

**TRINIDAD AND TOBAGO**



**MINISTRY OF PETROLEUM AND MINES**

# **ANNUAL REPORT**

**FOR THE YEAR**

**1980**

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**FOREWORD**  
**ANNUAL ADMINISTRATIVE REPORT 1980**

The crude oil decline which started in 1979 continued during 1980. On the other hand natural gas production continued on the increase with utilization assuming a level of 65 percent; Trinidad & Tobago Electricity Commission being the largest non-oil company consumer.

The Natural Gas Company continued the expansion of the gas transmission system and installed scrubbing and metering facilities for some of its customers. Trinidad Tesoro Petroleum Co. replaced a considerable length of its sales pipeline system to Pt. Lisas.

The country's refinery throughput declined somewhat during 1980, as a direct result of the increased crude oil prices and the restricted availability of premium crude.

Production of petrochemical intermediates and nitrogenous fertilizers both registered increases in production levels despite, in the case of nitrogenous fertilizers losses occasioned by power disturbances and labour problems.

Work on the preparation of Tax Legislation for granting Incentives in the Petroleum Industry with a view to boost the falling production was commenced in 1980.

Despite some minor problems affecting the local petroleum industry 1980 could be considered as a fairly good year for the petroleum industry in Trinidad and Tobago.

The Ministry wishes to take this opportunity to express its thanks to the various organizations that contributed towards the preparation of the report and to its staff whose dedication to their duty has contributed greatly to the difficult task of managing the petroleum sector of the economy.

## ANNUAL REVIEW 1980

### PRODUCTION:

Oil production in Trinidad and Tobago averaged 33 716 cubic metres/day (212,066 bbl/day) during 1980, which was less than last year's figure of 34 083 cubic metres/day (214,370 barrels/day). This decrease was due to lower-than-expected production from Trinmar and Trintoc. Amoco and Texaco experienced fairly constant production rates when compared to those of the previous year, while Trinidad-Tesoro showed an increase.

Once again, offshore fields accounted for 78.2 percent of the total volume of oil produced locally.

As a result of constant development drilling and workover activity, Amoco was able to arrest the natural decline in its Poui and Teak fields. Production in the Samaan field dropped however, and Amoco produced an average of 19 130 cubic metres/day (120,322 barrels/day), a 0.3 percent decrease from the previous year's figure. This production was equivalent to 56.6 percent of the country's total production.

Trinmar suffered a 10.1 percent loss in production in producing at an average rate of 6,323 cubic metres/day (39,700 barrels/day). Little new oil from drilling and low workover activity were the main reasons for the drop in production. The company has predicted a steadily increasing production trend for 1981.

Land production averaged 7 362 cubic metres/day (46,304 barrels/day) or 21.8 percent of the country's total production for 1980.

Trinidad-Tesoro increased its production by 16.2 percent to 3 966 cubic metres/day (24,947 barrels/day). The additional oil came from Platform "C" in the Galeota field, which came on stream in the early part of the year.

Texaco Trinidad Inc. registered a daily average of 2 978 cubic metres/day (18,733 barrels/day), which was a small increase of 0.5 percent over last year's figure. Drilling throughout the year in the Palo Seco Lot 8 area was responsible for keeping the company's production at this level.

Trintoc's average for 1980 was 1 364 cubic metres/day (8,581 barrels/day), which was a 5.4 percent fall in production. Electrical outages which plagued the company's operations throughout the year, and labour problems towards the end of the year were the factors that accounted for the decline.

Premier Consolidated Oilfields Limited produced at an average rate of 47 cubic metres/day (294 barrels/day), a 5.0 percent drop from that of the previous year.

### DRILLING AND COMPLETIONS:

During the year a total depth of 204498.8 metres (670,928 feet) was drilled, which was a 15.8 percent decrease from the previous year's figure. Rig activity increased marginally by 0.4 percent to 156.97 rig months this year.

Wells completed amounted to 183, one less than last year. On land, 134 wells were completed, 132 of them being development wells, the other 2 being exploratory. The development wells comprised 108 producers, 15 injectors and 9 abandonments. The 2 exploratory wells were completed as producers.

Offshore, there were 49 completions, of which 40 were development wells and 9 exploratory. The development wells included 36 producers and 4 abandonments, while the exploratory wells consisted of 2 producers and 7 abandonments.

Trinidad-Tesoro once again achieved the highest number of completions made by any company during the year. Using 37.14 rig months to drill a total depth of 72 260 metres (237,073 feet), the company completed 107 wells, which was a 40.8 percent increase in the number of wells completed. A maximum of 4 rigs at a time was used for development drilling which took place in the thermal areas of Palo Seco, Apex Quarry and Guapo, and the non-thermal areas of Mc Kenzie, Quarry, Fyzabad and Coora. Also, 18 wells which were drilled in 1979 on the Trintoc "B" platform were put to production early this year. No exploratory activity was conducted by Trinidad-Tesoro.

Trintoc drilled a total of 43 418 metres (142,447 feet) this year, a decrease of 19.6 percent from the 1979 level and as a result completed 21 wells, 19 of them being development of which 1 was abandoned and 2 were exploratory. These wells were drilled using 3 rigs that totalled 29.21 rig months and were operated in Mahaica, Point Fortin Central, Parrylands, "D" and "E", Balata, Inniss and Catshill. Exploratory drilling was conducted in Mahaica, where the gas well, AM-3, was closed-in awaiting completion after testing. Exploratory drilling was also carried out in Balata and Point Fortin Central, where the wells, BE 23 and FC 298, were completed as oil producers, and in Catshill and Inniss where, CO 130 and IN 35, were closed-in awaiting completion.

Texaco registered an increase of 96.3 percent in total depth drilled by penetrating 36 219 metres (118,829) during the year and consequently rig months increased by 103 percent to 24.52. Twenty development wells were drilled and completed on land, most of them in the Palo Seco area and in the Forest Reserve steamflood area. The number of rigs used for this type of drilling increased from one to two since mid-May. In exploration, more exploratory footage was achieved by this company than any other during 1980. Up to May, the Rowan Houston was employed in Block 1 in the Gulf of Paria for drilling and testing the gas wells Manicou 2 and 3. From August to year-end the Zapata Lexington was

engaged in Block 6 off the East Coast in drilling and testing the gas wells Dolphin 2, 3 and 4. All five wells were finally plugged and abandoned.

Amoco used 4 rigs for development drilling in the Poui and Teak fields, where 14 development wells were completed, one of them being abandoned. Total depth drilled was 28 054 metres (92,043 feet) a decrease of 41.3 percent from last year's depth. Rig months increased by 22.3 percent to 46.71. The company's drilling operations were affected by problems such as pipe sticking and the loss of drilling time due to fishing operations, during the year. Apart from NEP-2, which was tested and abandoned in January from the Discoverer 511, no further exploratory drilling was conducted by Amoco during the year.

Trinmar suffered a 68.6 percent drop in depth drilled in totalling 16 476 metres (54,055 feet), and a 60.6 percent drop in rig month to 13.22, because drilling from Platforms 20 and 21 stopped in February and April respectively. The Jack-up drilling barge TG 145 operated throughout the year in the North Soldado field. A total of 11 development wells were drilled of which 4 were abandoned. Three of these development wells were land wells in the FOS fields. In exploratory drilling, three wells, S 474, S 475 and S 477, were dilled using the TG 145 to investigate a westward extension of oil accumulation in the prolific Platform 18 area, North Soldado. S 477 was abandoned, while the other 2 were completed as oil producers. A new platform, No. 22, was sited in this area and S 478, its first well, was spudded in December. The company plans to erect 2 adjacent platforms during the coming year.

The Monsanto Oil Company (operating for Texaco Trinidad Inc.), drilled and completed two exploratory wells in the Diamond Prospect, 50 miles north-east of Point Radix, using the semi submersible, Zapata Lexington. A total depth of 4 630 metres (15,185 feet) was penetrated with rig time amounting to 3.33 rig months. Diamond 1, which was drilled to test the lower Miocene sequence, encountered mechanical problems and had to be abandoned. Diamond 2, a replacement for Diamond 1, was drilled to the Oligocene formation; this well found oil and gas in sub-commercial quantities and was finally abandoned.

The DATO Group, with Tenneco Oil Company as operator, drilled the exploratory well KK 4-4 to a depth of 2 540 metres (8,334 feet) to evaluate the extent of the gas sand in their lease off the north coast. The rig Blue Water Three, spent 2.58 rig months on location and at year end a drill stem test was being conducted.

This year saw the advent of drilling in Trinidad by Mobil Exploration Trinidad Limited which spudded the well Reverse "L" East 1 in Block 7, offshore south east Galeota on 30th December. At the end of the year a depth of 140 metres (458 feet) was reached and 0.06 rig months were spent on the well.

Finally, PCOL used 0.2 rig months in drilling a development well to 76.2 metres (2,500 feet) in its Fyzabad field in early 1980. The well was a dry hole and was abandoned.

**TABLE I**  
**SUMMARY OF STATISTICS FOR THE TRINIDAD AND TOBAGO INDUSTRY 1977 – 1980**

	UNIT	1977	1978	1979	1980
Annual Crude Oil Production	BBLS	83,619,077	83,777,503	78,249,474	77,612,960
Annual Natural Gas Production	MSCF	149,588,976	157,919,827	169,740,204	197,810,592
Average G.O.R.	SCF/BBL	1,789	1,885	2,169	2,549
Annual C.H.P.S. (Natural Gasoline) Production	BBLS	61,091	60,247	47,859	38,838
Daily Refinery Capacity	BBLS/Day	456,000	456,000	456,000	456,000
Annual Refinery Throughout	BBLS	99,536,480	85,881,842	82,856,825	78,342,973
Total Wells Completed During the Year	NO.	217	215	184	185
Average Depth of Completed Wells	FEET	4,250	3,868	4,252	3,557
Total Footage Drilled During the Year	FEET	922,295	895,098	797,182	670,928
Oil and Gas Wells Completed During the Year	NO.	170	170	156	146
Drilling Success-Ratio	PERCENT	78.3	79.1	84.8	78.9
Average Rigs Running	NO.	14.7	15.4	13.0	13.1



COUNTRY: TRINIDAD AND TOBAGO:

**TABLE 3**  
**SUMMARY OF WILDCAT DRILLING IN 1980**

NOTE: Be sure to include wildcat tests actively drilling as of December 31, 1980

OPERATOR	WELL NAME	LOCATION	BASIS LOCATION	LAHEE EXPLORATORY CLASSIFICATION	COMPLETION DATE	TOTAL Depth (FT.)	NAME AND/OR AGE OF DEEPEST FORMATION	RESULTS/REMARKS
TRINTOC	AM 3	D5. KH-7	S & SSG	A1	Closed in	8373	Horizon -3 Herrera Sds.	Awaiting Surf. Equip.
	IN 35	G15.LK 17/LN-18	S & SSG	A2b		7540		Awaiting Surf. Equip.
	IN 36	H11. IL.3/IK-4	S & SSG	A2b	Awaiting Surf. Equip. Drilling	6012	Herrera Sds.	Drilling
	CO 130	H7. CD/7	S & SSG	A1		3300	Catshill Sds.	Awaiting Surf. Equip.
	BE 23	H4/BB-9	S & SSG	B1	80.01.01	4540	Karamat & Herrera Sd.	Oil Producer
	FC 298	F15. IE-7	S & SSG	B2b	80.10.16	9500	Cruse	Oil Producer
TRINMAR	S 474	F.6. EJ-11	S & SSG	B-1	80.07.23	4902	Manzanilla Sds.	Oil Producer
	S 475	F6. AC-12	S & SSG	B-1	80.09.15	6063	Manzanilla Sds.	Oil Producer
	S 477	K10 DB-14	s & SSG	C1	80.12.25	4604	Manzanilla Sds.	Abandoned (Dry)
DATO/TENNECO MOBIL EXP.	KK4-4	KK4 Block	S & SSG	A1		8334	M-2 Sds	Testing
	RLE-1	Block S-7	S & SSG	A3		458	L. Miocene	Drilling
TEXACO	Manicou 2	Block-1	S & SSG	C1	80.04.07	15132	Miocene	Abandoned (Dry)
	Manicou 3	Block-1	S & SSG	C1	80.05.07	5565	Manicou 1	Abandoned After Testing
	Dolphin 2	Block-6	S & SSG	C3	80.10.06	9500	Dolphin 1 gas sd.	Abandoned After Testing
	Dolphin 3	Block 6	S & SSG	C3	80.11.12	7006	Dolphin 1 gas sd.	Abandoned After Testing
	Dolphin 4	Block 6	S & SSG	C3	80.12.27	7504	Dolphin 1	Abandoned After Testing
MONSANTO	Diamond 1	Block 3	S & SSG	C3	80.05.30	4289	Miocene	Abandoned (Mech.)
	Diamond 2	Block 3	S & SSG	C3	80.08.07	10900	Cipero Formation	Abandoned (Dry)
AMOCO	N.E.P.2	N.E.P.2	S & SSG	A1	80.01.16	7566	Zones 8, 9, 14, and 18 sands	Abandoned (Mech.)

**TABLE IV**  
**SUMMARY OF DEVELOPMENT DRILLING IN TRINIDAD AND TOBAGO – 1980**

AREA NUMBER	PRODUCERS COMPLETED	NUMBER OF WELLS ABANDONED	TOTAL COMPLETIONS	FOOTAGE DRILLED (FEET)	RIGS ACTIVE 31.12.80
1	5	3	8	30,755	1
2	46 <sup>a</sup>	2	48	156,087	2
3	–	–	–	–	–
4	46 <sup>b</sup>	5	51	185,490	3
5	15 <sup>c</sup>	1	16	32,263	1
6	6	1	7	43,686	1
7	–	–	–	–	–
8	–	–	–	5,171	1
9	3	–	3	20,095	–
10	2	–	2	–	–
11	36 <sup>d</sup>	1	37	91,488	2
12	–	–	–	–	–
13	–	–	–	–	–
14	–	–	–	–	–
15	–	–	–	–	–
<b>TOTAL</b>	<b>159</b>	<b>13</b>	<b>172</b>	<b>565,635</b>	<b>11</b>

a – Includes 6 Injectors

b – Includes 4 Gas, 3 Injectors

c – Includes 6 Injectors

d – Includes 2 Gas Well

**TABLE IVA 1980**  
**KEY TO AREA – NUMBER ON MAP (FIGURE (II)) ON TABLES IV AND IN TEXT**

AREA NUMBER	DESCRIPTION
1	SOLDADO, NORTH MARINE, COUVA MARINE, MAINICOU (GULF OF PARIA BLOCK 1)
2	PT. LIGOURE, F.O.S., AREA IV AND GUAPO, POINT FORTIN WEST AND CENTRAL, PARRYLANDS, CRUSE, GUAPO, BOOBOOSINGH.
3	BRIGHTON (LAND AND MARINE), VESSIGNY, MERRIMAC
4	PALO SECO, LOS BAJOS, ERIN, CENT, LOS BAJOS, MAC KENZIE
5	FOREST RESERVE, FYZABAD, POINT FORTIN EAST, NEW DOME, SAN FRANCIQUE, APEX QUARRY
6	QUARRY, COORA, QUINAM, MORNE DIABLO
7	OROPOUCHE
8	PENAL, BARRACKPORE, WILSON, SIPARIA
9	MORUGA NORTH AND WEST, ROCK DOME, INNIS, TRINITY, CATSHILL, BALATA, BOVALLIUS
10	GUAYAGUAYARE, MORUGA EAST
11	GALEOTA, TEAK, SAMAAN, POUI, DOLPHIN (BLOCK 6), DIAMOND PROSPECT EAST COAST
12	SOUTH MARINE (SOUTH COAST)
13	TABAQUITE, POINTE-A-PIERRE
14	ICACOS
15	NORTH COAST

**TABLE V**  
**OIL PRODUCTION (IN BARRELS) BY FIELDS, AREAS, OR DISTRICTS**

COMPANY, FIELD, AREA OR DISTRICT	DISCOVERY YEAR	TOTAL WELLS DRILLED	NAME AND/OR AGE OF PRODUCING FORMATION	ANNUAL PRODUCTION		CUMULATIVE PRODUCTION THROUGH DECEMBER 1980 '000 BARRELS
				1979	1980	
<b>TRINIDAD AND TOBAGO OIL CO. (TRINTOC)</b>						
BALATA EAST AND WEST	1952	55	MIOCENE	33,902	72,590	2,238
CATSHILL	1950	131	MIOCENE	220,352	194,307	21,985
INNESS	1956	38	MIOCENE	46,842	46,542	5,890
ROCK DOME	1962	3	MIOCENE	0	0	16
PENAL	1936	269	MIOCENE	485,934	416,348	59,126
NEW DOME	1928	31	MIOCENE	6,639	3,079	3,100
POINT FORTIN EAST	1929	149	MIOCENE	363,746	378,266	24,208
SAN FRANCISQUE	1929	27	MIOCENE	16,540	13,197	5,910
AREA IV AND GUAPO	1963	192	MIOCENE	699,741	565,099	35,497
PARRYLANDS 1-5	1913-18	409	MIOCENE	359,302	465,151	36,087
POINT FORTIN CENTRAL	1916	169	MIOCENE	875,118	809,283	15,723
POINT FORTIN WEST	1907	308	MIOCENE	201,147	167,876	19,191
LOS BAJOS	1918	29	MIOCENE	0	0	546
ERIN	1963	4	MIOCENE	0	0	710
<b>TOTAL</b>		<b>1814</b>		<b>3,309,263</b>	<b>3,132,038</b>	<b>230,228</b>
<b>TRINIDAD-TESORO PETROLEUM CO., LTD</b>						
FYZABAD/APEX QUARRY	1920-38	935	MIOCENE	1,430,893	1,352,445	160,579
GUAPO/BOOBROSSINGH	1922	604	MIOCENE	778,239	811,059	40,553
MORUGA EAST	1953	72	MIOCENE	90,518	85,633	2,371
MORUGA NORTH	1956	23	MIOCENE	21,127	12,511	892
MORUGA WEST	1957	129	MIOCENE	72,176	71,000	8,879
COORA/QUARRY	1936	623	MIOCENE	1,052,166	867,704	85,692
PALO SECO/ERIN/MC KENZIE	1926	1,293	MIOCENE	3,097,096	3,462,955	94,634
NORTH MARINE	1959	19	MIOCENE	0	0	1,269
GALEOTA	1972	89	MIOCENE	678,067	1,910,469	5,885
CENTRAL LOS BAJOS	1973	123	MIOCENE	580,373	501,648	3,737
OROPOUCHE	1975	3	MIOCENE	21,696	13,150	205
BARRACKPORE	1977	4	MIOCENE	14,624	12,135	51
<b>TOTAL</b>		<b>3917</b>		<b>7,836,975</b>	<b>9,100,809</b>	<b>404,688</b>
<b>TEXACO TRINIDAD INC.</b>						
GUAYAGUAYARE	1902	697	MIOCENE	1,207,378	1,076,659	82,027
TRINITY	1956	95	MIOCENE	194,706	165,087	14,372
BARRACKPORE	1911	328	MIOCENE	553,536	595,889	26,977
OROPOUCHE	1944	126	MIOCENE	217,795	176,420	5,920
MORNE DIABLO/QUINAM	1926	-	MIOCENE	57,437	45,258	7,526
FOREST RESERVE	1913	2,015	MIOCENE	2,613,310	2,434,830	246,550
PALO SECO	1929	19	MIOCENE	1,121,000	1,608,808	86,548
BRIGHTON	1903	613	MIOCENE	586,423	512,117	70,721
ERIN	1963	23	MIOCENE	84,772	68,854	2,219
COUYA MARINE	1963	6	MIOCENE	0	0	301
CRUSE	1913	150	MIOCENE	56,828	48,032	25,692
WILSON	1936	77	MIOCENE	85,075	83,160	19,447
TABAQUITE	1911	225	MIOCENE	23,440	22,116	1,666
BALATA CENTRAL	1949	6	MIOCENE	0	0	371
<b>TOTAL</b>		<b>4382</b>		<b>6,801,700</b>	<b>6,837,230</b>	<b>590,337</b>
<b>PREMIER CONSOLIDATED OILFIELDS LTD.</b>						
SIPARIA	1957	5	MIOCENE	7,369	6,948	814
SAN FRANCISQUE	1929	75	MIOCENE	32,968	31,309	3,001
FYZABAD	1918	253	MIOCENE	55,363	53,864	13,006
PALO SECO	1915	83	MIOCENE	5,440	4,007	1,622
BARRACKPORE	1970	3	MIOCENE	6,919	7,019	122
ICACOS	1965	11	MIOCENE	6,637	5,940	453
DEFUNCT FIELDS	1954	19	MIOCENE	0	0	323
<b>TOTAL</b>		<b>449</b>		<b>114,696</b>	<b>109,087</b>	<b>19,342</b>
<b>TRINIDAD NORTHERN AREAS</b>						
FOS - JT	1954	33	MIOCENE	130,712	182,883	4,054
SOLDADO	1955	496	MIOCENE	16,014,230	14,333,189	369,918
<b>TOTAL</b>		<b>529</b>		<b>16,144,942</b>	<b>14,516,072</b>	<b>373,973</b>
<b>AMOCO TRINIDAD OIL CO</b>						
TEAK	1971	78	MIOCENE	14,156,833	16,368,554	131,809
SAMAAN	1971	44	MIOCENE	14,773,752	12,458,125	121,584
POUI	1974	41	MIOCENE	15,111,313	15,091,045	82,175
<b>TOTAL</b>		<b>163</b>		<b>44,041,898</b>	<b>43,917,724</b>	<b>335,568</b>

## **A Synopsis of the Activities of the Geophysical Section – Ministry of Energy and Energy-Based Industries 1980:**

An approximate 13,000 kilometres seismic marine survey on the north and east of Trinidad and Tobago was proposed by this Ministry and approved by Cabinet.

The purpose of this survey was to identify possible prospects in the new unsurveyed areas, and then to submit these areas to competitive bidding in order to lease them to the best bidders.

The areas planned to be surveyed were east and north to the leased marine areas and some infill surveys in open acreages, where some more geophysical information was needed.

Invitation for tenders to do the survey were sent to several contractors' geophysical companies. Eight (8) companies answered the invitation for tenders. The tenders were examined from a technical point of view and a financial one. In March, Western Geophysical was chosen to do the survey. The terms of the contract between Western Geophysical and the Ministry of Energy and Energy-Based Industries were negotiated and the contract was signed on 30th May.

The survey for the Government started on 19th October, 1980 and a total of 4208.865km was surveyed as at 31st December, 1980; the survey will be continued in 1981. An officer from the Geophysical Section of this Ministry was sent to the London Office of Western geophysical Data Processing Centre to supervise the processing of the geophysical data shot for the Government.

Discussions between the Government and an oil company have been carried on, pertaining to the company's intention of leasing deep water areas (down to 200m water depth) in order to do a seismic survey in this area. These discussions are not finalized and are suspended for the time being.

As a result of the research done by the Ministry of Energy and Energy-based Industries in 1979 (i.e. interpretation of geophysical data) a location for two (2) wells on the north-west waters of Trinidad and the depths of these wells have been decided upon. The area with these well locations has been eventually relinquished to Trintoc.

The following companies presented to the Ministry programmes for seismic surveys:—

Trintoc:	290 km. in the Gulf of Paria and approximately 200 km shallow water survey in the Gulf of Paria.
Tesoro:	391 km in the Galeota area
Texaco:	376 km in the Gulf of Paria and approximately 200 km shallow water survey in the Gulf of Paria
Amoco:	2320 km – high resolution and sparker survey combined with side-scan sonar and sea-bottom profiling. Approximately 1600 km conventional survey. All on the East Coast.
Occidental:	14 km in Nariva Swamps
Trinmar:	Approximately 1000 km in the Gulf of Paria of deep and shallow water survey.
Mobil:	659 km in the Block 7 South East Marine Area.

All these programmes were studied and approved by the Geophysical Section of this Ministry. Shallow water surveys started only in December 1980, and only 27.5 km were shot in 1980 for Texaco Trinidad Inc. Other surveys except the one for Mobil and Trinmar were completed in 1980. Mobil's survey was completed in January, 1981.

Apart from the above mentioned surveys, in preparation for drilling in off-shore well sites' areas, in order to be aware of any shallow gas that might be hazardous to drilling operations, small sparker and sub-bottom profile surveys were carried out by Mobil in the East Coast of Trinidad, and by Tenneco on the North Coast. Programmes for these surveys were submitted to this Ministry and appraised and approved by the Geophysical Section.

Structure maps of the North-Marine Area in the Gulf of Paria has been presented by Trintoc. In view of several mistakes noticed in the presented maps, the Ministry requested Trintoc to re-interpret the data and to submit corrected maps.

The maps of 3D (three dimensional) seismic survey conducted over the Pelican prospect in the South East Coast Consortium Block, presented by Texaco, has been studied and the work found to be of a very high standard.

Geophysical work carried out between the years 1953 – 1964 in and around Trinidad and Tobago was compiled.

Three days were spent by a geophysicist from the Ministry on board the M.V. "All Tide" observing high resolution, sub-bottom profiler, and side scan sonar surveys being carried out for Amoco in February.

Trinmar's Review Team presentation of their completed study of the Trinmar acreages was attended by a geophysicist of the Ministry.

A report was prepared with reference to damages to private house re-land seismic survey carried out by Western Geophysical in July 1977 for Trintoc.

Work on interpreting blocks 8, 9, and 10 off the North-West Coast was carried out, but it is not yet completed.

Seismic Exploration Geophysicist (S.E.G.) 50th Annual Conference in Houston, Texas, U.S.A. has been attended by both Officers from this section.

Attended was also "Seismic Stratigraphy School" held in San Fernando.

## **GEOPHYSICAL ACTIVITIES CARRIED ON IN 1980**

The year 1980 has been abundant in geophysical activities.

An approximate 13,000 kilometres seismic marine survey on the north and east of Trinidad and Tobago has been proposed by this Ministry and has been approved by the Cabinet.

The purpose of this survey is to have an idea about the possible proposals in the new unsurveyed areas, and then to submit these areas to competitive bidding in order to lease them to the best bidders.

The areas planned to be surveyed are east and north to the leased marine areas and some infill surveys in open acreages, where some more geophysical information were needed.

Invitations for tenders to do the survey were sent to several contractors' geophysical companies. Eight (8) companies answered the invitation for tenders. The tenders were examined from a technical point of view and a financial one. In March, Western Geophysical was chosen to do the survey. The terms of contract between Western Geophysical and the Ministry of Energy and Energy-Based Industries were negotiated. The contract was signed on 30th May and the survey was supposed to start in July for Trinidad and Tobago Government.

The survey was delayed due to two unfortunate events:—

- (1) A storm damaged the vessel and consequently the vessel had to go to the dock.
- (2) While being overhauled, the vessel caught fire and burnt down. All the seismic equipment was taken out of the vessel before the fire occurred and so escaped the fire.

Western Geophysical hired a new vessel "Indian Seal" which arrived in Trinidad at the beginning of October, 1980. The survey for the Government started on 19th October, 1980. Up to 1st December 1980 it surveyed 2053 km. It will continue to survey in 1981.

Discussions between the Government and Phillips have been carried on, pertaining Phillips intention of leasing deep water areas (down to 2000 m water depth) in order to do a seismic survey in this area. The discussions are not finalised and are suspended for the time being.

As a result of the research done by the Ministry of Energy and Energy-Based Industries in 1979 (i.e. interpretation of geophysical data) a location for two (2) wells on the north-west waters of Trinidad and the depth of these wells has been decided upon. The area with these well locations has been recently relinquished to Trintoc.

### **Trintoc**

Trintoc has carried out a seismic survey on land in the following areas: 9 km in Penal, 166 km in Ortoire and 50 km in South-West Peninsula. This company has also done marine survey by shooting 290 km in the Gulf of Paria in the block acquired by Trintoc in 1979 competitive bidding. Trintoc also intends in December this year to start around 200 km of shallow water seismic survey in the Gulf of Paria. This survey will continue in 1981.

### **Trinidad Tesoro**

Trinidad-Tesoro is hoping to drill at least two wells on the Galeota block towards the end of this year and in view of these drilling has done 391 km seismic survey in order to be in a better position to locate the sites for the wells.

### **Texaco**

Texaco early this year presented the results of 1977 three dimensional seismic surveys conducted over the Pelican prospect in the South-East Coast Consortium block. Results of this survey are encouraging. The 3D method has among other things provided enhancement of deep data, improved fault definition and more reliable migrated structural control. These have led to a change in fault location at the Pelican-3 gas sand level which affects the position of interpreted reserves and therefore the location of future development wells.

In early October, Texaco seismically surveyed 376 km in the Gulf of Paria in an attempt to upgrade several Block 1 prospects to drillable status.

In December, Texaco intends to seismically survey approximately 200 km of shallow water seismic data in the Gulf of Paria. The survey will continue in 1981.

### **Amoco**

In February, 1980 Amoco conducted approximately 1450 miles of high resolution sparker survey combined with side-scan sonar and sea-bottom profiling. They hope that after interpreting this survey they will be sure of the faults correlations. The conventional seismic survey did not give a satisfactory answer. They also hope that this survey will show a major fault between Tesoro and Amoco holdings, with a downthrow on Amoco's side. This fault would be a trapping mechanism for Amoco's oil. They intend to locate shallow gas in order to avoid drilling hazards.

Amoco also conducted approximately 1600 km seismic conventional survey over their licenced areas. The French Company CGG was contracted to carry on this survey.

### **Occidental**

In September Occidental surveyed 14 km seismic line in Nariva Swamps. If the survey produces encouraging results, a follow on survey will be run through the Nariva area.

### **Trinmar**

Trinmar intends to shoot approximately 1184 km of seismic lines over its leased area commencing this December. The programme consists of approximately 309 km of shallow and 875 km of deep water seismic lines.

### **Mobil**

In preparation for drilling of the Reversed "L" shaped block, in offshore southern area, Mobil carried on small sparker and sub-bottom profile surveys over the wells site areas in order to be aware of any shallow gas that might be hazardous to drilling operations. They also run in these areas side scan sonar in order to be aware of bottom topography.

### **Tenneco**

In preparation for drilling, Tenneco also carried on small sparker and side scan sonar surveys over their wellsite areas. Both Mobil's and Tenneco's surveys were carried out by a local contractor.

Geophysicists from the Ministry and other Trinidad Oil Companies attended a SEG meeting in November, in Houston, Texas and seismic stratigraphy seminar held in Trinidad.

## **FLUID INJECTION OPERATIONS**

Oil production from Secondary Recovery operations in Trinidad and Tobago averaged 22,552 bopd in 1980. This represented 10.6 percent of the country's total production and was 16.1 percent higher than the figure recorded last year. The number of active projects increased from 31 in 1979 to 32 this year with the commencement of a new Waterflood project by Trinidad-Tesoro in April, 1980.

It is significant to note that in spite of a decrease in the rate of water injected in the waterflood projects, from 62,345 bopd last year to 52,230 bopd this year, the production from these projects rose by 35 percent to 14,603 bopd this year. In the case of the steam injection projects, however, an increase in the steam injection rate by 1624 bopd over last year's figure resulted in a decrease of 570 barrels per day in oil production this year.

A summary of the Fluid Injection operations in Trinidad and Tobago from 1976 to 1980 is presented in Table VI.

### **Gas Injection**

Gas Injection in Texaco's "007" Gas/Water Injection Project in the Guayaguayare field fell from 18.6 million cubic feet per day in 1979 to 4.5 million cubic feet per day in 1980. No oil production was attributed to the gas injected in this project.

### **Carbon Dioxide Injection**

The number of experimental carbon dioxide projects in Texaco's Forest Reserve field fell from 3 last year to 2 this year with the conversion of the W.C.R.A. Carbon Dioxide/Water Injection Project

to a Waterflood project. During the year Carbon Dioxide was injected in only one project – The Forest Sands Zone 5 project. Oil production from this project plus that attributed to the influence of Carbon Dioxide previously injected in the other Forest Sands experimental project average 118 bopd; 62.2 percent decline in production over that recovered in 1979.

### Water Injection

Texaco Trinidad Inc., with 11 active water injection projects producing at an average rate of 3197 bopd, remained the largest waterflood operator in the country. A decrease of 375 bopd was recorded this year as compared with last year's production even though there was a 29.5 percent increase in the water injection rate over last year's figure. A corresponding percentage increase in the water injection in the Navette 410' waterflood project over the same period resulted in a drop in production of 192 bopd in that field.

With the conversion of the W.C.R.A. Carbon Dioxide/water injection project to a Waterflood project in the Forest Reserve field the oil production averaged 160 bopd with the injection of 957 bopd.

Amoco's waterflood project in the Teak field, the largest single waterflood project in the country, produced at an average rate of 10,551 bopd. This was 72.4 percent higher than the previous year's production and was achieved in spite of a decrease in water injected from 34,974 bopd in 1979 to 22,675 bopd in 1980.

Trinidad-Tesoro's waterflood projects in the Coora field were severely affected by mechanical and electrical problems resulting in a 1 million barrel decrease in the amount of water injected this year as compared with last year's total. Oil production from the CO/UC/317 waterflood scheme amounted to 25,000 barrels this year; a 30 percent increase over the previous year and was responsible for the total oil production from the Coora waterflood schemes to drop by only 1,500 barrels from last year's production.

In April, a waterflood project PS/UF/500 was initiated in Trinidad-Tesoro's Palo Seco field. Although the project was hampered frequently by the unavailability of water, 83,000 barrels were injected and resulted in the recovery of 6,800 barrels of oil by year's end.

Oil production from Trintoc's Catshill waterflood project fell from 178 bopd in 1979 to 146 bopd this year. Due to mechanical problems experienced at the injection pumps, water injection was curtailed in order to modify the injection system.

Trinidad Northern Areas' Main Field waterflood produced an average of 604 barrels of oil per day for 1980; a 29 percent decrease in the amount produced the previous year. Downtime of the plant due to mechanical and electrical problems and shortage of gaslift gas at the producing wells were the main factors contributing to this decrease in oil production. During the year the addition of three (3) injection wells brought the total number of injections to seven (7). Success was achieved in correcting the injection profile in two wells that were treated with Polymer. Work is being carried out on the expansion of this plant.

A summary of the Waterflood project is shown in table VIII .

### Steam Injection

Steam flooding continued in Trinidad Tesoro's North West Palo Seco field where 39 injectors are drilled into twenty-two (22) patterns to flood the Lower Morne L'Enfer 'E' and 'F' sands. Steam injection rates fell by 2000 barrels per day from the previous year to 4478 bspd due to generator downtime and to the closing in of injections to carry out remedial work on offtake wells. Average daily oil production from the two projects in the Palo Seco field for the year was 2382 bopd.

In Trinidad Tesoro's Central Los Bajos field, thermal recovery was carried out during the year by restricting 28 wells to cyclic steam stimulation in batches of three. Total steam injected during the year in the two projects in this field was 143,574 barrels and yielded a daily average oil production of 1094 barrels which represents a decline of 20% over last year's figure. Expansion of the steam flood in the Guapo field was completed with the drilling of 25 wells of which 5 were injectors. The addition of a generator in this field resulted in a four-fold increase in steam injection to 4000 bspd and an increase in oil production from 1000 bopd in 1979 to 1530 bopd this year.

Oil production from the pilot Fyzabad (Sewlal Trace) thermal recovery project doubled from the beginning of 1980 to 900 bopd at year end. This was due mainly to the conversion of the project from one of cyclic to steam injection in mid 1979 and to the installation of larger pumping units in June, 1980. Towards the end of the year, Trinidad-Tesoro drilled ten (10) wells including six (6) injectors and relocated a steam generator in the Apex Quarry field in preparation for Phase I of the Apex Quarry Steamflood project next year.

Texaco Trinidad maintained two active Steamflood project and one hot waterflood project in their Forest Reserve field. It is significant to note that even though the total amount of fluid injected in these projects exceeded last year's figure by 500,000 barrels the total oil recovered this year was similar to the previous year of 982,000 barrels. The Hot waterflood project with a production averaging 80 bopd appears to be nearing the end of its life. In the coming year, Texaco plans drilling more thermal wells in the Project III steamflood and converting the Phase I expansion steamflood to push-pull.

Trintoc drilled two (2) thermal wells in their Parrylands field during the year in preparation for their Pilot Steamsoak Project which is scheduled to commence in mid 1981.

Concise data on steam injection project are highlighted in Tables VII and IX.

**TABLE VI**  
**SUMMARY OF FLUID INJECTION OPERATIONS IN TRINIDAD AND TOBAGO: 1976 – 1980**

Year	NO. OF PROJECTS IN OPERATION AT END OF YEAR				INJECTION VOLUMES			CRUDE OIL PRODUCTION					
	Gas	Water	Steam	Carbon Dioxide	Natural Gas (mmscf)	Water and Other Fluids (Bbls)	Steam (Bbl)	Oil Produced by wells under Project Influence (Bbl)				All Projects	Oil Expressed as a percentag of Country's Total Production
								Gas Inject. Projects	Water Inject. Projects	Thermal Recovery Projects	Carbon Dioxide Projects		
1976	7	16	8	3	607 1189*	18,536,272	2,076,772	414,364	2,001,986	1,223,092	203,842	3,843,284	5.0
1977	2	18	9	3	204 1686*	26,455,049	4,353,607	61,710	3,313,246	1,923,299	154,575	5,452,830	6.5
1978	2	18	12	3	101 768*	24,312,504	5,606,776	–	3,844,276	2,572,602	170,379	6,587,257	7.9
1979	–	17	10	3	19 1054*	22,755,841	7,378,320	–	3,947,162	3,029,681	113,675	7,090,518	9.1
1980	–	19	10	2	4 642*	19,116,250	7,972,576	–	5,344,765	2,866,101	43,004	8,253,870	10.6

\* CO<sub>2</sub> injected in Forest Reserve projects.



**TABLE VII**  
**FLUID INJECTION OPERATIONS – 1980**

**WATER INJECTION:**

COMPANY	No. of Active Projects	Water Injected (Bbls)	Oil Produced (Bbls)	Water Produced (Bbls)	Gas Produced (MCF)	Water Cut (%)
ATOC	1	8,299,028	3,861,824	479,095	2,203,175	11
TTI	11	9,156,084	1,170,116	1,912,533	2,244,127	62
TNA	1	1,302,831	221,114	304,977	599,096	58
TTPCL	5	223,296	38,170	2,476	29,394	6
TTOC	1	135,011	53,541	21,038	13,407	28
TOTAL	19	19,116,250	5,344,765	2,720,119	5,089,199	34

**STEAM INJECTION:**

COMPANY	No. of Active Projects	Water Injected (Bbls)	Oil Produced (Bbls)	Water Produced (Bbls)	Gas Produced (MCF)	Producing Ratio (Bbl/Bbl)
TTPCL	7	2,972,009	1,884,354	1,224,224	73,252	0.6
TTI	3	5,000,567	981,747	2,601,761	613,823	0.2
TOTAL	10	7,972,576	2,866,101	3,825,985	687,075	0.4

**CARBON DIOXIDE INJECTION:**

COMPANY	No of Active Projects	CO <sub>2</sub> Injected (MCF)	Oil Produced (Bbls)	Water Produced (Bbls)	Gas Produced (MCF)	GOR (CF/Bbl)
TTI	2	642,240	43,004	4,525	190,110	4,421
TOTAL	2	642,240	43,004	4,525	190,110	4,421

**NATURAL GAS INJECTION:**

COMPANY	No of Active Projects	Gas Injected (MCF)	Oil Produced (Bbls)	Water Produced (Bbls)	Gas Produced (MCF)	GOR (CF/Bbl)
TTI	1*	4,495	–	–	–	–
TOTAL	1	4,495	–	–	–	–

\*This is a water and gas injection project but no production has been attributed to gas injection.

**TABLE VIII**  
**WATER INJECTION SUMMARY BY PROJECTS – 1980**

Company	Field	Project	Water Injected (Bbl)	Oil Produced (Bbl)	Water Produced (Bbl)	Gas Produced (Mcf)	Water Cut (%)
TTI	Forest Reserve	UCRA	350,317	58,417	56,432	123,959	49
		UCWE/Middle Field	13,820	65,200	31,375	64,023	32
	Guayaguayare	UC '645'	556,681	70,298	70,470	293,973	50
		Bernstein UM Cruse	592,746	40,310	45,662	52,944	53
		Navette '007'	732,031	189,070	168,464	902,064	47
		Navette '410'	2,485,196	163,549	623,487	195,602	79
		'307' Waterflood	943,021	215,980	294,420	253,959	58
		'307' Ext	232,979	23,289	15,051	27,566	39
		'410' Ext	1,715,363	51,435	130,515	58,645	72
	Trinity Palo Seco	Shallow Herrera	1,393,445	165,087	270,337	109,904	74
		LF '234' Sds Rancho Quemado	140,485	127,481	6,320	161,488	5
TTI	All Fields	All Projects	9,156,084	1,170,116	1,912,533	2,244,127	62
TTPCL	Coora	CO/UC/100/I	85,924	6,144	161	4,730	3
		CO/UC/110/I	5,080	—	—	—	—
		CO/UC/317/II	—	25,222	1,120	19,422	8
		CO/UC/314/I	49,243	—	—	—	—
	Palo Seco	PS/UF/500/I*	83,049	6,804	195	5,242	3
TTPCL	All Fields	All Projects	223,296	38,170	2,476	29,394	6
TTOC	Catshill	CO-30 Sds	135,011	53,541	21,038	13,407	28
TNA	Soldado Main	Cruse	1,302,831	221,114	304,977	599,096	58
ATOC	Teak	MM-O/1(L)FBIIa/IIb	8,299,028	3,861,824	479,095	2,203,175	11
All Cos.	All Fields	All Projects	19,116,250	5,344,765	2,720,119	5,089,199	34

\*This project started in April, 1980

**TABLE IX**  
**STEAM INJECTION SUMMARY BY PROJECTS – 1980**

Company	Field	Project	Steam Injected (Bbl)	Oil Produced (Bbl)	Water Produced (Bbl)	Gas Produced (Mcf)	Water Cut (%)
TTI	Forest Reserve	Project III	3,679,180	783,045	2,268,703	450,260	74
		Forest Sds/ Project IV Hot Water					
		Flood Phase 1 Esp.					
TTI	All Fields	All Projects	5,000,567	981,747	2,601,761	613,823	73
TTPCL	Fyzabad Palo Seco	Pilot	421,514	259,426	110,149	—	30
		Main-UF/LMLE	1,096,891	600,004	396,887	23,354	40
		Patterns 1-5	495,364	212,925	319,497	33,463	60
	Guapo	Exp. Gen 3	252,687	215,702	68,111	6,460	24
		Exp. Areas 1(A) – 2(D)	562,069	197,198	224,136	9,887	53
	Central Los Bajos	Main – LMLE Patterns 1-5	76,465 67,109	235,180 163,919	60,144 45,300	88 —	20 22
TTPCL	All Fields	All Projects	2,972,009	1,884,354	1,224,224	73,252	39
All Cos.	All Fields	All Projects	7,972,576	2,866,101	3,825,985	687,075	57

**TABLE X**  
**GAS INJECTION SUMMARY BY AREAS – 1980**

Company	Field	Gas Injected (Mcf)	Oil Produced (Bbl)	Water Produced (Bbl)	Gas Produced (Mcf)	GOR (CF/Bbl)
TTI	Guaya-guayare	4,495	-	-	-	-

**CARBON DIOXIDE SUMMARY BY PROJECTS – 1980**

Company	Field	Project	CO <sub>2</sub> Injected (Mcf)	Water Injected (Bbl)	Oil Produced (Bbl)	Water Produced (Bbl)	Gas Produced (Mcf)	GOR (CF/Bbl)	Water Cut (%)
TTI	Forest Reserve	UCRA	-	-	-	-	-	-	-
		Forest Sands	-	-	9,551	1,141	9,160	959	11
		Forest Sds Zn 5	642,240	-	33,453	3,384	180,950	5,409	9
TTI	All Fields	All Projects	642,240	-	43,004	4,525	190,110	4,421	10

### NATURAL GAS REPORT 1980

The total natural gas (cummulative) production for the year 1980 amounted to 5,601 million cubic metres (197,811 MMSCF), which represents a 16.5% increase in production over the corresponding figure for 1979. The average daily production for the same period was 15.3 million cubic metres (540.5 MMSCF).

Amoco Trinidad Oil Company was responsible for 76% of this total with an average daily production of 11.6 million cubic metres (412 MMSCF) which represents a 17% increase in production over their corresponding 1979 figure. TNA produced an average of 1.8 million cubic metres/day (62 MMSCF/D) with the remaining companies Trinidad-Tesoro, Trintoc, Texaco and PCOL producing 1.9 million metres/day (67 MMSCF/D).

Overall gas utilization amounted to 65.1% of the total gas produced for 1980. The utilization split was as follows:

Gas used as fuel by oil companies was 18.5%, which represents an average daily figure of 2.8 million cubic metres (99.7 MMSCF) of gas. Gas used as fuel by non-oil companies was 22.3% which represented an average daily figure of 3.4 million cubic metres or (120.6 MMSCF) of gas. Gas used as process gas by the fertilizer companies was 8% or a daily average figure of 1.2 million cubic metres (43.3 MMSCF) of gas.

The largest non-oil company consumer was the Trinidad and Tobago Electricity Commission which utilized 12.3% of the gas produced which represents an average daily figure of 1.9 million cubic metres (66.6MMSCF).

### NEW FACILITIES

During the year 1980 Trinidad-Tesoro, Petroleum Company Limited replaced in sections a total of 43,000 feet of 14 inch line pipe on their gas sales line between Fyzabad and Pt. Lisas. A gas Compressor was relocated at Mc Kenzie to collect low pressure gas. Another compressor is programmed to be relocated during 1981.

The National Gas Company completed several projects related to the existing main gas transmission system and to the supply of gas to customers. Among these were:

1. The Completion of 2 miles of 24 inch pipeline from Beachfield to Guaya-guayare and the commissioning of the entire 24 inch line between Galeota Pt. and Beachfield.
2. The completion of 3 miles of 20 inch pipeline between Picton and Pt. Lisas and the commissioning of the entire 20 inch line.
3. The relocation of 4 miles of 16 inch pipeline along the Princess Margaret Highway.
4. The construction of scrubbing and metering facilities at Iscott and Fertrin and the construction of 1,000 feet of 16 inch pipeline to Iscott.
5. The addition of one small consumer Metal Box, Trincity to the gas distribution system.

**TABLE XI**  
**ANNUAL STATISTICS FOR NATURAL GAS PRODUCTION AND UTILIZATION 1976 – 1980**

	1976		1977		1978		1979		1980	
	MILLION OF S.C.F.*	%	MILLIONS OF S.C.F.	%	MILLIONS OF S.C.F.	%	MILLIONS OF S.C.F.	%	MILLIONS OF S.C.F.	%
PRODUCTION	137,959	100.0	149,589	100.0	157,920	100.0	169,740	100.0	197,811	100.0
G.O.R. (SCF/BBL)	1,775	—	1,789	—	1,885	—	2,169	—	2,549	—
A. USED AS FUEL:										
IN FIELDS	7,128	5.2	9,064	6.0	10,616	6.7	10,244	6.0	9,658	4.9
IN REFINERIES	18,541	13.4	19,350	12.9	18,751	11.9	20,865	12.3	26,837	13.6
IN OTHER INDUSTRIES	27,276	19.8	34,554	23.1	39,842	25.2	40,881	24.1	44,129	22.3
SUB TOTAL:	52,945	38.4	62,968	42.0	69,209	43.8	71,990	42.4	80,624	40.8
B. OTHER COMPLETE UTILIZATION:										
USED AS PROCESS GAS	7,169	5.2	7,708	5.1	15,153	9.6	15,445	9.1	15,870	8.0
INJECTED INTO FORMATION	1,699	1.2	333	0.2	114	0.07	19	—	4	—
CONVERTED TO C.H.P.S.	50	0.1	62	0.1	63	0.03	50	—	39	—
SUB TOTAL:	8,918	6.5	8,103	5.4	15,330	9.7	15,514	9.1	15,913	8.0
C. VENTED:										
AFTER USE OF PNEUMATIC ENERGY	7,200	5.2	10,349	6.9	15,843	10.1	25,550	15.1	32,313	16.3
WITHOUT USE	68,896	49.9	68,169	45.6	57,538	36.4	56,686	33.4	68,961	34.9
SUB TOTAL:	76,096	55.1	78,518	52.5	73,381	46.5	82,236	48.5	101,274	51.2

\*Standard Cubic Feet  
% Per cent of Total Natural Gas Produced

## Refining and Petrochemical Industry

The decline in refining activity in Trinidad and Tobago during this year was a direct result of the increased crude oil prices as well as the restricted availability of premium crudes. Average refinery throughput in 1980 was 34,028 m<sup>3</sup>/day (214,028 barrels per day), a drop of 5.7% from the corresponding figure for 1979.

The following table lists daily average throughputs for the Texaco and Trintoc refineries over the past decade:—

**Average Daily Troughput**

YEAR	TRINTOC		TEXACO		TOTAL	
	M <sup>3</sup> /day	(bbl/day)	M <sup>3</sup> /day	(bbl/day)	M <sup>3</sup> /day	(bbl/day)
1970	11,108	69,870	56,340	354,368	67,448	424,238
1971	10,720	67,427	52,672	331,297	63,392	398,724
1972	10,713	67,381	51,953	326,777	62,666	394,158
1973	10,571	66,492	51,138	321,648	61,709	388,140
1974	9,001	56,613	47,976	301,759	56,977	358,372
1975	7,438	46,782	29,868	187,866	37,306	234,648
1976	8,743	54,994	42,334	266,274	51,007	321,268
1977	8,764	55,124	34,588	217,555	43,352	272,679
1978	8,172	51,398	29,232	183,866	37,404	235,264
1979	8,210	51,638	27,881	175,367	36,091	227,005
1980	8,001	50,325	26,027	163,703	34,028	214,028

In 1980 the Trintoc refinery recorded a cumulative throughput of 2,920,428m<sup>3</sup> (18,368,625 barrels) or a daily average of 8,001m<sup>3</sup>/day (50,325 barrels/day) a decline of 2.5% from the 1979 processing level.

The average daily throughput at Texaco's refinery was 26,027m<sup>3</sup>/day (163,703 barrels/day) a decline of 6.7% from the 1979 figure. The total volume of crude oil processed by Texaco for the year was 9,525,933m<sup>3</sup>. (59,915,298 barrels).

Texaco continued the operation of desulphurizing Arabian Light Crude for export to the U.S. and total production in 1980 was 190,790m<sup>3</sup> (1.2 million barrels).

The main refinery products were:—

Products	% of Output
Fuel Oils	51.8
Motor Gasoline	19.1
Gas/Diesel Oil	17.1
Aviation Turbine Fuel	3.9
Kerosene	3.9
Lubes/Greases	1.2
Petrochemicals	1.5
Desulphurised Crude	1.5
	100.0

Crude feedstock to the country's refineries, excluding indigenous crude, originated from the following sources.

Company	Country	Cubic Metres	Barrels	Imports
Texaco Trinidad Inc.	Saudi Arabia	6,853,576	43,106,963	77.9
	Indonesia	1,813,616	11,407,105	20.6
	West Africa	122,967	773,424	1.4
	Angola	3,521	22,143	0.1
		8,793,678	55,309,635	100.0

Production of Petrochemical intermediates from the Texaco refinery amounted to 193,063m<sup>3</sup> (1,214,306, bbls) as compared to 159,215m<sup>3</sup> (1,001,437 bbls) in 1979, an increase of 21.2%.

**TABLE A 1980**

YEAR	AVERAGE DAILY THROUGHPUT (BBL PER DAY)		TOTAL
	TEXACO	TRINTOC	
1971	331,297	67,427	398,724
1972	326,777	67,381	394,158
1973	321,648	66,492	388,140
1974	301,759	56,613	358,372
1975	187,866	46,782	234,648
1976	266,274	54,994	321,268
1977	217,555	55,124	272,679
1978	183,866	51,398	235,264
1979	175,367	51,638	227,005
1980	163,703	50,325	214,028

**TABLE B 1980**

PRODUCTS	MILLION BARRELS		PERCENT CHANGE BETWEEN 1979 AND 1980
	1980	1979	
FUEL OILS	42.3	43.5	-2.8
GASOLINES	15.6	15.1	+3.2
GAS/DIESEL	14.0	11.7	+16.4
AVIATION TURBINE FUEL	3.2	2.5	+21.9
KEROSENE	3.2	3.2	-
LUBES/GREASES	1.0	0.7	+30.0
PETROCHEMICALS	1.2	1.0	+16.7
DESULPHURISED CRUDE	1.2	1.1	+8.3

**TABLE C 1980**

NAME OF CRUDE	CRUDE	AMOUNT (BBL)	PERCENT TOTAL
TEXACO	-	11,505,002	13.49
ARABIAN LIGHT	SAUDI ARABIA	27,071,888	31.76
ARABIAN MEDIUM	SAUDI ARABIA	3,138,299	3.68
ARABIAN HEAVY	SAUDI ARABIA	12,072,107	14.16
LIGHT NAPHTHA	SAUDI ARABIA	824,669	0.97
MINAS	INDONESIA	9,892,216	11.60
DURI	INDONESIA	1,514,889	1.78
CABINDA	WEST AFRICA	773,424	0.91
ANGOLAN	ANGOLA	22,143	0.03
TEXACO SUB-TOTAL		66,814,637	78.38
TRINTOC			
TRINIDAD	-	20,035,138	21.61
TRINTOC SUB-TOTAL		20,035,138	21.61
TRINIDAD - TESORO			
TRINIDAD	-	9,432	0.01
T'DAD- TESORO SUB-TOTAL		9,423	0.01
TOTAL		86,859,198	100

**PERCENT OF TOTAL PRODUCTION**

	1980	1979	PERCENT CHANGE
NORMAL PARAFFINS	49.7	61.4	-11.7
TOLUENE	28.3	21.1	+9.2
BENZENE	6.9	7.0	-0.1

**PRODUCTION AND EXPORTS OF IMPORTANT PETROCHEMICAL INTERMEDIATES**  
**TRINIDAD AND TOBAGO 1980**  
**(QUANTITIES IN BARREL(S))**

	1980		1979	
	PRODUCTION	EXPORTS	PRODUCTION	EXPORTS
NORMAL PARAFFINS	601,458	466,321	614,900	610,307
DI-ISOBUTYLENE	(40)	—	(274)	—
NONENE	56,007	36,371	32,652	*37,983
TETRAMER	26,500	18,446	14,118	*23,971
BENZENE	82,983	78,101	70,342	*80,323
TOLUENE	342,361	330,303	211,758	*236,314
XYLENE	68,991	64,804	34,110	21,819
CYCLOHEXANE	21,212	*28,275	26,752	21,853
UNREFINED NAPHTHENIC ACID	14,796	10,293	9,366	*15,496

\*EXCESS OF EXPORT OVER PRODUCTION MADE UP FROM STOCKS.

**CRUDE OIL BALANCE, 1980**

AVAILABILITY	MILLION (bbls)	DISPOSAL	MILLION (bbls)
STOCK AT 1ST JANUARY	4.7	EXPORTS	46.1
PRODUCTION	77.6	DELIVERED TO REFINERY	78.3
IMPORTS	55.3	LOSS FROM PRODUCTION	9.6
		STOCK AT 31ST DECEMBER	3.6
	137.6		137.6

### REFINED PRODUCTS BALANCE 1980

AVAILABILITY	MILLION (bbls)	DISPOSAL	MILLION (bbls)
STOCK AT 1ST JANUARY	13.4	SHIPMENTS	79.6
		BUNKERS	4.0
		LOCAL CONSUMPTION	0.4
PRODUCTS OBTAINED CRUDE DELIVERED	82.5	STOCK AT 31ST DECEMBER	11.9
	<u>95.9</u>		95.9

### ACCIDENT REPORT 1980

Accidents reported for 1980 numbered 830. This figure represents an increase of 21 per cent over the 1979 total of 687. There were marked increases in the number of accidents occurring in Texaco, Tesoro and Amoco, whereas Trinmar and Trintoc recorded decreases.

Accidents occurring during drilling and producing operations numbered 490, representing an increase of 19 per cent when compared to last year's total of 411. Of those accidents, Amoco's operations accounted for 51 per cent.

Refinery accidents, which do not fall under the jurisdiction of the Ministry of Energy and Energy-Based Industries totalled 340, which was an increase of 23 per cent over last year's figure of 276.

Accidents were classified as "serious" and "non-serious", depending on the extent of injury sustained. Of the total number of accidents serious accidents comprised 8 per cent, with a total of 41, this figure representing an increase of 21 per cent over the 1979 figure, and consisting mainly of fracture, amputations, contusions, deep cuts, burns, head injuries and dislocation of joints.

Non-serious accidents comprised 91 per cent of the total, in amounting of 444. This was an increase of 19 per cent over the 1979 total of 374. These accidents consisted mainly of crush injuries, lacerations, contusions, abrasions, burns, muscle injuries, exposure to chemicals, shock facial injuries and allergies.

There were four fatal accidents in 1980. Three occurred in offshore operations by Trinmar (2) and Amoco (1), the other being on land by Texaco.

On Trinmar's Platform 3, a labourer employed with the contractor S.W. Ali, drowned. After completing hot work, he went down the platform ladder into the sea, found himself in difficulties and disappeared before help was obtained.

In North Soldado Field, a winchman employed with Rodisingh Enterprises died as a result of shock and haemorrhage from injuries sustained while returning to Trinmar Marine Base. He was on the bow of Launch A.R.S. 5, which on approaching the "Tug Mallard" that was towing a barge suddenly swerved and came into contact with the two rope and barge.

A diver employed with Farah Marine Operations died while diving off Poui "A" platform off Point Galeota.

A production Derrickman was killed when a Workover Rig, Trinity Well Services Rig fell while in operation at Well F.R. 1446.



**TABLE XII**  
**1980 ACCIDENT STATISTICS**

COMPANY	FIELD	TOTAL	FATAL	SERIOUS				MINOR			
				D	P	E	O	D	P	E	O
Texaco	Barrackpore	6	—	—	1	—	—	—	5	—	—
	Guayaguayare	11	—	—	—	—	—	—	10	1	—
	Palo Seco/Cruise	22	—	2	1	—	—	8	11	—	—
	Forest Reserve/Brighton	27	1	—	3	—	2	4	13	1	3
	Gulf of Paria (Block 1)	4	—	—	—	—	—	3	1	—	—
	East Coast (Block 6)	3	—	—	—	—	—	3	—	—	—
	Pointe-a-Pierre *	340	—	—	—	—	—	—	—	—	—
	Total (excluding Pointe-a-Pierre)	73	1	2	5	—	<u>2</u>	18	40	2	3
Amoco	All	248	1	11	3	—	1	138	26	22	46
Tesoro	All	60	—	3	3	1	—	25	18	4	6
Trinmar	All	54	2	3	1	—	—	7	16	16	9
Trintoc	All	52	—	5	—	—	—	36	6	—	4
P.C.O.L.	All	1	—	—	—	—	—	—	1	—	—
Tenneco	All	2	—	1	—	—	—	1	—	—	—
Total		490	4	25	12	1	3	225	107	44	68

D-Drilling; P-Production; E-Engineering; O-Others.

Refinery Accidents -- under the jurisdiction of the Factory Inspectorate (Not included in total).

## ROYALTY ASSESSMENT 1980

APPENDIX VIII presents a summary of Crude Oil Assessed for State Royalty by company, showing price per barrel and analyses for the half-yearly periods ending 30th June 1980, and 31st December 1980.

The rate of Royalty on all fields is normally ten per cent (10%) of field storage value, except for Amoco Trinidad Oil Company's Licences, and the Galeota field of Trinidad Tesoro Petroleum Company Limited, where it is twelve and one half per cent (12 ½%) of field storage value. The net production for Royalty purposes for the first half 1980 was 37,374,335 barrels while in 1979, it was 37,231,044 barrels; for the second half of 1980 net production was 37,474,894 compared with 1979 of 38,142,056 barrels. The difference in the two rates of Royalty is reflected in the total assessable barrels as indicated hereunder.

Net assessed production for Royalty purposes increased during the first half of 1980 to 4,302,586 barrels from 4,273,489 barrels in 1979, due to the extra day in February of 1980. However, for the second half of 1980 there was a decrease to 4,328,042 as compared with 2,381,760 barrels in 1979; this decrease is due primarily to falling production in all fields except Tesoro Galeota, which showed a total increase of approximately 992,000 assessed barrels.

Prices of Petroleum Products continued rising, and these are reflected in the total Royalty for 1980 at \$544,997,925 compared with the 1979 figure of \$486,061,538 and \$274,391,049 for 1978 (see Appendix IX – average price of Petroleum Products in T. T. currency per barrel).

Appendix IX presents a summary of Royalty assessed for Crude Oil, Natural Gas sold and Natural Gasolene produced, and Minimum Rents on State Owned Mining Leases/Licences for half-yearly periods 1978, 1979 and 1980.

It will be observed that Total Royalty increased progressively through the years 1978, 1979 and 1980 which were actually \$277,570,968, \$490,484,882 and \$550,099,251 respectively. Increases in Petroleum Products prices were responsible for the higher revenue from year to year.

**APPENDIX 1**  
**ANNUAL STATISTICS OF PRODUCTION, DRILLING, REFINING – EXPORTS AND IMPORTS 1980 – 1970**

ITEM	UNIT	PERCENTAGE DIFFERENCE 1980-1979	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970
Crude Oil	'000 bbls	- 0.82	77,613	78,249	83,778	83,619	77,673	78,621	68,136	60,670	51,211	47,148	51,047
Casing Head Gasoline (C.H.P.S.)	'000 bbls	- 12.82	39	44	60	61	53	61	69	79	137	141	168
Total Crude Oil And Natural Gasoline (1+2)	'000 bbls	- 0.83	77,652	78,293	83,838	83,680	77,726	78,682	68,205	60,749	51,348	46,289	51,215
Crude Oil Production – Crown Oil Rights	'000 bbls	- 0.69	74,879	75,399	80,701	80,612	74,704	76,018	65,078	57,736	48,246	43,929	47,594
Crude Oil Production – Private Oil Rights	'000 bbls	- 4.24	2,734	2,850	3,077	3,007	2,969	2,603	3,058	2,934	2,965	3,219	3,452
Total Imports	'000 bbls	+ 6.65	55,309	51,631	56,817	67,441	87,459	58,796	95,636	103,977	107,662	107,567	115,445
Imports of Refined Products	'000 bbls	-	-	-	-	1,681	2,503	260	46	21	76	75	69
Imports Of Crude Oil For Refining	'000 bbls	+ 6.65	55,309	51,631	56,817	65,760	84,784	58,144	95,472	103,624	107,150	106,867	113,275
Imports Of Other Oils For Refining And Blending	'000 bbls	-	-	-	-	0	172	392	118	332	436	625	2,101
Total Exports	'000 bbls	+ 0.34	113,493	113,105	126,604	140,753	147,896	139,714	153,297	155,998	149,992	146,663	154,974
Export Of Crude Oil	'000 bbls	- 0.45	46,075	46,282	54,008	50,936	44,408	48,307	31,870	23,614	14,005	6,998	8,669
Export Of Refined Products	'000 bbls	+ 0.88	67,418	66,823	72,596	89,817	103,488	91,407	121,427	132,384	135,972	139,665	146,305
Runs To Still	'000 bbls	- 5.76	78,343	82,857	85,882	99,536	117,595	85,660	130,819	141,687	144,274	145,547	154,860
Number of Wells Started	As Stated	- 21.79	156	190	236	235	224	182	219	205	184	248	140
Total Number of Wells Completed	As Stated	- 0.55	183	184	215	217	207	189	212	212	189	220	135
Number Of Drilling Wells Completed As Oil Wells	As Stated	- 2.86	140	144	170	170	153	150	176	181	162	175	107
Number Of Drilling Wells Abandoned, Etc.	As Stated	- 110.5	19	40	45	47	54	24	21	31	27	45	28
Total Footage Drilled (All Wells)	Feet	- 17.32	670,928	787,132	895,098	922,295	919,705	839,649	909,980	955,185	841,742	939,259	663,743
Footage Drilled On Crown Oil Rights	Feet	- 49.24	623,384	1,228,181	863,989	882,023	879,132	772,279	766,787	874,867	760,769	809,954	614,719
Footage Drilled On Private Oil Rights	Feet	+ 150.29	51,258	20,479	31,109	40,272	40,573	67,370	143,193	80,318	80,973	129,305	49,024
Average Depth Of Completed Drilling Wells (15)	Feet	- 47.58	3,557	6,786	3,868	4,196	4,443	4,442	4,509	4,505	4,294	4,273*	4,917
Total Number Of Wells Producing (Average During Year)	As Stated	- 1.43	3,351	3,399	3,275	3,148	2,997	2,777	2,981	2,894	2,932	3,035	3,123
Number of Wells Produced By Flowing (Average During Year)	As Stated	- 29.97	397	516	507	428	438	438	498	506	525	569	626
Number Of Wells Produced By Artificial Life (Average During Year)	As Stated	- 7.02	2,694	2,883	2,768	2,720	2,559	2,339	2,483	2,388	2,407	2,476	2,497
Average Daily Production Per Producing Well	Barrels	+ 0.47	63.3	63.0	70.1	72.8	71.0	77.6	62.6	57.4	47.7	42.6	44.8
Average Daily Production Flowing Wells	Barrels	+ 13.46	248.9	215.4	271.4	335.7	328.5	358.7	248.0	204.4	146.8	114.4	119.9
Average Daily Production Per Artificial Lift Well	Barrels	+ 14.96	42.1	35.8	33.2	31.4	25.5	24.9	25.4	26.3	26.1	26.4	26.0
Total Value Of Domestic Exports	\$'000	+ 36.4	9,715,719	6,175,213	4,810,025	5,188,987	5,331,557	3,939,970	3,934,151	1,052,476	1,050,023	1,000,940	944,131
Total Value Of Petroleum Products (Item 28)	\$'000	+ 37.4	9,127,773	5,715,496	4,379,188	4,787,280	4,960,604	1,925,785	2,532,081	831,496	830,993	804,831	668,439
Total Value Of Lake Asphalt Products	\$'000	- 3.1	3,253	3,355	360	3,051	4,426	4,240	4,657	3,876	3,299	3,561	3,991
Total Natural Gas Produced	MMCF	+ 14.19	197,811	169,740	157,920	149,589	137,959	126,434	128,293	119,979	104,338	109,814	121,060
Used As Fuel	MMCF	+ 10.71	80,624	71,990	69,209	62,968	52,931	46,618	50,599	54,700	57,131	55,866	56,490
Replaced in Formation	MMCF	- 375.00	4	19	114	333	1,699	2,017	5,706	6,381	9,230	12,112	19,018
Losses, Not Collected	MMCF	- 552.30	12,607	82,236	73,381	8,518	76,095	70,890	63,760	49,213	28,016	32,793	35,356

\* Revised Data

APPENDIX 11  
MONTHLY ANALYSIS OF DRILLING AND WORKOVER WELLS, 1980  
TRINIDAD & TOBAGO

MONTH	RIG/MONTH	NEW WELLS STARTED	DRILLING WELLS COMPLETED										CLOSED IN		MONTHLY FOOTAGE DRILLED			AVERAGE FOOTAGE DRILLED		OLD WELLS				
			OIL & GAS PRODUCERS		INJECTION & OBSERVATION WELLS		ABANDONED						TOTAL	AGGREGATE DEPTH	AVERAGE DEPTH	NO.	AGGREGATE DEPTH	CROWN	PRIVATE	TOTAL	/DAY	/RIG /DAY	RE-COMPLETED	ABANDONED
			NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH	AFTER TESTING		DRY HOLES		TECHNICAL CAUSES													
							NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH	NO.	AGGREGATE DEPTH										
JANUARY	13.83	12	12	40,077	1	2,470	-	-	2	15,576	1	7,566	16	65,689	4379.3	-	-	58,695	6,472	65,167	2102.2	152.0	13	-
FEBRUARY	12.85	16	9	37,946	1	2,507	-	-	2	8,600	1	4,138	13	53,191	4091.6	-	-	40,955	5,278	46,233	1594.2	124.1	6	-
MARCH	13.51	15	9	29,637	2	2,285	-	-	1	2,500	-	-	12	34,422	2871.8	-	-	52,372	3,904	56,276	1815.4	134.4	11	-
APRIL	11.06	9	21	60,963	-	-	1	15,132	-	-	-	-	22	76,095	3458.9	-	-	29,919	5,951	35,870	1195.7	108.1	7	-
MAY	10.29	10	11	46,914	1	1,567	1	5,565	-	-	1	4,289	14	58,335	4166.8	-	-	37,656	2,500	40,156	1295.4	125.9	18	-
JUNE	12.45	14	8	38,657	-	-	-	-	-	-	-	-	8	38,657	4832.1	-	-	52,811	5,592	58,403	1946.8	156.4	4	2
JULY	14.90	15	18	56,618	1	2,430	-	-	-	-	-	-	19	53,048	2792.0	-	-	52,017	7,257	59,274	1912.1	128.3	11	-
AUGUST	13.92	20	11	48,554	2	4,800	-	-	3	25,615	1	450	17	79,419	46,717	-	-	62,036	3,709	65,745	2120.8	152.4	12	2
SEPTEMBER	13.46	14	16	58,968	-	-	-	-	-	-	1	5,537	17	64,505	3794.4	-	-	55,973	4,730	60,703	2023.4	150.3	12	3
OCTOBER	12.48	16	16	65,912	1	2,407	1	9,500	1	5,600	-	-	19	83,419	4390.5	-	-	56,250	3,186	59,436	1917.3	149.3	11	1
NOVEMBER	14.19	15	11	44,208	4	7,533	1	7,006	1	5,135	1	2,070	18	65,952	3664	-	-	67,204	1,379	68,583	2286.1	161.1	11	-
DECEMBER	13.50	15	6	44,460	2	4,302	1	7,504	1	4,604	-	-	10	60,870	6087.2	-	-	57,041	1,300	58,341	1882.0	139.4	11	-
TOTAL 1980	156.80	171	148	566,914	15	30,301	5	44,707	11	67,630	6	24,050	185	733,602	3966.6	-	-	622,929	51,258	674,187	1842.0	140.6	127	8
TOTAL 1979	153.6	189	145	653,060	8	19,796	4	46,284	11	63,143	5	11,731	173	802,314	4637.7	11	23,535	859,304	20,419	879,723	2410.2	188.3	149	16
INCREASE 1980 - 1979	3.1	-18	3	-86,106	7	10,507	1	-1,577	0	4,487	1	12,319	12	-68,490	-671.1	-11	23,535	-236,275	30,739	-205,536	-568.2	-47.7	-22	-8

APPENDIX 11A

LAND & MARINE FOOTAGE 1980

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
LAND	34,648	40,958	42,664	22,110	30,674	45,658	45,523	43,124	44,893	43,978	43,327	42,560	480,117
MARINE	30,519	5,275	13,612	13,760	9,482	12,745	13,751	22,621	15,810	15,458	25,256	15,781	194,070
TOTAL	65,167	46,233	56,276	35,870	40,156	58,403	59,274	65,745	60,703	59,436	68,583	58,341	674,187
DAILY AV. FT.	2102.2	1594.2	1815.4	1195.7	1295.4	1946.8	1912.1	2120.8	2023.4	1917.3	2286.1	1882.0	1842.0
DAILY AV. FT/RIG	152.8	124.1	134.4	108.1	126.4	156.5	128.3	152.4	150.3	149.3	161.1	139.4	140.6
MARINE % TOTAL	46.8	11.4	24.2	38.4	23.6	21.8	23.2	34.4	26.1	26.0	36.8	27.0	29.0

**APPENDIX III  
ANALYSIS OF MONTHLY PRODUCTION FOR THE YEAR ENDING 31ST DECEMBER, 1980**

MONTH	FLOWING				GAS/AIR LIFT				PUMPING				OTHER METHODS				SALT WATER				NO. OF WELLS PRODUCED	NO. OF IDLE WELLS	NO. OF WELLS ABANDONED	NO. OF WELLS DRILLING AT MONTH END	TOTAL NO. OF WELLS STARTED	DAILY AV. PER PRODUCING WELL	TOTAL OIL PRODUCTION	BREAKDOWN OF TOTAL PRODUCTION						AVERAGE B.O.P.D.	CROWN C.H.P.S.	PRIVATE C.H.P.S.	TOTAL		
	NO. OF WELLS	QUANTITY BBLs	% OF TOTAL OIL	DAILY AV. PER WELL BBLs	NO. OF WELLS	QUANTITY BBLs	% OF TOTAL OIL	DAILY AV. PER WELL BBLs	NO. OF WELLS	QUANTITY BBLs	% OF TOTAL OIL	DAILY AV. PER WELL BBLs	NO. OF WELLS	QUANTITY BBLs	% OF TOTAL OIL	DAILY AV. PER WELL BBLs	NO. OF WELLS	QUANTITY BBLs	% OF TOTAL LIQUID	DAILY AV. PER WELL BBLs								CROWN			PRIVATE								
																												DAILY AV. PER WELL	NO. OF WELLS	QUANTITY PRODUCED BBLs	DAILY AV. PER WELL	NO. OF WELLS	QUANTITY PRODUCED BBLs						
JANUARY	398	3,195,760	48.6	259.0	656	2,201,129	33.5	108.2	2,245	1,179,228	17.9	16.9	3	19	—	0.2	1,704	3,795,895	36.6	71.8	3,302	8,179	3	13	11,497	64.2	6,576,136	77.3	2,647	6,346,356	11.3	655	229,780	212,133	2,079	171	2,250		
FEBRUARY	393	3,070,356	49.4	269.4	664	2,032,052	32.7	105.5	2,227	1,113,438	17.9	17.2	3	33	—	0.3	1,623	3,730,279	37.5	79.2	3,287	8,208	3	11	11,509	65.2	6,215,879	78.1	2,646	6,000,257	11.5	641	215,622	214,341	1,459	149	1,608		
MARCH	397	3,169,601	47.7	257.5	663	2,225,318	33.5	108.2	2,302	1,249,329	18.8	17.4	—	—	—	—	1,622	3,904,698	37.0	77.6	3,362	8,148	0	13	11,523	63.8	6,644,248	76.3	2,705	6,400,110	11.9	657	244,138	214,331	3,013	91	3,104		
APRIL	405	3,082,169	47.3	253.6	631	2,157,940	33.1	113.9	2,305	1,276,101	19.6	18.4	—	—	—	—	1,595	3,719,450	36.3	77.7	3,341	8,182	1	7	11,531	65.0	6,516,210	77.9	2,682	6,272,398	12.3	659	243,812	217,207	3,287	124	3,411		
MAY	399	2,989,631	46.0	241.7	634	2,218,302	34.1	112.8	2,369	1,294,727	19.9	17.6	3	51	—	0.5	1,653	3,911,741	37.6	76.3	3,405	8,125	1	9	11,540	61.6	6,502,711	74.1	2,727	6,268,796	11.1	678	233,915	209,765	3,817	152	3,969		
JUNE	393	2,858,505	45.3	242.4	647	2,248,077	35.7	115.8	2,379	1,200,877	19.0	16.8	1	6	—	0.2	1,691	3,567,989	36.1	70.3	3,420	8,122	0	12	11,554	61.5	6,307,465	73.8	2,754	6,101,139	10.3	666	206,326	210,249	3,141	125	3,266		
PRODUCTION TOTAL:																																							
1ST JANUARY-30TH JUNE	398	18,366,022	47.3	253.5	649	13,082,818	33.8	110.7	2,304	7,313,700	18.9	17.4	2	109	—	0.2	1,648	22,630,052	36.9	75.4	3,353	—	—	—	—	—	63.5	38,762,649	76.2	2,694	37,389,056	11.4	659	1,373,593	212,982	16,796	812	17,608	
JULY	405	3,097,466	46.0	246.7	624	2,288,957	34.0	118.3	2,358	1,344,973	20.0	18.3	3	17	—	0.2	1,698	3,709,036	35.5	70.4	3,390	8,168	0	11	11,569	64.1	6,731,423	76.9	2,727	6,501,396	11.1	663	230,027	217,143	2,631	201	2,832		
AUGUST	389	2,977,687	45.2	246.9	607	2,301,367	34.9	122.3	2,341	1,315,251	19.9	18.1	3	36	—	0.3	1,754	3,390,890	34.0	62.3	3,340	8,229	3	15	11,587	63.7	6,594,341	76.9	2,672	6,373,723	10.6	668	220,618	212,721	2,530	196	2,726		
SEPTEMBER	386	2,906,787	46.2	251.0	620	2,173,692	34.5	116.8	2,302	1,215,112	19.3	17.5	3	35	—	0.3	1,645	3,412,722	35.2	69.1	3,311	8,277	1	11	11,600	63.4	6,295,626	76.2	2,658	6,080,803	10.9	653	214,823	209,854	3,165	100	3,265		
OCTOBER	402	2,982,900	46.0	239.3	619	2,266,120	34.9	118.0	2,363	1,241,867	19.1	16.9	3	37	—	0.3	1,685	3,686,546	36.2	70.5	3,387	8,213	2	12	11,614	61.8	6,490,924	74.4	2,712	6,256,657	11.1	657	234,267	209,385	3,357	96	3,453		
NOVEMBER	393	2,899,691	45.9	245.9	621	2,232,823	35.3	119.8	2,323	1,184,841	18.8	17.0	3	23	—	0.2	1,676	3,871,784	38.0	77.0	3,340	8,275	3	11	11,629	63.0	6,317,378	75.5	2,689	6,095,290	11.3	651	222,088	210,579	3,397	93	3,490		
DECEMBER	396	2,934,604	45.7	239.0	605	2,218,664	34.6	118.2	2,319	1,267,329	19.7	17.6	3	22	—	0.2	1,700	3,903,026	37.8	74.0	3,323	8,306	2	13	11,644	62.3	6,420,619	74.6	2,678	6,182,075	11.9	645	238,544	207,117	3,621	106	3,727		
PRODUCTION TOTAL:																																							
1ST JULY-31ST DECEMBER	395	17,799,135	45.8	244.8	616	13,481,623	34.7	118.9	2,335	7,569,373	19.5	17.6	3	180	—	0.3	1,693	21,974,004	56.6	70.5	3,349	—	—	—	—	—	63.0	38,850,311	75.7	2,690	37,489,944	11.2	659	1,360,367	211,143	18,701	792	19,493	
YEAR'S PRODUCTION TOTAL	—	36,165,157	—	—	—	26,564,441	—	—	—	14,883,073	—	—	—	289	—	—	—	44,604,056	—	—	—	—	—	—	—	—	63.2	77,612,960	—	—	74,879,000	—	—	2,733,960	212,057	35,497	1,604	37,101	
DAILY AVERAGES	—	98,812	—	—	—	72,580	—	—	—	40,664	—	—	—	0.7	—	—	—	121,869	—	—	—	—	—	—	—	—	—	212,057	—	—	204,587	—	—	7,470	579	97	4	101	
AVERAGES DURING YEAR	397	—	—	248.8	632	—	—	114.8	2,320	—	—	17.5	2	—	—	0.3	1,671	—	—	72.9	3,351	—	—	—	—	—	63.3	—	75.9	2,692	—	11.3	659	—	—	—	—	—	

**APPENDIX IIIA  
ANALYSIS OF PRODUCTION BY OPERATING COMPANIES - 1980**

COMPANY	FLOWING				GAS LIFTING				PUMPING				OTHER METHODS			SALT WATER			AV. NO. OF WELLS PRODUCED	DAILY AV PER PRODUCING WELL	TOTAL OIL PRODUCED	COY'S PROD'N AS % OF TOTAL PROD'N	CROWN		PRIVATE			
	AV. NO. OF WELLS	PRODUCTION (BARRELS)	% OF TOTAL OIL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION (BARRELS)	% OF TOTAL OIL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION (BARRELS)	% OF TOTAL OIL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION (BARRELS)	% OF TOTAL OIL	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION (BARRELS)					% OF TOTAL FLUID	DAILY AV. PER WELL	PRODUCTION (BARRELS)	% OF TOTAL PROD'N	PRODUCTION (BARRELS)	% OF TOTAL PROD'N
TRINIDAD-TESORO PETROLEUM CO. LTD.	67	1,414,411	15.5	57.7	67	528,165	5.8	21.5	1,217	7,158,233	78.7	16.1	-	-	-	-	640	2,348,236	20.5	10.0	1,315	18.4	9,100,809	11.73	7,509,135	82.5	1,591,674	17.5
TEXACO TRINIDAD INC.	61	1,256,535	18.4	56.3	390	1,786,523	26.1	12.5	593	3,794,172	55.5	17.5	-	-	-	-	422	6,067,316	47.0	39.3	1,044	17.9	6,837,230	8.81	6,091,102	89.1	746,128	10.9
PREMIER CONSOLIDATED OILFIELDS LTD.	2	6,948	6.4	9.5	-	-	-	-	77	101,850	93.4	3.6	2	289	0.3	0.4	30	69,569	38.9	6.3	81	3.7	109,087	0.14	24,161	22.1	84,926	77.9
TRINIDAD NORTHERN AREAS	97	6,441,909	44.4	181.5	112	6,023,606	41.5	146.9	53	2,050,557	14.1	105.7	-	-	-	-	219	4,668,794	24.3	58.2	262	151.4	14,516,072	18.70	14,516,072	100.0	0	0.0
AMOCO TRINIDAD OIL CO.	61	25,743,105	58.6	1153.1	55	18,174,619	41.4	902.9	-	-	-	-	-	-	-	-	78	30,370,065	40.9	1063.8	116	1034.4	43,917,724	56.59	43,917,724	100.0	0	0.0
TRINIDAD AND TOBAGO OIL COMPANY	109	1,302,249	41.6	32.6	9	51,528	1.6	15.6	380	1,778,261	56.8	12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL - 1980	396	36,165,157	46.6	249.5	633	26,564,441	34.2	114.7	2,319	14,883,073	19.2	17.5	2	289	0.0	0.4	1,669	44,874,056	36.6	73.5	3,350	63.3	77,612,960	100.0	74,879,000	96.5	2,733,960	3.5
TOTAL - 1979	516	40,576,201	51.9	215.4	599	23,231,294	29.7	106.3	2,281	14,441,569	18.5	17.3	3	410	0.0	0.4	1,726	39,083,662	33.3	62.0	3,399	62.9	78,249,474	100.0	75,399,301	96.4	2,858,173	3.6

**NATURAL GASOLINE C.H.P.S. PRODUCTION 1980**

	CROWN OIL RIGHTS (BBLs)	PRIVATE OIL RIGHTS (BBLs)	TOTAL (BBLs)
TRINIDAD TESORO PETROLEUM COMPANY LIMITED	35,497	1,604	37,101
TOTAL 1979	46,590	1,269	47,859

**APPENDIX IIB**  
**DAILY AVERAGE PRODUCTION BY MONTHS FOR ALL COMPANIES – 1980**  
**(ALL QUANTITIES IN BARRELS)**

COMPANY	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL CRUDE	TOTAL B.O.P.D.
TRINIDAD TESORO PETROLEUM CO. LTD.	657,069	643,483	783,000	781,021	767,785	724,535	852,575	824,546	769,528	788,271	727,800	781,196	9,100,809	
B.O.P.D.	21,196	22,189	25,258	26,034	24,767	24,151	27,502	26,598	25,651	25,428	24,260	25,200		24,866
PREMIER CONSOLIDATED OILFIELDS LTD.	10,024	9,136	9,529	9,385	9,744	8,401	9,198	8,579	8,862	9,099	8,706	8,424	109,087	
B.O.P.D.	323	315	307	313	314	280	297	227	295	294	290	272		298
TRINIDAD AND TOBAGO OIL COMPANY	277,649	259,174	260,430	258,638	273,566	258,573	263,746	272,082	256,652	269,996	243,025	238,507	3,132,038	
B.O.P.D.	8,956	8,937	8,401	8,621	8,825	8,619	8,508	8,777	8,555	8,710	8,101	7,694		8,557
TEXACO TRINIDAD INC.	581,701	544,757	595,806	584,537	590,350	538,528	587,219	551,754	547,031	567,560	566,958	582,029	6,837,230	
B.O.P.D.	18,765	18,785	19,187	19,485	19,044	17,951	18,943	17,799	18,234	18,308	18,899	18,775		18,681
TRINIDAD NORTHERN AREAS	1,304,099	1,210,330	1,235,040	1,229,216	1,216,884	1,202,054	1,237,012	1,222,538	1,165,279	1,174,215	1,130,174	1,144,231	14,516,072	
B.O.P.D.	42,068	41,736	39,840	40,974	40,706	40,068	39,904	39,437	38,843	37,878	37,672	36,911		39,661
AMOCO TRINIDAD OIL COMPANY	3,745,594	3,548,999	3,761,443	3,653,413	3,599,382	3,575,374	3,781,673	3,714,842	3,548,274	3,681,783	3,640,715	3,666,232	43,917,724	
B.O.P.D.	120,826	122,379	121,337	121,780	116,109	119,179	121,989	119,834	118,276	118,767	121,357	118,266		119,994
TOTAL – 1980	6,576,136	6,215,879	6,644,248	6,516,210	6,502,711	6,307,465	6,731,423	6,594,341	6,295,626	6,490,924	6,317,378	6,420,619	77,612,960	
B.O.P.D.	212,133	214,341	214,331	217,207	209,765	210,249	217,143	212,721	209,854	209,385	210,579	207,117		212,057
TOTAL – 1979	6,631,463	5,950,206	6,534,502	6,442,977	6,705,268	6,443,140	6,678,818	6,529,133	6,373,098	6,813,643	6,522,135	6,625,091	78,249,474	
B.O.P.D.	213,981	212,507	210,790	214,766	216,299	214,771	215,446	210,617	212,437	219,795	217,405	213,713		214,382



**APPENDIX III  
MARINE & LAND PRODUCTION - 1980  
(ALL QUANTITIES IN BBLs)**

	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JAN - JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		JULY - DECEMBER		YEAR 1980			
	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	AV. NO. OF WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	WELLS	PRODUCTION	AV. NO. OF WELLS	PRODUCTION	AV. NO. OF WELLS	PRODUCTION		
<b>MARINE</b>																																
T.N.A. - SOLDADO	254	1,290,054	247	1,196,621	245	1,216,559	245	1,210,370	257	1,248,433	252	1,189,646	250	7,351,683	249	1,218,385	247	1,206,010	250	1,145,210	239	1,161,276	245	1,118,942	248	1,131,683	246	6,981,506	248	14,333,189		
TEXACO - A.B.M.	75	31,659	63	28,526	62	28,572	68	30,306	67	30,217	67	33,576	67	182,856	60	31,707	60	27,990	62	29,953	66	26,837	69	26,468	66	22,860	64	165,815	65	348,671		
TESORO - GALEOTA	15	33,227	26	68,939	31	132,970	33	160,433	33	151,891	40	174,412	30	721,872	40	238,935	37	242,232	37	196,471	40	193,756	35	161,225	37	155,978	38	1,188,597	34	1,910,469		
AMOCO	115	3,745,594	117	3,548,999	117	3,761,443	118	3,653,413	118	3,599,382	118	3,575,374	117	21,884,205	114	3,781,673	114	3,714,842	111	3,548,274	115	3,681,783	116	3,640,715	119	3,666,232	115	22,033,519	116	43,917,724		
<b>SUB TOTAL</b>	<b>459</b>	<b>5,100,534</b>	<b>453</b>	<b>4,843,085</b>	<b>455</b>	<b>5,139,544</b>	<b>464</b>	<b>5,054,522</b>	<b>475</b>	<b>5,029,923</b>	<b>477</b>	<b>4,973,008</b>	<b>464</b>	<b>30,140,616</b>	<b>463</b>	<b>5,270,700</b>	<b>458</b>	<b>5,191,074</b>	<b>460</b>	<b>4,919,908</b>	<b>460</b>	<b>5,063,652</b>	<b>465</b>	<b>4,947,350</b>	<b>470</b>	<b>4,976,753</b>	<b>463</b>	<b>30,369,437</b>	<b>464</b>	<b>60,510,053</b>		
<b>DEVIATED FROM SHORE</b>																																
T.N.A. - F.O.S	9	14,045	9	13,709	16	18,481	19	18,846	19	13,451	18,	12,408	15	90,940	15	18,627	13	16,528	13	20,069	11	12,939	10	11,232	15	12,548	13	91,943	14	182,883		
TEXACO - A.S.	46	4,993	47	5,321	50	5,813	50	6,151	49	7,210	47	5,993	48	35,481	46	6,435	42	5,844	46	5,668	52	6,175	52	6,740	51	9,369	48	40,231	48	75,712		
TESORO - GUAPO M (11551/53)	9	1,700	10	2,128	9	933	10	1,300	10	808	9	650	10	7,519	10	1,328	9	1,655	9	1,264	9	1,303	9	997	9	1,554	9	8,101	9	15,620		
<b>SUB TOTAL</b>	<b>64</b>	<b>20,738</b>	<b>66</b>	<b>21,158</b>	<b>75</b>	<b>25,227</b>	<b>79</b>	<b>26,297</b>	<b>78</b>	<b>21,469</b>	<b>74</b>	<b>19,051</b>	<b>73</b>	<b>133,940</b>	<b>71</b>	<b>26,390</b>	<b>64</b>	<b>24,027</b>	<b>68</b>	<b>27,001</b>	<b>72</b>	<b>20,417</b>	<b>71</b>	<b>18,969</b>	<b>75</b>	<b>23,471</b>	<b>70</b>	<b>140,275</b>	<b>71</b>	<b>274,215</b>		
<b>MARINE AND DEVIATED LAND</b>	<b>523</b>	<b>5,121,272</b>	<b>519</b>	<b>4,864,243</b>	<b>530</b>	<b>5,164,771</b>	<b>543</b>	<b>5,080,819</b>	<b>553</b>	<b>5,051,392</b>	<b>551</b>	<b>4,992,059</b>	<b>537</b>	<b>30,274,556</b>	<b>534</b>	<b>5,297,090</b>	<b>522</b>	<b>5,215,101</b>	<b>528</b>	<b>4,946,909</b>	<b>532</b>	<b>5,084,069</b>	<b>536</b>	<b>4,966,319</b>	<b>545</b>	<b>5,000,224</b>	<b>533</b>	<b>30,509,712</b>	<b>535</b>	<b>60,784,268</b>		
<b>TOTAL PRODUCTION</b>	<b>2,779</b>	<b>1,454,864</b>	<b>2,768</b>	<b>1,351,636</b>	<b>2,832</b>	<b>1,479,477</b>	<b>2,798</b>	<b>1,435,391</b>	<b>2,852</b>	<b>1,451,319</b>	<b>2,869</b>	<b>1,315,406</b>	<b>2,816</b>	<b>8,488,093</b>	<b>2,856</b>	<b>1,434,333</b>	<b>2,818</b>	<b>1,379,240</b>	<b>2,783</b>	<b>1,348,717</b>	<b>2,855</b>	<b>1,406,855</b>	<b>2,804</b>	<b>1,351,059</b>	<b>2,778</b>	<b>1,402,395</b>	<b>2,816</b>	<b>8,340,599</b>	<b>2,816</b>	<b>16,828,692</b>		
<b>TOTAL MARINE CUMULATIVE</b>	<b>3,302</b>	<b>6,576,136</b>	<b>3,287</b>	<b>6,215,879</b>	<b>3,362</b>	<b>6,644,248</b>	<b>3,341</b>	<b>6,516,210</b>	<b>3,405</b>	<b>6,502,711</b>	<b>3,420</b>	<b>6,307,465</b>	<b>3,353</b>	<b>38,762,649</b>	<b>3,390</b>	<b>6,731,423</b>	<b>3,340</b>	<b>6,594,341</b>	<b>3,311</b>	<b>6,295,626</b>	<b>3,387</b>	<b>6,490,924</b>	<b>3,340</b>	<b>6,317,378</b>	<b>3,323</b>	<b>6,420,619</b>	<b>3,349</b>	<b>38,850,311</b>	<b>3,351</b>	<b>77,612,960</b>		
<b>DEVIATED CUMULATIVE</b>	<b>64</b>	<b>20,738</b>	<b>130</b>	<b>41,896</b>	<b>205</b>	<b>67,123</b>	<b>284</b>	<b>93,420</b>	<b>362</b>	<b>114,889</b>	<b>436</b>	<b>133,940</b>		<b>30,140,616</b>	<b>507</b>	<b>160,330</b>	<b>571</b>	<b>184,357</b>	<b>639</b>	<b>211,358</b>	<b>711</b>	<b>231,775</b>	<b>782</b>	<b>250,744</b>	<b>857</b>	<b>274,215</b>						
<b>LAND CUMULATIVE</b>	<b>2,779</b>	<b>1,454,864</b>	<b>5,547</b>	<b>2,806,500</b>	<b>8,379</b>	<b>4,285,977</b>	<b>11,177</b>	<b>5,721,368</b>	<b>14,029</b>	<b>7,172,687</b>	<b>16,879</b>	<b>8,488,093</b>	<b>19,735</b>	<b>9,922,426</b>	<b>22,553</b>	<b>11,301,666</b>	<b>25,336</b>	<b>12,650,383</b>	<b>28,191</b>	<b>14,057,238</b>	<b>30,995</b>	<b>15,408,297</b>	<b>33,773</b>	<b>16,828,692</b>								
<b>DEVIATED AND LAND TOTAL</b>	<b>2,843</b>	<b>1,475,602</b>	<b>5,677</b>	<b>2,848,396</b>	<b>8,584</b>	<b>4,353,100</b>	<b>11,461</b>	<b>5,814,788</b>	<b>14,372</b>	<b>7,287,576</b>	<b>17,315</b>	<b>8,622,033</b>	<b>20,242</b>	<b>10,082,756</b>	<b>23,124</b>	<b>11,486,023</b>	<b>25,975</b>	<b>12,861,741</b>	<b>28,902</b>	<b>14,289,013</b>	<b>31,777</b>	<b>15,659,041</b>	<b>34,630</b>	<b>17,102,907</b>								

**APPENDIX IV**  
**PRODUCTION AND DISPOSAL OF NATURAL GAS – 1980**  
**(ALL FIGURES OF GAS PRODUCTION IN MSCF) (MSCF – 1,000 STANDARD CUBIC FEET)**

	CRUDE OIL PRODUCTION (bbls)	AVERAGE GOR (CU. FT/bbl)	NATURAL GAS PRODUCTION	NATURAL GAS DISPOSAL								AVERAGE GAS RECOVERY			INTER-OIL COMPANY SALES	USED FOR THE MANUFACTURE OF PETROCHEMICAL		
				SALES TO OTHER COMPANIES	REPLACED INTO FORMATION	CONVERTED INTO C.H.P.S.	USED AS FUEL		VENTED TO ATMOSPHERE			PIPELINE LOSSES UNACCOUNTED FOR	NOT COLLECTED	NATURAL GAS TREATED			AVERAGE PLANT RECOVERY (IG/MCF)	NATURAL GASOLENE PRODUCED (bbls)
							IN FIELDS	IN REFINERIES	AFTER UTILIZATION	WITHOUT UTILIZATION	TOTAL							
JANUARY	6 567 136	2 378	15 639 222	5 023 601	–	2 360	830 245	2 340 334	2 244 926	3 853 610	6 198 536	151 777	1 092 369	286,841	0.274	2 250	3 044 549	1 408 650
FEBRUARY	6 215 879	2 371	14 739 958	5 003 958	–	1 687	749 876	2 095 104	2 246 633	3 502 777	5 749 410	218 307	921 616	295 817	0.190	1 608	2 726 894	1 462 226
MARCH	6 644 248	2 463	16 364 909	5 415 014	3 342	3 257	822 422	2 149 241	2 522 693	4 326 325	6 849 018	178 675	943 940	291 241	0.373	3 104	2 819 292	1 600 590
APRIL	6 516 210	2 499	16 280 868	5 218 735	1 131	3 597	780 414	2 122 441	2 436 800	4 526 886	6 963 686	168 016	1 022 866	253 013	0.471	3 411	2 845 933	1 502 798
MAY	6 502 711	2 260	17 034 339	5 037 908	–	4 164	832 989	2 300 527	2 643 659	5 033 630	7 677 289	159 901	1 021 561	278 261	0.499	3 969	2 981 048	1 289 478
JUNE	6 307 465	2 563	16 164 566	4 359 465	–	3 277	703 000	2 430 674	2 538 087	5 013 913	7 552 000	153 509	962 641	263 052	0.434	3 266	3 016 170	1 343 410
HALF-YEARLY TOTAL	38 762 649	2 482	96 223 862	30 058 681	4 473	18 324	4 718 946	13 438 321	14 732 798	26 257 141	40 989 939	1 030 185	5 964 993	1 668 225	0.369	17 608	17 433 886	8 607 152
JULY	6 731 423	2 508	16 884 123	5 162 713	–	2 972	781 169	2 348 110	2 525 840	4 774 833	7 300 673	152 496	1 135 990	232 711	0.426	2 832	2 997 971	1 375 818
AUGUST	6 594 341	2 486	16 395 722	4 882 040	–	2 861	821 353	2 216 500	2 752 347	4 586 247	7 338 594	25 363	1 109 011	226 098	0.422	2 726	2 825 934	1 218 905
SEPTEMBER	6 295 626	2 559	16 108 173	5 146 811	–	3 486	777 652	2 185 257	2 611 863	4 211 881	6 823 744	174 456	996 767	261 751	0.436	3 265	2 838 587	1 175 238
OCTOBER	6 490 924	2 682	17 408 976	4 994 480	–	3 623	824 582	2 355 243	2 963 038	4 846 258	7 809 296	175 800	1 245 952	259 571	0.465	3 453	3 073 461	1 103 670
NOVEMBER	6 317 378	2 861	18 076 660	5 368 935	–	3 662	838 252	2 059 279	3 624 227	4 855 271	8 479 498	183 580	1 143 454	237 276	0.514	3 490	2 547 845	1 440 360
DECEMBER	6 420 619	2 603	16 713 076	4 384 207	–	3 910	896 114	234 071	3 103 263	4 825 912	7 929 175	254 702	1 010 897	249 444	0.522	3 727	2 586 575	948 593
HALF-YEARLY TOTAL	38 850 311	2 615	101 586 730	29 939 186	–	20 514	4 939 122	13 398 460	17 580 578	28 100 402	45 680 980	966 397	6 642 071	1 466 851	0.456	19 493	16 870 373	7 262 584
YEAR TOTAL	77 612 960	2 549	197 810 592	59 997 867	4 473	38 838	9 658 068	26 836 781	32 313 376	54 357 543	86 670 919	1 996 582	12 607 064	3 135 076	0.414	37 101	34 304 259	15 869 736
% DISPOSAL FOR YEAR				30.3	–	–	4.9	13.6	16.3	37.5	43.8	1.0	6.4					

**APPENDIX V**  
**DESTINATION OF EXPORTS OF CRUDE AND REFINED PRODUCTS FROM TRINIDAD AND TOBAGO - 1980**  
**(ALL QUANTITIES IN BBLs)**

COUNTRY	TOTALS	% OF TOTAL EXPORTS	CRUDE PETROLEUM EXPORTS	L.P.G.	AVIATION TURBINE FUEL	AVIATION GASOLINE	MOTOR GASOLINE	KEROSINE	GAS AND DIESEL OILS	FUEL OILS	LUBES AND GREASES	ASPHALTIC PRODUCTS	OTHER REFINED PRODUCTS	PETROCHEMICALS
NORTH AMERICA: CANADA U.S.A.	772,822 27,591,141	0.991 35.377	- 43,879,427	- -	- 955,932	- 16,783	182,235 3,906,211	341,973 365,171	163,540 1,172,472	- 14,484,184	85,074 498,485	- -	- 5,916,022 <sup>1</sup>	- 275,881
TOTAL N.A.	28,363,963	36.368	43,879,427	-	955,932	16,783	4,088,446	707,144	1,336,012	14,484,184	583,559	-	5,916,022	275,881
CENTRAL AMERICA: COSTA RICA GUATEMALA HONDURAS REP. OF PANAMA	22,127 1,626,353 926,374 1,126,044	0.028 2.085 1.188 1.444	- - - -	- - 31,175 209,236	- - - -	- 65,913 13,500 21,157	- - 487,729 245,994	- - 57,194 10,157	- 534,414 321,325 381,359	- 998,502 15,451 247,247	- - - -	- - - -	22,127 27,524 - 10,894	- - - -
TOTAL C.A.	3,700,898	4.745	-	240,411	-	100,571	733,723	67,351	1,237,098	1,261,200	-	-	60,545	-
SOUTH AMERICA: FRENCH GUIANA GUYANA SURINAME OTHER S.A. <sup>2</sup>	976,695 2,290,673 5,385,806 887,140	1.252 2.937 6.871 1.137	- - - -	18,391 51,082 - -	83,380 86,639 98,226 -	2,089 11,786 9,977 2,273	164,909 512,609 512,890 91,104	11,383 101,614 27,313 50,045	613,724 1,162,012 1,665,783 681,391	82,819 361,230 3,039,962 -	- - - 15,490	- 3,701 1,788 -	- - 2,867 15,055	- - - 31,782
TOTAL S.A.	9,513,314	12.197	-	69,473	268,245	26,125	1,281,512	190,355	4,122,910	3,484,011	15,490	5,489	17,922	31,782
WEST INDIAN ISLANDS: BRITISH <sup>3</sup> FRENCH <sup>4</sup> NETHERLANDS <sup>5</sup> PUERTO RICO VIRGIN ISLANDS OTHER W.I. ISLANDS <sup>6</sup>	5,828,293 588,125 226,839 3,381,108 213,068 731,715	7.473 0.754 0.291 4.335 0.273 0.938	943,957 - 447,867 - - -	141,297 27,569 - - 3,871 -	544,325 87,873 - - 250 -	45,866 38,757 - 9,135 32,344 165,540	736,507 184,886 136,507 3,177,413 129,912 82,640	671,915 287 - 137,845 400 83,640	1,235,732 193,486 6,174 56,715 46,291 129,173	2,403,964 15,041 - - - 271,109	3,420 - - - - -	2,290 30,695 - - - -	42,977 9,531 - - - -	- - 84,158 - - -
TOTAL W.I. ISLANDS	10,969,148	14.064	1,391,824	172,737	632,448	291,642	4,447,865	893,700	1,667,571	2,690,114	3,420	32,985	52,508	84,158
EUROPE: ITALY NETHERLANDS UNITED KINGDOM FRANCE FED. REPUBLIC OF GERMANY OTHER EUROPE <sup>7</sup>	2,021,448 7,173,897 562,927 145,452 237,505 7,194,412	2.592 9.198 0.722 0.186 0.305 9.225	803,301 - - - - -	- - - - - -	- 216,331 62,934 - - -	- - - - - -	1,432 559,626 - - - 429,123	- - 252,778 - - 146,314	804,102 864,451 - - - 1,056,687	987,681 5,118,324 236,985 145,453 237,505 5,562,288	- - - - - -	- - - - - -	- - - - - -	228,233 415,165 10,230 - - 653,628
TOTAL EUROPE	17,335,642	22.228	803,301	-	279,265	-	990,181	399,092	2,725,240	12,288,236	-	-	-	653,628
OTHERS: AFRICA <sup>8</sup> CANARY ISLANDS CAPE VERDE ISLANDS JAPAN FIJI *MEDITERRANEAN	2,890,524 416,460 17,463 121,104 31,068 223,777	3.706 0.534 0.023 0.155 0.040 0.287	- - - - - -	- - - - - -	- - - - 31,068 -	- - - - - -	272,198 - - - - -	83,620 - - 17,463 - 223,777	757,005 179,997 - 117,771 - -	1,605,475 236,463 - - - -	158,232 - - - - -	- - - - - -	13,994 - - - - -	- 3,333 - - - -
TOTAL OTHERS	3,700,396	4.745	-	-	31,068	-	272,198	234,860	1,054,773	1,841,938	158,232	-	13,994	3,333
TOTAL CARGOES	73,583,361	94.347	46,074,552	482,621	2,166,958	435,120	11,813,925	2,582,502	12,143,604	36,049,683	760,701	38,474	6,060,991	1,048,782
FOREIGN BANKERS	4,409,036	5.653	-	-	133,014	1,714	14,	25	421,546	3,847,688	5,170	42	31	-
TOTAL EXPORT	77,992,397	100.000	46,074,552	482,621	2,299,972	436,834	11,813,939	2,582,527	12,565,150	39,897,163	765,871	38,516	6,061,022	1,048,782

\*COUNTRIES NOT DETAILED

(1) HTU PROCESSED ARABIAN LIGHT CRUDE

(2) OTHER SOUTH AMERICA - COLUMBIA, ARGENTINA, VENEZUELA, ECUADOR

(3) BRITISH - ANTIGUA, ANGUILLA, BARBADOS, BAHAMAS, BEQUIA, CARRIACOU, DOMINICA, GRENADA, GRAND CAYMAN, JAMAICA, MONTSERRAT, NEVIS, ST. KITTS, ST. LUCIA, ST. VINCENT

(4) FRENCH - GUADELOUPE, MARTINIQUE, ST. BARTHS, ST. MAARTEN

(5) NETHERLANDS - ARUBA, CURACAO, SABA, ST. EUSTATIUS

(6) OTHER WEST INDIAN ISLANDS - DOMINICA REPUBLIC, HAITI

(7) OTHER EUROPE - BELGIUM, GREECE, IRELAND, TURKEY

(8) AFRICA - REPUBLIC OF CAMEROON, REPUBLIC OF GUINEA, REPUBLIC OF SENEGAL, SIERRA LEONE, NIGERIA, TOGO, IVORY COAST, GAMBIA.

**APPENDIX VI**  
**MOVEMENT OF REFINERY PRODUCTS – 1980**  
**(QUANTITIES IN BARRELS)**

INVENTORY NAME	OPENING	PRODUCTION	IMPORTS	OTHER RECEIPTS	PURCHASES FROM OTHER PETROLEUM MARKETS	TOTAL	SALES TO OTHER MARKETS	LOCAL CONSUMPTION			TOTAL	EXPORTS		GAIN AND LOSSES	CLOSING INVENTORY	TOTAL
								OWN USE	RETAILER	LOCAL BUNKERS		CARGOES	FOREIGN BUNKERS			
LIQUIFIED GASES	54,858	869,384	856	–	444,090	1,369,188	441,058	566	429,824	–	430,390	427,719	–	11,559	58,452	1,369,188
AVIATION GASOLENES	16,515	375,032	–	–	23,336	414,883	23,526	–	–	21,181	21,181	346,701	1,714	(55)	21,816	414,883
MOTOR GASOLENES	5,544,831	15,221,569	–	(37,752)	2,707,481	23,440,129	2,664,520	8,641	2,674,240	–	2,682,881	12,544,982	–	(12,453)	5,560,199	23,440,129
AVIATION TURBINE FUEL	2,065,569	3,439,256	–	–	629,481	6,134,306	632,510	–	–	422,205	422,205	2,893,338	133,014	1,133	2,052,106	6,134,306
KEROSINE	299,167	3,302,087	–	(27,624)	187,766	3,761,396	260,022	2,305	192,626	–	194,931	3,022,894	25	(893)	284,417	3,761,396
WHITE SPIRIT	39,657	14,427	–	–	12,269	66,353	12,224	1,023	13,459	247	14,729	65	14	139	39,182	66,353
GAS OIL	3,596,027	13,525,384	–	(54,403)	1,237,462	18,304,470	1,525,478	57,671	975,215	299,858	1,262,744	11,504,484	96,511	2,993	3,912,260	18,304,470
MARINE DIESEL	525,157	419,906	–	43,570	641,542	1,630,175	225,142	2,576	14,209	23,641	40,426	474,501	325,035	16,497	548,574	1,630,175
FUEL OILS	13,635,209	42,130,990	–	222,871	3,241,174	59,230,243	2,766,760	101,330	108,706	255,864	465,900	38,795,954	3,847,480	27,678	13,326,471	59,230,243
LUBES AND GREASES	444,042	1,011,552	35,731	5,804	92,145	1,589,274	58,762	11,204	82,834	1,876	95,914	972,908	5,170	2,246	454,274	1,589,274
ASPHALTIC PRODUCTS	273,023	272,984	322	–	240,414	786,743	239,059	–	240,228	–	240,228	38,476	42	161	268,777	786,743
UNFINISHED OILS	3,038,551	(414,746)	–	–	–	2,623,805	–	1,920	–	–	1,920	78,926	–	1,081	2,541,878	2,623,805
PETROCHEMICALS	144,791	1,211,445	255	5,985	8,042	1,370,518	10,196	6	8,157	–	8,163	1,032,970	–	140	319,049	1,370,518
OTHER FINISHED PRODUCTS	14,542	(13,027)	–	498	304	2,317	817	296	749	4	1,049	–	31	18	402	2,317
<b>TOTAL</b>	<b>29,691,939</b>	<b>81,366,242</b>	<b>37,164</b>	<b>162,949</b>	<b>9,465,506</b>	<b>120,723,800</b>	<b>8,860,074</b>	<b>187,538</b>	<b>4,740,247</b>	<b>954,876</b>	<b>5,882,661</b>	<b>72,133,918</b>	<b>4,409,036</b>	<b>50,254</b>	<b>29,387,857</b>	<b>120,723,800</b>

**APPENDIX VII**  
**MOVEMENT OF CRUDE AND C.H.P.S. YEAR ENDED 31ST DECEMBER, 1980**  
**(ALL QUANTITIES IN BBLs)**

MONTH	PRODUCTION	IMPORTS	DECREASE IN INVENTORIES	TOTAL	PURCHASES AND EXCHANGES FROM OTHER COMPANIES	SALES AND EXCHANGES TO OTHER COMPANIES	OWN USE	TO REFINERY	EXPORTS	GAIN AND LOSSES	TOTAL
JANUARY	6,578,386	5,094,072	(364,624)	16,371,981	2,462,673	2,462,673	57,147	7,739,586	3,436,589	73,845	16,371,981
FEBRUARY	6,217,487	4,224,378	255,755	15,507,082	2,203,586	2,203,568	31,844	7,042,922	3,557,791	65,063	15,507,082
MARCH	6,647,352	4,480,236	(1,132,065)	15,937,050	2,263,560	2,263,560	2,971	6,206,766	3,749,063	36,723	15,937,050
APRIL	6,519,621	4,906,677	(486,376)	17,367,825	2,227,639	2,227,639	3,597	7,286,532	3,706,622	(56,829)	17,367,825
MAY	6,506,415	6,475,644	(1,461,838)	19,409,962	2,156,358	2,156,358	1,980	7,643,207	3,807,156	67,879	19,409,962
JUNE	6,310,631	3,909,320	818,551	15,820,541	2,117,444	2,117,444	2,909	7,440,100	3,574,237	21,256	15,820,541
JULY	6,734,246	4,711,223	(114,837)	16,227,508	2,299,677	2,299,677	2,641	7,155,223	4,138,860	33,908	16,227,508
AUGUST	6,597,067	3,746,357	739,454	15,240,300	2,232,886	2,232,886	1,022	6,868,570	4,217,049	(3,763)	15,240,300
SEPTEMBER	6,298,891	5,643,128	(1,003,096)	16,099,441	2,093,512	2,093,512	2,482	7,019,086	3,847,325	70,030	16,099,441
OCTOBER	6,494,377	4,073,798	(2,163)	15,728,693	2,293,851	2,293,851	2,125	6,920,995	3,652,310	(9,418)	15,728,693
NOVEMBER	6,320,868	4,179,484	(214,120)	15,663,033	2,081,184	2,081,184	1,823	6,497,146	3,707,081	80,182	15,663,033
DECEMBER	6,422,293	3,329,309	1,737,374	15,128,403	1,992,430	1,992,430	1,868	6,753,006	4,680,469	53,633	15,128,403
TOTAL	77,647,634	54,773,626	(1,227,985)	194,501,819	26,424,782	26,424,782	112,409	84,573,139	46,074,552	432,509	194,501,819

**APPENDIX VIII**  
**SUMMARY OF CRUDE OIL ASSESSED FOR CROWN ROYALTY WITH PRICES AND ANALYSIS – 1980**  
**(FOR HALF YEARLY ASSESSMENT PERIODS 30TH JUNE AND 31ST DECEMBER)**  
**1 BARREL – 34.9726 I.G**

COMPANY	NET ROYALTY PRODUCTION BBLs	ROYALTY		Sub Division of (Royalty) Curde into Products as per RLE 1 Analysis										BUNKER "C"	
		10% ASSESSED BBLs	VALUE \$	AVERAGE PRICE \$/BBL	LIGHT FRACTIONS			GAS OIL					FUEL OIL		
					QUANTITY	PERCENTAGE	TETRA ETHYL LEAD TO BLEND TO 70/72 OCT. GAS M/S	53-57 D.I. BBLs	48-52 D.I. BBLs	43-47 D.I. BBLs	NO 2 FUEL BBLs	TOTAL GAS OILS BBLs	PERCENTAGE	QUANTITY BBLs	PERCENTAGE
TRINIDAD-TESORO PETROLEUM COMPANY LTD	2,849,506	284,951	13,076,043	45.89	25,913	9.09	3,232,895.88		101	13,356	45,888	59,345	20.83	199,693	70.08
TESORO GALEOTA	721,872	*90,234	5,611,761	62.19	15,020	16.65	268,699.97				44,842	44,842	49.69	30,372	33.66
PREMIER CONSOLIDATED OILFIELDS LTD.	12,966	1,297	64,678	49.87	125	9.64	17,928.12		181		231	412	31.76	760	58.60
ESTATE OF TIMOTHY ROODAL	127	13	574	44.15							4	4	30.77	9	69.23
TRINTOC	1,415,265	141,526	6,824,146	48.22	19,299	13.64	6,003,634.94	7,572		19,939	2,262	29,773	21.04	92,454	65.32
TRINIDAD NORTHERN AREAS LTD	7,442,623	744,262	33,643,708	45.20	85,736	11.52	28,038,333.12		113,741			113,741	15.28	544,785	73.20
TEXACO TRINIDAD INC.	3,047,771	304,777	15,303,171	50.21	38,019	12.47	7,616,263.65	34,579	1,387	965	49,682	86,613	28.42	180,145	59.11
AMOCO TRINIDAD OIL COMPANY	21,884,205	*2,735,526	183,339,210	67.02	322,690	11.80	23,562,493.50		2,042,949			1,042,949	74.68	369,887	13.52
<b>TOTAL AND AVERAGES JANUARY – JUNE</b>	<b>37,374,335</b>	<b>4,302,586</b>	<b>257,863,291</b>	<b>59.93</b>	<b>506,802</b>	<b>11.78</b>	<b>68,740,249.18</b>	<b>42,151</b>	<b>2,158,359</b>	<b>34,260</b>	<b>142,909</b>	<b>2,377,679</b>	<b>55.26</b>	<b>1,418,105</b>	<b>32.96</b>
TRINIDAD-TESORO PETROLEUM COMPANY LTD.	2,744,931	274,493	15,709,097	57.23	26,234	9.56	1,918,663.74		40	11,842	42,332	54,214	19.75	194,045	70.69
TESORO GALEOTA	1,188,597	*148,575	9,772,302	65.77	25,640	17.26	520,761.24				68,634	68,634	46.19	54,301	36.55
PREMIER CONSOLIDATED OILFIELDS LTD.	11,260	1,126	68,382	60.73	112	9.95	14,254.80		144		255	399	35.43	615	54.62
ESTATE OF TIMOTHY ROODAL	122	12	682	56.83							4	4	33.33	8	66.67
TRINTOC	1,398,212	139,821	8,146,541	58.26	18,402	13.16	5,313,557.42	8,973		18,704	1,121	28,798	20.60	92,621	66.24
TRINIDAD NORTHERN AREAS LTD.	7,073,449	707,345	39,874,758	56.37	89,245	12.62	26,983,486.74		92,712			92,712	13.11	525,388	74.27
TEXACO TRINIDAD INC.	3,024,804	302,480	18,201,971	60.18	41,678	13.78	6,327,261.07	25,131	6,046	23,244	28,516	82,937	27.42	177,865	58.80
AMOCO TRINIDAD OIL CO.	22,033,519	*2,754,190	195,360,892	70.93	319,840	11.61	23,148,348.00		2,061,040			2,061,040	74.83	373,310	13.56
<b>TOTAL AND AVERAGES JULY -- DECEMBER</b>	<b>37,474,894</b>	<b>4,328,042</b>	<b>287,134,624</b>	<b>66.34</b>	<b>521,151</b>	<b>12.04</b>	<b>64,226,369.01</b>	<b>34,104</b>	<b>2,159,982</b>	<b>53,790</b>	<b>140,862</b>	<b>2,388,738</b>	<b>55.19</b>	<b>1,418,153</b>	<b>32.77</b>
<b>YEAR'S TOTALS AND AVERAGES</b>	<b>74,849,229</b>	<b>8,630,628</b>	<b>544,997,915</b>	<b>63.15</b>	<b>1,027,953</b>	<b>11.91</b>	<b>132,966,618.19</b>	<b>76,255</b>	<b>4,318,341</b>	<b>88,050</b>	<b>283,771</b>	<b>4,766,417</b>	<b>55.23</b>	<b>2,836,258</b>	<b>32.86</b>

\* Amoco Trinidad Oil Company and Trinidad-Tesoro Petroleum Company Limited – Galeota, are Marine Areas, subject to 12½ Royalty.

**APPENDIX IX  
ROYALTY ASSESSMENT**

The Royalty Assessed on the Crude Oil, National Gasoline and Natural Gas produced on Crown Oil Mining Leases for each Half Yearly period during 1978, 1979, 1980 is shown in the following Table:—

**SOURCE OF REVENUE**

Royalty On Natural Gas  
Royalty On Natural Gasoline  
Minimum Rent Not Offset By Royalty On Crude Oil  
Royalty On Crude Oil  
HALF YEARLY TOTAL

	31-12-80 \$	30-6-80 \$	31-12-79 \$	30-6-79 \$	31-12-78 \$	30-6-78 \$
	642,654	644,539	598,996	554,865	555,118	506,233
	149,263	145,535	183,076	167,912	127,699	96,911
	1,866,880	1,652,465	1,667,945	1,250,550	1,041,482	852,476
	287,134,624	257,863,291	276,961,776	209,099,762	140,240,666	134,150,383
	289,793,421	260,305,830	279,411,793	211,073,089	141,964,965	135,606,003
<b>YEARLY TOTAL</b>		550,099,251	490,484,882		277,570,968	

The Volumes Upon Which The Above Assessments Were Made Are As Follows:—

**SUBSTANCE ASSESSED FOR ROYALTY**

Natural Gas  
Natural Gasoline  
Crude Oil Net  
Crude Oil Average Royalty Value

UNIT	31-12-80	30-6-80	31-12-79	30-6-79	31-12-78	30-6-78
MCF	42,843,608	42,969,241	39,933,049	36,990,992	37,007,841	33,748,887
IG	606,912	541,446	698,723	832,985	1,016,200	955,868
BBL	4,328,042	4,302,586	4,381,760	4,274,549	45,794,418	47,564,836
\$TT	66.34	59.93	63.2079	48.9288	30.62	28.20

The date used to evaluate Crude Oil for Crown Royalty Assessment for each of the last Six Half Yearly Periods together with the Royalty on Casing Head Petroleum Spirit for each of these Periods are shown in the following Table:—

**PRODUCT**

Bunker C Grade Fuel  
No 2 Fuel  
43-47 D.I. Gas Oil  
48-52 D.I. Gas Oil  
53-57 D.I. Gas Oil  
70-72 Oct. M Headed Motor Gas  
Average Middle Rate For Sight Draft On N.Y. T & T Currency For U.S. \$1.00  
Value Of Tetra Ethyl Lead in T & T Cents Per Millimetre  
Royalty In T & T Cents Per Gallon On Natural Gasoline (C.H.P.S.)

	31-12-80	30-6-80	31-12-79	30-6-79	31-12-78	30-6-78
	55.266257	37.531426	41.018462	30.252680	30.252680	22.932632
	79.578697	74.966227	79.878381	57.149252	62.139847	36.560176
	80.002105	75.360932	80.387021	62.451363	62.419306	36.718266
	80.128577	75.487405	80.513494	62.554904	62.522845	36.844738
	80.381522	75.830350	80.766439	62.807849	62.775790	37.097683
	84.493253	93.221351	89.160363	71.121581	71.11317	43.830282
	2.40900	2.40900	2.40900	2.40900	2.409	2.409
	2.106938	1.952117	1.704319	1.394855	.01310848	.01195074
	24.490121	26.808542	25.843494	20.648249	12.560751	10.186644

The Half Year Volume of Products to which the above Prices for 1980 were applied respectively in calculating Royalty on Crude Oil will be found in APPENDIX VIII

**APPENDIX X**

The following Table shows for the year 1978, 1979, 1980 the Quantity of Asphalt extracted from the Pitch Lake and the Quantity of derived Products which were exported and consumed locally.

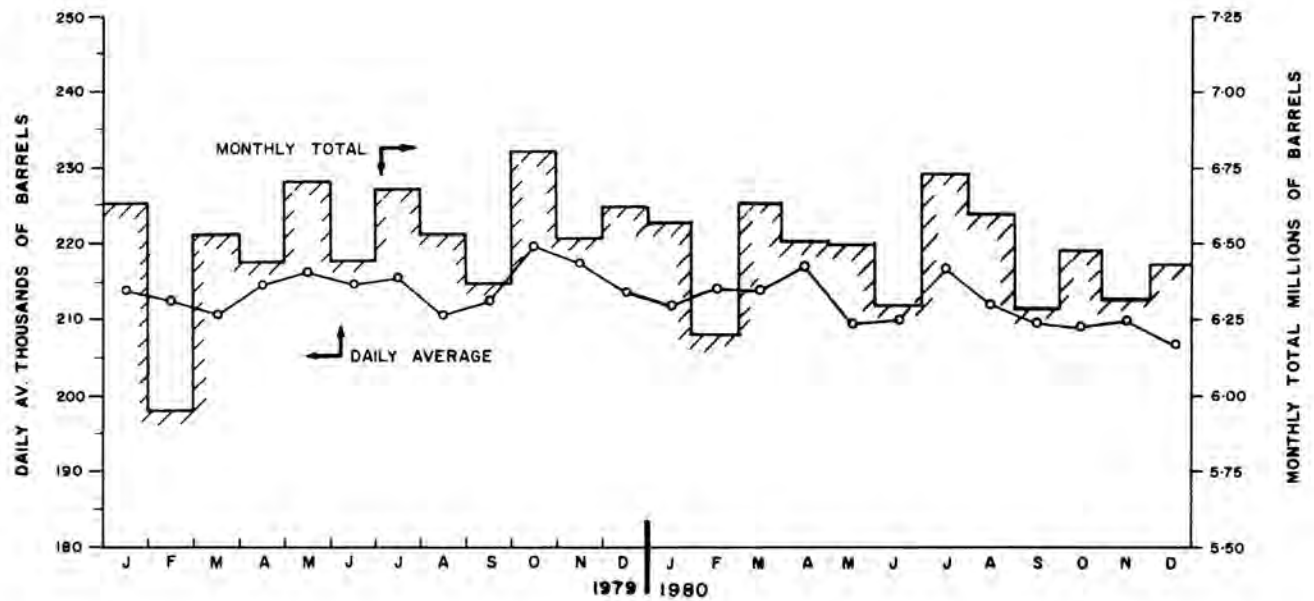
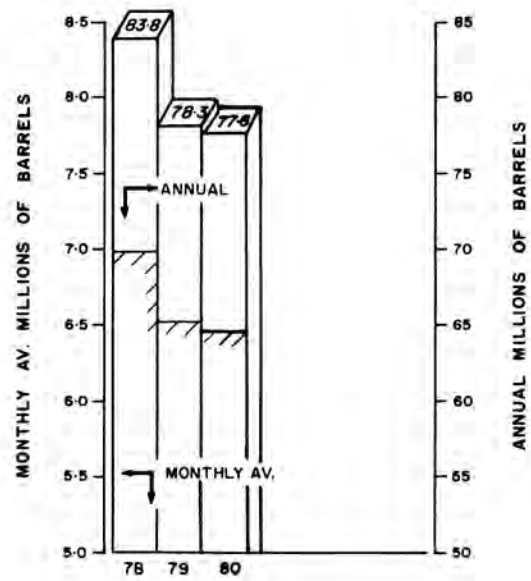
NATURAL ASPHALT	TONS		
	1978	1979	1980
Extracted by the Ministry of Works for local use	22,673	15,377	9,951
Extracted by Trinidad Lake Asphalt Co.,	39,718	39,433	29,968
TOTAL	62,391	54,810	39,919
Derived Products Manufactured by the Company:—			
Exported			
Crude Asphalt	—	—	—
Dried Asphalt	27,618	29,104	20,965
Asphalt Cement	21	193	267
TOTAL	27,639	29,297	21,232
Local Sales			
Crude Asphalt	32	60	40
Dried Asphalt	101	676	219
Asphalt Cement	58	12	22
TOTAL	191	748	281

Note: The above tabulation 1 long ton — 2240 lbs.



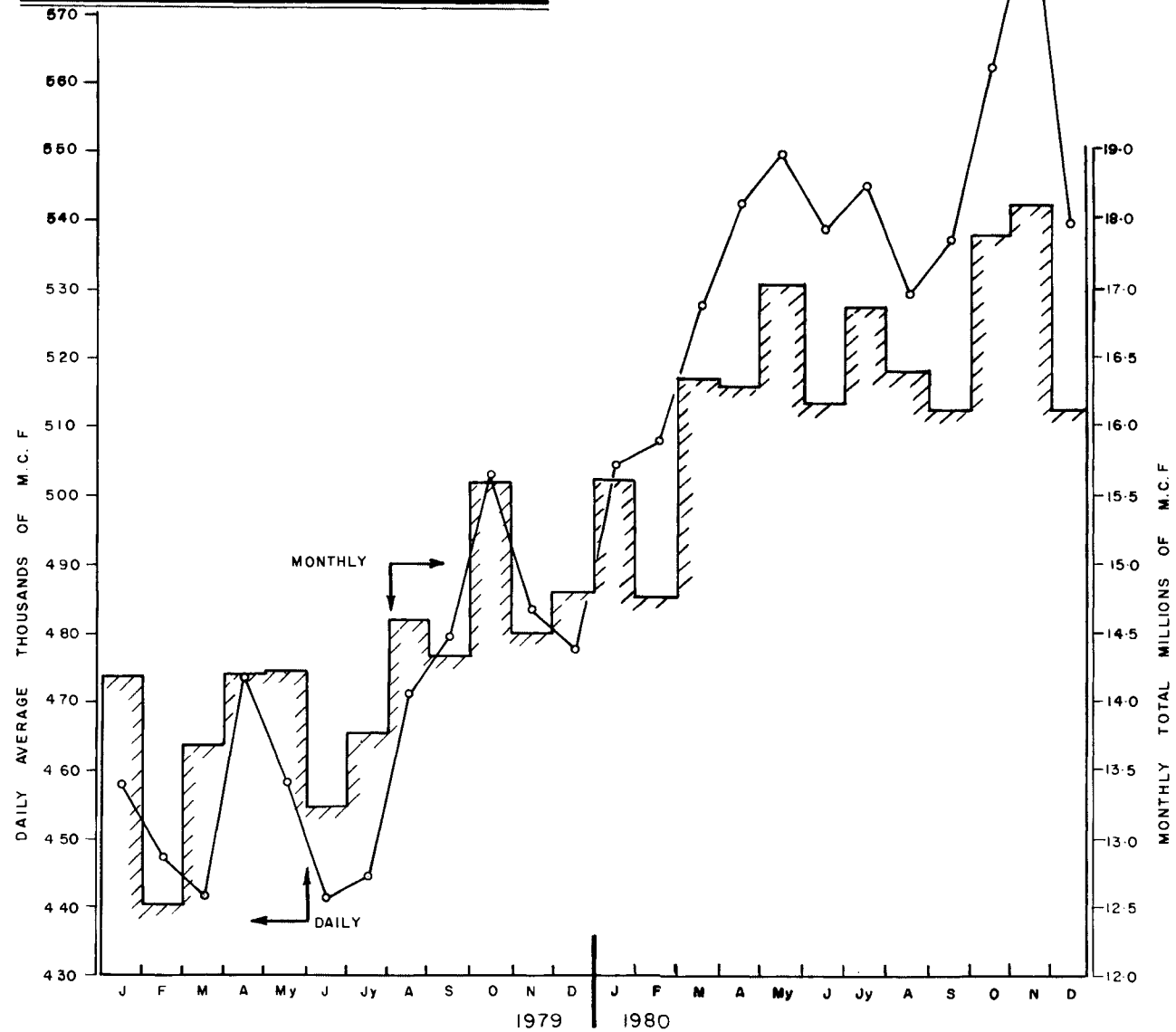
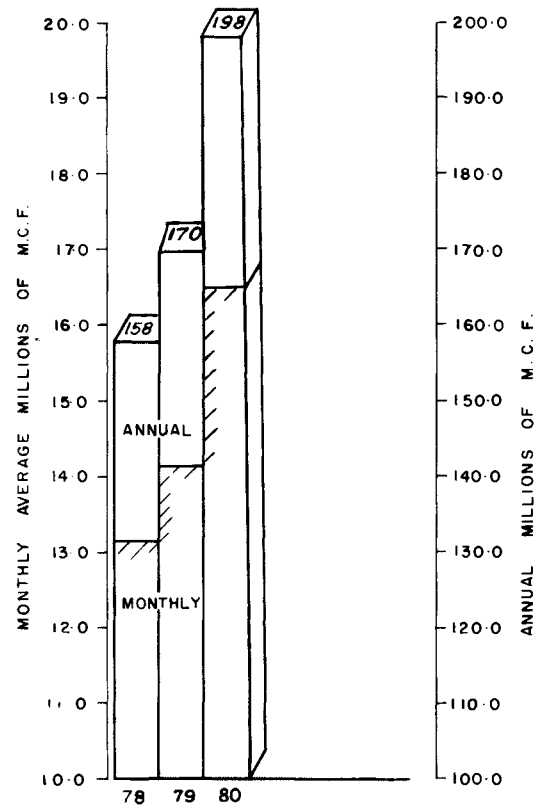
# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

## CRUDE OIL PRODUCTION



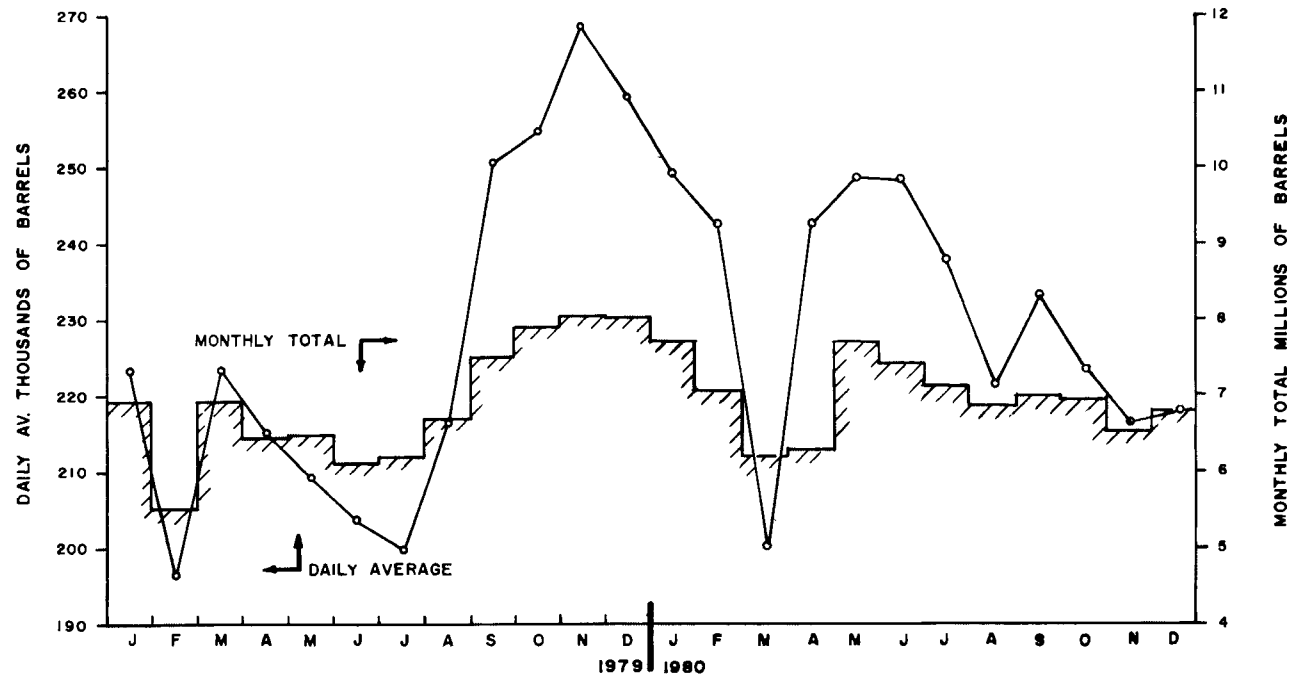
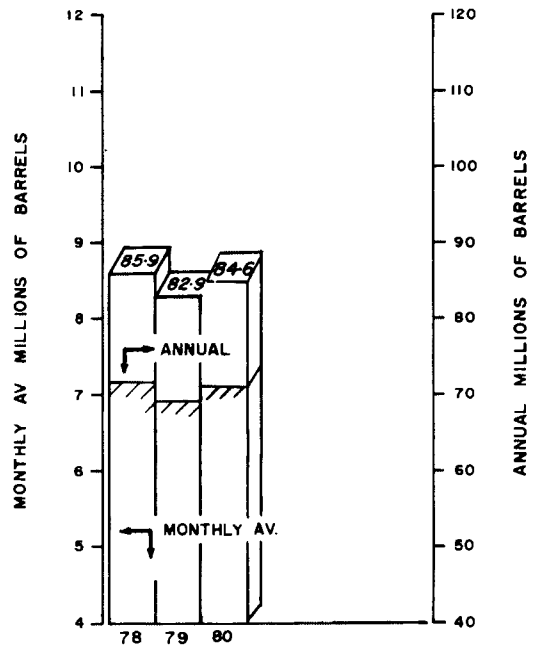
# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

## NATURAL GAS PRODUCTION



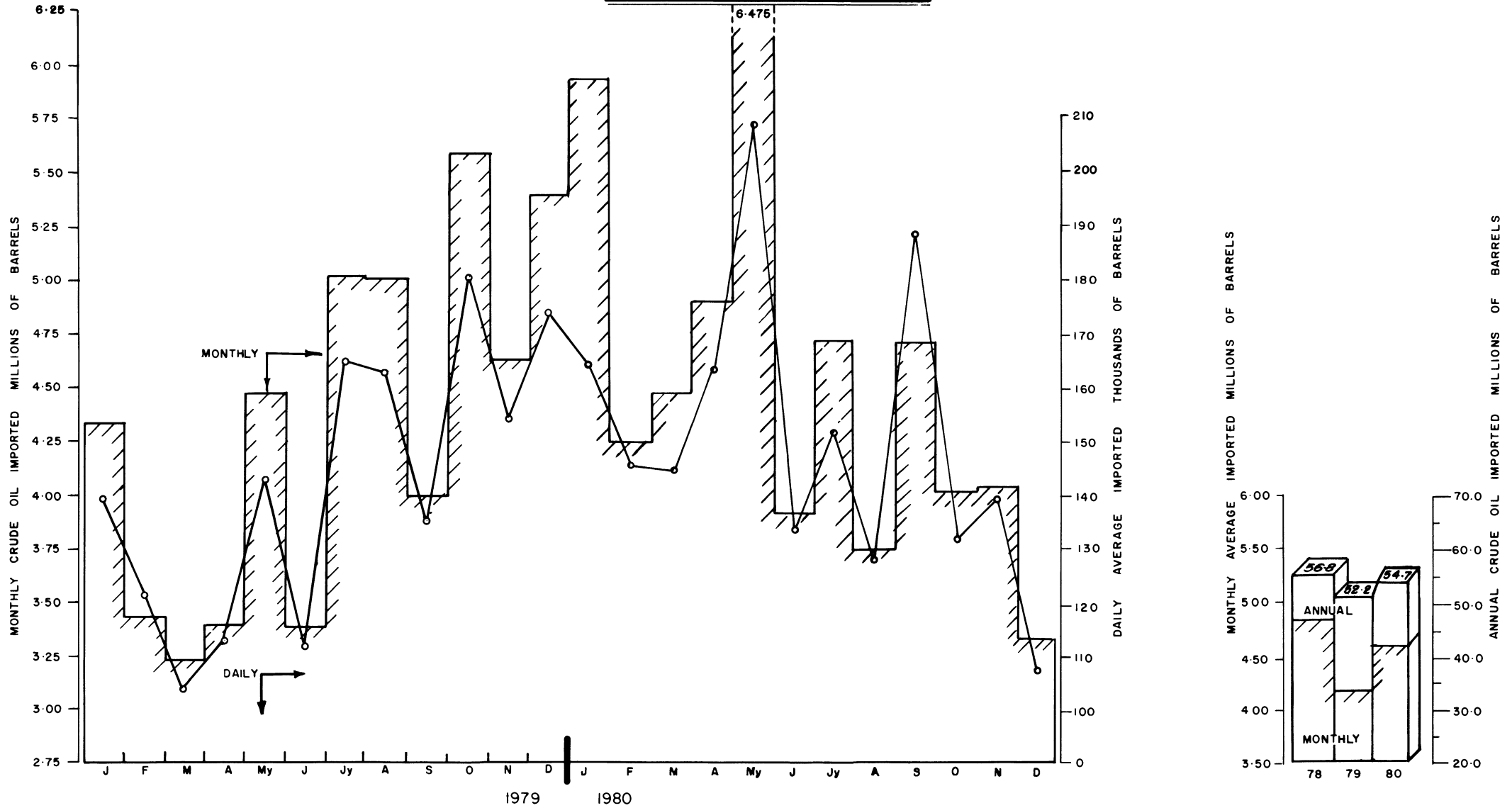
# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

## REFINERY THROUGHPUT



# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

## CRUDE OIL IMPORTS



# STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

## DRILLING

