Monsanto

Copy JJ Nick

FROM (NAME & LOCATION): D. K. Mitchell

DATE: September 28, 1970

SUBJECT: PCB Analysis

REFERENCE:

cc: W. H. Dragoumet
J. E. Lip
K. M. Warner

TO: B. T. Dean

The following compilation lists all analyses on PCB presently in our files. The data on pages 1 through 6 are listed in chronological order. The remaining pages are analyses by the Bureau of Commercial Fisheries and are so presented as received.

D. K. Mitchell

bah

EXHIBIT
WBP M-155

MON-MT-008748

TOWOLDMON0003925

Date	Sample	Location	Result	Analyst	Reference
6/5/69	Fish	Flounder Liver Mulatto Bayou	76.ppm	Duke	Federal Report
6/5/69	Fish	Flounder Muscle Mulatto Bayou	4.5 ppm	Duke	Federal Report
6/5/69	Fish	Flounder Gills Mulatto Bayou	19. ppm	Duke	Federal Report
6/5/69	Fish	Croaker Mulatto Bayou	12.ppm	Duke	Federal Report
6/5/69	Fish	Menhaden Mulatto Bayou	11.ppm	Duke	Federal Report
6/5/69	Fish	Pinfish Mulatto Bayou	10.ppm	Duke	Federal Report
7/1/69	Fish	Menhaden Mulatto Bayou	12. ppm	Duke	Federal Report
7/1/69	Shrimp	Mulatto Bayou	1.5 ppm	Duke	Federal Report
7/1/69	Sediment	Mulatto Bayou	N.D.	Duke	Federal Report
7/8/69	Sediment	Highway 90	1.7 ppm	Duke	Federal Report
8/11/69	Water	Pensacola Plant East Ditch	74.8 ppB	E.S. Tucker	Samples sent to St. Louis
8/11/69	Water	Monsanto Plant Outfall Ditch	12.5 ppB	E.S. Tucker	Samples sent to St. Louis
8/11/69	Water	Escambia River at Station "D" below plant	4.7 ppB	E.S. Tucker	Samples sent to St. Louis
8/11/69	Water	Escambia River at Station "W" above plant	0 ppB	E.S. Tucker	Samples sent to St. Louis
8/13/69	Blue Crab	Northern Escambia Bay	7.0 ppm	Duke	Federal Report
8/14/69	Fish	Speckled Trout Gills Pensacola Bay	7.5 ppm	Duke	Federal Report

TOWOLDMON0003926

Date	Sample	Location	Result	Analyst	Reference
8/14/69	Fish	Speckled Trout Liver Pensacola Bay	21.ppm	Duke	Federal Report
8/15/69	Sediment	Garcon Point	N.D.	Duke	Federal Report
8/15/69	Sediment	Mulatto Bayou	N.D.	Duke	Federal Report
8/15/69	Sediment	Northern Escambia Bay	.14 ppm	Duke	Federal Report
8/15/69	Sediment	Highway 90	1.4 ppm	Duke	Federal Report
8/15/69	Sediment	Outfall 6 Miles North of	486.ppm	Duke	Federal Report
8/18/69	Water	Monsanto Plant Outfall Ditch	1.0 ppB	E.S. Tucker	Samples sent to St. Louis
8/20/69	Water	Escambia River @ Monsanto Co. Outfall	270.ppB	E.S. Tucker	Reference sample Bureau of Fisheries Campbell to Tucker
8/20/69	Fish	Escambia River	133±2 ppm	E.S. Tucker	Fish caught by W.A. Calloway
8/22/69	Water	Monsanto Plant Outfall Ditch	1.4 ppB	E.S. Tucker	Samples sent to St. Louis
8/26/69	Water	Escambia River @ White River Above Monsanto Co. - Top Sample	3.ppB	Symes- (Winter-haven)	Sampled by G. Richmond #1
8/26/69	Water	Escambia River @ White River above Monsanto Co. 3/4 Depth Sample	2.ppB	Symes- (Winter-haven)	Sampled by G. Richmond #2
8/26/69	Water	Escambia River @ Monsanto Co. - Outfall - Top Sample	6.5 ppB	Symes- (Winter-haven	Sampled by G. Richmond #3
8/26/69	Water	Escambia River @ Monsanto Co. 3/4 Depth	3.ppB	Symes- (Winter-haven)	Sampled by G. Richmond #4

TOWOLDMON0003927

Date	Sample	Location	Result	Analyst	Reference
8/26/69	Water	Escambia River United Gas Line Top Sample	6.ppB	Symes-(Winter-haven)	Sampled by G. Richmond #5
8/26/69	Water	Escambia River United Gas Line 3/4 Depth Sample	5.5 ppB	Symes-(Winter-haven)	Sampled by G. Richmond #6
8/26/69	Water	Escambia River @ Gulf Power Out-fall Top Sample	3.3 ppB	Symes-(Winter-haven)	Sampled by G. Richmond #7
8/26/69	Water	Escambia River @ Gulf Power Outfall 3/4 Depth Sample	7.5 ppB	Symes-(Winter-haven)	Sampled by G. Richmond #8
8/26/69	Water	Escambia River @ Highway 90 Bridge Top Sample	3.7 ppB	Symes-(Winter-haven)	Sampled by G. Richmond #9
8/26/69	Water	Escambia River @ Highway 90 Bridge 3/4 Depth Sample	5+.ppB	Symes-(Winter haven)	Sampled by G. Richmond #10
8/26/69	Bottom Sludge	Escambia River @ White River Above Monsanto Company	0 ppm	Symes-(Winter-haven)	Sampled by G. Richmond #1A
8/26/69	Bottom Sludge	Escambia River @ United Gas Line	0.33 ppm	Symes-(Winter-haven)	Sampled by G. Richmond #3A
8/26/69	Bottom Sludge	Escambia River @ Highway 90 Bridge	1.5 ppm	Symes-(Winter-haven)	Sampled by G. Richmond #4A
8/26/69	Bottom Sludge	Escambia River @ Monsanto Co. Out-fall	385+ppm	Symes-(Winter-haven)	Sampled by G. Richmond #2A
		Detritus only	1000+ppm	Symes-(Winter-haven)	
		Sand only	2.5 ppm		

TOWOLDMON0003928

Date	Sample	Location	Result	Analyst	Reference
8/31/69	Fish	Speckled Trout Northern Escambia Bay	20. ppm	Duke	Federal Report
8/31/69	Fish	Flounder Liver Northern Escambia Bay	184.ppm	Duke	Federal Report
8/31/69	Shrimp	Northern Escambia Bay	2.5 ppm	Duke	Federal Report
8/31/69	Blue Crab	Northern Escambia Bay	6.3 ppm	Duke	Federal Report
9/9/69	Blue Crab	Mulatto Bayou	1.0 ppm	Duke	Federal Report
9/15/69	Water	Monsanto Outfall Skimmer	3.8 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/3/69	Water	Escambia River @ Station "W" Above Plant	0 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/3/69	Water	Escambia River @ Station "D" Below Monsanto	0.2 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/3/69	Water	Monsanto Plant Outfall Ditch	17.3 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/3/69	Water	Monsanto Outfall Skimmer	20.3 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/8/69	Water	Monsanto Plant Outfall Ditch	1.6 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/8/69	Water	Pensacola Plant East Ditch	45.0 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/8/69	Water	Pensacola Plant Power House Outfall	0.2 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/10/69	Water	Pensacola Plant East Ditch Above Bldg 408	0.1 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola

TOWOLDMON0003929

Date	Sample	Location	Result	Analyst	Reference
10/10/69	Water	Pensacola Plant East Ditch Below Bldg 408	11.7 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/10/69	Water	Pensacola Plant East Ditch	11.9 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/10/69	Fish	Menhaden Mulatto Bayou	5.7 ppm	Duke	Federal Report
10/17/69	Water	Bldg 408 Decanter Eff.	6,500 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/23/69	Water	Pensacola Plant East Ditch	1.3 ppB	Lubkowitz	Analyzed at Monsanto-Pensacola
10/30/69	Bottom Sludge	Monsanto Outfall Skimmer	112 ppm	Lubkowitz	Analyzed at Monsanto-Pensacola
11/28/69	Sediment	Escambia River West Side 150 ft Above Monsanto Outfall			
		Detritus			
		Fines	3.4 ppm	Cutchens	Monsanto-Pensacola
		Coarse	4.6 ppm		
11/28/69	Sediment	Escambia River West Side 100 ft Below Monsanto Outfall			
		Detritus			
		Fines	1.4 ppm	Cutchens	Monsanto-Pensacola
		Coarse	2.3 ppm		
11/28/69	Sediment	Escambia River East Side Across From Monsanto Outfall			
		Detritus			
		Fines	70.ppm	Cutchens	Monsanto-Pensacola
		Coarse	62.ppm		
6/30/60	Water	Escambia River @ Station "W" Above Monsanto	<0.4 ppB	Cutchens	Monsanto-Pensacola
6/30/70	Water	Monsanto Plant North Outfall	<0.4 ppB	Cutchens	Monsanto-Pensacola

TOWOLDMON0003930

Date	Sample	Location	Result	Analyst	Reference
6/30/70	Water	Monsanto Plant Outfall Ditch	< 0.4 ppB	Cutchens	Monsanto-Pensacola
3/17/70	Water	River Water From Monsanto River Water Pumping Station	0.6 ppB	Cutchens	Monsanto-Pensacola
3/18/70	Water	River Water From Monsanto River Water Pumping Station	< 0.4 ppB	Cutchens	Monsanto-Pensacola
3/19/70	Water	River Water From Monsanto River Water Pumping Station	1.9 ppB	Cutchens	Monsanto-Pensacola

TOWOLDMON0003931

BUREAU OF COMMERCIAL FISHERIES

LABORATORY:

Biological Field Station
Sabine Island
Gulf Breeze, Florida 32561

Verified by: [signature]
Date: May 9, 1969

PARTS PER MILLION or µ

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER
	1-5-68	Oyster	East Bay, Pensacola, Fla.	19	.015	--	--	--
	3-6-68	"	" " "	61	.015	--	--	--
	1-7-68	"	" " "	17	--	--	--	--
	1-8-68	"	" " "	223	tr	tr	--	--
	30-8-68	"	" " "	396	.020	--	--	--
	1-10-68	"	" " "	25	--	--	--	--
	30-10-68	"	" " "	188	tr	--	--	--
	4-12-68	"	" " "	361	--	--	--	--
	30-12-68	"	" " "	493	tr	tr	--	--
	30-1-69	"	" " "	72	.016	.014	tr	--
	29-2-69	"	" " "	217	.011	.010	--	--
	2-4-69	"	" " "	1	--	--	--	--
	2-4-69	"	Escambia Bay, Pensacola, Fla.	16L	Detected presence of polychlorinated biphenyl compound			
	5-5-69	"	East Bay, Pensacola, Fla.	99	.013	.013	--	--
	5-5-69	Water	" " " "	133L	--	--	--	--
	5-5-69	Oyster	Escambia Bay, Pensacola, Fla.	132L	Detected presence of polychlorinated biphenyl compound			
	5-5-69	Water	" " " "	134L	--	--	--	--

MON-MT-008755

TOWOLDMON0003932

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analyses supervised by: Alfred J. Wilson, Jr.
BCF Biological Field Sta.
Gulf Breeze, Florida

ORATORY:

First collection of samples on Escambia River by BCF

Verified by: Alfred J. Wilson Jr.
Date: Dec 19, 1969

PARTS PER MILLION or µg/

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER
	8-7-69	Noritina	Sta. I (Hwy. 90)	27				#1254 - 1.9pp
	"	Sediment	" " " "	28				#1254 - 1.7pp
	"	Corbicula	Sta. II (S.R. 184)	29				--
	"	Sediment	" " " "	30				--
	"	Corbicula	Sta. III (McDavid)	31				--
	"	Campalona	" " "	32	.012	.036	.022	--
	"	Centrar-chidae	" " "	33	Mixture DDT and PCB			
	"	Fish (mixed)	" " "	34	Mixture DDT and PCB			
	"	Algae	" " "	35	tr	tr	tr	--
	"	Sediment	" " "	36	--	--	--	--
	"	Corbicula	Sta. IV (Century)	37	--	--	--	--
	"	Campalona	" " "	38	.018	.078	.14	--
	"	Sediment	" " "	39	tr	tr	tr	--
	"	H_2O	Sta. I (Hwy. 90)	109	pH 8.18	Sal. 0.6		#1254 approx 0.5 ppb
	"	"	Sta. II (S.R. 184)	110	7.82	0.0		--
	"	"	Sta. III (McDavid)	111	8.20	0.0		--
	"	"	Sta. IV (Century)	112	7.00	0.0		--

MON-MT-008756

TOWOLDMON0003933

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analyses supervised by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida

RATORY:

Second collection of samples on Escambia River by BCF

Verified by:

Date:

PARTS PER MILLION or µg/

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB #1254
	15-7-69	H_2O	10. Mouth of Escambia River	117				tr
	"	"	1. Hwy. 90	114				0.51 ppb
	"	"	5. Mouth of Thompson Bayou	119				0.49 ppb
	"	"	4. Thompson Bayou	123				0.38 ppb
	"	"	3. Power Station Canal	115				1.1 ppb
	"	"	7. Mouth Governors Bayou	121				0.77 ppb
	"	"	6. Up Governors Bayou	120				1.8 ppb
	"	"	9. White River	122				ND
	"	"	8. Abbve White River	116				3.5 ppb

MON-MT-008757

TOWOLDMON0003934

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analyses supervised by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida

ORATORY:

Third collection of samples on Escambia River by BCF

Verified by: Alfred J. Wilson Jr.
Date: August 19 1969

PARTS PER MILLION or µg/

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB #1254
	17-7-69	H_2O	1. Hwy. 90	126				0.43 ppb
	"	"	10. S.R. 184	127				ND
	"	"	3. Just below Skimmer	128				5.8 ppb
	"	"	6. By Horse Shoe Lake	129				ND
	"	"	2. Just above White River	130				0.6 ppb
	"	"	4. Above Skimmer	131				ND
	"	"	5. Above Skimmer	132				ND
	"	"	7. Above Skimmer	133				ND
	"	"	8. Williams Ditch	134				ND
	"	"	9. Canal	135				ND

MON-MT-008758

TOWOLDMON0003935

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analyses supervise by Alfred J. Wilson, Jr.
BCF Biological Field Statio Gulf Breeze, Florida

RATORY:

Fourth collection of samples on Escambia River by BCF

Verified by: Alfred J. Wilson Jr.
Date: August 19, 1969

PARTS PER MILLION or µg/

SAMPLE REMARK	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB #1254
	22-7-69	H_2O	Above Skimmer	139				ND
	"	"	4C Barge Canal	140				ND
	"	"	4B Outfall of spillway	141				ND
	"	"	4A Outfall 6" pipe	142				ND
	"	"	3A Skimmer	143				41. ppb
	"	"	3 Below Skimmer	144				2.1 ppb
	"	"	East River Head of Escambia Bay	145				tr

MON-MT-008759

TOWOLDMON0003936

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analyses supervise
by: Alfred J. Wilson, Jr.
BCF Biological Field Static
Gulf Breeze, Florida

ORATORY:

Fifth collection of samples
on Escambia River by BCF

Verified by: Alfred J. Wilson Jr.
Date: August 19, 1969

PARTS PER MILLION or ug.

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB #1254
			pH 6.6					
*	11-8-69	H_2O	Skimmer Sal. 0.1‰	201				274. ppb
	"	"	Sub surface at Skimmer	202				184. ppb
	"	"	Hwy. 90	203				0.36 ppb
	"	"	300 yds. upstream from Skimmer	204				22. ppb
	"	"	White River	205				1.4 ppb

* A sample of this water was given to representatives of Monsanto Chemical Corp. Also, the sample was filtered through AA Millipore Filters (0.8μ) -- results of filters water 9.7 ppb of #1254.

MON-MT-008760

TOWOLDMON0003937

Samples (water, sediment, plankton) taken August 1969 from Garcon point to ½ mile above Monsanto

Station No.	Temperature °C	Temperature °F	PH	Salinity ‰		Residue of Aroclor 1254 Water		Residue of Aroclor 1254 Sediment		
1 - Garcon point (50 yd. offshore)	27	80	7.8	12.8		ND		ND		
2 - mouth of Mulatto Bayou	28	82	8.0	11.6		ND		ND		
3 - mouth of Escambia River (Red Bay # 20)	29	84	7.2	3.8		.48 ppb		.14 PPM		
4 - Escambia River Hy. 90 Bridge	29	84	6.8	1.8		.42 ppb		1.4 PPM		
* Escambia River (mouth of White River)	water sample for residue only					.61 ppb		—		—
5 - Bulkhead ½ mile below Monsanto	37	99	6.8	0.2	TOP 1 ft	71. ppb 6.8 ppb		486. PPM		
6. Escambia River (mouth of Bonne Lake) ½ mile above Monsanto	27	80	6.5	0.0		ND		ND		

MON-MT-008761

TOWOLDMON0003938

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analyses supervised by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida 32561

HORY:

Seventh collection of samples at Escambia River by BCF

Verified by: Alfred J. Wilson Jr.

Date: Wednesday August 27, 1969

PARTS PER MILLION or µg/l

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB #1254
	25-8-69	H_2O	Skimmer pH 7.2 Sal. 0.2‰ Temp. 36°C	254				1.7 ppb
	"	Sediment	Skimmer	253				44.

MON-MT-008762

TOWOLDMON0003939

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analysis supervised by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida 32561

BY:

th collection of samples on Escambia River
BCF

Verified by: Alfred J. Wilson
Date: September 9, 1969

PARTS PER MILLION or µg/g

SAMPLE	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER
			At Skimmer					PCB #1254
	3-9-69	H_2O	Temp. 36.5°C pH 6.6 Salinity 0.6‰	295				3.5 ppb
	"	Sediment		296				90.

MON-MT-008763

TOWOLDMON0003940

BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida 32561

RY:

ch collection of samples on Escambia River
BCF

Verified by: Alfred J. Wilson II
Date: September 15, 1969

PARTS PER MILLION or µg/g

SAMPLE	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB
	9-10-69	H_2O	Temp. 36 Salinity 0.4‰, pH 6.6	320				1254 2.5 ppb
	"	Sediment		321				1254 348.

MON-MT-008764

TOWOLDMON0003941

BUREAU OF COMMERCIAL FISHERIES

by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida 32561

RE:

ter samples from Escambia River collected
University of West Florida.

Verified by: Alfred J. Wilson

Date: September 26, 1969

SAMPLE	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER PCB 1254
	28-8-69	Water	Escambia River	408				7.6 ppb
	12-9-69	"	" "	409				34.0 ppb
	17-9-69	"	" "	410				28.0 ppb
	24-9-69	"	" "	411				0.8 ppb

MON-MT-008765

TOWOLDMON0003942

BUREAU OF COMMERCIAL FISHERIES
PESTICIDE MONITORING PROGRAM

Chemical analysis supervised by: Alfred J. Wilson, Jr.
BCF Biological Field Station
Gulf Breeze, Florida 32561

ORY:

September Oyster Monitor Samples

Verified by: Alfred J. Wilson Jr.
Date: Sept. 9 1969

PARTS PER MILLION or µg/

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER
	3-9-69	Oyster	Trout Bayou	297				1254 1.1
	"	"	Escambia Bay	298				1254 1.0
	"	"	East Bay	299	.010	tr	.014	--

MON-MT-008766

TOWOLDMON0003943

PESTICIDE ANALYSIS REPORT
BUREAU OF COMMERCIAL FISHERIES
~~ENVIRONMENTAL CONTAMINANTS PROGRAM~~
GULF BREEZE, FLORIDA 32561

Chemical analysis supervis
by: Alfred J Wilson, Jr

TO:

October Oyster Monitor Samples

Verified: Alfred J. Wilson, Jr.
Date: October 15, 1969

PARTS PER MILLION or µg/

SAMPLE NUMBER	DATE COLLECTED d-m-y	DESCRIPTION	STATION LOCATION	LAB. NO.	DDE	DDD	DDT	OTHER
	30-y-69	Oyster	East Bay	16	tr	--	--	--
	"	"	Trout Bayou	17				1254 .44
		"	Escambia Bay	18				1254 .38

MON-MT-008767

TOWOLDMON0003944