

**REPORT OF THE INSPECTOR OF MINES AND PETROLEUM TECHNOLOGIST
FOR THE YEAR 1943**

HONOURABLE ACTING COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Acting Governor, the following report on the work of the Mines Department for the year 1943.

THE PETROLEUM INDUSTRY

2. Increasing difficulties in regard to the supply of oilfield materials and equipment manufactured of steel continued to restrict the operations of the Petroleum Industry during the year under review, and drilling operations showed a further reduction in consequence. By restricting exploitation drilling operations, however, to well locations which would give the maximum yield of crude oil per ton of steel used and ceasing to drill wells to oil sands of secondary importance or doubtful productivity, it was possible to maintain the production figure at about the same level as in 1942 (*i.e.* approximately 60,000 barrels daily).

3. During recent years, on account of the difficulties referred to above, exploration drilling has been practically brought to a standstill with the result that the Colony's drilling reserves have been extensively drawn upon without the efforts to replace them which would have been possible in normal times. The need for additional exploration work is thus becoming increasingly urgent and this fact is being borne in mind in the preparation of future drilling programmes. The small amount of exploration drilling which it has been found possible to carry out during the year 1943 has been confined to exploring the possibilities of the comparatively recently discovered potential oil reservoir known as the "Herrera Sandstone" which, in the Penal District, has proved to be a prolific source of petroleum. Elsewhere, however, up to the present, results have proved to be disappointing. However, in the light of existing knowledge, it is considered that the work of exploring the extent and oil potentialities of this sandstone presents, at the present time, the most favourable possibility of proving new and important sources of petroleum, and, for this reason, it is hoped that material will be available for maintaining and extending this exploration work during the coming year.

4. In April, 1943, representatives of the Petroleum Administration for War of the Government of the United States of America visited Trinidad in connection with supplies of the material and equipment required by the Industry, and, as a result of this visit and subsequent discussions in Washington, it was decided that all future drilling operations in Trinidad should be governed by programmes to be submitted in advance by the Petroleum Association of Trinidad and duly approved by the Mines Department and the appropriate British and United States Government Authorities concerned in London and Washington. It was further decided that all future requirements for materials necessary to carry out such programmes should be similarly approved. As an additional safeguard, and to prevent the possibility of steel being used in drilling operations which had not been approved, it was decided to introduce legislation to control the drilling of oil wells, and this legislation, now in draft form, will be enacted early in 1944.

5. In view of the above decisions, and in order to ensure that this Department should be fully aware of the Association's proposals regarding its drilling and production programmes, the Association invited me to attend all its meetings at which such programmes were to be discussed, and, moreover, co-opted the Assistant Petroleum Technologist as a member of its Standing Technical Sub-Committee. With the approval of Government these invitations were accepted and the procedure thus adopted has greatly facilitated the work of this Department. Attention is drawn, however, to the large amount of additional work which has been thrown on the Petroleum Office, San Fernando, the staff of which is to be congratulated on the efficient manner in which it has dealt with it in addition to its normal duties.

6. It is also desired to draw attention to the valuable assistance and sympathetic co-operation which has been so freely tendered to the Oil Industry of this Colony by the Petroleum Administration for War in Washington and the British Petroleum Representative and his Staff in the United States of America during the past year in all questions relating to drilling and production programmes and the material supplies required. Without such assistance there is little doubt that drilling operations in the Colony would have been brought to a more or less complete standstill in the near future.

7. *Production of Crude Oil*—The total production of crude oil for the year 1943 amounted to 21,385,240 barrels, an average of 58,590 barrels per day. This total is 683,938 barrels or 3.10 per cent. less than the production for 1942.

8. *Drilling*—For the reasons noted in paragraph 2 drilling operations had to be reduced during the year 1943, the number of oil wells commenced being only 127 compared with 169 for the year 1942. The total number of oilwells drilled in the Colony to the end of 1943 was 4,038 of which 2,677 are on lands the oilrights of which are vested in the Crown and 1,361 are on private lands.

The number of feet drilled during 1943 amounted to 493,731, a decrease of 129,667 feet or 20.8 per cent. on the footage for 1942.

The depth of the deepest well completed in the Colony remains unaltered at 10,015 feet.

9. The following table shows comparatively the number of feet drilled and the quantity of oil produced during the years 1941, 1942 and 1943 :—

	Number of Feet Drilled.			Production in Barrels of 35 Imp. Gals.		
	1941	1942	1943	1941	1942	1943
Crown Oil Rights ..	785,487	546,233	389,527	15,380,226	17,793,360	17,056,197
Private Oil Rights ..	149,767	77,165	104,204	5,125,754	4,275,818	4,329,043
Totals ..	935,254	623,398	493,731	20,505,980	22,069,178	21,385,240

10. *Oilfield Operators*—The number of oilfield operators in the Colony during the year was 15 as compared with 16 in 1942.

11. *Persons Employed*—The average number of persons employed in the Petroleum Industry during 1943 amounted to 13,781 per day as compared with 13,996 during 1942.

12. *Leases and Licences*—Three supplemental leases were registered and seven exploration licences were renewed during the year. The total number of mining leases and exploration licences in force at the end of the year amounted to 84, the details of which are as follows :—

	Acreage					
	Crown			Alienated		
	A.	R.	P.	A.	R.	P.
77 Mining Leases	152,523	0	00	56,660	0	00
7 Exploration Licences ..	141,395	0	00	—	—	—
84 Total ..	293,918	0	00	56,660	0	00

13. *Total Area under Lease or Licence*—The total area under Crown and Private Leases on the 31st December, 1943, amounted to 411,488 acres (or 34.50 per cent. of the total area of Trinidad), made up as follows :—

	A.	R.	P.
Area of Crown Lands under Exploration Licence....	141,395	0	00
Area of Alienated Lands under Mining Lease the oil rights of which are vested in the Crown ..	56,660	0	00
Area of Crown Lands under Mining Lease ..	152,523	0	00
Area of privately owned oil rights under lease, according to details supplied by the oil companies ..	60,910	0	00
Total ..	411,488	0	00

14. *Revenue from Royalties and Fees*—The revenue collected under these heads amounted to \$1,410,289.56 as compared with \$1,387,629.30 collected during the year 1942. For purposes of comparison, the following table shows the amounts collected under each head for the years 1941, 1942 and 1943 :—

	Amounts Collected					
	1941		1942		1943	
	\$	c.	\$	c.	\$	c.
Royalties in respect of oil produced from Crown and Alienated Lands ..	1,332,368	99	1,382,558	75	1,407,605	09
Fees charged for pipelines along and across the Trinidad Government Railway and Public Roads ..	5,303	81	5,070	55	2,684	47
Totals ..	1,337,672	80	1,387,629	30	1,410,289	56

15. *Refineries*—Seven permits for the refining of oil were issued during the year under the Oil Mining and Refining Ordinance, Ch. 26. No. 3. Of these permits four were issued in respect of small field topping plants the operations of which are of relative unimportance.

The total crude oil capacity of the refineries operating in the Colony amounts to approximately 28,250,000 barrels per annum. During 1943 a total quantity of 21,085,972 barrels of crude oil was refined, compared with 21,914,247 barrels during 1942.

16. *Gasolene Extraction Plants*—Four Gas Absorption Plants and two Gas Adsorption Plants for the recovery of gasolene from natural gas were in operation during the year.

17. *Loading Facilities*—Four deep water piers equipped for loading tank steamers with petroleum and its products are in use. Facilities for bunkering vessels in the harbour of Port-of-Spain are also available.

18. *Pipelines*—Approximately 365 miles of main oil pipelines have been laid down in the Colony, and the total number of permits in force under the Pipelines Ordinance, Ch. 26, No. 9, to the end of 1943 amounted to 109.

19. *Tank Storage*—The total main tank storage capacity for petroleum in the Colony is approximately the same as last year, *i.e.* 7,472,850 barrels.

20. *Exports of petroleum and its products*—The quantity of petroleum and its products exported during the year decreased substantially as compared with the year 1942, the amounts and values for the two years being as follows :—

1942—19,063,926 barrels valued at	....	....	....	\$33,949,671.00
1943—15,861,354 barrels valued at	....	....	....	\$27,913,004.00

Petroleum and its products including Asphalt continued to form the largest part, *viz.* : 82.25 per cent. of the Colony's total exports during 1943, the value being more than seven times that of the products of the next most important of its industries, *viz.* : Sugar (including Molasses and Rum).

The value of the leading staple products of the Colony exported during 1943 is shown in the following table :—

<i>Staple Products Exported</i>	<i>Value</i>	<i>Per cent. of Total</i>
Petroleum and its Products	\$27,913,004	76.10
Sugar, Molasses and Rum	3,774,090	10.29
Asphalt and Products	2,256,565	6.15
Cocoa	971,212	2.65
Bitters	471,822	1.29
Fruits and Fruit Juices	359,909	0.98
Coconuts, Copra and Coconut Oil	17,000	0.05
Coffee	14,332	0.04
Other Exports not enumerated	900,449	2.45
	<u>\$36,678,383</u>	<u>100.00</u>

21. *Returns*—The various returns submitted by the oil companies under the various Ordinances and Regulations in respect of their operations have been regularly received, and after being checked have been filed with the records of the Department.

22. *Inspections*—The operations on the various oilfields were inspected by officers of this Department as frequently as possible, and I have pleasure in recording that the Managers have readily co-operated in ensuring that the provisions of the Ordinances and Regulations were effectively carried out.

23. Included in this Report as Appendix "B" will be found some notes and statistics relating to the progress of the petroleum industry which have been compiled by the Assistant Petroleum Technologist.

THE ASPHALT INDUSTRY

24. While shipping and other difficulties caused by the war continued to create adverse conditions for the Asphalt Industry, it is satisfactory to record that a substantial increase, both in production and exports, took place during the year 1943. The production of asphalt during the year amounted to 84,701 tons as compared with 63,409 tons for the year 1942, an increase of 21,292 tons. The following table shows, comparatively, the quantity of asphalt produced and exported during the years 1941, 1942 and 1943 :—

	1941	1942	1943
Production (in tons)	80,540	63,409	84,701
Export (in tons)	48,199	24,331	47,150

FACTORIES AND WORKSHOPS

25. During the period under review 349 factories and workshops, exclusive of units situated on oilfields, were in operation in Trinidad and Tobago. During the inspection of these factories and workshops by officers of this Department recommendations were made for ensuring the safety of the workmen, and such recommendations were at all times readily carried out by the managers concerned.

QUARRIES

26. The number of quarries worked during the past year was 133 as compared with 144 in operation during the year 1942. Most of these quarries are very small and relatively unimportant. As a result of inspection it was found that, as a general rule, the quarries were being worked in a careful manner. The various recommendations made by officers of this Department for increasing the safety of the workmen were usually carried out without delay.

ACCIDENTS

27. All fatal and serious accidents which occurred on oilfields and in refineries, factories and quarries during the period under review have been investigated, as in the past, by officers of this Department under the Mines, Borings and Quarries Ordinance, Ch. 26. No. 4, and the Prevention of Accidents Ordinance, Ch. 30. No. 3, and, where necessary, recommendations have been made to the employers with the object of reducing the incidence of such accidents to a minimum. During the year 1943 no fatal accidents occurred in the Petroleum Industry compared with four for the year 1942, and six accidents occurred in other industries compared with five for 1942.

PETROLEUM ORDINANCE, Ch. 26. No. 2

28. The premises where dangerous petroleum products are stored have been inspected, and all possible care has been taken to ensure safety. During the year 585 licences were issued for the storage and sale of petroleum and its products. The revenue actually collected from such licences during 1943 was \$1,557.60.

LEGISLATION

29. The following legislation relating to the Petroleum Industry was enacted during 1943:—

- (a) An Ordinance further to regulate Mining and Refining of Oil termed the Oil Mining and Refining Ordinance, No. 22 of 1943. This Ordinance, in certain circumstances, requires any person operating for oil to erect a refinery suitable for the production of fuel oil of Admiralty Specification, and gives the Governor the right of pre-emption of all crude oil and its products in times of national emergency.
- (b) Mines, Borings and Quarries (Amendment) Ordinance, No. 36 of 1943. This Ordinance amends Section 18 of the Mines, Borings and Quarries Ordinance, Ch. 26. No. 4, by additions to the statistical information required annually from Owners, Agents or Managers of every mine, boring or quarry.
- (c) The Emergency Taxation Ordinance, No. 48 of 1943. This Ordinance repeals Ordinance No. 32 of 1939 in Section 3 of which an impost of two cents for every barrel of oil won was levied on all operators.
- (d) An amendment was made to Regulations Nos. 26 and 30 of the Petroleum Regulations under Section 28 of the Petroleum Ordinance, Ch. 26. No. 2, relating to the distinctive marking of containers for dangerous petroleum.

In addition, it is desired to record that during 1942 by the Oil Tanks (Amendment) Regulations, 1942, an amendment was made to Regulation No. 5 of the Oil Tank Regulations, 1935, which was omitted from the 1942 Report. This amendment relates to safety measures to be adopted on stairways and roofs of oil tanks.

APPENDICES

30. Appendix "A" shows the list of oil and asphalt operators in the Colony during the year 1943.

31. Appendix "B" gives notes and statistics relating to the Petroleum Industry.

32. Appendix "C" is a statement of the quantity and value of minerals obtained and the daily average number of persons employed in the petroleum, asphalt and quarry industries.

33. Appendix "D" gives the Rates of Wages and Hours of Labour employed in the oilfields for the year 1943.

34. A Statement of oil produced and exported is shown as Appendix "E".

35. Appendix "F" shows the amount of oil refined year by year.

STAFF

36. In February, 1943, Mr. R. S. Mackilligin paid a brief visit to Washington in connection with material supplies, and in August, 1943, Mr. W. N. Foster, Assistant Petroleum Technologist, also proceeded to Washington to assist in presenting the Colony's 1944 Drilling and Production Programme to the Petroleum Administration for War. It is desired to record that Mr. Foster rendered most valuable service on this occasion.

The secondment of Mr. G. D. Proctor of the United Kingdom Factory Inspectorate, Senior Inspector of Factories, was extended for a further period of one year as from the 18th June, 1943.

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

R. S. MACKILLIGIN,
Inspector of Mines and
Petroleum Technologist.

23rd May, 1944.

APPENDIX "A"

LIST OF OIL AND ASPHALT OPERATORS IN TRINIDAD

No.	Company	Nature of tenure of lands on which operations took place	District in which operations took place	Disposal of Oil
1	Antilles Petroleum Co., (Trinidad) Ltd.	Private Lands	Brighton, Vessigny, Roussillac	Crude sold to United British Oilfields of Trinidad, Ltd.
2	Apex (Trinidad) Oilfields, Ltd.	Private Lands, Crown Lands, and Crown Oil Rights under Lease	Fyzabad, Siparia	Crude oil sold to Trinidad Leaseholds, Ltd.
3	Cory Bros. & Co., Ltd.	Crown Lands under Mining Lease	Moruga Road	No production.
4	Kern Trinidad Oilfields, Ltd.	Private Lands, Crown Lands, and Crown Oil Rights under Lease	Guapo, Fifth Company Rd.	Crude sold to United British Oilfields of Trinidad, Ltd.
5	Partap, Ramesar	Private Lands	Fyzabad	do. do.
6	Petroleum Options (1925), Ltd.	Private Lands	San Francique	Crude sold to Trinidad Leaseholds, Ltd.
7	Premier (Trinidad) Oilfields, Ltd.	Crown Lands under Lease, Private Lands	Palo Seco, San Francique	do. do.
8	Roodal, Timothy	Private Lands	Fyzabad	do. do.
9	Siparia Trinidad Oilfields, Ltd.	Crown Lands, and Crown Oil Rights under Lease	Palo Seco, Morne Diablo	do. do.
10	Trinidad Central Oilfields, Ltd.	Crown Lands under Lease	Guapo, Barrackpore	do. do.
11	Trinidad Consolidated Oilfields, Ltd.	Private Lands, Crown Oil Rights under Lease	Fyzabad	do. do.
12	Trinidad Lake Asphalt Operating Co.	Crown Lands under Lease	La Brea	Pitch refined and exported
13	Trinidad Leaseholds, Ltd.	Private Lands, Crown Lands, and Crown Oil Rights under Lease	Barrackpore, Forest Reserve, Guayaguayare, Quinam	Pumped to Company's Refinery at Pointe-a-Pierre.
14	Trinidad Petroleum Development Co.	Private Lands, Crown Lands and Crown Oil Rights under Lease	Coora, Los Bajos, Palo Seco, Quarry	Crude sold to United British Oilfields of Trinidad, Ltd.
15	United British Oilfields of Trinidad, Ltd.	Private Lands, Crown Lands, and Crown Oil Rights under Lease	Los Bajos, Cedros, Parrylands, Penal, Point Fortin	Pumped to Company's Refinery at Point Fortin
16	Zenith Trinidad Oilfields, Ltd.	Private Lands	Fyzabad	Crude sold to Trinidad Leaseholds, Ltd.

1st May, 1944.

W. N. FOSTER,
Assistant Petroleum Technologist.

APPENDIX " B "

INSPECTOR OF MINES AND PETROLEUM TECHNOLOGIST.

Production.—The production of crude oil during 1943 amounted to 21,385,240 barrels, or an average of 58,590 barrels per day. This represents a decrease of 3.1 per cent. on the production for 1942.

The unofficial quota for the Colony's production remained at 60,000 barrels per day throughout the year. This quantity was at all times immediately available, and the difference between it and the average daily for the year was due to restricted production for short periods necessitated by lack of off-take facilities

A comparison of footage and production figures for 1942 and 1943 is as follows :—

	<i>Footage.</i>		<i>Production.</i>	
	1942	1943	1942	1943
Crown	375,310	261,172	13,012,471	12,250,379
Alienated	170,923	128,355	4,780,889	4,805,818
Private	77,165	104,204	4,275,818	4,329,043
	<u>623,398</u>	<u>493,731</u>	<u>22,069,178</u>	<u>21,385,240</u>

Drilling.—The footage drilled during the year amounted to 493,731 feet, a decrease of 20.8 per cent. compared to last year. The number of drilling rigs in operation remained fairly constant at approximately 18.

During the year 127 oilwells were started as compared to 169 last year. The total number of oilwells in the Colony was 4,038 at the end of the year.

The following table gives an analysis of the drilling operations carried out during the year.

	<i>On Crown Lands.</i>	<i>On Alienated Lands.</i>	<i>On Private Lands.</i>	<i>Total</i>
Unfinished at end of 1942	21	7	20	48
Started during 1943	64	32	31	127
	<u>85</u>	<u>39</u>	<u>51</u>	<u>175</u>
Completed as oil producers	67	33	33	133
Uncompleted wells abandoned	2	1	3	6
Unfinished at end of 1943	16	5	15	36
	<u>85</u>	<u>39</u>	<u>51</u>	<u>175</u>
Completed Wells abandoned during 1943	42	18	11	71
Wells recompleted during 1943	36	15	15	66
	<u>78</u>	<u>33</u>	<u>26</u>	<u>137</u>

The following Tables are attached :—

No. 1—Showing Drilling Summary for 1943.

No. 2—Showing Production Summary for 1943.

No. 3—Showing number of wells started and footage drilled since the commencement of the Industry in 1867.

No. 4—Showing the Annual Production since returns were first sent to the Government in 1908.

No. 5—Showing the number of wells started annually and the status of these wells on the 31st of December, 1943.

25th March, 1944.

W. N. FOSTER,
Assistant Petroleum Technologist.

TABLE No. I
DRILLING SUMMARY FOR THE YEAR 1943

Month	Wells Started			Completed as Producers			Recompleted as Producers			Abandoned			FOOTAGE DRILLED FOR OIL				Rigs Running
	C.	A.	P.	C.	A.	P.	C.	A.	P.	C.	A.	P.	Crown	Alienated	Private	Total	
January	9	2	3	11	2	2	—	1	2	—	1	—	29,336	10,885	6,160	46,381	21
February	5	3	2	6	4	3	3	1	2	1	—	—	21,090	7,796	6,110	34,996	20
March	6	4	1	8	2	3	2	1	5	1	8	1	22,042	11,240	6,331	39,613	19
April	5	4	2	4	4	3	1	2	3	1	1	—	18,966	16,841	2,213	38,020	19
May	6	1	3	6	3	1	2	2	0	1	1	1	20,201	10,678	7,232	38,111	17
June	7	1	4	6	—	4	4	1	1	1	—	1	23,255	8,627	11,004	42,886	20
July	3	2	2	3	3	3	1	—	—	3	2	1	19,494	9,174	15,165	43,833	22
August	4	4	4	3	3	2	2	1	—	9	2	1	19,523	12,446	6,951	38,920	22
September	6	2	3	4	2	2	8	2	—	5	—	—	23,219	11,245	12,554	47,018	22
October	3	2	1	4	3	5	4	2	1	6	—	1	21,291	9,163	13,275	43,729	22
November	4	4	3	5	1	2	6	2	1	—	3	1	21,815	12,983	9,928	44,726	21
December	6	3	3	7	6	3	3	—	—	16	1	7	20,940	7,277	7,281	35,498	21
Totals	64	32	31	67	33	33	36	15	15	44	19	14	261,172	128,355	104,204	493,731	—
	127			133			66			77							

C= Crown. A= Alienated. P= Private.

25th March, 1944.

W. N. FOSTER,
Assistant Petroleum Technologist.

TABLE No. 2

ANNUAL PRODUCTION SUMMARY BY MONTHS DURING 1943

MONTH	Light Fractions returned to Crude	Per cent.	FLOWING			GAS/AIR LIFT			PUMPING			PLUNGER LIFT			DISPLACEMENT PUMP			BALING/SWABBING			Total No. Producing Wells	Total No. of Wells drilled	Prod. Wells Per cent. Wells Drilled	PRODUCTION					TOTAL	
			No. of Wells	Pro-duction	Per cent.	No. of Wells	Pro-duction	Per cent.	No. of Wells	Pro-duction	Per cent.	No. of Wells	Pro-duction	Per cent.	No. of Wells	Pro-duction	Per cent.	No. of Wells	Pro-duction	Per cent.				No. of Wells	Crown	No. of Wells	Alien-ated	No. of Wells		Private
Jan. ...	7,822	0.4	614	1,315,860	70.5	126	123,373	6.6	594	298,459	16.0	196	111,219	5.9	8	7,514	0.4	52	1,599	0.1	1,590	3,925	40.5	709	1,107,602	365	386,061	516	372,183	1,865,846
Feb. ...	7,433	0.4	615	1,208,986	70.7	124	103,669	6.1	580	266,288	16.1	197	110,832	6.5	10	1,788	0.1	34	1,175	0.1	1,560	3,935	39.6	732	996,736	560	357,580	468	345,855	1,700,171
March ...	8,353	0.4	620	1,334,770	71.9	117	102,844	5.6	562	274,766	15.1	198	122,919	6.6	5	3,942	0.2	57	2,163	0.1	1,559	3,946	39.5	731	1,099,345	364	396,167	464	354,245	1,849,757
April ...	8,607	0.5	633	1,289,250	72.0	116	90,364	5.0	608	285,058	15.9	201	111,962	6.2	3	4,187	0.2	55	2,259	0.1	1,615	3,957	40.8	734	1,036,755	374	407,010	507	347,922	1,791,687
May ...	8,036	0.4	622	1,306,174	71.4	117	95,607	5.2	603	297,398	16.2	201	116,971	6.4	3	2,939	0.2	45	2,197	0.1	1,591	3,967	40.1	725	1,052,941	371	417,514	495	358,867	1,829,322
June ...	7,982	0.4	621	1,269,035	71.3	111	86,888	4.9	620	297,125	16.7	200	112,190	6.3	6	4,417	0.2	44	2,039	0.1	1,602	3,979	40.2	715	1,010,904	373	406,824	514	361,948	1,779,676
July ...	7,995	0.4	637	1,303,921	71.6	113	84,573	4.6	606	292,818	16.1	198	122,052	6.7	4	7,638	0.4	38	1,484	0.1	1,596	3,986	40.0	714	1,035,806	571	421,961	511	362,714	1,820,481
Aug. ...	7,968	0.4	643	1,271,970	71.6	99	78,056	4.4	601	287,826	16.2	198	119,021	6.7	5	8,289	0.5	46	2,450	0.1	1,582	3,998	39.6	720	1,005,278	371	402,326	491	367,976	1,775,580
Sept. ...	7,567	0.5	609	1,174,019	71.2	109	75,606	4.6	592	270,751	16.4	194	111,490	6.8	4	6,559	0.3	44	2,227	0.1	1,552	4,009	38.7	697	929,340	363	367,657	492	351,222	1,648,219
Oct. ...	7,747	0.4	645	1,255,675	70.4	116	85,596	4.8	619	309,729	17.4	196	116,538	6.5	4	5,926	0.3	38	1,882	0.1	1,618	4,015	40.2	734	1,013,714	373	403,301	511	366,078	1,783,093
Nov. ...	7,191	0.4	632	1,203,975	70.6	125	86,033	5.0	606	290,552	17.0	203	109,791	6.4	4	5,813	0.3	41	1,609	0.1	1,611	4,026	40.0	739	947,745	376	394,872	496	362,347	1,704,964
Dec. ...	7,317	0.4	649	1,305,433	71.1	111	75,310	4.1	612	320,571	17.5	198	119,808	6.5	5	5,817	0.3	44	2,188	0.1	1,619	4,038	40.1	745	1,014,213	368	444,545	506	377,686	1,836,444
TOTALS	94,018	0.4	Avg. 628	15,230,068	71.5	Avg. 115	1,087,919	5.1	Avg. 600	3,491,341	16.3	Avg. 198	1,384,793	6.5	Avg. 5	64,829	0.3	Avg. 44	23,272	0.1	Avg. 1,591	4,038	39.4	Avg. 724	12,250,379	Avg. 369	4,805,818	Avg. 497	4,329,043	21,385,240

21st March, 1944.

W. N. FOSTER,
Assistant Petroleum Technologist.

TABLE 3
COLONY OF TRINIDAD
Number of Wells started and Footage Drilled Annually

YEAR	WELLS STARTED								FOOTAGE DRILLED						YEARLY TOTALS	CUMULATIVE
	CROWN		ALIENATED		PRIVATE		TOTALS		CROWN		ALIENATED		PRIVATE			
	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.		
1867	—	—	—	—	1	1	1	1	—	—	—	—	964	964	964	964
1900	—	—	—	—	1	2	1	2	—	—	—	—	600	1,564	600	1,564
1902	1	1	—	—	2	4	3	5	600	600	—	—	1,315	2,879	1,915	3,479
1903	1	2	—	—	—	4	1	6	1,172	1,772	—	—	1,060	3,939	2,232	5,711
1904	1	3	—	—	—	4	1	7	860	2,632	—	—	—	3,939	860	6,571
1905	—	3	—	—	—	4	—	7	—	2,632	—	—	—	3,939	—	6,571
1906	1	4	—	—	2	6	3	10	1,104	3,736	—	—	1,499	5,438	2,603	9,174
1907	1	5	—	—	2	8	3	13	798	4,534	—	—	1,563	7,001	2,361	11,535
1908	—	5	—	—	4	12	4	17	—	4,534	—	—	2,352	9,353	2,352	13,887
1909	—	5	—	—	6	18	6	23	—	4,534	—	—	5,362	14,715	5,362	19,249
1910	5	10	—	—	7	25	12	35	3,771	8,305	—	—	4,319	19,034	8,090	27,339
1911	8	18	—	—	38	63	46	81	4,902	13,207	—	—	34,010	53,044	38,912	66,251
1912	10	28	—	—	35	96	45	126	6,839	20,046	—	—	32,881	85,925	39,720	105,971
1913	25	53	—	—	18	114	43	169	13,813	33,859	—	—	26,388	112,313	40,201	146,172
1914	50	103	—	—	16	132	66	235	35,146	69,005	—	—	23,283	135,596	58,429	204,601
1915	31	134	—	—	19	151	50	285	29,208	98,213	—	—	25,652	161,248	54,860	259,461
1916	28	162	—	—	20	171	48	333	30,866	129,079	—	—	28,035	189,283	58,901	318,362
1917	38	200	—	—	6	177	44	377	41,227	170,306	—	—	9,557	198,840	50,784	369,146
1918	38	238	—	—	4	181	42	419	47,700	218,006	—	—	6,796	205,636	54,496	423,642
1919	40	278	—	—	13	194	52	471	49,741	267,747	—	—	16,769	222,405	66,510	490,152
1920	43	321	1	1	23	217	68	539	53,002	320,749	1,665	1,665	24,009	246,414	78,676	568,828
1921	49	370	4	5	32	249	85	624	71,318	392,067	2,896	4,561	44,631	291,045	118,845	687,673

TABLE 3—Continued
COLONY OF TRINIDAD
 Number of Wells started and Footage Drilled Annually

YEAR	WELLS STARTED								FOOTAGE DRILLED						YEARLY TOTALS	CUMULATIVE
	CROWN		ALIENATED		PRIVATE		TOTALS		CROWN		ALIENATED		PRIVATE			
	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.	Annual	Cum.		
1922	68	438	4	9	20	269	91	715	88,299	480,566	8,701	13,262	39,463	330,508	136,463	824,136
1923	70	508	5	14	33	302	108	823	79,907	560,273	7,060	20,322	58,805	389,313	145,772	969,908
1924	67	575	8	22	34	336	110	933	90,141	650,414	6,190	26,512	55,197	444,510	151,528	1,121,436
1925	46	621	16	38	37	373	99	1,032	86,904	737,318	18,446	44,958	63,543	508,053	168,893	1,290,329
1926	69	690	13	51	46	419	128	1,160	109,234	846,552	18,732	63,690	72,691	580,744	200,657	1,490,986
1927	73	763	13	64	73	492	159	1,319	101,920	948,472	17,288	80,978	122,465	703,209	241,673	1,732,659
1928	43	806	33	97	64	556	139	1,458	71,481	1,019,953	58,842	139,820	112,863	816,072	243,186	1,975,845
1929	52	858	58	155	48	604	159	1,617	92,590	1,112,543	118,583	258,403	96,309	912,381	307,482	2,283,327
1930	76	934	31	186	56	660	163	1,780	170,389	1,282,932	85,561	343,964	116,706	1,029,087	372,656	2,655,983
1931	9	943	25	211	26	686	60	1,840	42,972	1,325,904	95,410	439,374	80,260	1,109,347	218,642	2,874,625
1932	21	964	20	231	20	706	61	1,901	44,568	1,370,472	67,162	506,536	61,557	1,170,904	173,287	3,047,912
1933	36	1,000	22	253	23	729	81	1,982	85,946	1,456,418	87,550	594,086	62,206	1,323,110	235,702	3,382,614
1934	56	1,056	30	283	38	767	124	2,106	167,952	1,624,370	88,503	682,589	95,328	1,328,438	351,783	3,635,397
1935	55	1,111	46	329	38	805	139	2,245	185,788	1,810,158	142,722	825,311	107,789	1,436,227	436,299	4,071,696
1936	59	1,170	39	368	73	878	171	2,416	235,804	2,045,962	145,554	970,865	213,171	1,649,398	594,529	4,666,225
1937	92	1,262	46	414	151	1,029	289	2,705	345,393	2,391,355	162,804	1,133,669	403,378	2,052,776	911,575	5,577,800
1938	110	1,372	67	481	102	1,131	279	2,984	384,103	2,775,458	207,939	1,341,608	313,866	2,366,642	905,908	6,483,708
1939	106	1,478	66	547	73	1,204	245	3,229	377,737	3,153,195	208,098	1,549,706	249,011	2,615,653	834,846	7,318,554
1940	162	1,640	75	622	53	1,257	290	3,519	556,120	3,709,315	271,791	1,821,497	197,711	2,813,364	1,025,622	8,344,170
1941	178	1,800	43	641	49	1,301	270	3,742	593,930	4,291,862	191,557	1,995,509	149,767	2,960,699	935,254	9,248,090
1942	98	1,898	42	683	29	1,330	169	3,911	375,310	4,667,192	170,923	2,166,432	77,165	3,037,864	623,398	9,871,488
1943	64	1,962	32	715	31	1,361	127	4,038	261,172	4,928,364	128,355	2,294,787	104,204	3,142,068	493,731	10,365,219

NOTE:—Previous to the year 1941 figures showing the number of wells and footage drilled included fresh water wells. In the figures for 1941 and subsequent years fresh water wells are excluded.

TABLE 4
Yearly Trinidad Production

Year	Crown	Accumulative Total	Alienated	Accumulative Total	Private	Accumulative Total	Yearly Totals	Grand Accumulative Total
1908	—	—	—	—	37	37	37	37
1909	—	—	—	—	47,295	47,332	47,295	47,332
1910	55	55	—	—	105,023	152,355	105,078	152,410
1911	3,994	4,049	—	—	217,298	369,653	221,292	373,702
1912	9,104	13,153	—	—	476,801	846,454	485,905	859,607
1913	52,153	65,306	—	—	533,029	1,379,483	585,182	1,444,789
1914	512,299	577,605	—	—	480,917	1,860,400	993,216	2,438,005
1915	392,389	969,994	—	—	512,330	2,372,730	904,719	3,342,724
1916	478,815	1,448,809	—	—	449,060	2,821,790	927,875	4,270,599
1917	1,065,945	2,514,754	—	—	536,357	3,358,147	1,602,302	5,872,901
1918	1,588,805	4,103,559	—	—	493,115	3,851,262	2,081,920	7,954,821
1919	1,539,973	5,643,532	—	—	301,063	4,152,325	1,841,036	9,795,857
1920	1,758,039	7,401,571	—	—	325,071	4,477,396	2,083,110	11,878,967
1921	1,751,943	9,153,514	300	300	601,916	5,079,312	2,354,159	14,233,126
1922	1,534,796	10,688,310	147	447	909,727	5,989,039	2,444,670	16,677,796
1923	1,847,118	12,535,428	63,334	63,781	1,140,335	7,129,374	3,050,787	19,728,583
1924	2,410,737	14,946,165	76,467	140,248	1,570,856	8,700,230	4,058,060	23,786,643
1925	2,647,095	17,593,260	200,781	341,029	1,538,634	10,238,864	4,386,510	28,173,153
1926	2,630,100	20,223,360	310,953	651,982	2,030,426	12,269,290	4,971,479	33,144,632
1927	2,039,363	22,262,723	297,761	949,743	3,043,676	15,312,966	5,380,800	38,525,432
1928	2,652,981	24,915,704	1,470,333	2,420,076	3,561,273	18,874,239	7,684,587	46,210,019
1929	2,987,795	27,903,499	1,627,439	4,047,515	4,100,554	22,974,793	8,715,788	54,925,807
1930	3,429,030	31,332,529	1,831,338	5,878,853	4,158,589	27,133,382	9,418,957	64,344,764
1931	2,795,572	34,128,101	2,530,175	8,409,028	4,417,751	31,551,133	9,743,498	74,088,262
1932	3,200,083	37,328,184	2,410,813	10,819,841	4,515,225	36,066,358	10,126,121	84,214,383
1933	3,684,148	41,012,332	1,606,595	12,426,436	4,270,610	40,336,968	9,561,353	93,775,736
1934	4,586,366	45,598,698	1,805,178	14,231,614	4,502,819	44,839,787	10,894,363	104,670,099
1935	5,288,943	50,887,641	2,255,484	16,487,098	4,126,797	48,966,584	11,671,224	116,341,323
1936	5,982,993	56,870,634	2,199,025	18,686,123	5,055,012	54,021,596	13,237,030	129,578,353
1937	7,128,085	63,998,719	2,615,207	21,301,330	5,759,697	59,781,293	15,502,989	145,081,342
1938	8,165,149	72,163,868	3,475,547	24,776,877	6,096,505	65,877,798	17,737,201	162,818,543
1939	9,724,193	81,888,061	4,170,532	28,947,409	5,846,891	71,724,689	19,741,616	182,560,159
1940	11,448,511	93,336,572	5,231,912	34,179,321	5,546,453	77,271,142	22,226,876	204,787,035
1941	10,300,161	103,636,733	5,080,065	39,259,386	5,125,754	82,396,896	20,505,980	225,293,015
1942	13,012,471	116,649,204	4,780,889	44,040,275	4,275,818	86,672,714	22,069,178	247,362,193
1943	12,250,379	128,899,583	4,805,818	48,846,093	4,329,043	91,001,757	21,385,240	268,747,433

Table 5

Table showing number of Oil Wells started in each year and status of Wells at 31st December, 1943

YEAR	WELLS STARTED			PRODUCING			IDLE			ABANDONED			UNFINISHED			TOTALS			
	C	A	P	C	A	P	C	A	P	C	A	P	C	A	P	Prod.	Idle	Aban.	Unf.
1867	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—
1900	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—
1902	1	—	2	—	—	—	—	—	—	1	—	2	—	—	—	—	—	3	—
1903	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—
1904	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—
1905	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1906	1	—	2	—	—	—	—	—	—	1	—	2	—	—	—	—	—	3	—
1907	1	—	2	—	—	—	—	—	—	1	—	2	—	—	—	—	—	3	—
1908	—	—	4	—	—	—	—	—	1	—	—	3	—	—	—	—	1	3	—
1909	—	—	6	—	—	1	—	—	2	—	—	3	—	—	1	2	3	—	—
1910	5	—	7	—	—	1	3	—	1	2	—	5	—	—	1	4	7	—	—
1911	8	—	38	2	—	4	2	—	7	4	—	27	—	—	6	9	31	—	—
1912	10	—	35	1	—	1	4	—	10	5	—	24	—	—	2	14	29	—	—
1913	25	—	18	1	—	4	14	—	4	10	—	10	—	—	5	18	20	—	—
1914	50	—	16	5	—	2	22	—	7	23	—	7	—	—	7	29	30	—	—
1915	31	—	19	—	—	6	21	—	11	10	—	2	—	—	6	32	12	—	—
1916	28	—	20	1	—	3	17	—	12	10	—	5	—	—	4	29	15	—	—
1917	38	—	6	5	—	—	18	—	2	15	—	4	—	—	5	20	19	—	—
1918	38	—	4	10	—	—	16	—	—	12	—	4	—	—	10	16	16	—	—
1919	40	—	13	7	—	1	22	—	2	11	—	10	—	—	8	24	21	—	—
1920	43	1	23	6	—	2	22	—	8	15	1	13	—	—	8	30	29	—	—
1921	49	4	32	7	—	5	25	—	9	17	4	18	—	—	12	34	39	—	—
1922	68	4	20	6	—	4	36	1	4	26	3	12	—	—	10	41	41	—	—
1923	70	5	33	8	—	4	35	—	12	27	5	17	—	—	12	47	49	—	—
1924	67	8	34	14	—	4	32	1	15	21	7	15	—	—	18	48	43	—	—
1925	46	16	37	17	1	8	15	2	12	14	13	17	—	—	26	29	44	—	—
1926	69	13	46	11	1	13	35	1	21	23	11	12	—	—	25	57	46	—	—
1927	73	13	73	12	1	24	28	3	24	33	9	25	—	—	37	55	67	—	—
1928	43	33	64	8	13	20	21	12	32	14	8	12	—	—	41	65	34	—	—
1929	52	58	48	8	22	17	27	21	18	17	15	13	—	—	47	66	45	—	—
1930	76	30	56	13	7	20	43	9	19	19	14	16	1	—	40	71	49	2	—
1931	9	25	26	1	9	14	5	14	6	3	2	6	—	—	24	25	11	—	—
1932	21	19	20	4	10	9	14	9	7	3	—	4	—	—	23	30	7	—	—
1933	36	19	23	7	8	10	20	11	7	7	—	6	2	—	25	38	13	2	—
1934	56	29	38	22	20	19	25	7	14	8	2	5	1	—	61	46	15	1	—
1935	55	41	37	28	19	17	20	15	11	5	7	9	2	—	64	46	21	2	—
1936	59	36	72	33	17	29	21	12	26	5	7	16	—	—	79	59	28	1	—
1937	87	42	151	39	19	81	44	12	50	4	11	18	—	—	139	106	33	2	—
1938	106	63	101	56	35	41	30	23	40	20	5	16	—	—	132	93	41	4	—
1939	102	65	72	52	47	39	38	15	18	11	3	15	1	—	138	71	29	1	—
1940	157	74	52	116	48	32	35	21	14	5	4	5	1	1	196	70	14	3	—
1941	178	43	49	120	33	26	51	8	12	6	2	9	1	—	179	71	17	3	—
1942	98	42	29	72	30	20	19	8	5	6	3	3	1	1	122	32	12	3	—
1943	64	32	31	49	28	22	8	1	5	1	—	1	6	3	99	14	2	12	—
TOTALS:	1,962	715	1,361	741	368	503	788	206	448	417	136	395	16	5	15	1,612	1,442	948	36
	4,038			1,612			1,442			948			36			4,038			

C.=Crown:

A.=Alienated:

P.=Private.

23rd March, 1944.

W. N. FOSTER,
Assistant Petroleum Technologist.

APPENDIX "C"

Statement of the Quantity and Value of Minerals obtained and the Daily Average Number of Persons employed in the Petroleum, Asphalt and Quarry Industries during the years 1942 and 1943.

INDUSTRY	1942					1943				
	Quantity	Approximate Value *	Daily average number of persons employed			Quantity	Approximate Value *	Daily average number of persons employed		
			Males	Females	Total			Males	Females	Total
Petroleum	22,069,178 bbls.	\$ 19,345,696 09	13,799	197	13,996	21,385,240 bbls.	\$ 18,451,962 32	13,601	180	13,781
Asphalt (a)	33,165 tons	99,495 00	378	3	381	50,323 tons	150,969 00	378	3	381
Private Quarries (Limestone, Gravel, &c.)	420,292 tons	229,624 29	670	106	776	455,660 tons	299,582 72	600	82	682
Government Quarries (Limestone, Gravel, &c.)	126,172 tons	66,306 51	224	32	256	107,359 tons	90,563 62	258	32	290

(*) The values given are those returned by owners and managers and represent value at place of production.

(a) In addition to the figure shown against this item, the following quantities were extracted from the Pitch Lake by the Public Works Department for use on the roads of the Colony, viz :

1942 30,244 tons. 1943 34,378 tons.

APPENDIX "D"

Rates of Wages and Hours of Labour employed on the Oilfields

CLASS OF WORKER	HOURLY WAGE		DAILY WAGE		Normal Weekly hours of Labour.	EXPLANATORY NOTES
	Min. (Cents per hour.)	Max.	Min.	Max.		
Rigmen employed in Drilling	21	28	—	—	48/56 hrs.	<i>General Remarks.</i>
Rigmen employed in Production	20	30	—	—	do.	
Production men	15	21	—	—	do.	1. <i>Housing:</i>
Rig Builders	16	30	—	—		Accommodation is sometimes provided for those employees whose presence is required on the Fields.
Blacksmiths	18	30	—	—		
Boilersmiths	18	30	—	—		
Cabinet Makers	18	30	—	—		2. <i>Medical Attention:</i>
Carpenters	18	30	—	—		(a) In the case of accident arising from employment medical attention is usually free. In other cases the practice varies from Company to Company.
Chauffeurs	18	30	—	—		
Electricians	18	30	—	—		
Firemen	16	24	—	—		3. <i>War Bonus:</i>
Fitters (Bench, Engine or Pump)	18	30	—	—	45/48 hrs. up to 56, when working on shift.	In addition to all the hourly rates stated there has been paid a "War Bonus Addition". This is payable at the rate of $\frac{1}{2}$ c. per hour for every 5 points increase in the Government cost of living index number. Such War Bonus additions have been paid as follows:
Masons	15	26	—	—		Effective 24th Jan., 1940— 1c. per hour.
Motor Mechanics	18	30	—	—		Effective 18th Feb., 1940— $1\frac{1}{2}$ c. per hour.
Moulders	15	26	—	—		Effective 15th Sept., 1940— 2c. per hour.
Painters	14	21	—	—		Effective 16th April, 1941— $2\frac{1}{2}$ c. per hour.
Plumbers	15	30	—	—		Effective 15th June, 1941— 3c. per hour.
Riveters	18	30	—	—		Effective 15th Feb., 1942— $3\frac{1}{2}$ c. per hour.
Tinsmiths	15	30	—	—		Effective 16th April, 1942— 4c. per hour.
Turners	18	30	—	—		Effective 16th July, 1942— $4\frac{1}{2}$ c. per hour.
Welders	18	30	—	—		Effective 16th Aug., 1942— 5c. per hour.
Semi-skilled	13	26	—	—		Effective 16th Oct., 1942— $5\frac{1}{2}$ c. per hour.
Unskilled	13	18	—	—		Effective 15th Nov., 1942— 6c. per hour.
						Effective 16th Jan., 1943— $6\frac{1}{2}$ c. per hour.
						Effective 16th June, 1943— 7c. per hour.
						Effective 15th Aug., 1943— $7\frac{1}{2}$ c. per hour.
						Effective 15th Dec., 1943— 8c. per hour.
						The amount being paid at the close of the year is thus 8c. per hour additional on all rates.

APPENDIX "E"

Statement of Oil produced and exported year by year since the inception of the Petroleum Industry in the Colony

Year	Production in barrels	Quantity of crude and refined oil exported in barrels
1908	37	—
1909	47,295	46
1910	105,078	—
1911	221,292	219,582
1912	485,905	122,734
1913	585,182	387,719
1914	993,216	348,351
1915	904,719	408,188
1916	927,875	975,142
1917	1,602,302	1,079,369
1918	2,081,920	1,305,407
1919	1,841,036	1,406,264
1920	2,083,110	1,034,907
1921	2,354,159	1,223,346
1922	2,444,670	1,615,740
1923	3,050,787	2,432,470
1924	4,058,060	3,224,529
1925	4,386,510	3,606,608
1926	4,971,479	3,988,308
1927	5,380,800	4,456,770
1928	7,684,587	6,361,675
1929	8,715,788	8,243,023
1930	9,418,957	7,678,807
1931	9,743,498	8,964,303
1932	10,126,121	9,637,474
1933	9,561,353	8,909,298
1934	10,894,363	9,981,774
1935	11,671,224	10,993,540
1936	13,237,030	12,405,222
1937	15,502,989	14,124,056
1938	17,737,201	16,417,020
1939	19,741,616	17,600,222
1940	22,226,876	20,188,921
1941	20,505,980	17,123,931
1942	22,069,178	19,063,926
1943	21,385,240	15,861,354
Totals	268,747,433	231,390,026

APPENDIX "F"

Comparative Statement of Oil refined in the Colony

Previous to 1920	...	...	...	...	...	...	...	4,051,373 barrels.
1920	...	...	...	...	...	...	...	1,395,487 do.
1921	...	...	...	...	...	...	...	1,806,016 do.
1922	...	...	...	...	...	...	...	1,820,018 do.
1923	...	...	...	...	...	...	...	2,360,279 do.
1924	...	...	...	...	...	...	...	3,433,902 do.
1925	...	...	...	...	...	...	...	3,790,343 do.
1926	...	...	...	...	...	...	...	3,786,876 do.
1927	...	...	...	...	...	...	...	4,796,223 do.
1928	...	...	...	...	...	...	...	6,725,383 do.
1929	...	...	...	...	...	...	...	7,642,726 do.
1930	...	...	...	...	...	...	...	7,989,679 do.
1931	...	...	...	...	...	...	...	6,899,144 do.
1932	...	...	...	...	...	...	...	7,635,296 do.
1933	...	...	...	...	...	...	...	9,129,810 do.
1934	...	...	...	...	...	...	...	10,846,584 do.
1935	...	...	...	...	...	...	...	11,148,285 do.
1936	...	...	...	...	...	...	...	13,028,161 do.
1937	...	...	...	...	...	...	...	15,111,046 do.
1938	...	...	...	...	...	...	...	17,596,932 do.
1939	...	...	...	...	...	...	...	19,414,920 do.
1940	...	...	...	...	...	...	...	22,060,110 do.
1941	...	...	...	...	...	...	...	20,812,467 do.
1942	...	...	...	...	...	...	...	21,914,247 do.
1943	...	...	...	...	...	...	...	21,085,972 do.
Total	...	...	...	...	...	...	...	<u>246,281,279</u> do.