	F069A
DF004124	F069X

Batch No. 10

LC	SNSC
DF004201	F075X
DF004202	F041C
DF004203	F043C
DF004204	F042C
DF004205	Equip. Rinse
DF004206	S021A
DF004207	S021E
DF004208	S021X
DF004209	F129
DF004210	F105C
DF004211	F106C
DF004212	F104A
DF004213	F104C
DF004214	FS051A
DF004215	F040C
DF004216	FS053A
DF004217	FS052A
DF004218	FS022C
DF004219	FS023C
DF004220	FS045C
DF004221	FS054A
DF004222	FS054X
DF004223	Equip. Rinse
DF004224	I012B

Batch No. 11

LC	SNSC
DF004301	F130
DF004302	S027A
DF004303	S019X
DF004304	S026A
DF004305	S024B
DF004306	S025B
DF004307	S022A
DF004308	S022E
DF004309	S022X
DF004310	Blank
DF004311	F107A
DF004312	F107X
DF004313	F086A
DF004314	F087A
DF004315	F088A
DF004316	F088X
DF004317	Equip. Rinse
DF004318	Blank

Dioxin Samples

CONVERSION LIST FROM SAMPLE NUMBERING SYSTEM CODE (SNSC) TO LABORATORY CODE (LC)

SNSC	LC	SNSC	LC	SNSC	LC	SNSC	LC
F002C	DF003323	F046A	DF003313	F057B	DF003423	F067X	DF003823
F003C	DF003809	F046B	DF003314	F057C	DF003424	F068A	DF003618
F006A	DF003518	F046C	DF003318	F058C	DF003505	F068B	DF003624
F010A	DF003811	F047A	DF003311	F059C	DF003414	F068C	DF003623
F010X	DF003810	F047B	DF003312	F060A	DF003404	F069A	DF004123
F011C	DF004111	F047C	DF003315	F060B	DF003405	F069X	DF004124
F013A	DF004122	F048X	DF003316	F060C	DF003406	F070A	DF003902
F013X	DF004121	F049A	DF003317	F061A	DF003410	F070X	DF003903
F014A	DF003620	F049B	DF003320	F061B	DF003411	F071A	DF003923 & DF003924
F016A	DF003816	F049C	DF003319	F061C	DF003412	F071X	DF004001
F017A	DF003907	F050C	DF003321	F062X	DF003413	F072C	DF003324
F018A	DF004002	F051A	DF003307	F063A	DF003407	F073X	DF004119
F018X	DF004003	F052A	DF003301	F063B	DF003408	F074X	DF004120
F037C	DF003418	F052B	DF003302	F063C	DF003409	F075X	DF004201
F038C	DF003416	F052C	DF003303	F064A	DF003507	F076A	DF003904
F039C	DF003417	F053A	DF003304	F064B	DF003508	F076X	DF003905
F040C	DF004215	F053B	DF003305	F064C	DF003509	F077A	DF003906
F041C	DF004202	F053C	DF003306	F065A	DF003401	F078A	DF003922
F042C	DF004204	F054A	DF003308	F065B	DF003402	F079X	DF004006
F043C	DF004203	F055C	DF003504	F065C	DF003403	F080X	DF004021
F044A	DF004102 & DF004112	F056A	DF003501	F066A	DF003510	F081X	DF004022
F044X	DF004103	F056B	DF003502	F066B	DF003511	F082C	DF003419
F045A	DF004108	F056C	DF003503	F066C	DF003506	F083A	DF003715
F045X	DF004109	F057A	DF003421	F067A	DF003901	F084C	DF003803

Dioxin Samples

CONVERSION LIST FROM SAMPLE NUMBERING SYSTEM CODE (SNSC) TO LABORATORY CODE (LC)

SNSC	LC	SNSC	LC	SNSC	LC	SNSC	LC
F085C	DF003817	F107A	DF004311	FS031A	DF003916	FS054X	DF004222
F086A	DF004313	F107X	DF004312	FS032A	DF003920	FS055A	DF003909
F087A	DF004314	F120	DF003322	FS033A	DF003917	FS056A	DF003910
F088A	DF004315	F121	DF003422	FS034A	DF003919	I003A	DF003717
F088X	DF004316	F122	DF003517	FS035A	DF004007	I004A	DF003601
F089A	DF003805	F123	DF003611	FS036A	DF004008	I005A	DF003712
F090A	DF003806	F124	DF003713	FS037C	DF003815	I006A	DF004114 & DF004117
F091A	DF003804	F125	DF003807	FS038C	DF003813	I007A	DF003718
F092A	DF003714	F126	DF003911	FS039A	DF003722	I008A	DF003523
F093A	DF003808	F127	DF004013	FS040A	DF003720	I009A	DF003603
F094A	DF003821	F128	DF004101	FS041A	DF003724	I010A	DF004113
F095C	DF003812	F129	DF004209	FS042C	DF003814	I011A	DF003619
F096C	DF003820	F130	DF004301	FS043A	DF003716	I012B	DF004224
F097A	DF003621	FS015A	DF004005	FS044A	DF003918	I013A	DF004116
F098A	DF003622	FS019A	DF004015	FS045C	DF004220	I014A	DF004104
F099C	DF003818	FS022C	DF004218	FS046A	DF004017	I015A	DF004115
F100C	DF003819	FS023C	DF004219	FS047C	DF003721	I016A	DF003604
F101A	DF003921	FS024C	DF004016	FS048C	DF003723	I017A	DF004107
F102X	DF004023	FS025C	DF004004	FS049C	DF003824	I018A	DF003512
F103A	DF004110	FS026C	DF003915	FS050C	DF003822	I020A	DF003602
F104A	DF004212	FS027C	DF004014	FS051A	DF004214	N011A	DF004105
F104C	DF004213	FS028A	DF004020	FS052A	DF004217	N021C	DF003914
F105C	DF004210	FS029A	DF004019	FS053A	DF004216	N025A	DF003515
F106C	DF004211	FS030A	DF004018	FS054A	DF004221	N025C	DF003516

Dioxin Samples

CONVERSION LIST FROM SAMPLE NUMBERING SYSTEM CODE (SNSC)
TO LABORATORY CODE (LC)

SNSC	LC	SNSC	LC	SNSC	LC
N026A	DF003513	S016A	DF003521	Equip. Rinse	DF003524
N026C	DF003514	S017C	DF003522	Blank	DF003610
N027A	DF003701	S018A	DF003609	Equip. Rinse	DF003719
N027C	DF003702	S019A	DF003608	Blank	DF003801
N028A	DF003605	S019X	DF004303	Equip. Rinse	DF003802
N028C	DF003606	S020A	DF003607	Equip. Rinse	DF003908
N029C	DF003912	S021A	DF004206	Equip. Rinse	DF004024
N030C	DF003913	S021X	DF004208	Equip. Rinse	DF004106
S002A	DF003705	S021E	DF004207	Equip. Rinse	DF004118
S002X	DF003706	S022A	DF004307	Equip. Rinse	DF004205
S007A	DF003519	S022X	DF004309	Equip. Rinse	DF004223
S009A	DF003613	S022E	DF004308	Blank	DF004310
S009X	DF003614	S024B	DF004305	Equip. Rinse	DF004317
S010A	DF003704	S025B	DF004306	Blank	DF004318
S010X	DF003703	S026A	DF004304		
S011A	DF003612	S027A	DF004302		
S011X	DF003617	S028A	DF004009		
S012A	DF003707	S028B	DF004010		
S012X	DF003708	S029A	DF004011		
S013A	DF003709	S029B	DF004012		
S013X	DF003710 & DF003711	Blank	DF003309		
S014A	DF003616	Equip. Rinse	DF003310		
S014X	DF003615	Blank	DF003415		
S015C	DF003520	Equip. Rinse	DF003420		

APPENDIX 5

CONVERSION LIST. ORGANIC TRAFFIC
FORM NUMBER TO SAMPLE NUMBER
SYSTEM CODE, SAMPLE NUMBER
SYSTEM CODE TO ORGANIC
TRAFFIC FORM NUMBER

007376

Other Analysis

CONVERSION LIST FROM ORGANIC TRAFFIC FORM NUMBERS (OTFN)
TO SAMPLE NUMBER SYSTEM CODE (SNSC)

OTFN	SNSC	OTFN	SNSC
F4121	F052A	F4148	FS055A
F4122	F050C	F4149	N030A
F4123	F072C	F4150	FS031A
F4124	F065C	F4151	FS026C
F4125	F059C	F4152	FS015A
F4126	F037C	F4153	F011C
F4127	F057B	F4177	I006A
F4128	F066C	F4200	F104C
F4129	F064C	F4201	FS022C
F4130	N026C	F4206	I012B
F4131	N025C	F4208	FS054X
F4132	I018A	F4209	S019X
F4133	I009A	F4210	S026A
F4134	S019A	F4211	S025B
F4135	S011A	F4212	F041C
F4136	F076A	F4213	N011A
F4137	F094A	F4214	F044A
F4138	FS042C	F4215	FS028A
F4139	F003C	F4216	FS024C
F4140	FS048C	F4217	F075X
F4141	FS041A	F4218	S024B
F4142	S013X	F4219	S022X
F4143	S002A	F4220	F107A
F4144	N027C	F4221	F088A
F4145	F098A	F4227	N028C
F4146	S009C	F4228	I016A
F4147	N021A	F4229	F006A
		F4230	I019X

007377

Other Analysis

CONVERSION LIST FROM SAMPLE NUMBER SYSTEM CODE (SNSC)
TO ORGANIC TRAFFIC FORM NUMBERS (OTFN)

SNSC	OTFN	SNSC	OTFN
F003C	F4139	FS041A	F4141
F006A	F4229	FS042C	F4138
F011C	F4153	FS048C	F4140
F037C	F4126	FS054X	F4208
F041C	F4212	FS055A	F4148
F044A	F4214	I006A	F4177
F050C	F4122	I009A	F4133
F052A	F4121	I012B	F4206
F057B	F4127	I016A	F4228
F059C	F4125	I018A	F4132
F064C	F4129	I019X	F4230
F065C	F4124	N011A	F4213
F066C	F4128	N021A	F4147
F072C	F4123	N025C	F4131
F075X	F4217	N026C	F4130
F076A	F4136	N027C	F4144
F088A	F4221	N028C	F4227
F094A	F4137	N030A	F4149
F098A	F4145	S002A	F4143
F104C	F4200	S009C	F4146
F107A	F4220	S011A	F4135
FS015A	F4152	S013X	F4142
FS022C	F4201	S019A	F4134
FS024C	F4216	S019X	F4209
FS026C	F4151	S022X	F4219
FS028A	F4215	S024B	F4218
FS031A	F4150	S025B	F4211
		S026A	F4210

007378

APPENDIX 6

CONVERSION LIST. SAMPLE TAG NUMBER
TO SAMPLE NUMBER SYSTEM CODE,
SAMPLE NUMBER SYSTEM CODE
TO SAMPLE TAG NUMBER

007379

2.4-D, 2,4,5-T Analysis
CONVERSION LIST FROM SAMPLE TAG NUMBER (STN) TO
SAMPLE NUMBERING SYSTEM CODE (SNSC)

STN	SNSC	STN	SNSC
6-04096	F050C	6-04779	F076A
6-04097	F052A	6-04784	N030A
6-04451	F057B	6-04786	N021A
6-04452	F037C	6-04791	FS031A
6-04453	F066C	6-04792	FS026C
6-04454	N025A	6-04795	FS055A
6-04455	F072C	6-04797	FS042C
6-04456	F065C	6-04802	FS015A
6-04559	N027A	6-04830	FS024C
6-04567	F059C	6-04831	FS028A
6-04568	N026A	6-04834	N011A
6-04577	I018A	6-04835	F044A
6-04584	F064C	6-04851	I006A
6-04590	F006A	6-04866	F075X
6-04638	I016A	6-04869	F041C
6-04642	N028A	6-04870	F104C
6-04643	I009A	6-04873	FS022C
6-04647	S019A	6-04878	FS054X
6-04656	F098A	6-04880	I012B
6-04665	S002A	6-04883	S019X
6-04668	S013X	6-04904	F011C
6-04684	FS041A	6-04907	S026A
6-04696	S011A	6-04909	S024B
6-04700	S009X	6-04913	S022X
6-04772	FS048C	6-04914	S025B
6-04776	F003X	6-04923	F107A
6-04777	F094A	6-04926	F088A

007380

2.4-D, 2,4,5-T Analysis
CONVERSION LIST FROM SAMPLE NUMBERING SYSTEM CODE (SNSC)
TO SAMPLE TAG NUMBER (STN)

SNSC	STN	SNSC	STN
F003C	6-04776	FS041A	6-04684
F006A	6-04590	FS042C	6-04797
F011C	6-04904	FS048C	6-04772
F037C	6-04452	FS054X	6-04878
F041C	6-04869	FS055A	6-04795
F044A	6-04835	I006A	6-04851
F050C	6-04096	I009A	6-04643
F052A	6-04097	I012B	6-04880
F057B	6-04451	I016A	6-04638
F059C	6-04567	I018A	6-04577
F064C	6-04584	N011A	6-04834
F065C	6-04456	N021A	6-04786
F066C	6-04453	N025C	6-04454
F072C	6-04455	N026C	6-04568
F075X	6-04866	N027C	6-04559
F076A	6-04779	N028A	6-04642
F088A	6-04926	N030A	6-04784
F094A	6-04777	S002A	6-04665
F098A	6-04656	S009C	6-04700
F104C	6-04870	S011A	6-04696
F107A	6-04923	S013X	6-04668
FS015A	6-04802	S019A	6-04647
FS022C	6-04873	S019X	6-04883
FS024C	6-04830	S022X	6-04913
FS026C	6-04792	S024B	6-04909
FS028A	6-04831	S025B	6-04914
FS031A	6-04791	S026A	6-04907

007381

007382

APPENDIX 7

DIOXIN CONCENTRATIONS IN LAKE DUPREE.
ADAPTED FROM "FINAL TECHNICAL REPORT
FOR ROCKY BRANCH, BAYOU METO, AND
LAKE DUPREE," ENVIRONMENTAL AND
TOXICOLOGICAL CONSULTANTS. INC., 1983

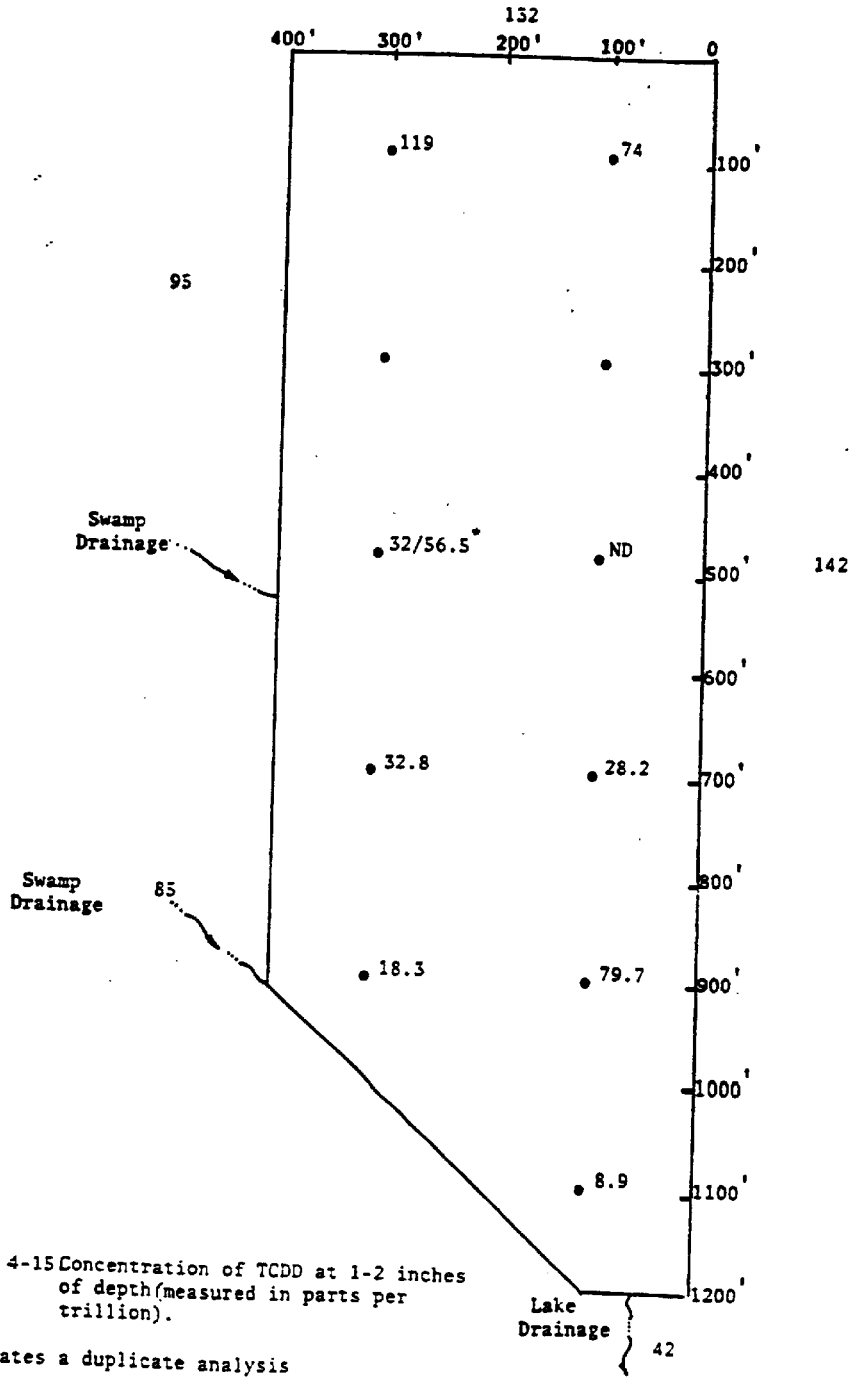

FIGURE 4-15 Concentration of TCDD at 1-2 inches of depth (measured in parts per trillion).

*Indicates a duplicate analysis

007383

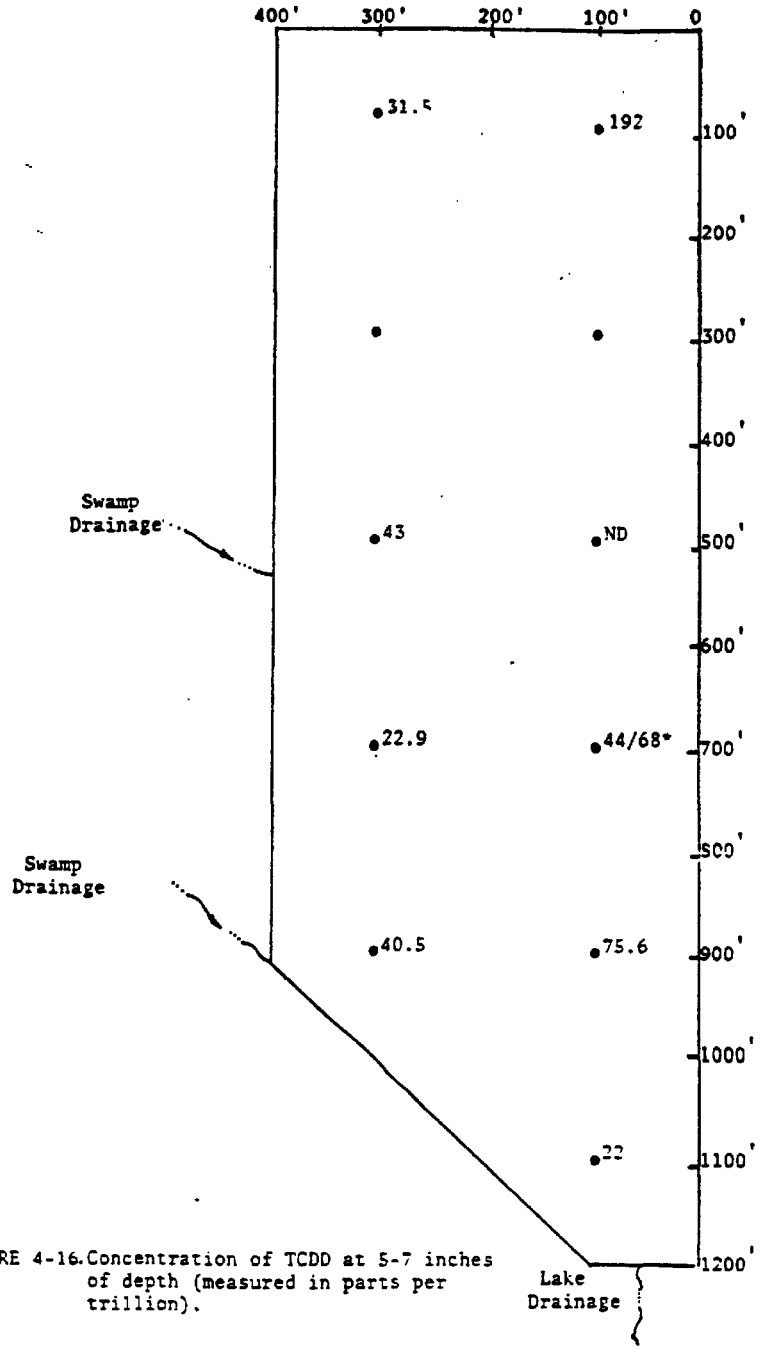

FIGURE 4-16. Concentration of TCDD at 5-7 inches of depth (measured in parts per trillion).

007384

APPENDIX 8

WATER-SURFACE PROFILES ALONG BAYOU METO AND
ROCKY BRANCH NEAR JACKSONVILLE, ARKANSAS.
USGS ADMINISTRATIVE REPORT BY BRAXTEL L. NEELY, JR.;

FINITE-ELEMENT SURFACE-WATER-FLOW MODELING
SYSTEM (FESWMS) PROPOSAL, USGS

007385

United States Department of the Interior

GEOLOGICAL SURVEY
Water Resources Division
2301 Federal Office Building
Little Rock, Arkansas 72201

May 13, 1985

007386

Mr. Imre J. Sekelyhidi, Sr.
Ecology and Environment, Inc.
1509 Main Street, Suite 814
Dallas, Texas 75201

Dear Mr. Sekelyhidi:

Enclosed for your information and use is a copy of a recently completed report entitled "Water-Surface Profile Along Bayou Meto and Rocky Branch Near Jacksonville, Arkansas" by Braxtel L. Neely, Jr. The report was completed by the U.S. Geological Survey in cooperation with the U.S. Environmental Protection Agency.

Please contact this office if there are any questions concerning the report.

Sincerely,

E.E. Gann
District Chief

Enclosure

EEG:sad

WATER-SURFACE PROFILES ALONG BAYOU METO AND ROCKY BRANCH NEAR JACKSONVILLE, ARKANSAS

007387

U.S. GEOLOGICAL SURVEY

Open-File Report 85-176

Prepared in cooperation with the

U.S. ENVIRONMENTAL PROTECTION AGENCY

WATER-SURFACE PROFILES ALONG BAYOU METO AND ROCKY BRANCH NEAR JACKSONVILLE, ARKANSAS

By Braxtel L. Neely, Jr.

007388

U.S. GEOLOGICAL SURVEY

Open-File Report 85-176

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Little Rock, Arkansas

1985

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

007389

For additional information
write to:

District Chief
U.S. Geological Survey
Water Resources Division
2301 Federal Office Building
Little Rock, Arkansas 72201

Copies of this report can be
purchased from:

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Denver, Colorado 80225
(Telephone: (303) 236-7476)

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007390

CONVERSION FACTORS

For use of readers who prefer to use metric units, conversion factors for terms used in this report are listed below:

Multiply	By	To obtain
foot (ft)	0.3048	meter (m)
foot per second (ft/s)	0.3048	meter per second (m/s)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)

0073391

WATER SURFACE PROFILES ALONG BAYOU METO AND ROCKY BRANCH NEAR JACKSONVILLE, ARKANSAS

By Braxtel L. Neely, Jr.

007392

ABSTRACT

Water-surface profiles were computed along Bayou Meto and Rocky Branch for the 2-, 5-, 10-, 25-, and 50-year floods. These profiles were computed using the U.S. Geological Survey's stepbackwater computer program number J-635. Cross sections needed for the computation were picked from one-foot interval topographic maps furnished by the U.S. Environmental Protection Agency. Flood boundaries for the 2-, and 5-year floods were delineated on topographic maps.

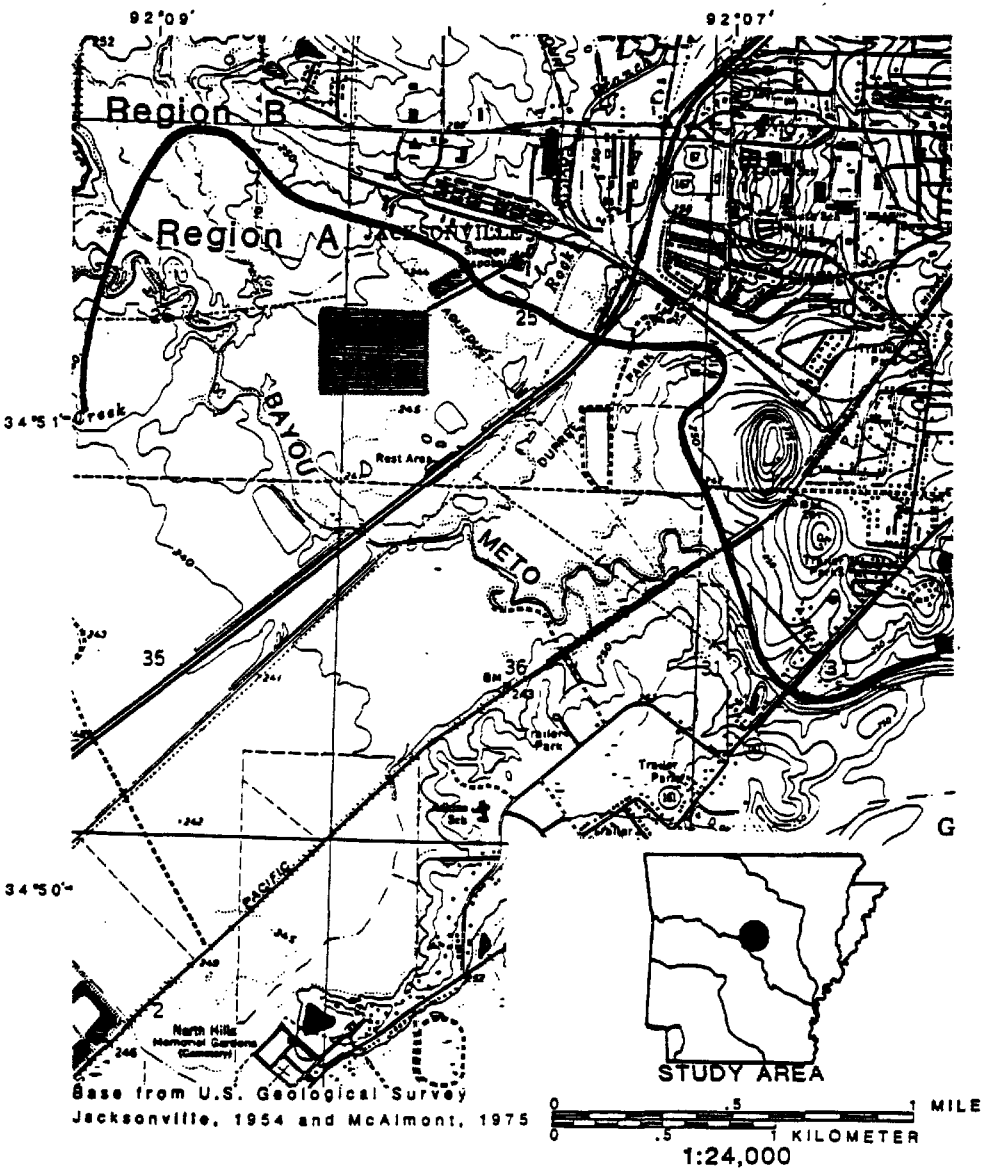


Figure 1.--Location of study area.

007393

DISCHARGE FREQUENCY

Recurrence interval is the average number of years within which a given discharge will be equaled or exceeded once. Peak discharges for selected recurrence intervals used in developing the profiles were determined from regional regression equations for Arkansas developed by Patterson (1971). Patterson divides Arkansas into regions A and B. Region A has relatively flat terrain and discharges have slow velocities, whereas terrain in region B is steep and discharges have high velocities. This study is near the divide between the two regions (fig. 1). Discharges for Rocky Branch were computed using the equations (Patterson, 1971) applicable for region B. Bayou Meto drains from region B into region A. Most of the drainage area is in region B (fig. 1). Discharges for Bayou Meto at the divide between regions A and B were computed using the equations (Patterson, 1971) applicable for region B. Discharges for Bayou Meto at the gaging station near Lonoke were computed using station data and the equations applicable for region A. The gaging station near Lonoke is about 15 miles downstream from the divide between region A and B. The peak discharges on Bayou Meto are much lower near Lonoke than they are at the divide. The peak discharge leaving region B decreases as the flood wave moves downstream because of the abrupt decrease in channel slope and the increase in overbank storage. Subjective judgement was used in assigning discharges along Bayou Meto by interpolating between the discharges near Lonoke and at the divide between region A and B.

007394

WATER-SURFACE PROFILES

Water-surface profiles along Bayou Meto for the 2-, 5-, 10-, 25-, and 50-year floods (fig. 2) were computed from about 2 miles downstream from Arkansas Highway 161 to about 2 miles upstream from U.S. Highway 67 (fig.4). The computed elevations are shown in table 1. Mannings "n" values (Barnes, 1967) were 0.035 in the main channel and 0.120 in the heavily vegetated flood plain. A Manning "n" of 0.045 was used in the open areas of the floodplain. Mean velocities on the floodplain during the 50-year flood are less than 1.0 foot per second except near Arkansas Highway 161 where a natural constriction exists (fig. 4).

Water-surface profiles along Rocky Branch (fig. 3) were computed from the mouth to about 2 miles upstream (fig. 4). The computed elevations are shown in table 2. Rocky Branch channel is steeper and discharges have higher velocities than Bayou Meto. Mannings "n" values were 0.035 in the main channel and 0.120 in the heavily vegetated floodplain.

FLOOD BOUNDARIES

The computed flood profiles for the 2- and 5-year floods were used to delineate flood boundaries (fig. 4) along Bayou Meto and Rocky Branch. Near the mouth of Rocky Branch, where the flood profiles for both streams overlap, the higher of the two was used.

007395

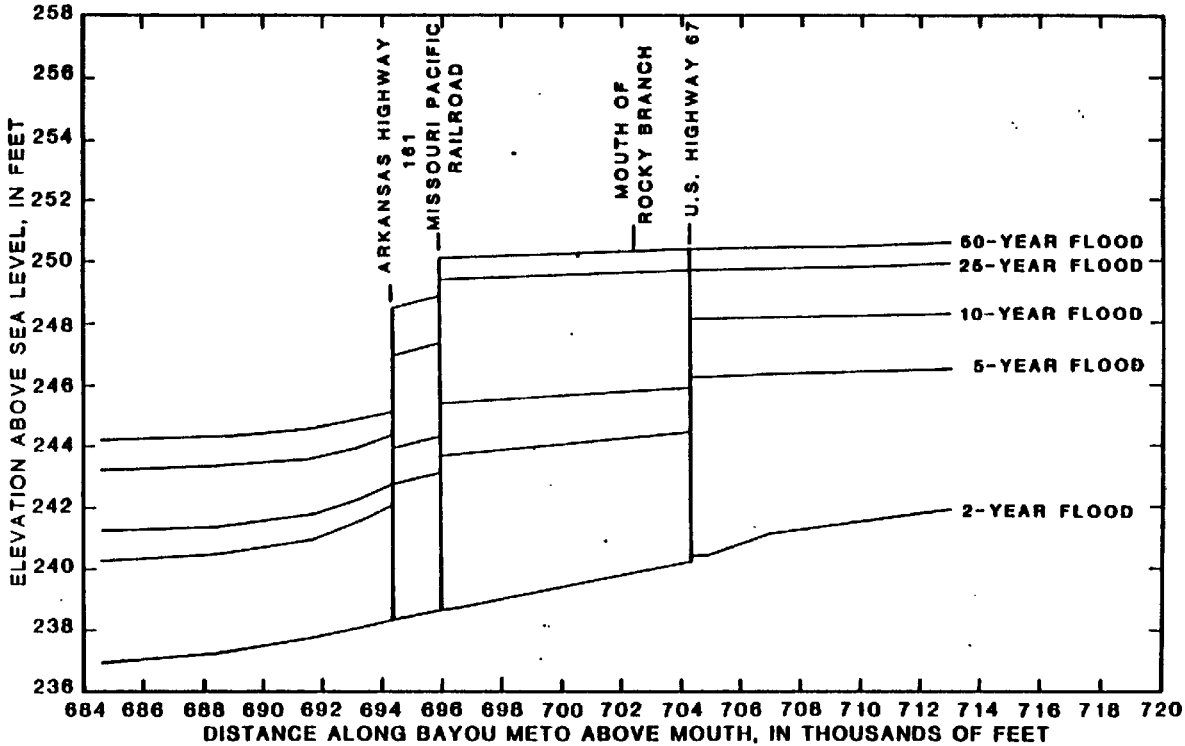


Figure 2.--Water-surface profiles for Bayou Meto, 2-, 5-, 10-, 25-, and 50-year floods.

007396

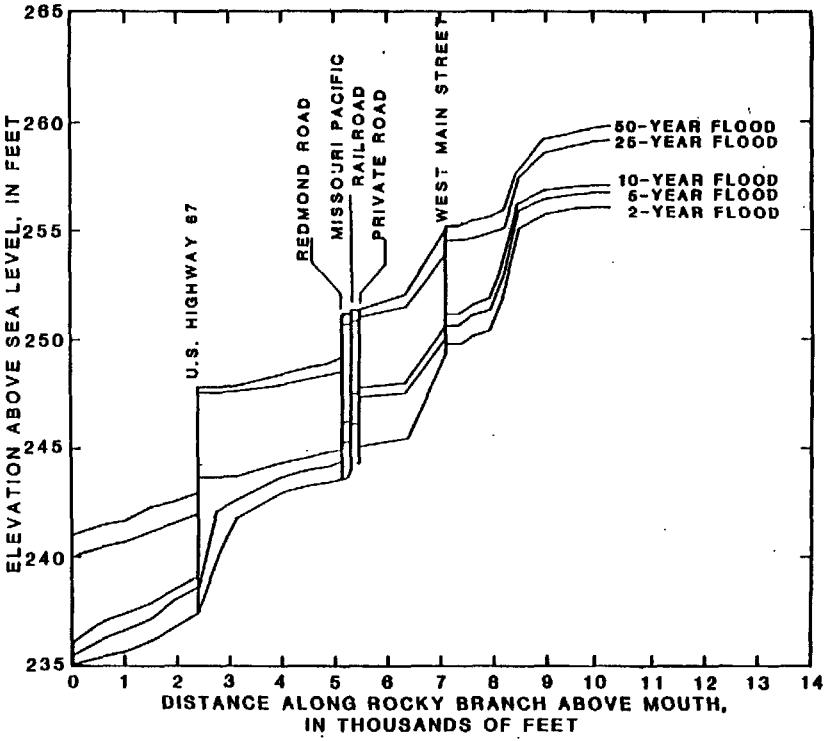
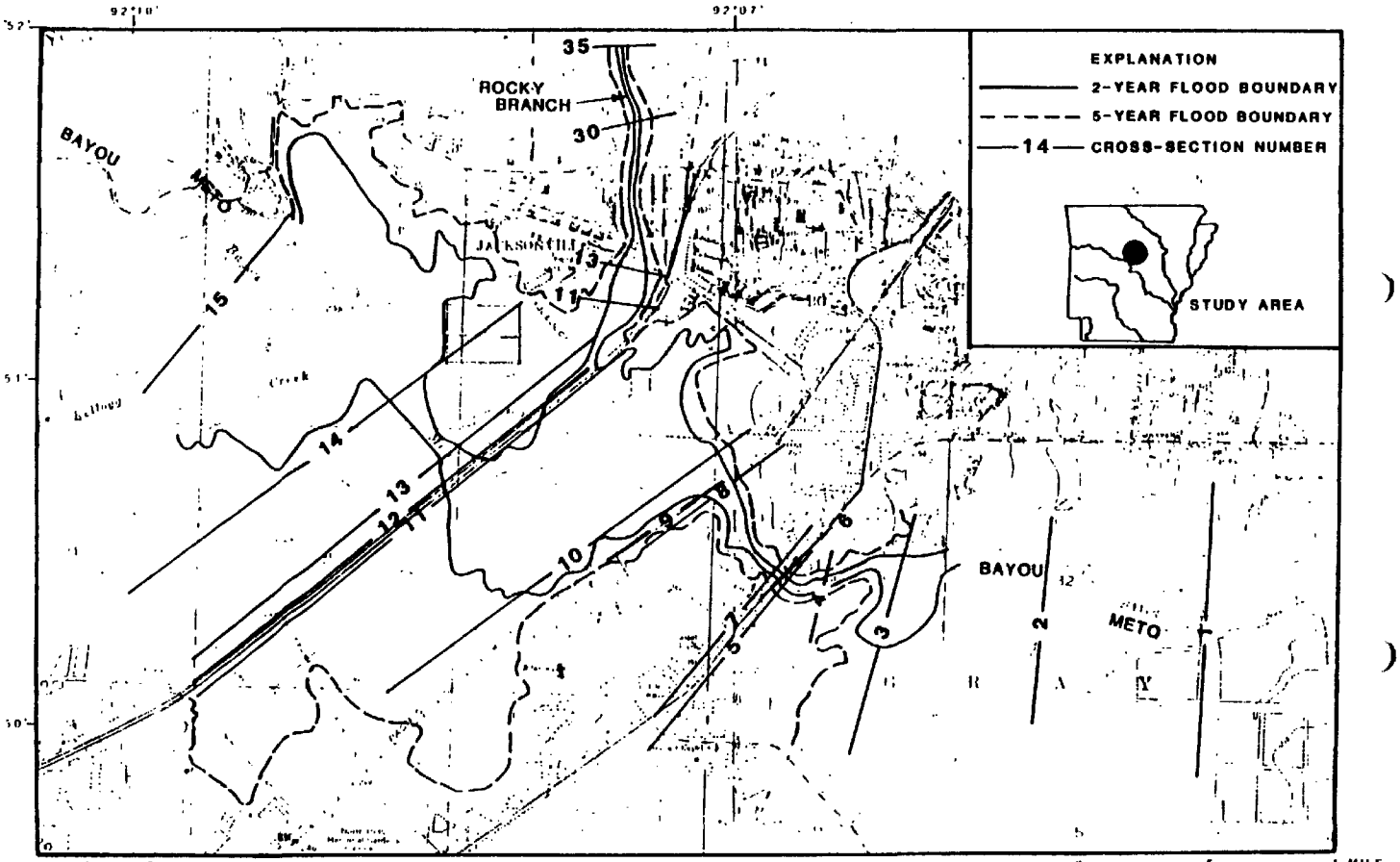


Figure 3.--Water-surface profiles for Rocky Branch, 2-, 5-, 10-, 25-, and 50-year floods.

007397



Base from U.S. Geological Survey Jacksonville, 1954 and McAlmont, 1975

Figure 4.--Flood boundaries for the 2- and 5-year.

0 .5 1 MILE
0 .5 1 KILOMETER
1:24,000

007398

Table 1.--Summary of backwater profiles on Bayou Meto

[Dashed line in elevation column indicates water surface is above lower part of bridge deck]

Cross-section	Stream stationing, (feet)	2-year flood		5-year flood		10-year flood		25-year flood		50-year flood	
		discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)
1	684,605	2,550	236.9	9,300	240.3	12,100	241.3	19,400	243.2	23,800	244.2
2	688,512	2,550	237.3	9,300	240.4	12,100	241.4	19,400	243.3	23,800	244.3
3	691,680	2,550	237.8	9,300	241.0	12,100	241.8	19,400	243.6	23,800	244.5
4	693,264	2,550	238.1	9,300	241.6	12,100	242.3	19,400	243.9	23,800	244.8
5	694,320	2,550	238.3	9,300	242.0	12,100	242.8	19,400	244.3	23,800	245.1
6	694,320	2,550	238.3	9,300	242.0	12,100	242.8	19,400	244.4	23,800	246.0
7	694,475	2,550	238.4	9,300	242.8	12,100	243.9	19,400	247.0	23,800	248.5
8	695,904	2,550	238.6	9,300	243.1	12,100	244.3	19,400	247.4	23,800	248.9
9	695,904	2,550	238.6	9,300	243.1	12,100	244.3	19,400	247.4	23,800	--
10	696,432	2,610	238.7	9,300	243.7	12,100	245.4	19,400	249.5	23,800	250.1
11	704,352	2,610	240.2	10,500	244.4	13,700	245.9	22,300	249.7	27,500	250.4
12	704,352	2,610	240.2	10,500	244.4	13,700	245.9	22,300	--	27,500	--
13	704,880	2,610	240.4	10,500	246.2	13,700	248.1	22,300	249.7	27,500	250.4
14	706,992	2,610	241.1	10,500	246.3	13,700	248.1	22,300	249.8	27,500	250.4
15	712,800	2,610	241.9	10,500	246.5	13,700	248.2	22,300	249.9	27,500	250.6

007399

Third Batch, U.S. Testing Laboratories. This batch included sample F4121 - F4133, F4229 and F4230.

The Houston EPA Laboratory has requested that the Sample Management Office resolve several deficiencies in this data with the laboratory involved. These issues include the following:

- o Incomplete data package for these samples. Missing or incorrectly filled out forms include initial calibration for semivolatiles, reagent blank summary for volatiles and semivolatiles; matrix spike and duplicate matrix spike recoveries for semivolatiles are not included.
- o Questionable pesticide results for sample F4229.
- o Pesticide data for samples F4131 and F4132 have not been received.

Upon resolution of these issues, the package will be complete and the data accepted.

Another deficiency occurs in the calibration linearity check for DDT. This check for linearity varied >10% from the initial calibration curve. Therefore, the DDT results for samples 4125 and 4126 should be considered semi-quantitative at best.

Field

Since these samples were considered exploratory samples no field duplicates were collected.

007400

Table 2.--Summary of backwater profiles on Rocky Branch

[Dashed line in elevation column indicates water surface is above lower part of bridge deck]

Cross-section	Stream stationing, (feet)	2-year flood		5-year flood		10-year flood		25-year flood		50-year flood	
		discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)
1	0	521	235.0	940	235.5	1,230	236.0	4,150	240.0	5,560	241.0
2	500	521	235.4	940	236.1	1,230	236.9	4,150	240.4	5,560	241.4
3	1,000	521	235.7	940	236.4	1,230	237.4	4,150	240.7	5,560	241.7
4	1,500	521	236.1	940	237.2	1,230	237.9	4,150	241.1	5,560	242.1
5	1,950	521	236.8	940	238.0	1,230	238.5	4,150	241.5	5,560	242.5
6	2,400	521	237.6	940	238.7	1,230	239.1	4,150	241.9	5,560	242.9
7	2,400	521	237.6	940	238.7	1,230	239.1	4,150	--	5,560	--
8	2,420	521	237.6	940	238.7	1,230	243.7	4,150	247.6	5,560	247.8
9	2,800	521	240.2	940	242.1	1,230	243.7	4,150	247.6	5,560	247.9
10	3,175	521	241.8	940	242.7	1,230	243.8	4,150	247.7	5,560	248.0
11	3,995	521	243.0	940	243.7	1,230	244.3	4,150	248.0	5,560	248.4
12	4,575	521	243.3	940	244.0	1,230	244.6	4,150	248.2	5,560	248.8
13	4,870	521	243.4	940	244.2	1,230	244.8	4,150	248.4	5,560	249.0
14	5,165	521	243.6	940	244.4	1,230	245.0	4,150	248.6	5,560	249.2
15	5,165	521	243.6	940	244.4	1,230	245.0	4,150	--	5,560	--
16	5,227	521	243.9	940	245.3	1,230	246.2	4,150	250.7	5,560	251.2
17	5,308	521	243.9	940	245.3	1,230	--	4,150	250.7	5,560	251.2
18	5,308	521	243.9	940	245.5	1,230	247.6	4,150	--	5,560	--
19	5,360	521	244.3	940	246.1	1,230	247.6	4,150	250.8	5,560	251.3
20	5,423	521	244.2	940	246.1	1,230	247.6	4,150	250.9	5,560	251.3
21	5,466	521	244.2	940	245.5	1,230	247.6	4,150	250.9	5,560	251.3
22	5,466	521	244.2	940	245.5	1,230	247.6	4,150	--	5,560	--
23	5,596	521	245.1	940	247.4	1,230	247.8	4,150	251.0	5,560	251.4
24	6,352	521	245.5	940	247.6	1,230	248.0	4,150	251.5	5,560	252.0
25	7,108	521	249.4	940	250.2	1,230	250.7	4,150	253.9	5,560	255.0

007401

Table 2.--Summary of backwater profiles on Rocky Branch--Continued

[Dashed line in elevation column indicates water surface is above lower part of bridge deck]

Cross-section	Stream stationing, (feet)	2-year flood		5-year flood		10-year flood		25-year flood		50-year flood	
		discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)	discharge (cubic feet per second)	elevation (feet)
26	7,108	521	--	940	--	1,230	--	4,150	--	5,560	--
27	7,380	521	249.8	940	250.7	1,825	251.2	4,150	254.5	5,560	255.3
28	7,599	349	250.1	629	251.1	825	251.6	3,120	254.6	4,240	255.4
29	7,639	349	250.2	629	251.2	825	251.6	3,120	254.6	4,240	255.4
30	7,949	349	250.5	629	251.4	825	251.8	3,120	254.9	4,240	255.7
31	8,204	349	253.0	629	253.2	825	253.4	3,120	255.2	4,240	255.9
32	8,459	349	255.0	629	255.9	825	256.2	3,120	257.3	4,240	257.4
33	8,959	349	255.7	629	256.4	825	256.8	3,120	258.6	4,240	259.2
34	9,409	349	256.0	629	256.6	825	256.9	3,120	258.9	4,240	259.5
35	9,634	349	256.0	629	256.7	825	257.0	3,120	259.0	4,240	259.6
36	9,859	349	256.0	629	256.7	825	257.0	3,120	259.1	4,240	259.7
37	10,259	349	256.0	629	256.7	825	257.1	3,120	259.1	4,240	259.8

007402

REFERENCES

Patterson, J. L., 1971, Floods in Arkansas, magnitude and frequency characteristics through 1968: Arkansas Geological Commission Water Resources Circular 11, 246 p.

Barnes, H. H., 1967, Roughness characteristics of natural channels: U.S. Geological Survey Water-Supply Paper 1849, 213 p.

0074003

United States Department of the Interior

GEOLOGICAL SURVEY
Water Resources Division
Arkansas District
2301 Federal Office Building
Little Rock, Arkansas 72201-3287

December 3, 1984

007404

Mr. Imre J. Sekelyhide, Sr.
Ecology and Environment, Inc.
1509 Main Street, Suite 814
Dallas, Texas 75201

Dear Mr. Sekelyhide:

As discussed by telephone today, enclosed is the requested project proposal for the 2-D flow model of the Bayou Meto floodplain in the vicinity of Jacksonville, Arkansas.

Resulting maps showing velocity vectors, velocity-magnitude contours, and water-surface contours for the 5-year flood will be useful in defining areas of scour and fill along the study reach.

Please contact this office concerning your further interest in this work and if there are additional questions.

Sincerely,

E. E. Gann
District Chief

Enclosure

Copy to: Mr. Larry Rexroat
U.S. Environmental
Protection Agency
1201 Elm Street
Dallas, TX 75270

Mr. Roy Murphy
U.S. Environmental
Protection Agency
401 M Street S.W.
Washington, D.C. 20460

Regional Hydrologist
U.S. Geological Survey, WRD
Southeastern Region
R. B. Russell Federal Building
75 Spring Street, S.W., Suite 772
Atlanta, GA 30303

PROJECT PROPOSAL
ARKANSAS DISTRICT USGS
NOVEMBER 26, 1984

TITLE AND LOCATION: Dimensional Finite-Element Modeling of Flow Patterns for Bayou Meto, Arkansas

PURPOSE AND SCOPE:

It is proposed to use the two-dimensional finite-element surface-water flow modeling system (FESWMS) to provide a two-dimensional picture of the velocity distribution in the channel and on the flood plain of Bayou Meto for a single discharge approximating that of the 5-year flood. Such a map of the velocity distribution will be useful in determining areas of potential scour and deposition of contaminated sediments.

The proposed study reach begins about a half mile upstream from U.S. Highways 67 and 167, where the flood plain is constricted on the right by a dike along the bayou channel and on the left by dikes surrounding the sewage treatment lagoons of the City of Jacksonville. The proposed study reach extends approximately 4 miles downstream.

Rocky Branch, the source of contamination, is tributary to Bayou Meto approximately 1 mile downstream from the upstream end of the study reach. Within the study reach the 5-year flood plain ranges in width from several hundred feet to several miles. The flood plain is crossed by U.S. Highway 67 and 167, raised on earthen embankments, with a 172-foot bridge across Bayou Meto and two 10-foot by 10-foot box culverts at Rocky Branch; the Missouri Pacific Railroad approximately a mile further downstream; and State Highway 161 another half mile downstream.

007405

Part of the flood plain is covered by woods, and part is in agricultural use. Numerous small dikes and levees are located on the flood plain within the study reach. The highway and railroad crossings, the variable width and vegetative cover of the flood plain, and the levees combine to create a complex two-dimensional flow situation, which can be understood only by use of a two-dimensional model.

APPROACH: The model FESWMS will be used to determine velocities at a network of points in the channel and on the flood plain of Bayou Meto for a single steady discharge approximating that of a 5-year flood. Highly variable flood-plain topography and vegetative cover and geometric features such as highway embankments, dikes, and channel bends can be readily accounted for in a finite-element network. The U.S. Geological Survey has demonstrated that FESWMS can be used effectively to analyze steady-state flow in complex river- flood-plain systems (Lee, 1980; Lee and others, 1982, 1983). Approximately 2000 to 2500 triangular elements will be needed to model the Bayou Meto river- flood-plain system. The channel of Bayou Meto and the culverts under Highways 67 and 167 at Rocky Branch will be modeled.

Two-dimensional modeling gives the magnitude and direction of the flow velocity throughout the flood plain. Information about local velocities allows improved estimates of the potential for scour. (It should be noted, however, that a two-dimensional model yields vertically averaged velocities, not point velocities. Thus, two-dimensional local velocities should not be confused with scour velocities.)

007406

DATA NEEDS FOR FESWMS: The data needed for applying the model FESWMS are described below:

Magnitude (discharge) of the flood and the flood-plain boundaries. The discharge approximating the average 5-year flood discharge will be used. Initial estimates of flood-plain boundaries will be based on a step-backwater analysis for this discharge.

Spatial description of flood-plain topography. Most of these data can be obtained from EPA-furnished topographic maps and Geological Survey quadrangles. This information will be supplemented with channel and flood-plain cross sections obtained by Geological Survey personnel.

Spatial description of flood-plain roughness. EPA-furnished topographic maps, Geological Survey quadrangles, existing aerial photographs, and field inspection will be sufficient to determine the roughness type of different parts of the study reach. Each roughness type will be associated with a particular roughness value (coefficient). After an initial partitioning of the flood plain into triangular elements, each element will be assigned a roughness type. (Each triangular element will be an area of approximately uniform roughness.) The numerical roughness value assigned to each roughness type will be based on Geological Survey experience with similar river- flood-plain systems.

Upstream discharge distribution. The transverse distribution of flow at the upstream boundary is required and will be estimated on the basis of Geological Survey experience. Flow entering the system from Rocky Branch will also be modeled.

Downstream water-surface elevation. Water-surface elevations are needed at model nodes along the downstream boundary of the study reach. These will be estimated on the basis of a one-dimensional step-backwater analysis compiled previously.

007407

Calibration and verification data. Because such data do not exist, values of roughness coefficients will be based on values obtained from similar river- flood-plain systems.

REPORT: A report will be completed by December 1985 describing the results of the study. All data used to run the modeling system will be kept on file at the Geological Survey office at Little Rock, Arkansas. The model will yield the two-dimensional velocity and water-surface elevation at each node of the finite-element network. These data will be used to prepare maps of velocity vectors and velocity-magnitude contours for the Bayou Meto system. In addition, a map of water-surface elevation will be supplied.

Meetings, or seminars, as needed, will be held by the Geological Survey to familiarize the Environmental Protection Agency and other interested officials with the results of the study.

IMPACT OF SUCCESSFUL PROJECT COMPLETION: Successful completion of the project will yield comprehensive information about the steady-state hydraulic behavior of the Bayou Meto stream flood-plain system for a 5-year discharge. This information will be useful in determining areas of potential scour and deposition of contaminated sediments entering Bayou Meto from Rocky Branch.

COST: The cost reimbursable to USGS by EPA for this study is $80,000.

007408

WORK PLAN:

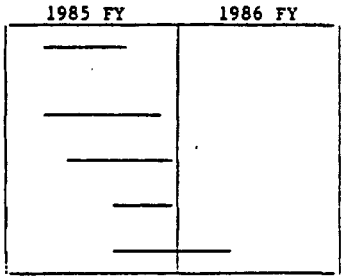
Establish model boundaries

Obtain and code topographic and roughness data

Make preliminary runs (model debugging)

Finalize flow model results

Complete report



007409

APPENDIX 9

JACKSONVILLE WASTEWATER UTILITY LETTER
REGARDING REPAIRS AT VERTAC PLANT

007410

Jacksonville Wastewater Utility

RECEIVED
EPA REGION VI

1985 JAN 23 PM 1:25

SUPERFUND BRANCH

January 21, 1985

Mr. Dick Karkkainen
Director of Environment and Safety
Vertac Chemical Corporation
5100 Poplar, 24th Floor
Memphis, TN 38137

Re: Sewer line repairs at Vertac's Jacksonville Plant

Dear Mr. Karkkainen:

Investigations by Jacksonville Wastewater Utility personnel since December 1984 have brought to light several sewer lines and manholes within the Vertac property boundary which need repair. All manholes referenced below are identified on the enclosed maps.

1. Manhole 3 was bypassed in the mid 1960's.
2. Manhole 4, which stands in the impoundment, has been rendered useless for sewer line access.
3. As a result of the Rocky Branch Creek diversion, manhole 2, previously on dry ground, now stands at low water level in the Creek and, being broken, is a significant source of inflow. The break is attributed to onsite remedial action.
4. As a result of the activities mentioned above, the Utility now has over 1000 feet of 12 inch sewer from manhole 2 to 5 without intervening manholes. The continuity of this line has been confirmed by tracer dye. This line, which routinely flows 1/3 to 1/2 full, is not linear and is largely inaccessible for routine maintenance. Any cleaning or repairs on this line could necessitate cutting the diversion dike between the Creek and the impoundment/hazardous waste area.
5. Steam condensate has been disconnected from manhole 2738 as requested, and routed through the pretreatment system.
6. The 6 inch clay line running from manhole 2738 to 2735 apparently passes through the French drain parallel to and immediately south of Hill Road. Prior to disconnecting the steam condensate, the flow into manhole 2735 was measured at 6 gpm. Can the integrity of this line through the French drain be verified?
7. Manhole 2736 is missing its ring and cover.
8. A sinkhole has developed on the clay line between manholes 2736 and 2735. This sinkhole is the result of a break in the pipe immediately adjacent manhole 2735, as confirmed by tracer dye.
9. Manhole 2742 is adjacent a drum storage area and recieves no domestic discharge.
10. The flow from the boiler room into manhole 2744 is not monitored.

007411

The following items should be addressed in a letter from Vertac to the Jacksonville Wastewater Utility within one month of receipt of this letter.

a. Request a waiver from Municipal Ordinance 604 prohibiting the connection of groundwater collection systems to municipal sanitary sewers. This waiver must be obtained from the Jacksonville Sewer Commission prior to connecting the French drain to the pretreatment system.
b. Certify that the Utility will be reimbursed for material and labor expended to reconstuct manhole 2, including diverting the upstream flow, recasting the manhole, raising the manhole approximately two feet and sealing with a watertight lid.
c. Certify that the existing line from manholes 2 through 5 will be sufficiently removed from the contaminated sediment disposal area once remedial action is complete in 1985. If there is any danger of digging through contaminated soil or hazardous waste to repair the line where it is now located, the Utility will relocate it at Vertac's expense.
d. Certify that manhole 4 will be reopened for sewer line access once remedial action is complete, and that the manhole will be made useful at Company expense.
e. Certify that the Utility will be notified 24 hours in advance of exposure of any part of the line running between manholes 2 and 5 once remedial action recommences in the Spring.
f. Acknowledge that manhole 3 will be rebuilt at Company expense should the Utility deem it necessary subsequent to inspection during remedial action.
g. Certify that any damage suffered by the Utility sewer system as a result of further remedial action will be repaired under the direction of the Utility at the Company's expense.
h. Verify that the discharge from the boiler room will be accounted for in self-monitoring flow reports.

The Utility will meanwhile undertake the following jobs at Utility expense.

1. Rehabilitate manholes 5, 2736 and 2739.
2. Repair the broken line between manholes 2736 and 2735.
3. Plug the line from manhole 2742 to 2743.

If you have any questions regarding items "a" through "h" please telephone me at 501-982-0581. And if the Company would rather rehabilitate manhole 2 itself rather than remiburse the Utility for materials and labor, please notify me immediately.

007412

Sincerely,

JACKSONVILLE WASTEWATER UTILITY

Frank J. Stephens

Frank J. Stephens
Collection System Superintendent/
Assistant Manager

FJS/plf

Enclosurers

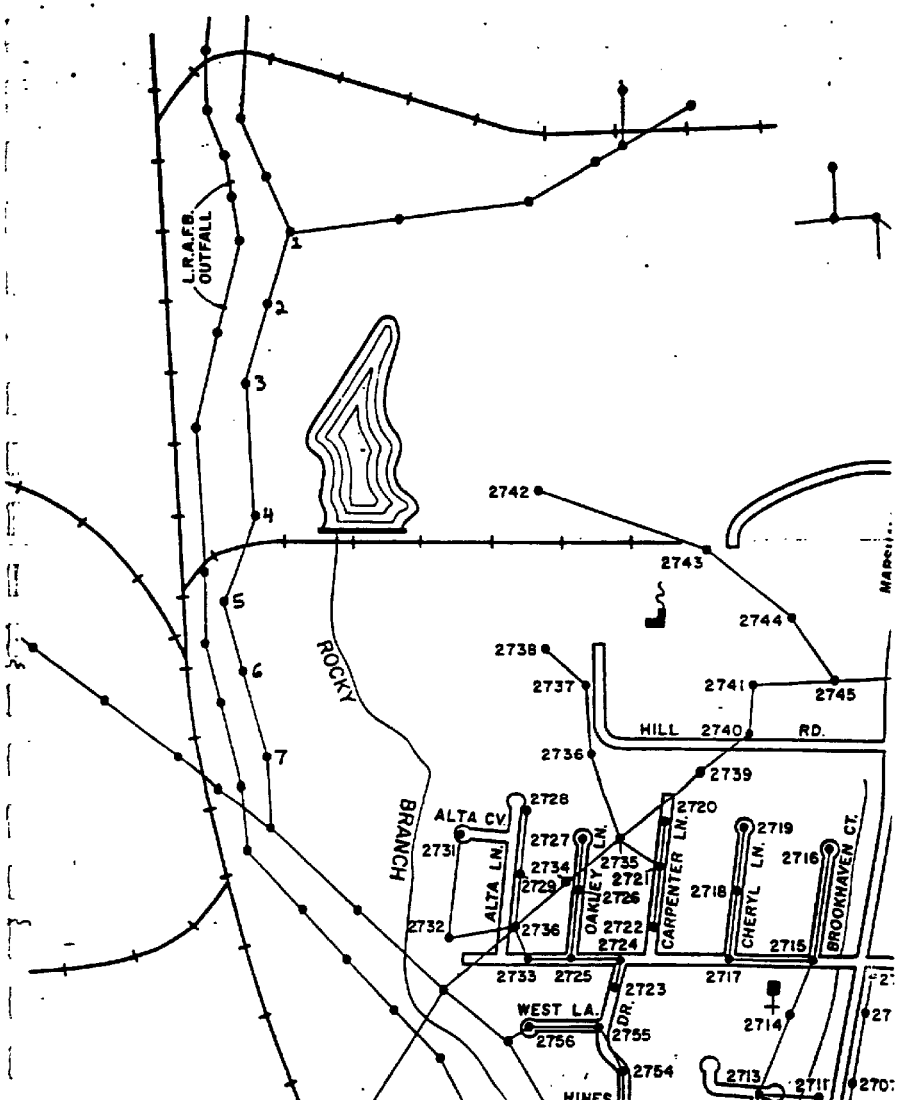
cc. Larry P. Rexroat
Superfund Enforcement Section
USEPA Region VI
Interfirst Two Building
1201 Elm Street
Dallas, TX 75270

Brad Bundy, P.E.
IT Corporation
#10 Duff Road
Pittsburgh, PA 15235

Dr. Robert Blanz
Deputy Director
Arkansas Department of Pollution
Control and Ecology
P.O. Box 9583
Little Rock, AR 72219

Ken Howard
Vertac Chemical Corporation
P.O. Box 69
Jacksonville, AR 72076

007413



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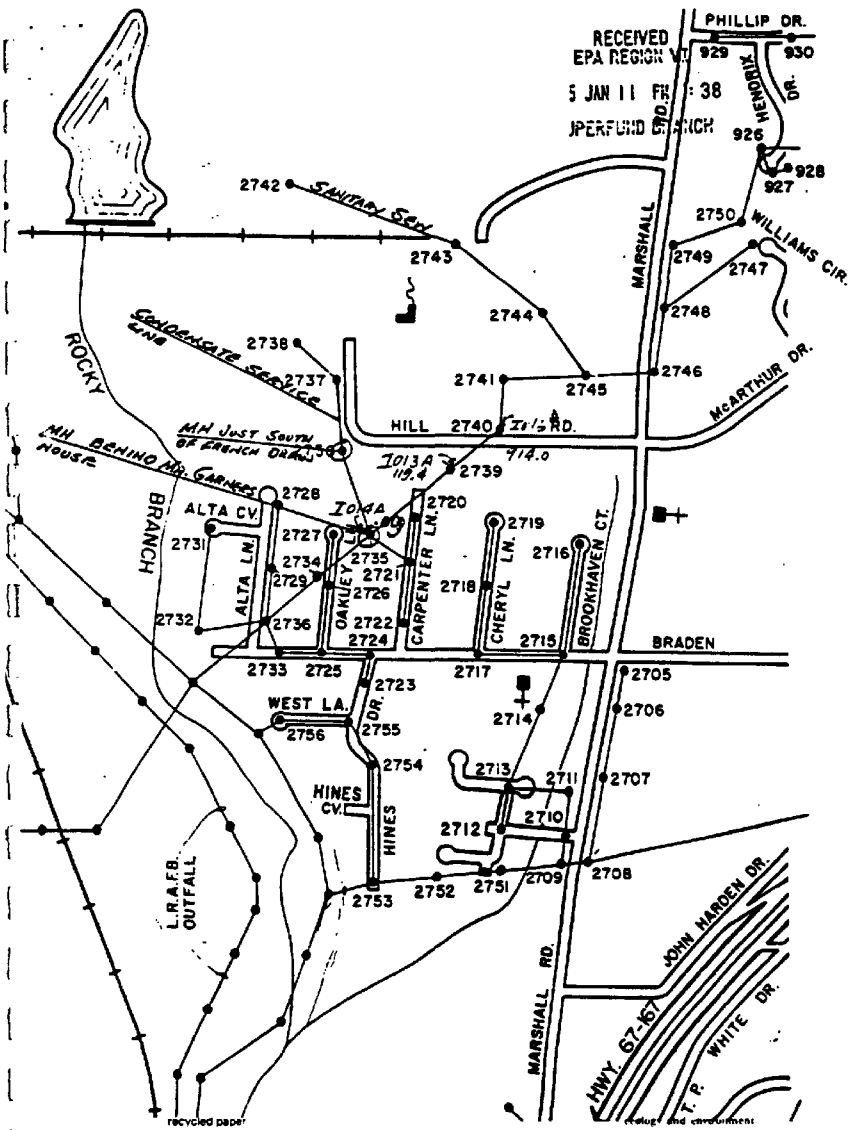
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007417

APPENDIX 10

QUALITY CONTROL

007418

APPENDIX 10. QUALITY CONTROL

This appendix describes in detail the quality control of the analyzed samples. Only the samples taken in August 1984 are included. All laboratory data were reported by laboratory codes. For dioxin the laboratory code is a combination of a two-letter alphabetical code (DF), and six-digit numerical code (Example: DF003421). The samples, however, were coded in the investigation, and referred to in the report, according to the sample numbering system code. In order to facilitate identification of samples by either code, conversion lists were included in Appendix 4. The laboratory codes of organics samples were the organic traffic form numbers. Appendix 5 includes conversion lists of organic traffic form numbers and sample numbering system codes; the laboratory codes of samples sent for 2,4-D and 2,4,5-T analysis were the sample tag numbers. Appendix 6 includes conversion lists of sample tag numbers and sample numbering system codes.

007419

Objective

The objective of the quality control was to assure that the concentrations of substances have a high degree of accuracy and precision. Statistical methods (as described in the "Offsite QA Project Plan Vertac Facility") were used for qualifying accuracy and precision.

For dioxin, the objective of the statistical evaluation was to determine if the laboratory concentration measurements, plus or minus 10%, fall within the 90% confidence interval. Samples taken for the purpose of analyzing for other organic hazardous substances were considered to be exploratory samples and as such were not subjected to statistical quality assurance evaluation.

Accuracy and Precision - Dioxin

Accuracy is a measure of the amount of a constituent recovered from a sample during the analytical procedure relative to the amount of the constituent actually present in the sample. Since, for example, some substances bond quite tightly to the sample matrix, only a partial extraction of the substance may occur, and a lower concentration may be measured than is actually present.

The accuracy is determined by splitting the sample, spiking one half and then analyzing both the spiked and unspiked subsamples. The spike recovery is calculated by subtracting the unspiked sample result from the spiked sample result and then dividing by the amount of spike added and multiplying by 100. A low spike recovery indicates that the sample matrix is tightly bonding the substance being analyzed for. A spike recovery greater than 100% indicates that something in the matrix is enhancing the recovery.

While spike recovceries are an indication of the accuracy, the analysis of the duplicate samples is a measure of the scatter or precision. Precision is determined in the laboratory to define analytical scatter as well as in the field to determine sampling scatter. In the lab, duplicates are created by splitting a sample into two subsamples. The difference between these two results indicates the analytical scatter for a particular analysis of a particular sample matrix. The field scatter is determined by taking a duplicate sample from the same location utilizing the same sampling techniques as used for all samples. Knowledge of scatter due to laboratory procedures and comparison between paired samples determines the degree of scatter due to sampling procedures.

Precision and accuracy in both the laboratory and field need to be assessed in order to qualify the results.

007420

Laboratories

In determining the accuracy of each batch, the average surrogate spike recovery, standard deviation, and range of uncertainty were computed. The average surrogate spike recovery and the standard deviation were used in Chauvenet's criteria for rejecting data points. Data points that are rejected are mentioned in the specific sample batch critiques. After all outlying data points are rejected, the range of uncertainty is calculated for the 90% confidence interval. When the difference between a theoretical spike recovery of 100% and the average spike recovery is greater than the range of uncertainty, a correction factor would be applied to the results of that data set. The correction factor is determined by dividing 100% by the average spike recovery for a particular batch. The sample results would then be multiplied by this factor.

The eleven batches of dioxin samples were sent to eight different laboratories. Although all laboratories operate according to the same standard procedures, uniform accuracy and precision between the laboratories was neither expected nor achieved. It should be noted that the sample media, hence the sample matrix have an influence on the accuracy possible in the first place. The sample media in the area of the investigation were widely different.

The samples taken from the sediments of the sewage collection and treatment system, the stream channels of the watercourses, and the floodplain are not expected to yield the same types of matrices. Similarly, neither are the samples taken from the soils of the sewage system overflow areas, floodplains, agricultural lands, and DuPree Park expected to yield the same types of matrices (although in this case matrix variations would be likely far less pronounced).

In addition, there may be significant local variations within each of these broad types of sediment and soil sampling areas (i.e. different type matrix would be expected from the sediment of a manhole, than that of the oxidation ponds of the sewage treatment plant).

Yet another variable is the fact that most of the control samples were reported as detection levels (ND or EM) a possible "range" of values is introduced into the computations of standard deviation and range of uncertainty.

Because of these variabilities the performed statistical analysis was considered to be a qualitative rather than a quantitative indication of accuracy, and therefore, no data were changed (i.e. "corrected").

Results of the statistical analysis of all laboratory deuplicates show that:

Laboratory Duplicates	J1	J2	Jpair
DF003321	ND(.3)	.26	.1429
DF003506	EM(.07)	ND(.08)	.1333
DF003620	ND(1.01)	.74	.3086
DF003701	ND(.69)	ND(.84)	.1961
DF003806	ND(.06)	ND(.03)	.6669
DF003922	.24	.25	.0408
DF004021	ND(.03)	ND(.03)	0
DF004105	22.3	33.9	.4128
DF004218	ND(.054)	ND(.055)	.0183
DF004316	ND(.05)	ND(.03)	.500
		Average =	.2420
		Standard Deviation =	± .2244

The duplicate analysis results for sample DF003421 were not used because they are both estimated concentrations and the results are very different, i.e. .41 ppb and .17 ppb.

The following subsections present the statistical analysis of each batch processed by nine laboratories.

Batch 01, Versar Laboratory. This batch included samples DF003301 through DF003324. Results of the statistical analysis show that:

Average spike recovery = 109.2%
Standard deviation = ± 14.1
Range of uncertainty = ± 4.83

According to the Vertac QA Project Plan, the results should be corrected since the average spike recovery falls outside 100% by +/- 4.83.

Analysis of the laboratory duplicates of Versar was:

DF003321 J1 = ND(.3) J2 = .26 Jpair = .1429

007421

The determination of the laboratory precision is highly questionable due to the fact that one of the results in "non-detectable". The other duplicate result is .26 ppb, just below the detection limit of the "non-detectable" duplicate (.30 ppb).

The native dioxin spike was performed on a method standard and not on the sample requested. No reason was given for this by the laboratory.

Most samples in this set were not extracted until a month after they were received in the lab. The remainder of the samples were extracted five months after receipt.

007422

Batch 02, O'Brian and Gere Laboratories. This batch included samples DF003401 through DF003424. Results of the statistical analysis show that:

Average spike recovery = 101.0%
Standard deviation = ± 2.73
Range of uncertainty = ± .91

The difference between the average spike recovery and 100% spike recovery is slightly greater than the range of uncertainty. However, correcting for this changes the value only by .02 ppb, therefore, the correction would be insignificant.

The laboratory duplicate analysis of sample DF003421 is out of contract limits. The RPD is 82% (contract limit is <50%). This may indicate inhomogeneity of the sample. The results for these two duplicates are reported as estimated concentrations (EM) due to continuing inaccuracies in the calibrations.

The native spike recovery is 100%.

Batch 03, Hazelton Laboratories. This batch included samples DF003501 through DF003524. Results of the statistical analysis show that:

Average spike recovery = 94.7%
Standard deviation = ± 7.23
Range of uncertainty = ± 2.5

Using Chauvenet's criteria, it was determined that samples DF003516 and DF003524 (rinsate blank) were outliers and are therefore invalid data points. In addition, the average spike recovery (94.7%) was determined to be outside the 100% recovery plus or minus the range of uncertainty. Therefore, according to the QA Project Plan the data should be corrected.

Analysis of the laboratory duplicates of Hazelton was:

DF003506 J1 = EM(.07) J2 = ND(.08) Jpair = .1333

The laboratory precision, based on the duplicate analysis performed by the laboratory is acceptable.

The native spike recovery is 86%.

Batch 04, Biospherics, Inc. The batch included samples DF003601 through DF003624. Results of the statistical analysis show that:

Average spike recovery = 101.0%
Standard deviation = ± 7.17
Range of uncertainty = ± 2.6

Using Chauvenet's criterion, samples DF003609 and DF003613 are invalid data points and should not be used.

Analysis of the laboratory duplicates of Biospherics was:

DF003620 J1 = ND(1.01) J2 = .74 Jpair = .3086

The precision of the duplicate analysis cannot be assessed because one of the duplicate results is "non detectable" while the other result is a specific number, the unknown quantity makes it impossible to determine the precision.

The result for sample DF003604 should be treated as questionable. The first analysis of this sample gave a result of 232 ppb. However, at this concentration it is outside the linear range of the analysis. The second analysis of the sample gave a result of 914 ppb. Because of incongruities in the analysis, this result is suspect. This sample was reanalyzed.

Another item of concern is that the lab reported a reagent blank detection limit higher than the required contract limit of 1 ppb. The lab has been asked to review their calculations and report their findings.

The native spike recovery is 100%.

Batch 05, Compu Chem Laboratories. The batch included samples DF003701 - DF003724. Results of the statistical analysis show that:

Average spike recovery = 98.5%
Standard deviation = ± 7.4
Range of uncertainty = ± 2.7

007423

Four samples from this batch were reanalyzed because they failed the QC criteria. These samples are DF003704, DF003712, DF003717 and DF003721. Disregarding this fact the laboratory accuracy for this batch would be acceptable.

Analysis of the laboratory duplicates of Compu Chem was:

DFJ003701 J1 = ND(.69) J2 = ND(.84) Jpair = .1961

The precision of this pair is acceptable. This batch of samples also contains a pair of field duplicate samples. Analysis of these field duplicates show that:

DF003710 & 11 I1 = ND(.15) I2 = ND(.12) Ipair = .2222

The precision of these two samples based on the detection limits is acceptable.

The native dioxin spike recovery is 93%.

Batch 06, California Analytical Laboratories. This batch included samples DF003801 through DF003824. Results of the statistical analysis show that:

Average spike recovery = 96.3%
Standard deviation = ± 4.98
Range of uncertainty = ∓ 1.8

Using Chauvenet's criteria for rejecting data, sample DF003815 is an invalid data point and was rejected. Since the difference between 100% spike recovery and the average spike recovery of 96.3 is greater than the range of uncertainty, a correction factor should be applied to the data.

Analysis of the laboratory duplicates of California Analytical Laboratories was:

DF003806 J1 = ND(.06) J2 = ND(.03) Jpair = .6669

The precision of these two duplicates based on the detection limits is acceptable.

The native dioxin spike recovery is 104%.

Batch 07, Californa Analytical Laboratories. This batch included samples DF003901 through DF003924. Results of the statistical analysis show that:

Average spike recovery = 96.6%
Standard deviation = ± 3.74
Range of uncertainty = ∓ 1.3

007424

Using Chauvenet's criteria, sample DF003907 is an invalid data point and should be rejected. Since the difference between 100% spike recovery and the average spike recovery is greater than the range of uncertainty, the data should be adjusted.

Analysis of the laboratory duplicates of California Analytical was:

DF003922	J1 = .25	J2 = .25	Jpair - .0408

The precision of the laboratory duplicate is acceptable. This batch of samples also contains a pair of field duplicate samples. Analysis of these field duplicates show that:

DF003923 & 24	I1= .31	I2 = ND(.10)	Ipair = 1.024

However, since one result is non-detectable and the other is a specific number, the precision cannot be determined.

The native dioxin spike recovery is 98%.

Batch 08, U.S. Testing Laboratory. This batch included samples DF004001 through DF004024. Results of the statistical analysis show that :

Average spike recovery = 97.2%
Standard deviation = ± 3.2
Range of uncertainty = ∓ 1.15

Using Chauvenet's criteria, the results for samples DF004006 and DF004014 are outliers and therefore were not used. Once again, the results should be adjected since the difference between the average spike recovery and 100% is greater than the range of uncertainty.

Analysis of the laboratory duplicates of U.S Testing Laboratory was:

DF004021	J1 = ND(.03)	J2 = ND(.03)	Jpair 0

The laboratory precision based on the detection limits is acceptable.

The data for this set of samples seems to be satisfactory. The laboratory has been asked to resubmit some report forms to clarify a few minor problems.

The native dioxin spike recovery is 64%.

007425

Batch 09, Hazelton Laboratories. This batch included samples DF004101through DF004124. Results of the statistical analysis show tnat:

Average spike recovery = 95.9%
Standard deviation = + 8.6
Range of uncertainty = ∓ 3.01

Since the difference between 100% spike recovery and the average spike recovery is greater than the range of uncertainty the data should be adjusted.

Analysis of the laboratory duplicates of Hazelton Laboratories was:

DF004105	J1 = 22.1	J2 = 33.9	Jpair = .4128

The duplicate data indicating laboratory precision is within the contract requirements. This batch of samples also contains two sets of field duplicates. Analyses of these sets of field duplicates show that:

DF004114 & 17	I1 = 30.9	I2 = 15.8	Ipair= .64467
DF004102 & 12	I1 = .37	I2 = EM(.07)	Ipair = 1.36

One set of field duplicates for this batch has an RPD value of 65% indicating either an inhomogenous sample matrix or problems associated with sample taking. It should be noted that one of these duplicate samples, DF004114 was rejected using Chauvenet's criteria because its surrogate spike recovery was only 48% indicating a possible laboratory problem. The surrogate spike recovery for the other duplicate sample DF004117 is 96%.

The other set of field duplicates has an RPD value of 136% which could indicate a possible problem associated with sampling. However, one of these duplicates is reported as estimated concentration (EM) which may be due to inaccuracies in t'e continuing calibrations, or may be an interference problem. Interference encountered may account for the low concentration reported for this sample. The other sample from this set of field duplicates, DF004102 has a concentration of.37 ppb. The 136% RPD value for this set was calculated using .07 ppb assumed to be the maximum concentration in that sample. In considering all factors and problems encountered with these field duplicates a combination of various laboratory problems is suspected.

The native dioxin spike recovery is 108%.

Batch 10, Envirodyne Laboratories. This batch included samples DF004101 through DF004224. Results of the statistical analysis show that:

Average spike recovery = 94.4%
Standard deviation = + 4.42
Range of uncertainty = ∓ 1.58

007426

Since the difference between 100% spike recovery and the average spike recovery of 94.4% is greater than the range of uncertainty, the data should be adjusted.

Analysis of the laboratory duplicate of Envirodyne Laboratories was:

DF004218 J1 = ND(.054) J2 = ND(.055) Jpair = .0183

The laboratory precision of these two samples is acceptable.

The native dioxin spike recovery is 89%.

Batch 11, California Analytical Laboratories. This batch included samples DF004301 through DF004318. Results of the statistical analysis show that:

Average spike recovery = 98.0%
Standard deviation = ± 5.84
Range of uncertainty = ∓ 2.3

The laboratory accuracy for this batch is a acceptable.

Analysis of the laboratory duplicates of California Analytical Laboratories was:

DF004316 J1 = ND(.05) J2 = ND(0.3) Jpair = .500

The precision of these duplicate analyses based on the detection limits is acceptable.

The native dioxin spike recovery is 96%.

Comparison of Batches. Eight laboratories analyzed the eleven batches of dioxin samples. Six of these eight laboratories analyzed one batch each. The other five batches were analyzed by two laboratories: California Analytical Laboratories analyzed three batches (06, 07 and 11) and Hazelton Laboratories analyzed two batches (03 and 09). The statistical analyses of batches analyzed by the same laboratories compare as follows:

California Analytica Laboratories

Accuracy

Batches:	06	07	11	Average
Average spike recovery:	96.3%	96.6%	98.0%	97%
Standard deviation:	±4.98	±3.74	±5.84	±4.85
Range of uncertainty:	∓1.8	∓1.3	∓2.3	∓1.8

007427

Precision

Batch:	06	07	11	07
Duplicate Type:	Laboratory	Laboratory	Laboratory	Field
Laboratory Code:	DF003806	DF003922	DF004316	DF003923 & 24
J1 =	ND(.06)	.25	ND(.05)	I1 = .31
J2 =	.6669	.0408	.500	Ipair = 1.204

Native Dioxin Spike Recovery

Batch:	06	07	11	Average
Percent of recovery:	104%	98%	96%	99.3%

It should be noted that the "averages" do not have statistical signifigance, they are shown merely for comparison purposes.

007428

Hazeltown Laboratories

Accuracy

Batch:	03	09	Average
Average spike recovery:	97.9%	95.9%	96.8%
Standard deviation:	±7.23	±8.6	±7.92
Range of uncertainty:	±2.5	±3.01	±2.76

Precision

Batch:	03	09	09	09
Duplicate type:	Laboratory	Laboratory	Field	Field
Laboratory code:	DF003506	DF004105	DF004104 & 17	DF004102 & 12
J1 =	EM(.07)	22.3	I1 = 30.9	.37
J2 =	ND(.08)	33.9	I2 = 15.8	EM(.07)
Jpair =	.1333	.4128	Ipair = .6467	1.36

Native Dioxin Spike Recovery

Batch:	03	09	Average
Percent of recovery:	86%	108%	

It is reasonable to assume that accuracy and precision are nearly identical for one laboratory. Yet, as the comparison indicates, there are differences between the statistical analyses of the different batches. It is a fact, that the composition of each batch is quite different with respect to the sample media. As was stated earlier, matrices of samples taken from sediments of the sewage collection and treatment system, the stream channels of the water courses, and the floodplain are expected to be different. Perhaps, segregation of analytical data along these lines, and statistical analyses of the segregated data would shed further light on the meaning of the statistical result (if the number of data in such segregated universes can be considered sufficient).

Water Samples, California Analytical Laboratories. This set of samples includes SAS1258F01 through SAS1258F07. The seven samples include two samples taken from Rocky Branch at the end of Braden Street, and five samples taken at random from five of the 13 drums containing decontamination waste of the August 1984 sampling. Results of the statistical analysis show that:

Average spike recovery = 93.0%
Standard deviation = ±2.56
Range of uncertainty = ∓ 1.90

Since the difference between 100% spike recovery and the average spike recovery is greater than the range of uncertainty, the results should be adjusted according to the Vertac QA Project Plan. The native spike recovery is 105%.

The laboratory duplicate precision is acceptable.

The native dioxin spike recovery is 105%.

Field

As was mentioned earlier, the field scatter due to sampling procedures is determined by taking a duplicate sample from the same location utilizing the same sampling techniques as used for all samples.

As described in Section 5.2, August 1984 sampling, a variety of sampling methods were used, best suited to the different types of sampling locations.

The qualifications regarding statistical analyses of laboratory accuracy and precision of laboratory work are also appliacable here. In addition, as it was brought out in preceeding sections, it is significant for any comparability of data that the exact sampling methods and circumstances be known due to the range of concentration in samples taken from a few inches less or greater depth, or a few inches away laterally.

In theory, duplicate samples taken from perfectly homogenized sample media, and utilization of exactly the same sampling procedures would yield exactly the same sample matrices. In reality such is not the case. In order to provide sufficient data for valid statistical analysis considering the extent, variety, and conditions of the offsite remedial investigation, a high number of field duplicates would need to be collected.

007429

The sampling plan called for collection of four pairs of field duplicates. These samples were collected at the following locations:

DF003710 & 11 at S013X, SE corner of S oxidation pond.
DF003923 & 24 at F071A, 340' NW of Hwy. 161 bridge in Bayou Meto.
DF004114 & 17 at I006A, manhole #1204; W of Rocky Branch
DF004102 & 12 at F044A, Lake DuPree approximately 100' from each bank of NE corner.

Results of the statistical analysis of field duplicates show that:

Field Duplicates	I1	I2	Ipair
DF003710 & 11	ND(.15)	ND(.12)	.2222
DF003923 & 24	.31	ND(.10)	1.024
DF004114 & 17	30.9	15.8	.6467
DF004102 & 12	.37	EM(.07)	1.36
		Average =	.8132
		Standard Deviation =	±.4900

007430

The analysis indicates that the RPD for the sewage treatment system oxidation pond sample is 22.2%; this sample represents the specific sampling method used to extract the hard bottom sediment samples from the oxidation pond with a sampling tube. The RPD for the sewage collection system manhole sample is 65%: this sample represents the use of an Eckman dredge to extract the sample from the sediment of a 6-foot deep manhole. The RPD for the Bayou Meto loose stream sediment sample is 102.4%; this sample represents the use of a pond sampler to extract the sample from under approximately 5-foot water and high variability of the sample media. The RPD for the Lake DuPree loose bottom sediment sample is 136%; this sample represents the use of an Eckman dredge to extract the sample from under more than 5-foot water from a floating boat and high variability of sample media. All of the sampling methods and sample media were significantly different. Even if the statistical values could be considered valid, the percentages would have only qualitative significance.

The average and standard deviation for these four field duplicates are not considered representative since their elements are so widely different that they should not be averaged

Theoretically, knowledge of scatter due to laboratory procedures and comparison with paired field duplicates determines the degree of scatter due to sampling procedures (as long as natural variability and inhomogenity of the sample media is considered to be integral part of the sampling procedures).

The comparison between the laboratory and field duplicates using the test for the 90% confidence level fails. This is primarily due to the unrepresentative nature of the statistical parameters of field duplicates. Therefore, additional statistical evaluation required for high levels of precision and accuracy were not performed.

Accuracy and Precision - Organic Data

In addition to the dioxin samples 55 samples were collected for pesticide scan with 2,4-D and 2,4,5-T added to standard analysis for toluene, chlorinated phenols and chlorinated benzenes; 55 samples were colleted for VOA analysis. All samples were analyzed by one laboratory, U.S. Testing Laboratories.

Laboratory

The samples were sent in batches of 25 or less for analysis. Since these samples were considered exploratory samples, they were reviewed, but no statistical analysis was performed.

First Batch, U.S. Testing Laboratories. This batch included samples F4134 - F4146, F4227 and 4228. Review of the data shows that:

The pesticide sample F4228 was diluted by a factor of 2000 increasing the detection limits for that sample. This was probably done to quantitate the large amount of heptachlor in the sample.

The semiviolatile results for all the samples showed a peak between 400 - 500 scan numbers. These peaks should be ignored as they are lab specific artifacts of a solvent or GC column.

Second Batch, U.S. Testing Laboratories. This batch included samples F4147 - F4153, F4208 - F4221, F4177, F4200, F4201 and F4206.

There are several deficiencies in the analytical data for these samples. They include the following:

- o Surrogate spike recoveries for the semivolatile fraction, especially the acid fraction are poor. Four samples (F4153, F4213, F4214 and F4200) were diluted for no apparent reason giving zero spike recoveries and artificially high detection limits.
- o Pesticides: Most surrogate recoveries were outside the QC requirements due to required dilution of the samples. These dilutions resulted in higher detection levels for several samples (F4147, F4148, F4149, F4153, F4177, F4200, F4213, F4214, F4217, F4206, F4209, F4210, F4211, F4218, F4219 and F4221).
- o There are several missing or incomplete forms in the data package.
- o Data for samples F4201 and F4208 have not been recieved.

Based on the data in its present form, the QA officer in the EPA Houston Lab rejected the data. Several attempts have been made to resolve the deficiencies mentioned, but with little success.

007431