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ECOLOGY AND ENVIRONMENT INC.,

REGION VI

MEMORANDUM

TO: Keith Bradley, Region VI RPO

FROM: David Anderson, FIT Chemist

THRU: K.H. Malone Jr., FIT RPM KHM

DATE: June 5, 1986

SUBJ: Sampling Inspection at Sun Refining and Marketing Co., Tulsa, OK. (OK1911)
TDD# R06-8506-23

A six member FIT (Team Leader D. Anderson and Team Members G. McAnarney, J. Trusley, M. Pike, B. Barham and D. Tanksley) conducted a sampling inspection at the Sun Refining and Marketing Co., facility in Tulsa, OK on December 17 - 20, 1986. The purpose of the investigation was to determine if there was movement of waste material from the landfills on the facility toward the Arkansas River. The investigation centered on four inactive landfills located along the northern property line. All four landfills are located north of the Army Corp of Engineers flood control levee for the Arkansas River (see Figure 1). All four landfills are inactive. Sun representatives indicated that the contents of Landfill 3 had been removed and used in paving roads within the plant.

Twenty soil and three water samples were collected from twenty one locations during the investigation. The sample locations are shown on Figure 1 and are described in Table 1. Panoramic photos were also taken of each landfill and of the areas between Landfills 2 and 3 and the river (photos 25-30). Temperature and pH measurements were taken at each of the monitor wells sampled, both when the wells were bailed and when sampling the wells. These measurements are shown on Table 2. Table 3 contains measured data on monitor well depths and static water levels. Ground water flow is northward, toward the river.

The previous site inspection report indicated erosion problems in the area north of Landfill 3. Sun Refining has placed bales of hay in these paths (see photo 29) that appear to be effectively controlling the erosion. The inspectors noted a tar mat covering large portions of the surface of this area (photos 23 and 29), and also encountered a subsurface tar layer at several locations when digging the holes for sampling. A seepage of oily material from the base of Landfill 4 was also noted by the inspectors (photo 24). The surface of each landfill was in good condition, with Landfill 4 lacking cover vegetation. Other than the seepage noted above, the north

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faces of each landfill were in good condition.

Samples from the three monitor wells were collected using a stainless steel bailer. Both the river water and sediment samples were collected using a stainless steel beaker attached to an extension pole. Subsurface soil samples were obtained by using a post hole digger to reach the desired sample depth and then using a bucket auger to collect the sample. Splits of all subsurface soil samples were requested by Sun Refinery and provided by the FIT.

The overall quality of the analytical data is good. Field replicate samples, Stations 10, 11, 19 and 20, show good agreement. Complete sample results are presented on the attached data summary sheets. Quality assurance review comments are also attached.

All of the soil samples except the two background samples (FB797, FB798) and the three monitor well samples contained a broad unresolved peak in the ABN chromatogram that is characteristic of oily material often found in refinery wastes. Station 12 is the only sample in which substantial quantities of HSL organics were detected, with 5 PNA's being detected at concentrations of 4.5 to 12 ppm. Other HSL compounds may be present in the samples, however due to the oily matrix and associated interferences, they may not have been detected. Monitor well #2, (Station 02) contained the highest levels of organic contamination. This was expected since the well is located within the landfill. The lead concentration in Station 03 appears to be slightly elevated in comparison with Station 01. Station 01 is upgradient of landfill 1 while Station 03 is downgradient of this landfill.

The metals concentrations in both the upstream and downstream river sediments were similar, thus metals from the site have no apparent impact on the river. Concentrations of nine metals appear to be elevated in one or more soil samples in comparison to the background samples, Stations 06 and 07. The elevated metals are barium (Stations 09 and 12), calcium (Stations 08, 09, 12, 13 and 18), copper (Station 12), iron (Station 11), lead (Stations 08, 09, 10, 11, 12, 13, 21 and 23), magnesium (Station 8), mercury (Stations 12 and 23), tin (Station 12) and zinc (Station 12). Lead is the most significant metal detected. Station 12 is the most heavily contaminated with metals.

Summary

Measures taken by Sun Refinery to control erosion below Landfill 3 appear to be effective. Wastes at the site appear to be typical refinery wastes (i.e. oily materials and lead). The wastes appear to be entering the shallow ground water, however the portion that can be attributed to prior waste disposal cannot be determined. The plant itself probably contributes to the ground water contamination. Also, the area along the Arkansas River is heavily industrialized. Thus an assessment of the impact of this site on the river is virtually impossible. The presence of the seepage below Landfill 4 indicates some problem with the waste management at the facility, and possibly some construction deficiencies at this landfill. No further sampling activities are recommended at the facility, however periodic monitoring of the facility is recommended to assure that erosion and seepage problems are controlled.

Table 1

Sample Locations

Station #	Location	Depth (soil only)	Photo #	Comments
01	Monitor Well at SE corner, LF #1	na	1	
02	Monitor well, 600' W of gate 6, 95' N of fence, LF #1	na	2	
03	Monitor Well, 75' WSW of Station 12, N of LF #1	na	3	
04	Downstream, Arkansas River, at NE corner of site	na	4	
05	Upstream, Arkansas River, at NW corner of site	na	5,6	
06	Background, S of plant, 164' S of north fence, 80' E of W fence	3-3.5'	7	
07	Background, S of plant, 180' S of north fence, 80' W of E fence	3-3.5'	8	
08	LF #1, 480' W of Gate L6, 30' N of fence	3-3.5'	9	water at 2'
09	LF #1, 330' W of Gate L6, 220' N of fence	3-3.5'	10	
10	LF #1, 530' W of Gate L6, 300' N of fence	3-3.5'	11	
11	Field Replicate of Station 10	3-3.5'	11	
12	LF #1, 860' W of Gate L6, 320' N of fence	3-3.5	12	
13	LF #2, 300' W of fence end near Gate L4, 10' N of Levee Road	3-3.5'	13	
14	LF #2, 250' W of fence corner near Gate L 4, 80' N of fence	1.5-2'	14	
15	LF #2, 470' W of fence corner near Gate L 4, 80' N of fence	1.5-2'	15	water at 2'
16	LF #2, 840' W of fence corner near Gate L 4, 100' N of fence	3-3.5'	16	water at 3'
17	LF #3, N of tank 874, 20' S of Levee Raod	3-3.5'	17	

18	LF #3, 410' W of fence corner Gate L 2, 280' N of fence	3-3.5'	18
19	LF #3, 680' W of fence corner Gate L 2, 265' N of fence	2-3'	19
20	Field Replicate of Station 19	2-3'	19
21	LF #4, NW of tank 401, 90' S of Levee Road	3-3.5'	20
22	LF #4, 210' W of Gate L 1, 150' N of fence	3-3.5'	21
23	LF #4, 460' W of Gate L 1, 140' N of fence	2-2.5'	22

*In locating sample stations, N indicates perpendicular to the fence from which measurements were made. W indicates a westward measurement along the fence. For landfills 1 and 4, the fence is south of the actual landfill and marks it's south border. For landfills 2 and 3, the fence is north of the landfill, marking the north limits of the landfill.

Table 2

Water Physical Measurements

Station	AT BAILING Temperature	AT BAILING pH	AT SAMPLING Temperature	AT SAMPLING pH
01	61°F	6-7*	8°C	7.4
02	68°F	6-7*	10°C	7.1
03	9°C	7.4	9°C	7.4

*pH paper used due to malfunctioning pH meter.

Table 3

Monitor Well Data

Station	Well Depth	STATIC WATER LEVEL Before Bailing	STATIC WATER LEVEL At Sampling	Number of Bails
01	29' TOC	22.5' TOC	22.5' TOC	26
02	28.3' TOC	16.3' TOC	12.9' TOC	50
03	21' TOC	12.2' TOC	20.0' TOC	45

*Monitor well #3 was sampled immediately after bailing. Monitor wells 2 and 3 were allowed to recharge overnight.

TOC - Top of Casing.

Data QA/QC

Metals:

Manganese, vanadium and zinc were all detected in both water preparation blanks at low levels. Concentrations of these metals in MFB 636, MFB 637 and MFB 638 are probably due to lab contamination (flagged with B). Manganese and vanadium were each detected in one of the soil preparation blank at low levels , however the soil data does not appear to be affected. Selenium results in the water samples are unusable to low matrix spike recovery (flagged with X). Thallium results in water samples are estimates, biased low, due to low matrix spike recovery (flagged with J). Matrix spike recoveries for aluminum and iron are below QC limits, however the data is usable since the sample concentration is greater than four times the spiking level.

Data for antimony in the soil samples is unusable due to zero percent matrix spike recovery (flagged with X). Tin results are considered as estimates, biased low (flagged with J) due to low matrix spike recovery. Positive results for lead and mercury in the soil samples are considered as estimates, biased high, due to high matrix spike recoveries. Soil samples in which lead and mercury were not detected are acceptable. Aluminum results in the soil samples are considered as estimates due to a high duplicate %D. Lead concentration in MFB 616 is considered as estimated due to a standard addition correlation coefficient below QC limits.

Organics

The laboratory narrative indicates that the ABN fraction of FB 795 would be reanalyzed due to a baseline shift, however this data has not been received. The VOA fraction of FC 403 was analyzed at a time greater than 12 hours after instrument tuning. Lab narrative indicates that sample is to be reanalyzed, however 1/17/86 telephone log indicates that the sample had still not been reanalyzed. The holding times for this sample has expired and any reanalysis results are invalid. Surrogate recovery (d8-toluene) in the VOA fraction of FC 406 was above QA limits. The sample was reanalyzed, however the reanalysis was conducted well outside holding times and these results are invalid. The original results indicated a high recovery of the surrogate, and the original sample results are not significantly impacted. The ABN fraction surrogates were diluted out in six of the samples. Twelve ABN and five VOA samples required dilution. The method blank for the VOA fraction of sample FB 795, FB 796, FB 798, FB 800, FC 401 and FC 402, analyzed on 12-23 and 24, is not appropriate. The six samples are all soil samples while the listed method blank (MB 2) was a water blank. The impact on data quality is minimal. Minor deficiencies in the instrument calibration were noted, however the effect on the data is minimal. Four samples (FB 795, FB 798, FB 799 and FC 403) appeared to contain a hydrocarbon matrix in the VOA fraction. All of the samples except FC 414, FC 415, FC 416 (Rinsate blanks) FB 797 and FB 798 contained a broad unresolved peak characteristic of oily material in the ABN fraction. The presence of this oily material complicates the identification of the matrix spike compounds, accounting for some of the recovery problems.

INORGANIC SOIL ANALYSIS SUMMARY

CASE NUMBER: 5314
SITE NAME/CODE: Sun Refining OK 1911

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers											AMBIENT BACKGROUND 1.	
	MFB 616	MFB 617	MFB 618	MFB 619	MFB 620	MFB 621	MFB 622	MFB 623	MFB 624	MFB 625	MFB 626	Western U.S. 2.	Eastern U.S. 2.
Matrix type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	Soil	Soil
Aluminum	3550J	6400J	8420J	3890J	9680J	32,300J	1680J	2640J	5290J	8150J	3450J	58,000	33,000
Antimony	RX	RX	RX	RX	RX	RX	RX	RX	RX	RX	RX	.47	.52
Arsenic									9.3			5.5	4.8
Barium	52.4	66.5	74.3	36.7	204	388	27.2	41.8	490	79.8	56.5	580	290
Beryllium			1.77		2.39	2.5			1.81	3.54		0.68	0.55
Cadmium		4.7		5.92	5.59	10		3.8	22.3	6.2		1	1
Calcium	5030	4260	1990	539	26,700	16,200	2150	2620	23,300	10,800	828	18,000	3,200
Chromium	16.8	15.4	16.5	8.29		36.3			28.9	38.1	10.8	41	33
Cobalt												7.1	5.9
Copper					22.3	14.4			871	28.4		21	13
Iron	6680	7720	11,000	6300	5020	33,900	3370	4420	127,000	7510	7760	21,000	14,000
Lead	10.3RJ	3.1RJ	1.89RJ	R	24RJ	28RJ	16.4RJ	20.7RJ	764RJ	52.3RJ	5.4RJ	17	14
Magnesium	1910	4000	4200	2360	19,500	1210	1260	1460	2570	1570	1920	7,800	2,300
Manganese	165	164	199	116	61.5	537	55.4	39.1	468	112	84.5	380	260
Mercury	0.14RJ	R	R	R	R	R	R	R	25.8RJ	0.91RJ	0.06RJ	0.046	0.081
Nickel						29.4			77.7			15	11
Potassium	706	1260	1650	918	998	6430	397	592	1070	1120	691		
Selenium												.23	.30
Silver												-	-
Sodium												10,000	2,600
Thallium												9.1	7.7
Tin	RJ	RJ	RJ	RJ	RJ	RJ	RJ	RJ	82.6RJ	RJ	RJ	.90	.96
Vanadium	16.1	18.8	23	14.8	16	55.7	13		54.2	17.7	17.7	70	43
Zinc	43.4	36.9	28.3	19.5	29.5	81.4	15.7	13.6	546	54.9	20	55	40
Cyanide													
Station No.	04	05	06	07	08	09	10	11	12	13	14		
Sample Station Location	RIVER SEDIMENT AT N.E. CORNER OF SITE (DOWN-STREAM)	RIVER SEDIMENT AT N.W. CORNER OF PROPERTY	FIELD S. OF TANK 406. 164' S. OF N. FENCE. 80' E. OF W. FENCE, 3-3.5' DEPTH	FIELD S. OF TANK 406. 180' S. OF N. FENCE. 80' W. OF E. FENCE, 3-3.5' DEPTH	480' W. OF GATE 6, 30' N. OF FENCE	230' W. OF GATE 6 POST. 220' N. OF FENCE	530' W. OF GATE 6 POST. 300' N. OF FENCE	530' W. OF GATE 6 POST. 300' N. OF FENCE	860' W. OF GATE 6 POST. 320' N. OF FENCE.	300' FROM FENCE. 10' FROM RD. LF2	250' W. & 80' N. OF FENCE		

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not within control limits.
*-duplicate analysis is not within control limits.
J-VALUE OR DETECTION LIMIT IS AN ESTIMATE
X-DATA IS INVALID

1. Values obtained from "Element Concentrations Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270.
2. Reference for East/West Division is the 96W longitudinal line which bisects Region VI.

10/31/85

INORGANIC SOIL ANALYSIS SUMMARY

CASE NUMBER: 5314
SITE NAME/CODE: Sun Refining OK1911

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers											AMBIENT BACKGROUND 1.	
	MFB 627	MFB 628	MFB629	MFB630	MFB631	MFB632	MFB633	MFB634	MFB635			Western U.S. 2.	Eastern U.S. 2.
Matrix type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			oil	Soil
Aluminum	16,000J	444J	6100J	7780J	3790J	3040J	1530J	5880J	5900J			58,000	33,000
Antimony	RX	RX	RX	RX	RX	RX	RX	RX	RX			.47	.52
Arsenic												5.5	4.8
Barium	204		30.9	126	43	39.6	11.9	59.4	81.3			580	290
Beryllium	2.79											0.68	0.55
Cadmium												1	1
Calcium	8270		941	13200	4630	3520		2650	6020			18,000	3,200
Chromium	25.8		9.87	11.8	9.26	6.95		15	11.1			41	33
Cobalt												7.1	5.9
Copper	18.8								16.4			21	13
Iron	19,400	1920	9070	10,800	5720	5120	3740	7520	9050			21,000	14,000
Lead	8.3RJ	R	R	4.34RJ	R	R	10.3RJ	R	38.4RJ			17	14
Magnesium	5360		3150	4780	1640	1500	622	2770	3450			7,800	2,300
Manganese	256	14.1	151	209	73.5	70.6	45.4	134	174			380	260
Mercury	0.1RJ	R	R	R	R	R	R	R	1.07RJ			0.046	0.081
Nickel								75.1				15	11
Potassium	2740		1340	1530	861	615	449	1210	1150				
Selenium												.23	.30
Silver												-	-
Sodium												10,000	2,600
Thallium												9.1	7.7
Tin	RJ	RJ	RJ	RJ	RJ	RJ	RJ	RJ	RJ			.90	.96
Vanadium	35.6	11.8	18.6	26.2	15.2	15	10.3	17.5	21.6			70	43
Zinc	64.9	17.5	24.4	30.5	18	17.1	9.74	47.6	36.3			55	40
Cyanide													
Station No.	15	16	17	18	19	20	21	22	23				
Sample Station Location	470' W. of 145' N. of fence BB.	840' W. of 100' N. of fence.	N. of tank 074. 20' S. of levee road.	410' W. of fence corner gate L2. 280' N. of fence.	680' W. of gate L2. N. of fence 265'	680' W. of gate L2. N. of fence 265'	N.W. of tank 401. 90' S. of levee road.	210' W. of gate L1. 150' N. of fence.	460' W. of gate L1. 140' N. of fence.				

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not within control limits.
*-duplicate analysis is not within control limits.

1. Values obtained from "Element Concentrations Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270.
2. Reference for East/West Division is the 96W longitudinal line which bisects Region VI.

10/31/85

INORGANIC WATER ANALYSIS SUMMARY

CASE NUMBER: 5314
SITE NAME/CODE: Sun Refining OK1911

CONCENTRATIONS (ppb)

PARAMETER	EPA Sample Numbers										Drinking Water Criteria	
	MFB 613	MFB 614	MFB 615	MFB 636	MFB 637	MFB 638					Primary	Secondary
Matrix type	WATER	WATER	WATER	WATER	WATER	WATER						
Aluminum	33,000	17,200	13,700									
Antimony												
Arsenic	14.9	10.2	8.15								50	
Barium	1050	520	429								1000	
Beryllium												
Cadmium	9	7	7								10	
Calcium	227,000	194,000	151,000									
Chromium	42	24	25								50	
Cobalt												
Copper		216	64									1000
Iron	57,600	39,600	31,900	49								300
Lead	16.4	26.1	135								50	
Magnesium	41,400	188,000	33,000									
Manganese	1010	1140	1160	6B	6B							50
Mercury			1.16								2	
Nickel	23		25									
Potassium	12,200	21,400	9450									
Selenium	RX	RX	RX	RX	RX	RX					10	
Silver											50	
Sodium	20,300	482,000	70,800									
Thallium	RJ	RJ	RJ	RJ	RJ	RJ						
Tin												
Vanadium	85	40	38	11B	11B							
Zinc	278	149	199	51B	18B	26B						5000
Cyanide												
Station No.	01	02	03									
Sample Station Location	Monitor Well #1.	600' W. of gate 6. 95' N. of fence.	75' w/SW of site 12.	Rinsate Blank 1 12/17/85	Rinsate Blank 2 12/18/85	Rinsate Blank 3 12/19/85						

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not within control limits.
*-duplicate analysis is not within control limits.
B-BLANK CONTAMINANT

ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 1 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

			FB 795	FB 796	FB 797	FB 798	FB 799	FB 800	FC 400	FC 401	FC 402	FC 403	FC 404	FC 405
			04 RIVER SED IMENT AT NE CORNER OF PROPERTY DOWNSTREAM	05 RIVER SED IMENT AT NW CORNER OF PROPERTY UPSTREAM	06 FIELD S OF TANK 406 164'S OF N FENCE, 80'E OF W FENCE	07 FIELD S OF TANK 406 180'S OF N FENCE, 80' W OF E FENCE	08 480'W OF GATE 6, 30'N OF FENCE	09 330'W OF GATE 6, 220' N OF FENCE	10 530'W OF GATE 6, 300' N OF FENCE	11 530'W OF GATE 6, 300' N OF FENCE DUPLICATE OF STA. 10	12 860'W OF GATE 6, 320' N OF FENCE	13 300'W OF FENCE END NEAR GATE L4 10'N OF LEVEE ROAD	14 250'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE	15 470'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE
		MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
COMPOUND	CASN/SCAN	CLASS												
BENZENE	71-43-2	VOA/1					680J							
CHLOROBENZENE	108-90-7	VOA/1	13			1.40J								
1,1,1-TRICHLOROETHANE	71-55-6	VOA/1												
TRANS-1,2-DICHLOROETHENE	156-60-5	VOA/1												
ETHYLBENZENE	100-41-4	VOA/1	18				2100							
METHYLENE CHLORIDE	75-09-2	VOA/1	68B	17B	15B	49B	2600B	19B	9.50B	17B	23B	2400B	1400B	8B
BROMOMETHANE	74-83-9	VOA/1												
TETRACHLOROETHENE	127-18-4	VOA/1							4.40J					
TOLUENE	108-88-3	VOA/1	5.10JB	2.10JB	2JB	2.60JB		2.80JB	2.90JB	2JB			300JB	2.30JB
TRICHLOROETHENE	79-01-6	VOA/1									17			
ACETONE	67-64-1	VOA/2			350	110J					78			
2-BUTANONE	78-93-3	VOA/2									28			
2-HEXANONE	319-78-6	VOA/2	28J											
VINYL ACETATE	108-05-4	VOA/2	10J											
TOTAL XYLENES	1330-20-7	VOA/2	16				41000					31000		
BIS(2-CHLOROETHYL)ETHER	111-44-4	ABN/1												
N-NITROSODIPHENYLAMINE	86-30-6	ABN/1	690J	350J								14000J		
BIS(2-ETHYLHEXYL)PHTHALAT	117-81-7	ABN/1			306J	520					4900J			
BENZYL BUTYL PHTHALATE	85-68-7	ABN/1									7100J			
BENZO(A)ANTHRACENE	56-55-3	ABN/1									5100J			
BENZO(B)FLUORANTHENE	205-99-2	ABN/1									12000J			
CHRYSENE	218-01-9	ABN/1									5700J			
BEZO(GHI)PERYLENE	191-24-2	ABN/1									12000J			
PHENANTHRENE	85-01-8	ABN/1	340J									6200J		
PYRENE	129-00-0	ABN/1									4500J			
2-METHYLNAPHTHALENE	91-57-6	ABN/2										13000J		
UNKNOWN	36	VOA/3			39JB	29JB		31JB	30JB		43JB			29JB
UNKNOWN	44	VOA/3											13000J	
UNKNOWN	44	VOA/3												
UNKNOWN	48	VOA/3											15000J	
UNKNOWN	60	VOA/3											4200J	
UNKNOWN	91	VOA/3												
UNKNOWN	96	VOA/3			49JB				56JB					50JB
UNKNOWN	98	VOA/3											1400J	
UNKNOWN	98	VOA/3												
ALKANE	225	VOA/3											2100J	
CYCLOHEXANE	266	VOA/3										40000J		
ALKANE	324	VOA/3											1100J	
ALKANE	331	VOA/3											1600J	

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
ABN - ACID/BASE/NEUTRAL
PES - PESTICIDE

B - THE ANALYTE IS FOUND IN THE LAB BLANK
J - INDICATES AN ESTIMATED VALUE FOR TENTATIVELY IDENTIFIED COMPOUNDS OR COMPOUNDS FOUND BELOW CONTRACT DETECTION LIMIT
P - PRESENT IN SAMPLE, BUT NOT REPORTED BY LAB

C - CONFIRMED BY MASS SPECTRAL DATA

ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 2 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FB 795	FB 796	FB 797	FB 798	FB 799	FB 800	FC 400	FC 401	FC 402	FC 403	FC 404	FC 405
		04 RIVER SED IMENT AT NE CORNER OF PROPERTY DOWNSTREAM	05 RIVER SED IMENT AT NW CORNER OF PROPERTY UPSTREAM	06 FIELD S OF TANK 406 164'S OF N FENCE, 80'E OF W FENCE	07 FIELD S OF TANK 406 180'S OF N FENCE, 80' W OF E FENCE	08 480'W OF GATE 6, 30'N OF FENCE	09 330'W OF GATE 6, 220' N OF FENCE	10 530'W OF GATE 6, 300' N OF FENCE	11 530'W OF GATE 6, 300' N OF FENCE DUPLICATE OF STA. 10	12 860'W OF GATE 6, 320' N OF FENCE	13 300'W OF FENCE END NEAR GATE L4 10'N OF LEVEE ROAD	14 250'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE	15 470'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE
	MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
COMPOUND	CASN/SCAN CLASS												
SUBSTITUTED CYCLOHEXANE	379 VOA/3					260000J					22000J		
SUBSTITUTED CYCLOPENTANE	391 VOA/3					66000J							
SUBSTITUTED CYCLOPENTANE	420 VOA/3	22J				99000J							
ALKANE	422 VOA/3											800J	
TETRAMETHYLTETRAHYDROFURA	433 VOA/3												
UNKNOWN	456 VOA/3										18000J		
UNKNOWN	465 VOA/3	10J									8100J		
ALCOHOL	466 VOA/3					56000J							
DIMETHYLCYCLOHEXANE ISOME	475 VOA/3										20000J		
DIMETHYLCYCLOHEXANE ISOME	487 VOA/3	11J				130000J					13000J		
UNKNOWN	503 VOA/3												
SUBSTITUTED CYCLOHEXANE	505 VOA/3					160000J					12000J		
UNKNOWN	507 VOA/3	260J											
ALKANE	514 VOA/3					130000J							
ALCOHOL	523 VOA/3					110000J							
UNKNOWN	525 VOA/3	24J											
ALKANE	528 VOA/3										12000J		
ALKANE	547 VOA/3										27000J		
ALKANE	571 VOA/3	95J											
UNKNOWN	571 VOA/3					150000J							
UNKNOWN	579 VOA/3						25J						
UNKNOWN	587 VOA/3						21J						
SUBSTITUTED CYCLOHEXANE	592 VOA/3	20J				140000J					11000J		
UNKNOWN	595 VOA/3												
KETONE	253 ABN/3												
UNKNOWN	263 ABN/3	2000JB	4600JB	1300JB	2000JB		1900JB	2200JB	1700JB				
TRIMETHYLCYCLOHEXANE ISOM	270 ABN/3												
UNKNOWN	276 ABN/3					120000J					290000J		
UNKNOWN	301 ABN/3	59000JB	200000JB	30000JB	43000JB		42000JB	78000JB	67000JB				180000J
METHYL HEXANONE ISOMER	314 ABN/3												
UNKNOWN	328 ABN/3												
UNKNOWN	334 ABN/3					64000J					P		
ALKANE	341 ABN/3	1800JB				100000J	550JB	2400JB	2000JB		250000J		
METHYLHEXANONE ISOMER	347 ABN/3												
METHYL HEXANONE ISOMER	354 ABN/3			950JB	1700JB								
ALKANE	360 ABN/3		1400JB	1100JB	1900JB		840JB	2400JB	2000JB				
1,4-DITHIANE	361 ABN/3												
CYCLIC HC	367 ABN/3					96000J					230000J		
ALKANE	370 ABN/3		1700JB	1200JB	1900JB		950JB		1900JB				

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
ABN - ACID/BASE/NEUTRAL
PES - PESTICIDE

B - THE ANALYTE IS FOUND IN THE LAB BLANK
J - INDICATES AN ESTIMATED VALUE FOR TENTATIVELY IDENTIFIED COMPOUNDS OR COMPOUNDS FOUND BELOW CONTRACT DETECTION LIMIT
P - PRESENT IN SAMPLE, BUT NOT REPORTED BY LAB

C - CONFIRMED BY MASS SPECTRAL DATA

ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 3 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

			FB 795	FB 796	FB 797	FB 798	FB 799	FB 800	FC 400	FC 401	FC 402	FC 403	FC 404	FC 405
			04 RIVER SED IMENT AT NE CORNER OF PROPERTY DOWNSTREAM	05 RIVER SED IMENT AT NW CORNER OF PROPERTY UPSTREAM	06 FIELD S OF TANK 406 164'S OF N FENCE, 80'E OF W FENCE	07 FIELD S OF TANK 406 180'S OF N FENCE, 80' W OF E FENCE	08 480'W OF GATE 6, 30'N OF FENCE	09 330'W OF GATE 6, 220' N OF FENCE	10 530'W OF GATE 6, 300' N OF FENCE	11 530'W OF GATE 6, 300' N OF FENCE DUPLICATE OF STA. 10	12 860'W OF GATE 6, 320' N OF FENCE	13 300'W OF FENCE END NEAR GATE L4 10'N OF LEVEE ROAD	14 250'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE	15 470'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE
		MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
COMPOUND	CAS#/SCAN	CLASS												
METHYLCYCLOPENTANOL ISOME	391	ABN/3												
ALKANE	392	ABN/3					120000J					230000J		
ALKANE	396	ABN/3										560000J		
CYCLIC HC	435	ABN/3					71000J					160000J		
UNKNOWN	442	ABN/3			350JB	460JB								
ALKANE	445	ABN/3					P					220000J		
ALKANE	450	ABN/3					83000J					320000J		
KETONE	465	ABN/3						550J	770J	630J				
ALCOHOL	476	ABN/3					P					170000J		
UNKNOWN	520	ABN/3					120000J					P	45000J	
UNKNOWN	520	ABN/3												
UNKNOWN	522	ABN/3			660JB	850JB		850JB	1500JB	1200JB				
ALKANE	542	ABN/3					71000J					520000J		
ALCOHOL OR ALKENE	572	ABN/3												
ALKANE	574	ABN/3					P					210000J		
UNKNOWN	667	ABN/3	P				P					240000J		
ALKANE	783	ABN/3	2200J				P					140000J		
UNKNOWN	870	ABN/3												
ALKANE	885	ABN/3	3800J				P					130000J		
ALKANE	959	ABN/3	1700J				P							
UNKNOWN	964	ABN/3												
ALKANE	980	ABN/3	4400J											
DIMETHYL NAPHTHALENE ISOM	989	ABN/3					P					P		
DIMETHYLNAPHTHALENE ISOME	1006	ABN/3												
ALCOHOL	1025	ABN/3	1800J				P					P		
ALKANE	1037	ABN/3	3100J				P							
ALKANE	1069	ABN/3	4600J				99000J					P		
TRIMETHYLNAPHTHALENE +ALK	1078	ABN/3												
TRIMETHYLNAPHTHALENE + UN	1115	ABN/3	2100J				P							
ALKANE	1153	ABN/3	2900J				P					P		
ALKANE	1193	ABN/3					P		750J	1300J				
UNKNOWN	1199	ABN/3												
ALKANE	1232	ABN/3	5400J				P				P			
ALKANE	1237	ABN/3	4200J				P					P		
SULFUR	1488	ABN/3	3200J				P						P	
SULFUR	1495	ABN/3												
UNKNOWN	1498	ABN/3												
AMIDE	1567	ABN/3			220J			P						
ALKANE	1577	ABN/3											P	P

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
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J - INDICATES AN ESTIMATED VALUE FOR TENTATIVELY IDENTIFIED COMPOUNDS OR COMPOUNDS FOUND BELOW CONTRACT DETECTION LIMIT
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ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING CO 1911
CASE NUMBER 5314 PAGE 4 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FB 795	FB 796	FB 797	FB 798	FB 799	FB 800	FC 400	FC 401	FC 402	FC 403	FC 404	FC 405
		04 RIVER SED IMENT AT NE CORNER OF PROPERTY DOWNSTREAM	05 RIVER SED IMENT AT NW CORNER OF PROPERTY UPSTREAM	06 FIELD S OF TANK 406 164'S OF N FENCE, 80'E OF W FENCE	07 FIELD S OF TANK 406 180'S OF N FENCE, 80' W OF E FENCE	08 480'W OF GATE 6, 30'N OF FENCE	09 330'W OF GATE 6, 220' N OF FENCE	10 530'W OF GATE 6, 300' N OF FENCE	11 530'W OF GATE 6, 300' N OF FENCE DUPLICATE OF STA. 10	12 860'W OF GATE 6, 320' N OF FENCE	13 300'W OF FENCE END NEAR GATE L4 10'N OF LEVEE ROAD	14 250'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE	15 470'W OF FENCE CORNER NEAR GATE L4 80'N OF FENCE
	MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
COMPOUND	CASN/SCAN CLASS												
AMIDE	1677 ABN/3			540J			770J		P	P			
ALKANE	1699 ABN/3												
ALCOHOL	1700 ABN/3	8400J	P					P	P	P	P		
ALKANE	1751 ABN/3	2700J				P			P		P		
UNKNOWN	1796 ABN/3			250J			P						
ALKANE	1809 ABN/3							P	P	P	P		
ALKANE	1823 ABN/3					190000J							
ALKANE	1862 ABN/3							P	P	P	P		
UNKNOWN	1903 ABN/3												
UNKNOWN	1914 ABN/3								P	P	P		
ALKANE	1916 ABN/3												
ALKANE	1924 ABN/3	P				140000J					P		
ALKANE	1956 ABN/3	3000J	P				P	P	P	P	P		
ALKANE	2008 ABN/3	1500J	P				P	P	P		P		
ALKANE	2017 ABN/3									20000J			
UNKNOWN	2040 ABN/3		P										
UNKNOWN	2059 ABN/3												
UNKNOWN	2068 ABN/3	P	P	P			P				P		
UNKNOWN	2075 ABN/3		P					P	P				
ALKANE	2076 ABN/3									23000J			
UNKNOWN +PNA	2137 ABN/3	P									P		
ALKANE	2145 ABN/3									22000J			
UNKNOWN	2197 ABN/3			690J	P		840J						

1. PRIORITY POLLUTANT
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ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 5 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

			FC 406	FC 407	FC 408	FC 409	FC 410	FC 411	FC 412	FC 413	FB 747	FB 793	FB 794	FC 414
			16 840'W OF FENCE CORNER NEAR GATE L4 100'N OF FENCE	17 N OF TANK 874, 20'S OF LEVEE ROAD	18 410'W OF FENCE CORNER GATE L2 280' N OF FENCE	19 680'W OF FENCE CORNER GATE L2 265' N OF FENCE	20 680'W OF FENCE CORNER GATE L2 265' N OF FENCE DUP. STA. 19	21 NW OF TANK 401 90' S OF LEVEE ROAD	22 210'W OF GATE L1 150' N OF FENCE	23 460'W OF GATE L1 140' N OF FENCE	01 MONITOR WELL AT SE CORNER OF LANDFILL #1	02 MONITOR WELL 600'W OF GATE 6 95'N OF FENCE	03 MONITOR WELL 75'WSW OF STA. 12	RINSATE BLANK 12/17/85
		MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER	WATER
COMPOUND	CASN/SCAN	CLASS												
BENZENE	71-43-2	VOA/1												
CHLOROBENZENE	108-90-7	VOA/1												
1,1,1-TRICHLOROETHANE	71-55-6	VOA/1												2.20J
TRANS-1,2-DICHLOROETHENE	156-60-5	VOA/1									3.30J			
ETHYLBENZENE	100-41-4	VOA/1												
METHYLENE CHLORIDE	75-09-2	VOA/1	16B	12B	17B	1400B	1200B	12B	16B	16B	4.60JB	3.50JB	4.30JB	5.40B
BROMOMETHANE	74-83-9	VOA/1				160J								
TETRACHLOROETHENE	127-18-4	VOA/1												
TOLUENE	108-88-3	VOA/1				310JB	290JB	2JB	3.10JB	3JB	2JB	2JB	2.10JB	4.80JB
TRICHLOROETHENE	79-01-6	VOA/1												
ACETONE	67-64-1	VOA/2			96J			180		190				
2-BUTANONE	78-93-3	VOA/2					730J							
2-HEXANONE	319-78-6	VOA/2												
VINYL ACETATE	108-05-4	VOA/2												
TOTAL XYLENES	1330-20-7	VOA/2												2.60J
BIS(2-CHLOROETHYL)ETHER	111-44-4	ABN/1											15	
N-NITROSODIPHENYLAMINE	86-30-6	ABN/1						108				37		
BIS(2-ETHYLHEXYL)PHTHALAT	117-81-7	ABN/1							88JB					7.70J
BENZYL BUTYL PHTHALATE	85-68-7	ABN/1												
BENZO(A)ANTHRACENE	56-55-3	ABN/1												
BENZO(B)FLUORANTHENE	205-99-2	ABN/1												
CHRYSENE	218-01-9	ABN/1												
BEZO(GHI)PERYLENE	191-24-2	ABN/1												
PHENANTHRENE	85-01-8	ABN/1										26		
PYRENE	129-00-0	ABN/1										30		
2-METHYLNAPHTHALENE	91-57-6	ABN/2										11J		
UNKNOWN	36	VOA/3	37JB					31JB	42JB	50JB				
UNKNOWN	44	VOA/3												
UNKNOWN	44	VOA/3				13000J								
UNKNOWN	48	VOA/3												
UNKNOWN	60	VOA/3												
UNKNOWN	91	VOA/3										7J		
UNKNOWN	96	VOA/3	55JB	58JB	60JB	1600J		43JB	59JB	61JB	8JB	11JB	9JB	8JB
UNKNOWN	98	VOA/3												
UNKNOWN	98	VOA/3					1900J							
ALKANE	225	VOA/3												
CYCLOHEXANE	266	VOA/3												
ALKANE	324	VOA/3												
ALKANE	331	VOA/3												

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
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ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 6 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FC 406	FC 407	FC 408	FC 409	FC 410	FC 411	FC 412	FC 413	FB 747	FB 793	FB 794	FC 414
		16 840'W OF FENCE CORNER NEAR GATE L4 100'N OF FENCE	17 N OF TANK 874, 20'S OF LEVEE ROAD	18 410'W OF FENCE CORNER GATE L2 280' IN OF FENCE	19 680'W OF FENCE CORNER GATE L2 265' IN OF FENCE	20 680'W OF FENCE CORNER GATE L2 265' IN OF FENCE DUP. STA. 19	21 NW OF TANK 401 90' S OF LEVEE ROAD	22 210'W OF GATE L1 150' IN OF FENCE	23 460'W OF GATE L1 140' IN OF FENCE	01 MONITOR WELL AT SE CORNER OF LANDFILL #1	02 MONITOR WELL 600'W OF GATE 6 95'N OF FENCE	03 MONITOR WELL 75'NSW OF STA. 12	RINSATE BLANK 12/17/85
	MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER	WATER
COMPOUND	CAS#/SCAN CLASS												
SUBSTITUTED CYCLOHEXANE	379 VOA/3												
SUBSTITUTED CYCLOPENTANE	391 VOA/3												
SUBSTITUTED CYCLOPENTANE	420 VOA/3												
ALKANE	422 VOA/3												
TETRAMETHYLTETRAHYDROFURA	433 VOA/3										7J		
UNKNOWN	456 VOA/3												
UNKNOWN	465 VOA/3												
ALCOHOL	466 VOA/3												
DIMETHYLCYCLOHEXANE ISOME	475 VOA/3												
DIMETHYLCYCLOHEXANE ISOME	487 VOA/3												
UNKNOWN	503 VOA/3										10J		
SUBSTITUTED CYCLOHEXANE	505 VOA/3												
UNKNOWN	507 VOA/3												
ALKANE	514 VOA/3												
ALCOHOL	523 VOA/3												
UNKNOWN	525 VOA/3												
ALKANE	528 VOA/3												
ALKANE	547 VOA/3												
ALKANE	571 VOA/3												
UNKNOWN	571 VOA/3												
UNKNOWN	579 VOA/3												
UNKNOWN	587 VOA/3												
SUBSTITUTED CYCLOHEXANE	592 VOA/3												
UNKNOWN	595 VOA/3								19J				
KETONE	253 ABN/3											5J	
UNKNOWN	263 ABN/3		670J	4500J			5300J	3700J					
TRIMETHYLCYCLOHEXANE ISOM	270 ABN/3									6J		P	
UNKNOWN	276 ABN/3												
UNKNOWN	301 ABN/3	110000J	150000J	150000J			120000J	89000J	36000J				
METHYL HEXANONE ISOMER	314 ABN/3									10J	P		8J
UNKNOWN	328 ABN/3											5J	
UNKNOWN	334 ABN/3												
ALKANE	341 ABN/3	1600J	1800J				1200J	850J					
METHYLHEXANONE ISOMER	347 ABN/3												
METHYL HEXANONE ISOMER	354 ABN/3											13JB	
ALKANE	360 ABN/3		2000J	730J									
1,4-DITHIANE	361 ABN/3										79J		
CYCLIC HC	367 ABN/3												
ALKANE	370 ABN/3	1400J		920J			2000J	1200J					

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ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 7 OF 12
CONCENTRATIONS IN PARTS PER BILLION

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	MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER	WATER
COMPOUND	CAS#/SCAN CLASS												
METHYLCYCLOPENTANOL ISOME	391 ABN/3											35JB	
ALKANE	392 ABN/3												
ALKANE	396 ABN/3												
CYCLIC HC	435 ABN/3												
UNKNOWN	442 ABN/3		1700JB				1300J	1000J					
ALKANE	445 ABN/3												
ALKANE	450 ABN/3									7J	P		
KETONE	465 ABN/3							600J					
ALCOHOL	476 ABN/3												
UNKNOWN	520 ABN/3												
UNKNOWN	520 ABN/3					48000J							
UNKNOWN	522 ABN/3		360J				390J	270J					
ALKANE	542 ABN/3												
ALCOHOL OR ALKENE	572 ABN/3										33J		
ALKANE	574 ABN/3												
UNKNOWN	667 ABN/3											9J	
ALKANE	783 ABN/3											P	
UNKNOWN	870 ABN/3										30J		
ALKANE	885 ABN/3										P		
ALKANE	959 ABN/3												
UNKNOWN	964 ABN/3										270J		
ALKANE	980 ABN/3												
DIMETHYL NAPHTHALENE ISOM	989 ABN/3										41J	P	
DIMETHYLNAPHTHALENE ISOME	1006 ABN/3										42J		
ALCOHOL	1025 ABN/3										180J		
ALKANE	1037 ABN/3										41J		
ALKANE	1069 ABN/3												
TRIMETHYLNAPHTHALENE +ALK	1078 ABN/3										66J		
TRIMETHYLNAPHTHALENE + UN	1115 ABN/3										63J		
ALKANE	1153 ABN/3												
ALKANE	1193 ABN/3										120J		
UNKNOWN	1199 ABN/3			1100J									
ALKANE	1232 ABN/3												
ALKANE	1237 ABN/3									P	130J		
SULFUR	1488 ABN/3										P	P	
SULFUR	1495 ABN/3			9100J									
UNKNOWN	1498 ABN/3												
AMIDE	1567 ABN/3							P					
ALKANE	1577 ABN/3					85000J							

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SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 8 OF 12
CONCENTRATIONS IN PARTS PER BILLION

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AND SAMPLE STATION LOCATION DESCRIPTIONS

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	MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER	WATER
COMPOUND	CAS#/SCAN CLASS												
AMIDE	1677 ABN/3							2600J					
ALKANE	1699 ABN/3				35000J								
ALCOHOL	1700 ABN/3												
ALKANE	1751 ABN/3				60000J	120000J					P		
UNKNOWN	1796 ABN/3												
ALKANE	1809 ABN/3				79000J	110000J							
ALKANE	1823 ABN/3												
ALKANE	1862 ABN/3		P		87000J	70000J		P					
UNKNOWN	1903 ABN/3							P					
UNKNOWN	1914 ABN/3				53000J								
ALKANE	1914 ABN/3					72000J							
ALKANE	1924 ABN/3			P				P				P	
ALKANE	1956 ABN/3	P	P	P	53000J	100000J		P		P			
ALKANE	2008 ABN/3					100000J				P			
ALKANE	2017 ABN/3				91000J			P					
UNKNOWN	2040 ABN/3	P		P	P					18J			
UNKNOWN	2059 ABN/3				P							45J	
UNKNOWN	2068 ABN/3	P	P		P	P		P		25J		11J	
UNKNOWN	2075 ABN/3			P								83J	
ALKANE	2076 ABN/3				60000J								
UNKNOWN +PNA	2137 ABN/3	P				P		P		21J			
ALKANE	2145 ABN/3												
UNKNOWN	2197 ABN/3		580J										

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
ABN - ACID/BASE/NEUTRAL
PES - PESTICIDE

B - THE ANALYTE IS FOUND IN THE LAB BLANK
J - INDICATES AN ESTIMATED VALUE FOR TENTATIVELY IDENTIFIED COMPOUNDS OR COMPOUNDS FOUND BELOW CONTRACT DETECTION LIMIT
P - PRESENT IN SAMPLE, BUT NOT REPORTED BY LAB

C - CONFIRMED BY MASS SPECTRAL DATA

ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 9 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FC 415	FC 416	
		RINSATE	RINSATE	
		BLANK	BLANK	
		12/18/85	12/19/85	
	MATRIX	WATER	WATER	
COMPOUND	CAS#/SCAN CLASS			
BENZENE	71-43-2 VOA/1			
CHLOROBENZENE	108-90-7 VOA/1			
1,1,1-TRICHLOROETHANE	71-55-6 VOA/1			
TRANS-1,2-DICHLOROETHENE	156-60-5 VOA/1			
ETHYLBENZENE	100-41-4 VOA/1			
METHYLENE CHLORIDE	75-09-2 VOA/1	4JB	2.30JB	
BROMOMETHANE	74-83-9 VOA/1			
TETRACHLOROETHENE	127-18-4 VOA/1			
TOLUENE	108-88-3 VOA/1	3.80JB	3.60JB	
TRICHLOROETHENE	79-01-6 VOA/1			
ACETONE	67-64-1 VOA/2			
2-BUTANONE	78-93-3 VOA/2			
2-HEXANONE	319-78-6 VOA/2			
VINYL ACETATE	108-05-4 VOA/2			
TOTAL XYLENES	1330-20-7 VOA/2			
BIS(2-CHLOROETHYL)ETHER	111-44-4 ABN/1			
N-NITROSODIPHENYLAMINE	86-30-6 ABN/1			
BIS(2-ETHYLHEXYL)PHTHALAT	117-81-7 ABN/1			
BENZYL BUTYL PHTHALATE	85-68-7 ABN/1			
BENZO(A)ANTHRACENE	56-55-3 ABN/1			
BENZO(B)FLUORANTHENE	205-99-2 ABN/1			
CHRYSENE	218-01-9 ABN/1			
BEZO(GHI)PERYLENE	191-24-2 ABN/1			
PHENANTHRENE	85-01-8 ABN/1			
PYRENE	129-00-0 ABN/1			
2-METHYLNAPHTHALENE	91-57-6 ABN/2			
UNKNOWN	36 VOA/3	33JB	33JB	
UNKNOWN	44 VOA/3			
UNKNOWN	44 VOA/3			
UNKNOWN	48 VOA/3			
UNKNOWN	60 VOA/3			
UNKNOWN	91 VOA/3			
UNKNOWN	96 VOA/3		21JB	
UNKNOWN	98 VOA/3			
UNKNOWN	98 VOA/3			
ALKANE	225 VOA/3			
CYCLOHEXANE	266 VOA/3			
ALKANE	324 VOA/3			
ALKANE	331 VOA/3			

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
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PES - PESTICIDE

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P - PRESENT IN SAMPLE, BUT NOT REPORTED BY LAB

C - CONFIRMED BY MASS SPECTRAL DATA

ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 10 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FC 415	FC 416										
		RINSATE	RINSATE										
		BLANK	BLANK										
		12/18/85	12/19/85										
	MATRIX	WATER	WATER										
COMPOUND	CASN/SCAN CLASS												
SUBSTITUTED CYCLOHEXANE	379 VOA/3												
SUBSTITUTED CYCLOPENTANE	391 VOA/3												
SUBSTITUTED CYCLOPENTANE	420 VOA/3												
ALKANE	422 VOA/3												
TETRAMETHYLTETRAHYDROFURA	433 VOA/3												
UNKNOWN	456 VOA/3												
UNKNOWN	465 VOA/3												
ALCOHOL	466 VOA/3												
DIMETHYLCYCLOHEXANE ISOME	475 VOA/3												
DIMETHYLCYCLOHEXANE ISOME	487 VOA/3												
UNKNOWN	503 VOA/3												
SUBSTITUTED CYCLOHEXANE	505 VOA/3												
UNKNOWN	507 VOA/3												
ALKANE	514 VOA/3												
ALCOHOL	523 VOA/3												
UNKNOWN	525 VOA/3												
ALKANE	528 VOA/3												
ALKANE	547 VOA/3												
ALKANE	571 VOA/3												
UNKNOWN	571 VOA/3												
UNKNOWN	579 VOA/3												
UNKNOWN	587 VOA/3												
SUBSTITUTED CYCLOHEXANE	592 VOA/3												
UNKNOWN	595 VOA/3												
KETONE	253 ABN/3												
UNKNOWN	263 ABN/3												
TRIMETHYLCYCLOHEXANE ISOM	270 ABN/3												
UNKNOWN	276 ABN/3												
UNKNOWN	301 ABN/3												
METHYL HEXANONE ISOMER	314 ABN/3												
UNKNOWN	328 ABN/3												
UNKNOWN	334 ABN/3												
ALKANE	341 ABN/3												
METHYLHEXANONE ISOMER	347 ABN/3	8JB											
METHYL HEXANONE ISOMER	354 ABN/3		6JB										
ALKANE	360 ABN/3												
1,4-DITHIANE	361 ABN/3												
CYCLIC HC	367 ABN/3												
ALKANE	370 ABN/3												

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
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ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 11 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FC 415	FC 416										
		RINSATE	RINSATE										
		BLANK	BLANK										
		12/18/85	12/19/85										
	MATRIX	WATER	WATER										
COMPOUND	CAS#/SCAN CLASS												
METHYLCYCLOPENTANOL ISOME	391 ABN/3												
ALKANE	392 ABN/3												
ALKANE	396 ABN/3												
CYCLIC HC	435 ABN/3												
UNKNOWN	442 ABN/3												
ALKANE	445 ABN/3												
ALKANE	450 ABN/3												
KETONE	465 ABN/3												
ALCOHOL	476 ABN/3												
UNKNOWN	520 ABN/3												
UNKNOWN	520 ABN/3												
UNKNOWN	522 ABN/3												
ALKANE	542 ABN/3												
ALCOHOL OR ALKENE	572 ABN/3												
ALKANE	574 ABN/3												
UNKNOWN	667 ABN/3												
ALKANE	783 ABN/3												
UNKNOWN	870 ABN/3												
ALKANE	885 ABN/3												
ALKANE	959 ABN/3												
UNKNOWN	964 ABN/3												
ALKANE	980 ABN/3												
DIMETHYL NAPHTHALENE ISOM	989 ABN/3												
DIMETHYLNAPHTHALENE ISOME	1006 ABN/3												
ALCOHOL	1025 ABN/3												
ALKANE	1037 ABN/3												
ALKANE	1069 ABN/3												
TRIMETHYLNAPHTHALENE +ALK	1078 ABN/3												
TRIMETHYLNAPHTHALENE + UN	1115 ABN/3												
ALKANE	1153 ABN/3												
ALKANE	1193 ABN/3												
UNKNOWN	1199 ABN/3												
ALKANE	1232 ABN/3												
ALKANE	1237 ABN/3												
SULFUR	1488 ABN/3												
SULFUR	1495 ABN/3												
UNKNOWN	1498 ABN/3	10J											
AMIDE	1567 ABN/3												
ALKANE	1577 ABN/3												

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
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ORGANIC ANALYSIS SUMMARY

SITE NAME: SUN REFINING AND MARKETING OK 1911
CASE NUMBER 5314 PAGE 12 OF 12
CONCENTRATIONS IN PARTS PER BILLION

ORGANIC TRAFFIC NUMBERS
AND SAMPLE STATION LOCATION DESCRIPTIONS

		FC 415	FC 416										
		RINSATE	RINSATE										
		BLANK	BLANK										
		12/18/85	12/19/85										
	MATRIX	WATER	WATER										
COMPOUND	CASN/SCAN CLASS												
AMIDE	1677 ABN/3												
ALKANE	1699 ABN/3												
ALCOHOL	1700 ABN/3												
ALKANE	1751 ABN/3												
UNKNOWN	1796 ABN/3												
ALKANE	1809 ABN/3												
ALKANE	1823 ABN/3												
ALKANE	1862 ABN/3												
UNKNOWN	1903 ABN/3	7J											
UNKNOWN	1914 ABN/3												
ALKANE	1914 ABN/3												
ALKANE	1924 ABN/3												
ALKANE	1956 ABN/3												
ALKANE	2008 ABN/3												
ALKANE	2017 ABN/3												
UNKNOWN	2040 ABN/3												
UNKNOWN	2059 ABN/3												
UNKNOWN	2068 ABN/3												
UNKNOWN	2075 ABN/3												
ALKANE	2076 ABN/3												
UNKNOWN +PAA	2137 ABN/3												
ALKANE	2145 ABN/3												
UNKNOWN	2197 ABN/3												

1. PRIORITY POLLUTANT
2. SPECIFIED HAZARDOUS SUBSTANCE
3. TENTATIVELY IDENTIFIED

VOA - VOLATILE
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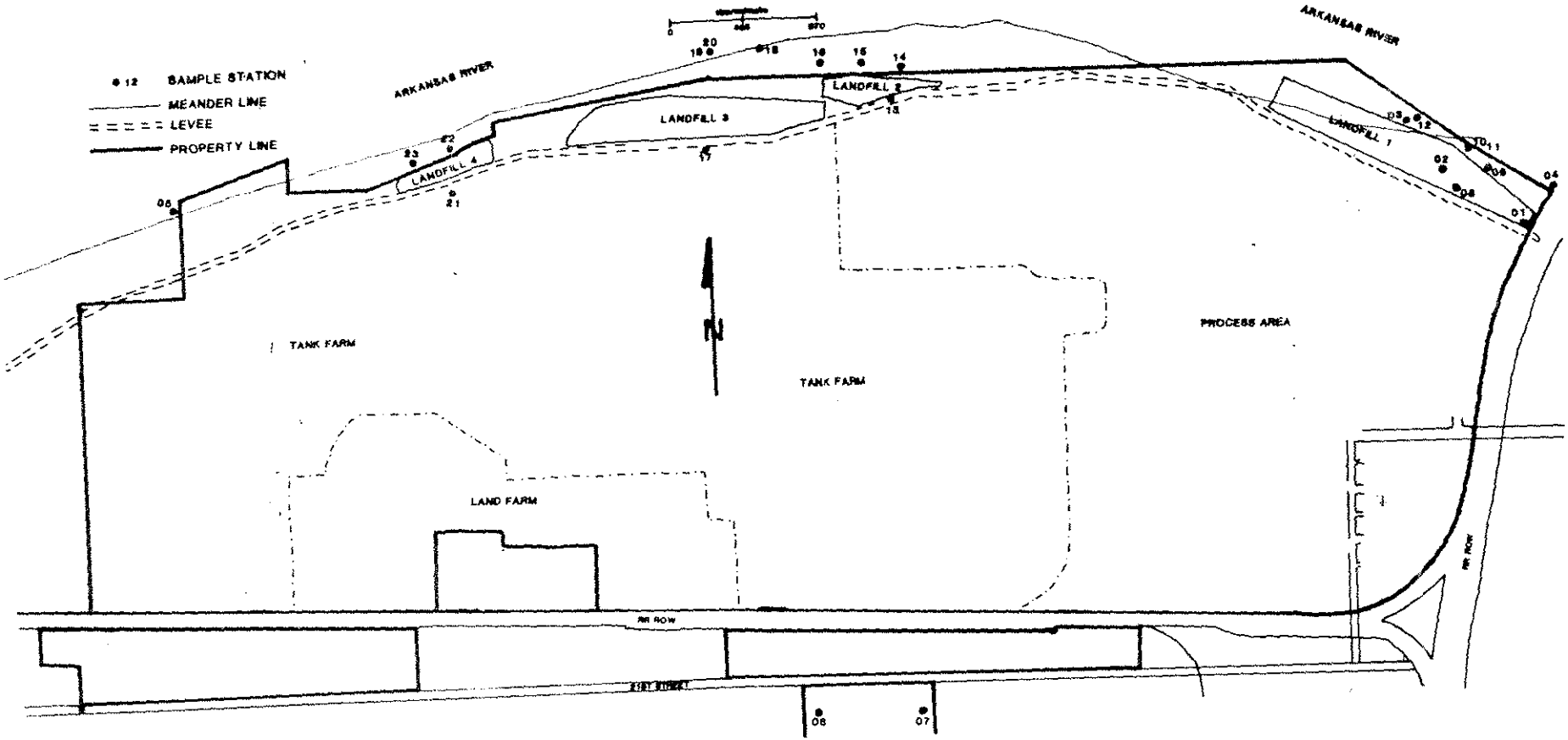
P - PRESENT IN SAMPLE, BUT NOT REPORTED BY LAB

C - CONFIRMED BY MASS SPECTRAL DATA

FIGURE 1

SUN REFINING AND MARKETING CO.
TULSA, OK.
OK 1911



FEDERAL EXPRESS

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS AND FOR SHIPMENTS FROM PUERTO RICO TO THE U.S.A.
FILL OUT PURPLE AREAS. FOR ASSISTANCE, CALL 800-238-5355, TOLL FREE.
IN ALASKA AND HAWAII, CALL 800-238-3064.
SEE BACK OF FORM SET FOR COMPLETE PREPARATION INSTRUCTIONS.

SENDER'S FEDERAL EXPRESS ACCOUNT NUMBER: 0752-3849-2

DATE: 12-17-91

From (Your Name): [illegible]
Your Phone Number (Very important): [illegible]
Company: ECOLOGY & ENVIRONMENT INC
Department/Floor No.:
Street Address: 1509 MAIN ST 910 814
City: DALLAS
State: TX

To (Recipient's Name): [illegible]
Recipient's Phone Number (Very important): [illegible]
Company: [illegible]
Department/Floor No.:
Exact Street Address (Use of P.O. Boxes or P.O. #Zip Codes Will Delay Delivery And Result in Extra Charge.): [illegible]
City: [illegible]
State: [illegible]

AIRBILL NO. 5984789413

ZIP *Zip Code Required For Correct Invoicing: 75201

ZIP Street Address Zip Required (No P.O. Box * Zip Code): 7503

YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE): [illegible]

PAYMENT
- [illegible] Bill Shipper
- Cash
- Bill Recipient's FedEx Acct. No. (Fill in line below)
- Bill 3rd Party FedEx Acct. No. (Fill in line below): 0200-7751-4
- Bill Credit Card (Fill in line below)

FedEx Acct. No. or Major Credit Card No.:

HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS ADDRESS:
Street Address (See Service Guide or Call 800-238-5355):
City:
State:
ZIP *Zip Code of Street Address Required:

SERVICES — CHECK ONLY ONE BOX

PRIORITY 1
- 1 [X] Overnight Deliver (Bring your packaging)

OVERNIGHT LETTER
- 6 [ ] (Our Packaging) 9"x12"

OVERNIGHT DELIVERY USING OUR PACKAGING
- 2 [ ] Courier-Pak Overnight Envelope 12" x 15½"
- 3 [ ] Overnight Box 12¾" x 17¾" x 3"
- 4 [ ] Overnight Tube 38" x 6" x 6" x 6"
- A [ ]
- B [ ]

STANDARD AIR
- 5 [ ] (Delivery not later than second business day)

SERVICE COMMITMENT
Priority 1: Delivery is scheduled (with next business morning) [illegible] Delivery is generally next business day or not later than second business day. [illegible] Delivery is generally next business day or not later than second business day. [illegible] Delivery is scheduled [illegible] business days or more [illegible] the destination is out of our primary service area.

DELIVERY AND SPECIAL HANDLING — CHECK SERVICES REQUIRED
- 1 [ ] HOLD FOR PICK-UP (Give the Federal Express address where you want package held in Section H at right)
- 2 [X] DELIVER WEEKDAY
- 3 [ ] DELIVER SATURDAY (Extra charge applies)
- 4 [ ] RESTRICTED ARTICLES SERVICE (Air Shipments Standard Air Packages only. Extra charge applies)
- 5 [ ] SIGNATURE SECURITY SERVICE (SSS) (Extra charge applies)
- 6 [ ] DRY ICE _____ lbs.
- 7 [ ] OTHER SPECIAL SERVICE _____
- 8 [ ]
- 9 [ ] SATURDAY PICK-UP OR SATURDAY DROP-OFF (Extra charge applies)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (See right)	OVER SIZE
1	20		
Total 1	Total 50	Total	

Received At:
- Shipper's Door
- [ ] Regular Stop
- [ ] On-Call Stop
- [ ] FedEx Box

Federal Express Corp. Employee No.: 2524

Date/Time For Federal Express Use: 12/17/91

YOUR DECLARED VALUE

DAMAGE OR LOSS

We are liable for no more than $100 per package in the event of physical loss or damage unless you fill in a higher Declared Value in the left and document higher actual loss in the event of a claim. We charge 35¢ for each additional $100 of declared value up to the maximum shown in our Service Guide. Declared value restrictions are shown on the back of the Shipper's Copy of this airbill. We make no express or implied warranties.

DELAY

There is always a risk of late delivery or non-delivery. In the event of a late delivery or non-delivery Federal Express will, at your request, refund all transportation charges paid. See back of Shipper's Copy of this airbill for further information.

CONSEQUENTIAL DAMAGES

We will not be responsible or liable for any loss of damage resulting from delay, non-delivery or damage to a package except as noted above. This includes loss of sales, income, interest, profits, attorneys' fees, and other costs, but is not limited to these items. Such damages are called "consequential damages."

Federal Express Use	
Base Charges	
Declared Value Charge	
Origin Agent Charge	
Other	
Total Charges	

PART #2041736901
FBE-5751-1000
REVISION DATE 10/84 GBF
PRINTED U.S.A.

SHIPPER'S COPY

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS AND FOR SHIPMENTS FROM PUERTO RICO TO THE U.S.A.
... TOLL FREE
...CTIONS.

FED EX

SHIPPERS COPY
SHIPPER ALWAYS REFER TO BOTH ORIGINAL AIRBILL NUMBER AND THIS CROSS REFERENCE NUMBER WHEN MAKING INQUIRIES

923963961 (pink)

0732-5840-2

From (Your Name)	Your Phone Number (Very Important)	To (Recipient's Name)	Recipient's Phone Number (Very important)
David Anderson	[illegible]	[illegible]	[illegible]

Company	Department/Floor No.	Company	Department/Floor No.
ECOLOGY & ENVIRONMENT INC			

Street Address	Exact Street Address (Use of P.O. Boxes or P.O. *Zip Codes Will Delay Delivery And Result in Extra Charge)
1509 MAIN ST STE 814	[illegible]

City	State	City	State
DALLAS	TX	[illegible]	TX

AIRBILL NO. 598478930

ZIP *Zip Code Required For Correct Invoicing: 75201

ZIP Street Address Zip Required (No P.O. Box * Zip Code): 77003

YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE.)

PAYMENT ☐ Bill Shipper ☐ Bill Recipient's FedEx Acct. No. Fill in line below ☒ Bill 3rd Party FedEx Acct. No. Fill in line below ☐ Bill Credit Card Fill in line below ☐ Cash

FedEx Acct. No. or Major Credit Card No. 0200-7751-4

HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS ADDRESS: Street Address (See Service Guide or Call 800-238-5355)

City State

ZIP *Zip Code of Street Address Required

SERVICES CHECK ONLY ONE BOX

PRIORITY 1
1 ☐ Overnight Delivery Using Your Packaging

OVERNIGHT LETTER
6 ☐ (Our Packaging) 9"x12"

OVERNIGHT DELIVERY USING OUR PACKAGING
2 ☐ Course-Pak Overnight Envelope 12" x 15½"
3 ☐ Overnight Box 12½" x 17½" x 3" A ☐
4 ☐ Overnight Tube 38" x 6" x 6" x 6" B ☐

STANDARD AIR
5 ☐ Delivery not later than second business day

SERVICE COMMITMENT
PRIORITY 1 - Delivery is scheduled early next business morning at most locations. It may take two or more business days to or from Hawaii, or if the destination is outside our primary service areas.
STANDARD AIR - Delivery is generally next business day, or not later than second business day. It may take three or more business days to or from Hawaii, or if the destination is outside our primary service areas.

DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

1 ☐ **HOLD FOR PICK-UP** Give the Federal Express address where you want package held in **Section H at right.**
2 ☒ **DELIVER WEEKDAY**
3 ☐ **DELIVER SATURDAY** (Extra charge applies.)
4 ☐ **RESTRICTED ARTICLES SERVICE** (P-1 and Standard Air Packages only. Extra charge applies.)
5 ☐ **SIGNATURE SECURITY SERVICE** (SSS) (Extra charge applies.)
6 ☐ **DRY ICE** _____ Lbs
7 ☐ **OTHER SPECIAL SERVICE** _____
8 ☐
9 ☐ **SATURDAY PICK-UP OR SATURDAY DROP-OFF** (Extra charge applies.)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (See right)	OVER SIZE
3	[illegible]		
Total	Total	Total	

Received At
Shipper's Door
☐ Regular Stop
☐ On-Call Stop
☐ FedEx Loc _____

Federal Express Corp. Employee No.

Date/Time For Federal Express Use

YOUR DECLARED VALUE

DAMAGE OR LOSS

We are liable for no more than **$100** per package in the event of physical loss or damage, unless you fill in a higher **Declared Value** to the left and document higher actual loss in the event of a claim. We charge 30¢ for each additional $100 of declared value up to the maximum shown in our Service Guide. Declared value restrictions are shown on the back of the Shipper's Copy of this airbill. We make no express or implied warranties.

DELAY

There is always a risk of late delivery or non-delivery. In the event of a late delivery Federal Express will, at your request, refund all transportation charges paid. See back of Shipper's Copy of this airbill for further information.

CONSEQUENTIAL DAMAGES

We will not be responsible or liable for any loss or damage resulting from delay, non-delivery or damage to a package except as noted above. This includes loss of sales, income, interest, profits, attorneys fees and other costs, but is not limited to these items. Such damages are called "consequential damages."

Federal Express Use
Base Charges
Declared Value Charge
Origin Agent Charge
Other
Total Charges

PART #2041738901
FEC-S-751-1000
REVISION DATE 10/84 GBF
PRINTED U.S.A.

SHIPPER'S COPY

FEDERAL EXPRESS

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS AND FOR SHIPMENTS FROM PUERTO RICO TO THE U.S.A.
FILL OUT PURPLE AREAS. FOR ASSISTANCE CALL ... 355, TOLL FREE.
IN ALASKA AND HAWAII CALL ...
SEE BACK ... UCTIONS.

923964952 (pink)

SHIPPERS COPY
SHIPPER ALWAYS REFER TO BOTH ORIGINAL AIRBILL NUMBER AND THIS CROSS REFERENCE NUMBER WHEN MAKING INQUIRIES

From (Your Name)	Your Phone Number (Very Important)	To (Recipient's Name)	Recipient's Phone Number (Very Important)
[illegible]	[illegible]	[illegible]	[illegible]

Company	Department/Floor No.	Company	Department/Floor No.
ECOLOGY & ENVIRONMENT INC		[illegible]	

Street Address	Exact Street Address (Use of P.O. Boxes or P.O. *Zip Codes Will Delay Delivery And Result in Extra Charge.)
1509 MAIN ST STE 814	[illegible]

City	State	City	State
DALLAS	TX	[illegible]	[illegible]

AIRBILL NO. 598478856

ZIP *Zip Code Required For Correct Invoicing: 75201

ZIP Street Address Zip Required (No P.O. Box * Zip Code): 7,063

YOUR BILLING REFERENCE INFORMATION (FIRST TWELVE CHARACTERS WILL APPEAR ON INVOICE.)

[illegible]

PAYMENT ☐ Bill Shipper ☐ Bill Recipient's FedEx Acct. No. Fill in line below ☒ Bill 3rd Party FedEx Acct. No. Fill in line below ☐ Bill Credit Card Fill in line below ☐ Cash

FedEx Acct. No. or Major Credit Card No. 0200-7751-4

HOLD FOR PICK-UP AT THIS FEDERAL EXPRESS ADDRESS: Street Address (See Service Guide or Call 800-238-5355)

City State

ZIP *Zip Code of Street Address Required

SERVICES CHECK ONLY ONE BOX

PRIORITY 1
1 ☒ Overnight Delivery (Using Your Packaging)

OVERNIGHT LETTER
6 ☐ (Our Packaging) 9"x12"

OVERNIGHT DELIVERY USING OUR PACKAGING
2 ☐ Courier-Pak Overnight Envelope 12" x 15½"
3 ☐ Overnight Box 12½" x 17½" x 3" A ☐
4 ☐ Overnight Tube 38" x 6" x 6" x 6" B ☐

STANDARD AIR
5 ☐ Delivery not later than second business day

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DELIVERY AND SPECIAL HANDLING CHECK SERVICES REQUIRED

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3 ☐ **DELIVER SATURDAY** (Extra charge applies.)
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5 ☐ **SIGNATURE SECURITY SERVICE** (SSS) (Extra charge applies.)
6 ☐ **DRY ICE** _____ Lbs.
7 ☐ **OTHER SPECIAL SERVICE** _____
8 ☐
9 ☐ **SATURDAY PICK-UP OR SATURDAY DROP-OFF** (Extra charge applies.)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (See right)	OVER SIZE
Total	Total	Total	

Received At
Shipper's Door
☐ Regular Stop
☐ On-Call Stop
☐ FedEx Loc. _____

Federal Express Corp. Employee No.

Date/Time For Federal Express Use

YOUR DECLARED VALUE

DAMAGE OR LOSS

We are liable for no more than **$100** per package in the event of physical loss or damage, unless you fill in a higher **Declared Value** to the left and document higher actual loss in the event of a claim. We charge 30¢ for each additional $100 of declared value up to the maximum shown in our Service Guide. Declared value restrictions are shown on the back of the Shipper's Copy of this airbill. We make no express or implied warranties.

DELAY

There is always a risk of late delivery or non-delivery. In the event of a late delivery Federal Express will, at your request, refund all transportation charges paid. See back of Shipper's Copy of this airbill for further information.

CONSEQUENTIAL DAMAGES

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Federal Express Use
Base Charges
Declared Value Charge
Origin Agent Charge
Other
Total Charges

PART #2041738901
FEC-S-751-1000
REVISION DATE 10/84 GBF
PRINTED U.S.A.

SHIPPER'S COPY

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.: OK 1911 ~~5341~~ 5c

PROJECT NAME: Sun Refining

SAMPLERS: (Signature) [illegible]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Extractable	VOA					REMARKS
06	12-17-85	0925 0926		✓	Field S of tank 406, 164' S of Al fence, 80' E of W fence 3-3.5 ft depth	3	1	2					FB797 6-14588, 14589, 6-14590
07	12-17-85	0918 0926		✓	Field S of tank 406, 180' S of Al fence 80' W of E fence 3-3.5' depth	3	1	2					FB798 6-14592, 6-14593, 6-14594
04	12-17-85	1425 1435		✓	River Sediment at NE Corner of site downstream	3	1	2					FB795 6-14580, 6-14582, 6-14581
RB1	12-17-85	1435 1505		✓	Rinsate blank	4	2	2					FB414 6-14932, 6-14933, 6-14934, 6-14935

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]		Federal Express AB# 598 478 941			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
				Case 5341

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6 — 6073

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.: OK1911
PROJECT NAME: Sun Refining

SAMPLERS: (Signature) [illegible] / James A. Trusley

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Metals						REMARKS
06	12-17-85	0920 0926		✓	Field Sof Tank 406 180' S of N fence 80' E of W fence 3-3.5' depth	1	X						MFB 618 6-14591
07	12-17-85	0918 0924		✓	Field Sof Tank 406 180' S of N fence 80' W of E fence 3-3.5' depth	1	X						MFB 619 6-14595
04	12-17-85	1425 1435		✓	River Sediment at N/E corner of site downstream	1	X						MFB 618 6-14583
RB1	12-17-85	1431 1505		✓	Rinsate Blank	1	X						MFB 636 6-14936
08	12/18/85	[illegible] 1032		✓	[illegible]	1	X						MFB 620 6-14599
09	12/18/85	1000 1011		✓	[illegible]	1	X						MFB 621 6-14603
10	12/18/85	1036 1001		✓	[illegible]	1	X						MFB 622 6-14607
11	12/18/85	1010 1002		✓	[illegible]	1	X						MFB 623 6-14611
12	12/18/85	1114 1120		✓	[illegible]	1	X						MFB 624 6-14615
13	12/18/85	1506 1522		✓	300' [illegible]	1	X						MFB 625 6-14616
01	12/18/85	1250 1305		✓	[illegible]	1	X						MFB 613 6-14563
03	12/18/85	1341 1350		✓	[illegible] Well 3 75' W/SW of Sta 12	1	X						MFB 615 6-14579
02	12/18/85	1415 1426		✓	[illegible] Well 2 600' W of Sta 6 [illegible]	1	X						MFB 614 6-14574
RB02	12/18/85	1600 1608		✓	Rinsate Blank	1	X						MFB 637 6-14937

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible] / James A. Trusley	12-18-85 1730	Federal Express AB # 598 478 930			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks case 5341	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6—6074

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

SPHD

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
OK 1911	Sun Refining

SAMPLERS: (Signature) Greg McAnerney, Dan Tinkley

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS							REMARKS
06	12-12-85	0903 0926		✓	Field S of Tank 436 16' S of N fence 80' E of W fence 3-3½' depth	1							6-14947
07	12-12-85	0918 0926		✓	Field S of Tank 409, 130' S of N fence 80' W of E fence 3-3½' depth	1							6-14948
08	12/18/85	0914 0940		✓	Upstream Landfill 1	1							6-14949
09	12/18/85	1000 1015		✓	Downgradient Landfill 1	1							~~6-14950~~ BB 6-14950
10	12/18/85	1036 1044		✓	Downgradient Landfill 1	1							6-14951
~~11~~	~~12/18/85~~	~~1044 1052~~	BB	✓	~~Downgradient Landfill 1~~ BB Center	1							~~6-14952~~ BB None
12	12/18/85	1114 1126		✓	Downgradient Landfill 1	1							6-14952
13	12/18/85	1506 1522		✓	800' from fence 10' from Rd. LF 2	1							6-14953
14	12/19/85	820 833		✓	250' W - 80' N of fence	1							6-14954
15	12/19/85	850 920		✓	410' W - 145' N of fence	1							6-14955
16	12/19/85	944 956		✓	845' W - 100' N of fence	1							6-14956
17	12/19/85	1028 1036		✓	N of Tank 874 20' S of Leeve Rd.	1							6-14957
21	12/19/85	1127 1137		✓	NW of Tank 401 10' S of Leeve Rd	1							6-14958
18	12/19/85	1208 1217		✓	410' W of fence Corner - Gate L2 280' N of fence	1							6-14959
19 & 20	12/19/85	1239 1309		✓	680' W of Gate L2 ~~[illegible]~~ 265' N of fence	1							6-14960

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Greg McAnerney, Dan Tinkley	12-19-85 1120	Gloria Anderson	Gloria Anderson	12-20-85 0728	William R. Clarke
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	~~[illegible]~~

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6 — 6075

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
OK 1911	Sun Refining

SAMPLERS: (Signature) [illegible]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Extractable	VOA					REMARKS
08	12/18/85	09:14		✓	UP gradient landfill 1	3	1	2					FB 799 6-14596 6-14598 6-14597
09	12/18/85	1030 1015		✓	Down gradient landfill 1	3	1	2					FB 800 6-14600 6-14602 6-14601
10	12/18/85	1036 1044		✓	Down gradient landfill 1 Center	3	1	2					~~FC 400~~ BB FC 400 6-14604 6-14606 6-14605
11	12/18/85	1114 1056 BB		✓	Down gradient landfill 1 Center	3	1	2					FC 401 6-14608 6-14610 6-14609
12	12/18/85	1114 1126		✓	Down gradient landfill 1 W.	3	1	2					FC 402 6-14612 6-14614 6-14613
~~13~~	~~12/18/85~~	BB		✓	BB	~~3~~	~~1~~	~~2~~	BB				~~FC 403 6-14616 6-14617 6-14618~~ BB
01	12/18/85	1258 1305		✓	MW 1	4	2	2					FB 747 6-14559 6-14561 6-14562 6-14563
03	12/18/85	1314 1350		✓	MW 3 75 W/SW of site 12	4	2	2					FB 744 6-14575 6-14577 6-14576 6-14578
~~02~~	~~12/18/85~~	BB		✓									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	[illegible] 1230	Federal Express [illegible] 478932			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Case 5341	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6 → 6076

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.: OK 1911
PROJECT NAME: Sun Refining
SAMPLERS: (Signature) James A. Trusley

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Extractables	VOA					REMARKS
02	12/18/85	1415 1426		✓	Monitor well 02 300' W of site 6 95' N of tree	10	4	6					FB 793 6-14564 6-14566 6-14568 6-14570 6-14565 6-14567 6-14569 6-14571
13	12/18/85	1506 1522		✓	300' from tanks 10' from Rd. Lt. 2	3	1	2					FC 403 6-14617 6-14618 6-14615
RB02	12/18/85	1600 1608			Rinsate Blank 02	4	2	2					FC 415 6-14938 6-14940 6-14939 6-14941

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
James A. Trusley	[illegible] 1730	Federal Express 1B# [illegible] 478 930			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Case 5341	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6—6077

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
OK1911	Sun Refining

SAMPLERS: (Signature) [illegible]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Extractable Vol.						REMARKS
14	12/19/85	1330 1333		✓	250'W + 80'N of fence	3	1	2					FC 404 6-14621 6-14622 6-14621
15	12/19/85	1353 1400		✓	470'W 80'N of fence	3	1	2					FC 405 6-14624 6-14626 6-14625
16	12/19/85	1400 1406		✓	80'W - 100'N of fence	3	1	2					FC 406 6-14628 6-14630 6-14632
17	12/19/85	1028 1036		✓	N of Tank 914 20'S of Leeve Rd	3	1	2					FC 407 6-14633 6-14634 6-14635 6-14636
18	12/19/85	1208 1217		✓	410'W of fence [illegible] gate 1.2 230'N of fence	3	1	2					FC 408 6-14637 6-14639 6-14638
21	12/19/85	1127 1137		✓	NW of Tank 410 90'S of Leeve Rd	3	1	2					FC 411 6-14649 6-14650 6-14620
19	12/19/85	1239 1309		✓	680'W of gate 12 [illegible]'N of fence	3	1	2					FC 409 6-14641 6-14643 6-14642
20	12/19/85	1239 1309		✓	" "	3	1	2					FC 410 6-14645 6-14647 6-14646
22	12/19/85	1335 1416		✓	210'W of gate 11 150'N of fence	6	2	4					FC 412 6-14921 6-14923 6-14925 6-14922 6-14924 6-14926
23	12/19/85	1447 1456		✓	460'W of gate 11 140'N of fence	3	1	2					FC 413 6-14928 6-14930 6-14929
5	12/19/85	1507 1514		✓	River [illegible] property	3	1	2					FB 796 6-14584 6-14585 6-14586
RB3	12/19/85	1512 1548		✓	Rinsate Blank	4	2	2					FC 416 6-14943 6-14945 6-14944 6-14946

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	12-19-85 1730	Federal Express AB# 595 478 856			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Case 5314

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6—6078

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.: OK 1911
PROJECT NAME: Sun Refining
SAMPLERS: (Signature) [illegible]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Metals						REMARKS
14	12/[illegible]	[illegible]		✓	[illegible]	1	1						MFB 626 6-14623
15	12/14/85	[illegible]		✓	[illegible]	1	1						MFB 627 6-14627
16	12/[illegible]	[illegible]		✓	[illegible]	1	1						MFB 628 6-14631
17	12/15/85	1028 1036		✓	[illegible] 20' S of Leeve Rd	1	1						MFB 629 6-14635
18	12/15/85	1208 1217		✓	~~NW of Tank 401~~ BB 410' W of fence corner gate L2. 280' N of fence.	1	1						MFB 630 6-14636
21	12/15/85	1127 1137		✓	NW of Tank 401 90' S of Leeve Rd.	1	1						MFB 633 6-14648
19	12/19/85	1239 1309		✓	680' W of gate L2 ~~175~~ N of fence	1	1						MFB 631 6-14640
20	12/19/85	1239 1309		✓	" " "	1	1						MFB 632 6-14644
22	12/19/85	1355 1416		✓	210' W. of gate L1. 150' N. of fence	1	1						MFB 634 6-14927
23	12/19/85	1447 1456		✓	460' W. of gate L1 140' N. of fence	1	1						MFB 635 6-14931
5	12/19/85	1507 1514		✓	River sediment At NW Corner of Property	1	1						MFB 617 6-14587
RB3	12/19/85	1542 1548		✓	Rinsate Blank	1	1						MFB 638 6-14942

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	12-19-85 1730	Federal Express [illegible] 598 478 014			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Case 5314	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6 — 6079

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
OK1911	Sun Refining

SAMPLERS: (Signature) Greg McAnarney, Dan Takely

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS							REMARKS
22	12/19/85	1353 1416		✓	210' W of gate L1 150' N of fence	1							6-14961
23	12/19/85	1447 1456		✓	460' W of gate L1 140' N of fence	1							6-14962

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Greg McAnarney, Dan Takely	12-19-85 1620	David Anderson	David Anderson	12-20-85 0728	William R. Clarke
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	~~Case 5314~~

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

6—6084

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

12-[illegible]
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: David [illegible]
FIT
[illegible]
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
[illegible]		MW 1	[illegible]	[illegible]		
[illegible]	[illegible]	MW 2	[illegible]	[illegible]	no	
03	[illegible]	MW 3	[illegible]	[illegible]	no	
04	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
05		[illegible]	[illegible]		no	
06		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
07		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
08		[illegible]	[illegible]	[illegible]		
09		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

William R Clarke
Sr. Environmental Engineer - Sun Refining and Marketing
William R Clarke
(Signature)

12/20/85
(Date)

DISTRIBUTION:
One copy facility representative
One copy for inspector's records
Original to Regional Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

12-[illegible]
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: David Anderson
FJI
David Anderson
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible] 1522	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible] 1523	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible] 1550	[illegible]	[illegible]	[illegible]	[illegible]	
16	[illegible] 1556	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

William R. Clarke
Chief Environmental Engineer [illegible] Co.
William R. Clarke — 12/20/85
(Signature) (Date)

DISTRIBUTION:
One copy facility representative
One copy for inspector's records
Original to Regional Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

[illegible]
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: David Arden
FI
[illegible]
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	40[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

William R Clarke
Chief Environmental Engineer Sun Refining and Marketing Co.
William R Clarke 12/20/85
(Signature) (Date)

DISTRIBUTION: One copy facility representative
One copy for inspector's records
Original to Regional Office

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1303 / East

Comments: photo 01 station 01

log # #09

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1423 / West

Comments: photo 02, station 02

log # 11

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1333 / ENE

Comments: photo 03 Station 03

log # 10

Photographer / Witness

David Anderson / William Barham

Date / Time / Direction

12-17-85/1428 / NE

Comments: photo 04 Station 04

downstream of site

log # 3

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85/1508/ N

Comments: photo 05 Station 05

upstream of site

log # 2-23

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85/1509 / E

Comments: [redacted]

gate on levee from sta 05

[redacted] log # 2-21

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-17-85 / 0921 / NW

Comments: photo 07 Station 06

log # 1

Photographer / Witness

David Anderson / William Barham

Date / Time / Direction

12-17-85 / 0924 / NW

Comments: photo 08, Station 07

log # 2

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 0922 / SW

Comments: photo 09 Station 08

log # 5

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1007 / NW

Comments: Photo 10, Station 09

log #6

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1040 / NE

Comments: photo 11, Station 10 & 11

log # 7

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1120 / NE

Comments: Photo 12, Station 12

log # 8

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1524 / W

Comments: photo 13, Station 13

log #26

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 0824 / S

Comments: photo 14, Station 14

log #27

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 0910 / S

Comments: photo 15, Station 15

log #28

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 0952 / SE

Comments: photo 16, station 16

log #37

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1031 / S

Comments: photo 17, station 17

log # 2-2

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1211 / S

Comments: photo 18, Station 18

log # 2-16

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1253 / E

Comments: photo 19 Station 19 & 20

log 2-19

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1128 / S

Comments: photo 20, Station 21

log # 2-8

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1358 / N

Comments: photo 21, Station 22

log # 2-20

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1450 / E

Comments: photo 22, Station 23

log # 2-22

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1253 / E

Comments: photo 23, Station 19 & 20

Not Tar mat behind station

log # 2-18

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1403 / S

Comments: photo 24, Oily seepage below LF #4 50' W of Sta 22

log # 2-21

Photographer / Witness

Dave Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1425 / West to East

Comments:

photo 25 1 of 3

panorama of landfill #1

log # 12, 13, 14

N

Photographer / Witness

David Anderson / Greg McInarney

Date / Time / Direction

12-18-85 / 1425 / West to East

Comments:

photo 25 cont 2 of 3

panorama of Landfill #1

log # 15, 16, 17

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1425 / West to East

Comments:

photo 25 cont 3 of 3

panorama of landfill #1

log #17 + 18

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

2-18-85 / 1520 / West to East

Comments:

photo 26 1 of 3

panorama of landfill # 2

log # 22, 23, 25

N

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

2-18-85 / 1520 / West to East

Comments:

photo 26 continued 2 of 3

panorama of landfill #2

log # 20, 21, 22

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-18-85 / 1520 / West to East

Comments:

photo 26 continued 3 of 3

panorama of Landfill #2

log #19

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 0913 / East to West

Comments:

photo 27 1 of 3

panorama of area N of Landfill

#2

log #29, 30

N

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85/0913/ East to West

Comments:

photo 27 continued 2 of 3

panorama of area N of Landfill #2

log # 31, 32, 33

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 0913 / East to West

Comments:

photo 27 continued 3 of 3

panorama of area N of Landfill

#2

log # 33, 34, 35

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

2-14-85 / 10 32 / West to east

Comments:

photo 28 1 of 3

panorama of landfill #3

log # 2-3, 2-4

N

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

2-19-85 / 1032 / West to East

Comments:

photo 28 continued 2 of 3

panorama of landfill #3

lg #2-5, 2-6, 2-7

Photographer / Witness

David Anderson / Greg McAnarney

Date / Time / Direction

2-19-85 / 1032 / West to East

Comments:

photo 28 continued 3 of 3

panorama of landfill #3

log # 27

Photographer / Witness

Doris Anderson / Greg McAnorney

Date / Time / Direction

12-19-85 / 1205 / East to West

Comments:

photo 29 1 of 3

panorama of area N1 of landfill

#3

log # 2-10, 2-11

N

Photographer / Witness

Davis Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1205 / East to West

Comments:

photo 29 continued 2 of 3

Panorama of area N of landfill

#3

log #2-12, 2-13, 2-14

Photographer / Witness

Gavin Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1205 / East to West

Comments:

Photo 28 Continued 3 of 3

panorama of area N of landfill

#3

log # 2-14, 2-15

Photographer / Witness

Dave Anderson / Greg McAnarney

Date / Time / Direction

12-19-85 / 1130 / West

Comments:

photo 3

Landfill #4

Log #2-9