A WATER QUALITY SURVEY OF CEDAR BAYOU

SEGMENT NOS. 0901 (TIDAL) AND 0902 (ABOVE TIDAL)

Submitted to
Field Operations Division
Texas Water Quality Board
Austin, Texas

by
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Biologist, District 7
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Table 1
Sampling Stations

Station Number	Location	Approximate Bayou-Mile From Mouth
1	Cedar Bayou Road Bridge	44.1
2	FM 1960 Bridge	40.0
3	US 90 Bridge	31.6
4	FM 1942 Bridge	21.0
5	IH - 10 Bridge	17.5
6	Southern Pacific Railroad Bridge	15.6
7	100 yards below Horsepen Bayou	13.0
8	SH 146 Bridge	11.2
9	¼ mile below East District STP	9.7
10	100 yards above HL&P Intake Canal at Cedar Bayou	5.2
	Mouth of Cedar Bayou	

of the industries are in the process of upgrading the quality of their discharge.

The following is a list of the point source waste dischargers in the survey area (see Table II for locations and Appendix D for the quality of the discharges).

Table II
Point Sources

Mile	Name	Type	WCO No.	Permitted Discharge Ave. MGD
27.0	Pennwalt Corp., Lucidol Division	I*	01671-01	---
18.1	Gulf Oil Chemical Company (C. B. Olefin Plant)	I	01006-01	1.300
17.5	City of Mont Belvieu	M**	10400-01	0.030
17.0	J. M. Huber Corporation	I	00737-01	0.190
17.0	J. M. Huber Corporation	I	00737-02	0.030
16.9	Industrial Waste Removal Company	I	20031-01	---
16.0	Lester A. Gallatin Sunny Villa Mobile home Park	M	11534-01	0.004
13.0	Cedar Bayou Mobile Home Park	M	10990-01	0.020
13.0	Tompkins Mobile Home Park Shady Oaks Mobile Home Park	M	11653-01	---
11.8	HHM Corporation	M	11031-01	0.001
11.5	General Telephone Company of the Southwest	M	11296-0,	0.006
9.9	City of Baytown-East District Plant	M	10395-07	1.000
9.8	Mobay Chemical Corporation	I	01499-01	1.250
2.6	U. S. Steel Corporation	I	01332-01	15.000

*I - Industrial
**M - Municipal

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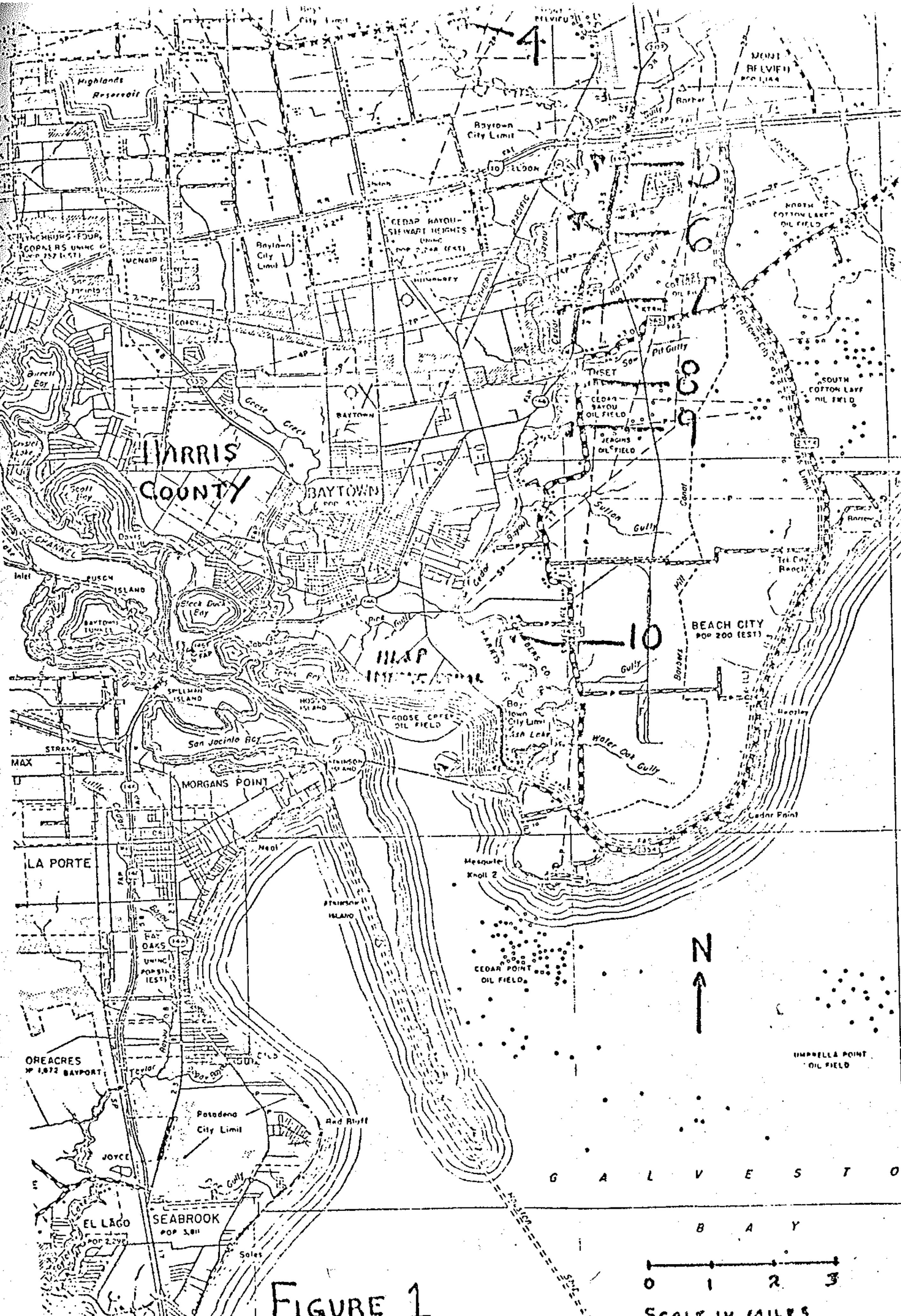

4
Highlands
Reservoir
MONT BELVIEU
Baytown City Limit
5
6
7
8
9
10
NORTH COTTON LAKE OIL FIELD
CEDAR BAYOU-STEWART HEIGHTS
LYNCHBURG-FOUR CORNERS
MCNAIR
Baytown City Limit
SOUTH COTTON LAKE OIL FIELD
CEDAR BAYOU OIL FIELD
JENKINS OIL FIELD
Burnet Bay
Crystal Lake
Scott Bay
HARRIS
COUNTY
BAYTOWN
Goose Creek
Sutton Gully
Canal
Tri City Beach
BUSCH ISLAND
Black Duck Bay
BEACH CITY
POP 200 (EST)
SPILLMAN ISLAND
HOG ISLAND
GOOSE CREEK OIL FIELD
San Jacinto Bay
Water Oak Gully
MORGANS POINT
Cedar Point
LA PORTE
Mesquite Knoll 2
ATKINSON ISLAND
N
CEDAR POINT OIL FIELD
UMBRELLA POINT OIL FIELD
Pasadena City Limit
Red Bluff
JOYCE
G A L V E S T O
B A Y
EL LAGO
SEABROOK
0 1 2 3
SCALE IN MILES

FIGURE 1

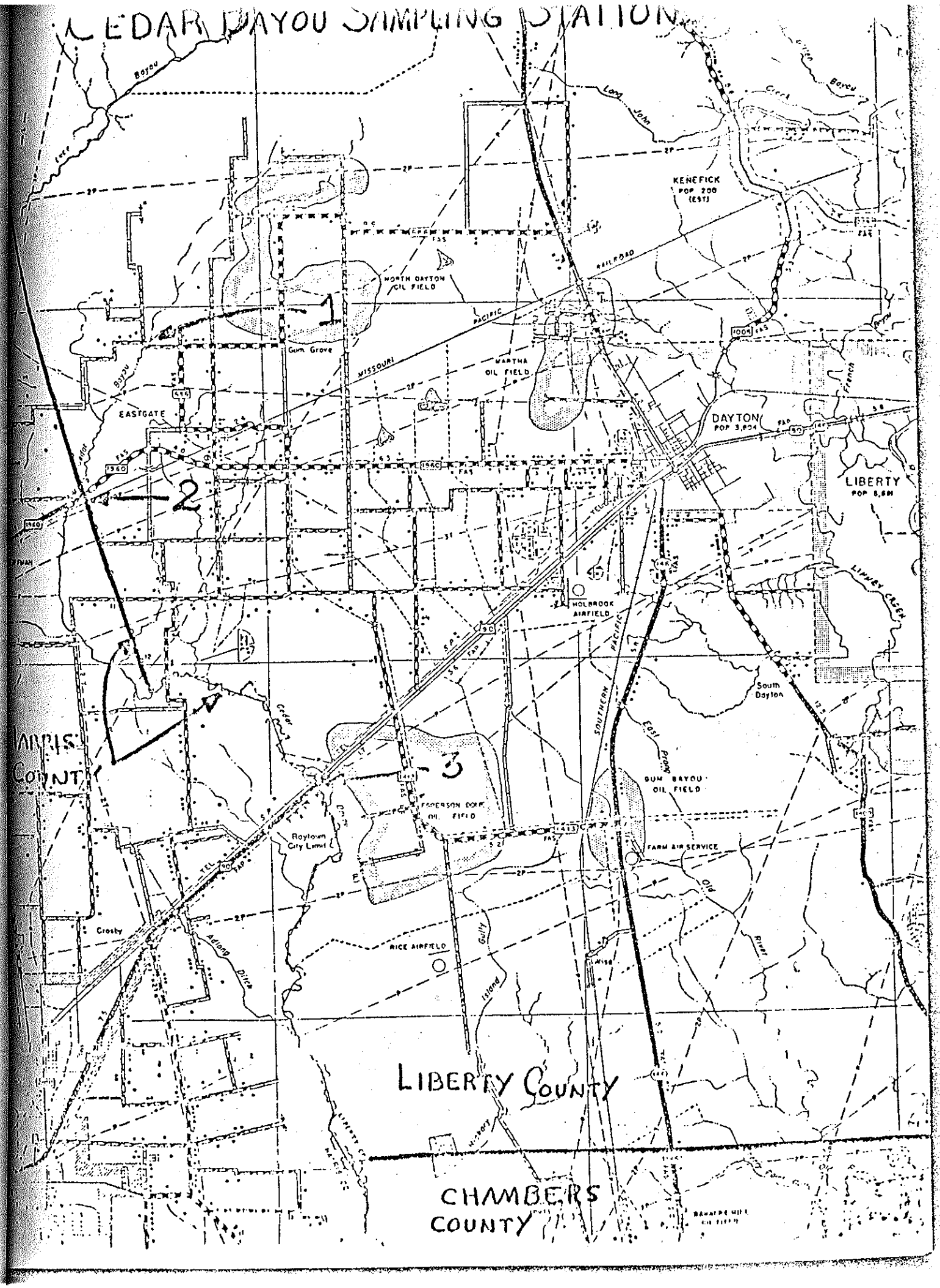
CEDAR BAYOU SAMPLING STATION
1
2
3
KENEFICK
POP 200
(EST)
NORTH DAYTON
OIL FIELD
Gum Grove
MARTHA
OIL FIELD
EASTGATE
DAYTON
POP 3,804
LIBERTY
POP 8,8M
HOLBROOK
AIRFIELD
South
Dayton
BUM BAYOU
OIL FIELD
FARM AIR SERVICE
Roytown
City Limit
RICE AIRFIELD
Crosby
Wisa
LIBERTY COUNTY
CHAMBERS
COUNTY
HARRIS
COUNTY
Long John
Cedar
Bayou
Lake
Bayou
Adams
Bayou
French
Bayou
Lippey Creek
Old
River
Gully
Island
Adams Ditch
Cedar
Creek
Ditch
RAILROAD
PACIFIC
MISSOURI
PACIFIC
SOUTHERN
PACIFIC
East
Prong
YELLOW
PINE
TEL
SP
FAS
FAP
1960
1008
90
146
2P

Table III
Non-Point Sources

Approximate Bayou Mile	Name	Type Discharge
48.0	North Dayton Oil Field	Oil & Brine Runoff
31.0	Esperson Dome Oil Field	Oil & Brine Runoff
18.0-21.0	Barbers Hill Oil Field	Oil & Brine Runoff
17.5	Conoco Service Station	Septic-Cavette System
17.5	Exxon Service Station	Septic tank
16.9	J. D. Giddings Landfill	Run-off
16.0	Julie Ann Subdivision	Septic Tank (23 homes)
16.0	Gulf Service Station	Septic Tank
14.5	Cedar Bayou Park Estates UD	Septic Tank (11 homes)
14.5	Pecan Forest Estates Subdivision	Septic Tank (6 homes)
14.5	Gilbert Manor Subdivision	Septic Tank (20 homes)
13.0	Abbe Subdivision	Septic Tank (36 homes)
13.0	Staples Subdivision	Septic Tank (36 homes)
13.0	Bayou Bend Subdivision	Septic Tank (10 homes)
11.8	Cedar Bayou MUD	Application
11.7	Cedar Bayou Community	Septic Tank (12 homes)
11.5	Goose Creek ISD	Septic Tank
11.1	Highland Shell Company	Run-off
11.1	Anahuac Shell Company	Run-off
10.8	Cedar Bayou Oil Field	Run-off
10.4	Baytown Ready Mixed Concrete Company	Run-off

Table VI
Field Measurements-July, 1974

tion ber	Mile	Depth	Water Temp. °C	Conductivity umhos/cm	pH (units)	Dissolved Oxygen (mg/l)
1	44.1	1.0'	27.0	900	8.0	7.7
2	40.0	1.0'	28.0	600	8.0	6.8
3	31.6	1.0'	29.0	100	8.2	7.8
4	21.0	1.0'	30.0	600	7.8	7.8
5	17.5	1.0'	30.0	8,000	7.9	7.1
		3.0'	*	35,000	*	*
		6.0'	*	*	*	*
6	15.6	1.0'	26.5	20,000	7.7	0.0
		5.0'	28.0	25,000	7.6	2.0
		10.0'	28.0	30,000	7.7	0.0
		13.0'	28.0	+100,000	7.6	0.0
7	13.0	1.0'	31.0	22,000	7.7	16.1
		5.0'	30.0	22,000	7.7	14.4
		10.0'	30.0	25,000	7.7	11.4
		20.0'	28.0	+100,000	7.7	0.0
8	11.2	1.0'	31.5	20,000	7.6	18.3
		5.0'	30.0	21,000	7.6	15.2
		10.0'	29.5	24,000	7.6	12.0
		15.0'	29.0	38,000	7.6	0.4
9	9.7	1.0'	29.5	22,000	7.7	5.5
		5.0'	29.0	22,000	7.7	4.5
		10.0'	28.5	22,000	7.7	3.7
		15.0'	28.5	26,000	7.7	0.6
10	5.2	1.0'	30.0	22,000	7.6	6.5
		5.0'	30.0	22,000	7.6	6.5
		10.0'	29.5	22,000	7.6	6.1
		15.0'	29.0	22,000	7.6	5.6

*Not taken

Table VII
Sediment Description

ation	Bayou Mile	Depth (ft.)	Sediment Description	Odor
1	44.1	1	1" silty clay over coarse yellow-white marbled clay	Not distinct
2	40.1	3	Hard bottom; mostly gravel; much road asphalt present	Not distinct
3	31.6	2	Several inches silt over hard sand; road asphalt present	Not distinct
4	21.0	2	Thin silt over hard sand	Not distinct
5	17.8	7	Black oil laden muck	Strong petro
6	15.6	14	Black muck over loose brown clay; hard pebbles present	Strong petro & hydrogen sulfide
7	13.0	25	1/8" black muck over gray muck; small gray & brown rocks (.1 cm) present	Strong hydrogen sulfide & petro
8	11.2	15	Black muck over gray muck; oily rainbows present	Strong hydrogen sulfide & petro
9	9.7	16	Black muck mixed with detritus	Hydrogen sulfide & petro
10	5.2	18	1/8" marbled brown silt over gray black muck	Not distinct

Table VIII
Laboratory Analyses

Parameters Station No.	Date	pH units	Cond. umhos/cm	BOD mg/l	COD mg/l	NH_3-N mg/l	NO_2-N mg/l	NO_3-N mg/l	T-PO_4 mg/l	O-PO_4 mg/l
1	1/73	7.2	615	2.3	36	0.06	0.01	0.04	1.23	---
	7/74	8.0	900	2.0	11	0.7	<0.01	0.01	2.78	0.09
2	1/73	7.3	650	1.4	36	0.06	0.01	0.05	0.74	---
	7/74	8.0	600	3.0	16	1.0	0.15	0.17	1.92	0.08
3	1/73	7.5	580	3.0	36	0.06	0.01	0.11	0.95	---
	7/74	8.2	100	4.0	29	0.5	0.02	0.02	2.03	0.24
4	1/73	7.4	560	2.2	44	0.06	0.01	0.08	1.23	---
	7/74	7.8	600	2.0	40	0.5	0.11	0.38	1.80	0.12
5	1/73	7.5	1,650	1.9	44	0.00	0.01	0.05	0.95	---
	7/74	7.9	8,000	3.0	---	0.6	0.02	0.08	2.14	0.31
6	1/73	7.6	2,300	3.5	68	0.00	0.00	0.00	1.23	---
	7/74	7.4	10,000	8.0	---	0.00	0.07	0.43	1.18	---
7	1/73	7.3	970	3.5	56	0.00	0.00	0.00	1.47	---
	7/74	9.4	10,000	10.0	56	0.00	0.01	0.05	1.30	---
8	1/73	7.6	4,700	4.2	68	0.26	0.03	0.09	2.18	---
	7/74	9.5	17,000	13.0	---	0.00	0.01	0.32	1.67	---
9	1/73	7.7	6,200	3.0	56	0.32	0.04	0.48	2.18	---
	7/74	8.6	15,000	6.0	---	0.00	0.05	0.73	2.07	---
10	1/73	7.9	13,700	4.2	72	0.40	0.04	0.26	2.45	---
	7/74	8.5	16,000	4.0	---	0.00	0.01	0.04	2.45	---

Table VIII
Laboratory Analyses

Station No.	Date	TSS mg/l	FSS mg/l	VSS mg/l	TOC mg/l	TC mg/l	Acidity mg/l	P. Alk. mg/l	T. Alk. mg/l	Chl. a mg/l	Cl^- mg/l
1	1/73	60	50	10	5	29	6	0	80	0.010	---
	7/74	187	187	0	10	42	10	---	130	---	---
2	1/73	60	30	30	4	35	6	0	100	0.014	---
	7/74	76	62	14	15	46	10	---	170	---	---
3	1/73	60	40	20	1	32	6	0	90	0.005	---
	7/74	58	50	8	17	51	2	---	140	---	---
4	1/73	220	180	40	6	32	8	0	90	0.009	---
	7/74	102	94	8	19	43	2	---	100	---	---
5	1/73	130	120	10	4	36	4	0	106	0.006	---
	7/74	27	15	12	15	40	10	---	90	---	4,05
6	1/73	110	90	20	7	31	4	0	80	0.011	---
	7/74	29	21	8	13	33	11	0	100	0.001	5,10
7	1/73	80	60	20	9	31	2	0	76	0.002	---
	7/74	26	12	14	14	43	0	30	250	0.091	6,97
8	1/73	30	20	10	5	31	6	0	80	0.006	---
	7/74	32	11	21	14	43	0	20	100	0.146	6,01
9	1/73	30	20	10	5	30	4	0	82	0.016	---
	7/74	29	15	14	10	36	0	10	130	0.047	6,65
10	1/73	20	10	10	1	29	6	0	84	0.017	---
	7/74	42	27	15	9	34	0	10	120	0.027	6,65

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Table IX
Pesticides in Water (ug/l)
July 16, 1974

Pesticide	EPA Criteria*	Stations 1	2	3	4	5
DDE	---	0	0	0	0	0
DDD	0.006	0	0	0	0	0
Lindane	0.02	0.010	0.070	0.010	0	0
Aldrin	0.01	0	0	0	0	0
Heptachlor	0.01	0	0	0	0	0
Heptachlor Epoxide	---	0	0	0	0	0
Dieldrin	0.005	0	0	0	0	0
Endrin	0.002	0	0	0	0	0
Toxaphene	0.01	0	0	0	0	0
DDT	0.002	0	0	0	0	0
Methoxychlor	0.005	0	0	0	0	0

*(Ref. 7)

Metals in Water (ug/l)
(above tidal)

Metals	Date	TWQB-EPA Criteria mg/l	Station Numbers 1	2	3	4
Arsenic	1/73	*T 0.05	0.0114	<0.008	0.008	<0.008
	7/74		---	---	---	---
Barium	1/73	T 5.0	<0.2	<0.2	<0.2	<0.2
	7/74		---	---	---	---
Cadmium	1/73	T 0.02	<0.008	<0.008	<0.008	<0.008
	7/74	**E 0.03'	---	---	---	---
		E 0.004"				
Chromium	1/73	T 5.0	<0.02	<0.02	<0.02	<0.02
	7/74	E 0.05	---	---	---	---
Copper	1/73	T 1.0	0.19	0.30	<0.03	<0.03
	7/74		---	---	---	---
Lead	1/73	T 0.1	<0.05	<0.05	<0.05	<0.05
	7/74	E 0.03	---	---	---	---
Manganese	1/73	T 1.0	0.07	0.07	0.07	0.07
	7/74		---	---	---	---
Mercury	1/73	T 0.005	0.0004	0.0002	0.0002	0.0003
	7/74	E 0.00005	---	---	---	---
Nickel	1/73	T 1.0	0.13	0.09	<0.07	<0.07
	7/74		---	---	---	---
Selenium	1/73	T 0.02	0.020	0.015	0.015	0.018
	7/74		---	---	---	---
Silver	1/73	T 0.1	<0.04	<0.04	<0.04	<0.04
	7/74		---	---	---	---
Zinc	1/73	T 5.0	0.57	0.41	0.03	0.04
	7/74		---	---	---	---
Iron	1/73		---	-----	---	---
	7/74		---	---	---	---

*T = TWQB Criteria
**E = EPA Criteria

' with hardness >100
" with hardness <100

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Table X
Metals In Water (ug/l)
(tidal)

Metals	Date	TWQB-EPA Criteria mg/l	Station Numbers 5	6	7	8	9	10
Arsenic	1/73	*T 1.0	<0.008	0.008	0.006	<0.004	0.008	0.017
	7/74	**E 0.05	---	0.043	0.051	0.051	0.046	0.043
Barium	1/73	T 5.0	<0.2	<0.2	<0.2	<0.02	<0.2	<0.2
	7/74	E 1.0	---	0.5	0.4	0.3	0.3	0.3
Cadmium	1/73	T 0.02	<0.008	<0.01	<0.01	<0.01	<0.01	<0.01
	7/74	E 0.01	---	0.05	0.05	0.04	0.05	0.01
Chromium	1/73	T 5.0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	7/74	E 0.1	---	0.02	0.02	<0.01	0.01	0.01
Copper	1/73	T 1.0	0.13	0.12	0.18	0.16	0.16	0.28
	7/74	E 0.05	---	0.37	0.17	0.14	0.11	0.13
Lead	1/73	T 0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	7/74	E 0.05	---	0.17	0.22	0.36	0.16	0.15
Manganese	1/73	T 5.0	0.08	0.09	0.06	0.06	0.09	0.06
	7/74	E 0.1	---	0.74	0.67	0.16	0.06	0.04
Mercury	1/73	T 0.005	0.0002	0.0016	0.0008	0.0009	0.0008	0.0013
	7/74	E 0.0001	---	0.0008	0.0002	<0.0002	<0.0002	<0.0002
Nickel	1/73	T 5.0	<0.07	<0.07	<0.07	<0.07	<0.07	0.07
	7/74	E 0.1	---	0.22	0.22	0.10	0.10	0.10
Selenium	1/73	T 0.02	0.013	<0.008	<0.008	<0.008	<0.008	<0.008
	7/74	E 0.01	---	---	---	---	---	---
Silver	1/73	T 0.1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
	7/74	E 0.005	---	0.05	0.04	0.02	0.02	0.02
Zinc	1/73	T 5.0	0.19	0.12	0.09	0.13	0.14	0.13
	7/74	E 0.1	---	0.12	0.06	0.06	0.41	0.04
Iron	1/73	E 0.3	---	---	---	---	---	---
	7/74		---	0.40	0.40	0.11	0.19	0.18

*T = TWQB Criteria
**E = EPA Criteria

Table XI
Metals in Sediment (mg/kg)

Metals	Date	EPA Criteria mg/kg	Station Numbers* 1	3	4	5
Arsenic	1/73	5.0	1.2	0.9	0.5	0.1
	7/74		<0.6	2.23	1.16	6.75
Barium	1/73		220.0	150.0	160.0	200.0
	7/74		107.0	178.0	148.0	396.0
Boron	1/73		<0.2	<0.2	0.2	0.7
Cadmium	1/73	2.0	<0.3	<0.3	0.5	<0.6
	7/74		<1.0	<1.0	<1.0	2.1
Chromium	1/73	100.0	16.0	14.0	14.0	73.0
	7/74		12.8	19.2	14.5	28.5
Copper	1/73	50.0	7.7	9.1	9.8	11.0
	7/74		5.0	13.5	7.4	28.5
Lead	1/73	50.0	34.0	28.0	27.0	27.0
	7/74		18.5	31.3	23.0	64.6
Manganese	1/73		2,400.0	510.0	800.0	200.0
	7/74		120.0	533.0	335.0	1,507.0
Mercury	1/73	1.0	0.015	0.049	0.028	0.048
	7/74		0.0092	0.0125	0.0138	0.0214
Nickel	1/73	50.0	21.0	15.0	18.0	12.0
	7/74		8.5	14.2	10.7	22.2
Selenium	1/73		<0.4	3.6	0.9	0.7
Silver	1/73		<2.0	<2.0	<1.0	<3.0
	7/74		2.1	2.1	1.6	2.8
Zinc	1/73	75.0	21.0	25.0	27.0	61.0
	7/74		26.3	38.4	30.3	34.1

*Station 2 not collected.

Table 3a

Metals in Sediment (mg/kg)

Metals	Date	EPA Criteria mg/kg	Station Numbers 6	7	8	9	10
Arsenic	1/73	5.0	4.2	2.5	2.7	3.1	1.2
	7/74		8.89	3.47	2.13	3.06	3.41
Barium	1/73		130.0	110.0	73.0	95.0	120.0
	7/74		191.0	230.0	111.0	160.0	149.0
Boron	1/73		<0.4	<0.3	0.2	2.5	3.7
Cadmium	1/73	2.0	<0.8	<0.9	<0.4	<0.7	<1.0
	7/74		<1.0	1.4	<1.0	<1.0	1.5
Chromium	1/73	100.0	60.0	59.0	29.0	50.0	48.0
	7/74		34.1	36.5	20.4	26.7	31.2
Copper	1/73	50.0	24.0	23.0	13.0	34.0	24.0
	7/74		22.1	18.9	13.0	28.0	14.9
Lead	1/73	50.0	47.0	34.0	26.0	52.0	40.0
	7/74		128.0	33.8	28.8	40.0	41.6
Manganese	1/73		350.0	88.0	150.0	180.0	290.0
	7/74		1,154.0	236.0	218.0	141.0	421.0
Mercury	1/73	1.0	0.098	<0.05	0.014	0.105	0.077
	7/74		0.0164	0.0434	0.0156	0.0932	0.0477
Nickel	1/73	50.0	17.0	20.0	10.0	19.0	20.0
	7/74		32.1	18.9	15.8	30.7	25.3
Selenium	1/73		<0.8	<0.9	0.6	<0.7	1.0
Silver	1/73		<4.0	<4.0	<2.0	<4.0	<5.0
	7/74		4.0	2.7	2.8	4.0	1.5
Zinc	1/73	75.0	52.0	58.0	34.0	87.0	70.0
	7/74		50.2	51.5	53.0	502.0	63.9

Table XII
Benthic Macroinvertebrates
January 1973

Station Numbers*	1	3	4	5	6	7	8	9	10
Number of Species	2	3	2				2	4	10
Number of Individuals	58	16	11				71	116	349
$\bar{d}$	.13	.67	.95	0	0	0	.19	.54	.99
Chaoborus punctipennis	---	---	---	---	---	---	2	---	---
Tanypus sp.	1	---	---	---	---	---	---	---	2
Cryptochironomus sp.	---	---	4	---	---	---	---	---	---
Tanytarsus sp.	---	14	---	---	---	---	---	---	---
Polypedilum sp.	---	1	---	---	---	---	---	---	---
Tubulanus pellucidus	---	---	---	---	---	---	---	4	7
Amphicteis gunneri floridus	57	---	---	---	---	---	69	5	---
Capitella capitata	---	---	---	---	---	---	---	1	2
Mediomastus californiensis	---	---	---	---	---	---	---	---	280
Streblospio benedicti	---	---	---	---	---	---	---	160	53
Neanthes succinea	---	---	---	---	---	---	---	---	1
Nereid sp.	---	---	---	---	---	---	---	---	1
Parandalia fauveli	---	---	---	---	---	---	---	---	1
Macoma mitchelli	---	---	---	---	---	---	---	---	1
Limnodrilus sp.	---	1	7	---	---	---	---	---	---
Acetes americanus	---	---	---	---	---	---	---	---	1

*Station 2 was not taken - road asphalt had been dumped in the area making sampling from the bridge impossible

$$d = -\sum_{1}^{s} (ni/n) \log_2 (ni/n)$$

Four grabs with a six inch Ekman Dredge were made at each station, and samples were collected with a No. 30 Sieve Bucket.

Station Numbers	1	2	3	4	5	6	7	8	9	10
Number of Species	17	29	11	13	11	8	7	5	15	12
Number of Individuals	276	1704	304	400	338	490	14807	10385	331	207
$\bar{d}$	3.79	2.61	2.50	2.68	2.96	2.33	1.14	1.45	3.47	3.19
Pandorina sp.	---	21	14	21	---	---	---	---	---	---
Volvox sp.	---	---	7	---	---	---	---	---	---	---
Actinastrum sp.	7	---	---	---	---	---	---	---	---	---
Microspora sp.	21	21	---	---	---	---	---	---	---	---
Chaetophora sp.	---	14	---	---	---	---	---	---	---	---
Chlorella sp.	---	14	---	14	82	193	179	607	21	14
Schroederia sp.	---	104	---	---	---	---	---	---	7	---
Scenedesmus sp.	---	7	---	14	69	14	---	21	---	---
Pediastrum sp.	---	14	---	---	---	---	---	---	---	---
Mougeotia sp.	---	---	---	---	---	---	---	---	---	7
Sirogonium sp.	45	---	14	---	---	---	---	---	---	---
Spirogyra sp.	21	7	7	---	---	---	---	---	---	---
Closterium sp.	---	---	---	---	48	7	---	---	7	---
Coccoid Green	---	---	---	---	21	---	---	---	---	---
Filamentous Green	7	---	---	---	---	---	---	---	---	---
Glenodiniaceae	---	---	---	7	---	---	---	---	---	---
Peridinium sp.	---	---	---	---	---	---	14	---	---	---
Dinoflagellate sp.	---	---	---	---	---	---	---	---	35	---
Tribonema sp.	14	---	---	---	---	---	---	---	---	---
Coscinodiscus sp.	---	---	---	---	---	---	---	---	---	7
Biddulphia sp.	---	14	---	---	---	---	---	---	---	---
Terpsinoe sp.	---	7	---	---	---	---	---	---	---	---
Chaetoceros sp.	---	---	---	---	---	---	---	---	---	7
Rhizosolenia sp.	---	---	---	---	---	---	---	---	---	
Diatoma sp.	---	---	19	---	7	---	---	---	28	---

Table XIII
Plankton
July 1974

Station Numbers	1	2	3	4	5	6	7	8	9	10
Fragilaria sp.	28	70	---	---	---	---	---	---	---	---
Synedra sp.	---	7	---	---	---	---	---	---	---	---
Amphiprora sp.	---	7	---	---	---	---	---	---	---	---
Tabellaria sp.	---	28	---	---	---	---	---	---	---	---
Navicula sp.	28	7	---	7	7	---	---	---	---	---
Cymbella sp.	7	---	---	---	---	---	---	---	---	---
Nitzschia hungarica	21	1035	28	178	28	14	---	---	---	7
N. sp. A	21	---	28	---	---	---	---	---	---	---
N. sp. B	21	62	---	48	---	55	---	---	---	---
Diatom sp. A	7	---	---	---	---	---	---	---	---	14
Diatom sp. B	---	---	---	---	---	---	---	---	7	---
Diatom sp. C	---	---	---	---	---	---	4623	6721	14	---
Diatom sp. D	---	---	---	---	---	---	---	---	14	---
Anacystis sp.	---	---	---	55	---	---	---	---	---	---
Merismopedia sp.	---	14	14	21	48	83	9687	1987	80	---
Oscillatoria sp.	---	35	---	14	14	14	14	----	7	---
Anabaena sp.	---	7	---	---	---	---	---	---	---	---
Filamentous blue green	7	---	---	---	---	---	---	---	---	---
Difflugia sp.	---	---	159	---	---	---	---	---	---	---
Pleurobrachia sp.	---	---	---	---	---	---	---	---	14	---
Sinantherina sp.	---	21	---	---	---	---	---	---	---	---
Brachionus sp.	---	---	---	---	7	110	276	1049	---	28
Epiphanes sp.	---	---	---	7	---	---	---	---	---	---
Euchlanis sp.	7	7	---	---	7	---	---	---	---	---
Keratella sp.	---	7	---	---	---	---	---	---	---	---
Colurella sp.	---	---	---	---	---	---	14	---	---	---
Platyias sp.	7	14	7	---	---	---	---	---	---	---
Lecane sp.	---	---	7	---	---	---	---	---	28	
Rotifer sp.	---	14	---	---	---	---	---	---	41	---

Table XIII
Plankton
July 1974

Station Numbers	1	2	3	4	5	6	7	8	9	10
Gastrotrich sp.	---	---	---	---	---	---	---	---	---	21
Nematode sp.	---	7	---	---	---	---	---	---	---	---
Ostracod sp.	---	28	---	7	---	---	---	---	7	---
Nauplius larva	7	90	---	---	---	---	---	---	---	47
Copepod sp.	---	21	---	7	---	---	---	---	21	41

Organisms were collected using a number 20 Wisconsin plankton net.

Species frequencies are recorded as units/liter.

Table XIV

Bacteria (Organisms per 100 ml)

Station	Date	Total[1]	Fecal[2]	Strep[3]	FC/FS Ratio*
1	1/17/73	2,400	2,400	240	10.0
2	1/17/73	11,000	11,000	2,400	4.58
	7/16/74	27,000	760	710	1.07
3	1/17/73	2,400	460	2,400	0.19
4	1/17/73	4,600	4,600	240	19.16
	7/16/74	11,000	600	360	1.66
5	1/18/73	4,600	2,400		
	7/16/74	6,000	100	330	0.30
6	1/10/73	4,600	930		
	7/9/74	>80,000	15,000	1,800	8.33
7	1/10/73	110,000	46,000		
	7/9/74	500	<10	<10	1
8	1/10/73	240,000	93,000		
	7/9/74	200	<10	10	1
9	1/10/73	460,000	240,000		
	7/9/74	11,000	300	18	16.66
10	1/10/73	46,000	24,000		
	7/9/74	200	<10	<10	1

*$\frac{FC}{FS} = \geq 4.0$ Human, ≤ 0.7 Animal

[1]Total Coliform
[2]Fecal Coliform
[3]Fecal Streptococci

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SUBJECT TO REVISION

WATER QUALITY PROBLEMS AND ACTIVITIES
RELATED TO CEDAR BAYOU AREA

FISH KILLS

Date	Location	# Fish Killed	Cause
2/11-13/71	Above FM 1942 Bridge to IH 10	7,000 ±3,000	Oiling of rice field roads
12/04/72	Northwest corner of HL&P Cedar Bayou Cooling Pond	1,000	Unknown
12/29/73	HL&P Cooling Pond	Unknown	Unknown
7/9/74	Near Highway 146, river mile 10-12	500,000	Plankton bloom resulting in an oxygen depletion

OIL SPILLS

Date	Location	# Barrels Spilled	Material Spilled
1/11/72	Mont Belvieu Oil Field	55	Crude Oil
5/10/73	Pipeline crossing just south of Highway 146 Bridge	5	Crude Oil
8/3/74	Mont Belvieu Oil Field	250,000	Brine Water

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SUBJECT TO REVISION

APPENDIX A

MILEAGE CHART SHOWING ALL MAJOR FEATURES ON CEDAR BAYOU
Segments 0901-0902

ure	Bayou Mile
h Dayton Oil Field (E)*	48.0
ion 1	44.1
ion 2	40.0
s. 90-USGS Gaging Station	31.6
ion 3	31.6
erson Dome Oil Field (E)	31.0
long Ditch (Lucidol) (W)	27.0
k Gully (W)	23.2
ckory Island Gully (E)	22.1
Liberty Chemical Company-11 miles upstream (proposed 7/75)	
1942 (Station 4)	21.0
lis Branch (W)	20.0
----------tidal limit-- segment 0902 / segment 0901 -------	19.9
rbers Hill Oil Field (E)	18.0-21.0
FM 1942 Bridge to SH 146	
ARCO Chemical Company-Oil storage tanks 500 yard area on SH 146	
Cities Service Fractionators, Inc.-LP Gas	
Enterprise Products Company-20 tanker trucks	

(E) = East Bank
(W) = West Bank

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SUBJECT TO REVISION

Feature		Bayou Mile
FM 1942 at SH 146 to IH 10	Miles on SH 146 (Parallels Cedar Bayou)	
ARCO Chemical Company-Mont Belvieu Terminal	0.0	
Exxon Road & Terminal	0.4	
Little Big Inch-Texas Eastern	0.7	
Warren Gas (Mont Belvieu Plant)	1.0	
Oil Field Operations	2.0	
IH 10	2.4	
Gulf Olefin (W) (2 outfalls)	Channelization from here to Mile 45	18.1
Smith Gully (E)		17.8
Mont Belvieu Sewage Treatment Plant		
Station 5-IH 10		17.5
Conoco Station (E) Cavette System		17.5
Exxon Station (E) Septic Tank		17.5
M. Huber (W) (2 outfalls)		17.0
Humphrey Chemical Company (Proposed) (W)		17.0
D. Giddings Landfill (W)		16.9
East Side Cedar Bayou		15.0-16.0
Julie Ann Subdivision (23 homes)		
Sunny Villa Mobile Home Park (18 homes)		
Gulf Station, Ken's One Stop		

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SUBJECT TO REVISION

Feature	Bayou Mile
Southern Pacific Railroad (Station 6) Dayton-Goose Creek Railroad	15.6
McGee Gully (W)	14.5
Cedar Bayou Park Estates (UD) (11 homes)	
Pecan Forest Estates Subdivision (6 homes)	
Gilbert Manor Subdivision (20 homes)	
Horsepen Bayou (E) (Station 7)	13.0
Abbe Subdivision (36 homes)	
Cedar Bayou Mobile Home Park (60 homes)	
Staples Subdivision (36 homes)	
Shady Oaks Mobile Home Park (38 homes)	
Bayou Bend Subdivision (10 homes)	
Cedar Bayou MUD	11.8
HHM Corporation (E)	11.8
Lincoln Cedars Subdivision (18 homes)	
Cedar Bayou Community (E)	11.7
Cary Bayou (W)	11.5
General Telephone Company of the Southwest	
Goose Creek Independent School District-Stallworth Stadium	
SH 146 (Station 8)	11.2
Highland Shell Company	11.1
Anahuac Shell Company	11.1

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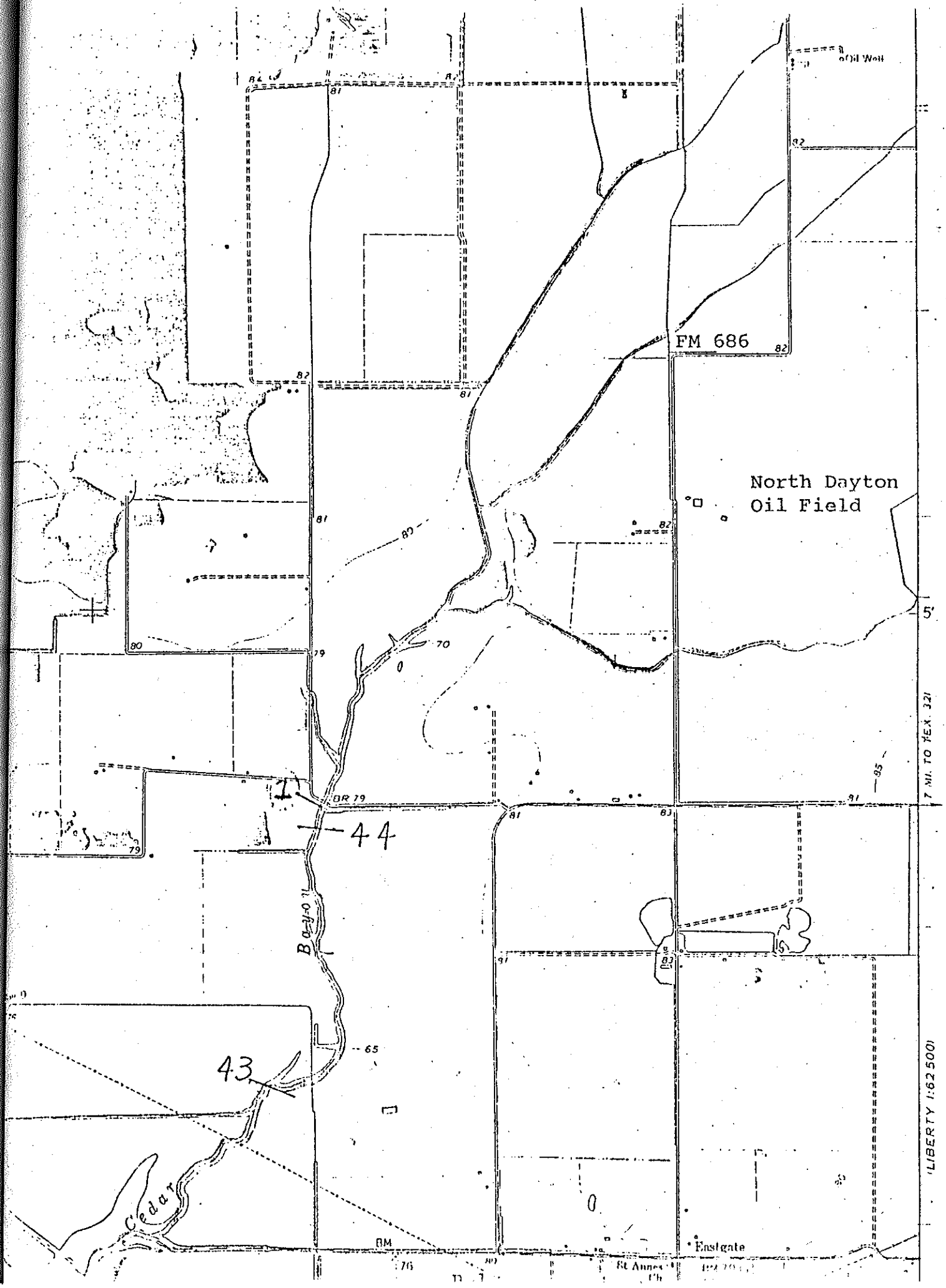
Feature	Bayou Mile
Saw Pit Gully (E)	11.0
Cedar Bayou Oil Field (E)	10.8
Small Oil Field-E. J. Gray-20 acres (W)	
Baytown Ready Mixed Concrete Company (W)	10.4
Gene Hazelwood Municipal Landfill (Proposed) (W)	10.0
Baytown-East District Sewage Treatment Plant (W)	9.9
Mobay Chemical Company (E)	9.8
Station 9	9.7
Pond Gully (E)	9.1
Houston Lighting & Power Company (No discharge) (E)	8.5
Villa Marina Apartments (W)	8.4
Sutton Gully (E)	8.1
Town Lake Village Apartments (W)	7.2
Hull Gully (W)	7.0
Roseland Oaks Subdivision	6.8
Roseland Park (W)	6.7
Station 10	5.2
Houston Lighting & Power Company Intake Canal at Cedar Bayou (W)	4.7
Ijams Gully (E)	2.6
U. S. Steel Corporation	
Negrohead Lake (W)	1.9

Feature	Bayou Mile
Ijams Lake (E)	1.5
Water Oak Gully	
Tri-City Beach Road	0.5
Apartment Center Apartments (W)	
Ash Lake (W)	0.4
Shell Point (Mouth)	0.0
Submerged jetties 0.7 miles out from mouth	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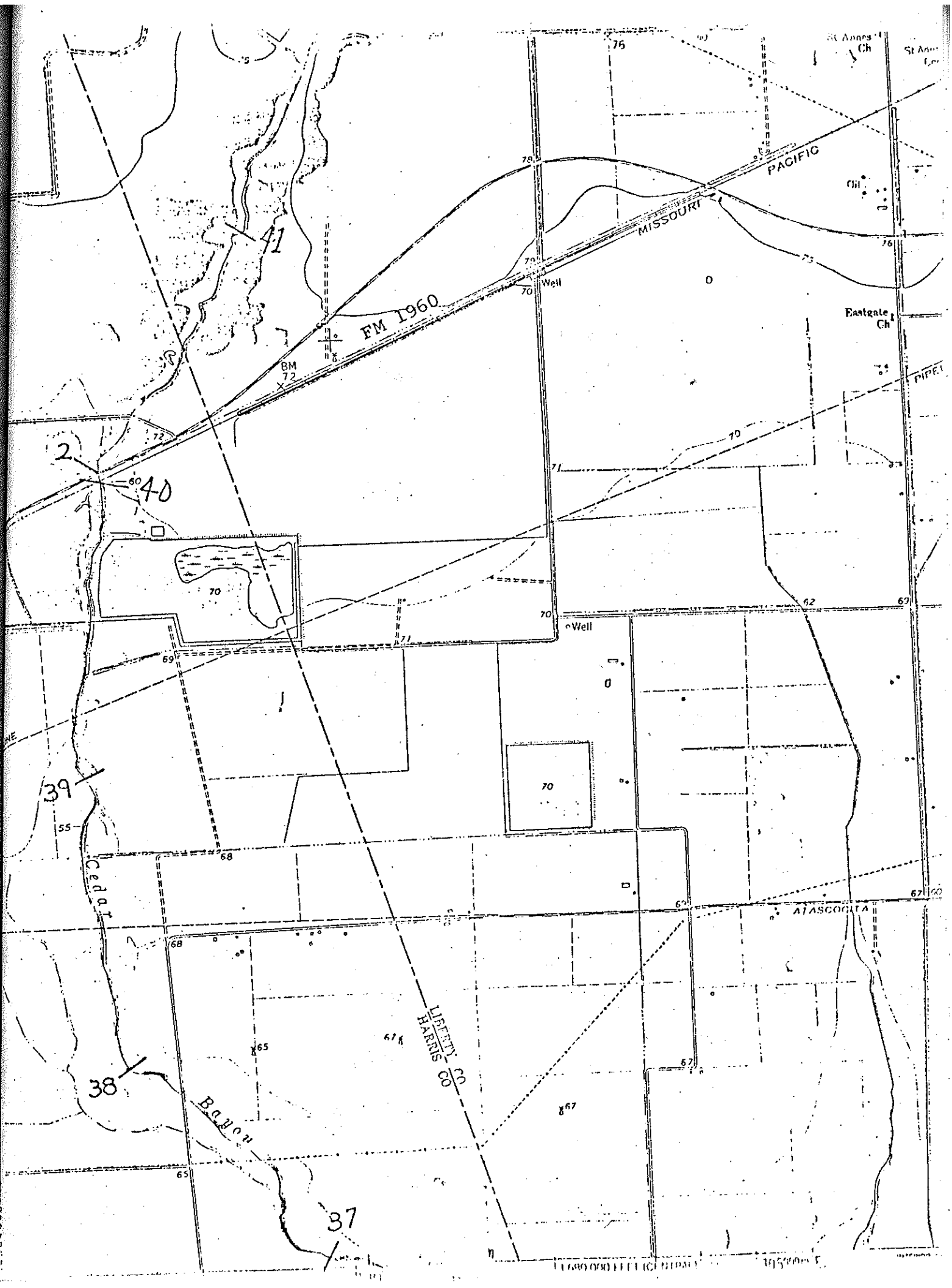
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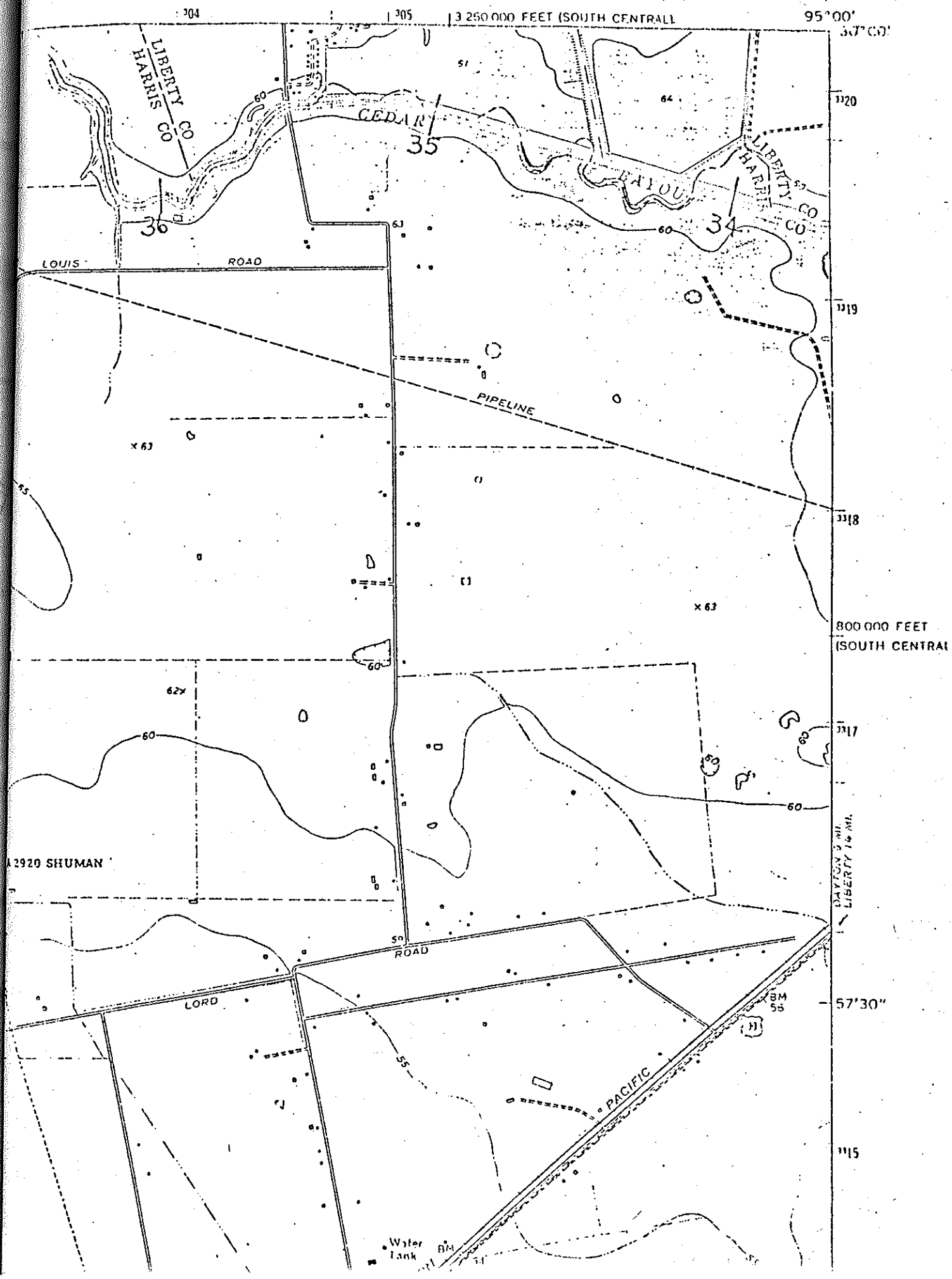
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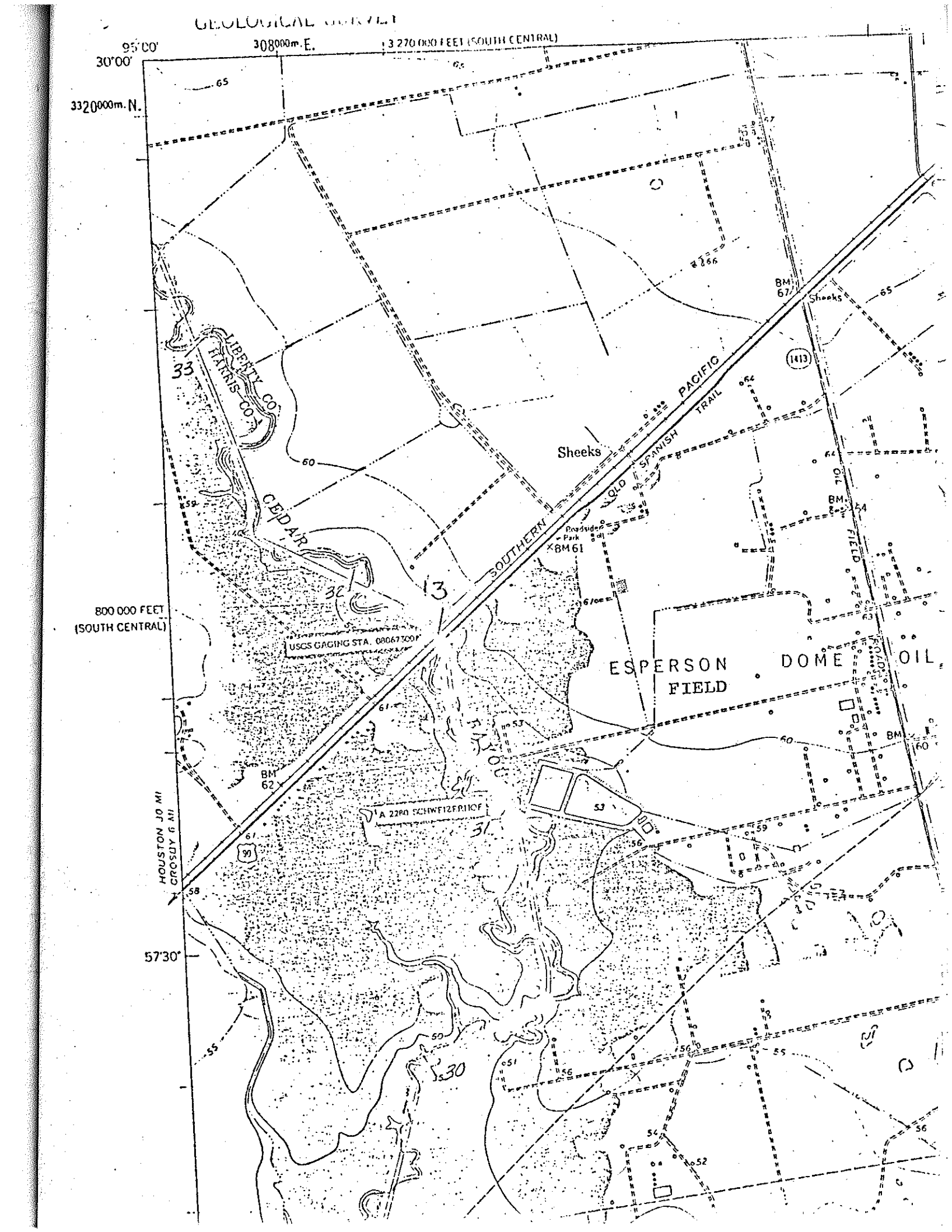
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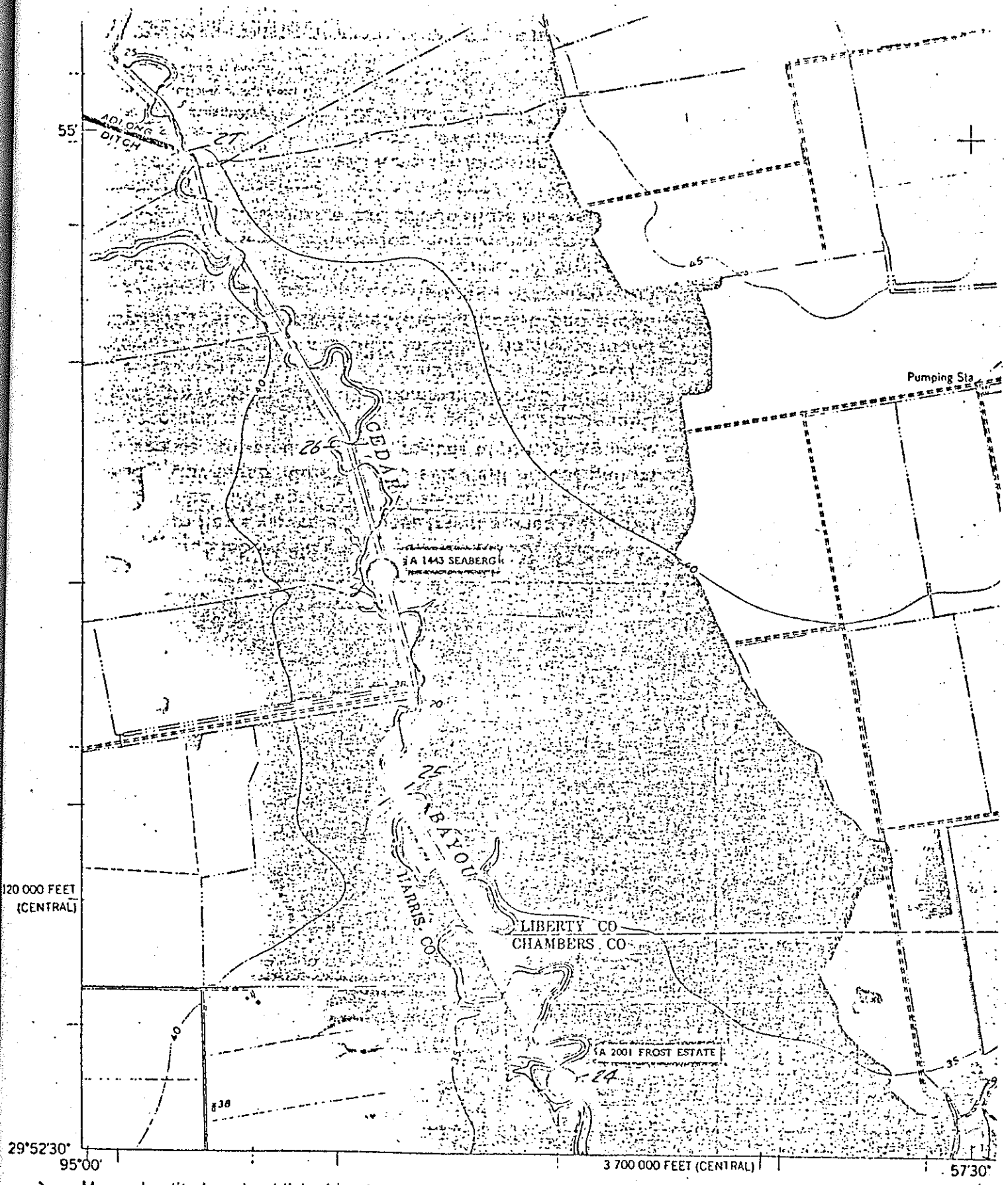

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Planimetry by photogrammetric methods from aerial photographs taken 1960. Topography enlarged from 1:31 680-scale AMS map of Walley quadrangle. Original map by photogrammetric methods and planetable surveys 1943. Revised 1961

Polyconic projection. 1927 North American datum

10 000 foot grids based on Texas coordinate system

B°

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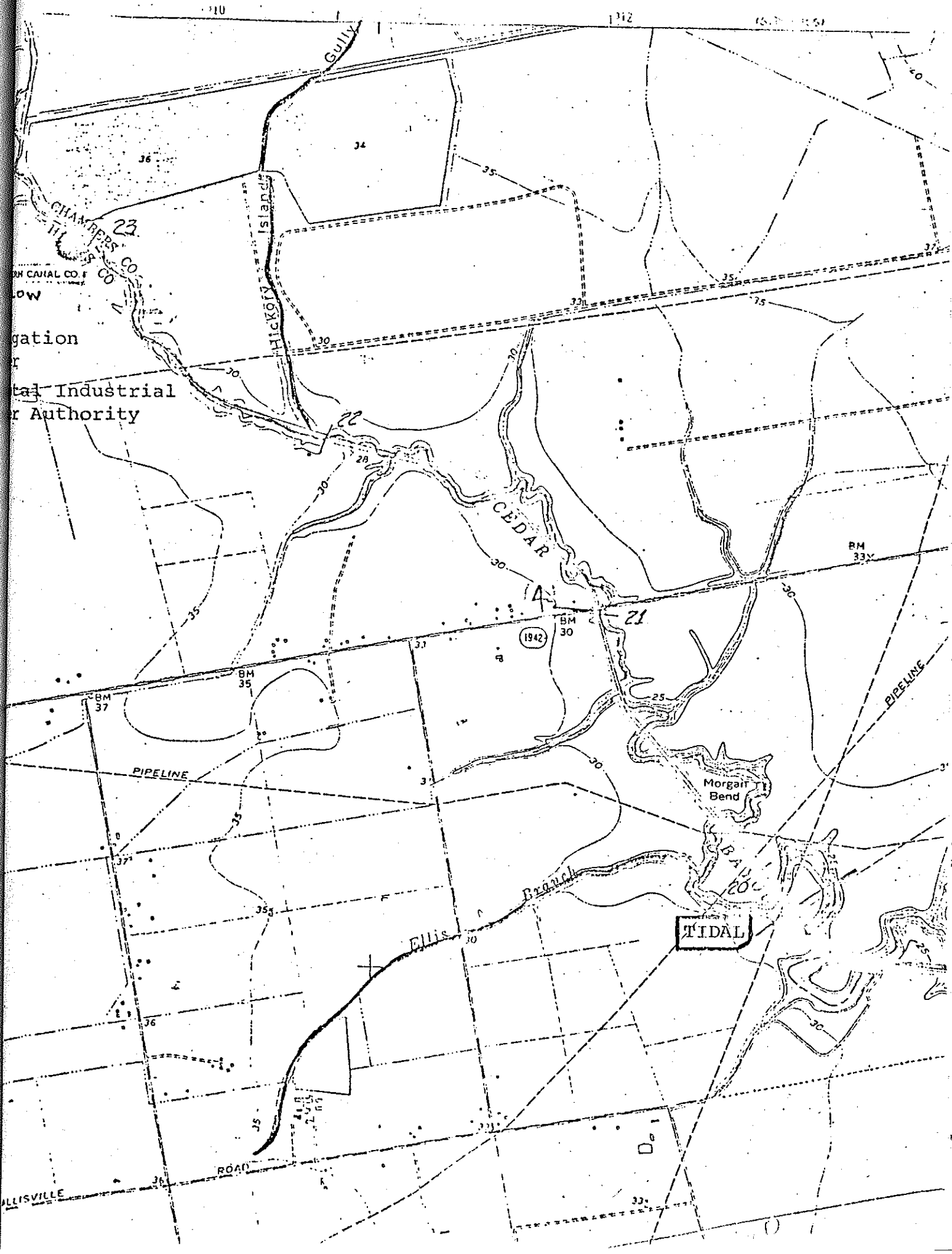
NETIC NORTH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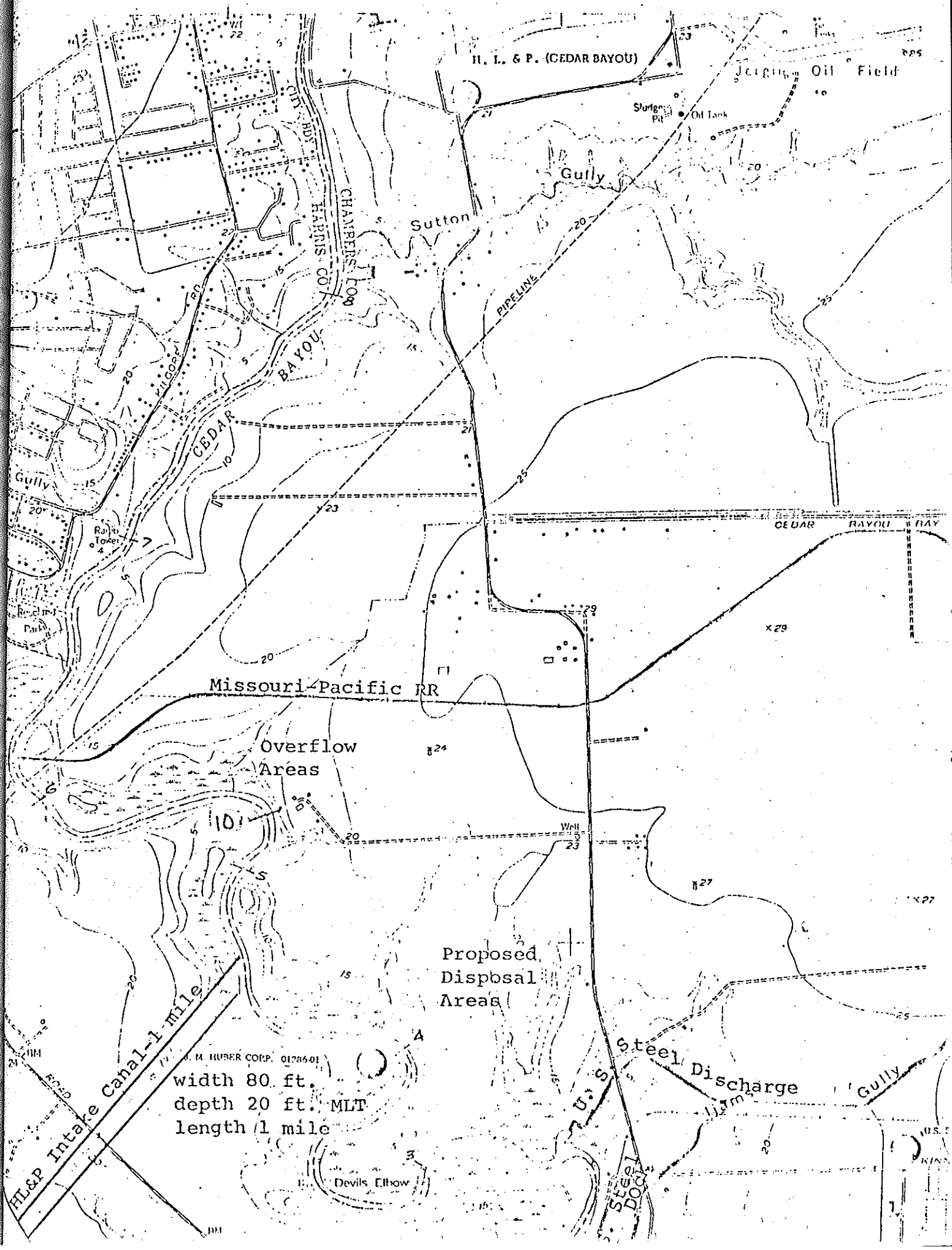
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Jensen Oil Field
Sludge Pit
Oil Tank
Gully
Sutton
CHANNEL
HARRIS CO.
CITY RDY
PIPELINE
CEDAR BAYOU
KILGORE
Gully
Radio Tower
Park
CEDAR BAYOU BAY
Missouri-Pacific RR
Overflow Areas
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U. S. Steel Discharge
Gully
HL&P Intake Canal-1 mile
J. M. HUBER CORP. 01286-01
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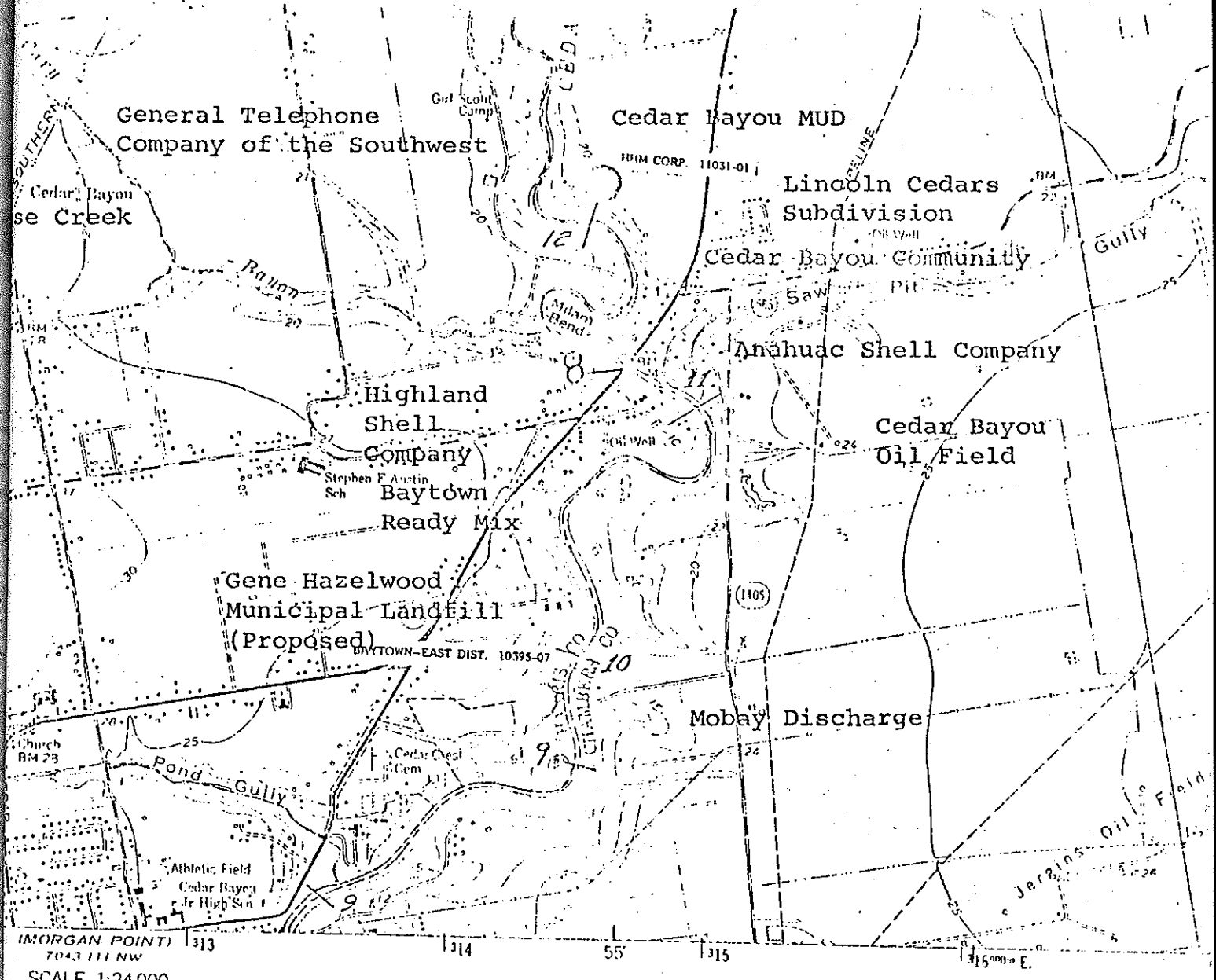
depth 20 ft. MLT
length 1 mile
Devils Elbow
U. S. Steel Dock
ROAD


General Telephone
Company of the Southwest
Cedar Bayou MUD
Lincoln Cedars
Subdivision
Cedar Bayou Community
Anahuac Shell Company
Highland
Shell
Company
Baytown
Ready Mix
Cedar Bayou
Oil Field
Gene Hazelwood
Municipal Landfill
(Proposed)
Mobay Discharge
Cedar Bayou
Se Creek
Pond Gully
Gully
Milam Bend
Stephen F Austin Sch
Church
Athletic Field
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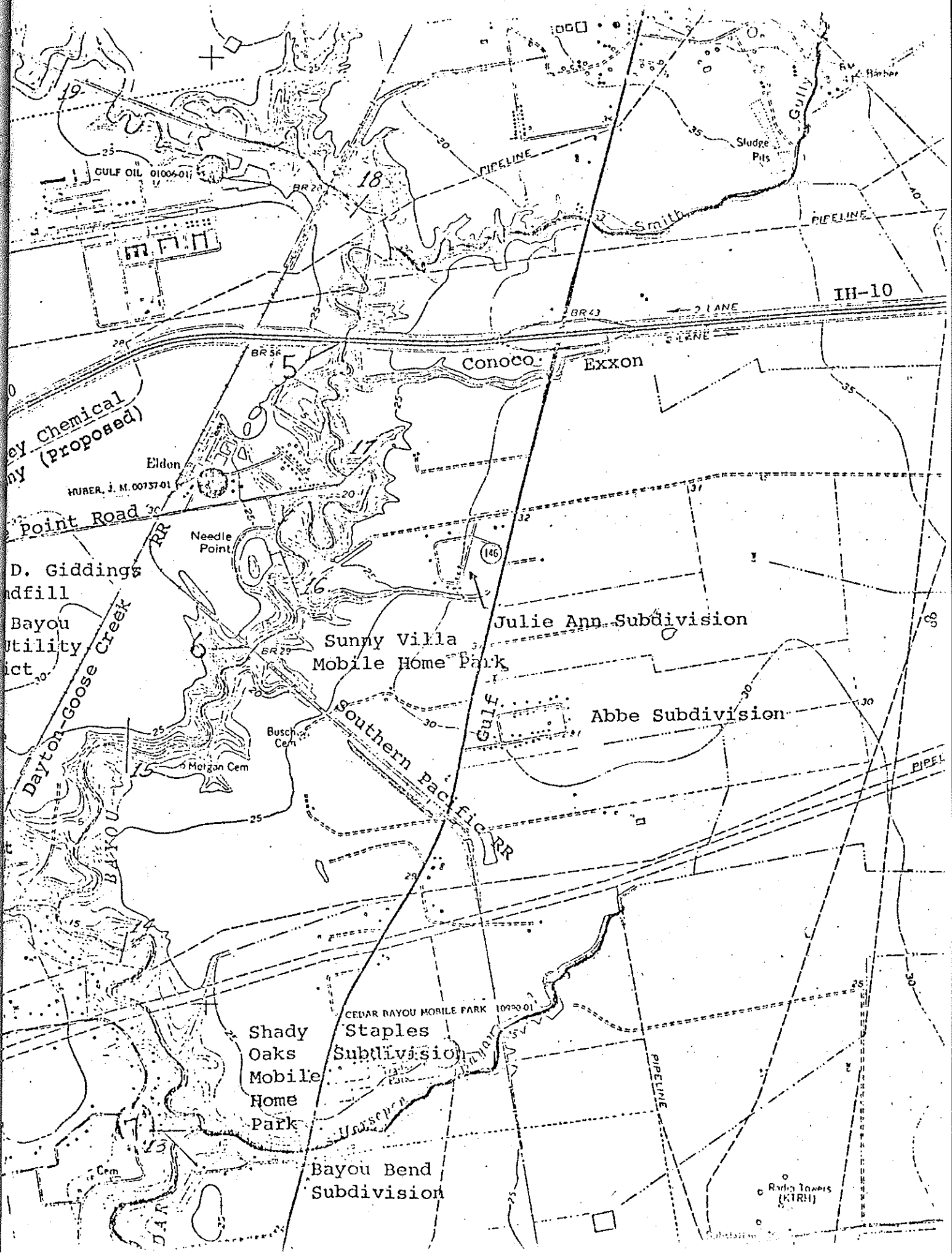
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Abbe Subdivision
Busch Cem
Morgan Cem
Southern Pacific RR
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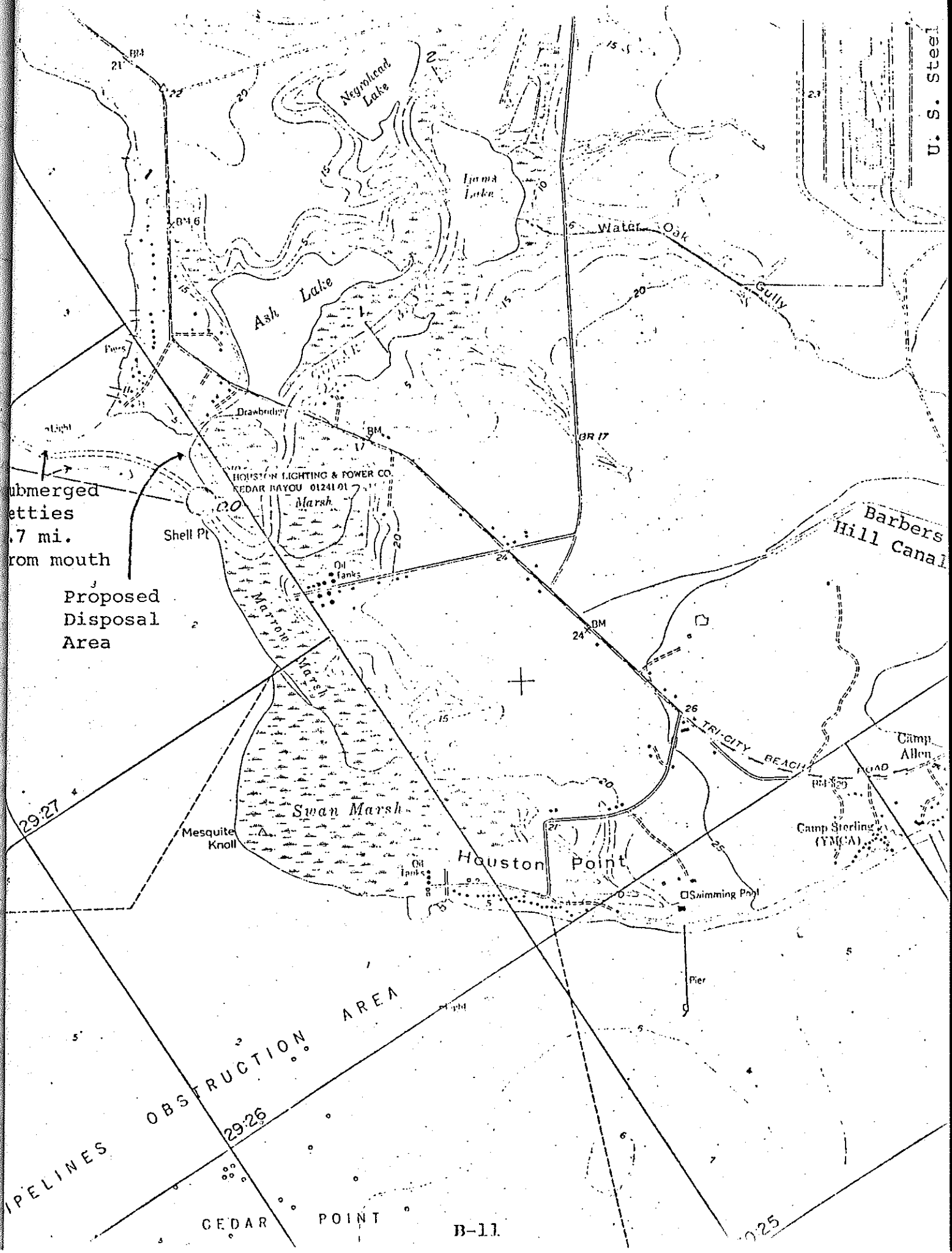
Smith
Gully
CEDAR BAYOU MOBILE PARK
Shady Oaks Mobile Home Park
Staples Subdivision
Bayou Bend Subdivision
Radio Towers (KTRH)
HUBER, J. M. 00737-01
GULF OIL 01006-01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Proposed
Disposal
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Negrohead Lake
Ash Lake
Water Oak
Gully
U. S. Steel
Barbers Hill Canal
HOUSTON LIGHTING & POWER CO.
CEDAR BAYOU 01241-01
Marsh
Shell Pl
Oil Tanks
Drawbridge
BM
BR 17
Marron
Swan Marsh
Mesquite Knoll
Houston Point
TRI-CITY BEACH ROAD
Camp Allen
Camp Sterling (YMCA)
Swimming Pool
Pier
29:27
29:26
OBSTRUCTION AREA
IPELINES
CEDAR POINT