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FINAL REPORT

**CONFIDENTIAL
ATTORNEY/CLIENT PRIVILEGE**

Prepared for:

MARATHON PIPE LINE COMPANY

FINDLAY, OHIO

Prepared by:

TERRA CONSULTING GROUP, INCORPORATED™

BATON ROUGE, LOUISIANA

ENVIRONMENTAL SAMPLING REPORT

FISH TISSUE RESULTS

AIRLINE HIGHWAY GASOLINE RELEASE

July 1996

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1.0 INTRODUCTION

On or about May 24, 1996, Marathon Pipe Line Company (Marathon) discovered a release of approximately 11,308 barrels of unleaded gasoline in the pipe line right-of-way adjacent to U.S. Highway 61 (Airline Highway) in St. James Parish approximately 3 miles northeast of Gramercy, Louisiana. The release resulted from a ruptured Garyville-to-Zachary 20-inch pipe line owned by Marathon. Two tributaries of Blind River in the vicinity of the gasoline release site served as conduits for the movement of an unknown quantity of the gasoline into the river (Figure 1). A cypress-tupelo gum swamp habitat (McElroy Swamp) surrounds the release site and borders Blind River (Figure 1).

1.1 PURPOSE

A sampling and analysis plan for fish was developed after consultation with Louisiana Department of Wildlife and Fisheries (LDWF) personnel. The goals of the sampling plan were to determine if gasoline product had contaminated Blind River fish and to obtain analytical data of known quality, thus assuring the scientific accuracy of project data. This report summarizes the fish sampling methods and analytical results from Blind River.

2.0 METHODS

A total of 59 fish were collected from five sample locations on May 31, June 4, and June 13 of 1996. Fish species collected included largemouth bass (Micropterus salmoides), bluegill (Lepomis macrochirus), choupique (Amia calva), and channel catfish (Ictalurus punctatus) (Figure 2). Figure 1 indicates the locations of the five fish sampling stations,

which spanned approximately a 6.5 mile reach along Blind River in St. James Parish, Louisiana. Station 1 was located downstream of the release site in the vicinity of the St. James Boat Club boat launch. Station 2 was located farther downstream, north of I-10, in the vicinity of Bayou Fusil and was considered representative of background. Station 3, located between tributary #9 and tributary #11, was on the fringe of the impact zone, based on the extent of the initial fish kill observed by LDWF personnel. Station 4 was located between the Kansas City Southern Railroad bridge and the vicinity of tributary #5 in the major impact zone. Station 5 was located upstream near the intersection of an access canal and Blind River.

Largemouth bass, bluegill, and choupique were collected from a boat equipped with electrofishing gear supplied by LDWF. Channel catfish were collected using hoop nets or catfish traps baited with soybean chips. Hoop nets and traps were set out on June 11, 1996 and catfish were collected on June 13, 1996.

With few exceptions (see Table 1), a total of three specimens of each fish species was taken. For channel catfish, a total of five specimens was usually collected. However, only three channel catfish were captured at station 3 because of a faulty release door on the trap. Most of the bait was missing from the trap, suggesting that many catfish entered the trap, but exited through the release door after eating. Therefore, channel catfish were probably abundant at station 3, but sampling error prevented the capture of more specimens.

All fish were measured (total length in mm) and weighed (g) (Table 1). Whole fish were arbitrarily divided with LDWF (Table 2), wrapped in aluminum foil (shiny side outward),

individually placed into Ziploc® plastic bags and stored in a laboratory-supplied cooler packed with wet ice to chill the containers to approximately 4°C. During the processing of fish samples, no odor of gasoline was noted. Fish samples were identified based on the station number where they were collected with an additional number assigned to ensure that sample numbers were unique. The sample identification code used is listed in Table 1. All samples were tracked according to established chain-of-custody procedures and transported to the contract laboratory. The chain-of-custody forms are included as Attachment 1.

American Analytical and Technical Services, Inc. (AATS) of Baton Rouge, Louisiana analyzed the fish samples for semivolatile compounds. A modified U.S. EPA SW-846 Method 8270 utilizing matrix solid phase dispersion (MSPD) was employed. Fish fillet tissue cores with initial weights of 0.5, 2.0, or 5.0 grams were dispersed in a solvent-washed C₁₈ media, the target compounds eluted with methylene chloride, concentrated to 0.5-1.0 mL, and 1-5 uL injected on the Gas Chromatograph/Mass Spectrometer (GC/MS).

Method detection limits were 0.1, 0.250, or 10 mg/kg*, depending on the initial weight of the tissue core. Each analytical sample represents an individual fish. No composite samples were used. The remaining fish fillet tissues were archived in a freezer (to -20°C) at AATS.

The following quality assurance/quality control (QA/QC) samples were performed for every 20 samples:

* mg/kg = parts per million (ppm) concentration.

- matrix spike,
- matrix spike duplicate,
- method blank, and
- laboratory control sample.

The results reported in this summary are based on validated analytical data in accordance with *U.S. EPA SW-846, 3rd Edition* and *National Functional Guidelines for Organic Data Review (USEPA, February 1994)*. Validation of the analytical data was performed by Terra Consulting Group, Incorporated of Baton Rouge, Louisiana.

3.0 RESULTS

Table 3 summarizes the analytical results for Blind River fish samples by species and sampling station. 2-methylnaphthalene was detected in 3 of 15 bluegill (0.27J-2.6 mg/kg) and in 2 of 17 largemouth bass (0.014J-0.12 mg/kg) at Stations 3 and 4, the sampling locations closest to the release site. 2-methylnaphthalene was not detected in catfish or choupique. Other detected semivolatile compounds were phenol, 4-methylphenol, and diethylphthalate, all of which were detected at Station 2, the location considered representative of background. Phenol was detected only in catfish (18 of 21) at all five Stations, with concentrations ranging from 0.32 to 0.44 mg/kg. The maximum concentration (0.44 mg/kg) was found at Station 2. 4-methylphenol was detected in a single bluegill (0.37 mg/kg) at Station 2. Diethylphthalate was detected in 1 of 6

choupique (0.24 mg/kg) at Station 2 and in 12 of 21 catfish at all sampling locations except Station 3.

Figure 1 shows the results of the single semivolatile gasoline component detected in Blind River fish.

4.0 SUMMARY

A total of 59 fish were collected from approximately a 6.5 mile reach of Blind River. The only detected semivolatile gasoline component, 2-methylnaphthalene, was found in bluegill and largemouth bass tissues collected at Stations 3 and 4, the sampling locations closest to the release site. Detected concentrations ranged from 0.014J** to 2.6 mg/kg. Other detected semivolatile compounds (phenol, 4-methylphenol, and diethylphthalate) are not known components of Garyville Regular Unleaded Gasoline and were found in tissues from Station 2, the location considered representative of background.. Diethylphthalate is a common laboratory contaminant (*USEPA, Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses, 1988*). No other semivolatile compounds were detected in fish samples.

** J = estimated concentration.

TABLES

TABLE 1
Marathon Pipe Line Company
Summary of Fish Sampling
Blind River, Louisiana

Site No.	Fish No.	Date Collected	Fish Species	Total Length (mm)	Weight (g)
1	1	5/31/96	Largemouth Bass	248	214
1	4	5/31/96	Largemouth Bass	264	233
1	6	5/31/96	Largemouth Bass	187	85
1	8	5/31/96	Choupique	579	1800
1	10	5/31/96	Choupique	498	1142
1	12	5/31/96	Bluegill	140	48
1	14	5/31/96	Bluegill	143	56
1	16	5/31/96	Bluegill	131	43
1	18	5/31/96	Choupique	544	1399
1	CC3	6/13/96	Channel Catfish	225	88.5
1	CC5	6/13/96	Channel Catfish	231	88.5
1	CC7	6/13/96	Channel Catfish	212	84.5
1	CC9	6/13/96	Channel Catfish	249	121
1	CC10	6/13/96	Channel Catfish	221	92
2	12	6/4/96	Bluegill	115	32
2	10	6/4/96	Bluegill	121	35
2	11	6/4/96	Bluegill	145	76
2	13	6/4/96	Choupique	596	2005
2	2	6/4/96	Largemouth Bass	307	424
2	6	6/4/96	Largemouth Bass	203	109
2	1	6/4/96	Largemouth Bass	267	260
2	CC11	6/13/96	Channel Catfish	307	281
2	CC13	6/13/96	Channel Catfish	279	200.5
2	CC15	6/13/96	Channel Catfish	272	201
2	CC16	6/13/96	Channel Catfish	251	133
2	CC18	6/13/96	Channel Catfish	241	116.5
3	4	6/4/96	Largemouth Bass	252	224
3	6	6/4/96	Largemouth Bass	222	176
3	5	6/4/96	Largemouth Bass	203	122
3	9	6/4/96	Bluegill	155	82
3	8	6/4/96	Bluegill	162	103
3	7	6/4/96	Bluegill	161	106
3	14	6/4/96	Choupique	668	2750
3	CC22	6/13/96	Channel Catfish	235	93
4	12	6/4/96	Bluegill	130	52

TABLE 1 (Continued)
Marathon Pipe Line Company
Summary of Fish Sampling
Blind River, Louisiana

Site No.	Fish No.	Date Collected	Fish Species	Total Length (mm)	Weight (g)
4	9	6/4/96	Bluegill	150	75
4	11	6/4/96	Bluegill	104	22
4	6	6/4/96	Largemouth Bass	269	286
4	5	6/4/96	Largemouth Bass	215	132
4	4	6/4/96	Largemouth Bass	226	174
4	CC24	6/13/96	Channel Catfish	274	176.5
4	CC27	6/13/96	Channel Catfish	234	90.5
4	CC28	6/13/96	Channel Catfish	268	153
4	CC30	6/13/96	Channel Catfish	232	87.5
4	CC31	6/13/96	Channel Catfish	226	93.5
5	1	6/4/96	Largemouth Bass	341	557
5	2	6/4/96	Largemouth Bass	408	1110
5	3	6/4/96	Largemouth Bass	242	193
5	5	6/4/96	Largemouth Bass	270	251
5	4	6/4/96	Largemouth Bass	248	213
5	11	6/4/96	Bluegill	160	88
5	10	6/4/96	Bluegill	164	106
5	9	6/4/96	Bluegill	157	79
5	12	6/4/96	Choupique	560	1771
5	CC38	6/13/96	Channel Catfish	249	114.5
5	CC39	6/13/96	Channel Catfish	206	66
5	CC40	6/13/96	Channel Catfish	194	60
5	CC41	6/13/96	Channel Catfish	217	80
5	CC43	6/13/96	Channel Catfish	206	65

TABLE 2
Louisiana Department of Wildlife and Fisheries
Summary of Fish Sampling
Blind River, Louisiana

Site No.	Fish No.	Date Collected	Fish Species	Total Length (mm)	Weight (g)
1	2	5/31/96	Largemouth Bass	257	233
1	3	5/31/96	Largemouth Bass	318	430
1	5	5/31/96	Largemouth Bass	253	243
1	7	5/31/96	Choupique	523	1318
1	9	5/31/96	Choupique	534	1236
1	11	5/31/96	Bluegill	164	86
1	13	5/31/96	Bluegill	115	25
1	15	5/31/96	Bluegill	154	88
1	17	5/31/96	Choupique	530	1385
1	CC1	6/13/96	Channel Catfish	210	71
1	CC2	6/13/96	Channel Catfish	226	91
1	CC4	6/13/96	Channel Catfish	216	75.5
1	CC6	6/13/96	Channel Catfish	259	174.5
1	CC8	6/13/96	Channel Catfish	211	83.5
2	3	6/4/96	Largemouth Bass	331	584
2	4	6/4/96	Largemouth Bass	264	273
2	5	6/4/96	Largemouth Bass	242	211
2	7	6/4/96	Bluegill	165	99
2	8	6/4/96	Bluegill	124	42
2	9	6/4/96	Bluegill	152	81
2	14	6/4/96	Choupique	739	3665
2	15	6/4/96	Choupique	545	1410
2	CC12	6/13/96	Channel Catfish	367	490
2	CC14	6/13/96	Channel Catfish	259	154
2	CC17	6/13/96	Channel Catfish	235	120.5
2	CC19	6/13/96	Channel Catfish	255	149
2	CC20	6/13/96	Channel Catfish	220	87
3	1	6/4/96	Largemouth Bass	458	1569
3	2	6/4/96	Largemouth Bass	269	300
3	3	6/4/96	Largemouth Bass	298	381
3	10	6/4/96	Bluegill	89	13
3	13	6/4/96	Choupique	600	1868
3	15	6/4/96	Choupique	522	1359
3	CC21	6/13/96	Channel Catfish	291	172
3	CC23	6/13/96	Channel Catfish	168	34

TABLE 2 (Continued)
Louisiana Department of Wildlife and Fisheries
Summary of Fish Sampling
Blind River, Louisiana

Site No.	Fish No.	Date Collected	Fish Species	Total Length (mm)	Weight (g)
4	1	6/4/96	Largemouth Bass	282	326
4	2	6/4/96	Largemouth Bass	308	423
4	3	6/4/96	Largemouth Bass	284	328
4	7	6/4/96	Bluegill	152	89
4	8	6/4/96	Bluegill	139	62
4	10	6/4/96	Bluegill	106	25
4	CC25	6/13/96	Channel Catfish	280	189.5
4	CC26	6/13/96	Channel Catfish	256	124.5
4	CC29	6/13/96	Channel Catfish	240	101.5
4	CC32	6/13/96	Channel Catfish	195	60
4	CC33	6/13/96	Channel Catfish	226	93.5
5	6	6/4/96	Bluegill	153	84
5	7	6/4/96	Bluegill	170	107
5	8	6/4/96	Bluegill	171	111
5	13	6/4/96	Choupique	478	1089
5	14	6/4/96	Choupique	573	1817
5	CC34	6/13/96	Channel Catfish	194	54.5
5	CC35	6/13/96	Channel Catfish	204	53
5	CC36	6/13/96	Channel Catfish	254	128.5
5	CC37	6/13/96	Channel Catfish	212	86.5
5	CC42	6/13/96	Channel Catfish	206	69.5

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1
Sample Name	FISH1	FISH4	FISH6	FISH12	FISH14	FISH16	FISH8	FISH10	FISH18
Lab Sample Type	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG
Analysis Date	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96
Species	LMB	LMB	LMB	BG	BG	BG	CHO	CHO	CHO
Analyte Name									
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzyl Alcohol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2'-oxybis(1-Chloropropane)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzoic Acid	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis

LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique

**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected

J=Estimated

UJ=Non-detected, estimated

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1	SITE1
Sample Name	FISH1	FISH4	FISH6	FISH12	FISH14	FISH16	FISH8	FISH10	FISH18
Lab Sample Type	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG
Analysis Date	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96	6/4/96
Species	LMB	LMB	LMB	BG	BG	BG	CHO	CHO	CHO
Analyte Name									
3-Nitroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4,6-Dinitro-2-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis

LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique

**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected

J=Estimated

UJ=Non-detected, estimated

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE2	SITE2	SITE2	SITE4	SITE5	SITE5	SITE2	SITE2	SITE2	SITE3	SITE4	SITE5	SITE5	SITE5	SITE2
Sample Name	FISH1	FISH2	FISH6	FISH6	FISH1	FISH2	FISH10	FISH11	FISH12	FISH7	FISH12	FISH9	FISH10	FISH11	FISH13
Lab Sample Type	TRG	TRGRE	TRG	TRG	TRG	TRG	TRG	TRGRE	TRGRE	TRG	TRG	TRGRE	TRGRE	TRG	TRGRE
Analysis Date	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/6/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96
Species	LMB	LMB	LMB	LMB	LMB	LMB	BG	BG	BG	BG	BG	BG	BG	BG	CHO
Analyte Name															
Phenol	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
bis(2-Chloroethyl)ether	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
2-Chlorophenol	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
1,3-Dichlorobenzene	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
1,4-Dichlorobenzene	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
1,2-Dichlorobenzene	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
2-Methylphenol	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
2,2'-oxybis(1-Chloropropane)	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
4-Methylphenol	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.37	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
N-Nitroso-di-n-propylamine	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
Hexachloroethane	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U
Nitrobenzene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Isophorone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Nitrophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dimethylphenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
bis(2-Chloroethoxy)methane	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dichlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2,4-Trichlorobenzene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Naphthalene**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chloroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorobutadiene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chloro-3-methylphenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Methylnaphthalene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorocyclopentadiene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4,6-Trichlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4,5-Trichlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Chloronaphthalene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Nitroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dimethylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthylene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,6-Dinitrotoluene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
3-Nitroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dinitrophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Nitrophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzofuran	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dinitrotoluene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis
LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique
**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected
J=Estimated
UJ=Non-detected, estimated

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE2	SITE2	SITE2	SITE4	SITE5	SITE5	SITE2	SITE2	SITE2	SITE3	SITE4	SITE5	SITE5	SITE5	SITE2
Sample Name	FISH1	FISH2	FISH6	FISH6	FISH1	FISH2	FISH10	FISH11	FISH12	FISH7	FISH12	FISH9	FISH10	FISH11	FISH13
Lab Sample Type	TRG	TRGRE	TRG	TRG	TRG	TRG	TRG	TRGRE	TRGRE	TRG	TRG	TRG	TRGRE	TRG	TRGRE
Analysis Date	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96	6/7/96
Species	LMB	LMB	LMB	LMB	LMB	LMB	BG	BG	BG	BG	BG	BG	BG	BG	CHO
Analyte Name															
Diethylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.24
4-Chlorophenyl-phenylether	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Nitroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,6-Dinitro-2-methylphenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
N-Nitrosodiphenylamine	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Bromophenyl-phenylether	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorobenzene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pentachlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenanthrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Anthracene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Di-n-butylphthalate	0.67 U	0.46 U	0.59 U	1 U	0.68 U	0.54 U	0.49 U	0.84 U	0.57 U	1 U	0.75 U	0.75 U	0.84 U	0.78 U	1 U
Fluoranthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Butylbenzylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
3,3'-Dichlorobenzidine	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)anthracene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
bis(2-Ethylhexyl)phthalate	0.84 U	0.81 U	0.8 U	0.86 U	0.64 U	0.7 U	0.76 U	0.6 U	0.1 U	0.84 U	0.83 U	0.76 U	0.63 U	0.76 U	0.51 U
Di-n-octylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U
Benzo(b)fluoranthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U
Benzo(k)fluoranthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U
Benzo(a)pyrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U
Indeno(1,2,3-cd)pyrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U
Dibenz(a,h)anthracene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U
Benzo(g,h,i)perylene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U (TRGRE)	0.1 U

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis
LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique
**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected
J=Estimated
UJ=Non-detected, estimated

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE3	SITE3	SITE3	SITE4	SITE4	SITE5	SITE5	SITE5	SITE3	SITE3	SITE4	SITE4	SITE3	SITE5
Sample Name	FISH4	FISH5	FISH6	FISH4	FISH5	FISH3	FISH4	FISH5	FISH8	FISH9	FISH9	FISH11	FISH14	FISH12
Lab Sample Type	TRG	TRG	TRG	TRGRE	TRGRE	TRG	TRGRE	TRG	TRG	TRG	TRG	TRG	TRGRE	TRG
Analysis Date	6/8/96	6/10/96	6/8/96	6/7/96	6/7/96	6/7/96	6/8/96	6/7/96	6/10/96	6/10/96	6/7/96	6/7/96	6/7/96	6/7/96
Species	LMB	LMB	LMB	LMB	LMB	LMB	LMB	LMB	BG	BG	BG	BG	CHO	CHO
Analyte Name														
Phenol	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
bis(2-Chloroethyl)ether	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ
2-Chlorophenol	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
1,3-Dichlorobenzene	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
1,4-Dichlorobenzene	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
1,2-Dichlorobenzene	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
2-Methylphenol	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
2,2'-oxybis(1-Chloropropane)	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
4-Methylphenol	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
N-Nitroso-di-n-propylamine	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Hexachloroethane	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ
Nitrobenzene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Isophorone	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Nitrophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dimethylphenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
bis(2-Chloroethoxy)methane	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dichlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2,4-Trichlorobenzene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Naphthalene**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chloroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorobutadiene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chloro-3-methylphenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Methylnaphthalene	0.1 U	0.014 J	0.1 U	0.12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.027 J	0.1 U	2.6	0.1 U	0.1 U
Hexachlorocyclopentadiene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4,6-Trichlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4,5-Trichlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Chloronaphthalene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-Nitroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dimethylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthylene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,6-Dinitrotoluene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
3-Nitroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis
LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique
**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected
J=Estimated
UJ=Non-detected, estimated

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE3	SITE3	SITE3	SITE4	SITE4	SITE5	SITE5	SITE5	SITE3	SITE3	SITE4	SITE4	SITE3	SITE5
Sample Name	FISH4	FISH5	FISH6	FISH4	FISH5	FISH3	FISH4	FISH5	FISH8	FISH9	FISH9	FISH11	FISH14	FISH12
Lab Sample Type	TRG	TRG	TRG	TRGRE	TRGRE	TRG	TRGRE	TRG	TRG	TRG	TRG	TRG	TRGRE	TRG
Analysis Date	6/8/96	6/10/96	6/8/96	6/7/96	6/7/96	6/7/96	6/8/96	6/7/96	6/10/96	6/10/96	6/7/96	6/7/96	6/7/96	6/7/96
Species	LMB	LMB	LMB	LMB	LMB	LMB	LMB	LMB	BG	BG	BG	BG	CHO	CHO
Analyte Name														
2,4-Dinitrophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Nitrophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzofuran	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,4-Dinitrotoluene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Diethylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chlorophenyl-phenylether	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Nitroaniline	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,6-Dinitro-2-methylphenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
N-Nitrosodiphenylamine	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Bromophenyl-phenylether	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Hexachlorobenzene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pentachlorophenol	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenanthrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Anthracene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Di-n-butylphthalate	0.56 U	0.67 U	0.69 U	0.9 U	1 U	1.6 U	4.6 U	0.7 U	0.81 U	0.88 U	0.76 U	1.3 U	1.2 U	0.88 U
Fluoranthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Butylbenzylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
3,3'-Dichlorobenzidine	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)anthracene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
bis(2-Ethylhexyl)phthalate	1.1 U	2 U	0.86 U	1.3 U	1 U	0.9 U	0.69 U	0.94 U	1.8 U	1.9 U	0.79 U	4.4 U	1.4 U	0.82 U
Di-n-octylphthalate	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenz(a,h)anthracene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

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LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique
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Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE1	SITE1	SITE1	SITE1	SITE1	SITE2	SITE2	SITE2	SITE2	SITE2	SITE3	SITE4	SITE4	SITE4	SITE4	SITE4	SITE5	SITE5	SITE5	SITE5	SITE5
Sample Name	CC3	CC5	CC7	CC9	CC10	CC11	CC13	CC15	CC16	CC18	CC22	CC24	CC27	CC28	CC30	CC31	CC38	CC39	CC40	CC41	CC43
Lab Sample Type	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG
Analysis Date	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/17/96
Species	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT
Analyte Name																					
Phenol	0.42	0.39	0.4	0.37	0.38	0.35	0.44	0.42	0.4	0.35	0.32	0.34	0.36	0.36	0.34	0.35	0.35	0.36	0.25 U	0.25 U	0.25 U
bis(2-Chloroethyl)ether	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Chlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dichlorobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Methylphenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,2'-oxybis(1-Chloropropane)	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Methylphenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
N-Nitroso-di-n-propylamine	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachloroethane	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Isophorone	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dimethylphenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
bis(2-Chloroethoxy)methane	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trichlorobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Naphthalene**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Chloroaniline	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachlorobutadiene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Chloro-3-methylphenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Methylnaphthalene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachlorocyclopentadiene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,5-Trichlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Chloronaphthalene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitroaniline	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dimethylphthalate	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Acenaphthylene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitroaniline	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Acenaphthene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dibenzofuran	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Diethylphthalate	0.29	0.34	0.31	0.37	0.36	0.25 U	0.37	0.38	0.37	0.25 U	0.25 U	0.25 U	0.35	0.37	0.34	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis
LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique
**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected
J=Estimated
UJ=Non-detected, estimated

Table 3
Marathon Pipe Line Company
Airline Highway Release Fish Samples
Validated Results from AATS
Analytical results are reported in ppm (mg/Kg)

Site Location	SITE1	SITE1	SITE1	SITE1	SITE1	SITE2	SITE2	SITE2	SITE2	SITE2	SITE3	SITE4	SITE4	SITE4	SITE4	SITE4	SITE5	SITE5	SITE5	SITE5	SITE5
Sample Name	CC3	CC5	CC7	CC9	CC10	CC11	CC13	CC15	CC16	CC18	CC22	CC24	CC27	CC28	CC30	CC31	CC38	CC39	CC40	CC41	CC43
Lab Sample Type	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG	TRG
Analysis Date	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/15/96	6/17/96
Species	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT	CAT
Analyte Name																					
4-Chlorophenyl-phenylether	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Fluorene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitroaniline	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4,6-Dinitro-2-methylphenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
N-Nitrosodiphenylamine	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Bromophenyl-phenylether	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Hexachlorobenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pentachlorophenol	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Phenanthrene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Anthracene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Di-n-butylphthalate	2.4 U	2.2 U	1.8 U	1.9 U	2.1 U	2.6 U	2.8 U	4.3 U	1.9 U	3.2 U	2.6 U	2.4 U	2.1 U	2.2 U	2.4 U	2.5 U	3 U	3.3 U	2.9 U	3.1 U	1.9 U
Fluoranthene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pyrene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Butylbenzylphthalate	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3,3'-Dichlorobenzidine	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Benzo(a)anthracene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Chrysene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
bis(2-Ethylhexyl)phthalate	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Di-n-octylphthalate	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.26 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Benzo(b)fluoranthene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Benzo(k)fluoranthene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Benzo(a)pyrene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Indeno(1,2,3-cd)pyrene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Dibenzo(a,h)anthracene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Benzo(g,h,i)perylene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U

TRG=Site Sample, TRGRE=Re-extraction/Re-analysis
LMB=Largemouth Bass, BG=Bluegill, CAT=Catfish, CHO=Choupique
**Risk-based concentration for fish tissue is 54 mg/Kg (USEPA, 1995)

U=Non-detected
J=Estimated
UJ=Non-detected, estimated

FIGURES

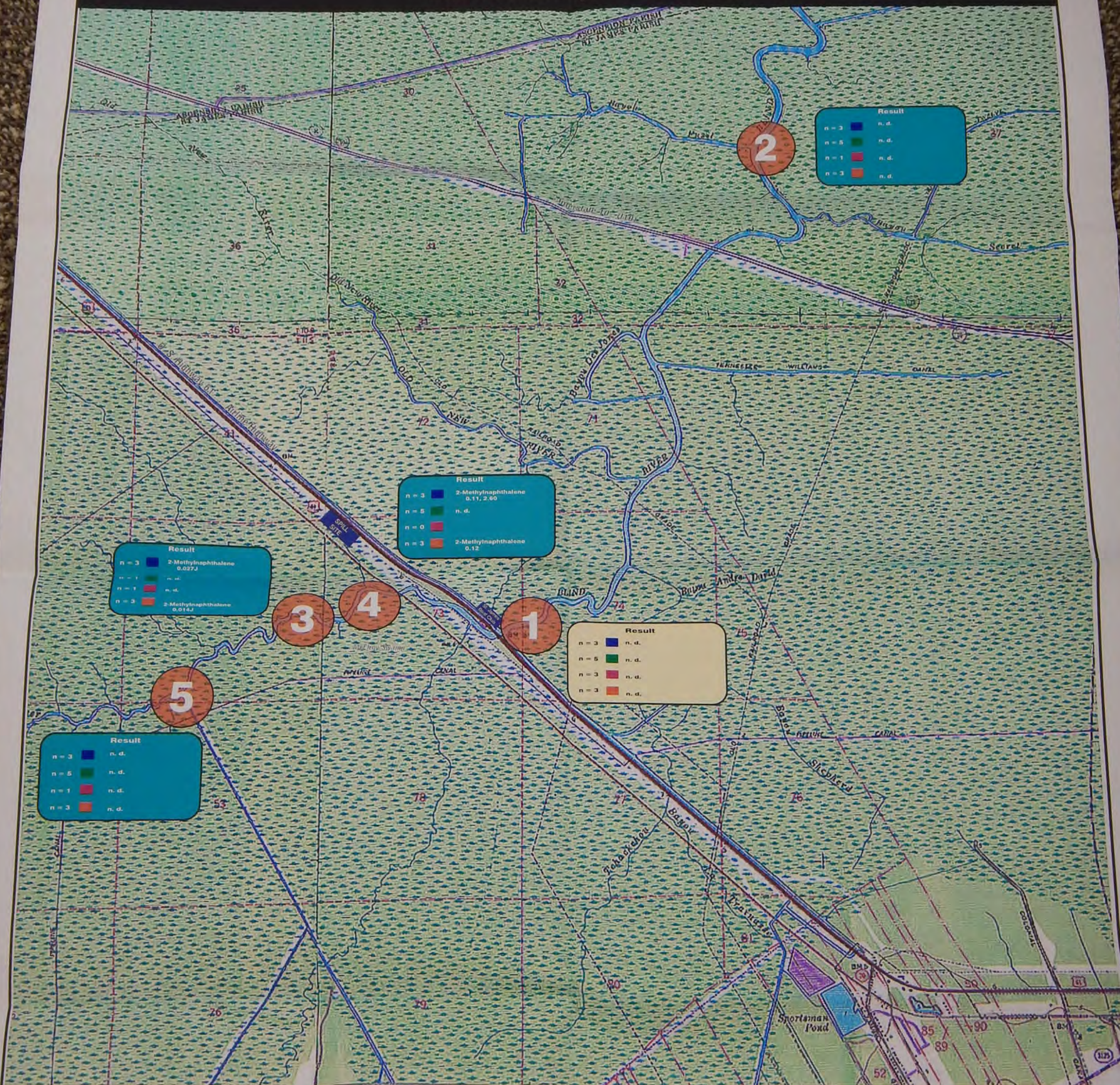
The following figure is too large to be digitized:

Figure 1: Blind River Fish Tissue Sampling Locations and Results

A digital photo of the figure is provided. Should you need better a resolution please contact LOSCO to view the original hard copy of the figure.



FIGURE 1 BLIND RIVER FISH TISSUE SAMPLING LOCATIONS AND RESULTS* Airline Highway Release Marathon Pipe Line Company



Fish Species Sampled

- Bluegill (*Lepomis macrochirus*)
- Channel Catfish (*Ictalurus punctatus*)
- Choupique (*Amia calva*)
- Largemouth Bass (*Micropterus salmoides*)

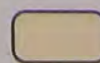
Legend



Sample Station

n = Number of observations

n. d. = Analyte not detected



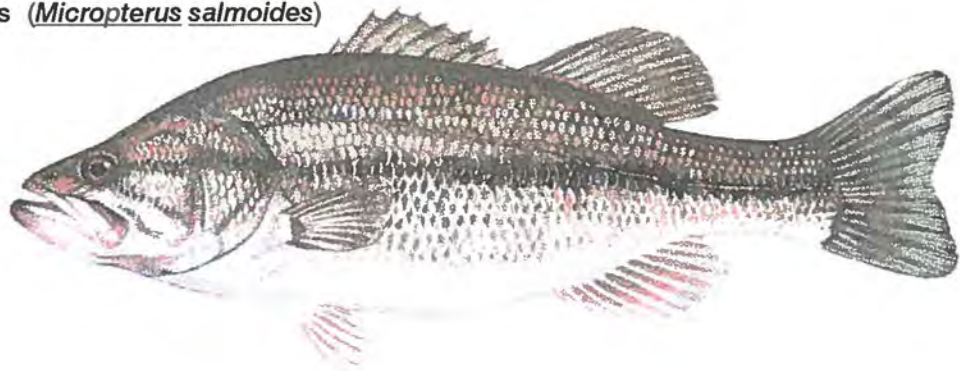
Sampled (5/31/96) and (6/13/96)



Sampled (6/4/96) and (6/13/96)

* Semivolatile analyses reported as parts per million (mg/kg)

Largemouth Bass (*Micropterus salmoides*)



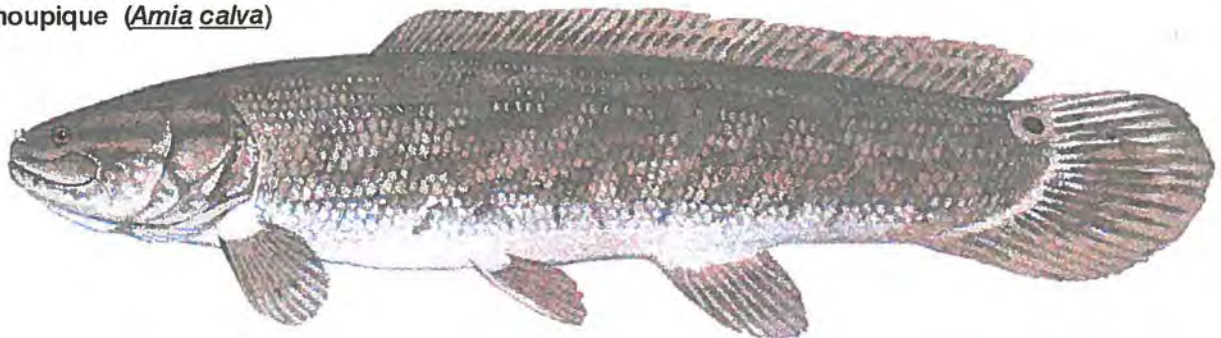
Bluegill (*Lepomis macrochirus*)



Channel Catfish (*Ictalurus punctatus*)



Choupique (*Amia calva*)



ATTACHMENT 1

000002 5/6/96

Marathon Oil Company
PO Box AC
Garyville, LA 70051

Page _____ of _____



SPL Environmental Laboratories, Inc.

500 Ambassador Caffery Pkwy.,
Scott, Louisiana 70583
(318) 237-4275

Analysis Request and Chain of Custody Record

Client/Project Name:

Sample submitted by: Noelle Blackwell

Company:

MOC

Address:

Contact: Jim Wilkins

Project Location:

Project No.

Phone: 535-7244Blind River

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquids, Soil Sludge, Etc.)	Preservative	ANALYSIS REQUESTED		REMARKS
							TEST	METHOD	
Site 1 Fish 1	5/31			UMB Fish - Alum Foil			① BNA ② VOA		Semivolatile Volatiles Composite - 3 each species Each species - livers, gills + composite all 3 from each species - freeze Left Side • Composite fillet - • Composite liver • Composite gill (9 Total) • KEEP RIGHT SIDE FILLET ON HOLD Per each species
Site 1 Fish 4	5/31			UMB Fish - Alum Foil					
Site 1 Fish 2	5/31			UMB Fish - Alum Foil					
Site 1 Fish 8	5/31			Sheepick Fish - Alum Foil					
Site 1 Fish 10	5/31			Sheepick Fish - Alum Foil					
Site 1 Fish 12	5/31			Blue gill Fish - Alum Foil					
Site 1 Fish 14	5/31			Blue gill Fish - Alum Foil					
Site 1 Fish 16	5/31			Blue gill Fish - Alum Foil					
Site 1 Fish 18	5/31			Blue gill Sheepick Fish - Alum Foil					
Site 1 Fish 18	5/31			Blue gill Sheepick Fish - Alum Foil					

Samplers: (Signature) <u>Noelle Blackwell</u> Affiliation SAMPLER REMARKS: Seal#	Relinquished by: (Signature) <u>Noelle Blackwell</u> Relinquished by: (Signature) Relinquished by: (Signature)	Date: <u>5/31/96</u> Time: <u>1515</u> Date: Time: Date: Time:	Received by: (Signature) <u>Jim Wilkins</u> Received by: (Signature) Received by: (Signature) Received for laboratory: (Signature) <u>[Signature]</u> Date Results to:	Date: <u>5/31/96</u> Time: <u>1636</u> Date: <u>5/31/96</u> Time: <u>18:30</u> Date: <u>6/3/96</u> Time: <u>18:00</u>	Intact Intact Intact Laboratory No.
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Steve Stewart 6/4/96

Marathon Co.,
PO Box AC
Garfield

Page 1 of 1



SPL Environmental Laboratories, Inc.

500 Ambassador Caffery Pkwy.

Scott, Louisiana 70583

-(318)-237-4775

Analysis Request and Chain of Custody Record

Sample submitted by: MDC to Terra

Client/Project Name:

Blind River Fish Samples

Company:

Terra

Address:

Contact: Jim Wilkins

Project Location:

Project No.

Phone: 535 7215

Field Sample No / Identification	Date and Time	Grid	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Soil Sludge, Etc)	Preservative	ANALYSIS REQUESTED		REMARKS
							TEST	METHOD	
Site 2 Fish 12	6/4/96			Alum Fol/Plastic	Blue Bag gill	ICE	Volatiles		- Composite fillet for each species from each site
Site 2 Fish 10	6/4/96				Blue gill				
Site 2 Fish 11	6/4/96				Blue gill		Semivolatiles		- Composite gill + livers from each site
Site 1 Fish 13	6/4/96				Choupique				
Site 2 Fish 2	6/4/96				LMB				
Site 2 Fish 6	6/4/96				LMB				
Site 2 Fish 1	6/4/96				LMB				
Site 5 Fish 2	6/4/96				LMB				
Site 5 Fish 1	6/4/96				LMB				
Site 4 Fish 12	6/4/96				Blue gill				

Samplers: (Signature)

Noelle K. Schaeffer

Affiliation

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date: 6/4/96
Time: 1730

Date: 6/4/96
Time: 1855

Date: 6-4-96
Time: 17:30

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received for laboratory: (Signature)

Date Results to:

Date: 6/4/96
Time: 1731

Date: 6-4-96
Time: 18:56

Date:
Time:

Date: 6/5/96
Time: 0800

Intact

Intact

Intact

Laboratory No.

SAMPLER REMARKS:

Seal#

Marathon Oil Company
P.O. Box AC
Garyville, LA 70051

Page 2 of



SPL Environmental Laboratories, Inc.

500 Ambassador Caffery Pkwy.
Scott, Louisiana 70583
(318) 237-4775

Analysis Request and Chain of Custody Record

Sample submitted by: Marathon Oil Company

Client/Project Name:

Blind River Fish Samples

Company:

Terra

Address:

Contact:

Jim Wilkins

Project Location:

Project No.

Phone:

535-7215

Field Sample No. / Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Soil Sludge, Etc.)	Preservative	ANALYSIS REQUESTED		REMARKS
							TEST	METHOD	
Site 4 Fish 9	6/4/96			Atom. Fish Plastic	Bluegill fish	Ice			- Composite filet for each species from each site - Composite gills + livers for each species from each site
Site 4 Fish 11	6/4/96				Bluegill fish		Volatiles		
Site 5 Fish 3	6/4/96				Lg Mouth Bass		+		
Site 5 Fish 5	6/4/96				LMB		Semivolatiles		
Site 5 Fish 4	6/4/96				LMB				
Site 3 Fish 4	6/4/96				LMB				
Site 3 Fish 6	6/4/96				LMB				
Site 3 Fish 5	6/4/96				LMB				
Site 3 Fish 9	6/4/96				Blue gill				
Site 3 Fish 8	6/4/96				Blue gill				

Samplers: (Signature)

K. L. Blackwell

Relinquished by:
(Signature)

Joel Blackwell

Relinquished by:
(Signature)

Joel Blackwell

Relinquished by:
(Signature)

Joel Blackwell

Date: 6/4/96

Time: 1730

Date: 6/4/96

Time: 1855

Date: 6-4-96

Time: 19:30

Received by:
(Signature)

Joel Blackwell

Received by:
(Signature)

Joel Blackwell

Received by:
(Signature)

Joel Blackwell

Date: 6/4/96

Time: 1731

Date: 6-4-96

Time: 1856

Date:

Time:

Date: 6/5/96

Time: 0800

Intact

Intact

Intact

Laboratory No.

SAMPLER REMARKS:

Seal#

Marathon Oil Company
P.O. Box AC
Garyville, LA 70051

Page 3 of



SPL Environmental Laboratories, Inc.

500 Ambassador Caffery Pkwy.
Scott, Louisiana 70583
(318) 237-4775

Analysis Request and Chain of Custody Record

Sample Submitted by: Marathon Oil Company

Client/Project Name:

Blind River Fish Sample

Company:

Terra/

Address:

Contact: Jim Wilkins

Project Location:

Project No.

Phone: 535 7215

Field Sample No / Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Soil Sludge, Etc)	Preservative	ANALYSIS REQUESTED		REMARKS
							TEST	METHOD	
Site 3 Fish 7	6/4/96			Acum. Poly Plastic bag	Blue gill	Ice	Volatiles		- Composite to fil + for each species from each site
Site 5 Fish 11	6/4/96				Bluegill		+		
Site 5 Fish 10	6/4/96				Bluegill		Semivolatiles		- Composite gills + livers for each species from each site
Site 5 Fish 9	6/4/96				Bluegill				
Site 4 Fish 6	6/4/96				LMB				
Site 4 Fish 5	6/4/96				LMB				
Site 4 Fish 4	6/4/96				LMB				
Site 3 Fish 14	6/4/96				Choupique				
Site 5 Fish 12	6/4/96				Choupique				
Site Fish	6/4/96								

Samplers: (Signature)

Thelma Blackwell

Affiliation

Relinquished by:
(Signature)

Relinquished by:
(Signature)

Relinquished by:
(Signature)

SAMPLER REMARKS:

Seal#

Date: 6/4/96

Time: 17:30

Date: 6/4/96

Time: 18:55

Date: 6-4-96

Time: 19:30

Received by:
(Signature)

Received by:
(Signature)

Received by:
(Signature)

Received for laboratory:
(Signature)

Date Results to:

Date: 6/4/96

Time: 17:31

Date: 6-4-96

Time: 18:56

Date:

Time:

Date: 6/5/96

Time: 08:30

Intact

Intact

Intact

Laboratory No.



CHAIN OF CUSTODY RECORD

AMERICAN ANALYTICAL AND TECHNICAL SERVICES, INC.

11950 Industriplex Blvd • Baton Rouge LA 70809

Office 504-753 8650 • Fax 504-751-1405

SAMPLING FIRM

Marathon Terra

CLIENT CONTACT

Lance Fontenot

PHONE NUMBER

769-1141

PROJECT NUMBER

PROJECT NAME

Marathon

SAMPLERS (Signature)

Lance Fontenot

ANALYTICAL TESTS REQUESTED

STA NO	DATE	TIME	COMP.	GRAB	STATION LOCATION	MATRIX	NO OF CONTAINERS	REMARKS
51CC3	6/13	1020		✓		catfish	1	Channel Catfish 240mm 88.5g
51CC5	6/13	1020		✓		catfish	1	231mm 88.5g
51CC7	6/13	1020		✓		catfish	1	212mm 84.5g
51CC9	6/13	1020		✓		catfish	1	249mm 121.0g
51CC10	6/13	1020		✓		catfish	1	221mm 92.0g
52CC11	6/13	950		✓		catfish	1	307mm 281.0g
52CC13	6/13	950		✓		catfish	1	279mm 200.5g
52CC15	6/13	950		✓		catfish	1	272mm 201.0g
52CC16	6/13	950		✓		catfish	1	251mm 133.0g
52CC18	6/13	950		✓		catfish	1	241mm 116.5g
53CC22	6/13	1110		✓		catfish	1	235mm 93.0g
54CC24	6/13	1142		✓		catfish	1	54CC24 274mm 176.5g
54CC27	6/13	1142		✓		catfish	1	54CC27 234mm 90.5g
54CC28	6/13	1142		✓		catfish	1	54CC28 268mm 153.0g
54CC30	6/13	1142		✓		catfish	1	54CC30 232mm 87.5g
54CC31	6/13	1125		✓		catfish	1	226mm 93.5g

RELINQUISHED BY: (Signature)

Lance Fontenot

DATE

6/13/96

TIME

1440

RECEIVED BY: (Signature)

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DATE

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TIME

RECEIVED FOR LABORATORY BY (Signature)

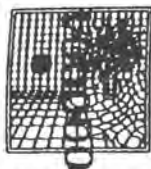
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DATE

TIME

RECEIVED BY: (Signature)

REMARKS:



CHAIN OF CUSTODY RECORD

AMERICAN ANALYTICAL AND TECHNICAL SERVICES, INC.

11950 Industriplex Blvd • Baton Rouge LA 70809

Office 504-753-8650 • Fax 504-751-1405

SAMPLING FIRM

Marathon/Terra

CLIENT CONTACT

Lance Fontenot

PHONE NUMBER

769-1141

PROJECT NUMBER

PROJECT NAME

Marathon

SAMPLERS (Signature)

Lance Fontenot

STA NO	1996 DATE	TIME	COMP	GRAB	STATION LOCATION	MATRIX	NO OF CONTAINERS	ANALYTICAL TESTS REQUESTED										REMARKS
								Survival	Volatiles									
55cc38	6/13	1100		✓		catfish	1	1	1									Channel Catfish 249mm 114.5g
55cc39	6/13	1100		✓		catfish	1	1	1									206mm 66.0g
55cc40	6/13	1100		✓		catfish	1	1	1									194mm 60.0g
55cc41	6/13	1100		✓		catfish	1	1	1									217mm 80.0g
55cc43	6/13	1100		✓		catfish	1	1	1									206mm 65.0g
	6/13			✓		catfish	1	1	1									yof
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									
	6/13			✓		catfish	1	1	1									

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RECEIVED FOR LABORATORY BY (Signature)

By

Koddy J. Vane

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DATE

TIME

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REMARKS:

