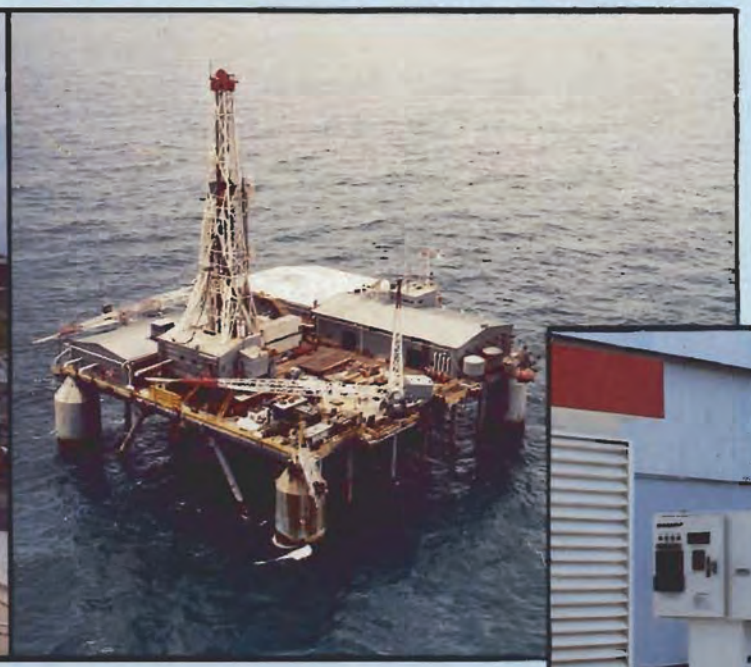
MINISTRY OF ENERGY AND NATURAL RESOURCES



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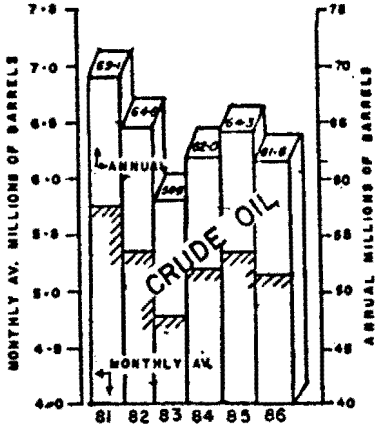

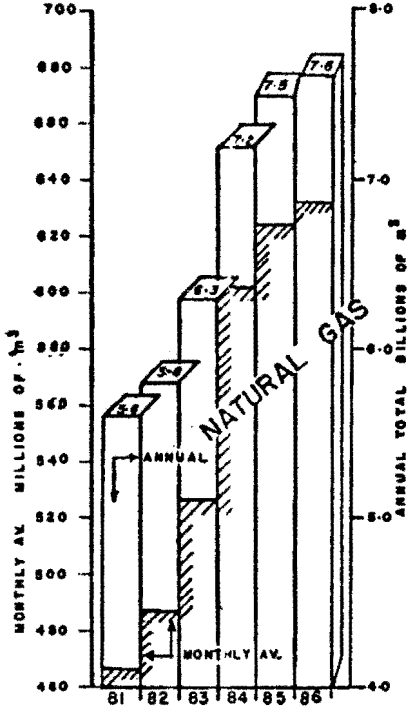

MINISTRY OF ENERGY AND NATURAL RESOURCES

ANNUAL REPORT 1986

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COVER PHOTOGRAPHS

New Urea Formaldehyde Plant - *A TRINTOC PHOTO*

Semi-submersible Drilling Barge - *MINISTRY OF ENERGY PHOTO*

Compressed Natural Gas Dispenser - *A ROSS & SONS ENGINEERING PHOTO*

LIST OF APPENDICES

LIST OF FIGURES

LIST OF CONTENTS

LIST OF TABLES

FOREWORD

The year,1986 witnessed the dramatic collapse in the price of oil, thus clearly and unambiguously defining the end of the oil boom era.

From a national perspective this indicated a significant shortfall in Government revenues. From the point of view of the oil industry this meant severely reduced earnings for its operators - with serious implications for activity and production levels.

Actual achievements during the year, however, suggest that a valiant effort by these operators did succeed in maintaining such levels at a time when most of the oil world tended to show declines commensurate with the precipitous fall in oil prices.

During the year there has been an increasing focus upon natural gas as fuel and feedstock for the nation's expanding petrochemical industry and as a substitute for oil products consumed locally . Natural gas is expected to play an increasing vital role in the country's future.

This future is one of consolidation and rationalisation. The country under new political administration needs to ensure the long term viability of the oil sector per se. Furthermore, petroleum is increasingly expected to shift from its traditional enclave role as the main-stay of the economy to serve as a bolster and structural link to the rest of the national econony, engendering a multi-faceted path to self-sustaining development.

The Ministry of Energy and Natural Resources wishes to acknowledge all those who participated in the oil sector during 1986, in particular those who in any way contributed to the preparation of this Report.

GEOLOGY AND GEOPHYSICS

The geology/geophysics department is divided into three sub-sections as follows:-

i) Petroleum Geology
ii) Geophysics
iii) Industrial Minerals and Energy Geology

Geophysical Section

The activities of this section during this period are outlined below.

(a) Four offshore exploration wells were evaluated.

(b) Documents were prepared and submitted to the Central Tenders Board for invitation to tender on the Vibration Analysis project. This project is designed to establish safety standards with respect to the conduct of seismic surveys (with vibration and explosive energy sources) and blasting in quarries with a view to establishing safe minimum distances from structures.

Discussions were held with two representatives from Oregon State University about a proposed gravity and magnetic survey of the Caribbean/Venezuelan margin. A request was received from the University of Illinois for permission to run one or two deep penetration seismic lines in an area adjacent to Trinidad and Tobago. A sample of existing seismic data in the area was also requested.

(c) Informal talks were initiated with representatives from local oil companies to find methods of minimizing the expenses involved in storing magnetic tapes of seismic data. These discussions will be continued in a formal manner, in 1987.

(d) Computerization of geophysical survey data and the filing system was started. This will continue in 1987.

(e) Three members of this section assisted in evaluating gas reserves off the east coast for a ministry study in future gas development plans.

Geophysical Surveys

Geophysical surveys were carried out by the following companies in 1986:-

S.E.C.C. - The S.E.C.C. carried out a pipeline route survey from Pelican Field to Galeota Point.

TRINTOC - Trintoc conducted a seismic survey of the Springvale area on the Northern Flank of the Central Range. The source was vibroseis and 91.6 km of data were recorded.

In Guayaguayare an experimental program was conducted in the following manner:-
(a) 12.25 km recorded with vibroseis as source;
(b) 13.2 km recorded with deep dynamite source and in both directions;
(c) 4 km recorded with 1 kg of dynamite at 3 metre depth.
(d) 6 km of array tests.

AMOCO Amoco completed a 369 km 2D seismic survey in N. Galeota and a 2380 km 3D seismic survey in Samaan. These programmes were initiated in 1985.

Site surveys were run in eight areas :-
1. South Galeota Ridge
2. Claro
3. West EQB (East Queen's Beach)
4. Cacao
5. Jasmine
6. SEG 11
7. N.W. Poui
8. N.E. Poui

Petroleum Geology Section

Work undertaken in the Petroleum Geology Section is divided into two major categories, 'ROUTINE' and 'PROJECTS'. 'Routine' duties refer to the normal day-to-day functions of the section. The main routine function entails the evaluation and classification of all semi-exploration and exploration wells proposed by the companies, monitoring the activities of the wells while drilling and evaluating the results on completion. 'Projects' are normally generated in the Section but may also include assignments that are generated in other areas of the Ministry and are conducted with a multi-disciplinary approach.

Exploratory Drilling

Exploration and semi-exploration drilling registered a decline when compared with the previous year's activity. A total of nine wells were spudded, a decline of five from the fourteen drilled in 1985. Three of these wells were marine and six land- based. The marine wells, GR-5, GR-6 and WEQB-1 were drilled by Amoco and represented a continuation of that company's 15 month Exploration Drilling Program that was initiated in October, 1985. Four of the six land wells were

drilled by Trintoc in the Morne Diablo, Barrackpore (2) and Erin fields. The remaining two wells were drilled, one each, by Trintopec and PCOL in the North Erin and San Francique fields, respectively. Trinmar did not do any exploration drilling for 1986.

The results of drilling have been encouraging. Of the nine wells drilled four had been successfully completed (although not necessarily in the primary objective), three unsuccessful and two were drilling ahead at the end of the year. Marine drilling was by far the more significant. GR-6 in the same fault block as the successful GR-4 was moderately successful while the potential of the incomplete WEOB-1 appears to be enormous. GR-5 in the fault block immediately west of the discovery well, GR-3, was unsuccessful.

On land two of the three Trintoc wells completed, MD-47 and BP-526, had been successful while the third BP-532 was drilling ahead at the end of the period . Er-25 was unsuccessful . The lone Trintopec well Er-80ST was successfully completed in the secondary objective. PCOL's exploration effort, SFE-48 was a failure.

Special Projects

(a) Steam-breakouts in Trintopec's Acreages

During the latter part of 1985, Trintopec experienced seven uncontrolled surface breakouts of steam, five in Palo Seco and two in Fyzabad which resulted in the loss of substantial quantities of oil. In the light of these adverse occurrences, a committee, comprising engineers from the Development Section and a geologist was appointed to investigate and make recommendations. A report was submitted in February, 1986.

(b) Trinidad and Tobago's Future Gas Development Plan

In July 1986, a team was appointed, with the objective of "determining whether adequate supplies of natural gas existed to meet demand requirements in the short term ." In the event that the existing supply arrangement was unable to meet demand, the group was to formulate contingency plans which would ensure that the requirements were met. During the course of study, the team focused its attention on the following areas:-

Present Source of Supply

- Amoco's Cassia, Teak and Samaan fields

Planned and Proposed Sources

- SECC's Pelican and Keskidee fields; Amoco's SEG

(c) Special Assignments

(i) Accelerated Oil Production Programmes

In August, a team examined the accelerated oil production programmes with the following terms of reference:-

- to review the various accelerated oil production programmes;
- to examine the justification of such programmes from a fiscal/economic point of view.
- to examine the justification of such programmes from the standpoint of the conservation of reserves;
- to develop criteria for use by the Ministry's technical personnel in consideration of future accelerated oil production programmes.

(ii) Review of well classification on petroleum development

The terms of reference of this Committee were as follows:-

- to review the present well classification system;
- to review the fiscal/economic input of such classification on petroleum exploration and development programmes in Trinidad and Tobago;
- to make recommendations for changes if desirable.

(d) Review of Trintoc's Cretaceous Studies

In early 1982, the Ministry of Energy and Natural Resources and the major oil companies held discussions to prepare a comprehensive plan for studying the petroleum potential of the Cretaceous and older formations, both on-shore and off-shore. Arising out of these deliberations, a project document, "The Mesozoic Study Outline", was prepared. This document identified in broad categories, the various areas and disciplines that should be included in this study, and formulated a plan of action for assimilating the data in order to achieve the ultimate goal of identifying prospective areas for drilling. It was envisaged that this study would have been completed by consultants working in close association with the Ministry of Energy and Natural Resources. For various reasons, the Ministry was unable to proceed with the study. In the meantime, however, Trintoc decided to proceed on its

own and in early 1985, submitted to the Ministry three documents representing attempts to address various sections of the study.

The documents were reviewed in the light of the "Mesozoic Study" Document to determine:-

- what areas of the proposed study had been implemented and to what extent;
- what areas remain to be addressed or implemented.

In August 1986, Trintoc embarked upon a study with British Petroleum (B.P.) of the U.K., intended to extend the scope of its earlier studies. This study should be completed during 1987.

Industrial Minerals and Engineering Geology

In continuing its efforts to search for industrial minerals to supply the construction and manufacturing industries, four surveys were conducted by the department. A sand and gravel survey, in the Matura Forest Reserve, and a clay survey in Turure/Valencia, both started in 1985, were completed in 1986. An evaluation was conducted to determine the pollution factor of the limestone resources at Scott's Quarry, on the Blanchiseusse Road and at the McIntosh Quarry, along the North Oropouche River.

The sand and gravel survey covered two hundred hectares, with two hundred and sixty-four holes drilled, for a total depth of about 1 800 metres. Approximately 1 500 000 cubic metre of sand and gravel, with a retail value of about $18,000,000 was discovered.

A preliminary evaluation, consisting of the surveying, drilling and sampling of a thirty hectare parcel of state lands at Valencia, with a view to determining the quantity, quality and potential uses of clay present was conducted. It has revealed the presence of at least 2.3 million cubic metres of gravel free clay in the Valencia Forest Reserve. Some five hundred samples from fifty-eight holes were collected and stored at the Ministry's warehouse to be tested by CARIRI when funds become available.

Following testing, CARIRI is expected to indicate possible uses to which the clay could be put. However, based on hand sample evidence and, the results of similar evaluations previously conducted in the vicinity, it is felt that the clay has little or no ceramic potential; though it could possible be used for such purposes as the production of bricks.

The two other areas mentioned involved work by the survey crews, which cut and chained about sixty km, mostly in forested areas.

Quarrying

In its role of monitoring and regulating quarry activity, this section conducted many and varied investigations:

(i) Applications for state lands for quarrying purposes which have been classified in terms of :-

- type of raw material requested, whether sand and gravel, clay, beach sand etc.
- acreage requested
- the status of the application i.e. whether it has been approved by Cabinet, recommended by the Quarries Advisory Committee (QAC), not recommended, or pending i.e. under investigation. This latter category includes, for example, those awaiting input from other Ministries or agencies, and requests of additional information for the completion of applications.

During 1986, twenty-five applications were received. Of these, five have been approved by Cabinet, three have been recommended and three have not been recommended by the QAC while investigations are pending for the others.

(ii) Renewals of quarry lease/licence

Almost all quarry lease/licence agreements are renewable annually. Based on a concessionaire's performance over the past year, the QAC determines whether or not approval is to be granted.

During 1986, twelve concessionaires applied for renewals. Of these, five have been approved, three have not been approved due to improper quarry practices, while investigations are pending for the others.

Many operators continue to operate without valid leases or licenses, despite efforts by this Ministry to have them regularise their tenure.

(iii) Complaints arising from quarrying activity

These investigations have been placed into five categories:

- encroachment upon state lands
- encroachment upon private lands
- unauthorized quarry operations
- water pollution by effluent emanating from quarries
- other complaints from the public against quarry operations re: dust and noise pollution, damage to roads, etc.

Of the twenty complaints investigated during 1986, nine were classified as encroachment upon state lands, six constituted encroachment upon private lands, six as unauthorized quarry operations, four as water pollution, while the rest involved destruction of roads including problems of access.

A total of sixty-two investigations arising out of applications to quarry, renewals and complaints have been investigated/processed.

Royalty Payments

Material won and royalty payable (by counties):

(i) St. Andrew/St. David:

At 31st October, 1986 the total volume of sand and gravel extracted from state concessions in St. Andrew/ St. David reached 65 680 cubic metres. This reported figure may be conservative as large quantities of gravel are removed and not recorded by the concessionaires.

The royalty payable on this volume is $171,806.00. However, monies actually paid to the state amounted to $67,114.00.

(ii) St. George East:

The total volume of sand and gravel extracted in St. George East during the period January to October is 17,658 cubic metres.

Royalty payable on this volume is $46,192.20. However, monies paid to the State during the same period totalled $111,987.54, almost two and one half times the required sum. The high figure is due largely to the inclusion of payment of arrears made in respect of the previous year by delinquent concessionaires.

Arrears of royalty at 31st October 1986 is $1,056,714 .17 -a figure which includes arrears for 1985 . At 31st December 1985 such arrears totalled $1,023,195 .27 . This sum includes outstanding royalty for 1986 and minimum payments on abandoned lands.

(iii) St. Patrick :

The total volume of sand extracted from this area was 221.7 cubic metres and royalty $14,223.52.

Pollution

The problem of pollution of streams by particulate mineral effluent from quarries "came to a head" when it was observed that excessive turbidity of the raw water at the Caroni Arena Water Treatment Plant had, and is continuing to have a serious deleterious effect on the operation and longevity of the plant. Complaints were also received from farmers along the North Oropouche River about pollution of that river. The complaints from the various Ministries prompted a number of investigations into the problem.

A study was initiated in 1985 in an attempt to quantify the amount of particulate mineral waste produced by quarries along the North Oropouche River . The initial phase, completed in 1985, involved the identification of the extent of the problem along the North Oropouche River. In January 1986, the second phase, involving the design of settling ponds with adequate settling capacities was completed for four quarries. During 1986 the project was extended on the advice of the Ministry of Energy to the Inter-Ministerial Committee for Quarries to include:-

- the implementation of a pilot project to confirm in the field the adequacy of the designed pond sizes; and
- to establish standards for the allowable levels of sediment in quarry effluent.

The pilot project was established at the Mackintosh Aggregates Ltd ., Quarry . However, the settling pond capacity-dimensions did not conform with the design parameters . The project has therefore been modified to evaluate the effectiveness of the existing systems.

This existing system is to be compared with the designed values of pond capacity/dimensions. The results of a survey of the existing ponds completed in November 1986, are being evaluated.

With reference to the Caroni Arena Water Treatment Plant, Cabinet agreed to appoint a committee to "undertake a study to determine all the factors which contribute to the turbid quality of the water entering the Caroni Water Treatment Plant ." The committee is expected to report in 1987.

Mapping continued in the Northern Range and other parts of Trinidad and Tobago, for the project to produce a "Landslide Susceptibility Map" for the country. Most of the effort was concentrated on Tobago and the Northern Range of Trinidad. The effect of unusual rainfall, such as that which followed tropical storm Danielle in September 1986, was the subject of a major study on the occurrence of landslides in Tobago.

OIL PRODUCTION AND DRILLING ACTIVITY

Crude Oil Production

Trinidad and Tobago's crude oil production averaged 169,662 bopd, a decrease of 4% from 1986. Two companies, TRINTOC and PCOL, recorded production increases of 8.0% and 24% respectively. Production of the other companies declined. Total marine production averaged 128,873 bopd, thereby accounting for 76% of total production in 1986.

Amoco Trinidad Oil Company (ATOC) registered a 7.0% decline in production to average 87,775 bopd. Production rose from a low of 81,830 bopd in January to 91,752 bopd in August, declining again to 88,116 bopd by year's end. Production declines were experienced in all fields except Poui Field which had a successful development drilling program. The newly developed Mora field, which is in the Galeota Ridge area, came on stream in June 1986 but has produced at levels way below expected production.

Trinidad Northern Areas (TRINMAR) had an average daily output of 37,147 bopd. This was 4.7% below the production recorded for 1985, and was caused mainly by a major fire on compressor platform #1 during March 1986. This platform supplied high-pressure gas for gas-lifting well. During the period April-July 1986, this decline was partially arrested by the increase in new oil production from the South-West Soldado area and the increase in secondary oil from the company's waterflood.

Trinidad and Tobago Petroleum Co (TRINTOPEC) crude oil production for 1986 averaged 22,984 bopd, a decline of 455 bopd below the corresponding figure for 1985. The company's peak production of 23,601 bopd in October coincided with the thermal production exceeding 10,000 bopd for the first time. Galeota's average production for the year was 3,334 bopd. Production from the company's land fields averaged 19,650 bopd including both thermal and non-thermal oil. Land production peaked in May at 20,376 bopd as a result of successful completions in Central Los Bajos and Erin. Thermal production averaged 9,265 bopd.

Trinidad and Tobago Oil Co (TRINTOC) produced 7,654,780 barrels of oil at an average rate of 20,972 bopd. This was an increase of 8.0% over the previous year's production rate. During 1986 production fluctuated from a high of 21,513 bopd in June to a low of 19,861 bopd in September.

Premier Consolidated Oilfields Ltd (PCOL) averaged a crude oil production of 784 bopd, 24% above that of 1985. This was due to the initiation of enhanced recovery in 1986 and the effects of successful drilling done in 1985.

During 1986, enhanced oil recovery operations in Trinidad and Tobago produced approximately 8.4 million barrels of oil at an average rate of 22,966 barrels per day. This represents 13.6 percent of the country's total production of 61.6 million barrels.

Thermal recovery continued to be the most successful enhanced oil recovery method employed on land with the trend of increasing production continuing during 1986. Production reached 11,588 barrels of oil per day from a total of thirteen active schemes.

Waterflood oil production on the other hand decreased slightly to 11,326 barrels of oil per day from the 1985 figure (11,848), chiefly because of operational problems.

Interest and activity in enhanced oil recovery operations continued, and the number of active schemes operated during the year increased to 38 - four more than the amount operated during the previous year. Premier Consolidated Oilfields Limited started its Fyzabad thermal scheme in June and Trintoc reactivated its Forest Reserve Phase 1 steam injection project and commissioned the Area IV Cruse E steamflood project in February. Fluid injection operations for the period 1982 to 1986 are summarized in Table V.

Water Injection

There were 22 water injection schemes in operation and a total of 10 million barrels of water was injected representing a second consecutive year of decreased injection. The volume injected was 14.4% below the 1985 figure, and was concomitant with the interruption in injection at ATOC's Teak A/C/E waterflood project, to effect necessary repairs to the injection system.

Amoco Trinidad Oil Company injected 4.4 million barrels of water into 5 injectors in its Teak A/C/E waterflood project. This was 47% less than the amount injected during 1985, and reflects the continuing difficulty which the company experiences with its waterflood project, as a result of corrosion caused by bacteria. Oil production as a result of decreased injection volume fell by 8.8% to 8,137 barrels per day.

Trinidad Northern Areas achieved greater injection rates into the Cruse Reservoir at the B011 waterflood project, following successful installation of a new injection unit during March. A total of 3.9 million barrels of water was injected into the cruse sands representing a significant increase in volume injected over the previous year's figure of 1.1 million barrels. Oil production increased by 9% to 1,200 barrels per day. Further increases could not have

Drilling Activity

Drilling activity in Trinidad and Tobago increased during 1986, and total depth drilled was 222 293 metres as compared with 199 892 in 1985. Exploration and semi-exploration drilling accounted for 22 402 metres or 10.0% of total depth drilled; development thermal drilling accounted for 31 207 metres or 14.0% and the remaining 168 684 metres represented non-thermal development drilling. Rig utilization increased by 7% to 119.54 rig months.

A total of 162 wells was completed in 1986, 18% less than total completions of 1985. In the marine areas 35 wells were completed consisting of 29 oil producers, 1 injector and 5 abandonments. On land, 127 wells were completed consisting of 98 oil producers, 1 gas well, 14 injectors, 12 abandonments and 2 others. Thus overall completion consisted of 127 oil producers, 15 injectors, 17 abandonments, 1 gas well and 2 others. Of the 169 development wells spudded in 1986, 113 were completed as oil producers, 12 were injectors, 11 were abandoned and 1 was completed other. The number of exploratory/semi-exploratory wells spudded in 1986 was 10, of which 2 were completed as oil producers, 5 were abandoned, 2 were drilling and 1 was suspended at year's end.

Drilling activity at Amoco Trinidad Oil Co. increased during 1986. Rig month totalled 34.60, 114% greater than that of 1985. Total depth drilled increased almost three-fold to 46 851 metres. Twenty-nine wells were spudded consisting of 3 exploration and 26 development wells. Development drilling was concentrated on the Poui 'B', Mora and Teak 'C' platforms.

Trinidad Northern Areas (TRINMAR) drilled 24 831 metres in 1986, compared to 27,689 in 1985. Drilling was concentrated in the South-West Soldado field and ten wells were completed. There were no exploratory wells or abandonments.

The total number of wells spudded by Trinidad and Tobago Petroleum Co (TRINTOPEC) was 81, an increase of six when compared with that of 1985. Of the wells spudded for 1986, 37 were development non-thermal, 43 were development thermal and one was semi-exploratory. The total depth drilled was 79 727 metres, an increase of 3.0%. Rig activity decreased to 28.01 rig months.

Trinidad and Tobago Oil Co (TRINTOC) utilized five rigs during the year but the level of rig activity stood at 3.7 rig years since only two rigs were in full-time use. Fifty-six wells were spudded; this was 10% less than 1985. Of these, 5 were exploratory and 16 were thermal wells. Depth penetrated decreased 2% to 68 846 metres. In 1986, there were 43 completions of which four were exploratory. Two were oil producers and the other two were abandoned. There were 29 development wells completed as oil producers, 3 completed as steam injectors, 4 abandoned, and 2 as others.

Premier Consolidated Oilfields Ltd (PCOL) drilled a total depth of 2 038 metres, 72.0% below that of 1985. Rig activity stood at 1.26 rig months. Of the three wells drilled in 1986, 2 were development and 1 exploratory. These wells were in the San Francique area.

TABLE I

SUMMARY OF STATISTICS FOR THE TRINIDAD AND TOBAGO PETROLEUM INDUSTRY

1986 1983

	UNIT	1986	1985	1984	1983
ANNUAL CRUDE OIL PRODUCTION	BARRELS	61,640,188	64,258,862	62,041,934	58,343,594
ANNUAL NATURAL GAS PRODUCTION	CU. METRES	7 585 342 950	7 412 770 580	7 227 955 536	6 318 586 981
AVERAGE G.O.R.	MCF/BARREL	4 346	4 074	4 068	3 782
ANNUAL C.H.P.S.(NATURAL GASOLINE) PROD.	BARRELS	24,827	23,222	28,999	33,731
DAILY REFINERY CAPACITY	BARRELS/DAY	305,000	305,000	305,000	305,000
ANNUAL REFINERY THROUGHPUT	BARRELS	29,936,479	29,672,826	28,143,204	27,170,600
TOTAL WELLS COMPLETED DURING THE YEAR	AS STATED	169	197	213	180
AVERAGE DEPTH OF COMPLETED WELLS	METRES	1 395	1 100	1 153	1 051
TOTAL DEPTH DRILLED DURING THE YEAR	METRES	222 294	199 402	206 829	183 797
OIL AND GAS WELLS COMPL. DURING THE YEAR	AS STATED	133	156	172	162
DRILLING SUCCESS RATIO	PERCENT	65.9	79.2	80.8	90.5
AVERAGE RIGS RUNNING	AS STATED	10.0	9.4	8.2	9.5

TABLE II

SUMMARY OF EXPLORATORY AND SEMI-EXPLORATORY ACTIVITIES IN 1986

OPERATOR	WELL NAME	LOCATION	BASIS FOR LOCATION	LAHEE EXPLORATORY CLASS	DATE SPUDDED	DATE COMPLETED	TOTAL DEPTH IN METRES	GEOLOGICAL OBJECTIVE	RESULTS/ REMARKS
AMOCO TRINIDAD OIL COMPANY LIMITED	GALEOTA RIDGE 4	GR-4	S&SS6	B1	85.11.08	86.01.10	2 813	2700' &3200' SANDS	ABANDONED - AFTER TESTING
	GALEOTA RIDGE 5	GR-5	S&SS6	B2b	86.01.24	86.04.06	3 962	5,700' SAND "D" HORIZON	ABANDONED - AFTER TESTING
	GALEOTA RIDGE 6	GR-6	S&SS6	B1	86.04.06	86.05.22	1 918	5,700' SAND & PINK SEISMIC HORIZON	ABANDONED - AFTER TESTING
	WEST EAST QUEEN BEACH 1	WEQB-1	S&SS6	A1	86.11.02	-	4 148	PLIOCENE SEDIMENTS	DRILLING
TRINIDAD AND TOBAGO PETROLEUM COMPANY LIMITED	ERIN 80 ST2	F.20 BH-14/ BH-15	S&SS6	C2b	86.01.28	86.05.26	3 553	LOWER CRUSE SANDS	COMPLETED - OIL
TRINIDAD AND TOBAGO OIL COMPANY LIMITED	MORNE DIABLO 57	G17 LA-4	S&SS6	B1	86.02.09	86.04.06	1 971	LOWER CRUSE SANDS	COMPLETED - OIL
	ERIN 25	F.20 GB-13	S&SS6	C1	86.10.17	86.11.24	2 591	FOREST/CRUSE SANDS	ABANDONED - DRY
	BARRACKPORE 526	G.9 KL-18	S&SS6	B1	86.10.07	86.09.24	2 371	INTERMEDIATE HERRERA SANDS	COMPLETED - OIL
	BARRACKPORE 531	G.10 FI-2	S&SS6	C1	86.12.07	86.12.12	175	INTERMEDIATE HERRERA SANDS	ABANDONED - MECH-ANICAL REASONS
	BARRACKPORE 532	G.10 FI-2	S&SS6	A1	86.12.13	-	1 099	INTERMEDIATE HERRERA SDS.	DRILLING
PREMIER CONSOLIDATED OILFIELDS LTD.	SAN FRANCIQUE EAST 48	G.12 FC-9	S&SS6	C2C	86.03.09	86.03.22	614	UPPER MIDDLE CRUSE SANDS	ABANDONED - DRY

TABLE III

SUMMARY OF DEVELOPMENT DRILLING IN TRINIDAD AND TOBAGO - 1986

FIELD, AREA OR DISTRICT	OIL & GAS PRODUCERS COMPLETED	ABANDONED WELLS	TOTAL COMPLETION	TOTAL DEPTH DRILLED IN METRES	ACTIVE RIGS AT YEAR'S END
1	10	0	10	24 831	1
2	12(a)	0	12(a)	16 529	2
3	1	0	1	640	0
4	69(b)	3	72(b)	73 608	1
5	15(c)	2	17(c)	12 424	1
6	9(d)	1	10(d)	8 850	0
8	10	3	13	23 551	0
9	2	0	2	2 637	0
11	20(e)	3	23(e)	36 822	2
TOTAL	148	12	160	199 892	7

(a) INCLUDES 4 STEAM INJECTORS - DEPTH 3 884 METRES
AND 1 WELL COMPLETED OTHER
(b) INCLUDES 6 STEAM INJECTORS - DEPTH 2 195 METRES
(c) INCLUDES 1 WELL COMPLETED OTHER
(d) INCLUDES 5 STEAM INJECTORS - DEPTH 3 787 METRES
(e) INCLUDES 1 WATER INJECTOR - DEPTH 915 METRES

TABLE IIIA

KEY TO AREA - NUMBER ON TABLE III

AREA NUMBER	DESCRIPTION
1	Soldado, North Marine, Couva Marine, Manicou, (Gulf of Paria Block 1)
2	Pt. Ligoure,F.O.S., Area IV and Guapo, Point Fortin West and Central
	Parrylands, Cruse, Guapo, Boodoosingh
3	Brighton (Land and Marine), Vessigny, Merriman
4	Palo Seco, Los Bajos, Erin, Central Los Bajos, Mackenzie
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, Inniss, Trinity, Catshill, Balata, Bovallius
10	Guayaguayare, Moruga East
11	Galeota, Teak, Samaan, Poui, Dolphin (Block 6), Diamond Prospect,
	East Coast, Reverse 'L' East, Reverse 'L' West
12	South Marine (South Coast)
13	Tabaquite, Pointe-a-Pierre
14	Icacos, South West Peninsula
15	North Coast Marine Area

TABLE IV
OIL PRODUCTION BY FIELDS, AREAS OR DISTRICTS - 1986

COMPANY, FIELDS AREAS OR DISTRICTS	DISCOVERY YEAR	TOTAL WELLS COMPLETED	ANNUAL PRODUCTION 1986	ANNUAL PRODUCTION 1985	CUMULATIVE PRODUCTION THROUGH DECEMBER, 1986
			BARRELS	BARRELS	000 BARRELS
TRINIDAD & TOBAGO OIL CO. LTD.					
BALATA EAST AND WEST	1952	75	119,095	134,028	3,072
CATSHILL	1950	134	139,024	133,320	22,904
INNISS	1956	41	41,477	43,952	6,174
ROCK DOME	1962	3	-	-	16
PENAL	1936	289	393,088	481,836	61,686
NEW DOME	1928	31	3,494	6,422	3,130
POINT FORTIN EAST	1929	168	274,683	369,065	26,353
SAN FRANCIQUE	1929	27	9,153	9,407	5,971
AREA IV AND GUAPO	1963	192	500,419	433,952	38,225
PARRYLANDS 1-5	1913	496	603,153	654,585	39,519
POINT FORTIN CENTRAL	1916	232	761,165	820,282	19,644
POINT FORTIN WEST	1907	316	175,546	178,013	20,217
LOS BAJOS	1918	29	-	-	546
ERIN	1963	4	-	-	710
MAHAICA	1954	6	-	-	-
GUAYAGUAYARE	1902	698	565,916	534,466	85,846
TRINITY	1956	95	71,771	88,511	15,046
BARRACKPORE	1911	356	811,996	531,308	29,984
OROPOUCHE	1944	128	67,101	76,766	6,577
MORNE DIABLO/QUINAM	1926	92	33,568	17,791	7,677
FOREST RESERVE	1913	2,042	1,607,252	1,559,703	257,340
PALO SECO	1929	926	793,361	719,250	92,316
BRIGHTON	1903	616	279,807	196,972	72,428
ERIN	1963	24	9,794	-	2,315
COUVA MARINE	1963	6	-	-	301
CRUSE	1913	150	17,697	25,740	25,892
WILSON	1936	82	72,924	76,973	19,918
TABAQUITE	1911	225	14,836	14,823	1,759
BALATA CENTRAL	1949	6	-	-	371
MAYARO		9	-	-	-
TOTAL		7,498	7,366,320	7,107,145	865,937
AMOCO TRINIDAD OIL CO. LTD.					
TEAK	1971	95	13,708,482	15,883,227	215,624
SAMAAN	1971	48	4,736,291	6,483,785	169,420
POUI	1974	56	10,937,786	8,693,414	142,726
CASSIA	1973	7	2,428,102	3,071,172	8,312
MORA	1983	5	167,281		167
TOTAL		211	32,037,942	34,131,598	563,240

TABLE IV
OIL PRODUCTION BY FIELDS, AREAS OR DISTRICTS - 1986

COMPANY, FIELDS AREAS OR DISTRICTS	DISCOVERY YEAR	TOTAL WELLS COMPLETED	ANNUAL PRODUCTION 1986	ANNUAL PRODUCTION 1985	CUMULATIVE PRODUCTION THROUGH DECEMBER, 1986
			BARRELS	BARRELS	000 BARRELS
TRINIDAD & TOBAGO PETROLEUM CO.LTD.					
FYZABAD/APEX QUARRY	1920-1938	1,031	1,387,722	1,428,982	169,042
GUAPO/BOODOOSINGH	1922	646	784,707	797,462	45,478
MORUGA EAST	1953	77	37,710	47,740	2,678
MORUGA NORTH	1956	23	1,337	5,429	1,034
MORUGA WEST	1957	129	42,997	53,607	9,178
COORA/QUARRY	1936	722	677,544	868,833	90,401
PALO SECO/ERIN/MC KENZIE	1926	1,539	3,292,527	3,107,875	113,863
NORTH MARINE	1956	19	-	-	1,269
GALEOTA	1963	105	1,213,102	1,443,075	14,148
CENTRAL LOS BAJOS	1973	205	944,033	784,913	7,555
OROPOUCHE	1975	3	6,783	10,408	263
BARRACKPORE	1977	4	2,872	8,112	106
TOTAL		4,503	8,391,334	8,556,436	455,015
PREMIER CONSOLIDATED OILFIELDS LIMITED					
SIPARIA	1957	5	11,954	8,021	863
SAN FRANCIQUE	1929	102	156,388	120,426	3,417
FYZABAD/ROODAL	1918	265	72,003	53,432	13,345
PALO SECO	1915	83	314	1,572	1,640
BARRACKPORE	1970	8	40,892	43,424	260
TICACOS	1955	11	4,551	4,463	484
DEFUNCT FIELDS	1954	19	-	-	323
TOTAL		493	286,102	231,338	20,332
TRINIDAD NORTHERN AREAS					
FOS/FT	1954	35	99,458	116,847	6,896
SOLDADO	1955	638	13,459,032	14,115,498	448,938
TOTAL		673	13,558,490	14,232,345	455,834
GRAND TOTAL		13,378	61,640,188	64,258,862	2,333,367

FLUID INJECTION

During 1986, enhanced oil recovery operations in Trinidad and Tobago produced approximately 8 .4 million barrels of oil at an average rate of 22,966 barrels per day. This represents 13 .6 percent of the country's total production of 61.6 million barrels.

Thermal recovery continued to be the most successful enhanced oil recovery method employed on land with the trend of increasing production continuing during 1986. Production reached 11,588 barrels of oil per day from a total of thirteen active schemes.

Waterflood oil production on the other hand decreased slightly to 11,326 barrels of oil per day from the 1985 figure (11,848), chiefly because of operational problems.

Interest and activity in enhanced oil recovery operations continued, and the number of active schemes operated during the year increased to 38 - four more than the amount operated during the previous year . Premier Consolidated Oilfields Limited started its Fyzabad thermal scheme in June and Trintoc reactivated its Forest Reserve Phase 1 steam injection project and commissioned the Area IV Cruse E steamflood project in February . Fluid injection operations for the period 1982 to 1986 are summarized in Table V.

Water Injection

There were 22 water injection schemes in operation and a total of 10 million barrels of water was injected representing a second consecutive year of decreased injection . The volume injected was 14 .4% below the 1985 figure, and was concomitant with the interruption in injection at ATOC's Teak A/C/E waterflood project, to effect necessary repairs to the injection system.

Amoco Trinidad Oil Company injected 4.4 million barrels of water into 5 injectors in its Teak A/C/E waterflood project . This was 47% less than the amount injected during 1985, and reflects the continuing difficulty which the company experiences with its waterflood project, as a result of corrosion caused by bacteria. Oil production as a result of decreased injection volume fell by 8.8% to 8,137 barrels per day.

Trinidad Northern Areas achieved greater injection rates into the Cruse Reservoir at the 8011 waterflood project, following successful installation of a new injection unit during March . A total of 3.9 million barrels of water was injected into the cruse sands representing a significant increase in volume injected over the previous year's figure of 1.1 million barrels. Oil production increased by 9% to 1,200 barrels per day . Further increases could not have been recorded this year because of gas lift problems resulting from the fire on the compressor facilities in the Main Field.

Trintopec had 10 water injection schemes operational, 5 of which were at Coora, 2 at Fyzabad, and 1 each at Galeota, Mackenzie and Palo Seco.

Offshore, at the Galeota HF/15/n1 project, there was good response to water injection to the St. Hilaire Sands. This scheme was initiated in October 1985, and after one full year of injection, production rose from 390 barrels of oil per day to 600 in December 1986.

Unlike the Galeota waterflood project offshore, the performance of waterflood projects on land was hampered by the lack of adequate supplies of water compatible with the formation for injection . This led to the curtailment of injection in many of the schemes during the year.

Overall volume of water injected by the company was 0 .76 million barrels, an increase of 29% over the 1985 figure. Oil production from the 10 schemes averaged 1,000 barrels per day, an increase of 73 % above the 1985 figure.

Trintoc injected water into only 5 of its 10 waterflood schemes during 1986. Severe corrosion at pumping station B in the Eastern district was again reported as being responsible for the lack of injection in the Guayaguayare and Navette projects . The volume of water injected was one million barrels, while oil production averaged 980 barrels per day, at an average watercut of 67%.

Acceptable injection rates of 1,800 barrels of water per day have been reported at the Area IV Cruse G waterflood. This scheme was commissioned during April 1985, and it is envisaged that fill up will be attained after 2 years of continuous injection.

Thermal Injection

In 1986, 13 thermal injection projects were in operation, three more than in 1985 . Overall injection of steam increased by 14 .6% to 18 .1 million barrels while production from the schemes increased marginally by 1% to 11,588 barrels of oil per day.

Trintopec optimized its thermal operations by maintaining satisfactory steam quality and volume to the injector wells. This was achieved through a more reliable supply of gas to the generators . As a consequence of continued good heating of the reservoirs, oil production from the 6 schemes averaged 9,200 barrels of oil per day.

The Palo Seco thermal project continued to be the largest producer of thermal oil, averaging 2,916 barrels of oil per day. This scheme was expanded to the east in 1986. There was improved production in the Bennett Village Thermal Project, where medium graving crude is being steamed. Oil production increased from 52 barrels of oil per day during 1985 to 559 barrels of oil per day during 1986. This good response is attributed to steam distillation effects. At the Fyzabad thermal project, oil production fell by 30% to 948 barrels of oil per day as a result of surface eruptions, and the temporary curtailment of steam injection in January and August.

Trintoc expanded its thermal operations when it commissioned the Area IV Cruse E steamflood project in February and reactivated the Forest Reserve Phase 1 Extension steam project in July. The company now operates 5 thermal schemes, comprising 2 at Parrylands, 2 at Forest Reserve and 1 at Area IV Point Fortin. The decision to reactivate the Phase 1 Extension project is an attempt by the company to maximize utilization of available steam. The company injected steam at a rate of 12,428 barrels per day, an increase of 15% over the injection rate of the previous year. Oil production averaged 2,258 barrels per day, resulting in an oil steam ratio of 0.17.

Premier Consolidated Oilfield Limited performed two cycles of injection into the Forest sands at the Fyzabad Thermal project. Volume of steam injected was 0.6 million barrels and oil production rate over the 6 month period of production was 82 barrels per day.

Carbon Dioxide

Three immiscible carbon dioxide schemes were operated and oil production rate from the schemes was 52 barrels per day. Volume of carbon dioxide injected was 17.6 million cubic metres.

TABLE V
SUMMARY OF FLUID INJECTION IN TRINIDAD AND TOBAGO 1982 - 1986

NO.OF PROJECTS IN OPERATION AT END OF YEAR				INJECTION VOLUMES			OIL PRODUCED BY WELLS UNDER PROJECT INFLUENCE				OIL EXPRESSED AS A PERCENTAGE OF COUNTRY'S TOTAL PRODUCTION
YEAR	WATER	STEAM	CARBON DIOXIDE	NATURAL GAS (m^3*10^3)	WATER & OTHER FLUIDS (bbl)	STEAM (bbl)	WATER INJECTION PROJECTS (bbl)	THERMAL RECOVERY PROJECTS (bbl)	CARBON DIOXIDE PROJECTS (bbl)	ALL PROJECTS (bbl)	
1982	19	9	2	16 679	10,520,099	9,694,176	4,991,716	3,729,827	13,756	8,735,299	13.5
1983	22	9	2	10 884	10,104,461	11,856,630	3,834,666	3,923,088	12,580	7,770,334	13.3
1984	23	9	2	33 902	15,205,143	12,445,527	4,339,531	3,953,109	27,738	8,320,378	13.4
1985	22	10	2	1 734	11,694,141	15,759,473	4,324,372	4,191,334	19,432	8,535,138	13.3
1986	22	13	3	17 781	10,016,397	18,062,522	4,133,926	4,223,335	18,924	8,376,185	13.6

TABLE VI
FLUID INJECTION OPERATIONS-1986

WATER INJECTION

COMPANY	NO.ACTIVE PROJECTS	WATER INJECTED (bbl)	OIL PRODUCED (bbl)	WATER PRODUCED (bbl)	GAS PRODUCED (m^3*10^3)	WATER CUT %	GOR (mcf/bbl)
ATOC	1	4,370,762	2,970,086	917,542	71 688	23.60	852
TNA	1	3,881,240	437,982	348,975	19 662	44.34	1 585
TTPCL	10	764,123	367,476	125,718	7 785	25.49	680
TRINTOC	10	1,000,272	358,382	840,731	16 759	70.11	700
ALL COS.	22	10,016,397	4,133,926	2,232,966	115 894	35.07	916

STEAM INJECTION

COMPANY	NO.ACTIVE PROJECTS	STEAM INJECTED (bbl)	OIL PRODUCED (bbl)	WATER PRODUCED (bbl)	GAS PRODUCED (m^3*10^3)	OIL/STEAM PROD.RATIO
TTPCL	7	13,459,750	3,390,617	6,057,551	5 200	0.39
TRINTOC	5	4,536,327	817,835	3,984,913	13 288	0.18
PCOL	1	66,445	14,883	14,412	0	0.22
ALL COS.	13	18,062,522	4,223,335	10,056,876	18 488	0.33

CARBON DIOXIDE INJECTION

COMPANY	NO.ACTIVE PROJECTS	CO2 INJECTED (m^3*10^3)	OIL PRODUCED (bbl)	WATER PRODUCED (bbl)	GAS PRODUCED (m^3*10^3)	WATER CUT %	GOR (mcf/bbl)
TRINTOC	3	17 781	18,924	7,885	646	29.4	1 205
ALL COS.	3	17 781	18,924	7,885	646	29.4	1 205

TABLE VII
WATER INJECTION SUMMARY BY PROJECTS - 1986

COMPANY	FIELD	PROJECT	WATER INJECTION (bbl)	OIL PRODUCED (bbl)	WATER PRODUCED (bbl)	GAS PRODUCED (m^3*10^3)	WATER CUT %	GOR (mcf/bbl)
ATOC	TEAK	A/C/E WATERFLOOD	4,370,762	2,970,086	917,542	71 688	23.60	852
ALL	ALL	ALL	4,370,762	2,970,086	917,542	71 688	23.60	852
TNA	SOLDADO	B011 WATERFLOOD	3,881,240	437,982	348,975	19 622	44.34	1 585
ALL	ALL	ALL	3,881,240	437,982	348,975	19 662	44.34	1 585
TRINTOC	CATSHILL	CO-30.BLK.24 N SAND	130,148	10,117	5,358	72	34.62	167
		CO-30.BLK.38	98,025	10,323	7,793	103	43.02	167
		Pt.F. AREA IV	88,929	6,343	592	45	8.54	167
			245,242	4,638	884	35	15.45	167
	G'YARE	NAVETTE 007	0	61,581	93,902	9 759	60.39	0
		NAVETTE 410	0	82,712	349,081	2 680	80.84	0
		410 EXT.	0	20,815	67,637	687	76.47	0
		307 WATERFLOOD	0	81,880	204,704	2 717	71.43	0
		307 EXT.	0	9,662	5,000	311	34.10	0
	TRINITY	SHALLOW HERRERA	439,928	70,112	105,780	350	60.14	0
ALL	ALL	ALL	1,000,272	358,382	840,731	16 759	70.11	700
TTPCL	COORA	CO/UC/100/1	166,587	3,171	15,349	65	82.88	723
		CO/UC/110/1	0	175	4,200	2	96.00	389
		CO/UC/314/1	0	11,409	3,196	222	21.88	688
		CO/UC/317/1	0	6,529	17,037	129	72.29	699
		CO/UC/170/1V	3,872	2,596	760	46	22.65	670
	PALO SECO	PS/UF/500/1	9,035	27,235	6,994	562	20.43	627
	FYZABAD	FM/UF/172/1	0	30,154	22,785	629	43.04	729
		FM/UF/169/1	9	43,257	39,854	928	47.95	737
	MACKENZIE	MACKENZIE	170,783	61,701	4,656	1 253	7.02	757
	GALEOTA	GAL/HF/15/11	413,846	181,249	10,887	3 949	5.67	769
ALL	ALL	ALL	764,123	367,476	125,718	7 785	25.49	680
TOTAL	ALL	ALL	10,016,397	4,133,926	2,232,966	115 894	35.07	794

TABLE VIII

STEAM INJECTION SUMMARY BY PROJECTS -1986

COMPANY	FIELD	PROJECTS	STEAM INJECTED (bbl)	OIL PRODUCED (bbl)	WATER PRODUCED (bbl)	GAS PRODUCED (m^3*10^3)	WATER CUT %	OIL/ST. RATIO
TRINIDAD AND TOBAGO PET. CO. LTD.	APEX QUARRY		3,259,450	628,720	1,139,703	492	64.45	0.31
	FYZABAD		1,250,855	346,020	534,566	211	60.71	0.43
	GUAPO		2,414,110	499,320	640,049	1 317	56.18	0.27
	CENTRAL							
	LOS BAJOS		1,450,510	640,210	686,876	9	51.76	0.85
	PALO SECO		4,205,165	1,064,340	2,963,680	3 171	73.58	0.36
	BENNETT V'GE		866,875	204,035	91,034	0	30.85	0.41
	MACKENZIE		12,785	7,972	1,643	0	17.09	0.62
TTPCL	ALL	ALL	13,459,750	3,390,617	6,057,551	5 200	64.11	0.39
TRINTOC	F.RESERVE	Project 111	3,293,029	554,159	3,577,788	10 322	86.59	0.17
		Phase 1 Ext.	263,193	59,513	81,999	1 442	57.94	0.23
	P.LANDS'E'.	Steamflood	235,185	116,579	168,135	840	59.05	0.50
		Phase 1. Exp	288,532	33,876	37,308	240	52.41	0.12
	Pt.FORTIN	Cruse 'E'	456,388	53,708	119,683	382	69.02	0.12
TTOC	ALL	ALL	4,536,327	817,835	3,984,913	13 288	82.97	0.18
PCOL	FYZABAD		66,445	14,883	14 412	0	49.20	0.22
ALL COS.	ALL	ALL	18,062,522	4,223,335	10,056,876	18 488	70.43	0.33

CARBON DIOXIDE INJECTION

COMPANY	FIELD	PROJECT	INJECTION (m^3*10^3)	OIL (bbl)	WATER (bbl)	GAS (m^3*10^3)	WATER CUT %	GOR (scf/bbl)
TRINTOC	F.RESERVE	UCNE a.fld.	13 435	1,552	2,367	43	60.40	972
		Zone 5 Sds.	0	4,960	850	208	14.63	1 481
		Exp.Co2						
		Cyc.Inj	4 346	12,412	4,668	395	27.33	1 124
ALL COS.	ALL	ALL	17 781	18,924	7,885	646	29.41	1 205

REFINING AND PETROCHEMICAL INDUSTRY

Refining

The overall crude throughput of both refineries remained relatively constant with a slight increase of 0.5% over 1985 to a daily average of 81,844 barrels. The Trinidad and Tobago Oil Company Ltd. continued to increase its crude imports. A total of 1,560,338 barrels of crude was imported and this consisted of 355,171 barrels from Ecuador and 1,205,167 barrels from Colombia. In addition the company imported 495,057 barrels of Arab light reduced crude in December for lube oil production.

The following table gives the average daily throughput for both the Pointe-a-Pierre and Point Fortin refineries.

AVERAGE DAILY REFINERY THROUGHPUT
1976 - 1986

YEAR	POINT FORTIN (bbl/day)	POINTE-A-PIERRE (bbl/day)	TOTAL (bbl/day)
1976	54,994	266,274	321,268
1977	55,124	217,555	272,679
1978	51,398	183,866	235,264
1979	51,638	175,367	227,005
1980	50,325	163,703	214,028
1981	39,628	133,917	173,545
1982	50,061	100,897	150,958
1983	12,550	61,890	74,440
1984	16,943	59,952	76,895
1985	25,450	56,010	81,460
1986	17,889	63,955	81,844

The average crude throughput at the Pointe-a-Pierre refinery during 1986 was 63,955 barrels per day which represented an increase of 14% over 1985 figure. During the last two weeks of December, the average throughput was 119,969 and 101,737 barrels per day respectively. During the year No. 4 VDU had undergone an extended test and inspection for the period April to November 1986.

At Point Fortin, the refinery processed a total of 6,581,044 barrels of crude averaging 17,889 barrels per day. This reduction of 29% over the 1985 figure was due to the increased downtime of CD III.

During the year, Trintoc in a bid to optimise the use and performance of both locations, continued the transfer of crude and semi-finished products between both refineries. Straight-run naptha was transferred from Pointe-a-Pierre to Point Fortin, while crude, gas oil, fuel oil and aviation turbine fuel were transferred from Point Fortin to Pointe-a-Pierre.

The refinery product output for 1986 and 1985 is given in the following table:

REFINERY OUTPUT

PRODUCTS	1986 MILLION (bbl)	1985 MILLION (bbl)	%CHANGE
LPG	739,863	745,589	-0.8
MOGAS	8,621,303	7,700,585	12.0
AV.GAS	58,216	49,749	17.0
AV.TURBINE FUEL	2,469,858	2,070,959	19.3
KEROSENE	606,783	886,786	-31.6
GAS/DIESEL OIL	4,010,609	4,221,815	-5.0
FUEL OIL	19,108,302	17,855,010	7.0
LUBE OIL	39,315	876	4,388.0
ASPHALTIC PROD.	139,619	182,720	-23.6
PETROCHEMICALS	38,379	291,000	-86.8
OTHER FIN. & UNFIN. PROD.	-4,552,426	-3,355,747	36.0
TOTAL	29,226,159	29,718,365	-1.0

IMPORTS OF REFINED PRODUCTS 1986

PRODUCTS	(bbl)
Avjet/Gas	52,709
Kerosene	27,688
Gas Oil	1,083,629
Fuel Oil	641,406
TOTAL	1,805,432

Petrochemicals

The total petrochemical production at the Pointe-a-Pierre refinery for the year totalled 38,379 barrels which represents a decline of 39% from 1985.

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NATURAL GAS

Production

During 1986, natural gas production averaged 20 .8 million cubic metres per day (MMcm/d), which was an increase of 0.1% over the previous year.

Amoco's production accounted for 85.1% of the country's total production, Trinmar 7 .6% and the land-based oil companies Trintoc and Trintopec together produced 7 .3%. Amoco produced natural gas at a rate of 17.7 MMcm/d. The Cassia field produced 7.6, Teak 6.1, Samaan 2.5 and Poui 1.5 MMcm/d. This exceeded last year's average by 2 .3%. High pressure gas available for sales averaged 8.7 MMcm/d.

Trinmar produced natural gas at an average rate of 1.6 MMcm/d - a 5 .9% decrease from last year's figure. The decrease was caused by the fire on compressor station No.1 in March of this year. Gas sales by Trinmar averaged 0.5 MMcm/d.

Trintoc produced an average of 0 .9 MMcm/d - a minor increase over the production rate for 1985. The company had to supplement its internal production by purchasing gas from the National Gas Company (NGC) for use as refinery fuel.

Trintopec produced natural gas at an average rate of 0.6 MMcm/d - a slight decrease from the previous year. Gas was purchased to meet fuel demand in areas under enhanced oil recovery.

Conservation

Low pressure gas from the Teak and Poui fields was compressed by the National Gas Company making available 1.9 MMcm/d of high pressure sales gas - each platform contributing 0 .96 MMcm/d. This represents a decrease of 13 .6% from the 1985 figure caused by unplanned compressor downtime.

Utilization

Overall gas utilization for 1986 averaged 18.4 MMcm/d, that is 88 .7% of total production. This includes gas utilised for gas lifting purposes (6 .4 MMcm/d) and refinery and field uses (2.26 MMcm/d). This reflects an increase of 13.6% when compared with 1985. The oil companies used 48.0 % of all gas utilized. Fuel and chemical feedstock accounted for 51.8% of total production.

Amoco's gas lift requirements rose by 8.9% to 4.9 MMcm/d while Trintoc's averaged 0.6 MMcm/d. Trinmar's gas lift supply decreased by 17% to average 0.9 MMcm/d.

Gas used for fuel by Amoco, Trinmar, Trintopec and Trintoc averaged 0.1, 0.06, 0.6 and 1.5 MMcm/d respectively.

Trinidad and Tobago Electricity Commission (T&TEC), the largest non-oil-company, consumed 16 .2% of total gas utilized, an increase of 5.4% to 2.95 MMcm/d. This was due mainly to an increase in power supply to the Iron and Steel plant (ISCOTT).

The manufacture of fertilizers accounted for 26.8% of the total gas utilized. An average of 4.94 MMcm/d was used representing an increase of 4 .0% over the previous year. Daily average for Fertilizer of Trinidad and Tobago Limited (FERTRIN) was 2 .55 MMcm/d. Tringen's consumption rose by 12 .5% to 1 .35 MMcm/d while Federation Chemicals Limited (FEDCHEM) used 0 .78 MMcm/d. The Urea plant accounted for 0.25 MMcm/d.

The Methanol plant utilized gas at a rate of 0.84 MMcm/d which was a 8 .7% decrease over 1985. The plant encountered operational problems during the period.

The ISCOTT plant recorded an increase of 57.7% in gas consumption, an average of 0.41 MMcm/d.

Trintoc purchased gas from NGC for use in its refineries at the rate 0 .7 MMcm/d while Trinidad Cement limited and fifty small consumers (of which nine are new) purchased gas at rates of 0.2 and 0.23 MMcm/d respectively.

Gas Distribution /Projects

During 1986, the National Gas Company continued to manage the country 's natural gas transmission system. The company was again engaged in numerous activities all designed towards maintaining and/or improving the quality and reliability of the natural gas supply to consumers in various parts of the island.

These activities included:

- Routine pipeline maintenance including corrosion surveys and right-of-way restoration.
- General preventive maintenance work to on-line facilities including sand-blasting and painting of facilities at Beachfield.
- Restoration and improvement of access roads to facilities along the 760mm (30 inch) and 600mm (24 inch) transmission lines.
- Successful pigging of an on-shore portion (Beachfield to Phoenix Park) of the 760 mm (30 inch)

transmission line . The removal of substantial quantities of liquid from this line resulted in a general improvement in the pressures observed at the consumer end of the system.

- Clean out of the slug catcher and modifications to the liquid knock-out facilities at Phoenix Park and Beachfield. These modifications will facilitate the more efficient removal of condensate at these installations.

- Installation of cathodic protection system on the 760 mm (30 inch) cross country pipeline.

- Commencement of design work on three (3) important projects identified in 1985. These were:-

    - The establishment of a Natural Gas Liquids Recovery Plant to improve the quality of gas supplied to industrial consumers . This facility will reduce the incidence of liquid dropout in transmission lines and distribution equipment and will also recover valuable/ saleable hydrocarbon liquids . Preliminary design work on this facility is complete and the project is awaiting a firm financial commitment by investors.

    - The expansion of compression facilities on the NGC Teak platform to recover an additional 30 MMcfd of low pressure associated gas . Preparatory work for the installation of two 15 MMcfd compressors is underway and actual installation is expected to begin early 1987.

    - The construction of a Heliport at Camden Field, Couva . Preliminary design work on this facility was initiated in the last quarter 1986 and will continue into 1987.

The Ministry of Energy and Natural Resources completed work on the first phase of a project designed to superimpose the natural gas transmission system on cadastral sheets. Work is continuing on the second phase which involves the development of a comprehensive distribution pipeline grid system for each of the country's industrial estates.

TABLE IX
NATURAL GAS PRODUCTION BY COMPANIES 1982 - 1986
(Thousand Cubic Metres Per Day)

COMPANY	1982	1983	1984	1985	1986
Amoco	12 210	13 828	16 445	17 332	17 715
Trinmar	1 698	1 637	1 749	1 735	1 570
Trintopec	746	705	604	588	578
Trintoc (P-a-P)	895	643	493	460	465
Trintoc (P/F)	450	494	457	423	448
P.C.O.L.	3	4	2	3	4
Total	16 002	17 311	19 750	20 541	20 780

TABLE X
GAS UTILIZED BY NON-OIL COMPANIES
(Thousands Cubic Metres Per day)

COMPANY	1982	1983	1984	1985	1986
T.T.E.C.	2 832	3 001	2 832	2 775	2 952
	(100)	(106)	(100)	(98)	(104)
Fertrin	1 670	2 492	2 492	2 520	2 550
	(59)	(88)	(88)	(89)	(90)
Tringen	1 132	1 132	1 189	1 189	1 353
	(40)	(42)	(42)	(42)	(47)
Methanol	0	0	623	906	843
			(22)	(32)	(29)
Fedchem	1 076	1 104	793	767	779
	(38)	(39)	(28)	(27)	(27)
Iscott	283	340	283	255	406
	(10)	(12)	(10)	(9)	(14)
Urea	0	0	0	226	254
				(8)	(8)
T.C.L.	85	85	198	141	196
	(3)	(3)	(7)	(5)	(6)
Others	170	170	170	226	231
	(6)	(6)	(6)	(8)	(8)
Total	7 248	8 324	8 580	9 005	9 564
	(256)	(296)	(303)	(318)	(333)

N.B. Figures in parenthesis are in MMSCF/DAY

TABLE XI
NATURAL GAS UTILIZATION 1982 - 1986
(Million Cubic Metres / Day)

	COMPANY	1982	1983	1984	1985	1986
OIL COMPANIES						
REFINERY	Trintoc(P-a-P)	1.35	1.26	1.20	0.93	1.00
(AS FUEL)	Trintoc(P/F)	0.29	0.29	0.26	0.28	0.24
	Sub Total	1.64	1.55	1.46	1.21	1.24
FIELD USE						
(AS FUEL)		0.83	1.00	0.97	0.96	1.02
PRODUCTION USE		2.63	3.06	4.70	4.76	6.40
	Sub-Total	5.10	5.61	7.13	6.93	8.66
NON-OIL COMPANIES						
FERTILIZER	Fedchem	1.09	1.12	0.80	0.76	0.78
MANUFACTURE	Fertrin	1.69	2.52	2.52	2.52	2.55
	Tringen	1.15	1.20	1.20	1.19	1.35
	Urea	0.00	0.00	0.17	0.25	0.26
	Fertilizer					
	Sub-Total	3.93	4.84	4.69	4.72	4.94
POWER						
GENERATION	T & TEC	2.86	3.04	2.86	3.00	2.95
CEMENT	Trinidad					
MANUFACTURE	Cement Limited	0.09	0.09	0.20	0.14	0.20
OTHER	Methanol	0.00	0.00	0.63	0.91	0.84
LARGE CONSUMERS	Iscott	0.29	0.34	0.29	0.26	0.41
SMALL CONSUMERS		0.17	0.17	0.17	0.22	0.23
	Sub-Total	7.34	8.48	8.84	9.25	9.57
	GRAND TOTAL	12.44	14.09	15.97	16.18	18.23
% UTILIZATION		78.00	81.00	81.00	80.00	87.73

TABLE XII

OVERALL GAS UTILIZATION - 1
(Cubic Metres/Day)

		JAN - JUNE	JUL - DEC	YEAR'S AVG.
OIL COMPANIES:				
REFINERY		1 174	1 306	1 241
FIELD USE		987	1 048	1 017
PRODUCTION USE		6 278	6 623	6 398
	SUB-TOTAL	8 439	8 977	8 656
NON-OIL COMPANIES:				
POWER GENERATION		2 919	2 938	2 953
FERTILIZER MANUFACTURE		4 779	5 016	4 938
IRON AND STEEL MANUFACTURE		350	457	407
CEMENT MANUFACTURE		179	212	197
SMALL USERS		296	164	232
METHANOL		742	931	843
	SUB-TOTAL	9 265	9 718	9 570
	GRAND TOTAL	17 704	18 695	18 226
% UTILIZATION		86.2	90.9	87.7

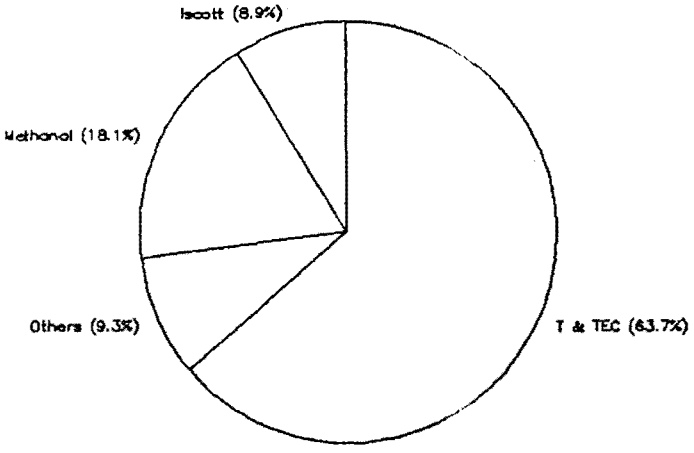
TABLE XIII

ANNUAL STATISTICS FOR NATURAL GAS PRODUCTION AND UTILIZATION 1982 - 1986

	1982		1983		1984		1985		1986	
	MILLION M3	%	MILLION M3	%	MILLION M3	%	MILLION M3	%	MILLION M3	%
PRODUCTION	5 841	100	6 319	100	7 229	100	7 413	100	7 585	100
GOR (M3/M3)	569		681		733		741		775	
A. USED AS FUEL IN FIELDS	301	5.2	360	5.7	355	4.9	352	4.7	447	5.9
IN REFINERIES	595	10.1	552	8.7	534	7.4	440	5.9	453	6.0
IN OTHER INDUSTRIES	1 947	33.2	2 171	34.4	1 663	23.0	2 165	29.3	2 290	30.2
SUB TOTAL	2 843	48.5	3 083	48.8	2 552	35.3	2 957	39.9	3 190	42.1
B. OTHER COMPLETE UTILIZATION:										
USED AS PROCESS GAS	689	11.9	919	14.5	1 105	15.3	1 120	15.1	1 203	15.9
INJECTED INTO FORMATION										
CONVERTED TO C.H.P.S.	0	0.0	1	0.0	1	0.0	1	0.0	1	0
SUB TOTAL	689	11.9	920	14.5	1 106	15.3	1 121	15.1	1 203	15.9
C. VENTED										
AFTER USE OF PNEUMATIC ENERGY	958	16.4	1 121	17.7	1 715	23.7	1 731	23.0	1 890	24.9
WITHOUT USE	1 350	23.2	1 195	19.0	1 857	25.7	1 601	21.6	1 126	14.8
SUB TOTAL	2 308	39.6	2 316	36.7	3 572	49.4	3 332	44.6	3 016	39.8

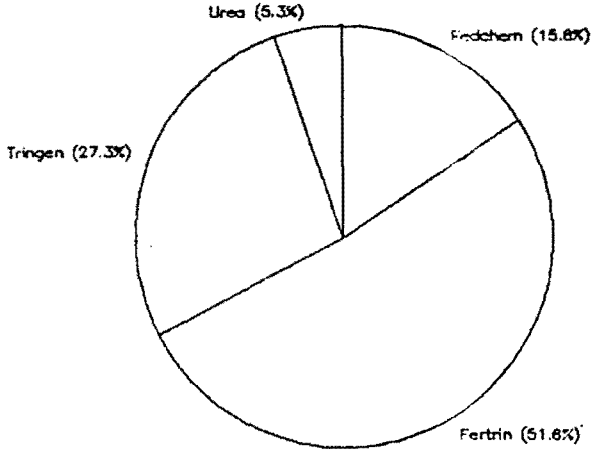
NON–OIL COMPANIES GAS UTILIZATION

OTHER LARGE CONSUMERS 1986



NON–OIL COMPANIES GAS UTILIZATION

FERTILIZER MANUFACTURE 1986



NITROGENOUS FERTILIZERS AND METHANOL

Total production of ammonia during 1986 was 1 399 554 MT, an increase of 5.8% over the 1985 production while total exports during 1986 was 1 411 334 MT, a corresponding increase of 26.0%.

At Fertrin, the '01' unit produced a total of 397 235 MT of ammonia, an increase of 0.6% over the 1985 production. The '02' unit produced a total of 397 898 MT of ammonia, an increase of 2%. The total ammonia production from Fertrin was 795 133 MT, an overall increase of 1% over last year. Total sales of anhydrous ammonia from Fertrin was 818 055 MT, an increase of 2.5% over 1985. Of this total, 296 917 MT were sold to the adjacent urea plant, with the remaining 521 138 MT being exported.

At Federation Chemicals Ltd. (FCL), the Braun unit produced a total of 229 393 MT of anhydrous ammonia, an increase of 8.6% over the 1985 production. Total exports from the Braun units during 1986 was 203 450 MT, a decrease of 8%.

The Trinidad and Tobago Nitrogen Company Ltd. (Tringen) produced a total of 375 028 MT of anhydrous ammonia, an increase of 14.7% over 1985. Total exports from the Tringen unit during 1986 were 389 829 MT, a 26.6% increase. This increase in production was due to fewer maintenance problems during the year.

During 1986 the Methanol Plant produced 330 762 MT of methanol, a decrease of 8.1% below the 1985 production. Various operational problems of the reformer, the process flare and the compressors were responsible for this decrease. Total exports during 1986 were 315 396 MT, a corresponding decrease of 5.8%.

The Urea Plant produced 490 311 MT of granular urea during 1986, an increase of 43.8% over the previous year. The main reason for this increase was a much reduced plant downtime. Total sales during 1986 was 474 815 MT of granular urea, an increase of 34.6%. Of this total, 471 087 MT were exported while the remaining 3 728 MT were sold locally.

TABLE XIV
PRODUCTION AND EXPORT OF NITROGENOUS FERTILIZER AND METHANOL 1985 - 1986
(tonnes)

Company	Product	Production		Export	
		1985	1986	1985	1986
Fedchem	Anhydrous Ammonia	211 312	229 393	223 174	203 450
Tringen	Anhydrous Ammonia	326 938	375 028	307 929	389 829
Fertrin	Anhydrous Ammonia	784 666	795 133	589 126	818 055
	Sub Total	1 322 916	1 399 554	1 120 229	1 411 334
NEC	Urea	340 955	490 311	352 796	474 815
NEC	Methanol	360 104	330 762	334 845	315 396

Note: NEC - National Energy Corporation

ACCIDENTS

During 1986, four hundred and twenty-six accidents were reported to the Ministry of Energy. This figure includes the one hundred and seventy-four accidents which occurred at the Point Fortin and Pointe-a-Pierre refineries and represents a significant decrease of one hundred and forty-six (25%) when compared with last year's figure of five hundred and seventy-two.

Of the two hundred and fifty-two accidents which occurred on the land and offshore producing fields, Trintoc and Trinmar accounted for one hundred and sixty-four (66%). Forty-two accidents (17%) were reported by Amoco while Trintopec reported thirty-five (14%). The two hundred and fifty-two reported accidents are 26% lower than the corresponding figure for 1985.

Twenty-four percent of the accidents occurred in drilling operations, 35% in production operations and 19% in engineering-related activities. Contractor accidents accounted for 34% of all reported accidents.

Personnel Accidents

Accidents were classified as serious and non-serious depending on the extent of the injury sustained. Serious accidents totalled two hundred and forty-four, showing an increase of nine over last year's figure of two hundred and thirty-five. These accidents consisted mainly of dislocations, low-back injuries, deep cuts and lacerations.

Non-serious accidents which amounted to eight showed a marked decrease of ninety-five below the figure for 1985. These accidents consisted mainly of bruises, abrasions and soft tissue injuries.

Approximately 1,894 days were lost as a result of both serious and non-serious accidents.

There were two fatalities in 1986. The first occurred on March 06, 1986 at Trintoc, Barrackpore as pipes were being transported up an incline to a new well site and the second on August 02, 1986 at the Pointe-a-Pierre Acid Plant when restoration work of a drying column was in progress.

Other Accidents

Eighteen serious accidents were investigated by the Ministry of Energy during 1986. These accidents included "blow-outs", fires and crane boom failures. Four of these were considered as major accidents.

The first major accident took place when a fire destroyed four compressors and other auxiliary equipment on Compressor Platform I on March 16, 1986. The compressor

platform is located in Trinmar's Soldado Main Field.

On June 20, 1986 the boom of the Dolphin Titan Crane collapsed while offloading drillpipes from Amoco's Poui B platform. The boom was subsequently replaced. However, a similar accident occurred on September 22, 1986 while a logging unit was being offloaded from a vessel.

The final major accident took place shortly after midnight on October 10, 1986 when a blow-out occurred on Well No: SB-10 Rd. The blow-out lasted approximately 12 hours. However, all fifty-two persons aboard the Samaan B platform in Amoco's licensed area were safely evacuated.

General

The Ministry of Energy continued to hold discussions with all petroleum companies in an effort to ensure that safety awareness was enhanced within the petroleum industry.

TABLE XV
ACCIDENT STATISTICS 1986

			SERIOUS				NON-SERIOUS			
COMPANY	TOTAL	FATALITY	D	P	E	O	D	P	E	O
AMOCO	42		24	10	0	7	-	-	-	1
NATIONAL GAS	11		-	-	-	11	-	-	-	-
PCOL	-		-	-	-	-	-	-	-	-
TRINMAR	80		17	22	21	14	2	2	1	1
TRINTOC	84	1	14	35	27	7	-	-	1	-
TRINTOC REFINERY	* 174	* 1	-	-	-	-	-	-	-	-
TTPCL	35		3	23	-	9	-	-	-	-
TOTAL	252	1	58	90	48	48	2	2	2	2

D - DRILLING P - PRODUCTION E - ENGINEERING O - OTHERS

* Refinery accidents under the jurisdiction of Inspectorate Division not included in totals.

ENERGY PLANNING

The major activities undertaken by the Energy Planning Division in 1986 were as follows:-

Routine Matters

- The issuing and renewal of retail marketing licences for service stations.
- The preparation and completion of the annual report and monthly bulletins.
- The monitoring of marketing trends for products of the energy-based industries.
- The finalisation of the 1985 National Energy Balance. An analysis of the consumption and production patterns is being undertaken. In addition a preliminary report on the National Energy Balance 1979-1985 has been prepared.
- Assessment of crude and product prices in Trinidad and Tobago for taxation purposes.
- An assessment of the CNG pilot project.
- Preparation of petroleum revenue projections.

Studies and Reports

In addition to the above assignments, studies were undertaken on the following:-

- The economic viability of Service Stations.
- A Draft Energy Policy of Trinidad and Tobago was completed. It incorporates energy policy measures instituted to date.
- The development of a new methodology for the determination of ex-refinery prices for petroleum products sold in Trinidad and Tobago. This system replaced the previous mechanism which was dependent principally on Platt's Caribbean Product Price Postings from Aruba and Curacao and which became extinct with the cessation of these postings.
- The Drillings Mud market in Trinidad and Tobago.

Domestic Petroleum Product Consumption

Overall domestic petroleum product consumption for 1986 dropped by 3.0%. Motor gasoline sales rose by 1.1% over the 1985 figure of 543.8 million litres. There were similar increasing trends for L.P.G. and aviation turbo fuel of 2.5% and 49.1% respectively. The latter increased consumption was due to the utilization of DC-9 airplanes flying the Trinidad-Tobago route.

In 1986, motor gasolines comprised 65.2%; auto diesel 18.3% and L.P.G. 10.3% of total domestic petroleum product consumption. Aviation turbo fuel and kerosines contributed 26.5 million litres to the total consumption, just over half of the remaining percentage.

It must be noted that previous data given for aviation gasoline and aviation turbo fuel contained an export element. These figures have been revised to reflect only local consumption.

Domestic Petroleum Product Consumption

(Million Litres)

Product	1982	1983	1984	1985	1986
Motor Gasoline	497.8	523.1	535.8	543.8	549.8
Kerosines	27.3	19.1	15.8	13.3	10.1
Auto Diesel	223.6	206.8	187.2	180.4	153.9
Marine Diesel	5.4	4.6	2.9	0.3	0.1
L.P.G.	76.8	84.4	80.5	85.1	87.2
Av. Gasoline	0.6	0.6	0.6	0.5	0.5
Av. Turbo Fuel	14.1	14.2	12.4	11.0	16.4
Fuel Oil	41.3	35.6	27.6	7.6	1.3
Lubes & Greases	11.6	11.2	10.3	10.3	12.5
Bitumen	54.3	24.0	21.5	17.2	11.3
Total	952.8	923.6	895.3	869.5	843.1

SUBSIDY ON LOCAL PETROLEUM PRODUCTS

Throughout 1986, the wholesale and retail prices of petroleum products in the domestic market remained at the prices set in January 1984. (Table A).

The subsidy for the year was $49,357,585 (Table B). The increase over the previous two years was attributable to the devaluation of the Trinidad and Tobago currency in late 1985. Consequently, the subsidy rates for the first two months in 1986 were $15.1 million and $7.8 million respectively. The sharp decline in crude oil prices during these early months resulted in lower product prices and from March onwards subsidy values decreased to pre-devaluation levels . The fluctuation in the price of crude and the concomitant changes in the ex-refinery prices yielded "Surplus Income" of $60.4 million, payable to the Treasury.

Early 1986, officials of the Ministry of Energy and Natural Resources together with those from the Ministry of Finance and Planning, developed a new method for arriving at the ex-refinery prices of petroleum products, taking into account local refinery costs. The need for a new method was essentially a result of the closure of the refineries at Curacao and Aruba, which since 1974 had provided the basis for the calculation of the domestic product prices.

In essence the new method seeks to relate ex-refinery product prices to the price of crude, the domestic refining industry and product price levels in the Caribbean . This system, referred to as the "market related method" became effective in March 1986.

TABLE A

PRICE OF PETROLEUM PRODUCTS
DOMESTIC MARKET

PRODUCT	WHOLESALE PRICE (Cents/Litre)	RETAIL PRICE (Cents/Litre)
Premium Gasoline	77.0	85.0
Regular Gasoline	73.0	80.0
Kerosine	71.0	77.0
Auto Diesel (other than to N.F.C.O.)	69.0	75.0
Marine Diesel	70.0	70.0
L.P.G. (cents/lb)	52.0	75.0

TABLE B

SUBSIDY FOR PERIOD 1977-1986

YEAR	TOTAL SUBSIDY	TT CENTS/BBL
1986	49,357,585	80.52
1985	36,188,071	56.09
1984	31,807,121	52.00
1983	155,616,925	265.83
1982	345,694,251	533.15
1981	327,286,922	469.48
1980	286,628,408	368.84
1979	178,674,425	227.85
1978	93,636,718	222.42
1977	87,341,068	105.00

TABLE C

PETROLEUM LEVY PAID BY OIL PRODUCING COMPANIES - 1986

COMPANY	TT DOLLARS
AMOCO	25,289,303.64
TRINTOPEC	10,558,696.64
TEXACO	3,801,636.28
TTOC (PF)	6,330,367.95
TTOC (P-A-P)	3,377,580.22
	49,357,584.73

POLLUTION INCIDENTS

Pollution incidents continued at a disturbingly high level during 1986. There were 130 reported oil spill incidents in 1986 with 39,800 bbls being spilled, 25,600 bbl (64%) being recovered, and 14,200 bbl (36%), irretrievably lost to the environment. The table below gives a comparison of the situation with respect to pollution in 1985 and 1986.

COMPARISON OF POLLUTION STATISTICS 1985-1986

	1985	1986	% Change in 1986
Spill Incidents	90	130	(+) 44%
Oil Spilled in bbl	13,700	39,800	(+) 190%
Oil Recovered in bbl	12,400	25,600	(+) 106%
Oil lost to environment in bbl	1,300	14,200	(+) 992%

Company-breakdown of Oil to environment (in bbl)

Trintoc	736	10,176	(+) 1,283%
ATOC	321	71	(-) 78%
Trintopec	138	3,799	(+) 2,653%
Trinmar	107	141	(+) 32%
PCOL	-	13	

POLLUTION STATISTICS

COMPANY	No. of Incidents	Estimated Quantity Spilled (bbl)	Estimated Recovery (bbl)	Estimated Net Loss (bbl)	Percent Recovery
TRINTOC	113	34,785	24,609	10,176	71%
ATOC	7	71	-	71	
TRINTOPEC	6	4,790	991	3,799	21%
TRINMAR	3	141	-	141	
PCOL	1	13	-	13	
TOTAL	130	39,800	25,600	14,200	64%

Trintoc with 113 reported oil spill incidents experienced a 77% increase over its 1985 figure. The majority of oil spills was due to pipeline leaks in the company's Eastern and Western District fields. The country's largest oil loss from a single incident in 1986 resulted from a leak in a fuel oil storage tank at Trintoc's refinery at Pointe-a-Pierre. The oil lost in this spill caused considerably damage to the fishing industry along the Icacos peninsula. Pollution claims made by the fishermen through the fishing co-operative were settled by the company.

Amoco Trinidad Oil Company reported seven oil spill incidents offshore Point Galeota with an estimated net loss of 71 barrels of crude oil.

Trinmar reported three oil spill incidents offshore Point Fortin with an estimated net loss of 141 barrels of crude oil.

Trintopec experienced six oil spill incidents with an estimated net loss of 13 barrels of crude oil, while Premier Consolidated lost 13 barrels of oil in one oil spill incident.

Pollution control activities

In response to the increasing incidents of oil pollution, the Ministry reorganized its pollution monitoring and response activities in order to ensure that area reports are received on a daily basis so that the Ministry's response to an oil spill could be more timely, and as a result, minimize the adverse effects in the environment.

The National Oil Spill Contingency Plan (NOSCP), the document formulated to provide the coordinated strategies for controlling oil pollution incidents, was activated twice during 1986. As a consequence, two meetings of the NOSCP operations group were held during the year.

These meetings had the following objectives:-

- To review the previous years accomplishments.
- To perform an in-depth analysis of the efficiency and effectiveness of the clean-up procedures used during the activation of the NOSCP
- To reintroduce daily reporting by the Area Controllers of the results of the surveillance of

their designated areas in the NOSCP.

- To plan for the inclusion of Hazardous Materials Contingency Planning under the aegis of the NOSCP.

- To increase the membership of the NOSCP's Technical Subcommittee so as to improve its ability to advise as well as to assist in making decisions on relevant matters.

During 1986, the Trinidad and Tobago/Venezuela Oil Spill Co-operative Agreement was signed. This agreement sought to establish a basis for cooperation and mutual assistance between the Governments of Trinidad and Tobago and Venezuela, with this Ministry and its counterpart Ministry in Venezuela being the respective executing agents in the event of serious oil spills occurring in their inter-territorial waters.

The National Controller attended an IMO Meeting of the Advisory Group on Marine Pollution held in London in April, 1986. The meeting was summoned to address the problem of countries faced with the threat of major marine pollution from spillages of oil and other hazardous substances.

Three officers of the Ministry attended a one week seminar which was part sponsored by the IMO, on the handling, storage and transport of dangerous and hazardous substances. A paper on "Emergency Response Organizations" was delivered by Mr. Hugh Hinds at the seminar.

The Ministry continued to upgrade its inventory of photographic equipment used in the NOSCP programme for investigating and documenting oil spills.

During the year, fifteen new chemicals were added to the list of chemicals approved by this Ministry, for use in the Oil Industry. The Ministry stipulated the necessary guidelines to ensure their proper use to avoid harmful effects on the environment.

INSPECTION

The Inspection Section comprising the Inspection Unit and the Gas, Storage and Pipelines Unit has a mandate to ensure that companies operating within the Petroleum Industry adhere to sound health and safety practices. The section seeks to ensure that the objective is met by the following measures:-

- Conducting regular inspections to identify all potential hazards involving plant, personnel and operating methods, so as to ensure that the safety standards adopted by the companies comply not only with the Government's legal requirements, but also with accepted international practices;

- Communicating with the companies to ensure compliance with the recommendations made by the Inspectorate and;

- Reviewing and granting approval of all new plant and major facilities intended for use within the industry.

The Inspectorate consists of Mechanical Engineers and Petroleum Inspectors. The activities of the section during 1986 are outlined below:

Inspection Unit

The principal functions of this unit involved the inspection of the following:-

- land production facilities

- pollution abatement facilities

- offshore production installations

- offshore drilling and production rigs

- land drilling and production rigs

Apart from the routine inspections, a safety survey was conducted on the above mentioned plants and equipment, and companies were notified of the deficiencies so that corrective action could be taken. Deficiencies included the use of poor maintenance practices which resulted in severely corroded storage tanks and pipelines, insufficient use of personal safety equipment, inadequate fire detection and protection systems on compressor platforms, and poorly designed and maintained pollution abatement facilities. The survey also revealed that all companies should immediately place greater emphasis upon their maintenance policies for pipelines, plant and equipment.

In addition, periodic field visits were introduced in an effort to better identify sources of pollution and thus reduce potential threats to the environment.

A programme to inspect the surface facilities of all secondary recovery schemes was initiated. In this context, data collection and the training of personnel are almost completed.

The inspection unit was also involved in accident investigations, special studies and projects, and the preparation of draft guidelines for the inspection of rigs, platforms and land production facilities. A summary of inspections conducted during 1986 is given in Table XVII.

Gas, Storage and Pipelines Unit

During 1986, this unit was mainly involved in the following activities:

- gas meter calibrations;
- evaluation and approval of all applications for petroleum product storage;
- advising Town and Country Planning Division on matters relating to new land development projects which are in close proximity to oil and gas installations.
- inspection of gas stations and petroleum product storage facilities.

The unit also conducted numerous investigations related to petroleum product storage and gas pipeline incidents.

Two LPG bottling plants at Duncan Village and Otaheite were constructed during the year. Each plant is capable of filling 1,000 - 9 kg - cylinders per hour. These also engaged the attention of the Inspection Unit.

A summary of inspections conducted during 1986 is given in Table XVIII.

TABLE XVI

INSPECTION UNIT

SUMMARY OF INSPECTION CONDUCTED -1986

INSPECTIONS CONDUCTED ALL PETROLEUM COMPANIES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JUL.	AUG.	SEPT	OCT.	NOV.	DEC.	TOTAL	AV. PER MONTH	INSP * FREQ.
LAND PRODUCTION FACILITIES	39	29	67	43	73	27	30	14	41	51	44	28	486	40.5	2.05
POLLUTION ABATEMENT FACS.	2	0	5	0	6	1	0	0	5	2	3	1	25	2.1	2.27
OFFSHORE PRODUCTION FACS.	10	12	4	16	11	21	8	1	11	10	9	8	121	10.1	1.55
OFFSHORE DRILLING & PRODUCTION RIGS	1	2	1	1	0	1	2	1	0	0	3	1	13	1.1	2.17
LAND - DRILLING RIGS	2	2	1	1	1	1	4	1	0	3	3	0	19	1.6	3.17
LAND - PRODUCTION RIGS	7	4	5	6	7	5	10	1	0	8	4	2	59	4.9	1.09
FIELD VISITS	0	0	0	0	0	1	19	6	1	0	5	0	32	2.7	-
INVESTIGATIONS	0	0	0	1	2	1	1	0	0	1	1	2	9	0.8	-
AVERAGE INSPECTION/ PER MONTH	61	49	83	68	100	58	74	24	58	75	72	42	-	-	-

* INSP. FREQ. = annual inspection average

TABLE XVII
GAS, PIPELINES & STORAGE UNIT
SUMMARY OF INSPECTIONS CONDUCTED - 1986

INSPECTIONS CONDUCTED	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL	AVG PER MONTH	INSP. FREQ.
GAS METER	18	6	11	16	18	10	9	15	4	2	-	-	109	9.1	3.4
GAS STATION	2	2	-	-	4	-	8	9	-	-	-	13	38	3.2	0.2
NEW STORAGE DIESEL,LPG MOGAS	9	6	6	10	11	7	6	6	9	9	7	4	90	7.5	-
LAND DEV. TOWN & COUNTRY	1	-	-	-	1	1	3	-	-	2	1	1	10	0.8	-
INVESTIGATIONS	-	-	4	5	4	2	3	-	6	1	3	-	28	2.3	-
AVERAGE INSPECTION/ MONTH	30	14	21	31	38	20	29	30	19	14	11	18	275		

LEGAL

Nineteen eighty-six was an active year in respect to some challenging issues which arose as a result of the progress of petroleum activities despite the prevailing economic recession. However, while the period under review saw the birth of novel issues in a number of areas, many of these issues were not finalised since it was not politically expedient to do so in an election year.

In addition to the normal routine matters which were handled by this section, the following activities were completed.

(i) Contracts

- Contract made between the Permanent Secretary, Ministry of Energy and Natural Resources and the Ryder Scott Company with respect to the Gas Reserve Study.

- Contract in respect of consultancy services by Marsoft Incorporated.

(ii) Extension of Licences

Amoco Trinidad Oil Company applied for and was granted a three year extension of its Exploration Licence No. 9051 of 1970 from January 9, 1986 to January 8, 1989.

(iii) Assignments

Texaco Trinidad Inc. assigned its 30% interest in South East Coast Consortium Licence to Trinidad and Tobago Oil Company Limited.

(iv) Applications for Licences

Trinidad and Tobago Petroleum Company Limited applied for an Exploration and Production (Public Petroleum Rights) Licence over approximately 14,403 acres of State Land in the Wards of Savana Grande, Moruga, La Brea, Erin, Guayaguayare and Trinity. However, this application was temporarily deferred because an exercise involving the rationalisation of leases on land held by national oil companies was in progress. It was decided that the formulation of a policy which was consistent with the rationalization process should be instituted before any further allocation of land was made to oil companies.

(v) Grant of Licences

- Three Exploration and Production Licences in respect of the areas of Mahaica, South West Peninsula and Catshill/Ortoire were granted to the Trinidad and Tobago Oil Company Limited.

- Natural Gas Systems Limited was granted a Retail Marketing Licence for the sale of compressed natural gas.

(vi) Legislation

It is expected that the Quarry Laws and the Compressed Natural Gas Regulations will be finalised shortly by the Chief Parliamentary Counsel since the technical officers have submitted their comments on the relevant draft legislation.

(vii) Committees

The Committee appointed by Cabinet to review the existing method for evaluating royalty on crude submitted its final report and recommendations were made with respect to the rate of royalty the relevant oil companies would be required to pay.

INFORMATION SERVICES

During 1986, the library was reorganised to utilize the additional space. The highlight of the year was the arrival of the IBM AT computer and Tallgrass 20 MB hard disk, followed soon after by the receipt of the UNESCO developed, CDS/ISIS Micro-computer Software Package for Libraries. The library staff developed a data base which at the end of the year was well established and contained 300 entries. This facilitated testing the capabilities of the programme. Data entry is proceeding apace with three clerical officers trained for this task.

Due to financial constraints very few books were purchased in order to maintain the periodical holdings of the library.

Books received:

Purchase :	37 titles	66 vols.
Gift :	1069 titles	1142 vols.

Periodicals received:

Purchase:	1213 titles	3109 vols.
Gift :	1231 titles	1758 vols.

Articles indexed. - 2520

Loans

Books	- 328
Periodicals	- 199

Officers continued to use the library and an increase in the number of school children, university students and members of the general public was noted. In order to cope with the demand for information at the school level, handouts giving basic information on drilling, refining, history of the industry and similar topics, were made available.

All members of the library staff participated in training courses held internally and the Librarian and Library Assistant II attended courses relating to the development of computerized data bases, held at CARIRI and at the University of the West Indies, Jamaica.

The Librarian attended meetings with librarians of other libraries in the oil industry in order to organize co-operative activities in areas such as the acquisition and indexing of periodicals. A list of periodicals held by all these libraries is now being prepared.

The library staff looks forward to having the catalogue on line and the South Office library connected by modem to the data base in Port-of-Spain, early in 1987.

TRAINING

In view of the downturn of the economy in Trinidad and Tobago during 1986, and a consequent shortage of funds, in order to maintain its level of training, the Ministry of Energy and Natural Resources intensified the use of its in-house expertise by making full use of these in conducting training courses during 1986. Ministry's personnel also participated in some of the courses put on by local training agencies. All levels of staff were exposed to training which covered a wide range of topics.

The Ministry's in-house training programme under the direction of the Special Adviser was launched in February when computer courses such as An Introduction to Micro-computer, An Introduction to PC-Dos and Wordstar 2000 - A Word Processor for the Secretarial Staff were offered. The Special Adviser was assisted by other Ministry personnel in lecturing on these courses.

The Permanent Secretary conducted a course entitled "Economics for Engineers and Geologists" which was of six weeks duration. The Chief Librarian conducted a short course on the Use of the Library - How to get the most out of it.

Because of the relatively large number of new clerical staff that joined the Ministry in 1986, the Ministry's Introduction Course was put on. This course is designed to acquaint new staff with the Ministry's operations, how they fit into it, and the overall relationship between this Ministry and other Government Ministries and agencies and the oil companies. Here again, several senior technical staff lectured on the many varied topics which are covered in this course.

As far as the non-in-house training programme was concerned the Institute of Languages (of NIHERST) conducted an intermediate level course in Conversational Spanish for senior personnel and senior secretaries at the Ministry's office over the period January to July. This was a follow-up to the elementary level course done the previous year.

The Ministry made maximum use of the Central Training Unit when it participated in some of the courses put on by the Unit, and these included a Communications Skills Workshop which dealt with the writing of Cabinet Notes, and reports; Reception Training for Clerks, Secretarial Orientation, Basic Concepts in Mathematics, Environmental Sanitation for Cleaners, Janitors, Maids; Performance Appraisal and Staff Reporting; National Insurance Workshop and several others.

Although no new officers commenced overseas training courses in 1986, several officers continued their training at Universities abroad and at the University of the West Indies.

PETROLEUM TESTING LABORATORY

The laboratory analyzed 1,001 samples during the year . Monitoring of pollutants from the energy based industries formed a large part of the work undertaken. Tests were performed in the areas of:-

- Natural Gas Analysis.
- Octane ratings on super gasolines and light fractions from Royalty Lease Evaluations.
- Analyses of gas oils, fuel oils, lubricating oils.
- Effectiveness testing of dispersants.
- Analysis of scale samples, asphalts, brake fluids and other petroleum products.

Trouble shooting problems of petroleum product users also formed a large percentage of the work of the laboratory.

Effluent studies were carried out at the east coast operations of Amoco and Trintopec and a fortnightly monitoring programme was initiated in July at the N.E.C.'s Methanol Plant at Point Lisas.

Activities

(a) R.L.E.1

Royalty lease evaluations of crude oils continued as per the roster established with the Ministry of Energy and Natural Resources.

(b) Effluent Monitoring

Programmes were conducted on the east coast and Point Lisas. One inherent in the Point Lisas programme is the inability to determine methanol levels in the effluent water.

(c) Round Robin Testing

Round robin testing of petroleum products is continuing. The laboratories involved are:-

Trintoc	-	Pointe-a-Pierre
Trintoc	-	Penal
Petrojam	-	Jamaica
Mobil	-	Barbados
The P.T.L.	-	CARIRI

Collation of the results is being carried out by Trintoc Pointe-a-Pierre, from where the samples originate.

APPENDICES

&

FIGURES

APPENDIX 1

ANNUAL STATISTICS OF PRODUCTION, DRILLING, REFINING - EXPORTS AND IMPORTS 1986 - 1976

ITEM	UNIT	PERCENTAGE CHANGE 1986 OVER 1985	1986	1985	1984	1983	1982
1. CRUDE OIL	'000 BBL	-4.1	61,640	64,259	62,041	58,344	64,618
2. CASING HEAD GASOLINE (C.H.P.S.)	'000 BBL	+8.7	25	23	29	34	28
3. TOTAL CRUDE OIL AND NATURAL GASOLENE (1+2)	'000 BBL	-4.1	61,665	64,282	62,071	58,378	64,646
4. CRUDE OIL PRODUCTION - STATE OIL RIGHTS	'000 BBL	-4.3	59,176	61,845	59,734	55,988	62,215
5. CRUDE OIL PRODUCTION - PRIVATE OIL RIGHTS	'000 BBL	+2.1	2,464	2,414	2,308	2,356	2,403
6. TOTAL IMPORTS	'000 BBL	+0.2	3,860	3,852	6,774	8,133	27,046
7. IMPORTS OF REFINED PRODUCTS	'000 BBL	-50.0	1,805	3,609	6,428	8,133	3,654
8. IMPORTS OF CRUDE OIL FOR REFINING	'000 BBL	+542.0	1,560	243	346	0	23,392
9. IMPORTS OF OTHER OILS FOR REFINING AND BLENDING	'000 BBL	0	495	0	0	0	0
10. TOTAL EXPORTS	'000 BBL	-5.6	56,990	60,345	61,294	57,715	87,667
11. EXPORT OF CRUDE OIL	'000 BBL	-7.0	32,867	35,358	32,518	31,065	37,462
12. EXPORTS OF REFINED PRODUCTS	'000 BBL	-3.5	24,123	24,987	28,776	26,650	50,205
13. RUNS TO STILLS	'000 BBL	+0.9	29,936	29,673	28,147	27,178	55,105
14. NUMBER OF WELLS STARTED	AS STATED	-3.3	176	182	198	174	232
15. TOTAL NUMBER OF WELLS COMPLETED	AS STATED	-14.2	169	197	213	179	215
16. NUMBER OF DRILLING WELLS COMPLETED AS OIL WELLS	AS STATED	-14.7	133	156	165	162	169
17. NUMBER OF DRILLING WELLS ABANDONED	AS STATED	+28.6	18	14	17	13	26
18. TOTAL DEPTH DRILLED (ALL WELLS)	METRE	+11.5	222 294	199 402	206 830	183 797	252 936
19. DEPTH DRILLED ON STATE OIL RIGHTS	METRE	+14.1	219 246	192 149	200 438	163 539	220 747
20. DEPTH DRILLED ON PRIVATE OIL RIGHTS	METRE	-58.0	3 048	7 253	6 392	20 258	32 189
21. AVERAGE DEPTH OF COMPLETED WELLS (15)	METRE	+26.8	1 395	1 100	1 153	1 051	1 083
22. AVERAGE NUMBER OF WELLS PRODUCING	AS STATED	+1.3	3,209	3,167	3,142	3 140	3 372
23. AVERAGE NO. OF WELLS PRODUCED BY FLOWING	AS STATED	+8.3	352	325	319	344	392
24. AVERAGE NO. OF WELLS PRODUCED BY ARTIFICIAL LIFT	AS STATED	+0.5	2,857	2,842	2,823	2,796	2,980
25. AVERAGE DAILY PRODUCTION PER PRODUCING WELL	BARREL	-5.4	52.6	55.6	54.1	50.9	52.1
26. AVERAGE DAILY PRODUCTION PER FLOWING WELL	BARREL	0	139.7	139.7	139.6	121.4	149.1
27. AVERAGE DAILY PRODUCTION PER ARTIFICIAL LIFT WELL	BARREL	-8.9	41.9	46.0	44.0	42.1	39.6
28. TOTAL VALUE OF DOMESTIC EXPORTS	'000$	-5.2	4,854,712	5,120,719	5,044,400	5,431,684	7,118,368
29. TOTAL VALUE OF PETROLEUM PRODUCTS (ITEM 28)	'000$	-21.2	3,304,409	4,191,329	4,168,910	4,692,967	6,491,617
30. TOTAL VALUE OF LAKE ASPHALT PRODUCTS	'000$	+37.3	21,866	15,925	11,130	6,737	6,782
31. TOTAL NATURAL GAS PRODUCED	MILLION M^3	+2.3	7 585	7 412	7 228	6 318	5 841
32. USED AS FUEL	MILLION M^3	+7.9	3 190	2 957	2 552	3 102	2 842
33. REPLACED IN FORMATION	MILLION M^3	0	0	0	0	0	0
34. LOSSES, NOT COLLECTED	MILLION M^3	-42.9	149	261	249	214	297

continued

APPENDIX 1

ANNUAL STATISTICS OF PRODUCTION, DRILLING, REFINING - EXPORTS AND IMPORTS 1936 - 1976

1981	1980	1979	1978	1977	1976	ITEM	UNIT
69,107	77,613	78,249	83,778	83,619	77,673	CRUDE OIL	'000 BBL
38	37	44	60	61	53	CASING HEAD GASOLINE (C.H.P.S.)	'000 BBL
69,146	77,650	78,293	83,838	83,680	77,726	TOTAL CRUDE OIL AND NATURAL GASOLENE (1+2)	'000 BBL
66,602	74,879	75,399	80,701	80,612	74,704	CRUDE OIL PRODUCTION - STATE OIL RIGHTS	'000 BBL
2,505	2,734	2,850	3,077	3,007	2,969	CRUDE OIL PRODUCTION - PRIVATE OIL RIGHTS	'000 BBL
39,047	55,309	51,631	56,817	67,441	87,459	TOTAL IMPORTS	'000 BBL
440	0	0	0	1,681	2,503	IMPORTS OF REFINED PRODUCTS	'000 BBL
38,607	55,309	51,631	56,817	65,760	84,784	IMPORTS OF CRUDE OIL FOR REFINING	'000 BBL
0	0	0	0	0	172	IMPORTS OF OTHER OILS FOR REFINING AND BLENDING	'000 BBL
95,511	113,493	113,105	126,604	140,753	147,896	TOTAL EXPORTS	'000 BBL
42,519	46,075	46,282	54,008	50,936	44,408	EXPORT OF CRUDE OIL	'000 BBL
52,992	67,418	66,823	72,596	89,817	103,488	EXPORTS OF REFINED PRODUCTS	'000 BBL
63,345	78,343	82,857	85,882	99,536	127,595	RUNS TO STILLS	'000 BBL
206	156	190	236	235	224	NUMBER OF WELLS STARTED	AS STATED
206	183	184	215	217	207	TOTAL NUMBER OF WELLS COMPLETED	AS STATED
161	140	144	170	170	153	NUMBER OF DRILLING WELLS COMPLETED AS OIL WELLS	AS STATED
14	19	40	45	47	54	NUMBER OF DRILLING WELLS ABANDONED	AS STATED
239 609	205 492	380 592	272 826	281 116	280 326	TOTAL DEPTH DRILLED (ALL WELLS)	METRE
220 806	189 869	374 350	263 344	268,841	267 959	DEPTH DRILLED ON STATE OIL RIGHTS	METRE
18 803	15 623	6 242	9 482	12 275	12 367	DEPTH DRILLED ON PRIVATE OIL RIGHTS	METRE
1 132	1 084	2 068	1 179	1 279	1 354	AVERAGE DEPTH OF COMPLETED WELLS (15)	METRE
3 408	3,351	3,399	3,275	3,148	2,997	AVERAGE NUMBER OF WELLS PRODUCING	AS STATED
392	397	516	507	428	438	AVERAGE NO. OF WELLS PRODUCED BY FLOWING	AS STATED
3,016	2,954	2,883	2,768	2,720	2,559	AVERAGE NO. OF WELLS PRODUCED BY ARTIFICIAL LIF	AS STATED
55.4	63.3	63.0	70.1	72.8	71.0	AVERAGE DAILY PRODUCTION PER PRODUCING WELL	BARREL
118.8	248.9	215.4	271.4	335.7	328.5	AVERAGE DAILY PRODUCTION PER FLOWING WELL	BARREL
39.0	42.1	35.8	33.2	31.4	25.5	AVERAGE DAILY PRODUCTION PER ARTIFICIAL LIFT WE	BARREL
9,025,898	9,715,719	6,175,213	4,810,025	5,188,987	5,331,557	TOTAL VALUE OF DOMESTIC EXPORTS	'000$
8,051,501	9,127,773	5,715,496	4,379,188	4,787,280	4,960,604	TOTAL VALUE OF PETROLEUM PRODUCTS (ITEM 28)	'000$
1,134	3,253	3,355	360	3,051	4,426	TOTAL VALUE OF LAKE ASPHALT PRODUCTS	'000$
5 604	5 601	4 807	4 472	4 236	3 907	TOTAL NATURAL GAS PRODUCED	MILLION M^3
941	2 283	2 039	1 960	1 783	1 499	USED AS FUEL	MILLION M^3
0	0.1	0.5	3.2	9.4	48.1	REPLACED IN FORMATION	MILLION M^3
356	357	2 329	2 080	241	2 155	LOSSES, NOT COLLECTED	MILLION M^3

APPENDIX 11
MONTHLY ANALYSIS OF DRILLING AND WORKOVER WELLS - 1986
(Depth drilled in metres)

MONTH	NEW WELLS STARTED	DRILLING WELLS COMPLETED														OLD WELLS	
		OIL & GAS PRODUCERS		INJECTION WELLS		ABANDONED						COMPLETED		TOTAL WELLS	TOTAL AGGR DEPTH	AGGR DEPTH PER WELL	RE-COMPLETED	ABANDONED
						AFTER TESTING		DRY HOLES		TECHNICAL CAUSES		OTHER						
		NO.	AGGR DEPTH	NO.	AGGR DEPTH	NO.	AGGR DEPTH	NO.	AGGR DEPTH	NO.	AGGR DEPTH	NO.	AGGR DEPTH					
JANUARY	12	11	10 177	1	311	1	2 813	0	0	1	65	0	0	14	13 366	955	4	0
FEBRUARY	10	11	13 197	1	381	0	0	0	0	0	0	0	0	12	13 578	1 132	2	0
MARCH	10	8	15 636	0	0	0	0	1	613	0	0	0	0	9	16 249	1 805	3	0
APRIL	15	6	8 992	4	1 814	1	3 962	1	2 613	0	0	0	0	12	17 381	1 448	4	0
MAY	15	10	16 707	2	1 430	1	1 918	0	0	0	0	1	597	14	20 652	1 475	1	0
JUNE	10	9	13 118	3	2 358	0	0	0	0	1	1 234	0	0	13	16 710	1 285	0	0
JULY	16	14	26 284	0	0	0	0	2	3 886	0	0	0	0	16	30 170	1 886	1	0
AUGUST	12	10	15 423	0	0	0	0	3	6 553	0	0	0	0	13	21 976	1 690	2	0
SEPTEMBER	17	9	12 267	1	2 933	0	0	1	1 006	0	0	1	366	12	16 572	1 381	4	0
OCTOBER	19	14	21 633	0	0	0	0	1	363	2	3 023	0	0	17	25 019	1 472	3	1
NOVEMBER	19	16	21 353	3	1 429	0	0	1	2 591	0	0	0	0	20	25 373	1 269	0	0
DECEMBER	21	15	18 164	1	384	0	0	0	0	1	175	0	0	17	18 723	1 101	9	0
TOTAL 1986	176	133	192 951	16	11 040	3	8 693	10	17 625	5	4 497	2	963	169	235 769	1 395	33	1
TOTAL 1985	182	156	177 501	20	9 087	2	6 090	5	9 176	7	11 439	7	3 503	197	216 796	1 100	161	17

APPENDIX 11 A
LAND AND MARINE DEPTH DRILLED - 1986
(metres)

MONTH	STATE LAND	PRIVATE LAND	SUB-TOTAL LAND	MARINE	SUB-TOTAL STATE	TOTAL	RIG MONTHS	DAILY AVG. DEPTH	DAILY AVG. DEPTH/ RIG	MARINE % OF TOTAL DEPTH
JANUARY	12 294	0	12 294	3 678	15 972	15 972	8.95	515	58	23
FEBRUARY	8 449	699	9 148	4 862	13 311	14 010	9.06	500	55	35
MARCH	9 703	1 339	11 042	3 246	12 949	14 288	8.75	461	53	23
APRIL	10 826	0	10 826	6 543	17 369	17 369	9.70	579	60	38
MAY	14 665	0	14 665	5 731	20 396	20 396	10.42	658	63	28
JUNE	10 053	0	10 053	6 787	16 840	16 840	9.63	561	58	40
JULY	11 537	0	11 537	7 749	19 286	19 286	9.90	622	63	40
AUGUST	11 575	0	11 575	9 242	20 817	20 817	12.29	672	55	44
SEPTEMBER	13 927	0	13 927	3 048	16 975	16 975	10.86	566	52	18
OCTOBER	14 868	0	14 868	5 628	20 496	20 496	9.81	661	67	27
NOVEMBER	14 042	0	14 042	7 317	21 359	21 359	10.34	712	69	34
DECEMBER	15 626	1 010	16 636	7 850	23 476	24 486	10.36	790	76	32
TOTAL	147 565	3 048	150 613	71 681	219 246	222 294	120.07	609	61	32

APPENDIX 111
CRUDE OIL PRODUCTION BY MONTHS AND METHODS - 1986
(barrels)

MONTH	FLOWING			GAS LIFT			PUMPING		
	NO.OF WELLS	PRODUCTION	DAILY AV. PER WELL	NO.OF WELLS	PRODUCTION	DAILY AV. PER WELL	NO.OF WELLS	PRODUCTION	DAILY AV. PER WELL
JANUARY	346	1,486,053	138.5	471	2,487,065	170.3	2,352	1,172,298	16.1
FEBRUARY	341	1,331,919	139.5	472	2,375,361	179.7	2,368	1,021,978	15.4
MARCH	344	1,441,617	135.2	484	2,581,969	172.1	2,345	1,130,688	15.6
APRIL	367	1,424,101	129.3	492	2,532,560	171.6	2,385	1,122,230	15.7
MAY	371	1,469,386	127.8	489	2,681,974	176.9	2,414	1,139,952	15.2
JUNE	375	1,415,169	125.8	486	2,602,980	178.5	2,332	1,074,109	15.4
JULY	375	1,556,471	133.9	496	2,641,015	171.8	2,356	1,083,079	14.8
AUGUST	369	1,630,152	142.5	500	2,585,516	166.8	2,351	1,100,860	15.1
SEPTEMBER	360	1,501,022	139.0	487	2,451,600	167.8	2,355	1,075,828	15.2
OCTOBER	322	1,587,802	159.1	467	2,512,067	173.5	2,372	1,140,745	15.5
NOVEMBER	332	1,538,356	154.5	482	2,460,175	170.1	2,355	1,060,362	15.0
DECEMBER	322	1,570,340	157.3	490	2,537,566	167.1	2,297	1,098,261	15.4
TOTAL 1986		17,952,388			30,449,848			13,220,390	
AVERAGE 1986	352	49,185	139.7	485	83,424	172.1	2,357	36,220	15.4

Continued

APPENDIX 111
CRUDE OIL PRODUCTION BY MONTHS AND METHODS - 1986
(barrels)

MONTH	PLUNGER LIFT & OTHER METHODS			TOTAL NO. OF WELLS PRODUCING	TOTAL OIL PRODUCTION	DAILY AVG. B.O.P.D. PER PRODUCING WELL		SALT WATER	
	NO.OF WELLS	PRODUCTION	DAILY AV. PER WELL					PRODUCTION	% OF TOTAL FLUID
JANUARY	14	1,028	2.4	3,183	5,146,444	52.2	166,014	4,362,817	45.9
FEBRUARY	18	1,215	2.4	3,199	4,730,473	52.8	168,945	3,917,064	45.3
MARCH	25	1,629	2.1	3,198	5,155,903	52.0	166,319	4,470,387	46.4
APRIL	18	769	1.4	3,262	5,079,660	51.9	169,322	4,527,260	47.1
MAY	19	1,041	1.8	3,293	5,292,353	51.8	170,721	4,531,882	46.1
JUNE	16	904	1.9	3,209	5,093,162	52.9	169,772	4,462,013	46.7
JULY	13	6,211	15.4	3,240	5,286,776	52.6	170,541	4,369,240	45.2
AUGUST	13	1,073	2.7	3,233	5,317,601	53.1	171,536	4,328,723	44.9
SEPTEMBER	13	760	1.9	3,215	5,029,210	52.1	167,640	4,281,232	46.0
OCTOBER	19	1,447	2.5	3,180	5,242,061	53.2	169,099	4,297,546	45.0
NOVEMBER	10	723	2.4	3,179	5,059,616	53.1	168,654	4,237,850	45.6
DECEMBER	5	762	4.9	3,114	5,206,929	53.9	167,965	4,402,355	45.8
TOTAL 1986		17,562			61,640,188			52,188,369	
AVERAGE 1986	15	48	3.2	3,209	168,877	52.6	168,877	142,982	45.8

APPENDIX 111 A
ANALYSIS OF PRODUCTION BY OPERATING COMPANIES - 1986
(barrels)

COMPANY	FLOWING			GAS LIFTING			PUMPING		
	AV. NO. OF WELLS	PRODUCTION	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION	DAILY AV. PER WELL	AV. NO. OF WELLS	PRODUCTION	DAILY AV. PER WELL
AMOCO TRINIDAD OIL COMPANY LTD.	42	10,921,045	712.4	86	21,116,897	672.7	0	0	0.0
PREMIER CONSOLIDATED OILFIELDS LTD.	6	96,243	43.9	0	0	0.0	85	179,768	5.8
TRINIDAD NORTHERN AREAS	74	3,676,318	136.1	218	8,272,445	104.0	56	1,609,727	78.8
TRINIDAD AND TOBAGO OIL COMPANY LTD.	151	2,285,547	41.5	175	1,036,927	16.2	902	4,036,375	12.3
TRINIDAD AND TOBAGO PETROLEUM COMPANY LTD.	79	973,235	33.8	6	23,579	10.8	1,313	7,394,520	15.4
TOTAL 1986	352	17,952,388	139.7	485	30,449,848	172.0	2,356	13,220,390	15.4
TOTAL 1985	325	16,575,721	139.7	463	33,838,255	200.2	2,372	13,839,041	16.0

Continued

APPENDIX 111 A
ANALYSIS OF PRODUCTION BY OPERATING COMPANIES - 1986
(barrels)

COMPANY	PLUNGER LIFT & OTHER			AV. NO. OF WELLS PRODUCED	TOTAL OIL PRODUCED	DAILY AV. PER WELL	COMPANY'S PROD'N AS A % OF TOTAL PROD'N	SALT WATER	
	AV. NO. OF WELLS	PROD'N	DAILY AV. PER WELL					PRODUCTION	% OF TOTAL FLUID
AMOCO TRINIDAD OIL COMPANY LTD.	0	0	0	128	32,037,942	685.7	52.0	35,426,697	52.5
PREMIER CONSOLIDATED OILFIELDS LTD.	14	10,091	2.0	105	286,102	7.5	0.5	67,905	19.2
TRINIDAD NORTHERN AREAS	0	0	0	348	13,558,490	106.7	22.0	2,426,250	15.2
TRINIDAD AND TOBAGO OIL COMPANY LTD.	1	7,471	20.5	1,229	7,366,320	16.4	12.0	7,166,384	49.3
TRINIDAD AND TOBAGO PETROLEUM COMPANY LTD.	0	0	0	1,398	8,391,334	16.4	13.6	7,101,133	45.8
TOTAL 1986	15	17,562	3.2	3,208	61,640,188	52.6	100.0	52,188,369	45.8
TOTAL 1985	6	5,845	2.7	3,167	64,258,862	55.6	100.0	52,447,774	44.9

APPENDIX 111 B

TOTAL AND DAILY AVERAGE CRUDE OIL PRODUCTION BY MONTHS FOR ALL COMPANIES - 1986

(Production in barrels)

MONTH	AMOCO TRINIDAD OIL CO. LTD.		PREMIER CONSOLIDATED OILFIELDS LTD.		TRINIDAD NORTHERN AREAS		TRINIDAD & TOBAGO OIL CO. LTD.		TRINIDAD & TOBAGO PETROLEUM CO. LTD.	
	PRODUCTION	B.O.P.D	PRODUCTION	B.O.P.D	PRODUCTION	B.O.P.D	PRODUCTION	B.O.P.D	PRODUCTION	B.O.P.D
JANUARY	2,536,732	81,830	25,551	824	1,249,224	40,298	622,067	20,067	712,870	22,996
FEBRUARY	2,380,874	85,031	22,470	803	1,126,296	40,225	575,822	20,565	625,011	22,322
MARCH	2,644,285	85,300	24,691	796	1,147,971	37,031	631,091	20,358	707,865	22,834
APRIL	2,612,721	87,091	26,600	887	1,115,598	37,187	632,928	21,098	691,813	23,060
MAY	2,744,057	88,518	24,912	804	1,129,147	36,424	665,425	21,465	728,812	23,510
JUNE	2,670,773	89,026	21,781	726	1,085,893	36,196	620,918	20,697	693,797	23,127
JULY	2,802,857	90,415	25,563	825	1,122,423	36,207	636,120	20,520	699,813	22,575
AUGUST	2,844,309	91,752	22,692	732	1,140,635	36,795	607,782	19,606	702,183	22,651
SEPTEMBER	2,684,124	89,471	19,559	652	1,069,058	35,635	576,650	19,222	679,819	22,661
OCTOBER	2,728,695	88,022	26,928	869	1,155,608	37,278	599,198	19,329	731,632	23,601
NOVEMBER	2,656,917	88,564	22,867	762	1,089,356	36,312	596,036	19,868	694,440	23,148
DECEMBER	2,731,598	88,116	22,488	725	1,127,281	36,364	602,283	19,428	723,279	23,332
TOTAL 1986	32,037,942	87,775	286,102	784	13,558,490	37,147	7,366,320	20,182	8,391,334	22,990
TOTAL 1985	34,131,598	93,511	231,338	634	14,232,345	38,993	7,107,145	19,472	8,556,436	23,442

APPENDIX 111 C
LAND AND MARINE CRUDE OIL PRODUCTION - 1986
(barrels)

MONTH	MARINE				TOTAL MARINE	DEVIATED FROM SHORE			LAND
	TNA: SOLDADO	TRINTOC: A.B.M.	TRINTOPEC: GALEOTA	AMOCO		TNA: F.O.S.	TRINTOC: A.S.	TRINTOPEC: GUAPO	
JANUARY	1,240,047	11,209	102,513	2,536,732	3,890,501	9,177	4,076	2,278	1,240,412
FEBRUARY	1,118,472	7,710	97,783	2,380,874	3,604,839	7,824	2,819	2,397	1,112,594
MARCH	1,140,924	15,482	99,942	2,644,285	3,900,633	7,047	7,098	2,775	1,238,350
APRIL	1,108,852	12,027	100,895	2,612,721	3,834,495	6,746	9,107	1,764	1,227,548
MAY	1,121,933	12,592	95,805	2,744,057	3,974,387	7,214	10,162	1,301	1,299,289
JUNE	1,076,855	11,953	97,167	2,670,773	3,856,748	9,038	10,426	1,233	1,215,717
JULY	1,112,254	9,583	101,515	2,802,857	4,026,209	10,169	9,128	1,415	1,239,855
AUGUST	1,131,414	8,603	111,370	2,844,309	4,095,696	9,221	7,134	1,867	1,203,683
SEPTEMBER	1,060,157	13,071	101,751	2,684,124	3,859,103	8,901	7,602	1,648	1,151,956
OCTOBER	1,146,864	9,987	103,990	2,728,695	3,989,536	8,744	7,114	1,642	1,235,025
NOVEMBER	1,082,070	13,208	99,590	2,656,917	3,851,785	7,286	6,730	1,958	1,191,857
DECEMBER	1,119,190	11,925	100,781	2,731,598	3,963,494	8,091	7,108	2,058	1,226,178
TOTAL	13,459,032	137,350	1,213,102	32,037,942	46,847,426	99,458	88,504	22,336	14,582,464

APPENDIX 111 C
LAND AND MARINE WELLS - 1986

MONTH	MARINE				TOTAL MARINE	DEVIATED FROM SHORE			LAND
	TNA: SOLDADO	TRINTOC: A.B.M.	TRINTOPEC: GALEOTA	AMOCO		TNA: F.O.S.	TRINTOC: A.S.	TRINTOPEC: GUAPO	
JANUARY	336	31	51	115	533	12	19	9	2,610
FEBRUARY	339	21	51	122	533	12	19	9	2,626
MARCH	342	27	51	128	548	11	18	9	2,612
APRIL	331	35	51	125	542	9	20	9	2,682
MAY	343	25	51	128	547	10	22	9	2,705
JUNE	336	27	51	130	544	12	20	9	2,624
JULY	343	27	44	132	546	12	23	9	2,650
AUGUST	345	24	44	132	545	12	22	9	2,645
SEPTEMBER	342	25	44	132	543	12	21	8	2,631
OCTOBER	329	22	51	131	533	12	22	8	2,605
NOVEMBER	327	26	54	134	541	10	21	9	2,598
DECEMBER	332	21	54	135	542	11	20	9	2,532
AVERAGE	337	26	50	129	541	11	21	9	2,627

APPENDIX 111 D
CRUDE OIL PRODUCTION BY LEASE - 1986
(barrels)

MONTH	STATE LEASE			PRIVATE LEASE			STATE LEASE C.H.P.S.	PRIVATE LEASE C.H.P.S.	TOTAL C.H.P.S.
	NO.OF WELLS	PRODUCTION	DAILY AV. PER WELL	NO.OF WELLS	PRODUCTION	DAILY AV. PER WELL			
JANUARY	2,557	1,938,551	62.3	626	207,893	10.7	2,628	17	2,645
FEBRUARY	2,563	1,539,522	63.3	636	190,951	10.7	2,281	31	2,312
MARCH	2,557	1,937,451	62.3	641	218,452	11.0	1,529	15	1,544
APRIL	2,624	1,871,477	61.9	638	208,183	10.9	2,328	16	2,344
MAY	2,643	5,065,403	61.8	650	226,950	11.3	2,647	21	2,668
JUNE	2,565	1,883,144	63.5	644	210,018	10.9	882	3	885
JULY	2,606	5,073,167	62.8	634	213,609	10.9	2,461	18	2,479
AUGUST	2,598	5,114,854	63.5	635	202,747	10.3	2,282	15	2,297
SEPTEMBER	2,584	1,836,107	62.4	631	193,103	10.2	3,007	10	3,017
OCTOBER	2,561	5,041,604	63.5	619	200,457	10.4	2,331	11	2,342
NOVEMBER	2,575	1,866,396	63.0	604	193,220	10.7	747	3	750
DECEMBER	2,512	5,008,908	64.3	602	198,021	10.6	1,527	17	1,544
TOTAL 1986		59,176,584			2,463,604		24,650	177	24,827
AVERAGE 1986	2,579	162,128	62.9	630	6,750	10.7			

APPENDIX 111 E
CRUDE OIL PRODUCTION BY COMPANY LEASE - 1986
(barrels)

COMPANY	STATE LEASE		PRIVATE LEASE	
	PRODUCTION	% OF TOTAL PRODUCTION	PRODUCTION	% OF TOTAL PRODUCTION
AMOCO TRINIDAD OIL COMPANY LIMITED	32,037,942	100.0	0	0
PREMIER CONSOLIDATED OILFIELDS LIMITED	30,459	10.6	255,643	89.4
TRINIDAD NORTHERN AREAS	13,558,490	100.0	0	0
TRINIDAD AND TOBAGO OIL COMPANY LIMITED	6,625,992	89.9	740,328	10.1
TRINIDAD AND TOBAGO PETROLEUM COMPANY LIMITED	6,923,701	82.5	1,467,633	17.5
TOTAL 1986	59,176,584	96.0	2,463,604	4.0
TOTAL 1985	61,844,973	96.2	2,413,889	3.8

APPENDIX IV
NATURAL GAS DISPOSAL - 1986
(All quantities in m3)

MONTH	NATURAL GAS DISPOSAL							
	NATURAL GAS PRODUCTION	SALES TO OTHER COMPANIES	CONVERTED TO C.H.P.S.	USED AS FUEL IN FIELDS	USED AS FUEL IN REFINERY	VENTED TO ATMOSPHERE AFTER UTIL.	VENTED TO ATMOSPHERE WITHOUT UTIL.	TOTAL
JANUARY	583 123 767	284 046 209	78 608	31 226 378	35 278 774	128 453 075	140 126 640	268 579 716
FEBRUARY	550 692 592	253 150 940	68 697	29 813 056	33 376 080	126 062 001	137 039 112	263 101 113
MARCH	651 784 171	308 855 423	45 873	30 438 943	40 883 953	150 247 252	155 327 323	305 574 576
APRIL	646 111 173	298 668 747	69 603	30 125 164	33 905 237	157 811 108	154 784 801	312 595 909
MAY	653 031 472	283 934 612	79 259	30 372 795	36 561 244	167 616 525	158 076 918	325 693 443
JUNE	631 010 137	276 051 881	26 221	26 650 800	32 452 866	160 998 141	165 544 269	326 542 410
HALF-YEARLY TOTAL	3 715 753 311	1 704 707 812	368 261	178 627 136	212 458 154	891 188 101	910 899 064	1 802 087 166
JULY	680 425 022	308 889 743	209 998	29 608 297	36 534 343	167 819 613	166 834 244	334 653 857
AUGUST	652 326 722	297 921 466	80 307	69 604 715	39 668 622	161 405 111	162 831 855	324 236 966
SEPTEMBER	615 613 954	294 446 167	85 432	70 207 042	39 254 432	182 392 144	108 786 683	291 178 827
OCTOBER	631 394 397	305 071 838	63 996	33 071 362	41 396 998	146 847 220	148 696 225	295 543 445
NOVEMBER	629 624 622	289 329 793	22 229	32 243 293	39 445 882	161 271 597	143 891 705	305 163 302
DECEMBER	660 148 317	292 431 140	45 845	33 831 500	44 173 861	179 036 824	149 820 546	328 857 369
HALF-YEARLY TOTAL	3 869 533 034	1 788 090 147	507 806	268 566 208	240 474 138	998 772 508	880 861 258	1 879 633 766
YEAR TOTAL	7 585 286 344	3 492 797 959	876 067	447 193 344	452 932 292	1 889 960 609	1 791 760 322	3 681 720 931
% DISPOSAL FOR YEAR		46.0		5.9	6.0	24.9	23.6	48.5

continued

APPENDIX IV
NATURAL GAS DISPOSAL 1986
(All quantities in m3)

PIPELINE LOSSES	NOT COLLECTED	GAS RECOVERY: AVERAGE PLANT RECOVERY (litres/M3)	GAS RECOVERY: NATURAL GASOLINE PRODUCED (litres)	INTER-OIL COMPANY SALES	USED FOR THE MANUFACTURE OF PETROCHEMICALS	MONTH
3 682 436	10 683 948	0.060	420 841	270 937 660	100 788 419	JANUARY
2 274 693	10 518 379	0.011	62 021	245 701 230	84 542 306	FEBRUARY
2 991 024	9 475 073	0.042	245 479	303 448 745	105 970 403	MARCH
2 089 925	8 162 077	0.060	372 627	296 095 312	100 857 059	APRIL
3 949 634	8 890 726	0.062	424 174	280 835 390	90 823 210	MAY
2 214 434	8 791 957	0.022	140 358	258 582 197	93 477 999	JUNE
17 202 147	56 522 160	0.044	1 665 500	1 655 600 533	576 459 396	HALF-YEARLY TOTAL
1 300 791	8 978 509	0.056	394 120	299 294 918	109 675 917	JULY
3 537 681	9 038 654	0.057	429 670	280 564 199	102 985 552	AUGUST
3 809 976	9 047 913	0.057	415 273	278 234 997	104 320 493	SEPTEMBER
2 416 588	8 507 316	0.051	372 372	287 352 031	107 810 913	OCTOBER
2 226 865	10 733 587	0.019	119 142	273 524 659	99 471 289	NOVEMBER
4 533 046	10 101 413	0.038	245 398	281 210 277	101 801 596	DECEMBER
17 824 947	56 407 392	0.047	1 975 973	1 700 181 081	626 065 760	HALF-YEARLY TOTAL
35 027 094	65 446 045	0.046	3 641 473	3 355 781 613	1 202 525 156	YEAR TOTAL
0.5	0.9					% DISPOSAL FOR YEAR

APPENDIX V

DESTINATION OF EXPORTS OF CRUDE AND REFINED PRODUCTS FROM TRINIDAD AND TOBAGO'- 1986

(All quantities in barrels)

COUNTRY	TOTAL REFINED PRODUCTS	% OF TOTAL EXPORTS	CRUDE PETROLEUM EXPORTS	L.P.G.	AVIATION GASOLENE	MOTOR GASOLENE	KEROSENE & AVIATION TURBINE FUEL	GAS & DIESEL OILS	FUEL OILS	PETRO-CHEMICALS	OTHER REFINED PRODUCTS
NORTH AMERICA -											
CANADA	219 650	0.88	0	0	0	0	0	219 650	0	0	0
U.S.A.	11 648 232	46.76	32 866 677	0	0	302 427	0	1 263 538	10 081 017	0	1 250
TOTAL N.A.	11 867 882	47.64	32 866 677	0	0	302 427	0	1 483 188	10 081 017	0	1 250
CENTRAL AMERICA -											
REPUBLIC OF PANAMA	49 227	0.20	0	10 164	19 132	0	0	19 931	0	0	0
GUATEMALA	7 988	0.03	0	0	0	0	0	0	0	7 988	0
TOTAL C.A.	57 215	0.23	0	10 164	19 132	0	0	19 931	0	7 988	0
SOUTH AMERICA -											
GUYANA	625 850	2.51	0	26 265	2 018	131 013	43 169	197 576	220 261	0	5 548
SURINAME	1 035 533	4.16	0	433	8 269	362 704	75 781	362 915	221 489	0	3 942
FRENCH GUIANA	824 020	3.31	0	19 585	1 000	161 260	74 022	266 458	288 020	0	13 675
TOTAL S.A.	2 485 403	9.98	0	46 283	11 287	654 977	192 972	826 949	729 770	0	23 165
WEST INDIES -											
BRITISH (a)	2 728 769	10.95	0	111 164	8 533	796 261	767 949	696 040	66 614	0	282 208
FRENCH (b)	642 462	2.58	0	21 556	9 915	179 379	127 431	232 416	36 242	0	35 523
NETHERLANDS (c)	258 434	1.04	0	0	0	5 850	84 349	25 149	137 500	0	5 586
HAITI	191 516	0.77	0	0	0	0	0	0	191 516	0	0
OTHER W.I.ISLANDS (d)	1 031 317	4.14	0	3 135	5 961	57 361	31 292	38 633	887 893	0	7 042
TOTAL W.I.	4 852 498	19.48	0	135 855	24 409	1 038 851	1 011 021	992 238	1 319 765	0	330 359
EUROPE -											
ITALY	2 019 370	8.11	0	0	0	0	0	0	2 019 370	0	0
ENGLAND	1 114 290	4.47	0	0	0	0	0	0	1 114 290	0	0
OTHER EUROPE (e)	221 713	0.89	0	0	0	0	0	0	221 713	0	0
TOTAL EUROPE	3 355 373	13.47	0	0	0	0	0	0	3 355 373	0	0
OTHERS -											
JAPAN	248 246	1.00	0	0	0	231 530	12 882	0	0	0	3 834
OTHERS*	1 501 666	6.02	0	0	0	0	746 669	383 484	1 566	8 383	361 564
TOTAL OTHERS	1 749 912	7.02	0	0	0	231 530	759 551	383 484	1 566	8 383	365 398
TOTAL CARGOES	24 368 283	97.82	32 866 677	192 302	54 828	2 227 785	1 963 544	3 705 790	15 487 491	16 371	720 172
FOREIGN BUNKERS	542 728	2.18	0	0	0	0	357 235	43 614	140 715	0	1 164
TOTAL EXPORT	24 911 011	100	32 866 677	192 302	54 828	2 227 785	2 320 779	3 749 404	15 628 206	16 371	721 336

Countries Not Detailed

(a) British : Antigua,Anguilla,Barbados,Bequia,Carriacou,Dominica, Grand Cayman,Granada,Jamaica,Montserrat,Nevis,St.Kitts, St.Lucia,St.Vincent.

(b) French : Guadeloupe,Martinique,St.Barthelemy,St.Barths,St.Maarten.

(c) Netherlands : Saba,St.Eustatius,Aruba.

(d) Other W.I.Islands : Tortola,Virgin Gorda, Virgin Islands.

(e) Other Europe : Rotterdam,Antwerp.

APPENDIX VI

MOVEMENT OF REFINED PRODUCTS - 1986
(ALL QUANTITIES IN BARRELS)

PRODUCT	OPENING INVENTORY	PRODUCTION	IMPORTS	TRANFERS	REC. FROM LOCAL COMPANIES	TOT.OPEN. INVENTORY/ RECEIPTS	DISBURSE. TO LOCAL COMPANIES
L.P.G.	273,397	739,829	0	4,950	548,949	1,567,124	547,595
MOGAS - PREMIUM	2,067,185	3,750,742	0	18,905	3,364,408	9,201,240	3,364,488
MOGAS - REGULAR	601,323	2,047,505	0	13	68,232	2,717,072	66,790
MOGAS - UNFINISHED	3,916,096	461,383	0	16,277	0	4,393,756	10,699
NAPHTHA	3,772,664	202,725	0	-49,983	0	3,925,406	289
AVIATION GASOLINE	115,984	58,212	0	-57	3,623	177,762	3,654
AVIATION TURBINE FUEL	1,534,119	2,408,306	0	-139,792	672,908	4,475,541	173,155
KEROSINE	674,191	667,755	52,627	163,352	37,431	1,595,356	537,815
WHITE SPIRITS	55,476	10,571	0	0	10,668	76,715	11,753
GAS OIL	5,415,837	3,703,849	1,150,505	-17,794	1,108,804	11,361,202	1,110,614
MARINE DIESEL	205,015	149,928	0	-3,503	9,303	360,741	9,047
FUEL OIL	15,857,553	16,001,222	7,655	-593,556	48,060	31,320,933	54,175
LUBES & GREASES	391,753	39,318	90,774	862	9,742	532,449	19,605
ASPHALTIC PRODUCTS	333,263	179,466	0	0	74,358	587,087	72,956
PETROCHEMICALS	536,253	36,265	0	258	0	572,775	1,774
OTHER FINISHED PRODUCTS	35,311	94	0	0	6	35,412	94
UNFINISHED OILS	17,915,097	-4,584,882	4,118,781	439,045	0	17,888,041	0
TOTAL	53,700,516	25,872,287	5,420,342	-161,024	5,956,490	90,788,611	5,984,504

ERRATUM

APPENDIX VI

MOVEMENT OF REFINED PRODUCTS - 1986
(ALL QUANTITIES IN BARRELS)

PRODUCT	OPENING INVENTORY	PRODUCTION	IMPORTS	TRANFERS	REC. FROM LOCAL COMPANIES	TOT.OPEN. INVENTORY/ RECEIPTS	DISBURSE. TO LOCAL COMPANIES
L.P.G.	18,430	739,829	0	4,950	548,949	1,312,158	547,595
MOGAS - PREMIUM	163,460	3,750,742	0	164,847	3,364,408	7,297,515	3,364,488
MOGAS - REGULAR	45,049	2,047,505	0	-145,873	68,232	2,160,799	66,790
MOGAS - UNFINISHED	409,047	461,383	0	16,277	0	886,707	10,699
NAPHTHA	178,274	202,725	0	-49,983	0	331,016	289
AVIATION GASOLINE	4,271	58,212	0	-57	3,623	66,049	3,654
AVIATION TURBINE FUEL	108,199	2,406,306	0	-139,792	672,908	3,049,621	173,155
KEROSINE	48,142	667,755	52,627	163,352	37,431	969,307	537,815
WHITE SPIRITS	6,586	10,571	0	0	10,668	27,825	11,753
GAS OIL	465,096	3,703,849	1,150,505	-17,794	1,108,804	6,410,460	1,110,614
MARINE DIESEL	22,239	149,928	0	-3,503	9,303	177,967	9,047
FUEL OIL	1,580,645	16,001,222	7,655	-593,556	48,060	17,044,026	54,175
LUBES & GREASES	27,431	39,318	90,774	862	9,742	168,127	19,605
ASPHALTIC PRODUCTS	35,037	179,466	0	0	74,358	288,861	72,956
PETROCHEMICALS	32,170	36,265	0	258	0	68,693	1,774
OTHER FINISHED PRODUCTS	2,975	94	0	0	6	3,075	94
UNFINISHED OILS	1,686,371	-4,584,882	4 440 372	439,045	0	1,659,315	0
TOTAL	4,814,413	25,872,288	5,741,908	-160,967	5,956,492	42,224,134	5,984,503

continued

PRODUCT	LOCAL CONSUMPTION: OWN USE	RETAIL/ CONTRACT SALES	LOCAL BUNKERS	TOTAL	EXPORTS: CARGOES	FOREIGN BUNKERS	GAIN / LOSS	CLOSING INVENTORY	TOTAL CLOSING INVENTORY/ DISBURSE	STAT. ADJUST.
L.P.G.	371	541,237	0	541,608	192,625	0	10,435	19,882	1,312,145	13
MOGAS - PREMIUM	8,856	3,406,049	0	3,414,905	503,229	0	-29,914	190,749	7,443,457	0
MOGAS - REGULAR	0	67,345	0	67,345	1,836,577	0	44	44,157	2,014,913	0
MOGAS - UNFINISHED	13	0	0	13	552,687	0	0	323,239	886,638	69
NAPHTHA	0	478	0	478	0	0	0	330,249	331,016	0
AVIATION GASOLINE	0	3,359	0	3,359	54,136	13	88	4,799	66,049	0
AVIATION TURBINE FUEL	114	333,254	0	333,368	2,062,040	357,235	1,730	122,093	3,049,621	0
KEROSINE	2,005	115,978	0	117,982	254,177	0	-3,516	62,848	969,306	1
WHITE SPIRITS	0	8,529	0	8,529	0	0	145	7,386	27,813	12
GAS OIL	36,749	1,061,353	118,481	1,216,583	3,590,019	37,670	-6,133	479,473	6,428,226	-17,766
MARINE DIESEL	0	2,881	15,982	18,863	112,268	5,944	459	31,026	177,607	360
FUEL OIL	8,572	23,341	43,922	75,835	15,477,690	140,715	-830	1,296,441	17,044,026	0
LUBES & GREASES	2,849	78,230	0	81,079	8,056	0	-370	59,933	168,303	-176
ASPHALTIC PRODUCTS	0	85,467	0	85,467	102,462	0	1,044	26,933	286,774	-1
PETROCHEMICALS	302	4,703	0	5,005	20,208	0	0	41,706	68,693	0
OTHER FINISHED PRODUCTS	0	69	0	69	0	0	0	2,931	3,094	-19
UNFINISHED OILS	90,493	0	0	90,493	0	0	0	1,890,388	1,980,881	0
TOTAL	150,324	5,732,273	178,385	6,060,981	24,765,010	542,741	-28,906	4,901,818	42,226,147	-2,013

APPENDIX VI

MOVEMENT OF REFINED PRODUCTS - 1986
(ALL QUANTITIES IN BARRELS)

continued

L O C A L	C O N S U M P T I O N			E X P O R T S						
OWN USE	RETAIL/ CONTRACT SALES	LOCAL BUNKERS	TOTAL	CARGOES	FOREIGN BUNKERS	GAIN / LOSS	CLOSING INVENTORY	TOTAL CLOSING INVENTORY/ DISBURSE	STAT. ADJUST.	PRODUCT
371	541,237	0	541,608	192,625	0	10,435	274,861	1,567,124	0	L.P.G.
8,856	3,406,049	0	3,414,905	503,229	0	-29,914	1,948,538	9,201,246	-6	MOGAS - PREMIUM
0	67,345	0	67,345	1,836,577	0	44	746,316	2,717,072	-0	MOGAS - REGULAR
13	0	0	13	552,687	0	0	3,830,351	4,393,749	-6	MOGAS - UNFINISHED
0	478	0	478	0	0	0	3,924,639	3,925,406	0	NAPHTHA
0	3,359	0	3,359	54,136	13	88	116,512	177,762	0	AVIATION GASOLINE
114	333,254	0	333,368	2,062,040	357,235	1,730	1,548,013	4,475,541	0	AVIATION TURBINE FUEL
2,005	115,978	0	117,982	254,177	0	-3,516	688,897	1,595,356	-0	KEROSINE
0	8,529	0	8,529	0	0	145	56,288	76,715	0	WHITE SPIRITS
36,749	1,061,353	118,481	1,216,583	3,590,019	37,670	-6,133	5,429,594	11,378,348	-17146	GAS OIL
0	2,881	15,982	18,863	112,268	5,944	459	214,160	360,741	-0	MARINE DIESEL
8,572	23,341	43,922	75,835	15,477,690	140,715	-830	15,573,348	31,320,933	0	FUEL OIL
2,849	78,230	0	81,079	8,056	0	-370	424,258	532,629	-180	LUBES & GREASES
0	85,467	0	85,467	101,298	1,164	1,044	325,159	587,087	0	ASPHALTIC PRODUCTS
302	4,703	0	5,005	20,208	0	0	545,789	572,775	0	PETROCHEMICALS
0	69	0	69	0	0	0	35,248	35,412	0	OTHER FINISHED PRODUCTS
90,493	0	0	90,493	0	0	0	17,797,573	17,888,066	-25	UNFINISHED OILS
150,324	5,732,273	178,385	6,060,982	24,765,011	542,740	-26,819	53,479,544	90,805,962	-17351	TOTAL

APPENDIX VII
MOVEMENTS OF CRUDE AND C.H.P.S. - YEAR ENDING 31st. DECEMBER 1986
(All quantities in barrels)

MONTH	PRODUCTION	IMPORTS	CHANGE IN INVENTORIES	TOTAL	OWN USE TO REFINERY		EXPORTS	GAINS AND LOSSES	TOTAL
JANUARY	5,146,444	0	95,602	5,242,046	2,484	2,472,071	2,736,397	31,094	5,242,046
FEBRUARY	4,730,473	0	(102,997)	4,627,476	2,468	2,305,107	2,332,495	(12,594)	4,627,476
MARCH	5,155,903	0	108,387	5,264,290	1,187	2,221,890	3,040,334	879	5,264,290
APRIL	5,079,660	0	(551,733)	4,527,927	1,418	2,127,053	2,374,722	24,734	4,527,927
MAY	5,292,353	0	420,944	5,713,297	2,124	2,526,551	3,213,497	(28,875)	5,713,297
JUNE	5,093,162	0	(301,618)	4,791,544	1,986	2,390,395	2,343,871	55,292	4,791,544
JULY	5,286,776	0	341,976	5,628,752	1,272	2,453,579	3,178,178	(4,277)	5,628,752
AUGUST	5,317,601	397,741	(403,362)	5,311,980	677	2,615,820	2,605,505	89,978	5,311,980
SEPTEMBER	5,029,210	710,223	198,336	5,937,769	1,009	2,751,699	3,270,259	(85,198)	5,937,769
OCTOBER	5,242,061	0	202,019	5,444,080	741	2,712,438	2,734,362	(3,461)	5,444,080
NOVEMBER	5,059,616	0	(550,072)	4,509,544	1,197	2,116,126	2,363,795	28,426	4,509,544
DECEMBER	5,206,929	452,374	288,195	5,947,498	902	3,272,284	2,673,262	1,050	5,947,498
TOTAL	61,640,188	1,560,338	(254,323)	62,946,203	17,465	29,965,013	32,866,677	97,048	62,946,203

APPENDIX VIII

SUMMARY OF CRUDE OIL ASSESSED FOR CROWN ROYALTY WITH PRICES AND ANALYSES - 1986

COMPANY	NET ROYALTY PRODUCTION (Barrel)	FIELD STORAGE VALUE		ROYALTY PAYABLE	GASOLENE		LEAD
		Per Barrel	Dollar		Barrel	%	
TRINTOPEC (Land)	5,707,176	41.99	239,644,556.97	23,964,455.73	423,256	7.42	4,104,059.90
GALEOTA	1,213,102	51.86	62,907,590.41	7,863,448.80	192,450	15.86	-
PCOL	32,802	44.34	1,454,440.21	145,444.02	2,707	8.25	24,851.82
ESTATE OF T. ROODAL	586	43.14	25,279.27	2,527.92	15	2.56	-
TRINTOC (P.F.)	2,770,784	44.24	122,590,442.92	12,259,044.30	295,433	10.66	9,177,850.06
TRINTOC (P-a-P)	3,826,348	45.38	173,478,569.07	17,347,856.91	518,482	13.55	7,826,607.06
TNA	13,558,490	43.33	587,547,735.31	58,754,773.53	1,680,755	12.40	66,168,309.06
AMOCO	32,037,942	54.87	1,757,770,996.82	219,721,374.60	4,033,431	12.59	50,663,245.50
TOTAL	59,147,230	49.80	2,945,419,610.98	340,422,925.81	7,146,529	12.08	137,964,923.40

continued

APPENDIX VIII

SUMMARY OF CRUDE OIL ASSESSED FOR CROWN ROYALTY WITH PRICES AND ANALYSES - 1986

COMPANY	GAS OIL				TOTAL GAS OIL	%	FUEL OIL		CRUDE OIL WEIGHTED API GRAVITY
	53 - 57	48 - 52	43 - 47	#2 FUEL			Barrel	%	
TRINTOPEC (Land)	-	-	101,378	931,156	1,032,534	18.09	4,251,386	74.49	19.4
GALEOTA	-	-	-	574,421	574,421	47.35	446,231	36.78	23.3
PCOL	-	-	3,127	5,616	8,743	26.65	21,352	65.09	22.9
ESTATE OF T. ROODAL	-	-	-	174	174	29.69	397	67.75	21.0
TRINTOC (P.F.)	158,461	-	316,335	192,579	667,375	24.09	1,807,976	65.25	22.7
TRINTOC (P-a-P)	4,340	293,509	273,816	525,849	1,097,514	28.68	2,210,352	57.77	23.7
TNA	-	592,582	1,843,950	-	2,436,532	17.97	9,441,203	69.63	22.4
AMOCO	-	22,225,255	-	-	22,225,255	69.37	5,779,256	18.04	32.9
TOTAL	162,801	23,111,346	2,539,606	2,229,795	28,042,546	47.41	23,958,153	40.51	

APPENDIX IX

THE ROYALTY ASSESSMENT ON CRUDE OIL, NATURAL GASOLINE AND NATURAL GAS PRODUCED ON STATE OIL MINING LEASES FOR EACH HALF-YEARLY PERIOD DURING 1984 - 1986

SOURCE OF REVENUE	ASSESSMENT OF HALF YEARLY PERIODS ENDING:					
	31-12-86	30-6-86	31-12-85	30-6-85	31-12-84	30-6-84
ROYALTY OF NATURAL GAS	$926,949	$896,681	$856,580	$840,016	$857,192	$857,193
ROYALTY OF NATURAL GASOLINE	63,023	77,951	110,722	52,381	70,588	131,402
MINIMUM RENT NET OFFSET BY ROYALTY ON CRUDE OIL	3,915,973	3,710,524	3,102,544	3,212,216	3,512,648	3,275,313
ROYALTY ON CRUDE OIL	182,595,703	157,463,223	221,884,705	204,896,817	233,863,140	218,608,196
HALF YEARLY TOTAL	187,501,648	162,148,379	225,954,551	209,001,430	238,303,568	222,854,104
YEARLY TOTAL	$349,650,027		$434,955,981		$461,157,672	

THE VOLUMES UPON WHICH THE ABOVE ASSESSMENTS WERE MADE ARE AS FOLLOWS:

SUBSTANCE ASSESSED FOR ROYALTY	UNIT	31-12-86	30-6-86	31-12-85	30-6-85	31-12-84	30-6-84
NATURAL GAS	M.C.F.	61 796 587	59 778 748	57 105 334	56 001 081	57 146 150	57 146 224
NATURAL GASOLINE	I.G.	387,041	389,386	506,928	251,282	353,467	603,103
CRUDE OIL NET	BARREL	29,227,448	29,919,782	30,911,855	30,944,682	31,274,221	28,440,715
FIELD STORAGE VALUE PER BARREL	$TT	$54.23	$45.47	$62.25	$56.88	$64.62	$66.76
ROYALTY PAYABLE PER BARREL		$5.42	$4.55	$6.22	$5.69	$6.46	$6.68

THE DATA USED TO EVALUATE CRUDE OIL FOR CROWN ROYALTY ASSESSMENTS

PRODUCT	31-12-86	30-6-86	31-12-85	30-6-85	31-12-84	30-6-84
BUNKER 'C' GRADE FUEL	36.781109	44.298412	52.584921	57.104978	63.058192	63.760406
NO. 2 FUEL	56.945618	68.482264	79.539160	71.636449	75.564570	80.009839
43-47 D.I. GAS OIL	57.560275	69.096921	79.964520	72.046220	75.974341	80.419609
48-52 D.I. GAS OIL	57.749983	69.286629	80.095804	72.172692	76.100813	80.546082
53-57 D.I. GAS OIL	58.129401	69.666047	80.358372	72.425637	76.353759	80.799027
70-72 OCT. M HEADED MOTOR GAS	57.479688	69.718893	76.093305	72.544658	69.705593	76.128106
AVERAGE MIDDLE RATE FOR SIGHT DRAFT ON N.Y./T.T. CURRENCY FOR U.S. $1.00	3.6135	3.6135	2.409 **3.6135	2.409	2.409	2.409
VALUE OF TETRA ETHYL LEAD IN TT CENTS PER MILLILITRE	2.902166	2.796804	1.6419888	1.6593067	1.6562623	1.5927033
ROYALTY ON TT CENTS/GALLON ON NATURAL GASOLINE (C.H.P.S.)	16.479407	19.976708	21.772564	20.771953	19.952216	21.772703

** Rate increase with effect from 18/12/1985 due to devaluation of TT dollar.

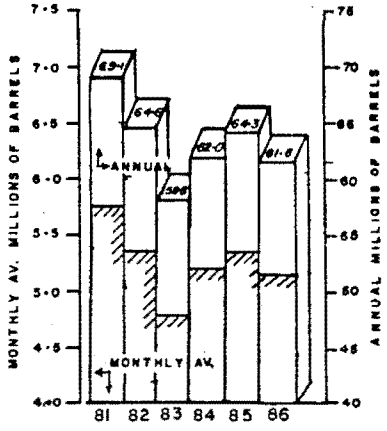
APPENDIX X

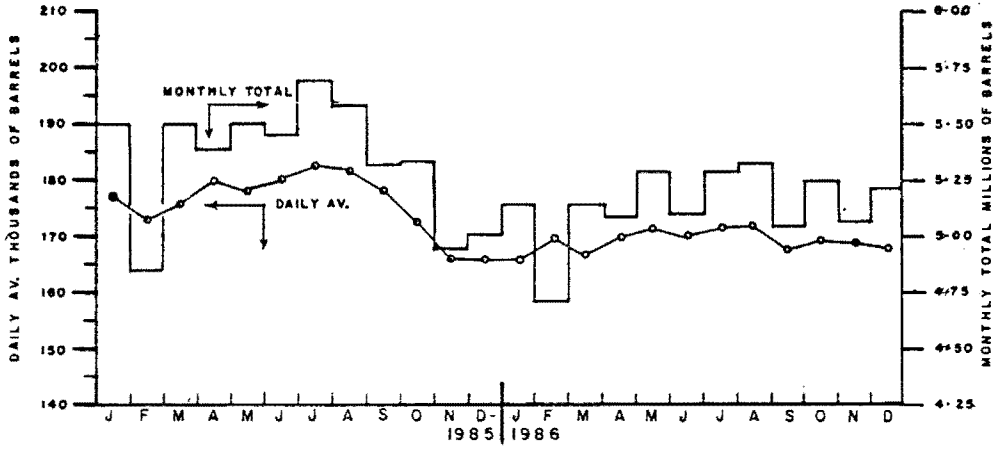
THE FOLLOWING TABLE SHOWS FOR THE YEARS 1984,1985,1986 THE QUANTITY OF ASPHALT EXTRACTED FROM THE PITCH LAKE AND THE QUANTITY OF DERIVED PRODUCTS WHICH WERE EXPORTED AND CONSUMED LOCALLY.

NATURAL ASPHALT	METRIC TONS		
	1984	1985	1986
...EXTRACTED BY MINISTRY OF WORKS FOR LOCAL USE	9 332	11 926	10 873
...EXTRACTED BY TRINIDAD LAKE ASPHALT COMPANY	31 187	21 349	24 109
TOTAL	40 519	33 275	34 982
DERIVED PRODUCTS MANUFACTURED BY THE COMPANY			
EXPORTS :-			
...CRUDE ASPHALT	0	0	0
...DRIED ASPHALT	23 573	20 258	18 904
...CEMENT ASPHALT	246	228	128
TOTAL	23 819	20 486	19 032
LOCAL SALES :-			
...CRUDE ASPHALT	1	2	0
...DRIED ASPHALT	455	429	230
...CEMENT ASPHALT	6 848	3 998	2 376
TOTAL	7 304	4 429	2 606

STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

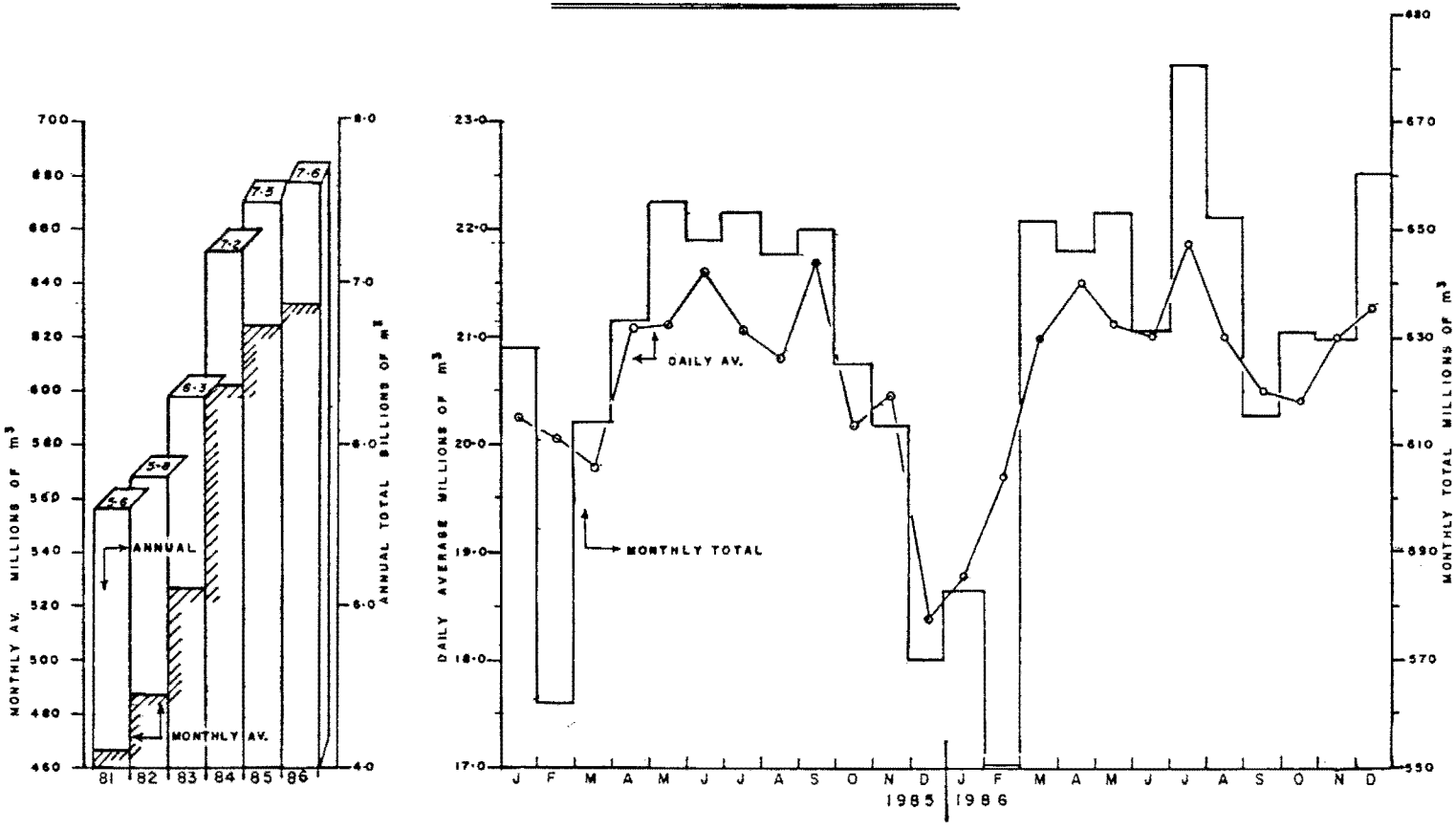
CRUDE OIL PRODUCTION



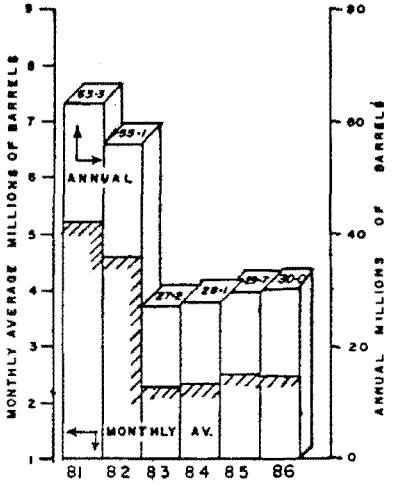


STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

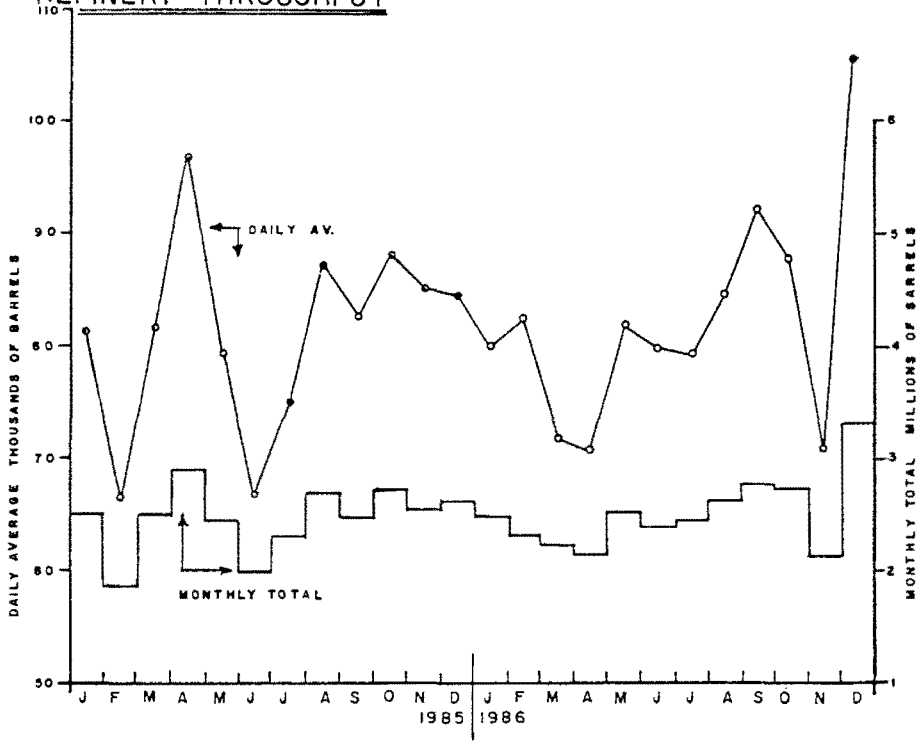
NATURAL GAS PRODUCTION



STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

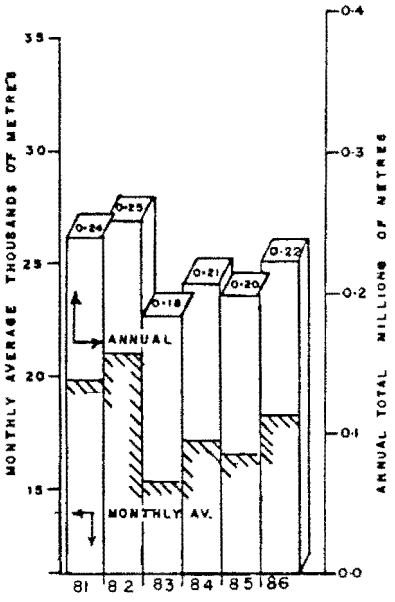


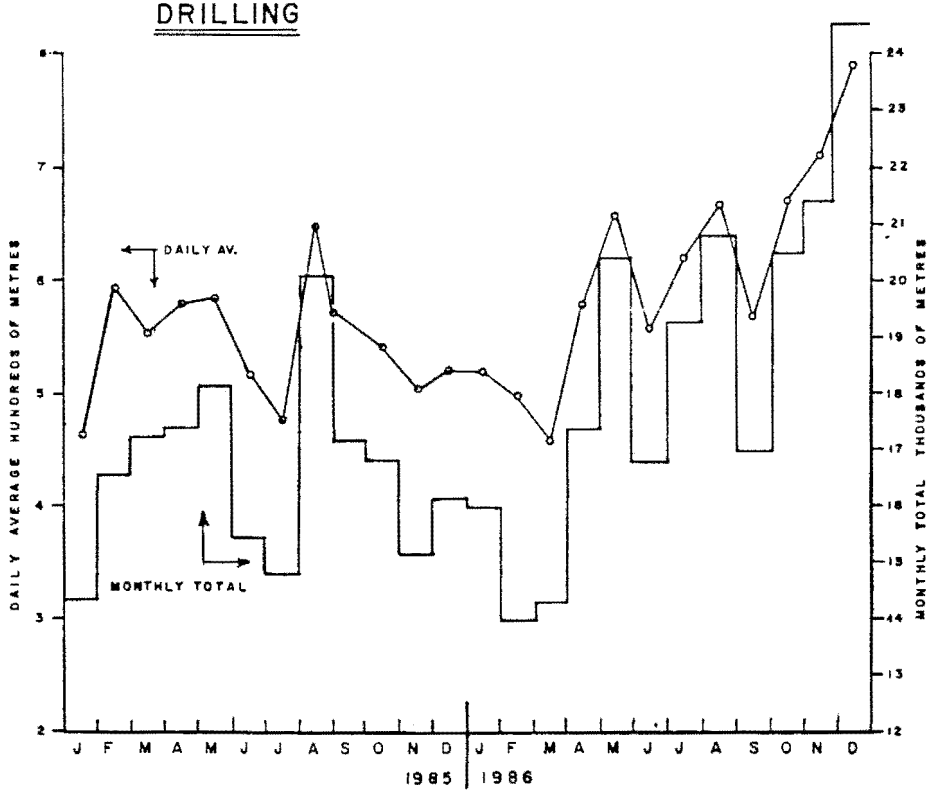
REFINERY THROUGHPUT



STATISTICS ON THE PETROLEUM INDUSTRY OF TRINIDAD & TOBAGO

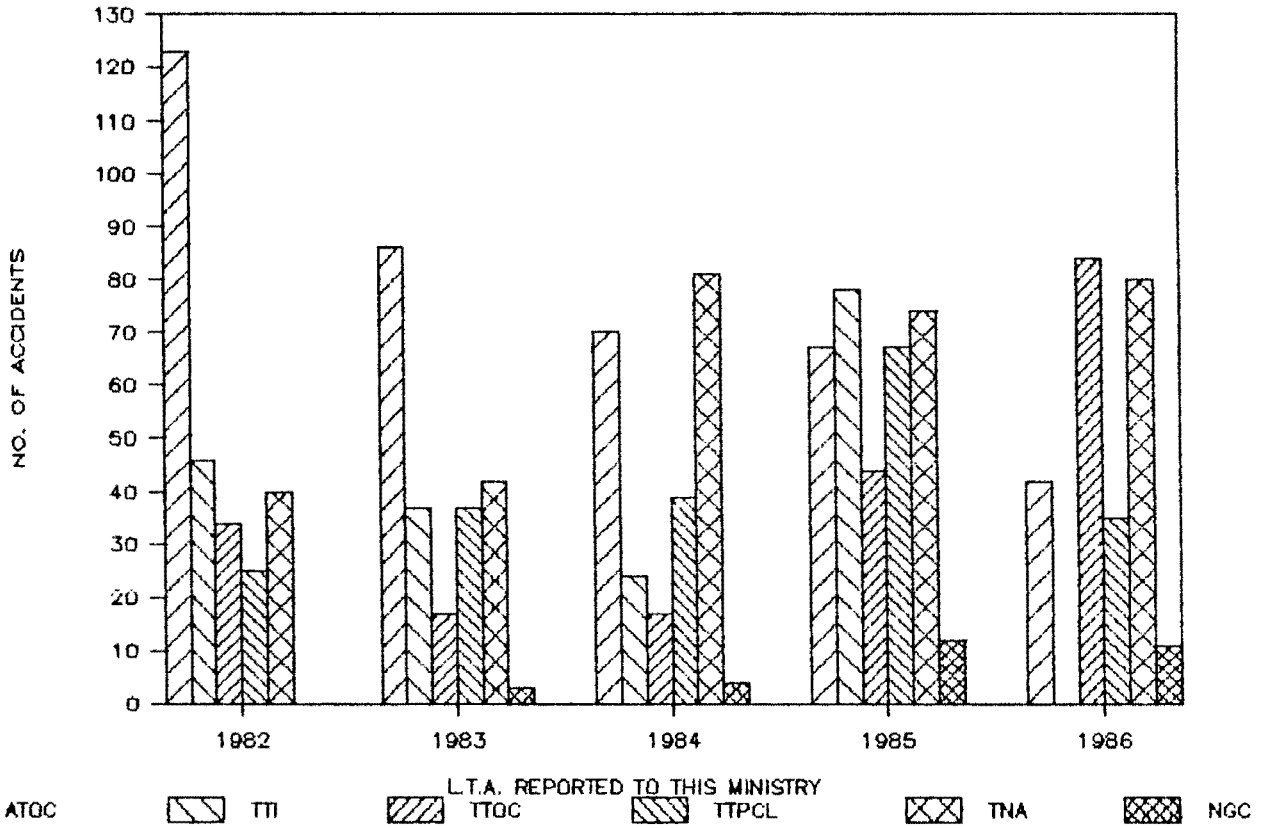
DRILLING





FIVE YEAR ACCIDENT REVIEW

— BY COMPANY —



FIVE YEAR ACCIDENT REVIEW

— YEARLY TOTAL —