

Assessment of potential for release of mercury from dredged bottom sediments at the Barataria Unit, Jean Lafitte National Historic Park and Preserve, Louisiana

By
Chris Swarzenski and Charles Demas
United States Geological Survey
Baton Rouge, Louisiana

Background

To restore the floating marshes of the Barataria Unit of Jean Lafitte National Park and Preserve to their natural condition, a pilot study backfilling canals and removing man-made spoil banks, by grading to marsh level, is proposed. In their place would be more emergent marsh. Spoil banks deposited when the canals were dug (for oil exploration) will be removed and placed into the adjacent canals. Bottom sediments from the edge of Lake Salvador will be pumped on top of the torn down spoil banks, to marsh elevation, to foster the return of the emergent vegetation. Two canals have been proposed. One canal will receive dredge material in addition to the spoil banks, the other canal will receive only spoil bank material.

Problem

It is unknown if dredging and backfilling of canals will release mercury into surface waters of the Barataria Unit.

Objective

This study will assess the potential for mercury release from the bottom sediments newly dredged to surface waters; and the potential for mercury release into surface waters while the dredging process is ongoing;

Scope of Work

Work elements

1. **Assessing the potential for mercury and other trace metals to move from the sedimentary phase into water as sediments are dredged from the lake bottom and moved into the canal. Bottom material samples will be evaluated for potential release of trace metals using standard elutriate procedures.**

USGS will collect five nine-foot deep cores along the lake front, from the same area that will be dredged for material to place in the canals that will be filled in. The core material

will be well mixed, and composite samples taken from each one for analysis of heavy metals, including mercury as well as methyl mercury (n=5 samples). One replicate sample will also be collected.

Subsamples of core material from all five cores will be mixed with 1 gallon of native water, and allowed to sit for one hour. The resulting elutriate will be analyzed for the same suite of parameters (n=5). All sampling will be done using the USGS parts per billion protocol developed by Horowitz, Demas and others (1994). Before collection of the samples, a water-quality profile of the overlying lake water will be made at each of the five core sites. Dissolved oxygen, redox, pH, salinity and conductance will be measured from the surface to just above the lake bottom.

2. **measuring the amounts of mercury and methylmercury in surface waters in areas where the dredging is occurring, and where dredge material is being deposited using the same parts per billion protocol.**

The surface waters adjacent to where the dredge is being operated will be sampled for mercury during normal operations (n=3), as well as waters where the dredge material is being deposited. At the latter sites samples will be taken 1) after the spoil banks have been removed, but before the material is being deposited (n=2), 2) while the material is being deposited (n=2), and 3) one week after all dredging has ceased (n=2). The canal which will experience only spoil-bank removal, but will not be back-filled, will be sampled in the same manner, but step 2 will be omitted. (only total mercury and methyl mercury). In addition, the slurry resulting from the spoil-bank infilling will also be sampled at this canal.

3. **assessing the potential for mercury methylation from organic marsh soils adjacent to the areas where the spoil banks are being torn down before and after the removal of spoil banks**

Marsh pore-waters and organic soils will be assayed for total mercury and methylmercury. Marsh sites adjacent to canals will be chosen. Soil cores will be sectioned into five centimeter increments to a depth of 50 cm. Sections at 2.5-7.5 cm, and again from 32.5-37.5 cm will be analyzed for the mercury compounds. Porewaters will be taken from the same depths. This will be done at each of the two canal sites. The unused soil sections will be frozen for future use. In addition, the sulfur species in the marsh soils will be analyzed for (including acid-volatile fraction, organic S, total S). This will be done in 5 cm increments for the top 55 cm of core, but only for two cores. Marsh sites will be sampled prior to the spoil banks coming down, and again several weeks later.



State of Louisiana

Department of Environmental Quality



M.J. "MIKE" FOSTER, JR.
GOVERNOR

March 20, 2001

DALE GIVENS
SECRETARY

Jean Lafitte National Historical Park and Preserve
365 Canal Street, Ste. 2400
New Orleans, LA 71030

Attention: Geraldine Smith

RE: Corps of Engineers Permit (EC-20-000-4600)
Water Quality Certification (WQC 000918-03/AI 84372)
Jefferson Parish

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Gentlemen:

The Department has received an application to dredge for fill material from Bayou Segnette waterway and Lake Salvador, degrade existing spoil banks, and backfill existing canals for marsh restoration near Crown Point, Louisiana.

The requirements for Water Quality Certification have been met in accordance with LAC 33:IX.1507.A-E. Based on the information provided in your application, we have determined that the placement of the fill material will not violate the water quality standards of Louisiana provided for under LAC 33:IX.Chapter 11. Therefore, the Department has no objection to this project.

Sincerely,

Bliss M. Higgins
Assistant Secretary

bmh/jgm/mvrb

c: Corps of Engineers, New Orleans
Coastal Management Division





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M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

December 1, 2000

Ms. Geraldine Smith, Superintendent
Jean Lafitte National Historic Park and Preserve
365 Canal St., Suite 2400
New Orleans, LA 70130-1142

RE: **C000501**, Coastal Zone Consistency
National Park Service
Direct Federal Action
Marsh restoration of two oil and gas canals
Jefferson Parish, Louisiana

JEAN LAFITTE NHP&P	
DEC 05 2000	
SUPT.	<i>R.S. 12/20</i>
A. SUPT.	
A.O.	
RES. MGT.	<i>W</i>
PROTECTION	
FAO. MGR.	
INTERP.	
ANALYST	

Dear Ms. Smith:

The above referenced project has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The project, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Jeff Harris of the Consistency Section at (225)342-7949.

Sincerely,

Terry W. Howey

Terry W. Howey,
Administrator

TWH/JDH/cws

cc: Fred Dunham, LDWF
Marnie Winter, Jefferson Parish
Frank Cole, CMD/FC

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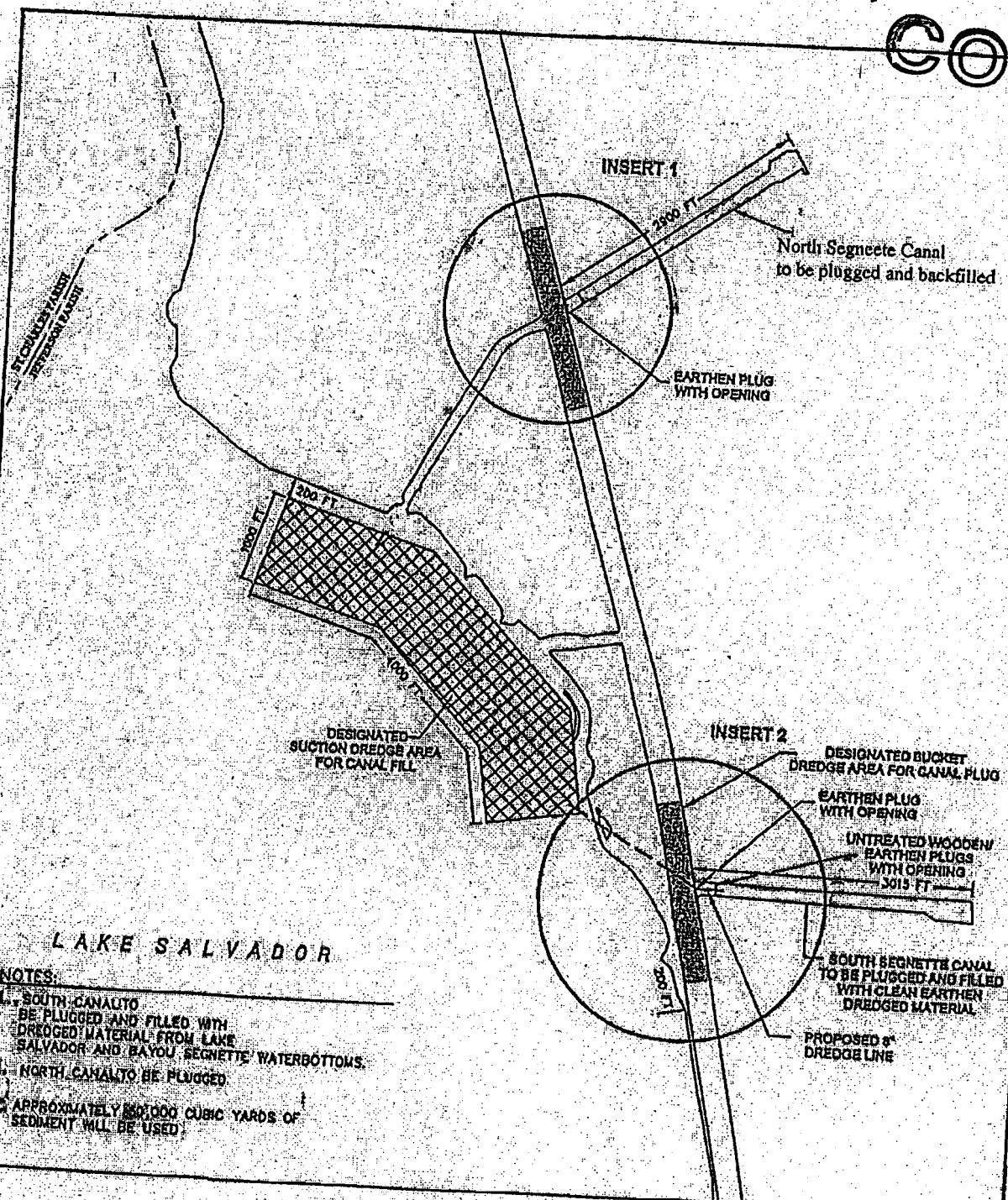
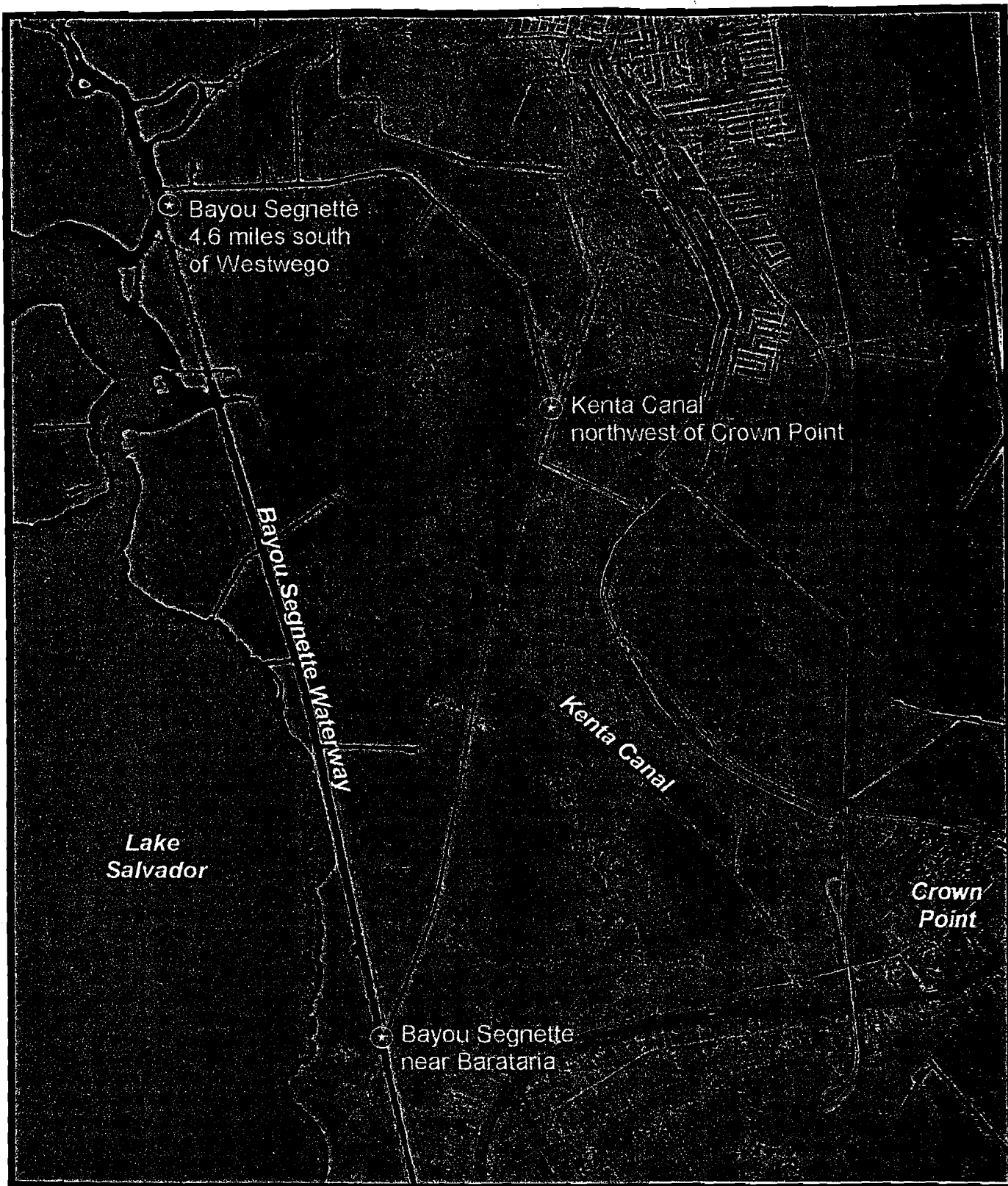


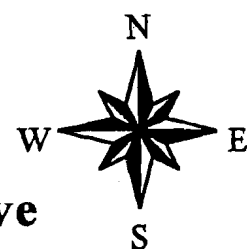
Figure 3
Plan View

Marsh Restoration Through Canal Backfilling
at the Barataria Preserve
Jean Lafitte National Historical Park and Preserve

1500 0 1500
SCALE: 1" = 1500'



1 0 1 2 Kilometers



**Sampling Sites Within the Barataria Preserve
Jean Lafitte National Historical Park and Preserve**

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PARAMETER	DATE	TIME	49273 WATER PRESENT TI (%)	PARAMETER	DATE	TIME	34830 CALCIUM BM<63 WS PERCENT	PARAMETER	DATE	TIME	00300 OXYGEN DISSOLVED (MG/L)
Tissue	6/17/98	1200	80	Bed Sediment	6/17/98	1200	0.82	Water	6/17/98	1200	5.8
6/17/98	1201	86	6	8/25/99	1130	0.91	0.91	8/25/99	1130	7.5	7.5
6/17/98	1202	73	<0			1.6	1.6	2/4/00	0930	7.6	7.6
			<2			0.64	0.64	5/31/00	1315	7.6	1080
			0.9			0.88	0.88			1080	1080
			<1			8500	8500			31.6	31.6
			<2			300	300			25	25
			0.5			9.5	9.5			22	22
			<2			1300	1300			50	50
			<5			0.14	0.14			3	3
			<2			0.9	0.9			3	3
			0.7			0.03	0.03			96	96
			310			110	110			<1.6	<1.6
			<2			8.11	8.11			<4.0	<4.0
			5.9			79	79			120	120
			0.3			6.3	6.3			<1.0	<1.0
			0.9			0.8	0.8			<1	<1
			<2			9	9			<1.0	<1.0
			3.5			9.5	9.5			<5.0	<5.0
			<2			760	760			<2.0	<2.0
			2.8			2	2			<4	<4
			0.2			<1	<1			<50	<50
			74			1	1			<50	<50
			18							180	180
										170	170
										110	110

<5.00	49353 ALDRIN BIOTA WH (UG/KG)	0.5	34825 CADMIUM BM<63 WS UG/G	<2.0	<1.0	01049 LEAD DISSOLVED (UG/L AS PB)
<5.0	49366 ALPHA-BHC WH ORG (UG/KG)	52	34835 CERIUM BM<63 WSF UG/G	<4	<1	01051 LEAD TOTAL (UG/L AS PB)
86	49261 ALPHA-BHC,D6 SUR (PERCENT)	16	01029 CHROMIUM TOTAL B (UG/G AS CR)	288	18	01056 MANGANESE DISSOL (UG/L AS MN)
<5.00	49387 HEXACHLOROBENZEN (UG/KG)	64	34840 CHROMIUM BM<63 W UG/G	410	27	01055 MANGANESE TOTAL (UG/L AS MN)
<5.00	49365 BETA-BHC WH ORG (UG/KG)	10	01038 COBALT BOT. MAT. (UG/G AS CO)	<2	<1	71890 MERCURY DISSOLVE UG/L AS HG
72	49264 BIPHENYL3,5-DICHL S (PERCENT)	10	34845 COBALT BM<63 WSF UG/G	<30	<2	71900 MERCURY, TOT.REC UG/L AS HG
<5.00	49380 C-CHLORDANE WH O (UG/KG)	24	01043 COPPER BOT. MAT. (UG/G AS CU)	<28	1.1	01065 NICKEL DISSOLVED (UG/L AS NI)
<5.00	49359 CIS-NONACHLOR WH (UG/KG)	25	34850 COPPER BM<63 WSF UG/G	7	<50	01067 NICKEL TOTAL (UG/L AS NI)
<5.0	49378 DCPA WH ORG (UG/KG)	1	34855 EUROPIUM BM<63 W UG/G	E1	<2	01145 SELENIUM DISSOLV (UG/L AS SE)
<5.0	49364 DELTA-BHC WH ORG (UG/KG)	14	34860 GALLIUM BM<63 WS UG/G	<4	<3	01147 SELENIUM TOTAL (UG/L AS SE)
<5.0	49371 DIELDRIN WH ORG (UG/KG)	<1	34870 GOLD BM<63 WSF UG/G	<4	<1	01077 SILVER TOTAL (UG/L AS AG)
<5.00	49370 ENDRIN WH ORG (UG/KG)	<1	34875 HOLMIUM BM<63 WS UG/G	<100	<20	01090 ZINC DISSOLVED (UG/L AS ZN)
<5.00	49368 HEPTACHLOREPOXID (UG/KG)	20000	01170 IRON BOTTOM MATE (UG/G AS FE)	<17	<40	01092 ZINC TOTAL (UG/L AS ZN)
<5.00	49369 HEPTACHLOR WH OR (UG/KG)	3	34880 IRON BM<63 WSF PERCENT	<0.36	<0.10	82183 2,4-DP TOTAL UG/L
<5.00	49363 LINDANE WH ORG (UG/KG)	30	34885 LANTHANUM BM<63 UG/G	<0.31	<0.10	39740 2,4,5-T TOTAL(WA UG/L
29	49289 LIPIDS WH ORG (PERCENT)	30	01052 LEAD TOTAL BOT. (UG/G AS PB)	<0.50	0.13	39730 2,4-D TOTAL (WA UG/L
<5.00	49382 OPMETHOXYCHLOR W (UG/KG)	34	34890 LEAD BM<63 WSF UG/G	61.9	70	90593 2,4DB SURROGAT S PERCENT
<5.00	49381 PPMETHOXYCHLOR W (UG/KG)	32	34895 LITHIUM BM<63 WS UG/G	<0.13	<0.13	39330 ALDRIN TOTAL (WA UG/L
<5.00	49360 MIREX WH ORG (UG/KG)	510	01053 MANGANESE BOT.MA (UG/G AS MN)	101	134	99776 ALPHA-HCH-D6 SUR PERCENT
<5.00	49374 O,P'-DDD WH ORG (UG/KG)	700	34905 MANGANESE BM<63 UG/G		83	00681 CARBON ORGANIC D (MG/L AS C)
<5.00	49373 O,P'-DDE WH ORG (UG/KG)	0.03	71921 MERCURY BTM UG/G AS HG	<100	<100	39350 CHLORDANE TOT(WA UG/L
<5.00	49377 O,P'-DDT WH ORG (UG/KG)	0.09	34910 MERCURY BM<63 WS UG/G	<0.14	<0.10	38932 CHLORPYRIFOS UG/L
<5.00	49357 OXYCHLORDANE WH (UG/KG)	1	34915 MOLYBDENUM BM<63 UG/G	<0.20	<0.10	39040 DEF,TOTAL UG/L
<5.00	49375 P,P'-DDD WH ORG (UG/KG)	25	34920 NEODYMIUM BM<63 UG/G	<0.20	<0.10	39570 DIAZINON TOT (WA UG/L
<5.00	49372 P,P'-DDE WH ORG (UG/KG)	30	01068 NICKEL BOT. MAT. (UG/G AS NI)	<0.09	<0.09	39380 DIELDRIN TOT (WA UG/L
<5.00	49376 P,P'-DDT WH ORG (UG/KG)	28	34925 NICKEL BM<63 WSF UG/G	<0.33	<0.10	39011 DISULFOTON UNFLT UG/L
<50.0	49354 PCB BIOTA WH ORG (UG/KG)	8	34930 NIOBIUM BM<63 WS UG/G	<0.15	<0.15	39388 ENDOSULFAN I TOT UG/L

<5.00	49356 PENTACHLORANISOL (UG/KG)	9	34945 SCANDIUM BM<63 W UG/G	<.014	<.014	39390 ENDRIN UNF REC (UG/L)
>200	49355 TOXAPHENE WH ORG (UG/KG)	1	34950 SELENIUM BM<63 W UG/G	<.014	<.010	39398 ETHION TOTAL (WA UG/L)
>5.00	49379 T-CHLORDANE WH O (UG/KG)	1.3	34955 SILVER BM<63 WSF UG/G	<.013	<.010	82614 FONOFOS (DYFONAT UG/L)
<5.00	49358 TRANS-NONACHLOR (UG/KG)	140	34965 STRONTIUM BM<63 UG/G	<.008	<.008	39420 HEPT EPOX TOT(WA UG/L)
<2	49257 URANIUM BIO TISS (UG/G)	1	34975 TANTALUM BM<63 W UG/G	<.011	<.011	39410 HEPTACHLOR T.(WA UG/L)
3001	50280 SITE VISIT PURPO CODE	<1.0	04064 THALLIUM BM DS < (UG/G)	68	68	90567 ISODRIN SURROG S PERCENT
3001	99852 SAMPLE WEIGHT S2 (G)	3	34985 TIN BM<63 WSF UG/G	63.2	65.7	90712 ISOENFOS SURR S PERCENT
10		0.349	49274 TITANIUM BM <63U (PERCENT)	<.012	<.012	39340 LINDANE TOTAL(WA UG/L)
		88	35005 VANADIUM BM<63 W UG/G	<.028	<.010	39530 MALATHION TOT(WA UG/L)
		2	35015 YTTERBIUM BM<63 UG/G	<.015	<.015	39480 METHOXYCHLOR T.(UG/L)
		16	35010 YTTRIUM BM<63 WS UG/G	<.015	<.010	39600 MET PARTH TOT(WA UG/L)
		10	01093 ZINC BOTTOM MATE (UG/G AS ZN)	<.010	<.010	39755 MIREX TOTAL UG/L
		130	35020 ZINC BM<63 WSF UG/G	112	88	99779 PCB 207 SUR 1324 PERCENT
		<100	49391 22BIQUINOLINE <2 (UG/KG)	<.014	<.014	39360 P,P'-DDD UNFLT R UG/L
		<100	39741 2,4,5-T BTM UG/KG	<.016	<.016	39365 P,P'-DDE, TOTAL UG/L
		<100	39731 2,4-D BTM UG/KG	<.017	<.017	39370 P,P'-DDT UNFILT UG/L
		23.1	90594 2,4DB SURROGAT S PERCENT	<.012	<.010	39540 PARATHION TOT(WA UG/L)
		<100	34809 DP, 2,4 IN BOT. (UG/KG)	<.100	<.100	39516 PCB TOTAL (WA UG/L)
		<100	49421 3,5-XYLENOL BM < (UG/KG)	<.100	<.100	39250 PCN TOTAL (WA UG/L)
		<100	49454 4BROMOPHNPHNLETH (UG/KG)	<.100	<.100	39034 PERTHANE TOTAL UG/L
		<100	49455 4CHLOROPHNPHNLET (UG/KG)	<.019	<.010	39023 PHORATE TOTAL UG/L
		E38	49411 4HCYPENPHENANTHR (UG/KG)	<.025	<.010	39760 SILVEX TOTAL (WA UG/L)
		<100	49437 8,10ANTHRAQUINON (UG/KG)	<.100	<.100	39400 TOXAPHENE TOT(WA UG/L)

DEF 17

4.0 MILES SOUTH OF PEEBLES

STATION ID - 29430100000000

	<100	49398 1METHYL9HFLUOREN (UG/KG)	<010	245	39786 TRITHION TOTAL UG/L
	E12	49399 9H-FLUORENE BM < (UG/KG)	<014	41	99870 IN-BOTTLE DIGEST DDD
	<100	49429 ACENAPHTHENE <2 (UG/KG)	159	820	99946 SAMP VOL S 1304 (ML)
	<100	49428 ACENAPHTHYLENE < (UG/KG)	902	877	99868 SAMP VOL SCHED 1 (ML)
	<100	49430 ACRIDINE BM <2MM (UG/KG)	909	862	99865 SAMP VOL SCHED 1 (ML)
	<200	39333 ALDRIN BTM U UG/KG	908	843	
	<200	49319 ALDRIN BM <2MM (UG/KG)		862	
	95	90504 A-HCH-D8, SUR132 PERCENT			
	73	49275 ALPHA-BHC SURRG T (PERCENT)			
	<200	49338 ALPHA-BHC BM <2M (UG/KG)			
	<100	49435 2METHYLANTHRACEN (UG/KG)			
	E40	49434 ANTHRACENE BM <2 (UG/KG)			
	<100	49443 AZOBENZENE BM <2 (UG/KG)			
	E34	49436 BENZ(A)ANTHRACEN (UG/KG)			
	<100	49438 BENZENE124TRICHL (UG/KG)			
	<200	49343 BENZENE HEXACHLO (UG/KG)			
	<100	49441 BENZENE MDICHLOR (UG/KG)			
	<100	49444 BENZENE NITRO <2 (UG/KG)			
	53.6	49280 BENZENE NITROD5 (PERCENT)			
	<100	49439 BENZENEDICHLORO (UG/KG)			
	620	49442 BENZENE PDICHLOR (UG/KG)			
	<100	49446 BENZENEPNTCHLRNT (UG/KG)			
	<100	49389 BENZO(A)PYRENE < (UG/KG)			
	E77	49458 BENZO(B)FLUORANTHE (UG/KG)			
	<100	49408 BENZO(GHI)PERYLE (UG/KG)			
	E53	49397 BENZO(K)FLUORANT (UG/KG)			

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			<100	49468 BENZOCINNOLINE B (UG/KG)					
			<2.00	49339 BETA-BHC BM <2MM (UG/KG)					
			47	49279 BIPHENL 2FLUORO (PERCENT)					
			80	49277 BIPHENL 35DICHR (PERCENT)					
			<100	49449 CARBAZOLE BM <2M (UG/KG)					
			110	49271 CARBON ORG BM <2 (G/KG)					
			8.08	49268 CARBON ORG BM,< (PERCENT)					
			E2.50	39351 CHLORDANE BTM U UG/KG					
			<10.0	49322 CHLORONEB BM <2M (UG/KG)					
			E38	49450 CHRYSENE BM <2MM (UG/KG)					
			<2.00	49320 CIS-CHLORDANE BM (UG/KG)					
			<2.00	49316 CIS-NONACHLOR BM (UG/KG)					
			<10.0	49349 CIS-PERMETHRIN < (UG/KG)					
			<10.0	49324 DCPA BM <2MM (UG/KG)					
			<400	39571 DIAZINON BTM U UG/KG					
			<100	49481 DBENZ(AH)ANTHRAC (UG/KG)					
			<200	39383 DIELDRIN BTM UG/KG					
			<2.00	49331 DIELDRIN BM <2MM (UG/KG)					
			<100	49433 NNITRSDIPHNYLAMN (UG/KG)					
			<100	49431 NNITROSODPRPYLAM (UG/KG)					
			<2.00	49332 ENDOSULFAN I BM (UG/KG)					
			<200	39389 ENDOSULFANE BTM UG/KG					
			<200	39393 ENDRIN BTM UG/KG					
			<4.00	49335 ENDRIN BM <2MM (UG/KG)					

DATA

	< 400	39399 ETHION BTM UG/KG			
	150	49466 FLUORANTHENE BM (UG/KG)			
	< 200	39423 HEPT EPOX BTM U UG/KG			
	< 2.00	49342 HEPTACHLOR EPOXI (UG/KG)			
	< 200	39413 HEPTACHLOR BTM U UG/KG			
	< 2.00	49341 HEPTA-CHLOR BM < (UG/KG)			
	< 100	49390 1MINDENO123CDPYR (UG/KG)			
	< 2.00	49344 ISODRIN BM <2MM (UG/KG)			
	42	90568 ISODRIN SURROG S PERCENT			
	89.7	90710 ISOFENFOS SURR 1 PERCENT			
	< 100	49400 ISOPHORONE BM <2 (UG/KG)			
	< 100	49394 ISOQUINOLINE BM (UG/KG)			
	< 200	39343 LINDANE BTM U UG/KG			
	< 2.00	49345 LINDANE BM <2MM (UG/KG)			
	< 400	39531 MALATHION BTM U UG/KG			
	< 100	49422 4-CHLORO M-CRESO (UG/KG)			
	< 100	49401 METHANE2CHLRETHO (UG/KG)			
	< 2.50	39481 MTHXYCLR BTM UG/ UG/KG			
	< 10.0	49347 METHOXYCHLOR O,P (UG/KG)			
	< 10.0	49346 METHOXYCHLOR P,P (UG/KG)			
	< 400	39801 MET PARTH BTM U UG/KG			
	< 2.00	49348 MIREX BM <2MM (UG/KG)			
	< 200	39758 MIREX BTM UG/KG			
	< 100	49403 12DIMETHLNAPHTHA (UG/KG)			

<100	49422 4-CHLORO M-CRESO (UG/KG)
<100	49401 METHANE2CHLRETHO (UG/KG)
<2.50	39481 MTHXYCLR BTM UG/ UG/KG
<10.0	49347 METHOXYCHLOR O,P (UG/KG)
<10.0	49348 METHOXYCHLOR P,P (UG/KG)
<400	39601 MET PARTH BTM U UG/KG
<2.00	49348 MIREX BM <2MM (UG/KG)
<200	39758 MIREX BTM UG/KG
<100	49403 12DIMETHLNAPHTHA (UG/KG)
<100	49404 16DIMETHLNAPHTHA (UG/KG)
<100	49405 238TRIMTHNAPHTHA (UG/KG)
120	49406 28DIMETHLNAPHTHA (UG/KG)
<100	49407 2-CHLORONAPHTHAL (UG/KG)
<100	49948 NAPHTH, 2ETHYL B UG/KG
<100	49402 NAPHTHALENE BM < (UG/KG)
27	90575 NONACHLOROBIPHEN PERCENT
<2.00	49325 O,P'-DDD BM <2MM (UG/KG)
<2.00	49327 O,P'-DDE BM <2MM (UG/KG)
<4.00	49329 O,P'-DDT BM <2MM (UG/KG)
86	49276 OCTCHLR BIPHENL (PERCENT)
<2.00	49318 OXYCHLORDANE BM (UG/KG)
<2.00	49326 P,P'-DDD BM <2MM (UG/KG)
<500	39363 P,P'-DDD BEDMAT UG/KG
0.92	39368 P,P'-DDE BED MAT UG/KG

DATE

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4.0 MILLIS COUMI UI RECHWGU

<100	49422 4-CHLORO M-CRESO (UG/KG)
<100	49401 METHANE2CHLRETHO (UG/KG)
<2.50	39481 MTHXYCLR BTM UG/ UG/KG
<10.0	49347 METHOXYCHLOR O,P (UG/KG)
<10.0	49346 METHOXYCHLOR P,P (UG/KG)
<400	39601 MET PARTH BTM U UG/KG
<2.00	49348 MIREX BM <2MM (UG/KG)
<200	39758 MIREX BTM UG/KG
<100	49403 12DIMETHLNAPHTHA (UG/KG)
<100	49404 16DIMETHLNAPHTHA (UG/KG)
<100	49405 236TRIMTHNAPHTHA (UG/KG)
120	49406 26DIMETHLNAPHTHA (UG/KG)
<100	49407 2-CHLORONAPHTHAL (UG/KG)
<100	49948 NAPHTH, 2ETHYL B UG/KG
<100	49402 NAPHTHALENE BM < (UG/KG)
27	90575 NONACHLOROBIPHEN PERCENT
<2.00	49325 O,P'-DDD BM <2MM (UG/KG)
<2.00	49327 O,P'-DDE BM <2MM (UG/KG)
<4.00	49329 O,P'-DDT BM <2MM (UG/KG)
66	49276 OCTCHLR BIPHENL (PERCENT)
<2.00	49318 OXYCHLORDANE BM (UG/KG)
<2.00	49326 P,P'-DDD BM <2MM (UG/KG)
<500	39363 P,P'-DDD BEDMAT UG/KG
0.92	39368 P,P'-DDE BED MAT UG/KG

DIPAL

DEPT

<100 49422 4-CHLORO M-CRESO (UG/KG)

<100 49401 METHANE2CHLRETHO (UG/KG)

<250 39481 MTHXYCLR BTM UG/ UG/KG

PARAMETER	DATE	TIME		PARAMETER	DATE	TIME	
Bottom Material	8/25/99	1345	2100	Water	8/25/99	1345	7.6
00626 NITROGEN AMMONIA (MG/KG AS				00403 PH, WH, LABORATO (STANDARD UNIT			
00668 PHOSPHORUS BOT. (MG/KG AS P)			650	90095 SPECIFIC CONDUCT MICROSIEMENS/C			1600
00495 MOISTURE CONTENT (PERCENT)			80	01000 ARSENIC DISSOLVE (UG/L AS AS)			3
01003 ARSENIC BOT. MAT (UG/G AS AS)			7	01002 ARSENIC TOTAL (UG/L AS AS)			3
01028 CADMIUM BOT. MAT (UG/G AS CD)			1	01007 BARIUM TOTAL (UG/L AS BA)			100
01029 CHROMIUM TOTAL B (UG/G AS CR)			21	01010 BERYLLIUM DISSOL (UG/L AS BE)			<1.6
01038 COBALT BOT. MAT. (UG/G AS CO)			10	01012 BERYLLIUM TOTAL (UG/L AS BE)			<4.0
01043 COPPER BOT. MAT. (UG/G AS CU)			26	01022 BORON TOTAL (UG/L AS B)			140
01170 IRON BOTTOM MATE (UG/G AS FE)			20000	01025 CADMIUM DISSOLVE (UG/L AS CD)			<1.0
01052 LEAD TOTAL BOT. (UG/G AS PB)			30	01027 CADMIUM TOTAL (UG/L AS CD)			<1.0
01053 MANGANESE BOT.MA (UG/G AS M			510	01030 CHROMIUM DISSOLV (UG/L AS CR)			<1.0
71921 MERCURY BTM UG/G AS HG			0.03	01034 CHROMIUM TOTAL (UG/L AS CR)			<1.0
01068 NICKEL BOT. MAT. (UG/G AS NI)			30	01040 COPPER DISSOLVED (UG/L AS CU)			<2.0
01093 ZINC BOTTOM MATE (UG/G AS ZN)			100	01042 COPPER TOTAL (UG/L AS CU)			<12
39741 2,4,5-T BTM UG/KG			<100	01046 IRON DISSOLVED (UG/L AS FE)			<40
39731 2,4-D BTM UG/KG			<100	01045 IRON TOTAL (UG/L AS FE)			180
90594 2,4DB SURROGAT S PERCENT			20	01049 LEAD DISSOLVED (UG/L AS PB)			<2.0
34609 DP, 2,4 IN BOT. (UG/KG)			<100	01051 LEAD TOTAL (UG/L AS PB)			<1
39333 ALDRIN BTM U UG/KG			<400	01056 MANGANESE DISSOL (UG/L AS MN)			58
90504 A-HCH-D6, SUR132 PERCENT			96	01055 MANGANESE TOTAL (UG/L AS MN)			35

<6.00	39351 CHLORDANE BTM U UG/KG	<2	<1	71890 MERCURY DISSOLVE UG/L AS HG
<400	39571 DIAZINON BTM U UG/KG	<30	<2	71900 MERCURY, TOT.REC UG/L AS HG
<400	39383 DIELDRIN BTM UG/KG	<2.0	1.1	01065 NICKEL DISSOLVED (UG/L AS NI)
<400	39389 ENDOSULFANE BTM UG/KG	8	<2	01067 NICKEL TOTAL (UG/L AS NI)
<400	39393 ENDRIN BTM UG/KG	<2	<1	01145 SELENIUM DISSOLV (UG/L AS SE)
<400	39399 ETHION BTM UG/KG	<4	<1	01147 SELENIUM TOTAL (UG/L AS SE)
<400	39423 HEPT EPOX BTM U UG/KG	<4	<1	01077 SILVER TOTAL (UG/L AS AG)
<400	39413 HEPTACHLOR BTM U UG/KG	<200	E12	01090 ZINC DISSOLVED (UG/L AS ZN)
51	90568 ISODRIN SURROG S PERCENT	17	E19	01092 ZINC TOTAL (UG/L AS ZN)
95.6	90710 ISOEFENFOS SURR 1 PERCENT	<.036	<.010	82183 2,4-DP TOTAL UG/L
<400	39343 LINDANE BTM U UG/KG	<.031	<.010	39740 2,4,5-T TOTAL(WA UG/L
<400	39531 MALATHION BTM U UG/KG	<.050	0.12	39730 2,4-D TOTAL (WA UG/L
<5.00	39481 MTHXYCLR BTM UG/ UG/KG	82.8	80	90593 2,4DB SURROGAT S PERCENT
<400	39601 MET PARTH BTM U UG/KG	<.013	<.013	39330 ALDRIN TOTAL (WA UG/L
<400	39758 MIREX BTM UG/KG	92	133	99776 ALPHA-HCH-D6 SUR PERCENT
39	90575 NONACHLOROBIPHEN PERCENT	<.100	<.100	39350 CHLORDANE TOT(WA UG/L
<1.00	39363 P,P'-DDD BEDMAT UG/KG	<.014	<.010	38932 CHLORPYRIFOS UG/L
<400	39368 P,P'-DDE BED MAT UG/KG	<.020	<.010	39040 DEF,TOTAL UG/L
<1.00	39373 P,P'-DDT BTM UG/KG	<.020	<.010	39570 DIAZINON TOT (WA UG/L
<400	39541 PARATHION BTM UG UG/KG	<.009	<.009	39380 DIELDRIN TOT (WA UG/L
15	39519 PCB BTM UG/KG	<.033	<.010	39011 DISULFOTON UNFLT UG/L
<100	39761 SILVEX BTM UG/KG	<.015	<.015	39388 ENDOSULFAN I TOT UG/L

DRAFT

Bayou Segnette Near Barataria

Station ID = 294539090084500

<100	39403 TOXAPHENE BTM UG/KG	<.014	39390 ENDRIN UNF REC (UG/L)	<.014
<400	39787 ETH TRITH BTM U UG/KG	<.010	39398 ETHION TOTAL (WA UG/L)	<.013
70.7	99951 SAMP WT S 1305 (GRAMS)	<.010	82614 FONOFOS (DYFONAT UG/L)	<.013
9.2	99953 SAMP WT S 1320 (GRAMS)	<.009	39420 HEPT EPOX TOT(WA UG/L)	<.009
9.2	99955 SAMP WT S 1325 (GRAMS)	<.011	39410 HEPTACHLOR T.(WA UG/L)	<.011
		68	90567 ISODRIN SURROG S PERCENT	76
		66.4	90712 ISOFEFOS SURR S PERCENT	70
		<.012	39340 LINDANE TOTAL(WA UG/L)	<.012
		<.010	39530 MALATHION TOT(WA UG/L)	<.029
		<.015	39480 METHOXYCHLOR T.(UG/L)	<.015
		<.010	39600 MET PARTH TOT(WA UG/L)	<.015
		<.010	39755 MIREX TOTAL UG/L	<.010
		88	99779 PCB 207 SUR 1324 PERCENT	106
		<.014	39360 P,P'-DDD UNFLT R UG/L	<.014
		<.016	39365 P,P'-DDE, TOTAL UG/L	<.016
		<.017	39370 P,P'-DDT UNFLT UG/L	<.017
		<.010	39540 PARATHION TOT(WA UG/L)	<.012
		<.100	39516 PCB TOTAL (WA UG/L)	<.100
		<.100	39250 PCN TOTAL (WA UG/L)	<.100
		<.100	39034 PERTHANE TOTAL UG/L	<.100
		<.019	39023 PHORATE TOTAL UG/L	<.019
		<.010	39760 SILVEX TOTAL (WA UG/L)	<.025

Station ID = 294539090084500

Page 4 of 4

PARAMETER	DATE	TIME	PARAMETER	DATE	TIME	PARAMETER	DATE	TIME
Tissue	7/28/99	1200	Bed Sediment	2/4/00	1130	Water	2/4/00	1130
7/28/99	1201	82	2/4/00	1130	1215	5/31/00	1215	1215
49273 WATER PRESENT TI (PERCENT)	80	49237 ALUMINUM BIO TI (UG/G)	560	00668 PHOSPHORUS BOT. (MG/KG AS P)	6.7	00403 PH, WH, LABORATO (STANDARD UNIT)	7.1	90095 SPECIFIC CONDUCT MICROSIEMENS/C
<1.0	<1.0	4	4	01003 ARSENIC BOT. MAT (UG/G AS AS)	6370	00668 PHOSPHORUS BOT. (MG/KG AS P)	2350	01000 ARSENIC DISSOLVE (UG/L AS AS)
<3	<2	M	M	01028 CADMIUM BOT. MAT (UG/G AS CD)	560	01002 ARSENIC TOTAL (UG/L AS AS)	560	01007 BARIUM TOTAL (UG/L AS BA)
<3	0.6	12	12	01029 CHROMIUM TOTAL B (UG/G AS CR)	E2	01010 BERYLLIUM DISSOL (UG/L AS BE)	2	01012 BERYLLIUM TOTAL (UG/L AS BE)
0.8	<1	10	10	01038 COBALT BOT. MAT. (UG/G AS CO)	3	01022 BORON TOTAL (UG/L AS B)	3	01025 CADMIUM DISSOLVE (UG/L AS CD)
<3	<2	21	21	01043 COPPER BOT. MAT. (UG/G AS CU)	250	01027 CADMIUM TOTAL (UG/L AS CD)	140	01030 CHROMIUM DISSOLV (UG/L AS CR)
0.9	0.9	18000	18000	01170 IRON BOTTOM MATE (UG/G AS FE)	4.8	01034 CHROMIUM TOTAL (UG/L AS CR)	4.8	01040 COPPER DISSOLVED (UG/L AS CU)
<3	<2	20	20	01052 LEAD TOTAL BOT. (UG/G AS PB)	3.0	01042 COPPER TOTAL (UG/L AS CU)	3.0	01046 IRON DISSOLVED (UG/L AS FE)
<5	<5	380	380	01053 MANGANESE BOT.MA (UG/G AS MN)	310	01045 IRON TOTAL (UG/L AS FE)	140	01049 LEAD DISSOLVED (UG/L AS PB)
<3	<2	0.01	0.01	71921 MERCURY BTM UG/G AS HG	<14	01051 LEAD TOTAL (UG/L AS PB)	<14	01056 MANGANESE DISSOL (UG/L AS MN)
0.9	0.8	20	20	01068 NICKEL BOT. MAT. (UG/G AS NI)	3	01055 MANGANESE TOTAL (UG/L AS MN)	3	
5.3	7.1	80	80	01093 ZINC BOTTOM MATE (UG/G AS ZN)	<80		171	
<3	<2	<100	<100	39741 2,4,5-T BTM UG/KG	1		571	
2.4	0.5	<100	<100	39731 2,4-D BTM UG/KG	<1.3		590	
0.2	0.4	10.8	10.8	90594 2,4DB SURROGAT S PERCENT	E1			
<3	<2	<100	<100	34609 DP, 2,4 IN BOT. (UG/KG)	64			
<3	<2	<1.00	<1.00	39333 ALDRIN BTM U UG/KG	140			
3.8	1.9	<15.0	<15.0	39351 CHLORDANE BTM U UG/KG	<1.0			
<3	<2	<1.00	<1.00	39571 DIAZINON BTM U UG/KG	3			
6.9	1	<1.00	<1.00	39383 DIELDRIN BTM UG/KG	171			
<3	<2	<1.00	<1.00	39389 ENDOSULFANE BTM UG/KG	210			
					590			

49245 ZINC BIO TISS (UG/G)	<1.00	39393 ENDRIN BTM UG/KG	<2	71890 MERCURY DISSOLVE UG/L AS HG
49353 ALDRIN BIOTA WH (UG/KG)	<1.00	39399 ETHION BTM UG/KG	<30	71900 MERCURY, TOT.REC UG/L AS HG
49366 ALPHA-BHC WH ORG (UG/KG)	<1.00	39423 HEPT EPOX BTM U UG/KG	<1.4	01065 NICKEL DISSOLVED (UG/L AS NI)
49261 ALPHA-BHC,D6 SUR (PERCENT)	<1.00	39413 HEPTACHLOR BTM U UG/KG	5	01067 NICKEL TOTAL (UG/L AS NI)
49367 HEXACHLOROBENZEN (UG/K)	73	90568 ISODRIN SURROG S PERCENT	E2	01145 SELENIUM DISSOLV (UG/L AS SE)
49365 BETA-BHC WH ORG (UG/KG)	92.2	90710 ISOFENFOS SURR 1 PERCENT	3	01147 SELENIUM TOTAL (UG/L AS SE)
49380 C-CHLORDANE WH O (UG/KG)	<1.00	39343 LINDANE BTM U UG/KG	3	01077 SILVER TOTAL (UG/L AS AG)
49359 CIS-NONACHLOR WH (UG/KG)	<1.00	39531 MALATHION BTM U UG/KG	20	01090 ZINC DISSOLVED (UG/L AS ZN)
49378 DCPA WH ORG (UG/KG)	<12.0	39481 MTHXYCLR BTM UG/ UG/KG	E21	01092 ZINC TOTAL (UG/L AS ZN)
49364 DELTA-BHC WH ORG (UG/KG)	<1.00	39601 MET PARTH BTM U UG/KG	<.036	82183 2,4-DP TOTAL UG/L
49371 DIELDRIN WH ORG (UG/KG)	<1.00	39758 MIREX BTM UG/KG	<.031	39740 2,4,5-T TOTAL(WA UG/L
49370 ENDRIN WH ORG (UG/KG)	<2.50	39363 P,P'-DDD BEDMAT UG/KG	<.050	39730 2,4-D TOTAL (WA UG/L
49368 HEPTACHLOREPOXID (UG/KG)	<1.00	39368 P,P'-DDE BED MAT UG/KG	95	90593 2,4DB SURROGAT S PERCENT
49369 HEPTACHLOR WH OR (UG/KG)	<2.50	39373 P,P'-DDT BTM UG/KG	<.013	39330 ALDRIN TOTAL (WA UG/L
49363 LINDANE WH ORG (UG/KG)	<1.00	39541 PARATHION BTM UG UG/KG	90	99776 ALPHA-HCH-D6 SUR PERCENT
49289 LIPIDS WH ORG (PERCENT)	<5.0	39519 PCB BTM UG/KG	<.100	39350 CHLORDANE TOT(WA UG/L
49362 OPMETHOXYCHLOR W (UG/K	<1.00	39250 PCN TOTAL (WA UG/L	<.014	38932 CHLORPYRIFOS UG/L
49361 PPMETHOXYCHLOR W (UG/K	<1.00	39034 PERTHANE TOTAL UG/L	<.020	39040 DEF,TOTAL UG/L
49360 MIREX WH ORG (UG/KG)	<1.00	39761 SILVEX BTM UG/KG	<.020	39570 DIAZINON TOT (WA UG/L
49374 O,P'-DDD WH ORG (UG/KG)	<2.50	39403 TOXAPHENE BTM UG/KG	<.009	39380 DIELDRIN TOT (WA UG/L
49373 O,P'-DDE WH ORG (UG/KG)	20.6	99951 SAMP WT S 1305 (GRAMS)	<.033	39011 DISULFOTON UNFLT UG/L
49377 O,P'-DDT WH ORG (UG/KG)	5.4	99953 SAMP WT S 1320 (GRAMS)	<.015	39388 ENDOSULFAN I TOT UG/L

DRAFT

<5.00	49357 OXYCHLORDANE WH (UG/KG)	5.4	99955 SAMP WT S 1325 (GRAMS)	<.014	39390 ENDRIN UNF REC (UG/L)
<5.00	49375 P,P'-DDD WH ORG (UG/KG)			<.013	39398 ETHION TOTAL (WA UG/L
<5.00	49372 P,P'-DDE WH ORG (UG/KG)			<.013	82614 FONOFOS (DYFONAT UG/L
<5.00	49376 P,P'-DDT WH ORG (UG/KG)			<.009	39420 HEPT EPOX TOT(WA UG/L
<50.0	49354 PCB BIOTA WH ORG (UG/KG)			<.011	39410 HEPTACHLOR T.(WA UG/L
<5.00	49356 PENTCHLORANISOL (UG/KG)			56	90567 ISODRIN SURROG S PERCENT
<200	49355 TOXAPHENE WH ORG (UG/KG)			88.3	90712 ISOFENFOS SURR S PERCENT
<5.00	49379 T-CHLORDANE WH O (UG/KG)			<.012	39340 LINDANE TOTAL(WA UG/L
<5.00	49358 TRANS-NONACHLOR (UG/KG)			<.029	39530 MALATHION TOT(WA UG/L
<.3	49257 URANIUM BIO TISS (UG/G)			<.015	39480 METHOXYCHLOR T.(UG/L
10	99852 SAMPLE WEIGHT S2 (G)			<.015	39600 MET PARTH TOT(WA UG/L
124.04	99822 SET NO SCHED 210 (NUMBER)			<.010	39755 MIREX TOTAL UG/L
				87	99779 PCB 207 SUR 1324 PERCENT
				<.014	39360 P,P'-DDD UNFLT R UG/L
				<.016	39365 P,P'-DDE, TOTAL UG/L
				<.017	39370 P,P'-DDT UNFILT UG/L
				<.012	39540 PARATHION TOT(WA UG/L
				<.100	39516 PCB TOTAL (WA UG/L
				<.019	39023 PHORATE TOTAL UG/L
				<.025	39760 SILVEX TOTAL (WA UG/L
				<1.00	39400 TOXAPHENE TOT(WA UG/L
				<.014	39786 TRITHION TOTAL UG/L
				41	99870 IN-BOTTLE DIGEST DDD

DRAFT

					835	99946 SAMP VOL S 1304 (ML)
					884	
					855	99868 SAMP VOL SCHED 1 (ML)
					935	
					858	99865 SAMP VOL SCHED 1 (ML)

Linda,

Per your request: the following attachments are the most recent data for water, bottom material, and fish tissue from the Lake Salvador/Jean Lafitte area. You will note that all concentrations in bottom material and water are quite low. One fish sample had a value of 0.6mg/kg but the rest of the fish analyzed from this same area were all below the 0.5 level. Further, as I have told everyone that is interested in mercury, USGS water data collected prior to 1994 is suspect because of sample or lab contamination because HgCl was used as a preservative for nutrient samples and may have gotten in the labs air conditioning system and we were not using a part per billion sampling protocol.

I contacted LADEQ about additional samples in Salvador. One set was collected in 1998 and all values were below the 0.5 mg/kg level. I asked why no advisory was issued based on the 1997 East Salvador sample and Will Tucker said it was felt that the sample may have had some contamination problems based on the results for the rest of the lake, historical data (1996 data) and the 1998 results.

The attachments each contain a separate folder for water, beds, and tissue. Click on the appropriate folder for the desired information.

If you have any questions, feel free to contact me at 225 389 0281 ex 3117.

Have a good Holiday,

Charlie

(See attached file: b segnette.xls) (See attached file: kenta canal.xls) (See attached file: westwego.xls)
Received: from gscodenh01.cr.usgs.gov ([136.177.16.207]) by ccmail.itd.nps.gov with SMTP

(IMA Internet Exchange 3.13) id 007772D1; Fri, 22 Dec 2000 14:15:50 -0500

Subject: Mercury data for Lake Salvador/Jean Lafitte

To: Linda.g.mathies@mvn02.usace.army.mil

Cc: crdemas@usgs.gov,
cswarzen@usgs.gov,
david_muth@nps.gov

Bcc:

X-Mailer: Lotus Notes Release 5.0.1b September 30, 1999

Message-ID: <OF9C1D17A9.D6A60FEF-ON862569BD.0067F91D@cr.usgs.gov>

From: crdemas@usgs.gov

Date: Fri, 22 Dec 2000 13:18:46 -0600

X-MIMETrack: Serialize by Router on gscodenh01/SERVER/USGS/DOI (Release 5.0.3
| March 21, 2000) at

12/22/2000 12:18:12 PM

MIME-Version: 1.0

Content-type: multipart/mixed;

Content-Disposition: inline



kenta canal.xls



b segnette.xls



westwego.xls