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AN INVENTORY OF EXISTING OCS RELATED OIL AND GAS FACILITIES

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AN INVENTORY OF EXISTING OCS RELATED OIL AND GAS FACILITIES

THE COASTAL MANAGEMENT PROGRAM
GENERAL LAND OFFICE OF TEXAS

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AN INVENTORY OF EXISTING OCS RELATED OIL AND GAS FACILITIES

The purpose of this section is to list and describe those facilities which are relevant to offshore activity. The topics covered in this section are not all inclusive regarding an offshore operation but do contain those most relevant in the overall process. Areas of interest which are covered include:

		Pages
1.	Petroleum Refineries and Petrochemical Complexes	2 - 8
2.	Pipelines	9 - 16
3.	Ports	17 - 22
4.	Rigs	23 - 28
5.	Support Services	29 - 39

Later, the data will be updated as necessary and will be used as input into the OCS methodology.

PETROLEUM REFINERIES AND PETROCHEMICAL COMPLEXES

PETROLEUM REFINERIES AND PETROCHEMICAL COMPLEXES

The Texas coastal area contains the largest concentration of petroleum refineries and petrochemical complexes of any state in the nation. Approximately 40% of the nation's petrochemical industries and 25% of the refining capacity is located in coastal counties. In 1972, total value of output in petroleum refineries along the coast amounted to $6.3 billion and $4.6 billion for petrochemical plants. At the same time, the refineries employed nearly 32,000 workers and the petrochemical complexes employed approximately 45,000.

TABLE 1

$ Million Output and Employment

Area	Petro-chemical	Emp.	Petroleum Refineries	Emp.
Beaumont-Port Arthur Area	$ 908	9,433	$ 2,476	14,997
Houston-Galveston Area	3,289	30,338	3,294	15,257
Victoria Area	184	1,953		
Corpus Christi Area	202	2,708	522	1,371
Lower Rio Grande Valley	5	292		
Total	$ 4,588	44,724	$ 6,292	31,625

Source: 1972 Census of Manufacturers, Department of Commerce, Washington, D. C. Texas Employment Commission, Austin, Texas, unpublished data.

If the total effect these industries have on the economy were measured, the impact would be significantly higher. For example, the total income effect these industries have on the economy amount to $16.3 billion for refining and $12.3 billion for petrochemicals. These industries not only employ many workers and significantly contribute to the economy but they are also the most capital intensive industries in the coastal area. They also use more water in their processing than any other manufacturing industries along the coast.

While the petroleum refineries and petrochemical complexes are generally thought of in the same light, they are separate processes. The petroleum refining industries use crude oil as feedstock and produce gasoline and other fuels used for transportation, power generation, and heating purposes. The petrochemical industry uses natural gas and byproducts from petroleum refining as a feedstock. Petrochemical plants manufacture include a multiplicity of products including rubber, plastic, synthetic fibers and organic chemicals.

The refining and petrochemical complex is concentrated along the upper Texas coast in the Houston and Beaumont-Port Arthur areas. Tables 2 and 3 show the location and capacity of these plants. The Exxon refinery on Baytown is currently undergoing an expansion to increase its capactiy to 600,000 barrels per day. In total, refineries in the Houston area have a capacity of 1.5 million barrels per day. The Beaumont-Port Arthur area refineries have a capacity 1.3 million barrels per day. In all probability, there will not be any new refineries built in the near future because the industry only builds large refineries and currently there is not a need for any new refineries. Also, because of ecomonies of scale it is easier to expand an existing refinery rather than build a new one. A final reason is that the current feedstock in refineries is a mix of domestic and imported crude and any increase in domestic supplies could be substituted for the imported crude oil.

Table 2

PETROLEUM REFINERIES

Name	Location	Capacity MBD
Texaco	Pt. Arthur	406,000
Exxon	Baytown	400,000
Amoco	Texas City	333,000
Mobil	Beaumont	325,000
Gulf	Pt. Arthur	312,100
Shell	Deer Park	294,000
Arco	Houston	213,000
Coastal States	Corpus Christi	185,000
Union Oil of California	Nederland	127,000
Southwestern Refining Co., Inc.	Corpus Christi	114,000
Crown Central Petro. Corp.	Houston	100,000
Phillips Petro	Sweeney	85,000
Tex City Refining Co.	Texas City	76,500
Charter International Oil	Houston	70,000
Champlin Petroleum Co.	Corpus Christi	67,700
Marathon Oil	Texas City	64,000
Suntide Refining Co.	Corpus Christi	57,000
Texaco	Pt. Neches	47,000
Quintana-Howell Joint Venture	Corpus Christi	44,400
South Hampton Co.	Silsbee	18,100
Eddy Refining Co.	Houston	3,250
TOTAL		3,342,050

SOURCE: 1975 International Petroleum Encyclopedia, Petroleum Publishing Co., Tulsa, Oklahoma.

Table 3

PETROCHEMICAL PLANTS

City	County & Company	Feed	Major Products
	Orange County		
Orange	Allied Chemical	Ethylene	Polyethylene
Orange	Firestone Synthetic Rubber & Latex Co.	Butane, Styrene Butaliene	SBR
Orange	Gulf Oil Chemicals	Ethylene	Id polyethylene
Orange	Phillips Petro	gas, oil	Carbon Black
	Jefferson County		
Pt. Arthur	Arco Polymers Inc.		Id Polythylene
Beaumont	Goodyear Tire & Rubber	Propylene, C-5 streams butadiene	Polybutadiene
Pt. Arthur	Gulf Oil Chemicals	Petro fractions	Ethylene
Beaumont	Houston Chemical Co	Ethylene	Ethylene glycol
Pt. Neches	Jefferson Chem. Co.	Refinery gases	Ethylene
Beaumont	Mobil Chemical	Petro fractions	Toluene
Groves	Petro Gas Producing Co.	Refinery products	
Pt. Arthur	Texaco	Refinery fractions	Benzene, cyclohexane
Beaumont	Union Oil Co. of Ca.	Reformate	Toluene
	Hardin County		
Silsbee	S. Hampton Co.		
	Harris County		
Channelview	Arco	Butane, Butylenes Xylenes	Butaliene
Houston	Arco	Refinery Streams	Benzene
Houston	Arco/Plymers Inc.		Propylene

Table 3 cont'd

City	County & Company	Feed	Major Products
	Harris County(cont)		
Clear Lake	Celanese Chemical	Ethylene	Methanol
Houston	Charter Int'l Oil		Toluene
Houston	Crown Central Petro Corp.	Reformate, toluene	Benzene
Deer Park - Pasadena	Diamond Shamrock	Ethylene, Vinyl chloride, Methane	acetylene, ethylene, dichloride, polepurif chloride
Pasadena	Diamond Shamrock		polypropylene
Pasadena	Ethyl Corp.	Ethylene	Alpha olefins, ethyl chloride, ethylene dichloride
Baytown	Exxon		Benzene, butyl rubber, carbon black feedstocks, cyclohexane, ethylbenzen ethylene, in-paraffins, orthoxylene, paraxylene, polyisobutylene, polypropylene, propylene plasticizers, solvents, volume xylene mix.
Houston	Goodyear Tire & Rubber	Butaliene-styrene	Styreen-butaliene rubber
Baytown	J.M. Huber Corp.	Refinery bottoms	Carbon Black
Houston	Merichem	Refinery treating wastes	Pehnol
Houston	National Petro		Id polyethylene
Bayport	Oxirane Chemical	Propylene	Propylene oxide
Houston	Petro-Tex Chem. Corp.	Petroleum Base	Butadiene
Pasadena	Phillips Petro. Corp	Ethylene, propylene, natural gas	Ammonia
Sweeney	Phillips Petro. Corp	Crude Oil	Ethlene
Houston	Rechhold Chemicals	Methanol Styrene	Formaldehyde
Deer Park	Rohm & Hass Co.	Natural Gas	Acrylic esters
Houston	Shell Chemical	Petro fractions	Ethylene

Table 3 cont'd

City	County & Company	Feed	Major Products
	Harris County (cont)		
Pasadena	Tenneco Chemicals	Natural gas, vinyl chloride	Methanol
Houston	US Industrial Chemicals Co.		Vinylacetate
	Galveston County		
Texas City	Amoco Chem Corp	Ethylene, benzene, petro fractions, refinery gases	Styrene
Texas City	Amoco Oil Co.	Refinery products, natural gas	Ammonia
Texas City	Marathon Oil		Cumene
Texas City	Monsanto Co	light crude oils, natural gas	Ethyl benzene
Texas City	Texas City Refining Co.	Refinery streams	Propylene
Texas City	Union Carbine Corp.	Natural gas, refinery gases	Ethylene, acetic acid
	Fort Bend County		
Oyster Creek	Dow Chemical	Ethylene, cumene	Phenol
	Brazoria County		
Freeport	Dow Badische Co.	Propylene, acetylene, cyclohexane	Caprolactum
Freeport	Dow Chemical Co.	Natural gas, LP gas, benzene	Butadiene, glycols, styrene
Alvin	Monsanto Co.	Light crude oil	ethylene
Sweeney	Phillips Petro Co.	Crude oil, natural gas liquid, benzene	Ethylene
	Matagorda County		
Bay City	Celanese Chem.	Ethylene, cyclohexane	Vinyl acetate

Table 3 cont'd

City	County & Company	Feed	Major Products
	Nueces County		
Corpus Christi	Champlin Petro Co.		Cyclohexane
Corpus Christi	Coastal States Petro Chemical Co	Crude Oil	Toluene
Corpus Christi	Hess Oil & Chem. Co.	Petro fractions	Benzene
Corpus Christi	Southwestern Oil & Refining Co.	Naphtha	Toluene
Corpus Christi	Suntide Refining Co.	Refinery streams	Paraxylene
	Cameron County		
Brownsville	Triad Chem. Co.	Natural Gas	Acetic acid, acetic acetecamhydride

SOURCE: 1975 International Petroleum Encyclopedia, Petroleum Publishing Co., Tulsa, Oklahoma.

PIPELINES

PIPELINES

Over seventy trunk or gathering pipelines extend from the Texas OCS or the federal OCS off Texas to the Texas barrier islands or to the Texas coast where there are no barrier islands. Twelve of these trunk or gathering lines extend beyond the three marine league line into the federal OCS. (See Map 1 and Table 4 .)

Most of the pipelines which are situated wholly within the Texas OCS carry gas and are in the 2 3/8" to 12" size range. Although a few are much larger - up to 42" - and some carry oil, these are relatively few.

Of primary concern are the twelve trunk or gathering lines which are situated in the federal OCS off Texas.

1. Pipeline #2 on Map 1 is a 16-mile gathering line connecting to a trunk line situated in the federal OCS off Louisiana. Pipeline #2 gathers gas from tract number 129 in the High Island/East Addition area. It has a 12" diameter and is owned by Tidal Pipeline Co.

2. Pipeline #9 is a 16" gas line extending approximately 33 miles from tract number 88 in the High Island area to a trunk line in Louisiana. It carries gas and is owned by United Gas Pipeline Co.

3. Pipeline #10 on Map 1 is a 16" natural gas pipeline. It gathers production from tract number 88 in the High Island area and carries it 26 miles to a natural gas trunk line in Texas. It is owned by Natural Gas Pipeline Co.

4. Pipeline #13 extends approximately 32 miles from tract number 52 in the High Island area to a trunk line in Louisiana. It is a 16" gas line owned by Transcontinental Gas Pipeline Co.

5. Pipeline #16 on Map 1 is a 4 1/2" oil line extending from tract number 52 in the High Island area to the Texas coast. That distance is approximately 12 miles. The line is owned by Chevron Oil Co.

6. Pipeline #20 is a 16" gas line which gathers production from tract number 136 in the High Island area. It carries such production approximately 56 miles to Texas City, Texas. It is owned by the Black Marlin Pipeline Co.

7. Pipeline #21 is a 6" gas line which gathers production from that number 140 in the High Island area and carries it approximately 3 miles to feed into pipeline number 20. It too, is owned by Black Marlin.

8. Pipeline #26 gathers production from tract number 296 in the Galveston area and carries it approximately 3 miles to feed into pipeline #27. It is a 20" gas line owned by Blue Dolphin Pipeline Co.

9. Pipeline #27 gathers gas from tract number 288 in the Galveston area and carries it approximately 40 miles to the Texas shores. It, like pipeline #26 which feeds into it, is a 20" gas line and is owned by Blue Dolphin.

10. Pipeline #34, which is fed by both numbers 33 and 35 (see below) is a 30" gas line. It extends from tract number 538 in the Brazos area to Texas shore, approximately 28 miles away. It is owned by Transcontinental gas Pipeline Co.

11. Pipeline #33 on Map 1 is a 20" gas line extending from tract number A-1 in the Brazos area down to tract number 541 in the same area and then westward to join pipeline #34. Its total length is approximately 22 miles and is owned by Transcontinental.

12. Pipeline #35 originates in tract number A-76 in the Brazos/South Addition area and extends approximately 32 miles to feed into pipeline #34. It is a 20" gas line owned by Transcontinental.

Thus, the total mileage of pipeline seaward of the three league line in the federal OCS off Texas is approximately 147 miles.

The approved pipeline shown on Map 1 will, when completed, gather production from the High Island South Addition and the High Island East Addition South Extension areas. The proposed pipeline shown on Map 1 would serve the High Island and Galveston Areas.

TABLE 4
Pipelines/Gulf of Mexico
(To accompany Map 1)

Pipeline Number (From Map)	Texas General Land Office Easement No.	Size	Product	Owner
1		12"	Gas	Tidal Pipeline Co.
2		12"	Gas	Tidal Pipeline Co.
3		6"	Gas	Tidal Pipeline Co.
4		16"	Gas	Tidal Pipeline Co.
5		6"	Gas	Tidal Pipeline Co.
6		10"	Gas	Tidal Pipeline Co.
7		10"	Gas	Chevron Oil Co.
8		18"	Gas	Chevron Oil Co.
9	2184	16"	Gas	United Gas Pipeline Co.
10	2391	16"	Natural Gas	Natural Gas Pipeline Co.
11	1955	10"	Gas	Transcontinental Gas Pipeline Co.
12	1557	6 5/8"	Oil	Zapata - C&K
13	1833	16"	Gas	Transcontinental Gas Pipeline Co.

TABLE 4
Pipeline/Gulf of Mexico
(To accompany Map 1)

Pipeline Number (From Map)	Texas General Land Office Easement No.	Size	Product	Owner
13a	2815	10"	Gas	Transcontinental Gas Pipeline Co.
13b	2850	2 7/8"	Gas	Mitchell Energy Offshore
14	1852	12"	Gas	United Gas Pipeline Co.
15	1827 1816	16" 8 5/8"	Gas Oil	United Gas Pipeline Co. Atlantic Richfield Co.
16	2421	4 1/2"	Oil	Chevron Oil Co.
17	2018	12"	Gas	Pennzoil Pipeline Co.
17a	2005	4 1.2"	Gas	King Resources Co.
18	1572	3"	Gas	Occidental Petroleum Corp.
18a	1571	4 1/2" 2 1/2"	Gas Oil	Occidental Petroleum Corp.
19	445	4"		Pan American Petroleum Corp.
20	1487	16"	Gas	Black Marlin Pipeline Co.
21		6"	Gas	Black Marlin Pipeline Co.

TABLE 4
Pipeline/Gulf of Mexico
(To accompany Map 1)

Pipeline Number (From Map)	Texas General Land Office Easement No.	Size	Product	Owner
22	2470	8"	Gas	Natural Gas Pipeline Co.
23	2465	4"	Oil	Mitchell Energy Offshore
23a	2461	2 3/8"	Oil	Mitchell Energy Offshore
24	3252	6 5/8"	Gas	Tejas Gas Corporation
25	3089	42"	Oil	Houston Oil and Minerals
26		20"	Gas	Blue Dolphin Pipeline Co.
27	3000	20"	Gas	Blue Dolphin Pipeline Co.
28	3209	8"	Gas	Houston Pipeline Co.
29	2605	8 5/8"	Oil	Mobil Oil Corp.
30	2565	8 5/8"	Oil	Houston Pipeline Co.
31	3249	3"	Gas	Houston Pipeline Co.
32	3225	8 5/8"	Gas	Pipeline Technologists
32a	2857	8 5/8"	Gas	Coastal States Gas Prod. Co.

TABLE 4
Pipeline/Gulf of Mexico
(To accompany Map 1)

Pipeline Number (From Map)	Texas General Land Office Easement No.	Size	Product	Owner
33		20"	Gas	Transcontinental Gas Pipeline Co.
34	2114	30"	Gas	Transcontinental Gas Pipeline Co.
35		20"	Gas	Transcontinental Gas Pipeline Co.
36	1453	8 5/8"	Gas	Lo-Vaca Gathering Co.
37	1453	8 5/8"	Gas	Lo-Vaca Gathering Co.
38	1592	12"	Gas	Lo-Vaca Gathering Co.
39	3170	6 5/8"	Gas	Superior Oil Company
40	1454	10 3/4"	Gas	Lo-Vaca Gathering Co.
40a	1567	12"	Gas	Lo-Vaca Gathering Co.
41	1459	16"	Gas	Lo-Vaca Gathering Co.
42	2597	6"	Oil	Monsanto Co.
43	2588	5 5/8"	Gas	North American Royalties, Inc.
44	2587	5 5/8"	Gas	North American Royalties, Inc.

TABLE 4
Pipeline/Gulf of Mexico
(To accompany Map 1)

Pipeline Number (From Map)	Texas General Land Office Easement No.	Size	Product	Owner
45	2926	10"	Gas	Corpus Christi Oil & Gas Co.
45a	2927	8 5/8"	Gas	Corpus Christi Oil and Gas Co.
46	3226	10 3/4"	Gas	Pipeline Technologists
46a	1566	12"	Gas	Lo-Vaca Gathering Co.
47	2893	6 5/8"	Gas	OXY Petroleum
48	2882	6"	Gas	Sun Oil Co.
49	1836 1826	4" 6"	Gas Gas	Shell Oil Co. Gulf Oil Co.
50	1717	8"	Gas	United Gas Pipeline Co.
50a	1630	8"	Gas	United Gas Pipeline Co.
51	1745	4 1/2"	Gas	Texaco, Inc.
52	2560	6"	Gas	Reynolds Mining Corp.
53	1641	10"	Gas	Texas Eastern Transmission
53a	2849	10"	Gas	Chevron Oil Co.

TABLE 4
Pipeline/Gulf of Mexico
(To accompany Map 1)

Pipeline Number (From Map)	Texas General Land Office Easement No.	Size	Product	Owner
54	2790	3 1/2"	Gas	Reserve Gas Systems, Inc.
55	2933	4 1/2"	Oil	Mobil Oil Corp.
56	2933	4 1/2"	Oil	Mobil Oil Corp.
57	2933	4 1/2"	Oil	Mobile Oil Corp.
58	3115	8 5/8"	Oil	Mobile Oil Corp.

TEXAS PORTS

TEXAS PORTS[1]

The ports and harbors of Texas can be thought of as comprising three separate yet inter-related components: deep draft ports, shallow draft ports, and the Gulf Intracoastal Waterway (GIWW).

Deep Draft Ports

There are eleven distinct deep draft ports or port systems scattered along the Texas Gulf Coast. These ports, for the most part, have depths of 36 to 40 feet. (See Table 5). In 1974, these ports handled a total of 229,440,637 short tons; of that total, approximately 171,780,000 short tons - 74.9% of the total - was petroleum, natural gas, chemicals or chemical products, or petroleum fuels or lubricants. The eleven deep draft ports are:

1. Orange - port facilities include 447,000 barrels of storage for crude petroleum and refined products storage. The port is well-served by rail and highways, and there are 35 piers, wharves, and docks. Nearly 31% of the tonnage handled in 1974 was petroleum-related.[2]

2. Port Arthur - approximately 26,000,000 barrels of storage for crude oil and refined products is available. There is a 1200-foot wharf structure with nine docks and access to land transportation is good. Over 89% of the tonnage handled in 1974 was petroleum-related.

3. Sabine Pass Harbor - located directly on open gulf waters, it is not an extremely active port. Nearly 90% of its 1974 tonnage, however, was petroleum related. There is one dock and no petroleum storage capacity.

4. Beaumont - the port is served by several rail companies and highways and has a capacity for storage of crude oil and refined products of nearly 40 million barrels. In 1974, almost 82% of the total tonnage handled was petroleum related. There are nine docks.

5. Galveston - the port has applied for an authorized depth of 67 feet. It is equipped with 22,639 linear feet of wharves and can dock 37 ships simultaneously. Approximately 7% of the tonnage handled in 1974 was petroleum-related. The port is well served by rail and highway systems. It has virtually no petroleum storage capacity.

6. Texas City - port facilities include a storage capacity for over 11 million barrels of crude oil and refined products. Over 99% of its 1974 tonnage was petroleum related. There are 30 docks.

7. Houston - Texas' largest port system and the third busiest in the nation has 218 wharves, piers, and docks in the vicinity. In 1974, over 66% of the total tonnage handled was petroleum-related. Over 12 million barrels of storage for crude oil and petroleum products is available.

8. Freeport - the port is well served by inland transportation systems and has storage space for about 700,000 barrels of crude petroleum and 1,350,000 barrels of finished products. Over 96.5% of the tonnage handled in 1974 was petroleum-related. There are three docks.

9. Harbor Island - the port is located on an island in Corpus Christi Bay, has five docks, and is served by one highway in addition to the Gulf Intracoastal Waterway. It has applied for an authorized depth of 72 feet. A total of 100% of the tonnage handled in 1974 was petroleum-related.

10. Corpus Christi - port facilities include storage space for over 25 million barrels of crude oil or refined petroleum products, nearly 7,000 linear feet of wharf frontage, and approximately 43 docks. Almost 73% of the total tonnage handled in 1974 was petroleum-related.

11. Brownsville - port facilities include five liquid storage terminal operators, 18 cargo docks (5 of which are oil docks), and over 6,000 feet of wharf frontage. Over 48% of its 1974 tonnage was petroleum related.

Shallow Draft Ports

There are many small, shallow draft ports along the Texas Gulf Coast, but the most significant (See Map 2) are the channel to Liberty, Anahuac, Double Bayou, Port Bolivar, Cedar Bayou, Clear Creek, Dickinson Bayou, Chocolate Bayou, the channel to Sweeny, Palacios, the channel to Victoria, the Matagorda Ship Channel, Rockport, Aransas Pass, Port Mansfield, the channel to Harlingen, and Port Isabel.

These ports combined handled a total of over 14 million short tons of cargo in 1974; slightly over 6 million tons of that total (42%) were petroleum-related. (See Table 5 .) The busiest of the shallow draft ports are Chocolate Bayou, the Matagorda Ship Channel, and the channel to Victoria.

Gulf Intracoastal Waterway

The Gulf Intracoastal Waterway (GIWW) extends along the entire Gulf Coast from Brownsville, Texas to southern Florida. It serves as the primary lane for nearly all small commercial and recreational vessels berthed on the Gulf Coast. The Texas section of the GIWW extends along a 403 mile arc from the Sabine River at the Port Arthur Canal to the Port of Brownsville. (See Map 2 .) The channel is generally 12 feet deep and 125 feet wide.[3]

Tonnage handled on the GIWW has remained relatively constant in recent years. In 1968, 63.3 million short tons were handled; that figure fluctuated somewhat until a high of 68.9 million short tons was reached in 1972. The 1973 figure was 63 million.[4] In 1971, 30.4% of the cargo handled on the Texas intracoastal waterway was petroleum products, 29.8% was crude petroleum, and 17.4% was chemicals.[5]

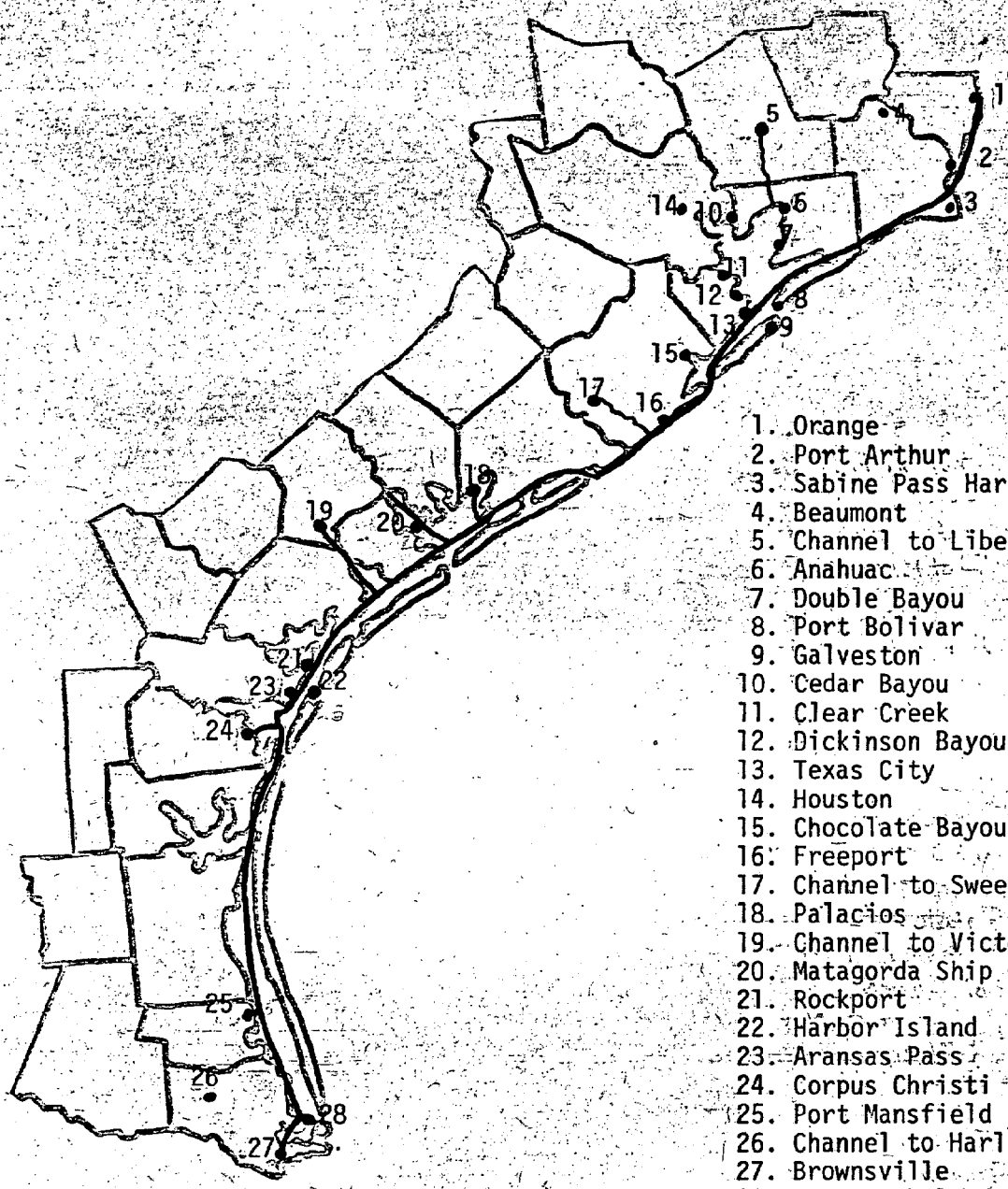
(To avoid the possibility of double-counting tonnage handled, the GIWW is entered separately on Table 5 and is not included in the "Total" row.)

In addition to existing ports and port systems, three port proposals merit attention. The Port of Galveston has applied for a permit to dredge the port and a 35-mile channel to the Gulf of Mexico to a depth of 67 feet. If the application is approved, the facility is projected to be in operation by 1981. It is estimated that the port could import 125 million tons of crude oil by the early 1990's.[6]

Similarly, the Port of Corpus Christi has applied for a permit to deepen the Harbor Island facility at Port Aransas to 72 feet.[7]

Finally, a consortium of nine oil and chemical companies have planned and designed an offshore, deepwater oil terminal 25 miles off Freeport, Texas, in the Gulf of Mexico. The facility, which could be completed by 1980, will include four monobuoys and a four-acre platform. Two 52-inch diameter pipelines would carry up to 2 million barrels of crude oil per day to storage facilities 31 miles away. Two additional monobuoys, a second platform and a third pipeline are projected for a later date.[8]

MAP 2



1. Orange
2. Port Arthur
3. Sabine Pass Harbor
4. Beaumont
5. Channel to Liberty
6. Anahuac
7. Double Bayou
8. Port Bolivar
9. Galveston
10. Cedar Bayou
11. Clear Creek
12. Dickinson Bayou
13. Texas City
14. Houston
15. Chocolate Bayou
16. Freeport
17. Channel to Sweeny
18. Palacios
19. Channel to Victoria
20. Matagorda Ship Channel
21. Rockport
22. Harbor Island
23. Aransas Pass
24. Corpus Christi
25. Port Mansfield
26. Channel to Harlingen
27. Brownsville
28. Port Isabel

Table 5

PORT OR WATERWAY	DRAFT	TOTAL TONNAGE HANDLED (IN MILLIONS OF SHORT TONS)			SELECTED COMMODITIES HANDLED IN 1974 (IN MILLIONS OF SHORT TONS)			
		1960	1970	1974	A Crude Petroleum and Natural Gas	B Chemicals And Chemical Products	C Petroleum Fuels And Lubricants	Total: A,B&C
Orange	24-33	1.02	1.62	1.33	.05	.30	.06	.41
Beaumont	36-38	27.11	30.48	33.50	12.88	2.37	12.09	27.34
Port Arthur	36-41	28.21	22.67	27.80	10.30	.55	13.92	24.77
Sabine Pass Harbor	30-40	.37	.28	.39	.29	.01	.04	.34
Houston	36-40	57.13	64.65	89.11	18.81	10.07	30.27	59.14
Texas City	36-40	15.40	17.10	20.15	6.27	6.43	7.36	20.06
Galveston	44	6.07	3.46	7.17	.21	.13	.15	.49
Freeport	32	3.65	5.28	8.90	3.07	4.34	1.18	8.59
Corpus Christi	38-45	24.84	25.23	32.84	8.32	2.64	12.90	23.86
Harbor Island	47		5.32	5.41	4.92	-	.49	5.41
Brownsville	36-38	.97	4.99	2.84	.38	.33	.66	1.37
Port Isabel	12	.44	.39	.18	.13	0	0	.13
Anahuac	Approx. 6	.11	.48	.38	-	.04	-	.04
Trinity River to Liberty	Approx. 6	.97	.36	.36	-	.04	-	.04
Cedar Bayou	Approx. 6	.23	.49	.92	.03	-	.12	.15
Chocolate Bayou	12	-	2.53	2.88	1.45	.72	.61	2.78
San Bernard River to Sweeny	9	.84	.53	.51	.06	.04	.30	.40
Matagorda Ship Channel	12	2.04	4.48	4.93	.17	.55	.08	.80
Channel to Victoria	9	.25	1.78	3.14	-	1.22	.08	1.30
Tributary Arroyo Colorado to Harlingen	12	.22	.43	.58	.02	.05	.32	.39
Aransas Pass	12	.10	0	.02	-	0	-	0
Palacios	12	.14	.10	.07	0	-	-	0
Port Bolivar	12	-	-	0	-	-	0	0
Clear Creek	Approx. 6	-	-	.22	-	-	-	-
Dickinson Bayou	Approx. 6	-	-	.12	-	-	-	-
Double Bayou	Approx. 6	.06	-	.03	-	0	-	0
Port Mansfield	8-16	.11	.02	.04	-	-	.01	.01
Rockport	9	0	0	0	-	-	-	-
TOTAL		170.28	192.67	243.82	67.36	29.83	80.64	177.83
Gulf Intracoastal Waterway	12	51.7 (1965)	65.3	66.1	14.24	14.44	22.0	50.68

Note: 0 indicates less than .01 million

Table 5

AGE IN MILLIONS TONS)		SELECTED COMMODITIES HANDLED IN 1974 (IN MILLIONS OF SHORT TONS)				Total: A,B&C (As a % of Total Tonnage Handled in 1974)	Number of Berths	Petroleu Storage Capacity (In 1000 BBL
70	1974	A Crude Petro-leum and Natural Gas	B Chemicals And Chemical Products	C Petroleum Fuels And Lubri-cants	Total: A,B&C			
52	1.33	.05	.30	.06	.41	30.8	35	447
48	33.50	12.88	2.37	12.09	27.34	81.6	9	40,000
67	27.80	10.30	.55	13.92	24.77	89.1	9	26,000
28	.39	.29	.01	.04	.34	87.2	1	0
65	89.11	18.81	10.07	30.27	59.14	66.4	218	12,000
10	20.15	6.27	6.43	7.36	20.06	99.6	30	11,000
46	7.17	.21	.13	.15	.49	6.8	37	0
28	8.90	3.07	4.34	1.18	8.59	96.5	3	2,050
23	32.84	8.32	2.64	12.90	23.86	72.7	Approx. 43	{ 25,000 }
32	5.41	4.92	-	.49	5.41	100.0	5	
99	2.84	.38	.33	.66	1.37	48.2	18	1,000
39	.18	.13	0	0	.13	72.2		
48	.38	-	.04	-	.04	10.5		
36	.36	-	.04	-	.04	11.1		
49	.92	.03	-	.12	.15	16.3		
53	2.88	1.45	.72	.61	2.78	96.5		
53	.51	.06	.04	.30	.40	78.4		
48	4.93	.17	.55	.08	.80	16.2		
78	3.14	-	1.22	.08	1.30	41.4		
43	.58	.02	.05	.32	.39	67.2		
	.02	-	0	-	0	0		
10	.07	0	-	-	0	0		
	0	-	-	0	0	0		
	.22	-	-	-	-	-		
	.12	-	-	-	-	-		
	.03	-	0	-	0	0		
02	.04	-	-	.01	.01	25		
	0	-	-	-	-	-		
67	243.82	67.36	29.83	80.64	177.83	72.9		
3	66.1	14.24	14.44	22.0	50.68	76.7		

Footnotes

[1]Most of the statistical information presented in this section has been abstracted from: U.S. Army, Corps of Engineers, Waterborne Commerce of the United States, 1960, 1970, and 1974, Washington, D.C.

[2]The term "petroleum-related" means petroleum, natural gas, chemicals or chemical products, and petroleum fuels or lubricants.

[3]U.S. Army, Corps of Engineers, Final Environmental Statement: Maintenance Dredging, Gulf Intracoastal Waterway, Texas Section, Main Channel and Tributary Channels, 1975, Galveston, Texas.

[4]Texas A&M University, Sea Grant Program, Analysis of the Role of the Gulf Intracoastal Waterway in Texas,(College Station, Texas: Texas A&M University, Sea Grant Program, 1975), p.5.

[5]Texas A&M University, Sea Grant Program, Primary Economic Impact of the Gulf Intracoastal Waterway in Texas, (College Station, Texas: Texas A&M University, Sea Grant Program, 1974), p.50.

[6]"Seadock Showdown Coming Today," The Houston Post, 27 May 1976, p. 1BB.

[7]Ibid.

[8]"Firm Sees Offshore Port For Supertankers by '79," The Houston Post, 27 May 1976, p. 1BB.

OFFSHORE DRILLING RIGS

OFFSHORE DRILLING RIGS

The most recent statistics show that there are 29 drilling rigs operating offshore Texas. Most of the rigs are either jackups or semi-submersibles. The data in Table 7 show not only the drilling contractor, but give additional information about the drilling operation including:

1. Operator - oil company which owns the lease.
2. Location - tract number and rig status.
3. Water depth - depth of water where rig is located.
4. Target depth - depth of well.
5. Subcontractors - those support groups on board.
6. Shorebase - drilling contractor onshore base.
7. Future status - where rig will move from present location.

In Texas, there are numerous offshore drilling contractors, most of which are located in Houston. However, the largest offshore drilling contractor in the world, Ocean Drilling Exploration Co. (ODECO) is headquartered in Dallas. A Texas base does not inecesarily imply that the contractor is operating offshore Texas. In most cases, Texas-based contractors are world-wide operators. The data listed below show that in 1975 the number of rigs owned by Texas-based contractors were:

Semi-submersibles	25
Jackups	78
Drillships	29
Fixed Platforms	68

Also, during 1975, Texas-based contractors had 39 rigs under construction divided into three groups:

Semi-submersibles	9
Jackups	20
Drillships	10

At the present time, there is a worldwide surplus of offshore drilling rigs. One reason for the surplus is because offshore activity has not expanded as rapidly as expected. Another reason is, because of escalating construction costs, older rigs can operate at a cheaper day rate than new rigs. In the past few years, there has been three identifiable levels of construction costs for offshore units - those units built before 1970, those built from 1970 - 74, and those delivered after 1974. In most cases

the rig owner who bought the rig before 1970 will be the most competitive and least hurt in an oversupply situation. Those rig owners who bought after 1974 will be the ones most likely to be stacking their rigs or working them at prices that are less than profitable. Table 6 shows the average cost of building offshore units for the three time periods.

TABLE 6

Construction Cost - Offshore Units

$ Million

	Jackups	Semi-Submersibles	Drillships
Prior to 1971	5.1	9.0	5.4
1971-74	10.3	22.8	13.1
After 1974	19.2	33.9	45.4

SOURCE: Offshore Rig Data Services, "Offshore Rig Newsletter", October 1975. P.O. Box 19247, Houston, Texas 77024.

In Texas, there are five yards that build offshore drilling rigs. The two largest are Levingston and Marathon-Le Tourneau. In each yard there is currently some activity although they are not operating at full capacity.

Name	Location
Baker Marine	Ingleside
Bethlehem Steel	Beaumont
Levingston Shipbuilding	Orange
Marathon-Le Tourneau	Brownsville
Todd Shipyards	Galveston

TABLE I

Gulf of Mexico - Texas

SUBMERSIBLES

Rig Owner	Rig Name & Rated Water Depth	Operator	Location/Status	Well Water Depth	Target Depth & Type	Spud Date	Sub-Contractors Diving/Cement Workboat/Mud	April 6, 1976 Shore Base	Future Status
Field Swire Drlg.	Mr. Arthur (80')	Getty	High Is.Bl. 74L/ Drilling	40'	13,500' Wildcat	1/76	None/Hallib./ Tidewater Mar./ Milchem	Cameron, La.	Contract w/Getty thru current well.

SEMISUBMERSIBLES

DiamondM General	DIAMOND M-GENERAL(1000')	--	Sabine Pass/Stacked	--	--	--	--	--	Available
Marlin Drlg.	MARLIN NO. 7 (1000')	--	Sabine Pass/ Stacked	--	--	--	--	--	Available
ODECO	OCEAN SCOUT (600')	Pennzoil	High Is.Bl.A-548/ Drilling	270'	Explor.	3/13/76	Oceaneering/Hallib./A. Martin & A.Levy/	Pelican Is., Tx.	Contract w/Pennzoil to 4/21/76
ODECO	OCEAN EXPLORER (600')	Shell	Mustang Is. Bl. A-92/Drilling	210'	4000' Explor.	1/2/76			Contract with Shell to 10/76
Santa Fe	Mariner 2 (600')	Amoco	S. Galveston A-218 Drilling	240'		Late 1/76	Oceaneering/Hallib./		Term contract w/Amoco Will leave for Petrobras/ Brazil ap. 4/15.
Sea Drlg. Neth.	SEDNETH I (600')	Texaco	High Is.Bl.586 #2/Drilling	532'	11,000' Explor.	3/12/76	Oceaneering/Hallib./ Candies/Milchem	Freeport, Tx.	Contract w/Texaco to 8/18/77. Next Texaco/High Is. Area
Western Oceanic	WESTERN PACESETTER II(1200')	--	Sabine Pass/ Idle	--		--	--	--	Available.
Zapata	ZAPATA CONCORD (2000')	Mobil	Bay City N698-E69/Drlg.		Wildcat	Mid 3/76	Oceaneering/Hallib/ Candies&A.Levy/	Cameron, La.	Contract w/Mobil to 11/77.
Mission Drlg.	MISSION EXPLORATION (1500')	--	Galveston/Stacked	--	--	--	--	--	Available.

Rig Owner	Rig Name & Rated Water Depth	Operator	Location/Status	Well Water Depth	Target Depth & Type	Spud Date	Sub-Contractors Diving/Cement Workboat/Mud	April 6, 1976 Shore Base	Future Status
Mission Drlg.	MISSION VIKING (1500')	Texaco	Bay City N639E73/ Drilling	750'			Ocean Systems/ Hallib/Martin/		Contract with Pennzoil to 10/78 & Texaco to 10/77
Atlantic Pacific Marine	Ranger I (70')	McMoran	Matagorda Is.Bl. 691-L/Drilling	45'		3/76	None/Hallib.		Contract w/McMoran to 5/76
Dixilyn (Pel-Lyn Godager)	DIXILYN THREE-SEVENTY(370')	Arco	N. Padre Is.Bl. 967/ Drilling	185'			None/Hallib./		Contract w/Arco to 7/76.
Fluor Drlg. Svcs.	MR. SAM (155')	Ruther-ford (Farmout)	Brazos Bl. 335-L/ Drilling	62'		Late 2/76		Freeport, Tx.	Contract w/Transocean to 5/77
Marine Drlg.	J. STORM III (250')	Houston O&M	Galveston Bl. 182S#1/Drilling	26'	11500'	3/5/76	None/Hallib/ Offsh. Log./		Term contract w/Cities Svc. & Houston O&M
Marine Drlg.	J. STORM IV (250')	Corpus Christi Oil & Gas	Matagorda Is.Bl. 596-L#4/Drlg.	50'			/BJ/ Offsh.Log.	Pt. O'Connor,Tx.	Term Contract w/Arco
Marine Drlg.	STORMDRILL V (115')	Conoco	High Is.Bl.137 #1/Drilling	46'	14756' Wildcat	2/21/76	None/Hallib./	Morgan City, La.	
ODECO	OCEAN EXPRESS (250')	Marathon	Mustang Is.Bl. 803L Drilling	115'	9000' Explor.	3/12/76	/Hallib./ Tidex/Dresser	Rockport, Tx.	Contractw/Marathon to 12/77. Next Marathon/ Mustang Is.Bl. 809-L #1 ap. 4/10/76
ODECO	OCEAN CHIEF (225')	Occi-dental (Farmout)	Brazos Bl. 542/ Drilling	119'	14000' Explor.	Mid 2/76	None/Hallib./ Various/Milchem	Freeport, Tx.	Term contract w/Shell & Pennzoil. Next Shell ap. 4/18/76

Rig Owner	Rig Name & Rated Water Depth	Operator	Location/Status	Well Water Depth	Target Depth & Type	Spud Date	Sub-Contractors Diving/Cement Workboat/Mud	April 6, 1976 Shore Base	Future Status
ODECO	OCEAN KING (340')	Superior	Mustang Is. Bl. 821/Drilling	156'		Mid 2/76	/Hallib/Tide-water Mar. & A. Levy		Term contract w/ Superior
Penrod Drlg.	PENROD 61 (340')	Cities Svc.	Mustang Is. A-54/ Drilling	300'		3/19/76	None/Hallib/		Term contract w/Cities Svc, Next Cities Svc./ Mustang Is. Bl. A-139.
Rowan Drlg.	ROWAN-LOUISIANA (350')	Burmah	High Is. Bl.A 317/Drilling	180'	8500'	3/25/76	/Hallib./ /Acadian Mar./		Contract w/Burmah to 5/76
Rowan Drlg.	ROWAN-HOUSTON (225')	Coastal States	Brazos Bl.368-L Drilling			3/76			
Salen Offshore	SALENENERGY I (250')		Sabine Pass/ Stacked	--	--	--	--	--	Available
Trans-world Drlg.	TRANSWORLD 50 (70')	Superior	Matagorda ST 581-S/Drlg.	40'		2/17/76	None/Hallib.		Term contract w/ Superior
Trans-world Drlg.	TRANSWORLD 62 (300')	Cities Svc.	N. Padre Is. Bl.A-59#1/Drilling	222'	10000' Wildcat	3/12/76	/Hallib./State Boat/		Contract w/Cities Svc. & Kerr McGee to 12/76. Next Cities Svc./Galveston Bl. A-54
Trans-world Drlg.	TRANSWORLD 67 (40')	Mitchell (Farmout)	Galveston Bl.164-S/Workover	34'	Workover	2/20/76	/Hallib./ /Dresser	Galveston, TX.	Term Contract w/Kerr McGhee
Western Oceanic	WESTERN DELTA (145')	Kilroy	High Is. Bl.98-L/ Drilling	80'		Early 3/76	/Hallib./ Acadian Mar./	Sabine Pass TX.	Contract w/Kilroy to 12/76.
Zapata	TOPPER I (Zapata 22) (120')	Texas Gas (Farmout)	S. Padre Is. Bl. 1131-L/Drlg.	40'		Late 3/76	None/Hallib.?		Contract w/Houston Oil & Min to 8/1/76.

SOURCE: Offshore Rig Data Services, "The Offshore Rig Location Report", P. O. Box 19247, Houston, Texas 7702[redacted]

REFERENCE FOR SUB-CONTRACTORS

Hallib.	Halliburton
Tidewater Mar.	Tidewater Marine
A. Martin	A. Martin
A. Levy	Arthur Levy
Milchem	Milchem
Oceaneering	Oceaneering International
Offsh. Log	Offshore Logistics
Candies	Candies
Ocean System	Ocean Systems
B.J.	Byron Jackson
Dresser	Dresser Industries
Tidex	Tidex
Acadian Mar.	Adadian Marine Services
State Boat	State Boat Corporation

SUPPORT SERVICES

SUPPORT SERVICES

The process of drilling and completing an offshore well involves not only a drilling contractor and an oil company, but includes many different support services and suppliers of materials and equipment. These support services and suppliers may generally be classified into five groups: 1. those which transport the rig to the well site and assist in making the rig ready for drilling 2. those which provide services and supplies for the drilling process 3. those which provide services and supplies in completing the well 4. those involved in pipeline construction and 5. those involved in production platform construction and operation.

All of the support groups have a common characteristic in that they are dependent on marine or air transportation in providing their service. In Texas, most of the offshore support groups are located in and around the Houston area. The reason for this is mainly logistical in that most of the offshore activity in Texas has been near the Houston area and the Port of Houston and other nearby ports provide adequate docking and storage facilities for these businesses. Also, Houston is the leading oil center in the United States and most of these support groups are located in and around Harris County. Some support services may be classified in more than one of the five groups. For example, marine transportation services are required for all phases of a drilling operation. They assist in transportation and setting up the rig, they provide supplies for the drilling operation and in completing the well, they assist in pipeline construction and they are necessary in production platform construction and operation. Others such as cementing services are only required in one phase of operating, that of completing the well. Table 8 is a list of the different support services required for each of the five phases. Table 9 is a composite of the different support services in each county along the coast.

TABLE 8

Support Services and Supplies

Moving the Rig	Drilling	Completion	Pipelines	Production
1. tug boats	1. supply boat	1. supply boats	1. pipe suppliers	1. helicopters
2. supply boats	2. service boats	2. service boats	2. pipe laying barges	2. crew boats
3. fabricators	3. crew boats	3. crew boats	3. helicopters	3. supply boats
4. helicopters	4. helicopters	4. helicopters	4. welders	4. fabricators
5. service boats	5. catering services	5. catering services	5. pipe burying services	5. welders
	6. mud supply	6. cement supply	6. supply boats	6. catering services
	7. divers	7. cementing services	7. pipe coating	
	8. tool rental	8. tool rental		
	9. well logging	9. casing crew		
	10. drill pipe suppliers	10. casing supply		
	11. drill bit suppliers	11. welders		
	12. welders	12. welders		
	13. oil well supply	13. wireline services		
		14. perforating services		
		15. directional drilling services		

TABLE 9

SUPPORT INDUSTRIES

Servicer-Supplier	Number of Establishments
Acidizing - Formation	
Beaumont	1
Corpus Christi	3
Houston	
Aircraft Charter	
Houston	4
La Porte	1
Anchor Handling Crew	
Houston	1
Anchors - Marine	
Houston	1
Anchors - Pipeline	
Houston	2
Automatic Drillers	
Bay City	1
Corpus Christi	1
Freeport	1
Galveston	1
Houston	3
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Belts	
Beaumont	1
Houston	8
Corpus Christi	2
Refugio	1
Bits	
Corpus Christi	3
Houston	9
Refugio	1
Pasadena	1

Servicer-Supplier	Number of Establishments
Bits - Diamond	
Corpus Christi	2
Houston	4
Refugio	1
Blocks - Traveling	
Beaumont	1
Corpus Christi	2
Houston	7
Refugio	1
Blowout Preventers	
Houston	2
Casing Crews	
Alvin	1
Casing - New	
Corpus Christi	2
Houston	19
Galena Park	1
Refugio	1
Casing - Used	
Corpus Christi	1
Houston	5
Catering	
--	--
Cement - Bulk	
Houston	1
Cementing	
Houston	2
Beaumont	1
Corpus Christi	2
Cementing Equipment	
Beaumont	1
Corpus Christi	2
Houston	3
Centralizers	
Beaumont	1
Corpus Christi	2
Houston	4

Servicer-Supplier	Number of Establishments
Centrifuging	
Bay City	1
Corpus Christi	2
Freeport	1
Galveston	1
Houston	2
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Chain - Anchor	
Beaumont	1
Houston	2
Chains- Industrial	
Houston	1
Chains & Sprockets	
Beaumont	1
Bellaire	1
Corpus Christi	1
Houston	2
Charts - Nautical	
Houston	1
Charts - Recording	
Corpus Christi	1
Houston	1
Chemical Treating - Formation	
Bay City	1
Corpus Christi	2
Freeport	1
Galveston	1
Houston	1
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Chemicals & Compounds - Formation	
Bay City	1
Freeport	1
Galveston	1
Corpus Christi	1
Houston	4
Kingsville	1
Port Lavaca	1

Servicer-Supplier	Number of Establishments
Chemicals & Compounds - Formation (cont)	
Port O'Connor	1
Sabine Pass	1
Beaumont	1
Chemicals & Compounds - Industrial	
Bay City	1
Corpus Christi	1
Freeport	1
Galveston	2
Houston	6
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Pasadena	1
Completion Services	
Houston	4
Corpus Christi	1
Completion Tools	
--	--
Directional Drilling Equipment	
Corpus Christi	1
Houston	4
Directional Drilling Services	
Corpus Christi	2
Houston	3
Diving Services	
Freeport	2
Houston	2
Drawworks	
Beaumont	1
Corpus Christi	2
Houston	7
Refugio	1
Dredging	
Aransas Pass	1
Corpus Christi	1

Servicer-Supplier	Number of Establishments
Drill Collars	
Corpus Christi	1
Houston	4
Drilling Contractors - Marine	
Corpus Christi	1
Houston	9
Engine Repairs	
Corpus Christi	1
Houston	1
Fabricators	
Beaumont	1
Corpus Christi	1
Galveston	1
Houston	18
Gauges	
Corpus Christi	1
Houston	5
Refugio	1
Helicopters -Charter	
Houston	3
Sabine Pass	1
Logging - Electric	
Beaumont	1
Corpus Christi	3
Houston	3
Marine Construction	
Corpus Christi	2
Galveston	1
Houston	3
Aransas Pass	1
Marine Loading & Docking Facilities	
Galveston	1
Houston	3
Marine Repairs	
Corpus Christi	1
Galveston	1
Houston	2

Servicer-Supplier	Number of Establishments
Marine Supplies	
La Marque	1
Beaumont	1
Houston	3
Marine Vessels - Barges	
Aransas Pass	1
Corpus Christi	1
Galveston	1
Houston	3
Marine Vessels - Cargo Boats	
Freeport	1
Houston	1
Marine Vessels - Crew Boats	
Aransas Pass	1
Freeport	3
Galveston	1
Houston	2
Marine Vessels - Fabrication	
Galveston	2
Houston	5
Rockport	1
Marine Vessels- Supply Boats	
Aransas Pass	2
Freeport	1
Galveston	1
Houston	7
Marine Vessels - Tugs - Ocean	
Aransas Pass	1
Freeport	1
Galveston	1
Houston	6
Marine Vessels - Tugs - Offshore	
Aransas Pass	2
Freeport	1
Galveston	1
Houston	7
Marine Vessels - Work Boats	
Freeport	1
Houston	3

Servicer-Supplier	Number of Establishments
Mud	
Bay City	3
Corpus Christi	4
Freeport	3
Galveston	3
Houston	9
Kingsville	1
Port Lavaca	3
Port O'Connor	3
Sabine Pass	2
Ingleside	1
Jacinto City	1
Alvin	2
Beaumont	1
Robstown	1
Rockport	1
Mud Analysis	
Bay City	1
Corpus Christi	1
Freeport	1
Galveston	1
Houston	1
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Mud Logging	
Bay City	1
Corpus Christi	2
Freeport	1
Galveston	2
Houston	4
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Mud Pumps	
Corpus Christi	1
Houston	5
Refugio	1
Offshore Construction	
Houston	4
Offshore Drilling Equipment	
Houston	3

Servicer-Supplier	Number of Establishments
Packers	
Alvin	1
Corpus Christi	2
Houston	3
Perforating	
Bay City	1
Beaumont	1
Corpus Christi	3
Houston	2
Refugio	1
Pipe Drill	
Beaumont	1
Corpus Christi	1
Houston	9
Refugio	1
Pipeline Contractors - Marine	
Houston	1
Sandblasting	
Corpus Christi	1
Houston	3
Seabrook	1
Shale Shakers	
Bay City	1
Corpus Christi	2
Freeport	1
Galveston	1
Houston	6
Kingsville	1
Port Lavaca	1
Port O'Connor	1
Sabine Pass	1
Shipyards	
Corpus Christi	1
Orange	1
Houston	2
Galveston	1
Tongs - Casing & Tubing	
Corpus Christi	1
Houston	3
Refugio	1

Servicer-Supplier	Number of Establishments
Tongs - Power	
Alvin	1
Corpus Christi	1
Houston	4
Refugio	1
Tool Rental	
Houston	2
Tubing - New	
Corpus Christi	1
Galena Park	1
Houston	15
Refugio	1
Valves	
Beaumont	1
Corpus Christi	2
Houston	22
Pasadena	1
Refugio	1
Welding	
Beaumont	1
Corpus Christi	2
Houston	7
Workover - Marine	
Corpus Christi	1
Houston	2

Source: Petroleum Industry Yellow Pages, Gulf Coast Region 1976. Whico Atlas Company, Houston, Texas.

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