

MINES.

Report of the Inspector of Mines and Petroleum Technologist for the Year 1941.

HONOURABLE COLONIAL SECRETARY,

I have the honour to submit, for the information of His Excellency the Governor, the following report on the work of the Mines Department for the year 1941.

THE PETROLEUM INDUSTRY.

2. As will be obvious the operations of the Petroleum Industry during the year under review have continued to be primarily determined by requirements for war purposes and also the availability of tanker tonnage for transporting the products. During the first half of 1941 a decreased demand resulted in a restriction in the production of crude oil but during the latter half of the year some improvement in the situation took place and it was possible to increase the production somewhat. Nevertheless, in consequence of the foregoing, the results for the year 1941 show a reduction both in the number of wells drilled and the quantity of oil produced as compared with the results obtained during the year 1940. It is satisfactory to record, however, that in the event of the Colony's oil resources being called upon to supply substantially larger quantities of crude oil and its products than are required at present there would be no difficulty in doing so.

3. *Production of crude oil.*—The total production of crude oil for the year 1941 amounted to 20,505,980 barrels, which is 1,720,896 barrels or 7.70 per cent. less than the production for 1940.

4. *Drilling.*—During the year 1941, 270 oil wells were commenced, compared with 290 during 1940 which latter figure includes 7 wells drilled for water. The total number of oil wells drilled in the Colony at the end of 1941 is 3,742 of which 2,441 are on lands the oil rights of which are vested in the Crown and 1,301 are on private lands.

The number of feet drilled during 1941 amounted to 935,254 a decrease of 90,368 feet or 8.8 per cent. on the footage for 1940.

The depth of the deepest well completed in the Colony at the end of the year was 10,015 feet.

5. The following table shows comparatively, the number of feet drilled and the quantity of oil produced during the years 1939, 1940 and 1941:—

	Number of Feet Drilled.			Production in Barrels of 35 gals.		
	1939	1940	1941	1939	1940	1941
Crown Oil Rights ..	585,835	827,911	785,487	13,894,725	16,680,423	15,380,226
Private Oil Rights ..	249,011	197,711	149,767	5,846,891	5,546,453	5,125,754
Total ..	834,846	1,025,622	935,254	19,741,616	22,226,876	20,505,980

Note.—Previous to the year 1941 figures showing the number of feet drilled included fresh water wells. In the footage figures for 1941 shown above fresh water wells are excluded.

6. *Oilfield Operators.*—The number of oilfield operators in the Colony during the year was 17 as compared with 18 in 1940.

7. *Persons Employed.*—The average number of persons employed in the Petroleum Industry during 1941 amounted to 14,890 per day as compared with 13,568 during 1940.

8. *Leases and Licences.*—During the year 3 applications for supplemental leases were received. One principal and two supplemental mining leases were registered and seven exploration licences were renewed. 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.			Alienated.		
	Crown.			Alienated.		
	A.	R.	P.	A.	R.	P.
77 Mining Leases	139,444	0	36	56,676	2	01
7 Exploration Licences	141,394	3	06	—	—	—
84 Total	280,839	0	02	56,676	2	01

9. *Total Area under lease or licence.*—The total area under Crown and private leases on the 31st December, 1941, amounted to 385,726 acres (or 32.34 per cent. of the total area of Trinidad) made up as follows:—

	A.	R.	P.
Area of Crown Lands under Exploration Licence....	141,394	3	06
Area of Alienated Lands under Mining Lease the oil rights of which are vested in the Crown	56,676	2	01
Area of Crown Lands under Mining Leases	139,444	0	36
Area of privately owned oil rights under lease, according to details supplied by the oil companies	48,210	2	03
Total....	385,726	0	06

10. *Revenue from Royalties and Fees.*—The revenue collected under these heads amounted to \$1,332,368.99 as compared with \$1,310,334.50 collected during the year 1940. For purposes of comparison, the following table shows the amounts collected under each head for the years 1939, 1940 and 1941 :—

Heads.	Amounts Collected.		
	1939	1940	1941
	\$ c.	\$ c.	\$ c.
Royalties in respect of oil produced from Crown and Alienated Lands	1,066,233 30	1,306,506 02	1,332,368 99
Fees charged for pipelines along and across the Trinidad Government Railway and Public Roads	5,836 91	3,828 48	5,303 81
Total	1,072,070 21	1,310,334 50	1,337,672 80

11. *Refineries.*—Six 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 three were issued in respect of small field topping plants the operations of which are of relative unimportance.

During the year important extensions to the principal refineries have been satisfactorily completed and the total crude oil capacity of the refineries operating in the Colony amounts to approximately 32,000,000 barrels per annum. During 1941 a total quantity of 20,812,467 barrels of crude oil was refined, compared with 22,060,110 barrels during 1940.

12. *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.

13. *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.

14. *Pipelines.*—Approximately 337 miles of main oil pipe lines have been laid down in the Colony. During the year nine new permits under the Pipelines Ordinance, Ch. 26. No. 9, were issued and the total number of permits in force at the end of 1941 amounted to 104.

15. *Tank Storage.*—The total main tank storage capacity for petroleum in the Colony is approximately 6,256,873 barrels.

16. *Exports of Petroleum and its Products.*—The quantity of petroleum and its products exported during the year declined as compared with the year 1940, the amounts and values for the two years being as follows :—

1940—20,188,921 barrels valued at	\$33,650,359.00
1941—17,123,931 barrels valued at	\$28,980,268.00

Petroleum and its products including Asphalt continued to form the largest part, viz. : 73.35 per cent., of the Colony's total exports during 1941, the value being more than four 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 1941 is shown in the following table :—

<i>Staple Products Exported.</i>	<i>Value.</i>	<i>Per cent. of Total.</i>
Petroleum and its Products	\$28,980,268	71.05
Sugar, Molasses and Rum	7,099,333	17.41
Cocoa	1,749,836	4.29
Asphalt	938,560	2.30
Fruits and Fruit Products	712,367	1.75
Bitters	157,845	0.38
Coffee	109,514	0.27
Coconuts, Copra and Coconut Oil	60,069	0.15
Other Exports not enumerated	979,058	2.40
	<u>\$40,786,850</u>	<u>100.00</u>

17. *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.

18. *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.

19. Included in this report as Appendix "B" will be found some interesting statistics relating to the progress of the Petroleum Industry which have been compiled by the Acting Assistant Petroleum Technologist.

THE ASPHALT INDUSTRY.

20. This important industry continues to suffer severely as a result of the war on account of the difficulty experienced in shipping the products to markets abroad. The production of asphalt during the year amounted to 80,540 tons as compared with 78,652 tons for the year 1940, a slight increase of 1,888 tons. The following table shows, comparatively, the quantity of asphalt produced and exported during the years 1939, 1940 and 1941 :—

	1939	1940	1941
Production (in tons)	130,315	78,652	80,540
Export (in tons)	86,033	36,393	48,199

FACTORIES.

21. During the period under review 297 factories exclusive of oilfield machinery were in operation in Trinidad and Tobago. During the inspection of these factories 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.

22. The number of quarries worked during the past year was 170 as compared with 155 quarries in operation during the year 1940. 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.

23. 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 1941 six fatal accidents occurred in the Petroleum Industry compared with eight for the year 1940 and four occurred in other industries. Of the accidents which occurred in the Petroleum Industry three occurred at refining installations and three during drilling operations.

PETROLEUM ORDINANCE, Ch. 26. No. 2.

24. The premises where dangerous petroleum products are stored have been inspected, and all possible care has been taken to ensure safety. During the year 571 licences were issued for the storage and sale of petroleum and its products. The revenue actually collected from such licence during 1941 was \$1,658.40.

APPENDICES.

25. Appendix "A" shows the list of oil and asphalt operators in the Colony during the year 1941.

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

27. 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.

28. Appendix "D" gives the Rates of Wages and Hours of labour employed in the oilfields for the year 1941.

29. A statement of oil produced and exported is shown as Appendix "E".

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

STAFF.

31. Mr. C. Niles, 2nd Class Clerk, Petroleum Office, San Fernando, was granted 90 days vacation leave from the 25th April, 1941, and on resumption of duty on the 23rd July, 1941, was seconded to the Registrar and Marshal's Department.

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

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

24th June, 1942.

APPENDIX "A."

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., (T'dad) Ltd.	Private Lands	Brighton, Vessigny, Roussilac	Crude Exported.
2	Apex (T'dad) Oilfields, Ltd.	Private Lands, Crown Lands, and Crown Oil Rights under Lease	Fyzabad, Siparia ...	Crude Oil sold to Trinidad Leaseholds, Ltd. Casing head gas sold to United British Oilfields of Trinidad 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, Caparo, Sangre Grande	Crude sold to United British Oilfields of Trinidad, Ltd.
5	Partap, Ramesar ...	Private Lands	Fyzabad	Crude sold to United British Oilfields of Trinidad, Ltd.
6	Petroleum Options (1925) Ltd.	Private Lands	San Francique ...	Crude sold to Trinidad Leaseholds, Ltd.
7	Premier (Trinidad) Oilfields, Ltd.	Crown Lands under Lease	Palo Seco	do. do.
8	Roodal, Timothy	Private Lands	Fyzabad	do. do.
9	Siparia Trinidad Oilfields, Ltd.	Crown Lands, and Crown Oilrights 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 Oilrights under Lease	Fyzabad	do. do.
12	Trinidad Lake Asphalt Operating Co., Ltd.	Crown Lands under Lease ...	La Brea	Pitch refined and exported.
13	Trinidad Leaseholds, Ltd. ...	Private Lands, Crown Lands, and Crown Oilrights under Lease	Barrackpore, Forest Reserve, Guaya-guayare, Quinam	Pumped to Company's Refinery at Pointe-a-Pierre.
14	Trinidad Oilfields Operating Co., Ltd.	Private Lands, Crown Oil rights under Lease	Palo Seco, San Francique	Crude sold to Trinidad Leaseholds, Ltd.
15	Trinidad Petroleum Development Co., Ltd.	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.
16	Trinidad Northern Areas, Ltd.	Private Lands	Montserrat ...	No production.
17	United British Oilfields of Trinidad, Ltd.	Private Lands, Crown Lands, and Crown Oil Rights under Lease	Cedros, Parrylands, Penal, Point Fortin	Pumped to Company's Refinery at Point Fortin
18	Zenith Trinidad Oilfields, Ltd.	Private Lands	Fyzabad	Crude sold to Trinidad Leaseholds, Ltd.

12th May, 1942. ↘

R. G. FFOULKES-JONES,
Acting Assistant Petroleum Technologist.

APPENDIX "B":

HONOURABLE INSPECTOR OF MINES AND PETROLEUM TECHNOLOGIST.

The production of crude oil for the year under review amounted to 20,505,980 barrels, a decrease of 1,720,896 barrels or 7.7 per cent. on the figure for 1940.

The footage drilled amounted to 935,254 feet, a decrease of 90,368 feet or 8.8 per cent. less than last year's figure.

A comparison of the footage and production figures for 1940 and 1941 is as follows:—

	Footage.		Production.	
	1940	1941	1940	1941
Crown	556,120	593,930	11,448,511	10,309,161
Alienated	271,791	191,557	5,231,912	5,080,065
Private	197,711	149,767	5,546,453	5,125,754
Totals... ..	1,025,622	935,254	22,226,876	20,505,980

Drilling.

During the year, 270 oilwells were started, as compared with 283 (290 including fresh water wells) last year, bringing the total number of oilwells started in the Colony to 3,742 by the end of the year.

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

	On Crown Lands.	On Alienated Lands.	On Private Lands.	Total.
Unfinished at end of 1940	31	8	23	62
Started during 1941	178	43	49	270
	209	51	72	332
Completed as Oil Producers	185	44	46	275
Completed as Dry Holes	—	—	—	—
Abandoned while drilling	3	2	9	14
Unfinished at end of 1941	21	5	17	43
	209	51	72	332
Old Wells abandoned during 1941	19	2	17	38
Old Wells recompleted during 1941	32	8	27	67

According to the Drilling Regulations made under the Mines, Borings and Quarries Ordinance, Ch. 26. No. 4, the definition of "well" includes a well drilled for the purpose of obtaining fresh water, and the drilling of all such wells is therefore reportable to this Department.

It has been the practice in previous years to include in this report all data regarding such fresh water wells and oil wells together. However, in view of the importance now attached to the drilling of fresh water wells in the island to supplement the water supply, it has been considered desirable to submit separate statistics. Thus, in the foregoing and in the attached Tables, the figures given for the year under review refer only to wells drilled for the purpose of obtaining oil, whereas those for 1940 and previous years include both oil and fresh water wells.

Fresh Water Wells.

During the year 23 new wells were drilled for fresh water production in widely separated parts of the island, as compared with 7 wells last year bringing the total number of fresh water wells drilled in the Colony to 70 at the end of the year. In addition, there were 4 abandoned oil wells converted to fresh water wells, bringing the total of such converted wells to 17.

Footage drilled for fresh water amounted to 13,170 feet, as compared with 4,825 feet in 1940.

The following Tables are attached:—

No. 1—Showing Drilling Summary for 1941.

No. 2—Showing Production Summary for 1941.

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, 1941.

R. G. FFOULKES-JONES,
Acting Assistant Petroleum Technologist.

12th May, 1942.

TABLE I.
DRILLING SUMMARY FOR THE YEAR, 1941.

Month	Wells Started.			Completed as Producers.			Recompleted as Producers.			Abandoned.			FOOTAGE DRILLED FOR OIL.									
	C.	A.	P.	C.	A.	P.	C.	A.	P.	C.	A.	P.	Crown.	Alienated.	Private.	Total.						
January	26	7	7	23	5	6	1	—	1	13	2	4	77,977	20,530	19,659	118,166
February	19	1	4	21	4	5	2	—	1	—	1	4	56,340	16,276	12,454	85,070
March	24	7	9	23	4	6	4	1	2	—	—	2	67,001	16,460	20,393	103,854
April	13	4	2	17	4	4	1	—	—	—	—	2	50,919	24,027	13,137	88,083
May	15	4	6	20	4	4	1	—	6	—	—	1	54,339	23,528	10,267	88,134
June	17	2	2	14	4	3	2	2	3	—	—	3	47,828	10,903	11,218	69,949
July	12	6	4	12	5	4	7	5	6	—	—	2	40,751	14,199	8,469	63,419
August	7	4	3	8	3	2	5	—	2	2	1	2	36,880	17,201	9,411	63,492
September	12	—	5	9	1	3	1	—	2	6	—	—	36,698	16,693	12,341	65,732
October	11	3	5	13	7	3	2	—	3	—	—	1	44,323	10,400	14,417	69,140
November	11	4	2	13	2	4	—	—	1	1	—	1	45,797	11,872	12,128	69,797
December	11	1	—	12	1	2	6	—	—	—	—	4	35,077	9,468	5,873	50,418
Totals	178	43	49	185	44	46	32	8	27	22	4	26	593,930	191,557	149,767	935,254
							=270			=275			=67			=52						

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

8th May, 1942.

R. G. FFOULKES-JONES,
Acting Assistant Petroleum Technologist.

TABLE No. 2.
ANNUAL PRODUCTION SUMMARY BY MONTHS DURING 1941.
(In Barrels of 35 Imperial Gallons).

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. 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.	Alienated.	No. of Wells.		Private.
Jan. ...	9,109	.5	548	1,219,657	69.0	110	101,054	5.7	615	312,042	17.7	191	115,295	6.5	14	5,259	.3	.75	4,181	.2	1,553	3,512	44.2	576	883,801	371	430,698	606	452,098	1,766,597
Feb. ...	8,243	.5	542	1,101,177	70.7	94	79,370	5.1	517	253,416	16.2	193	109,554	7.0	16	5,219	.3	70	3,729	.2	1,432	3,536	40.5	468	752,297	302	392,805	602	415,606	1,560,708
March ...	9,014	.5	547	1,102,779	68.4	94	87,760	5.4	514	283,425	17.7	192	118,530	7.3	16	5,591	.3	74	4,201	.3	1,437	3,576	40.2	479	724,395	355	426,509	603	460,396	1,611,300
April ...	8,593	.6	547	1,039,501	68.3	88	80,412	5.3	520	273,030	17.9	193	111,379	7.3	16	5,462	.3	62	4,254	.3	1,426	3,595	39.7	473	696,039	362	398,357	591	428,235	1,522,631
May ...	9,930	.6	542	1,057,651	67.5	103	87,913	5.6	538	287,376	18.3	195	113,884	7.3	17	5,527	.4	72	4,154	.3	1,467	3,620	40.5	501	742,898	363	391,873	603	431,664	1,566,435
June ...	9,108	.6	549	1,106,076	69.3	89	63,590	4.0	554	294,744	18.5	197	111,916	7.0	17	5,348	.3	64	4,184	.3	1,470	3,641	40.4	512	786,640	362	394,110	596	414,216	1,594,966
July ...	9,435	.5	599	1,273,395	70.3	89	80,622	4.5	587	313,989	17.4	193	121,308	6.7	18	5,776	.3	71	5,081	.3	1,557	3,663	42.5	576	922,716	367	450,846	614	436,044	1,809,606
Aug. ...	9,149	.4	580	1,316,022	70.5	94	88,024	4.7	573	314,951	16.8	194	129,077	6.9	16	5,592	.2	63	3,232	.7	1,520	3,677	41.3	551	959,295	366	461,451	603	445,331	1,866,077
Sept. ...	8,678	.5	580	1,230,636	70.0	92	77,288	4.4	592	303,653	17.6	194	122,333	6.9	16	5,383	.3	67	3,923	.2	1,541	3,694	41.7	569	917,895	368	422,662	604	416,337	1,756,894
Oct. ...	9,037	.5	573	1,264,359	69.3	109	90,923	5.0	632	345,553	18.9	193	106,636	5.8	16	5,419	.3	57	3,305	.2	1,580	3,713	42.6	612	958,377	367	452,784	601	414,071	1,825,232
Nov. ...	8,338	.5	561	1,213,642	68.6	119	97,582	5.5	642	344,052	19.4	194	96,830	5.5	15	5,229	.3	71	3,553	.2	1,602	3,730	43.0	616	937,232	377	435,002	609	396,942	1,769,226
Dec. ...	8,710	.5	565	1,253,877	67.5	117	117,169	6.3	644	362,322	19.5	195	105,838	5.7	16	5,375	.3	67	2,957	.1	1,604	3,742	42.9	635	1,018,526	372	422,968	597	414,814	1,856,308
TOTALS :	107,344	.5	Avg. 561	14,178,772	69.1	Avg. 100	1,051,707	5.1	Avg. 577	3,693,553	18.0	Avg. 194	1,362,640	6.6	Avg. 16	65,180	.3	Avg. 68	46,784	.2	Avg. 1,516	3,742	40.5	Avg. 547	10,300,161	366	5,080,065	602	5,125,754	20,505,980

6th May, 1942.

R. G. FFOULKES-JONES,
Acting 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	8,099	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	—	—	25,682	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

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.		
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
1922	68	438	4	9	20	269	91	715	88,299	480,366	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	4,291,882	191,557	1,995,509	149,767	2,960,699	935,254	9,248,090

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

Cum = Cumulative.

R. G. FFOULKES-JONES,
Acting Assistant Petroleum Technologist.

TABLE 4.
Yearly Trinidad Production.

Year.	Crown.	Cumulative Total.	Alienated.	Cumulative Total.	Private.	Cumulative Total.	Yearly Totals.	Grand Cumulative 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	4,270,589
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	16,677,786
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	19,741,610	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

Table 5.

Table showing number of Oil Wells started in each year and status of Wells at 31st December, 1941.

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	—	—	2	—	—	2	—	—	2	—	—	2	2	2	2	—
1910	5	—	7	—	—	1	3	—	1	2	—	5	—	—	1	4	7	—	—
1911	8	—	38	1	—	4	3	—	7	4	—	27	—	—	5	10	31	—	—
1912	10	—	35	2	—	3	3	—	8	5	—	24	—	—	5	11	29	—	—
1913	25	—	18	1	—	5	13	—	3	11	—	10	—	—	6	16	21	—	—
1914	50	—	16	6	—	5	21	—	4	23	—	7	—	—	11	25	30	—	—
1915	31	—	19	2	—	7	19	—	10	10	—	2	—	—	9	29	12	—	—
1916	28	—	20	3	—	11	15	—	6	10	—	3	—	—	14	21	13	—	—
1917	38	—	6	10	—	2	13	—	1	15	—	3	—	—	12	14	18	—	—
1918	38	—	4	11	—	—	16	—	—	11	—	4	—	—	11	16	15	—	—
1919	40	—	13	10	—	1	17	—	2	13	—	10	—	—	11	19	23	—	—
1920	43	1	23	8	—	5	19	—	3	16	1	15	—	—	13	22	32	—	—
1921	49	4	32	6	—	8	27	—	8	16	4	16	—	—	14	35	36	—	—
1922	68	4	20	6	1	3	38	—	5	24	3	12	—	—	10	43	39	—	—
1923	70	5	33	10	—	11	33	1	5	27	4	17	—	—	21	39	48	—	—
1924	67	8	34	12	—	8	34	1	12	21	7	14	—	—	20	47	42	—	—
1925	46	16	37	19	3	13	14	—	9	13	13	15	—	—	35	23	41	—	—
1926	69	13	46	15	2	21	32	—	13	22	11	12	—	—	38	45	45	—	—
1927	73	13	73	10	3	31	34	6	16	29	4	26	—	—	44	56	59	—	—
1928	43	33	64	7	18	29	24	10	21	12	5	14	—	—	54	55	31	—	—
1929	52	58	48	10	25	22	27	21	16	15	12	10	—	—	57	64	37	—	—
1930	76	30	56	18	9	21	45	12	20	12	9	14	—	1	48	77	35	2	—
1931	9	25	26	2	11	17	5	12	3	2	2	6	—	—	30	20	10	—	—
1932	21	19	20	5	10	13	14	9	3	2	—	4	—	—	28	26	6	—	—
1933	36	19	23	8	10	12	20	9	7	6	—	4	—	—	30	36	10	2	—
1934	56	29	38	22	22	25	25	5	8	8	2	5	—	—	69	38	15	1	—
1935	55	41	37	29	23	20	20	15	9	4	3	7	—	1	72	44	14	3	—
1936	59	36	72	34	22	40	20	8	16	4	6	13	—	—	96	44	23	4	—
1937	87	42	151	45	26	94	40	12	37	2	4	16	—	—	165	89	22	4	—
1938	106	63	101	57	44	55	34	12	29	15	5	15	—	—	156	75	35	4	—
1939	102	65	72	67	54	42	29	9	15	5	2	15	—	—	163	53	22	1	—
1940	157	74	52	96	54	38	57	17	7	3	2	7	—	—	188	81	12	2	—
1941	178	43	49	104	34	30	60	4	8	2	1	7	—	—	168	72	10	20	—
TOTALS:	1,800	641	1,301	636	371	600	774	163	314	369	100	372	21	5	17	1,607	1,251	841	43
	3,742			1,607			1,251			841			43			3,742			

C.=Crown:

A.=Alienated:

P.=Private.

7th May, 1942.

R. G. FFOULKES-JONES,
Acting 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 1940 and 1941.

INDUSTRY.	1940.					1941.				
	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	22,226,876 bbls.	\$ c. 17,311,199 37	13,374	194	13,568	20,505,980 bbls.	\$ c. 17,709,841 38	14,700	190	14,890
Asphalt (a)	48,151 tons	144,453 00	474	7	481	46,269 tons	138,807 00	459	7	466
Private Quarries (Limestone, Gravel, &c.)	466,727 tons	186,790 80	762	211	973	481,538 tons	214,720 79	726	152	878
Government Quarries (Limestone, Gravel, &c.)	89,680 tons	68,171 23	242	55	297	109,147 tons	79,841 19	287	69	356

(*) 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 :

194030,501 tons	194134,271 tons.
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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.	1. <i>Housing.</i>
Production men	15'	21	—	—	do.	Accommodation is sometimes provided for those employees whose presence is required on the fields.
Rig Builders	16	30	—	—		
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	—	—		
Fitters (Bench, Engine or Pump)	18	30	—	—	45/48 hrs. up to 56, when working on shift.	3. <i>War Bonus.</i> In addition to all the hourly rates stated there has been paid a "War Bonus Addition". This is payable at the of ½c. per hour for every 5 points increase in the Government cost of living index number. Such War Bonus additions have been paid as follows: Effective 24th Jan., 1940— 1c. per hour. Effective 18th Feb., 1940— 1½c. per hour. Effective 15th Sept., 1940— 2c. per hour. Effective 16th April, 1941— 2½c. per hour. Effective 15th June, 1941— 3c. per hour. the amount being paid at the close of the year is thus 3c. per hour additional on all rates.
Masons	15	26	—	—		
Motor Mechanics	18	30	—	—		
Moulders	15	26	—	—		
Painters	14	21	—	—		
Plumbers	15	30	—	—		
Riveters	18	30	—	—		
Tinsmiths	15	30	—	—		
Turners	18	30	—	—		
Welders	18	30	—	—		
Semi-skilled	13	26	—	—		
Un-skilled	13	18	—	—		

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 oil 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
	225,293,015	196,464,746

APPENDIX "F."

Comparative Statement of Oil refined in the Colony.

Previous to 1920	...	...	...	...	...	...	...	4,051,373 barrels.
1920	...	...	...	...	...	...	...	1,395,487 do.
1921	...	...	...	...	...	...	...	1,806,015 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	...	...	...	...	...	...	...	4,793,223 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.
Total	...	...	...	...	...	...	...	<u>203,281,060</u> do.