

# PETROLEUM

## ADMINISTRATION REPORT OF THE PETROLEUM DEPARTMENT, 1949

HON. COLONIAL SECRETARY,

I have the honour to submit for the information of His Excellency the Governor, the following report on the Petroleum and Asphalt Industries of the Colony for the year 1949.

The report is set out in the sections, tables, Appendices and Maps as detailed below.

THE PETROLEUM INDUSTRY	PAGE
SUMMARY OF ACTIVITIES DURING 1949 ... ..	2
OUTLOOK FOR THE FUTURE ... ..	2
EXPLORATION ... ..	2
DRILLING ... ..	3
PRODUCTION OF CRUDE OIL ... ..	3
REFINERIES ... ..	4
NATURAL GASOLINE RECOVERY PLANTS ... ..	4
NATURAL GAS ... ..	4
PIPELINES AND LOADING PIERS ... ..	4
TANK STORAGE ... ..	4
CONTRIBUTION TO THE REVENUE OF THE COLONY ... ..	4
LOCAL DISBURSEMENTS ... ..	5
EXPORTS OF PETROLEUM AND ITS PRODUCTS ... ..	5
INDUSTRIAL RELATIONS ... ..	6
THE ASPHALT INDUSTRY ... ..	6
ADMINISTRATION	
ROYALTY ASSESSMENT ... ..	7
SALE OF OIL TAKEN BY GOVERNMENT AS ROYALTY IN KIND ... ..	8
RETAIL PRICE OF GASOLINE ... ..	9
INSPECTIONS AND ACCIDENTS ... ..	10
RETURNS ... ..	11
GOVERNMENT GEOLOGIST ... ..	11
LEGISLATION ... ..	11
LICENCES AND LEASES ... ..	12
STAFF ... ..	13
TABLE I—STATISTICS ... ..	15
TABLE II—ANALYSIS OF MONTHLY DRILLING RETURNS ... ..	16
TABLE III—ANALYSIS OF MONTHLY PRODUCTION RETURNS ... ..	17
TABLE IV—ANALYSIS OF MONTHLY NATURAL GAS RETURNS FOR 1949 ... ..	18
TABLE IVA—ANALYSIS OF MONTHLY NATURAL GAS RETURNS FOR 1948 ... ..	18
TABLE V—RETURN SHOWING PRODUCTION, STOCKS AND DISPOSAL OF PETROLEUM AND ITS PRODUCTS ... ..	19
TABLE VI—STATEMENT SHOWING CONTRIBUTION TO REVENUE OF THE COLONY ... ..	20
TABLE VII—DETAILS OF LOCAL DISBURSEMENTS ... ..	21
TABLE VIII—LIST OF OIL OPERATORS IN TRINIDAD, 1949 ... ..	22
TABLE IX—ANALYSIS OF WELLS DRILLED TO A DEPTH OF $\pm$ 8,000 FEET ... ..	23
APPENDIX "A"—GRAPH SHOWING ANNUAL CRUDE OIL PRODUCTION ... ..	
APPENDIX "B"—GRAPH SHOWING CRUDE OIL PRODUCTION METHODS ... ..	
APPENDIX "C"—GRAPH SHOWING ANNUAL DRILLING FOOTAGE ... ..	
APPENDIX "D"—GRAPH SHOWING PART OF TOTAL ANNUAL OUTGOINGS ... ..	
APPENDIX "E"—GRAPH SHOWING VALUE OF ANNUAL EXPORTS ... ..	
APPENDIX "F"—GRAPH SHOWING PRODUCTION OF SALT WATER ... ..	
APPENDIX "G"—MAP OF SOUTH TRINIDAD SHOWING OILFIELD AREAS ... ..	

## THE PETROLEUM INDUSTRY

## SUMMARY OF ACTIVITIES DURING 1949

2. For the third year in succession there has been very little change in the scale of operations of the local Oil Industry.

3. Exploitation drilling on infilling locations failed to yield the expected new production in some areas, but maintenance work on existing wells, successful re-completions by Gun Perforating and the reduction of the Back-log on artificial lifting equipment enabled the average daily production for the year to be slightly increased as compared to 1948.

4. A very costly Exploration drilling programme was carried out over widely spaced areas without discovering any new oil reservoirs.

5. Importation of foreign crude for refining or blending and re-export increased considerably averaging nearly 1,000,000 barrels per month with the result that the Refineries are now operating at full capacity.

6. Plans for the modernisation of their Refinery by the installation of a Catalytic Cracking Unit were announced by Trinidad Leaseholds, Limited.

7. In direct taxation the Oil Industry contributed \$18,918,170 or over 32 per cent. of the Colony's total revenue. The value of petroleum and its products excluding asphalt exported amounted to 75.2 per cent. of the value of the Colony's total exports.

## OUTLOOK FOR THE FUTURE

8. The Revenue and other benefits which the Colony enjoys as a result of a prosperous Oil Industry depend largely on the rate of oil production and the price obtained for the oil.

9. The rate of production may reasonably be expected to remain fairly constant during 1950 and 1951 at the present figure of about 56,000 barrels per day. It would, however, be unwise to rely on the present price structure remaining steady until the end of 1951.

10. The Industry's contribution to revenue in 1950 will fall below the figure of \$18,900,000 contributed in 1949 because the rapid fall in Fuel Oil prices during the first half of 1949 will be reflected in a reduction in the Income Tax collectible in 1950, devaluation having come too late in the year to give any appreciable offset to the effect of the lower prices then obtaining.

11. So long as prices in 1950 and the first half of 1951 remain at near present levels then the 1951 contribution to revenue should be higher than that in 1950 as a result of devaluation but probably not up to the record figure attained in 1949. Since all local sales agreements for crude oil and refined products are based on United States Gulf Coast export prices, the immediate effect of devaluation of sterling on the local oil industry has been to increase the sterling value of its oil sales by about 43 per cent. On the other hand, the industry has to pay 43 per cent. more for its purchases from the United States, on import duty on these purchases in royalties and also a proportionate increase in Income Tax.

12. The short term outlook appears to be good, subject to an uncertainty as to what the full effect of devaluation and the effort to close the dollar gap will have on oil movements and the oil price structure.

13. The long term outlook is not good, the salient points in view being the strong probability of falling prices after 1951 with the increasing availability of Middle East crude, the failure up to the present of Exploration to discover new reservoirs, and the enormous cost of continuing an adequate exploratory effort.

## EXPLORATION

14. The Geophysical Survey work detailed in paragraphs 11-15 of this Department's Report for 1948 was completed early this year and a lot of work has since been done on calculation of results. The results so far obtained offer some interesting problems of interpretation which have not yet been solved. Geological field work continued through the year in several areas.

15. Exploratory drilling was actively carried on but on the whole with disappointing results. In the five-year period since the war, 1st January, 1945 to 31st December, 1949, a total of 38 wells were commenced with a target depth of 8,000 feet or more. These wells are listed by Companies in Table IX and the location of each one is shown on the Map at the back of this Report.

16. By comparing the two it will be noticed that while outstep wells from producing areas were fairly successful the pure wild-cat wells were all unproductive and added nothing to the Island's proved crude reserve.

17. The magnitude of the effort involved in drilling the 38 wells listed, of which the aggregate depth at 31st December, 1949 was 344,117 feet, and of purchasing equipment with which to maintain this effort, is clearly brought out by the following cost figures :—

(1) <i>Expenditure on Deep Wells :</i>	
(a) For the period 1st January, 1945 to 30th September, 1947	\$ 3,706,000
(b) For the period 1st October, 1947 to 31st December, 1949	10,427,000
	\$14,133,000
(2) <i>Investment in Capital equipment especially purchased :</i>	
Purchases after 1st January, 1945	\$ 6,226,000
Orders placed but not delivered as at 31st December, 1945	438,000
	\$ 815,000
(3) <i>Depreciation :</i>	
On Capital equipment as per 2 above	\$ 815,000
Unamortised portion of the investment as at 31st December, 1949 is thus	5,411,000
	\$19,544,000
(4) Total Expenditure on Deep Drilling during period 1st January, 1945 to 31st December, 1949	
	\$19,544,000

18. It will be appreciated that the Exploration drilling programme now costing over \$5,000,000 per year has to be paid for out of profits and that it can only be maintained on the present scale so long as the present volume of profit is available. Any substantial drop in Crude prices must inevitably result in a decrease in the exploratory effort, the continuance of which is vitally important to the Colony's future.

#### DRILLING

19. During the year twenty-four (24) drilling rigs were in continuous operation, twenty (20) being employed on exploitation and four (4) on exploratory work. The total footage drilled was 630,209 feet as compared to 638,681 in 1948.

20. Statistics relative to drilling will be found in Table I items 14-21 inclusive ; the annual footage, item 18, and the average depth per well, item 21, being shown in graph form in Appendix "C". A monthly analysis is given in Table II.

21. One hundred and forty-six (146) oil wells were commenced during the year and one hundred and forty-four (144) were completed, the comparable figures for 1948 being 145 and 141 respectively.

22. The use of Oil Base and Oil Emulsion Muds increased during the year and Diamond Coring equipment was used for the first time, giving very good recovery in formation which would not have cored well with the standard soft formation core barrel. A Magna-tector was imported during the year for use in recovering casing.

23. The depth record for the Colony was broken twice during the year, first by Trinidad Petroleum Development Co., Ltd., with 11,557 feet at their Erin No. 3 location and later by the National Mining Corporation with 12,161 feet at their Otaheite Test.

#### PRODUCTION OF CRUDE OIL

24. The total production of Crude for the year 1949 was 20,616,721 barrels, an average of 56,484 barrels per day. This represents an increase of 2½ per cent. compared to last year's figure.

25. Statistics relative to Crude Oil Production are shown under Item numbers 0, 1 and 22-27 inclusive on Table I, Items 1 and 25 being reproduced in Graph form in Appendix "A". In Table III a detailed monthly breakdown of production methods is given, the annual production contributed by the principal producing methods being graphed as a percentage of the total production in Appendix "B".

26. The average daily production per producing well (Table I, item 25) again dropped slightly being 27.0 barrels per day in 1949 as compared to 27.3 barrels in 1948 and this was again due to a reduction in the ratio of the number of flowing wells to pumping wells the back-log in artificial lifting equipment having been largely worked off during the year.

27. The percentage of salt water in the total fluid produced again showed a slight increase. This is shown in Graph Form in Appendix "F".

## REFINERIES

28. Six permits for the refining of oil were issued under the Oil Mining and Refining Ordinance, four of these being for small field topping plants. No addition was made during the year to either the topping capacity or cracking capacity of the refineries which totalled about 95,000 barrels a day and 50,000 barrels a day respectively.

29. Trinidad Leaseholds Limited announced its intention of embarking on an extensive programme for modernising its Refinery by the installation of a Fluid Catalyst Cracking Plant with a capacity of 15,000 barrels a day and the attendant Vacuum Distillation Column for feed preparation.

30. The capital outlay involved in this venture will be in the neighbourhood of \$20,000,000. The new plant will provide a desirable increase in cracking capacity so that the proportion of gasoline manufactured will be able to be increased considerably. The manufacture of petroleum chemicals was started during the year, an operating company having been registered for this purpose under the name of Tricana Industrial Chemicals, Limited. "Tricana" Selling Companies were also registered in Canada and in the United Kingdom.

31. The Vacuum Asphalt Plant at the Point Fortin Refinery of United British Oilfields of Trinidad, Limited was put into operation in December, its completion having been delayed for many months by the non-arrival of essential material.

32. Crude run to stills (item 13, Table I) amounted to 29,617,000 barrels, an increase of 12.6 per cent on last year's figure. This increase is due to the bigger volume of foreign crude imported for refining and re-export (item 8, Table I).

## NATURAL GASOLENE RECOVERY PLANTS

33. Two plants for the recovery of natural gasoline were in operation during the year. The Charcoal Absorption Plant operated by Apex (Trinidad) Oilfields, Ltd. processed 72.5 per cent. of the Company's total production of gas, the daily average throughout being 8.26 million cubic feet a day for a recovery of 1.06 gallons per thousand cubic feet.

34. The Oil Absorption Plant operated by Trinidad Petroleum Development Co., Ltd. handled 56.6 per cent. of the Company's total production of gas, processing an average of 7.3 million cubic feet a day for a recovery of 0.93 gallons per thousand cubic feet.

35. Small amounts of compressing gasoline were made by Apex (Trinidad) Oilfields, Limited and also by Trinidad Leaseholds, Limited.

## NATURAL GAS

36. Table IV gives figures showing the production and utilization of natural gas for 1948 and 1949. Early in the year the installation of new compressors enabled Trinidad Leaseholds, Limited to considerably increase the input of gas in connection with their repressuring experiment at Forest Reserve. An average of 6.5 million cubic feet per day was put back into the formation as compared to 3.4 million cubic feet per day last year.

## PIPELINES AND LOADING PIERS

37. There were no important additions to the Pipe Line System during the year. All four of the Deep Water Piers were in use, the Pointe D'Or being used exclusively for shipping Trinidad Leaseholds Limited's crude oil to Canada.

38. The Brighton Terminal Pier was used for a few shipments of crude oil to Canada by Antilles Petroleum Company (Trinidad) Limited, but largely for transshipment of bunker oil by the Texas Company.

## TANK STORAGE

39. The total main storage capacity for crude oil and refined products amounted to 9,240,898 barrels, at December, 1949, an increase of 7.2 over last year. One 112,000 barrel tank was re-erected during the year by United British Oilfields of Trinidad, Limited, while Trinidad Leaseholds Limited completed two 150,000 barrel tanks, and three 80,000 barrel tanks at Pointe-a-Pierre and one 10,000 barrel tank at Morne Diablo.

## CONTRIBUTION TO THE REVENUE OF THE COLONY

40. Direct contribution to Revenue made by the Oil Industry amounted to \$18,918,170 or over 35 per cent. of the Colony's total revenue. The comparable figures for 1948 were \$13,227,663 or 26 per cent. of the total revenue. This large increase of over five and half million dollars is entirely due to Income Tax. The only other noteworthy changes in the items of Revenue were in Customs Dues and Oil Royalties. Details are given in Table VI.

41. Income Tax yielded \$13,292,777 in 1949 as compared to \$7,441,508 in the previous year. This increase is accounted for by the increased profits resulting from the higher average price of crude oil in 1948 as compared to 1947. The income tax rate effective from January, 1948 was also higher being 45 per cent. as compared to 40 per cent. in the previous year.

42. Royalties collected on crude oil and natural gas amounted to \$3,670,468 as compared to \$4,030,076 in 1948. These figures, however, are not comparable since an amount of \$1,254,824 was collected in 1948 in respect of an adjustment on the assessments for the previous two years.

43. Customs receipts (Item I of Table VI) increased by 59 per cent. This increase was due more to rising prices than to any increase in the volume of goods imported. There was no increase in Customs tariff on any of the more important items imported by the industry. The c.i.f. value of oil industry importations from various sources is shown in Table VII. Purchases of United Kingdom origin again amounted to almost exactly 60 per cent. of the total.

#### LOCAL DISBURSEMENTS

44. The sum expended annually in the Colony by the oil industry other than in direct contribution to revenue is shown in Table VII. It will be noted that the amount has increased by very nearly 12 per cent. over the figure for 1948.

45. Items 5 and 8 of Table VII and item 19 of Table VI when added together give some indication of the trend of the total outgoings of the industry. This figure, which exceeded \$43,000,000 in 1947 and \$54,000,000 in 1948 was more than \$75,000,000 in 1949, an increase of \$21,000,000 or 39 per cent. in the past year. The increase is distributed roughly as follows :—

Overseas purchases	...	...	...	...	...	\$ 9,250,000
Direct taxation	...	...	...	...	...	6,500,000
Local expenditure :						
Purchases, Rents, Private Royalties, &c.	...	...	...	...	...	3,650,000
Payments to employees and contractors	...	...	...	...	...	1,800,000
						<u>\$21,200,000</u>

#### EXPORTS OF PETROLEUM AND ITS PRODUCTS

46. The quantity of petroleum and its products exported during the year (Table I, items 10-12) again showed a large increase due to increased importation of foreign crudes for refining and re-export. A detailed breakdown of stocks, imports and exports of petroleum products is given in Table V. The export of local crude to Canadian refineries increased slightly being 1,934,753 barrels as compared with 1,706,000 in 1948.

47. The amounts and values of petroleum and its products exported during 1948 and 1949 based on Customs and Excise Department figures are :—

1948 — 26,167,894 barrels valued at	...	...	...	...	\$93,425,393
Petroleum bitumen	...	...	...	...	2,681,404
					<u>\$96,106,797</u>
1949 — 29,379,945 barrels valued at	...	...	...	...	\$97,328,440
Petroleum bitumen	...	...	...	...	1,837,816
					<u>\$99,166,256</u>

48. Petroleum and Asphalt and their products continue to form the largest part, namely 77.5 per cent. of the Colony's export during 1949, practically the same percentage as for the previous year.

The value of the leading staple products of the Colony exported during 1949 is shown in the following table :—

	Value	Percentage of Total
Petroleum and Asphalt and their Products	\$102,177,315	77.531
Sugar, Molasses and Rum	20,913,499	15.869
Cocoa	4,519,207	3.429
Fruits and Fruit Juices	779,173	.591
Coconuts, Copra and Coconut Oil	210,036	.159
Bitters	404,575	.307
Coffee	516,387	.392
Other exports not enumerated	2,269,393	1.722
	<u>\$131,789,585</u>	<u>100.000</u>

3,511,000  
5.22

49. The combined values of petroleum and asphalt together with their products exported annually is shown in Appendix "D" graphed as a percentage of the total annual value of the Colony's exports.

50. Harbour Dues on petroleum cargoes increased from \$557,040 in 1948 to \$598,267 in 1949. These figures do not reflect in full the increased volume of petroleum cargoes entering and leaving the Colony (*see* item 6 and 10 of Table I) since some outward cargoes were exempted from Harbour Dues.

51. Under section 7 (8) of the Port Services (Dues, Charges, and Management) Ordinance, 1948 the Texas Petroleum Company was granted relief from outward Harbour Dues on shipments made after 5th July, 1949 of products from crude oil which it imported into the Colony for refining by Trinidad Leaseholds, Limited and re-exported.

52. A similar concession is also enjoyed by the Texas Petroleum Company in respect of outward cargoes of fuel oil amounting to an average of 150,000 barrels per month transhipped at the Brighton Terminal installation at Brighton.

#### INDUSTRIAL RELATIONS

53. No stoppages of work occurred during the year and the most harmonious relations continued between the Oilfield Workers Trade Union and the Oilfield Employers Association of Trinidad.

54. Additional housing of a very high standard was built for employees by Trinidad Leaseholds, Limited, United British Oilfields of Trinidad, Limited and Trinidad Petroleum Development Co., Ltd.

Trinidad Leaseholds, Limited built a number of two storied houses at Pointe-a-Pierre for key employees of the foreman class and also provided similar accommodation at their Forest Reserve field.

55. United British Oilfields extended their housing scheme at Point Fortin where a number of bungalows were built to accommodate both families and single men. A new Anglican church was also built and opened during the year.

Trinidad Petroleum Development Co., Ltd. spent a considerable amount on extending Dalley Village at Palo Seco and have planned further extensions.

56. United British Oilfields of Trinidad Limited started an apprentice training scheme during the year. Suitable applicants of 15-16 years of age are selected and are given a full five years' training in some branch of the oil industry. Good hostel accommodation is provided for those boys whose homes are some distance from Point Fortin and adequate provision is made for their recreation and general welfare.

57. The Trinidad Leaseholds, Limited apprentice training scheme at Pointe-a-Pierre has now been in operation for several years and is giving excellent results. After a preliminary period in the trade school, apprentices are put through the various departments of the Refinery and Fields with a view to finding out for what kind of work they are individually best suited.

58. The two trade schools are very well equipped for training in wood and metal work, forge work and welding, &c. Each has a good lecture hall with cinematograph equipment.

59. The oil companies are to be congratulated on having provided, at their own expense, a very well organised educational facility of a type which is badly needed through the West Indies.

#### THE ASPHALT INDUSTRY

60. Application was made by Previté & Co., Ltd., to whom the lease of the Pitch Lake has been assigned, for a renewal of the lease when the present one expires in 1956. The terms of a new lease are under consideration.

61. The following table shows the quantity of Natural Asphalt produced and exported :—

	1947	1948	1949
Removed by Works and Hydraulics Department ...	25,350	25,327	46,466
Removed by Company ... ..	61,996	103,666	98,694
	<hr/>	<hr/>	<hr/>
	87,346	128,993	145,160
<i>Exported :</i>	<hr/>	<hr/>	<hr/>
Crude ... ..	342	16	27
Dried ... ..	32,360	41,988	47,461
Cement ... ..	25,470	49,368	37,288
	<hr/>	<hr/>	<hr/>
	58,172	91,372	84,776

## ADMINISTRATION

## ROYALTY ASSESSMENT

62. During the course of the royalty negotiations held in 1947 between Government and the oil companies the question arose as to the precise meaning of the phrase "not less than 10 per cent." where it occurred in Clause 7 of Schedule II to the Land (Oil Mining) Regulations, 1934, in connection with any new method of assessing royalty.

63. The companies asked at that time that the question should be settled as soon as practicable after the main negotiations were concluded and Government agreed. Shortly after the new method of assessing royalty was published (*see* the Land (Oil Mining) Regulations, 1948) further discussions took place to determine the circumstances under which Government might ask for a royalty in excess of 10 per cent. of the value of the crude oil.

64. The various economic factors involved in this matter were discussed in detail in paragraphs 68-72 of this Department's Administration Report for 1948 and the conclusion was there reached that "Other conditions remaining unaltered, an increase in the average production per well per day, such as might be occasioned by the discovery of prolific new pools in depth, would provide greater justification for asking for a royalty rate in excess of 10 per cent. than simply an increase in the volume of profits which existing taxation appears to tap adequately."

65. This conclusion was accepted by both Government and the oil companies as a basis for negotiating a royalty formula applicable to individual wells to provide a sliding scale of royalty ranging from 10 per cent. to 12½ per cent., according to productivity.

66. Agreement was reached rapidly in this matter and the necessary modification of the Royalty Regulations was published in October as the Land (Oil Mining) Regulations, 1949.

The clause containing the royalty scale is worded as follows :—

2. *Crude Oil* :

- (i) Royalty on net crude oil received in the Field Storage Tanks of the lessee or licensee on and from the 1st January, 1949, shall be paid in cash at the end of each half-yearly royalty period at the rate of ten per centum of the equivalent in Trinidad currency of the "Field Storage Value" of the net crude oil produced on lease or licence, provided that if and whenever the net crude oil produced from any well shall in any half-yearly royalty period exceed in the case of a land oil mining lease 350,000 barrels, and in the case of a submarine oil mining licence 450,000 barrels, then and in such case the royalty payable for that royalty period on the production from such well shall be at the following rates :

	<i>Land Leases</i>	<i>Submarine Licence</i>
10 per cent. on the first	... 350,000 bbls.	450,000 bbls.
11 per cent. on the next	... 100,000 "	100,000 "
12 per cent. on the next	... 50,000 "	50,000 "
12½ per cent. on all production over	500,000 "	600,000 "

The percentages aforesaid shall be percentages of the equivalent in Trinidad currency of the "Field Storage Value" of the net crude oil produced on the lease or licence on which the well is located, as the same shall have been calculated for payment of royalty at the rate of ten per centum as provided for in these Regulations.

67. It will be observed that in the case of land leases it is only production in excess of 350,000 barrels per half-yearly royalty period, say 1,933 barrels per day, which will carry more than 10 per cent. royalty. For wells in marine locations the figure is higher on account of the greater cost of preparing derrick foundations and of drilling.

68. This figure of 350,000 barrels per half-yearly period is greater than the production of any well now producing in Trinidad so that the sliding scale will not penalise production from the existing partially depleted reservoirs. It is possible, however, that exploratory drilling may result in wells being drilled which will be capable of producing at rates in excess of 350,000 barrels per half-yearly period and it is such prolific production only which will be affected by the sliding scale of royalty. Since an amendment to the Land (Oil Mining) Regulations is only applicable to leases issued after the publication of such amendment each lessee holding leases to which the Land (Oil Mining) Regulations, 1948, were applicable entered into a Deed agreeing that the Land (Oil Mining) Regulations, 1949, should apply to leases issued before the coming into force of the latter Regulations.

69. Royalty on crude oil was 27.672,737 Trinidad cents per barrel of 23.0-23.9 A.P.I. gravity for the half-yearly royalty period January-June, 1949. This is the same as for both the half-yearly royalty periods in 1948.

70. On and after 19th September, 1949 the de-valued rate for sterling was taken into account in calculating the royalty from the United States price of West Texas sour crude, the royalty for the period July-December, 1949 being 34.549,575 Trinidad cents per barrel of 23.0-23.9 A.P.I. gravity.

71. The full effect of de-valuation on the royalty will not be felt until the end of the royalty period January-June, 1950, for which the royalty is expected to be 39.8 Trinidad cents per barrel of 23.0-23.9 A.P.I. gravity so long as there is no fall in crude prices during that period.

#### SALE OF OIL TAKEN BY GOVERNMENT AS ROYALTY IN KIND

72. The Sales Agreement negotiated during 1946, for the buy-back of royalty oil by the lessees of the seven old-type leases, terminated on the 30th April, 1949. The Governor having advised these lessees that as from the 1st May, 1949, he would again exercise his option to take royalty in kind, bids were invited for the purchase of this oil. Each of the lessees concerned indicated his willingness to buy back the royalty crude produced on his leases and negotiations were commenced early in 1949 in order to agree a method of evaluating this crude.

73. In April 1948, when the lessees of the old-type leases were given notice of Government's desire to terminate the buy-back agreement, it was expected that the method of evaluating, for royalty assessment purposes, crude oil produced on the new-type leases (described in the Land (Oil Mining) Regulations, 1948) which was based on U.S. crude prices would also be applied to crude oil taken as royalty in kind on the old leases and sold by Government. Early in 1949 it became apparent that the local companies could not buy crude oil for cash at the royalty valuation. This valuation had been negotiated at a time when strong market conditions prevailed for all products. Contrary to general expectation these conditions did not last and at the 1st May, 1949, when a new buy-back agreement was due to commence, the Gulf Export price for Fuel Oil had fallen to an extent which caused consternation throughout the Industry and which threw the prices of refined products completely out of alignment with crude prices.

74. During the six-month period, mid-November, 1948, to mid-May, 1949, the value placed on crude produced on the new type leases by the Land (Oil Mining) Regulations, 1948 (West Texas Sour Crude of the same A.P.I. gravity plus 14.3 U.S. cents per barrel) remained stable, being U.S. \$2.32.3 per barrel of average gravity (23.0-23.9 A.P.I.). During this same period, the Gulf export price for Bunker "C" Grade Fuel Oil cargoes fell from U.S. \$2.46 to U.S. \$1.15, other grades of fuel oil suffering similar drops in price. As a result the aggregate value of the three main products obtainable from one barrel of average Trinidad Crude of 23.0-23.9 A.P.I. gravity, yielding about 65 per cent. Fuel Oil, 23 per cent. Gas Oil (No. 2 Fuel) and 12 per cent. Gasolene, on the 1st May, 1949, was only U.S. \$1.90, whereas the royalty valuation was still U.S. \$2.32.3.

75. It was clear that no lessee would buy back crude from the old-type leases at the royalty valuation established by the Land (Oil Mining) Regulations, 1948, since at the 1st May, 1949, this valuation was about 75 U.S. cents per barrel more than the price offered by local refiners. A method of evaluating royalty crude for cash sale had, therefore, to be negotiated.

76. The lessees after consultation with this Department, made an offer based on the Gulf Export price of the principal products obtainable from local crude oil, the main features of which were very similar to those of existing sales agreements between the local producers and the refining companies. Government considered the offer to be a fair and equitable one and, after the lessees had agreed to the adjustment of some minor technical details, accepted it.

77. The methods of determining the purchase price of crude oil taken as royalty in kind as from the 1st May, 1949, is as follows :—

- i. The price payable is calculated by aggregating the value of the gasolene, gas oil and fuel oil content of the crude oil and deducting therefrom a fixed allowance per barrel for expenditure incurred in transportation from fields, storage, processing and terminal charges.
- ii. The products yield of the crude oil to agreed specifications are determined by standard distillation tests made monthly on representative bulk samples for each lease.



iii. The prices applied to the products yield determined by the distillation tests are respectively the weighted average over each half-yearly royalty period of Platt's Oilgram low quotation for cargoes (domestic and export) at Gulf Ports of the corresponding product, namely :—

- (a) motor gasolene 70/72 octane leaded, less cost of leading. (Such cost to be the average c.i.f. value, shown by Custom's invoices, of the Tetra Ethyl lead actually used plus 10 per cent. to cover transportation, handling and blending charges). In the absence of a quotation for 70/72 octane leaded gasolene the low quotation in Platt's Oilgram for export cargoes at United States Gulf Ports of the nearest applicable grade of leaded gasolene shall be used, with an adjustment, to be agreed, to bring the price to that which would, by calculation, be quoted for 70/72 octane leaded gasolene :
- (b) gas oil, according to the diesel index of the product actually obtained. Gas oil will be evaluated as No. 2 Fuel if the diesel index obtained shall be less than 43 :
- (c) Bunker "C" grade Fuel Oil.

78. The following Table shows the total production of, and revenue derived from royalty crude sold back to the lessees :—

<i>Half yearly royalty period</i>	<i>Old Purchase Agreement No. Analysis</i>			<i>Production</i>	<i>Average price per bbl.</i>	<i>Revenue \$</i>
<b>1948</b>				Tons		
January-June	Sold at 40/- per ton			54,403.2	\$1.38	522,270.72
July-December	do.	do.		57,978.3	\$1.38	556,591.68
<b>1949</b>						
January-April	do.	do.		39,208.5	\$1.38	376,401.60
	<i>New Purchase Agreement Analysis</i>			<i>Barrels</i>		
	<i>Fuel Oil</i>	<i>Gas Oil</i>	<i>Gasoline</i>			
May-June	64.7	23.4	11.9	131,212.20	\$1.90½	249,978.34 626,379.94
July-December	66.0	22.6	11.4	399,559.5	\$2.67	1,067,126.96
<b>1950</b>	Estimate at Gulf prices prevailing on 1st March, 1950					
January-June	66.0	23.0	11.0	400,000	\$3.04	1,216,000.00

79. The period January-April, 1949 was the last four months of the old purchase agreement under the terms of which the crude was sold at 40/- per ton, equivalent to \$1.38 per barrel.

80. During the months May and June of the first half-yearly royalty period in 1949, the new purchase agreement was effective at pre-devaluation rate of exchange.

81. The difference in average price between the periods May-June and July-December is due in part to the higher average value for Fuel Oil in the latter period, but is mainly due to the effect of de-valuation which increased the sterling value of all oil sales made on and after 19th September, 1949.

82. The full effect of devaluation on the average half-yearly value of the royalty crude will not be felt until the period January-July, 1950 for which an estimate is given in the above table.

#### RETAIL PRICE OF GASOLINE

83. In May, 1948, an agreement was reached with the Distributing Companies whereby the retail price of gasoline would rise or fall by one cent Trinidad currency per Imperial gallon respectively for every rise or fall of not less than ¾ U.S. cent per U.S. gallon in the low quotation of Platt's Oilgram for the Gulf Export price of the equivalent grade to that marketed in Trinidad. The Gulf Export price of the equivalent grade of gasoline at that time was 9 U.S. cents per U.S. gallon. This rose by ½ cent U.S. on 23rd December, 1948, and by a further ½ cent U.S. on 22nd March, 1949. Under the terms of the agreement, the Distributing Companies were entitled to raise the

local retail price by one Trinidad cent per Imperial gallon. Gulf Export prices for oil products did not appear to be stable at that time and in order that the public should not be inconvenienced by possible frequent price changes, the Distributing Companies agreed to defer the price rise for several months. By July it appeared that further changes in the export price would be unlikely for some time, accordingly, the retail price was advanced from 40 to 41 Trinidad cents per Imperial gallon on 22nd July, 1949.

84. Early in September a number of service station operators wrote to Government pointing out that margin of three cents per Imperial gallon between the wholesale and retail prices of gasoline was the lowest in the West Indies and was the same as before the war, whereas the cost of operating a service station had increased enormously. The service station operators asked Government to control the wholesale price as well as the retail price in order to give an increased margin between the two prices. Government examined this matter and came to the conclusion that a service station could no longer be operated at a profit on a margin of three cents per gallon. The margin was increased to 4 cents per Imperial gallon, effective on 29th October, 1949.

85. On 19th September, 1949, the Pound was devalued in relation to the U.S. dollar and shortly afterwards the Distributing Companies advised Government that since their purchases of all petroleum products were on the basis of the United States Gulf export prices as quoted for cargo lots in Platt's Oilgram, in terms of local currency, these prices would reflect the full effect of devaluation. The Distributing Companies were informed that the policy of the local Government would be to allow the same increase in basic prices as might be allowed in the United Kingdom and they were asked to freeze prices at pre-devaluation level until discussions between the petroleum industry and the United Kingdom Government then proceeding with a view to fixing new prices and the date from which these prices should operate were concluded.

86. On the 25th October, the Ministry of Fuel and Power announced new maximum selling prices in the United Kingdom for the main petroleum products. These new prices reflected in full the increase in the sterling equivalent of Gulf export prices consequent upon the new dollar/sterling rate of exchange.

87. The method by which effect might be given to the new basic price structure of petroleum products with least upset to the local economy was most carefully considered by Government. It was decided to reduce the Excise Tax on gasoline from 18 cents to 9 cents per Imperial gallon and to abolish the Excise tax of 6 cents per Imperial gallon on kerosene. These Excise reductions which were effective on and from 29th October, 1949, enabled the retail prices of gasoline and kerosene to remain unchanged at 41 cents and 24 cents per gallon respectively while allowing the dealers margin on gasoline to be increased from 3 to 4 cents per Imperial gallon.

88. The loss of revenue in 1950 occasioned by the reduction in Excise Tax was estimated at \$1,125,000 in the case of gasoline and \$250,000 in the case of kerosene. These losses will, however, be more than offset by the increase, estimated at \$1,600,000, in oil royalties, which being based on United States Gulf export prices, will reflect the full effect of devaluation.

89. The free of Excise concession which the oil companies have hitherto enjoyed under section 22 of the Excise (General Provisions) Ordinance, whereby no Excise Duty was payable on any petroleum spirit or petroleum oil used by its manufacturer or any allied company in connection with the winning or refining of petroleum was repealed with effect from the 29th October, the additional revenue collectible in 1950 from this source being estimated at \$108,000 (9 cents per gallon on 1,200,000 gallons of gasoline).

90. The formula agreed between Government and the Distributing Companies for determining the retail price of gasoline (*see* paragraph 83 above) was upset by the de-valuation of sterling and at the end of the year a new formula was under discussion.

91. The local consumption of gasoline, which increased rapidly after the war, is now expected to remain fairly constant at the rate of about 14,000,000 gallons per year. Kerosene consumption is also nearly steady at 4,000,000 gallons per year. Aviation spirit supplied to commercial aircraft in 1949 amounted to 2,322,770 gallons.

#### INSPECTIONS AND ACCIDENTS

92. Drilling rigs, producing wells and oilfield ancillary installations were inspected. No fatal accidents occurred on these during the year. All accidents were reported and suitable investigations instituted.

All accidents, other than those above, were dealt with by the Senior Factory Inspector.

## RETURNS

93. Returns submitted by the oil companies under the various Ordinances and regulations have been received regularly and checked. I am glad to record the willing co-operation of the oil companies' technical and accounting staffs in the preparation of the large volume of returns which are now required.

## GOVERNMENT GEOLOGIST

94. The post of Government Geologist which had been vacant for over twenty years was filled by the appointment of Major A. G. A. Sutton who took up his duties at the end of January, 1949.

The geological data and maps of Crown lands held under Mining Leases and supplied to Government under the terms of the leases were examined and are being brought up-to-date where necessary.

95. Negotiations were started with the oil companies for the writing of technical reports on the various oilfields by the company geologists. It is hoped that these reports will be published by the end of 1950.

96. A Geiger Counter has been supplied to the Department to be used in prospecting for radioactive substances. A survey of several of the West Indian islands will be carried out with this instrument early in 1950.

97. A number of requests for advice relating to water supply have been received by the Department and to facilitate the making of recommendations as to the site of water wells and dams, an exhaustive report on the facts of the water situation in Trinidad has been completed and will be published early in 1950.

98. Reports have been made on several quarries and on the Glass Sand Deposit at Melajo.

## LEGISLATION

99. The Land (Amendment) Regulations, 1949, effective 27th August, 1949, repealed and replaced part V of the Land Regulations (24th December, 1917).

100. They provide for the granting of Exploration Licences and Mining Leases over Crown Lands where such are required to explore for or to win minerals other than Crude Oil and Natural Gas.

101. The Submarine (Oil Mining) (Amendment) Regulations, 1949, amended the Submarine (Oil Mining) Regulations, 1945, by deleting a reference to an obsolete ordinance and by altering the wording of the clauses relating to royalty so that they will be in conformity with the corresponding clauses of the Land (Oil Mining) Regulations, 1934.

102. The Land (Oil Mining) Regulations, 1949, effective on 24th October, 1949, repealed and replaced the Land (Oil Mining) Regulations, 1948, and by agreement with the lessees concerned were made applicable to leases issued prior to the publication of these Regulations.

103. They differed from the 1948 Regulations by providing a sliding scale of royalty applicable only to very prolific wells.

104. The Excise (General Provisions) (Amendment) Ordinance, 1949, effective on 29th October, 1949, amended the Excise (General Provisions) Ordinance by deleting subsections (2) (a), (3) and (4) of section 22, thereby terminating the free of Excise concession to the oil companies.

105. Each of the following three Ordinances, namely :—

The Oil Bearing Sands (Water Control) (Amendment) Ordinance, No. 33 of 1949 ;

The Oilfield Fires Control (Amendment) Ordinance, No. 35 of 1949 ;

The Oil Mining and Refining (Amendment) Ordinance, No. 34 of 1949 ;

amended its corresponding principal Ordinance by —

i. changing the definition of Oilfield to include a Marine area ;

ii. including a definition of "person operating for oil" in the same terms as those contained in the Petroleum Office and Conservation Board Ordinance.

106. During the year a consolidation of the Land (Oil Mining) Regulations, 1934 and its nine amendments was made and agreed with the Commissioner for Law Revision and the Petroleum Association of Trinidad.

## LICENCES AND LEASES

107. Three exploration licences were renewed over reduced areas from the 1st of January, 1949. No principal leases were issued during the year but two supplemental leases were issued.

A summary of the leasing situation as at 31st December, 1949, is as follows:—

## A. Leases Registered :

	ACREAGE					
	Surface rights in Private Ownership			Surface rights vested in Crown		
	A.	R.	P.	A.	R.	P.
Principal Mining Leases—81 ... ..	56,862	1	12½	159,352	3	13
Exploration Licences—8 ... ..	—	—	—	64,444	—	—
	<u>56,862</u>	<u>1</u>	<u>12½</u>	<u>223,796</u>	<u>3</u>	<u>13</u>

## B. Leases granted but not yet registered :

## (i) Principal Leases :

Company	Locality	ACREAGE					
		Surface rights in Private Ownership			Surface rights vested in Crown		
		A.	R.	P.	A.	R.	P.
Antilles 2	Mayaro ... ..	—	—	—	8,400	0	00
	Cocal ... ..	—	—	—	1,240	0	00
Apex 1	Central Range ... ..	16,440	0	00	—	—	—
K.T.O. 1	Pointe-a-Pierre ... ..	17	0	18	—	—	—
T.L.L. 4	Savana Grande ... ..	316	2	24	953	2	30
	Naparima ... ..	—	—	—	—	—	—
	do. ... ..	47	0	03	2	2	00
	do. ... ..	308	0	00	20	0	00
T.N.A. 2	Moruga ... ..	16	0	33	—	—	—
	Turure ... ..	—	—	—	500	0	00
	Nariva ... ..	—	—	—	7,603	0	00
T.P.D. 9	Moruga ... ..	13	1	37	223	0	38
	Moruga ... ..	—	—	—	115	0	00
	Cedros ... ..	1,553	1	17	1,653	2	00
	Moruga ... ..	1,503	0	00	64	0	09
	Nariva ... ..	159	3	32	—	—	—
	Pointe-a-Pierre ... ..	181	3	12	—	—	—
	Siparia ... ..	10	1	19	—	—	—
	Coora ... ..	60	1	19	—	—	—
	Central Range ... ..	179	1	30	—	—	—
	U.B.O.T. 3	Ortoire ... ..	—	—	—	45,901	0
	do. ... ..	—	—	—	2,791	0	00
	Roussiliac ... ..	89	3	29	845	2	27
		<u>20,896</u>	<u>2</u>	<u>33</u>	<u>70,312</u>	<u>2</u>	<u>24</u>

## (ii) Supplemental Leases :

Company	Locality	ACREAGE					
		Surface rights in Private Ownership			Surface rights vested in Crown		
		A.	R.	P.	A.	R.	P.
T.L.L. 1	Moruga ... ..	205	3	30	29	1	23
T.P.D. 1	Siparia ... ..	11	3	34	31	3	35
U.B.O.T. 6	Siparia ... ..	—	—	—	34	1	24
	Cocal ... ..	40	3	31	—	—	—
	Guapo ... ..	—	—	—	Not Surveyed	—	—
	Guapo ... ..	—	—	—	Not Surveyed	—	—
	Cocal ... ..	Not Surveyed	—	—	—	—	—
	Siparia ... ..	Not Surveyed	—	—	—	—	—
		<u>258</u>	<u>3</u>	<u>15</u>	<u>95</u>	<u>3</u>	<u>02</u>

Total Acreage of Arcas granted but not registered:

91,563a. 31. 34P.

*C. Notice of Intention to exercise option to convert a portion of an Exploration Licence into a Mining Lease :*

	A.	R.	P.
From Antilles Petroleum Co. (Trinidad) Limited ... .. — — —	9,144	0	00
„ Trinidad Northern Areas, Ltd. ... .. — — —	6,704	0	00
„ United British Oilfields of Trinidad, Limited ... .. — — —	26,100	0	00
	41,948	0	00

Each of the above areas will be converted into a Mining Lease effective from 1st January, 1950.

*D. Exploration Licences applied for prior to 31st December, 1949, and effective for one year from 1st January, 1950 :*

Company	Locality	Crown Oilrights		
		A.	R.	P.
Trinidad Leaseholds, Limited	1 Moruga ... ..	2,360	0	00
Trinidad Northern Areas, Limited	3 Central Range ... ..	19,500	0	00
	Cedros ... ..	816	1	22
	Manzanilla ... ..	1,148	0	00
Trinidad Petroleum Development Co., Ltd. ... ..	1 Nariva ... ..	5,664	0	00
United British Oilfields of Trinidad, Ltd. ... ..	3 Cocal ... ..	906	0	00
	Cedros ... ..	802	0	00
	Nariva ... ..	23,600	0	00
	Total Acreage ... ..	54,796	1	22

*E. Marine Areas in Territorial Waters :*

Licences are in course of preparation and will shortly be issued.

*F. Private Oilrights :*

Returns submitted by the oil companies shew that 115,013 acres of private oilrights were under lease at the end of the year.

The total of the leased areas under heads "A", "B" and "F" above is 487,236 acres or about 40.8 per cent of the total acreage of the Colony.

STAFF

108. Mr. I. S. Rutherford, Assistant Petroleum Technologist, went on 126 days leave with effect from 5th May to 7th September. Owing to difficulty in obtaining passage he did not return to the Colony until 9th November. He resumed duties on the 10th November.

Mr. J. G. A. Roe, was appointed 3rd Assistant Petroleum Technologist for a further period of two years from 1st April, 1949. He went on 45 days vacation leave from 13th January, 1949.

Mr. Cyril Niles was promoted to Principal Officer with effect from 1st January, 1949.

Mr. H. O. Roberts, 1st Class Clerk, was seconded to the Secretariat as from 28th February, 1949. He was promoted Senior Clerk and transferred to the latter department with effect from 1st June, 1949.

Mr. V. E. Bruce, 1st Class Clerk, Inland Revenue Department, was appointed to replace Mr. Roberts but did not take up duties here, being seconded to the Secretariat.

Mr. P. B. Ramroop, 2nd Class Clerk, acted as 1st Class Clerk from 28th February to the end of the year.

Mr. A. S. Birbal was appointed Draughtsman from 1st January, 1949, but his services were terminated on 31st October, and Mr. G. M. Coolman replaced him with effect from 1st November, 1949.

Mr. Yakubh Ali, Junior Draughtsman, was granted 50 days vacation leave as from 9th May, 1949.

Mr. H. A. Ramsankar, 2nd Class Clerk, was granted 44 days vacation leave from 17th August, 1949, and during his absence Mr. C. Gopaul was appointed to act as a 2nd Class Clerk in the department.

Mr. R. E. Alexander, 2nd Class Clerk, went on 60 days vacation leave from 3rd January, 1949, and Mr. D. V. Khan was appointed to act as a result.

Mr. Norbert Joseph was appointed to act as a 2nd Class Clerk from the 11th March, 1949, and continued to do so to the end of the year.

Miss E. E. Maule was appointed as Typist in the Department as from 1st January, 1949.

I have much pleasure in recording the very able and willing assistance I have received from all members of the staff.

W. N. FOSTER,  
*Petroleum Technologist*

27th March, 1950.

TABLE I—ANNUAL STATISTICS OF PRODUCTION, DRILLING, EXPORTS AND IMPORTS

Item	Unit	1949	% difference 48/49	1948	1947	1946	1945	1944	1943	1942	1941
<b>PRODUCTION</b>											
0 Crude Oil as per previous Administration Reports (see footnote)	1,000's bls.	—	—	20,110	20,520	20,233	21,093	21,635	21,385	22,069	20,506
1 Crude Oil ... ..	do.	20,617	+ 2.5	20,107	20,433	20,142	21,000	21,543	21,286	21,962	20,393
2 Natural Gasoline ... ..	do.	168	— 7.7	182	181	187	182	185	182	197	219
3 TOTAL CRUDE OIL AND NATURAL GASOLINE ... ..	do.	20,785	+ 2.4	20,289	20,614	20,239	21,182	21,728	21,468	22,159	20,612
4 From Crown-Oil-rights ... ..	do.	16,288	+ 6.4	15,309	15,373	15,541	16,878	17,430	17,089	17,833	15,424
5 From Private Oil-rights ... ..	do.	4,497	— 9.7	4,980	5,241	4,788	4,304	4,298	4,379	4,326	5,188
6 TOTAL IMPORTS (ALL OILS) ... ..	do.	11,678	+ 31.5	8,882	5,917	2,933	3,394	3,188	1,101	1,365	4,048
7 Imports of Refined Products ... ..	do.	25	+ 13.6	22	21	40	409	840	365	—	—
8 Imports of Crude Oil for Refining ... ..	do.	11,333	+ 28.2	8,840	5,896	2,893	2,119	1,082	—	83	241
9 Imports of Other Oils for Refining and Blending ... ..	do.	320	—	20	—	—	866	1,266	736	1,282*	3,807*
10 TOTAL EXPORTS (ALL OILS) ... ..	do.	29,458	+ 12.6	26,168	22,926	20,432	20,651	19,754	15,860	19,063	15,851
11 Exports of Crude Oil ... ..	do.	2,037	+ 19.4	1,706	881	263	—	—	—	—	161
12 Exports of Refined Products (As per Customs') ... ..	do.	27,421	+ 12.1	24,462	22,045	20,169	20,651	19,754	15,860	19,063	15,690
13 CRUDE OIL RUN TO STILLs ... ..	do.	29,617	+ 9.4	27,074	25,281	22,713	23,170	22,498	21,086	21,914	20,812
14 NO. OF WELLS STARTED ... ..	As stated	146	+ 0.7	145	162	124	110	105	127	169	270
15 TOTAL NO. OF DRILLING WELLS COMPLETED ... ..	do.	144	+ 2.1	141	157	108	100	100	136	163	285
16 No. of Drilling Wells completed as oil wells ... ..	do.	130	— 3.0	134	141	104	95	96	133	156	275
17 No. of Drilling Wells abandoned while drilling (Dry holes, &c.)	do.	14	+ 100.0	7	16	4	5	4	3	7	10
18 TOTAL FOOTAGE DRILLED (ALL WELLS) ... ..	Feet	630,209	— 1.3	638,681	644,689	533,209	453,872	456,957	493,731	623,398	933,254
19 Footage Drilled on Crown Oil-rights ... ..	do.	451,624	— 7.8	489,987	446,798	406,017	345,071	352,988	389,527	546,233	785,487
20 Footage Drilled on Private Oil-rights ... ..	do.	178,585	+ 20.0	148,694	197,891	127,192	108,801	103,969	104,204	77,165	149,767
21 AVERAGE DEPTH OF COMPLETED DRILLING WELLS (Item 15)	do.	4,065	— 4.6	4,259	4,155	4,772	4,586	4,535	3,620	3,750	3,276
22 TOTAL NO. OF WELLS PRODUCING (Average during year)	As stated	2,089	+ 3.8	2,013	1,876	1,820	1,735	1,637	1,591	1,630	1,516
23 No. of Wells producing by flowing (Average during year)	do.	616	— 2.1	629	625	615	634	642	628	618	561
24 No. of Wells producing by Artificial Lift (Average during year)	do.	1,473	+ 6.4	1,384	1,251	1,205	1,101	995	963	1,012	955
25 AVERAGE DAILY PRODUCTION DURING YEAR PER PRODUCING WELL	Barrels	27.0	— 1.1	27.3	30.0	30.4	33.3	36.1	36.8	37.1	37.1
26 Average daily production during year per flowing well ...	do.	51.9	+ 2.4	50.7	54.2	55.0	59.5	63.9	64.8	67.8	69.8
27 Average daily production during year per artificial lift well	do.	16.6	— 0.6	16.7	17.8	17.9	18.2	18.3	17.5	18.3	18.2

The difference between Items 0 and 1 is due to Item 0 including a part of total production of Natural Gasoline which was not disposed of as such but blended with crude oil at field storage.

\* Includes some Refined Products.

(SGD.) I. S. RUTHERFORD  
Assistant Petroleum Technologist

TABLE II—MONTHLY ANALYSIS OF DRILLING WELLS FOR THE YEAR 1949

MONTH	Average No. of Rigs running	No. of New Wells started	No. of Old Wells Abandoned	No. of Oil Wells Recompleted	DRILLING WELLS		WELLS COMPLETED				MONTHLY FOOTAGE DRILLED			Average footage drilled per day
					Completed as Oil Wells		Abandoned while drilling		Crown Oil Rights	Private Oil Rights	Total			
					No.	Aggregate Depth in Feet	Dry holes	Technical causes						
JANUARY	21	16	1	4	9	36,031	4	12,609	—	—	32,374	20,186	52,560	1,696
FEBRUARY	24	7	2	10	12	49,617	—	—	—	—	30,982	14,416	45,398	1,621
MARCH	21	10	3	10	9	30,031	1	10,056	—	—	38,191	12,659	50,850	1,640
APRIL	24	17	7	10	11	44,342	2	7,717	—	—	31,155	14,752	45,907	1,530
MAY	23	9	1	10	13	52,307	—	—	1	8,914	30,856	13,887	44,743	1,443
JUNE	25	17	1	5	11	39,694	1	3,389	—	—	35,773	21,144	56,917	1,897
JULY	26	12	3	6	12	43,346	1	1,200	—	—	45,078	20,368	65,446	2,111
AUGUST	24	16	—	11	11	48,813	1	12,161	—	—	46,564	12,245	58,809	1,897
SEPTEMBER	25	10	2	18	14	46,685	—	—	—	—	33,248	15,499	48,747	1,625
OCTOBER	25	11	1	10	10	39,707	1	2,927	—	—	42,247	13,369	55,616	1,794
NOVEMBER	26	13	1	5	9	38,456	1	3,607	—	—	47,324	12,061	59,385	1,980
DECEMBER	24	8	—	10	9	44,293	—	—	1	9,426	37,832	7,999	45,831	1,478
YEAR'S TOTALS	—	146	22	109	130	513,322	12	53,666	2	18,340	451,624	178,585	630,209	Average during year 1,726

Average depth of drilling Wells completed 4,065 feet.

(SGD.) I. S. RUTHERFORD  
Assistant Petroleum Technologist



TABLE III

## ANALYSIS OF MONTHLY PRODUCTION FOR THE YEAR ENDING 1948

All figures are for Dry Oil in Barrels of 35 Imperial Gallons

MONTH	FLOWING				GAS/AIR LIFT				PUMPING				PLUNGER LIFT				OTHER METHODS				Daily Average per Well	Total No. Wells produced	Total No. Idle Wells	Total No. Wells Abandoned	No. of Wells Drilling at end of month	Total No. of Wells started	PRODUCTION: DRY OIL IN BARRELS OF 35 IMPERIAL GALLONS				Total
	No. of Wells	Production	Per Cent.	Daily Average per Well	No. of Wells	Production	Per Cent.	Daily Average per Well	No. of Wells	Production	Per Cent.	Daily Average per Well	No. of Wells	Production	Per Cent.	Daily Average per Well	No. of Wells	Production	Per Cent.	Daily Average per Well							No. of Wells	Production	Per Cent.	Daily Average per Well	
January ...	618	1,040,669	60.0	54.3	57	67,782	3.9	38.4	991	533,000	30.7	17.4	226	92,822	5.3	13.2	51	1,196	0.1	0.8	1,943	1,218	833	18	4,012	28.8	1,347	1,308,601	596	427,562	1,736,163
February ...	615	934,619	59.4	52.4	59	53,948	3.4	31.5	1,009	493,677	31.4	16.9	223	90,257	5.7	13.9	53	1,037	0.1	0.7	1,959	1,206	838	21	4,024	27.7	1,353	1,187,367	606	386,111	1,573,478
March ...	632	1,016,728	59.3	51.9	56	56,650	3.3	32.6	1,017	541,905	31.6	17.2	230	97,397	5.7	13.7	57	1,370	0.1	0.8	1,992	1,178	848	21	4,039	27.8	1,379	1,296,313	613	417,757	1,714,070
April ...	653	956,176	58.3	48.8	52	47,900	2.9	30.7	1,051	535,000	32.7	16.9	230	98,868	6.0	14.3	57	1,318	0.1	0.8	2,043	1,140	850	18	4,051	26.7	1,409	1,241,064	634	398,807	1,639,871
May ...	628	967,610	57.6	49.7	53	51,220	3.0	31.1	1,046	558,555	33.2	17.2	226	102,340	6.1	14.6	39	1,141	0.1	0.9	1,992	1,196	854	21	4,063	27.2	1,382	1,262,157	610	418,739	1,680,896
June ...	616	937,359	58.4	53.8	49	43,217	2.7	23.4	1,041	526,467	32.9	16.9	225	95,145	5.9	14.1	51	1,645	0.1	1.0	1,982	1,218	855	21	4,076	27.0	1,364	1,205,952	618	397,881	1,603,833
July ...	627	985,331	57.8	50.7	55	51,144	3.0	30.0	1,060	571,881	33.6	17.4	220	94,148	5.5	13.8	55	1,297	0.1	1.0	2,017	1,195	856	22	4,090	27.2	1,382	1,284,872	635	418,929	1,703,801
August ...	624	975,778	57.1	52.1	55	56,713	3.3	34.3	1,066	578,625	33.9	18.0	221	95,143	5.6	14.3	53	1,351	0.1	0.8	2,019	1,202	859	18	4,098	28.2	1,386	1,283,914	633	423,696	1,707,610
September ...	631	950,929	57.5	50.2	56	58,699	3.6	34.9	1,066	544,408	32.9	17.0	223	97,180	5.9	14.5	53	1,265	0.1	0.8	2,029	1,202	860	17	4,108	27.1	1,390	1,238,034	639	414,447	1,652,481
October ...	635	971,612	56.9	49.3	62	69,525	4.1	34.6	1,083	565,701	33.1	19.7	224	99,564	5.8	14.3	52	1,123	0.1	0.7	2,056	1,184	861	16	4,117	26.8	1,418	1,295,910	638	411,615	1,707,525
November ...	634	933,595	56.5	49.1	58	72,406	4.4	41.6	1,094	547,709	33.1	16.7	224	97,137	5.9	14.4	55	1,189	0.1	0.7	2,065	1,186	863	15	4,129	26.7	1,435	1,260,981	630	391,055	1,652,036
December ...	629	995,265	57.2	51.0	64	70,397	4.1	35.5	1,086	570,957	32.8	17.0	223	100,865	5.8	19.1	54	1,653	0.1	1.0	2,054	1,208	865	18	4,145	27.3	1,421	1,338,470	633	400,667	1,739,137
TOTALS ...	Avge. 629	11,665,671	Avge. 58.0	51.1	56	699,601	Avge. 3.5	33.2	1,051	6,569,178	Avge. 32.7	17.4	225	1,160,866	Avge. 5.8	14.5	52	15,585	Avge. 0.1	0.8	Avge. 2,013				Avge. 27.4	1,389	15,203,635	Avge. 624	4,907,266	20,110,901*	
DAILY AVERAGES		31,873				1,911				17,949				3,172														41,540		13,408	54,948

\* 3,447 Bbls. C.H.P.S. (Nat. Gasoline) included in this total : 20,110,901 Bbls.  
Total Production of C.H.P.S. (Nat. Gasoline) for 1948 : 182,163 Bbls.

3rd February, 1949

I. S. RUTHERFORD,  
Acting Assistant Petroleum Technologist.

TABLE IV—PRODUCTION AND DISPOSAL OF NATURAL GAS

(All figures in thousands of cubic feet)

1949	GAS PRODUCTION (M.C.Ft.)		GAS DISPOSAL (M.C.Ft.)				
	Gas Production	Inter Company Sales and Interfield transfers	Used as Fuel	Replaced in formation	Losses and unaccounted for	Not collected	Vented as surplus
January ... ..	2,562,522	784,253	1,432,238	111,500	169,813	467,425	381,546
February ... ..	2,374,658	771,552	1,385,440	105,000	157,298	429,403	297,517
March ... ..	2,647,821	836,869	1,526,377	164,500	170,310	452,917	333,717
April ... ..	2,666,397	868,917	1,401,637	194,670	180,278	447,220	442,592
May ... ..	2,716,099	851,667	1,366,529	211,500	184,201	482,167	471,702
June ... ..	2,647,082	836,674	1,362,749	240,069	135,086	463,014	446,164
July ... ..	2,791,900	919,819	1,460,900	220,536	208,550	552,179	349,735
August ... ..	2,788,496	867,020	1,416,908	228,476	168,077	553,866	421,169
September ... ..	2,697,383	843,140	1,419,461	235,678	194,755	506,056	341,433
October ... ..	2,800,120	837,484	1,500,572	205,224	222,644	537,372	334,308
November ... ..	2,748,619	825,847	1,482,978	215,933	191,557	499,829	358,322
December ... ..	2,845,697	867,587	1,514,314	253,394	248,325	331,592	498,072
TOTALS ... ..	32,286,794	10,110,829	17,270,103	2,386,440	2,230,894	5,723,040	4,676,277
Percentage of Total ...	100	—	53.5	7.4	6.9	17.7	14.5

TABLE IVa—PRODUCTION AND DISPOSAL OF NATURAL GAS

(All figures in thousands of cubic feet)

1948	GAS PRODUCTION (M.C.Ft.)		GAS DISPOSAL (M.C.Ft.)				
	Gas Production	Inter Company Sales and Interfield transfers	Used as Fuel	Replaced in formation	Losses and unaccounted for	Not collected	Vented as surplus
January ... ..	2,560,620	740,164	1,309,527	111,956	141,875	530,389	466,873
February ... ..	2,451,839	679,356	1,214,193	101,849	141,594	492,584	501,619
March ... ..	2,629,914	715,646	1,256,735	100,608	207,897	492,115	572,559
April ... ..	2,550,880	691,346	1,279,719	101,860	205,000	490,531	473,770
May ... ..	2,545,683	681,657	1,288,507	121,000	206,370	496,007	433,799
June ... ..	2,432,794	716,861	1,311,699	133,500	106,632	479,625	401,338
July ... ..	2,554,554	798,490	1,433,006	105,000	155,896	502,498	358,154
August ... ..	2,564,899	859,150	1,496,917	105,000	168,652	476,318	318,012
September ... ..	2,549,652	887,554	1,491,604	98,000	178,663	458,239	323,146
October ... ..	2,652,309	912,922	1,509,569	95,500	211,490	474,102	361,648
November ... ..	2,585,854	854,377	1,424,269	89,500	194,267	462,808	415,010
December ... ..	2,617,569	836,310	1,413,858	77,500	223,636	453,994	448,581
TOTALS ... ..	30,696,567	9,373,833	16,429,603	1,241,273	2,141,972	5,809,210	5,074,509
Percentage of Total ...	100.0	—	53.5	4.0	7.0	19.0	16.5

TABLE V—RETURN OF PRODUCTION, STOCKS AND DISPOSAL OF PETROLEUM DURING THE YEAR ENDED 1949

All figures in Tons of 2,240 lb.

	Crude and Process Oils	AVIATION SPIRIT		Motor Spirit	White Spirit	Burning Oil	Vapourising Oil	Gas and Diesel Oil	Fuel Oils (All grades)	Lubricating Oil and Grease	Bitumen	Other finished products	Feed or Blending Stock for Transfer
		100 Octane	Other Grades										
1. OPENING STOCKS	162,791	7,370	3,076	63,157	336	7,992	14,069	64,334	138,684	2,377	5,346	1,637	42,020
2. CRUDE OIL PRODUCTION INCLUDING CASING HEAD PETROLEUM SPIRIT	2,963,015	—	—	—	—	—	—	—	—	—	—	—	—
3. IMPORTS :													
Venezuela	1,128,825	—	—	—	—	—	—	—	—	—	—	—	—
Columbia	469,788	—	—	—	—	—	—	—	—	—	—	—	—
United States of America, United Kingdom, Netherlands West Indies and Canada	—	—	—	35,116	—	—	—	—	—	3,624	—	—	—
TOTAL IMPORTS	1,598,613	—	—	35,116	—	—	—	—	—	3,624	—	—	—
4. RUNS TO STILLs	4,204,302	—	—	—	—	—	—	—	—	—	—	—	—
5. PRODUCTS OBTAINED	—	42,181	87,298	580,529	295	63,574	195,042	581,609	2,414,576	345	54,847	24,906	22,322
6. CONSUMPTION :													
Trinidad and Tobago	—	—	—	51,033	447	13,983	—	23,991	54,598	3,867	6,607	8,096	—
Bunkers	—	8,514	1,517	—	—	—	—	117,375	1,009,661	—	—	—	—
Refinery Fuel	—	—	—	—	—	—	—	—	12,041	—	—	—	—
TOTAL CONSUMPTION	—	8,514	1,517	51,033	447	13,983	—	141,366	1,076,300	3,867	6,607	8,096	—
7. SHIPMENTS :													
Exported	288,246	34,472	81,219	533,996	—	45,276	190,448	455,741	1,331,066	283	44,881	13,994	14,335
Re-Exported*	—	—	—	26,438	—	—	—	—	—	451	—	—	—
TOTAL SHIPMENTS	288,246	34,472	81,219	560,434	—	45,276	190,448	455,741	1,331,066	734	44,881	13,994	14,335
8. CLOSING STOCKS ON 31ST DECEMBER, 1949	206,014	6,565	7,638	67,335	184	12,307	18,663	48,836	145,954	1,745	8,705	4,453	39,283
9. BALANCE NOT SPECIFICALLY ACCOUNTED FOR	†25,857	—	—	—	—	—	—	—	—	—	—	—	‡10,724

\* Fuel Oils imported for tran shipment are not included in this Return.

† Pipeline Losses, &c.

‡ Stock Adjustment.

(SGD.) I. S. RUTHERFORD

Assistant Petroleum Technologist

TABLE VI—STATEMENT SHOWING CONTRIBUTIONS TO REVENUE OF THE COLONY BY THE OIL INDUSTRY

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
1. Customs ... ..	\$ 730,626	\$ 598,563	\$ 565,176	\$ 578,030	\$ 709,372	\$ 636,035	\$ 370,193	\$ 650,525	\$ 778,276	\$ 1,238,426
Excise Duty on Petroleum Spirit										36,910
2. Land and Building Taxes ... ..	106,841	109,221	110,592	121,974	130,733	120,484	167,062	150,919	145,874	84,754
Vehicles, Licences and Registration										69,371
3. Taxes on Income ... ..	1,433,272	1,579,143	1,865,856	2,918,920	2,666,052	3,076,581	2,730,744	3,552,074	7,441,508	13,292,777
4. Reimbursements—Petroleum Office	18,745	17,294	16,581	16,621	19,176	21,839	16,808	23,884	30,071	24,611
Exploration Licences										3,864
5. Earnings of Government Departments	1,568	283	514	491	760	555	1,319	2,079	1,934	5,045
6. Miscellaneous ... ..	17,498	29,242	21,881	35,129	15,472	10,351	7,658	13,190	5,204	64,386
7. Royalty on Oil ... ..	1,218,391	1,323,304	1,183,177	1,498,307	1,351,531	1,428,160	1,287,917	1,976,989	4,030,076	3,596,251
Royalty on Gas										74,217
8. Forest—Sale of Timber, &c. ... ..	50,823	67,622	52,192	31,999	35,629	34,606	43,698	51,880	58,915	38,715
9. Extraordinary ... ..	—	—	120	—	—	—	—	—	—	—
10. Cocoa Subsidy—Special Taxation ... ..	—	—	—	—	—	—	—	—	—	—
11. Emergency Taxation—Oil Impost ... ..	428,758	391,004	436,925	414,348	—	—	—	—	—	—
12. Levy on Income ... ..	—	1 103,896	3,526	—	—	—	—	—	—	—
SUB-TOTALS ... ..	4,006,522	5,220,112	4,256,540	5,615,819	4,928,725	5,328,611	4,625,399	6,421,540	12,491,858	18,529,327
13. Harbour Dues (For Ships' a/c) ... ..	—	—	—	—	169,513	190,480	226,055	367,345	557,040	585,901
SUB-TOTALS ... ..	4,006,522	5,220,112	4,256,540	5,615,819	5,098,238	5,519,091	4,851,454	6,788,885	13,048,898	19,115,228
14. Fees and Payments for Specific Services ... ..	8,676	10,830	7,606	10,783	8,009	10,331	11,060	16,261	9,294	12,308
15. Post Office ... ..	9,861	15,825	18,758	23,520	19,166	19,424	25,405	28,066	25,061	34,656
16. Rent of Government Property ... ..	2,441	2,754	1,778	1,489	1,079	2,509	49,999	5,662	4,174	11,151
17. Government Railway and Telegraph ... ..	119,467	73,770	47,667	80,080	62,734	77,260	107,499	110,571	101,209	115,539
18. Wharves and Harbours ... ..	63,866	74,221	22,018	34,499	28,259	50,533	47,767	127,194	39,027	215,189
19. GRAND TOTAL ... ..	4,210,833	5,397,022	4,354,367	5,766,190	5,217,485	5,679,148	5,093,184	7,076,639	13,227,663	19,504,071
20. Total Revenue of Colony under the above										
Eighteen Heads ... ..	16,894,077	21,134,915	26,768,239	33,373,031	29,158,819	34,900,299	47,776,085	42,075,147	49,593,902	58,391,567
21. Percentage of total Revenue of Colony contributed										
by Oil Industry ... ..	24.9	25.5	16.3	17.3	17.9	16.3	10.7*	16.8	26.6	33.4
22. Excise collected on Petroleum Products (paid by										
General Public) ... ..	1,048,716	1,299,940	1,468,132	1,212,306	1,255,876	1,491,779	1,762,496	2,135,938	2,381,909	2,394,109

\*NOTE—Drop in percentage of total revenue contributed by Oil Industry in 1946 was due to total revenue of Colony being increased by repayment by H.M. Treasury of a loan of \$9,200,000.

TABLE VII—STATEMENT SHOWING THE AMOUNT OF MONEY DISBURSED IN THE COLONY (OTHER THAN CONTRIBUTIONS TO REVENUE) BY THE OIL INDUSTRY

	YEARS									
	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1. Payments to Employees* ... ..	8,205,922	8,963,560	10,377,356	11,695,979	12,401,298	12,781,464	13,896,842	14,701,680	16,201,000	17,081,804
2. Payments to Contractors* ... ..	2,395,281	2,408,097	2,638,996	2,969,415	2,871,227	2,410,418	2,369,675	2,855,917	3,543,432	4,488,089
3. Local Purchases of materials ... ..	4,337,145	4,239,161	3,946,405	3,095,691	3,955,870	3,813,021	3,494,215	4,005,478	3,929,831	4,336,776
4. Other local expenditure (rents, Private Royalties, &c.)	3,265,395	2,919,486	3,084,130	2,316,201	2,273,991	2,609,726	2,619,541	3,181,947	3,817,212	7,080,430
5. Total ... ..	\$18,203,743	\$18,530,304	\$20,046,887	\$20,077,286	\$21,502,386	\$21,614,629	\$22,380,273	\$24,745,022	\$27,491,475	\$32,987,099
OVERSEAS PURCHASES OF MATERIALS, C.I.F. DOLLARS TRINIDAD CURRENCY										
6. Importations from the United Kingdom ... ..	3,553,756	2,472,714	1,583,702	1,303,615	1,019,965	1,438,971	4,425,954	6,822,090	8,515,146	14,161,158
7. Importation from :										
Canada ... ..	5,492,537	5,457,249	4,773,440	3,679,393	5,085,790	5,136,245	2,322,331	4,758,800	5,690,016	516,130
United States of America ... ..	—	—	—	—	—	—	—	—	—	7,766,696
Other Sources ... ..	—	—	—	—	—	—	—	—	—	1,012,427
8. Total ... ..	\$9,046,293	\$7,029,963	\$6,357,142	\$4,983,008	\$6,105,755	\$6,575,216	\$6,748,285	\$11,580,890	\$14,205,162	\$23,456,411

\*These amounts include hidden contributions to the direct revenue of the Colony in the form of Customs Duties, Income Tax, Licences, &c.

TABLE VIII—LIST OF OIL OPERATORS IN TRINIDAD SHOWING THE AREAS HELD UNDER MINING LEASE AND EXPLORATION LICENCE

ITEM	OPERATORS	LANDS HELD UNDER REGISTERED MINING LEASE ON 31ST DECEMBER, 1949									LANDS HELD UNDER EXPLORATION LICENCE ON 31ST DECEMBER, 1949			DISPOSAL OF OIL
		Crown Surface Crown Oilrights			Private Surface Crown Oilrights			Private Surface Private Oilrights			Crown Surface Crown Oilrights			
		A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	
1	ANTILLES PETROLEUM CO. (TRINIDAD) LTD. ...	254	1	36	5,900	2	38	11,418	1	09	9,144	0	00	Exported
2	APEX (TRINIDAD) OILFIELDS LTD. ...	2,070	3	07	2,272	3	21	1,342	3	25	—	—	—	Sold to Trinidad Leaseholds Ltd.
3	KERN TRINIDAD OILFIELDS LTD. ...	331	1	12	592	3	37	13,447	1	03	—	—	—	Sold to United British Oilfields of Trinidad Ltd.
4	NATIONAL MINING CORPORATION LTD. ...	17,293	3	31	1,627	2	25	10,563	0	21	—	—	—	Sold to Trinidad Leaseholds Ltd.
5	PREMIER (TRINIDAD) OILFIELDS LTD. ...	500	0	00	—	—	—	899	2	01	—	—	—	Sold to Trinidad Leaseholds Ltd.
6	ROODAL, TIMOTHY ...	—	—	—	9	2	12	—	—	—	—	—	—	Sold to Trinidad Leaseholds Ltd.
7	SIPARIA (TRINIDAD) OILFIELDS LTD. ...	1,900	1	10	10,976	3	28	79	2	17	—	—	—	Sold to Trinidad Leaseholds Ltd.
8	TRINIDAD CENTRAL OILFIELDS LTD. ...	6,996	2	31	—	—	—	35	2	00	—	—	—	Sold to Trinidad Leaseholds Ltd.
9	TRINIDAD CONSOLIDATED OILFIELDS LTD. ...	—	—	—	1,026	2	11	1,886	0	05	—	—	—	Sold to Trinidad Leaseholds Ltd.
10	TRINIDAD LEASEHOLDS LTD. ...	91,002	3	24	15,573	2	15	15,101 7,879	1 1	26 33*	—	—	—	Pumped to Company's Refinery at Pointe-a-Pierre
11	TRINIDAD PETROLEUM DEVELOPMENT CO. LTD. ...	20,119	2	11	5,659	2	27	<del>20,888</del> 26,741.	0 0	18 22.	—	—	—	Sold to United British Oilfields of Trinidad Ltd.
12	UNITED BRITISH OILFIELDS OF TRINIDAD LTD. ...	18,882	3	11	13,221	2	38½	11,705 1,096	1 3	25 15*	48,596	0	00	Pumped to Company's Refinery at Point Fortin
13	TRINIDAD NORTHERN AREAS LTD. ...	—	—	—	—	—	—	6,144	3	11	6,704	0	00	
	TOTALS ...	159,352	3	13	56,862	1	12½	<del>110,888</del>	<del>+</del>	<del>07</del>	64,444	0	00	

\* Held jointly by Trinidad Leaseholds Limited and United British Oilfields of Trinidad Limited.

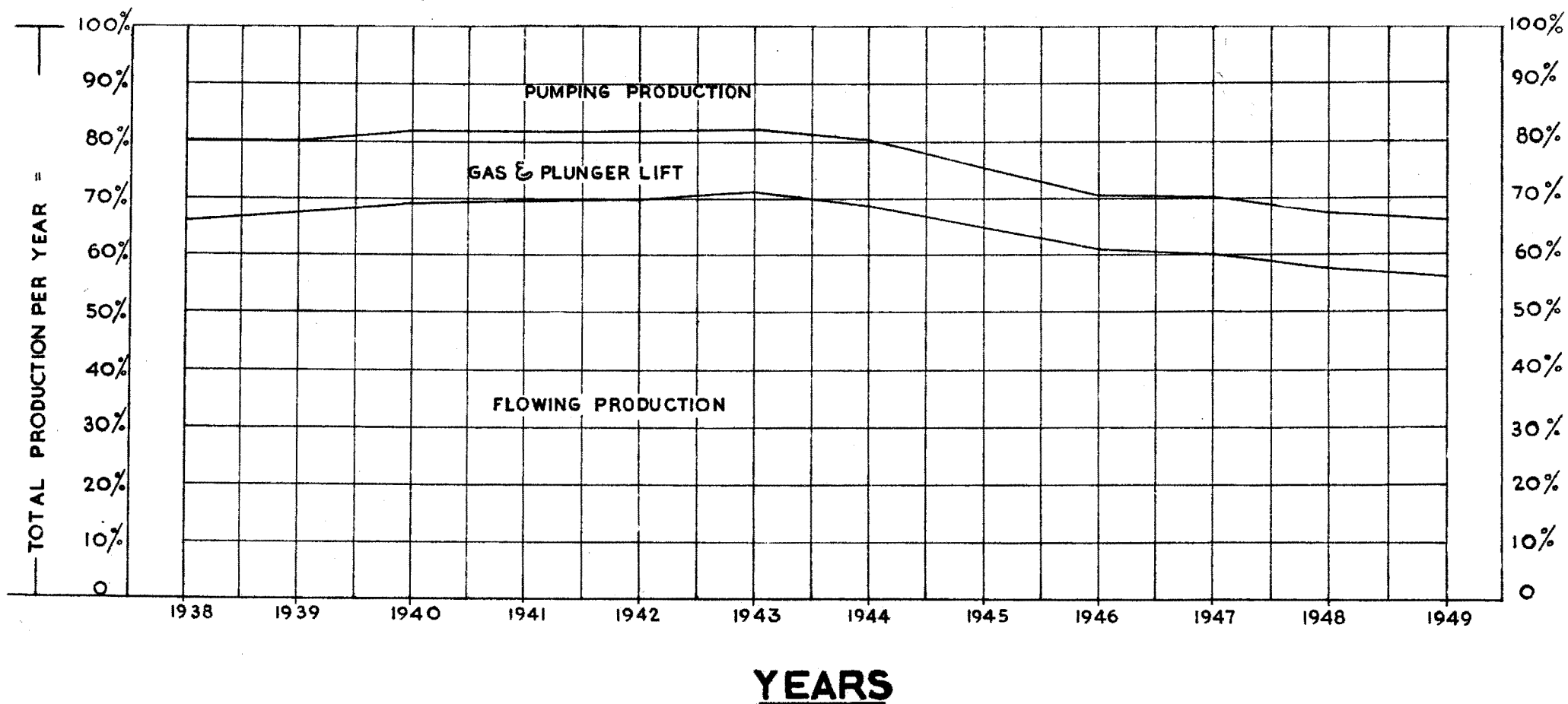
I. S. RUTHERFORD  
Asst. Petroleum Technologist

TABLE IX—INFORMATION REGARDING WELLS DRILLED TO A DEPTH OF  $\pm$  8,000 FEET AND OVER  
IN RESPECT OF PERIOD 1st JANUARY, 1945 TO 31st DECEMBER, 1949

Company	Well No. (reference to chart)	Total depth feet	Result	Remarks
Apex (Trinidad) Oilfield Ltd.	420 A	8,306	Abandoned, unproductive	
	429 B	8,030	Abandoned, unproductive	
	438 C	7,967	Producer	
	462 D	9,277	Small producer	
	469 E	8,374	Small producer	
	474 F	8,043	Producer	
	481 G	8,394	Producer	
	487 H	10,025	Results incomplete at 31st December, 1949	Since abandoned, unproductive.
National Mining Corporation Ltd. (Group)	PX 1	8,009	Abandoned, unproductive ...	No sands in lower part of well.
	212	9,960	Small producer from higher levels	No sands below 3,000 feet
	CS 3	8,914	Abandoned, unproductive ...	Not completed owing to mechanical difficulties.
	N.O. 1	12,161	Abandoned, unproductive ...	No oil sands penetrated. Geological structure extremely complicated.
Trinidad Leaseholds Ltd.	Maloney 2	8,207	Successful in upper horizons ...	No sands located in lower levels.
	Lizard No. 1 (G'yare area)	7,919	Testing upper horizons, unsuccessful in lower levels	Difficult formation was encountered and after frequent side-tracking, drilling was halted.
	Barrackpore 336	10,087	Producer from lower sands ...	After reaching 10,042 feet, and after much difficulty with caving, well collapsed. Re-drilled to 10,087 feet and completed as deepest producing Well in Trinidad.
	G'yare 163	7,787	Results incomplete as at 31st December, 1949	Operations suspended at 7,787 feet.
	Solomon 1 (Barrackpore area)	10,850	Running casing at end of 1949	Testing
	Barrackpore 341	9,732	Results incomplete as at 31st December, 1949	Drilling
	Barrackpore 342	6,124	Results incomplete as at 31st December, 1949	Drilling—programmed for 11,000 feet
Trinidad Petroleum Development Co. Ltd.	Erin 1	10,264	Abandoned ...	No commercial oil sands encountered.
	Erin 3	11,557	Producer from higher levels ...	Exceptionally difficult conditions encountered.
	Los Bajos Moruga 57	8,010	Producer	
	1	3,292	Results not yet complete ...	Drilling
United British Oilfields of Trinidad Ltd.	Ortoire 01 (La Fortitude)	8,982	Abandoned ...	Joint Venture Well with K.T.O. sands water bearing.
	P 92	9,037	Producer ...	Discovery of normal Penal producing sands now deeper bloc.
	P 98	8,234	Abandoned ...	Sands absent.
	P 104	8,854	Producer	
	P 111	9,967	Result yet incomplete ...	Sands gas bearing.
	P 124	9,780	Result yet incomplete ...	Suspended 26th October, 1948. Sands gas bearing.
	P 133	9,631	Result yet incomplete ...	Suspended 31st March, 1949. Probable failure.
	P 143	8,855	Producer	
	FW 209	9,980	Producer from higher levels ...	Re-drilled to 8,500 feet. Deep sands absent.
	FW 214	10,525	Result yet incomplete ...	Drilling.
	E 54	10,626	Abandoned in lower levels Opened up to higher levels	
	TO 1	10,056	Abandoned ...	No sands
	IO 1	7,833	Abandoned ...	Sands water bearing.
	Inniss Balata C 1	9,426	Abandoned ...	Joint Venture Well with T.C.O. Mechani- cal trouble.
FC 98	11,042	Abandoned in lower levels. Opened up to higher levels		

# CRUDE OIL PRODUCTION METHODS

RELATIVE PROPORTIONS OF ANNUAL PRODUCTION (=100%) OBTAINED BY THE THREE PRINCIPAL PRODUCING METHODS



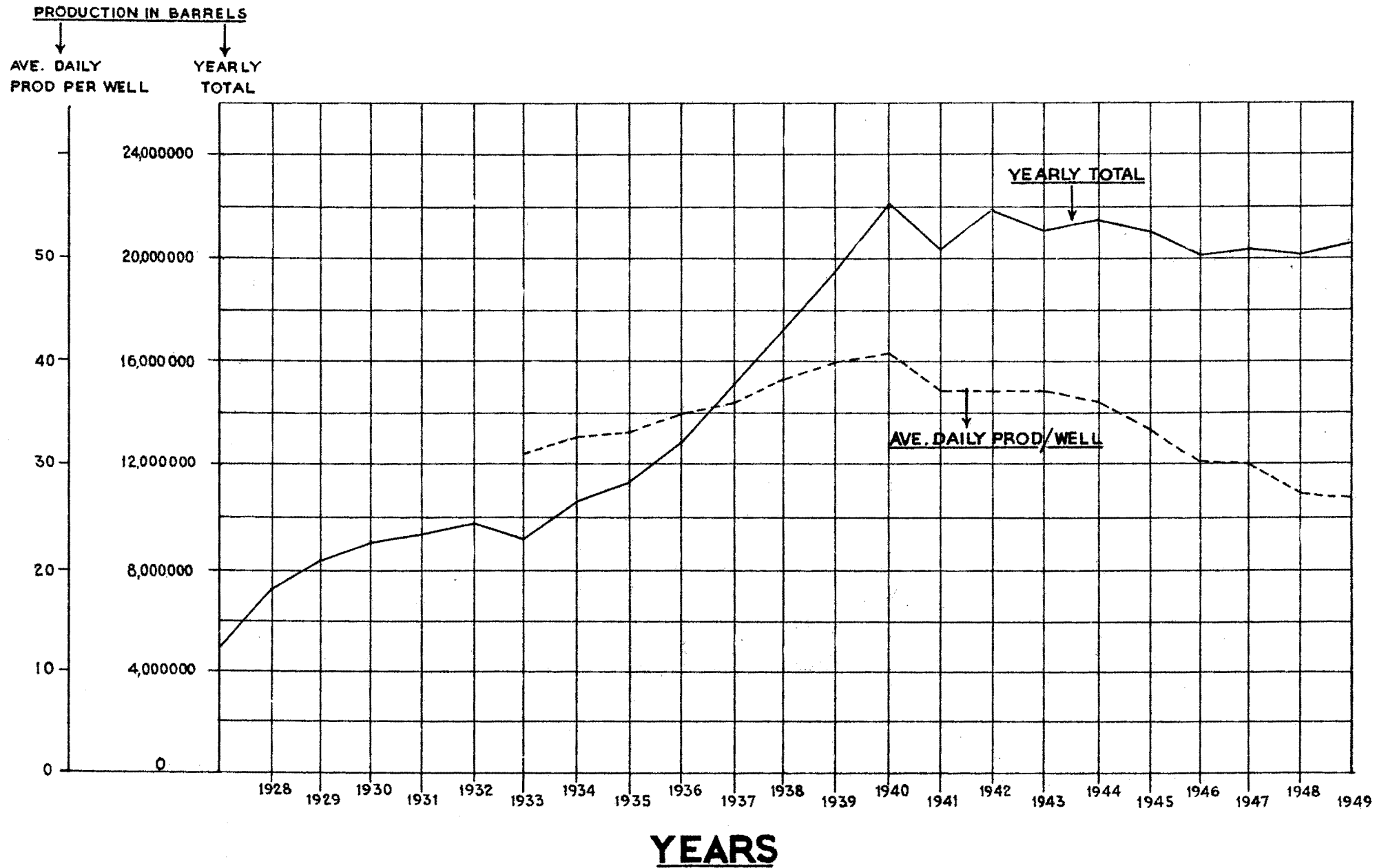
SEE TABLE III FOR DETAILED FIGURES FOR 1949.

APPENDIX

B.



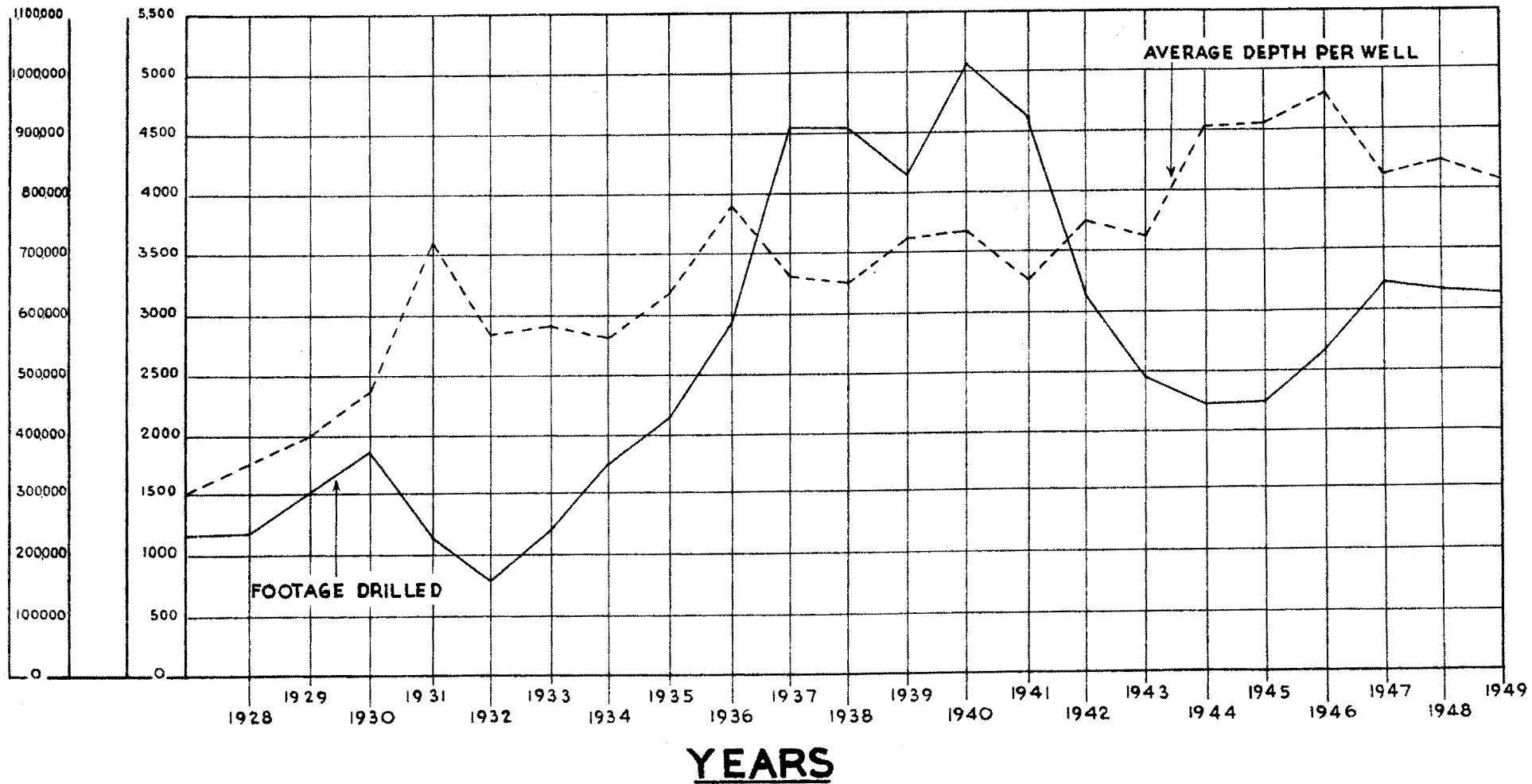
# ANNUAL CRUDE OIL PRODUCTION



FOR FIGURES USED IN CONSTRUCTING GRAPH SEE TABLE I ITEMS 1 AND 25

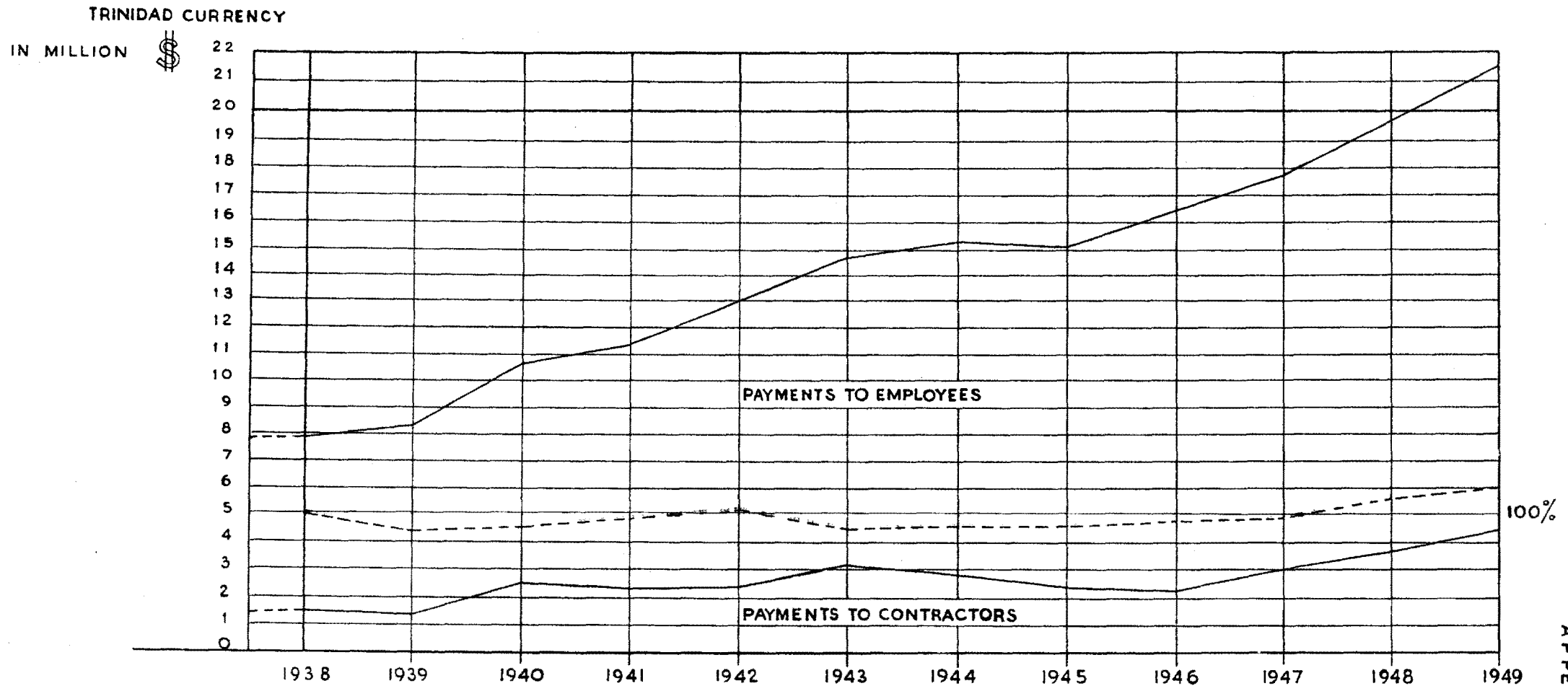
# ANNUAL DRILLING FOOTAGE

FEET DRILLED  
 ↓            ↓  
 YEARLY    AVERAGE DEPTH  
 TOTAL    PER WELL



FOR FIGURES USED IN CONSTRUCTING GRAPH SEE TABLE I ITEMS 18 AND 21

# OIL COMPANIES ANNUAL PAYMENTS TO CONTRACTORS AND EMPLOYEES

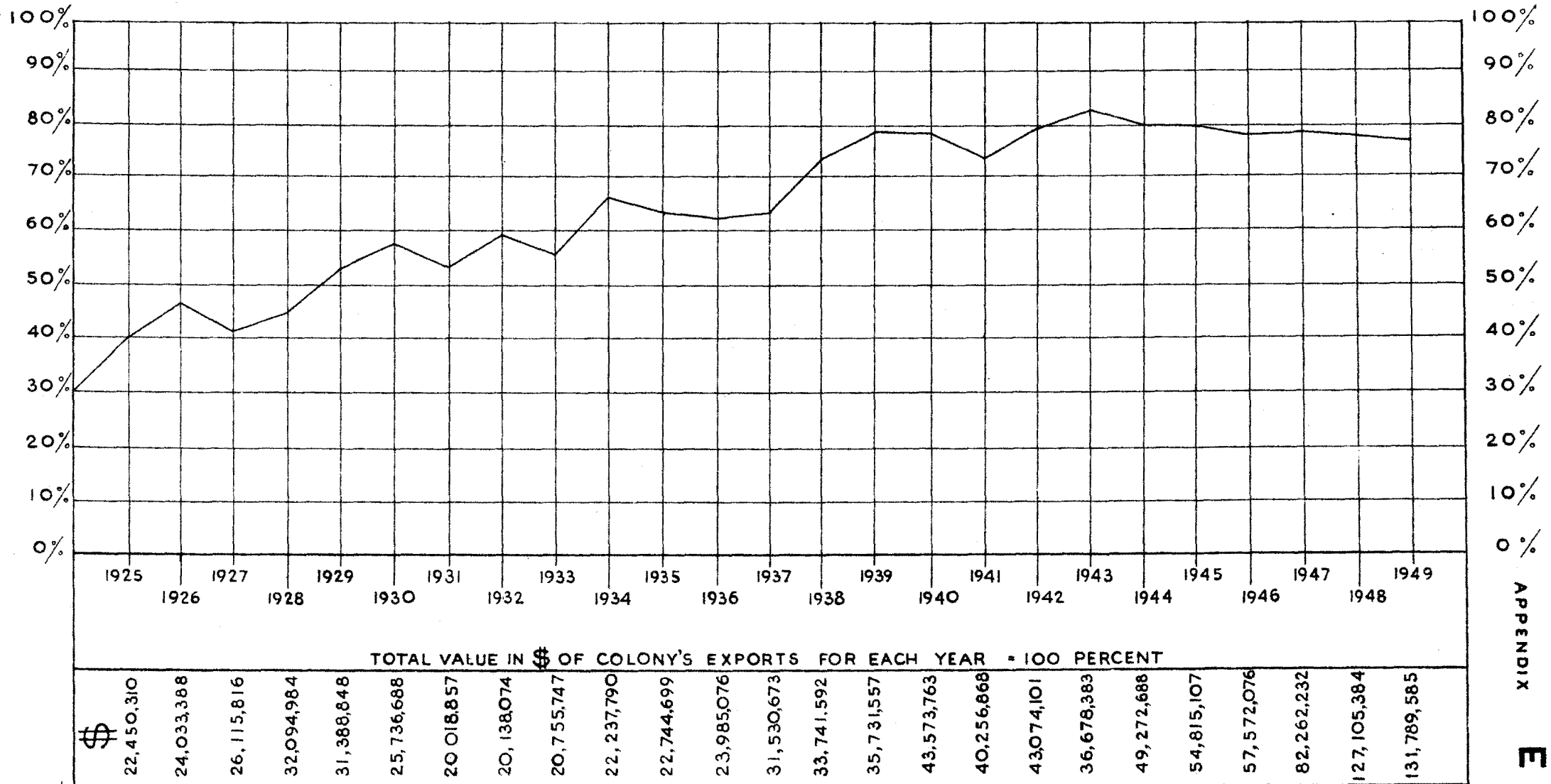


FOR FIGURES USED IN CONSTRUCTING GRAPH SEE TABLE VII ITEMS 1 AND 2

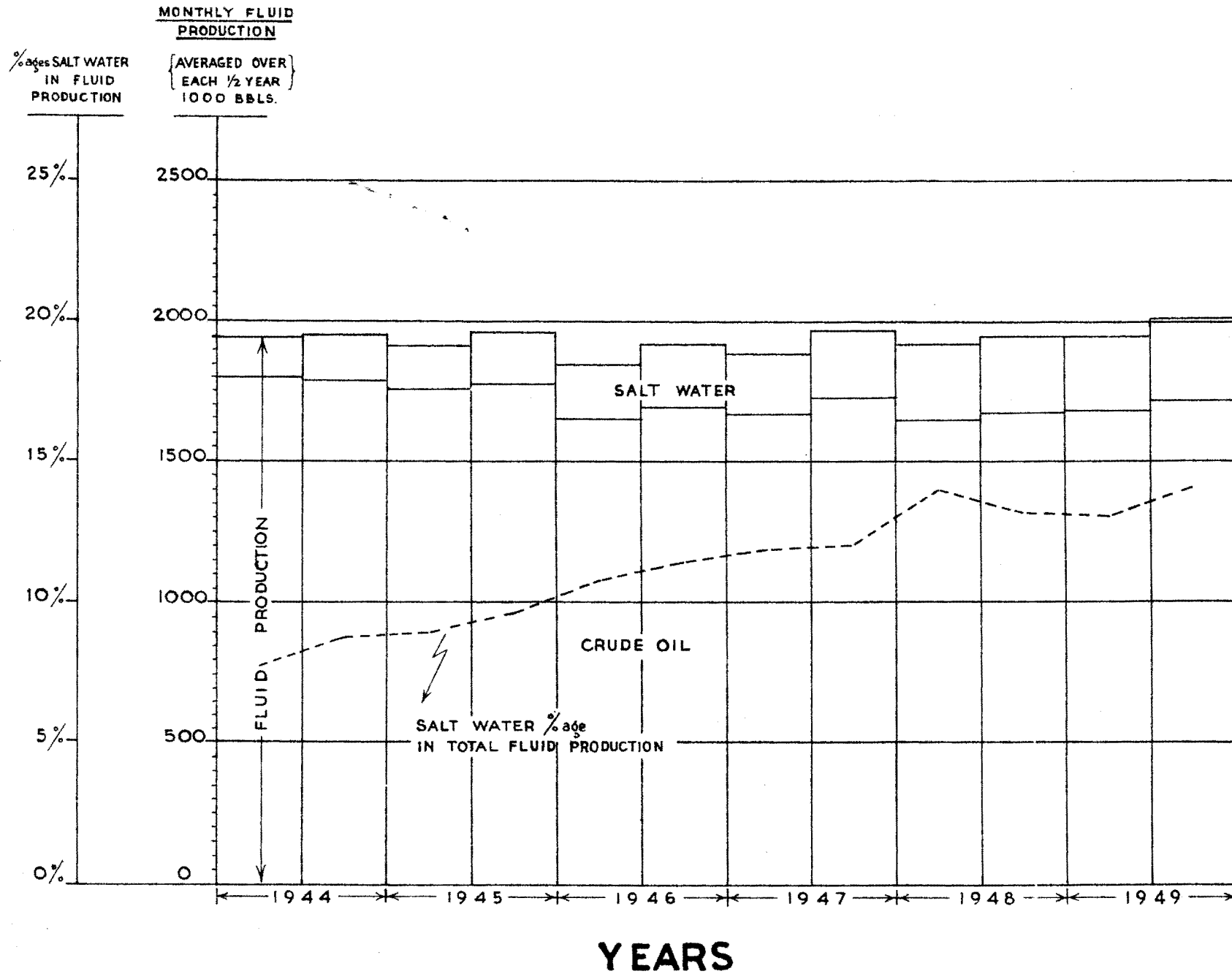
--- TREND LINE OF TOTAL NO OF EMPLOYEES (INCLUDING CONTRACTORS LABOUR) 1938 FIGURE = 100%

N.B. PAYMENTS TO CONTRACTORS ARE MAINLY WAGES.

# VALUE OF PETROLEUM AND ASPHALT AND THEIR PRODUCTS EXPORTED COMPARED TO THE TOTAL VALUE OF COLONY'S EXPORTS



# PRODUCTION OF SALT WATER







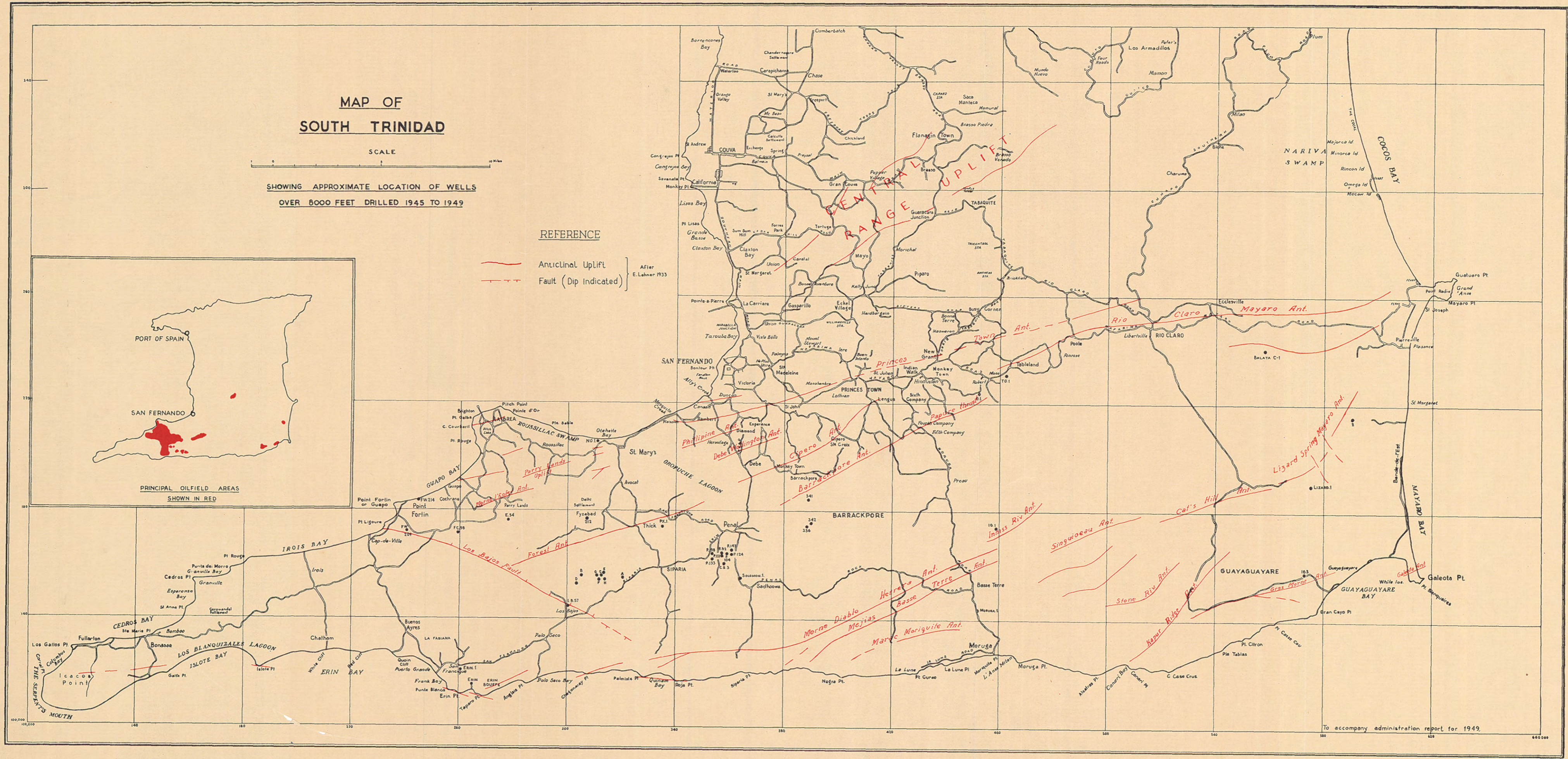
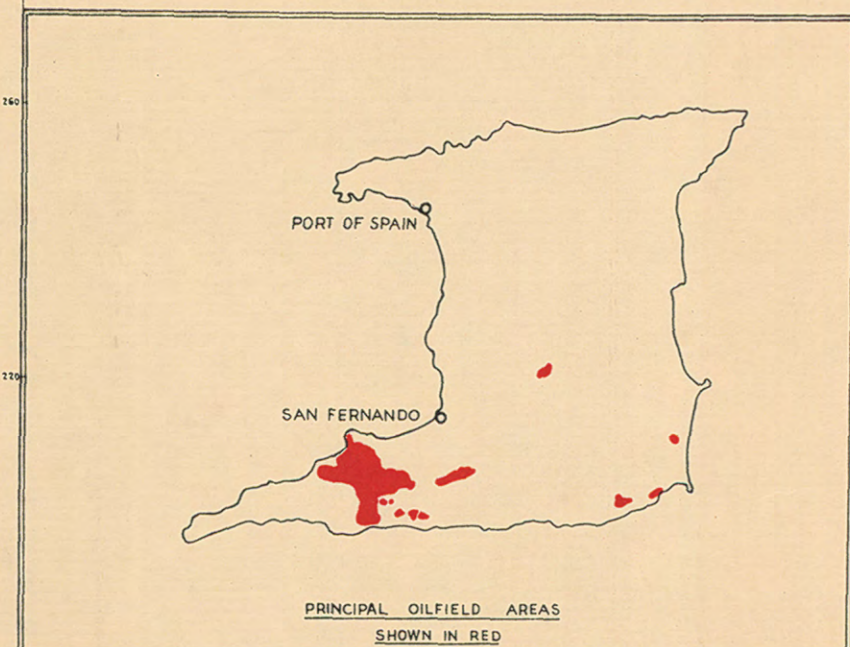
# MAP OF SOUTH TRINIDAD

SCALE  
0 10 Miles

SHOWING APPROXIMATE LOCATION OF WELLS  
OVER 8000 FEET DRILLED 1945 TO 1949

### REFERENCE

-  Anticlinal Uplift
  -  Fault (Dip Indicated)
- After E. Lehner 1933



To accompany administration report for 1949.