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DIRECTORATE OF
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Intelligence Memorandum

Indonesia: Prospects for the Oil Industry

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December 1968

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
December 1968

INTELLIGENCE MEMORANDUM

Indonesia: Prospects for the Oil Industry

Summary

Indonesia's rapidly growing petroleum industry is the country's only hope for a large increase in export earnings during the next few years. Oil production increased rapidly during the 1950's, but growth slowed greatly in the 1960's as a result of threats to nationalize properties of the three foreign companies that operated most of the country's oil industry. Unlike the other foreign-owned interests, however, the oil industry had not been taken over by the time of the 1965 coup, and much of its mechanized equipment remained in relatively good condition. Therefore, the industry was able to respond rapidly to President Suharto's new policy of encouraging foreign private investment. Production of crude oil, which will increase 15 percent in 1968 and reach a record 580,000 barrels per day, will probably double by 1972.

Almost all of Indonesia's increased crude oil production will be exported, and this will make a major contribution to the country's pressing foreign exchange needs. Petroleum exports were nearly $250 million in 1967, about one-third of total exports, and in 1968 the share will be even larger. Because Indonesia's exports of oil are expected to reach at least 1 million barrels per day in 1972, Djakarta's net receipts of foreign exchange from oil probably will be $300 million by 1972, compared with only $70 million in 1967.

Note: This memorandum was produced solely by CIA. It was prepared by the Office of Economic Research and was coordinated with the Office of National Estimates and the Office of Current Intelligence.

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In the longer run the extensive exploration now getting under way could produce a genuine oil boom. At least 20 foreign companies already have signed exploration and development contracts, and the number of contracts soon may reach 30. Generally, the new contracts cover offshore areas in the shallow waters of the Malacca Straits and the Java Sea. While most of the companies involved are small and medium-sized US firms, the major US and other international companies have now entered the scene. The sustained interest shown by foreign companies in bidding for these areas indicates that these companies are highly optimistic about the prospects of finding oil and reflects favorably on the investment climate created by the Suharto regime.

The Setting

1. The Indonesian petroleum industry was developed almost entirely by three major foreign oil companies during the half century before World War II. A predecessor of the Royal Dutch/Shell group began commercial production of crude oil in 1890, Stanvac* obtained concessions in 1912, and Caltex** in 1931. Petroleum production and exploration activities increased rapidly until interrupted by World War II, which left the petroleum industry in a shambles.

2. After a brief period of postwar reconstruction during which the foreign oil companies received favorable treatment, the Sukarno government began to increase its control over the industry. Initially the main purpose of the government control was to gain a greater share of the revenues, but as time went on, nationalistic objectives came to be predominant. In 1951 the government stopped granting new oil rights, and activities of the petroleum companies were limited to old concessions, pending the adoption of a new petroleum law. Company properties that had not been rehabilitated after the war or were inaccessible as a result of civil unrest reverted to the government. The government established three petroleum enterprises (now combined into one company, Pertamina), which took over some company properties, particularly those of Shell, and extended government control over domestic distribution and marketing. The investment climate worsened markedly in 1957, when President Sukarno introduced his "Guided Democracy" and announced he would extend government control to all sectors of the economy and limit all foreign investment in Indonesia.

3. During 1960-65 the government greatly tightened its control over the economy, including

* *The Standard-Vacuum Petroleum Company is jointly owned by Esso Standard Eastern Inc. and Mobil Petroleum Co. (formerly called Socony Mobil Oil).*

** *Jointly owned by Standard Oil Company of California and Texaco, Inc.*

the petroleum industry, and as a result the growth of crude oil production slowed markedly. A new law in 1960 specified that exploitation of oil and natural gas resources was to be carried out only by state enterprises or by contractors for the state. Private investment in the petroleum industry nearly stopped in the confusion that followed. The companies were subjected to a variety of political pressures amid recurrent rumors of impending nationalization. Finally, in June 1963, after more than two years of negotiations, the oil companies and the government signed an agreement in Tokyo covering profit sharing (60/40 percent in favor of the government), the duration of exploration and production rights (20 years for older holdings and 30 years for new ones), and government purchase of refineries (within 15 years) and marketing facilities (within five years).

4. The 1963 Tokyo agreement brought only a temporary end to uncertainty regarding the legal basis for foreign oil company operations. A year later the Indonesian legislature and the trade unions demanded nationalization of all foreign holdings, including the oil industry. And in early 1965 most US and other foreign firms, but not the oil companies, were taken over by the government. The oil companies were placed under temporary protective custody. By October 1965, when the aborted Communist coup occurred, the oil companies were the only important firms remaining under foreign operational control.

5. Despite the Tokyo agreement, Sukarno obviously intended to eliminate all foreign oil interests except those operating on a production-sharing basis. His interpretation of production sharing was an arrangement in which the government held formal management responsibilities even though it might not take an active role, while the foreign investor provided only technical advice and financial support for which he received a share of production for a specified time. After that the project belonged entirely to the government. The prospects of government interference with management and of eventual nationalization so completely discouraged the Shell Company that it

sold its interests to the government at the end of 1965. Stanvac also was negotiating to get out when the present military government under Suharto took control of Indonesia. Caltex, with substantially more profitable fields, was the only company willing to continue operations under Sukarno's rule.

6. Sukarno's policies caused a virtual cessation of investment by the oil companies, except Caltex, and kept crude oil output considerably below what it could have been. Despite these problems, however, when Suharto took over the government, the oil industry was in much better condition than other sectors of the Indonesian economy.

The Nature of the Industry

7. Indonesia produces about 3 percent of the Free World's crude oil and has about the same percent of proved oil reserves. The country is well located to supply high-quality crude oil to the rapidly growing Far Eastern market. Indonesia's crude oils have a low sulfur content, which makes them desirable in pollution-conscious countries. The major consumers of Indonesian crude oils are Japan, Australia, the Philippines, and the United States (mainly Hawaii).

8. Indonesia has about 50 producing fields on the three major islands (see Figure 1), but fields in Sumatra accounted for about 90 percent of the total output in 1967. Crude oil production increased from about 170,000 barrels per day (b/d) in 1952, the year in which production regained pre-World War II levels, to about 450,000 b/d in 1962 and about 500,000 b/d in 1967. Exports of crude oil have increased at about the same rate as production (see Figure 2). The substantial increase in output between 1952 and 1962 (10 percent per year) resulted from expansion in all producing areas. From 1962 until 1967, output increased only about 2 percent a year because output declined in all areas, except in central Sumatran fields mainly operated by Caltex. The share of crude oil production accounted for by the government and the companies, by area, is shown in the following tabulation:

Operator	Area	Percent of Total Crude Production 1958	1962	1967
Caltex	Central Sumatra	45	50	70
Stanvac	Southern and Central Sumatra	23	15	10
Shell	Southern Sumatra, Java, Kalimantan	22	24	
Government of Indonesia	Northern Sumatra, Java, Kalimantan	10	11	20 a/
Total		*100*	*100*	*100*

a. Including areas formerly operated by Shell.

9. The shift in area and in producing company is to a great extent the result of Sukarno's policies. Stanvac and Shell held older concessions that were being depleted, and until after the Tokyo agreements in 1963 new lands were not made available to them. In any case, these companies were unwilling to invest because of the political and economic climate of the country after about 1957. Stanvac let its properties deteriorate and did not make plans for substantial expansion until 1967. Facilities owned and operated by the government -- including the former Shell properties -- ran down because of poor management and lack of investment. Caltex, on the other hand, with prolific fields it had discovered shortly before World War II, had more to gain than the companies operating older and less productive properties, and the company substantially increased production.

10. Government refineries accounted for nearly 70 percent of total refinery output in 1967; Stanvac produced the remainder. Refinery output rose slowly during the 1950's, declined slightly during the first half of the 1960's, and has since remained at about 200,000 b/d. An increasing portion of the output is being consumed domestically each year, and consequently exports of petroleum products are declining (see Figure 2).

Only three of the seven refineries ship products outside their immediate area. They account, however, for over 95 percent of the national capacity of about 275,000 b/d (see Figure 1). The Piadju (government-owned ex-Shell) and the Sungaigerong (Stanvac) refineries are both located on the Musi River close to Palembang in southern Sumatra (see Figures 3 and 4). Owing to declining production of crude oil in adjacent areas, these two refineries have become heavily dependent on crude oil being shipped by sea from other areas in Indonesia, especially from the Caltex fields in central Sumatra (see Figures 5 and 6). The shallow draught of the Musi River bar, however, generally limits tankers to sizes of about 8,000 to 10,000 tons. The third major refinery is the government-owned (ex-Shell) Balikpapan Refinery on the island of Kalimantan (see Figure 7) which also obtains more than half of its crude oil from central Sumatra because of declining production at local fields. The other small refineries are government enterprises.

Suharto and the Petroleum Industry

11. Since March 1966, Suharto and his colleagues have successfully created an atmosphere both encouraging to former investors and attractive to new ones. The government enacted a foreign investment law in 1967 which provides for guarantees on repatriation of capital, land use rights, special tax incentives for companies that increase foreign exchange earnings, and assurances against nationalization and undue interference in the control and management of foreign enterprises. The government also changed most of the prevailing special discriminatory foreign exchange procedures objected to by the private oil companies and gave them more freedom in establishing export prices. Djakarta, in addition, began paying off old debts to the oil companies, particularly to Stanvac.

Recent Trends and Prospects

12. Production of crude oil in 1968 probably will be about 580,000 b/d, an increase of about 15 percent compared with a 9-percent increase in 1967 and a decline in output in 1966. Most of

the increase in 1968 and in the next several years will come from Caltex, which has the largest investment program of any foreign company in Indonesia -- about $24 million in 1968. A Caltex expansion program, including development drilling and construction of jetties and storage facilities, aims at increasing the company's production to 600,000 b/d by late 1969, compared with about 360,000 b/d in 1967. In addition to the very large Minas field (with an output of 250,000 b/d), Caltex has the Duri and Bekasap fields (30,000 to 40,000 b/d each) and two new fields at Permatang and Pungut which began producing in 1966. Moreover, Caltex will soon begin drilling in the highly promising Lebo field (near Minas) and has discovered still another very promising field northwest of Duri, both of which probably contain low-sulfur Minas-type crude oil. Caltex now holds the best of the potential oil-producing lands and has been awarded for exploration some of the best of the former Pan American areas adjacent to its present producing areas (see inset on Figure 1). If its Lebo field alone proves out, as Caltex officials are confident it will, Caltex production could go well over a million barrels in 1972.

13. Aside from Caltex, other established producers are making improvements to at least arrest the decline in their output and hopefully to increase it in the near future. Stanvac's fields, where output declined from 70,000 b/d in 1962 to about 55,000 b/d in 1967 principally because of lack of investment in machinery and equipment, are being rehabilitated and the company is continuing to explore onshore and offshore for new fields. Stanvac's total new investments, including the refinery, were scheduled at $3.1 million for 1967 and $4.1 million for 1968. Output of Pertamina, the government enterprise, which had declined from 160,000 b/d in 1962 to only 100,000 b/d in 1967, has prospects for modest increases from small fields discovered in southern Sumatra and on Kalimantan by Pertamina and a Japanese contractor, NOSODECO. Asamera, a Canadian company, also began operating in 1967 in northern Sumatra, but production has reached only 8,000 b/d.

14. The conclusion of contracts with new foreign companies for exploration and eventual exploitation greatly improves the outlook for developing Indonesia's oil resources. At least 20 companies, including Stanvac and Caltex, have been awarded one or more exploration areas each, and a number of other contracts are under discussion (see the table). The new companies are for the most part small or medium-sized independent US firms, but there are also two Japanese companies and one each from Australia, Canada, Italy, and France. The new, large areas for exploration are predominately offshore in the shallow waters surrounding the Indonesian islands, mainly in the Malacca Straits and Java Sea (see Figure 1). The Indonesian government expects to bring the total number of foreign contracts to about 30, mostly for offshore areas, and to reserve the remaining onshore areas for government exploration. Expectations are high that significant new oil finds in these offshore areas, which have never been surveyed, will by the mid-1970's greatly increase Indonesia's output of crude oil.

15. In 1967 and 1968 there was good progress in exploration. In order to reduce Japan's 90-percent dependence on the Middle East as a source of crude oil and to reduce its substantial expenditure of foreign exchange for oil imports, the Japanese government is giving financial support to the three Japanese companies working in Indonesia. Large US oil and holding companies (Sinclair, Natomas, Cities Service) bought into contracts already signed; and two major international companies, Mobil and Gulf Oil, obtained concessions on their own. Wildcat drilling offshore is under way in three areas held by Kyushu, Japex, and Sinclair. The Japanese estimate that imports of 200,000 b/d will originate from their areas beginning in 1970.

16. Indonesia's refinery problems are expected to be largely over by 1971. Two Japanese firms signed a contract at the end of 1967 to build a 100,000 b/d refinery at Dumai, the site of the Caltex pipeline terminal. As payment, the Japanese will take the low-sulfur heavy fuel oil to be produced at the refinery and will continue

these purchases after payment is complete. This refinery will supply sufficient kerosine, some of which is now imported, for domestic needs, and Japan will provide a ready market for the fuel oil, which is the only form of petroleum other than crude oil that Indonesia now exports in quantity. Also some of the new exploration agreements specify that refineries will be built after a certain production level is reached.

17. The petroleum industry is clearly the most promising sector for a rapid expansion of exports. Production is expanding rapidly now and will probably double by 1972. Although the petroleum industry accounts for only about 5 percent of Indonesia's national product, it contributed $250 million, or about 35 percent, of the country's gross foreign exchange earnings in 1967; in 1968 the share will be even larger. With expected production increases in the next few years, Djakarta's net foreign exchange receipts from petroleum will rise to about $300 million in 1972, about equal to the deficit in Indonesia's transactions on goods and services in 1967, when comparable receipts were only $70 million.

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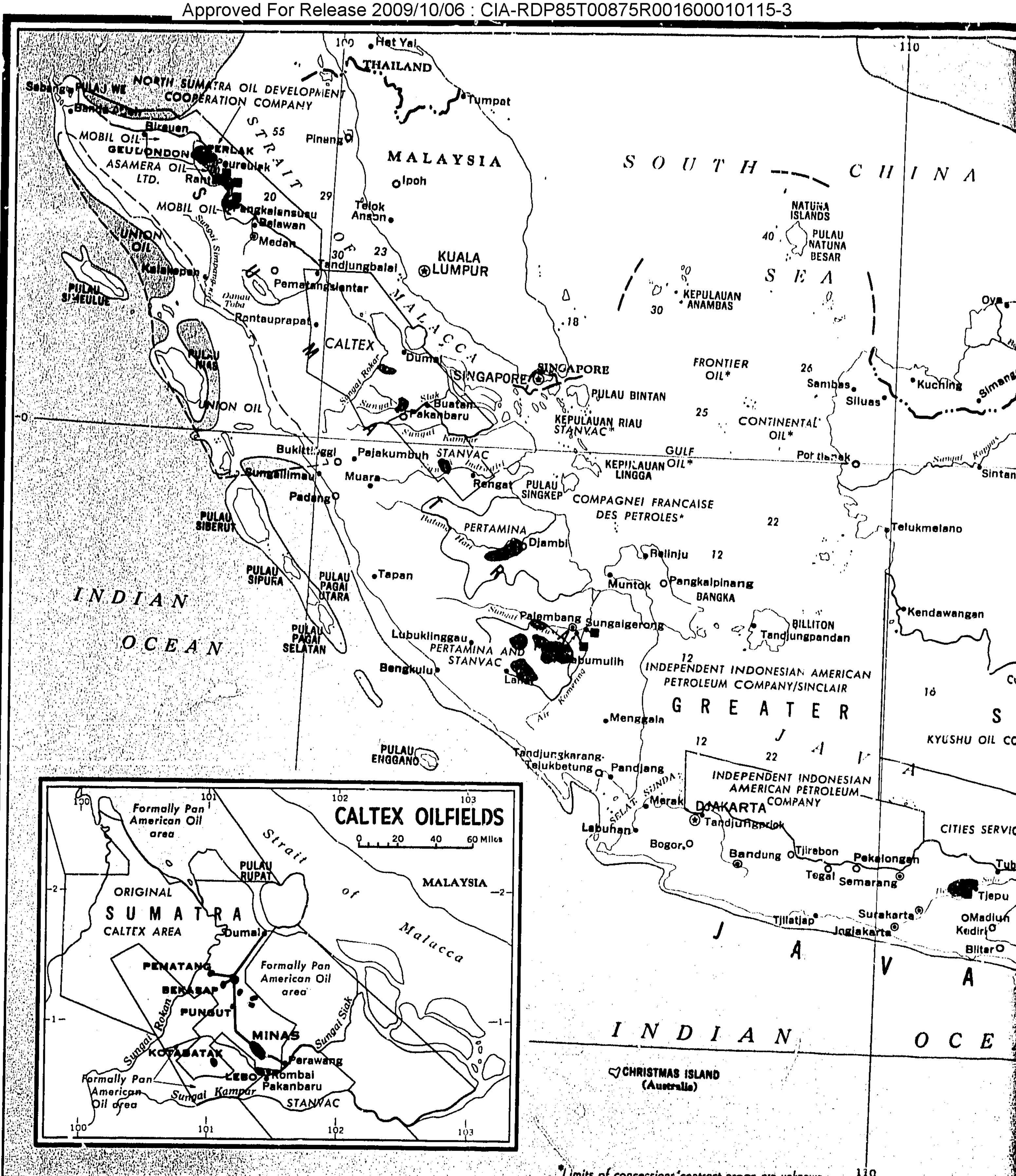
Indonesia: New Oil Exploration Contracts
1967-68

Company	Origin	Location of Contract Area	Size (Square Miles)	Date of Agreement	State of Exploration
Japan Petroleum Exploration Company (Japex) a/	Japan	Offshore east Kalimantan (Bunju Island area)	13,000	March 1967	Aerial magnetic survey, 1967; seismic survey, 1968; drill, 1968
		Offshore east Kalimantan (Mahakam area)	14,000	March 1967	
Kyushu Oil Company	Japan	Offshore south Kalimantan	52,000	March 1967	Aerial magnetic survey, August-November 1967; seismic survey, 1968; drill, 1968
		Offshore southeast Kalimantan	21,000	Acquired from REFICAN 1968	
Indonesian Independent American Petroleum (IIAPCO) Company/Sinclair/Natomas	United States	Offshore north Java (Djakarta-Semarang)	21,000	January 1967	Seismic survey, July 1967 - June 1968; drill, mid-1968
Australian Drilling/Cities Service/Ashland Oil and Refining	United States	Offshore and onshore north Java (Semarang-Madura)	65,000	March 1967	Seismic survey, 1968; geological survey (Madura), complete; plan drill, 1968
Continental Oil/Union Oil	United States	Onshore Barito Basin in south Kalimantan	6,500	Mid-1967	Survey in preparation
Union Oil	United States	Onshore and offshore northwest Sumatra (northwest tip to Bukittinggi, including Nias Island)	Unknown, but very large	January 1968	Survey in preparation
Caltex a/	United States	Onshore central Sumatra (ex-Pan American)	Unknown	January 1968	Survey in preparation
International Oil of Australia	Australia	Onshore and offshore Timor	Unknown	April 1968	N.A.

Indonesia: New Oil Exploration Contracts
1967-68
(Continued)

Company	Origin	Location of Contract Area	Size (Square Miles)	Date of Agreement	State of Exploration
Phillips Petroleum/Superior Oil	United States	Offshore south West Irian	125,000	May 1968	N.A.
Compagnie Francaise des Petroles (CFP)	France	Onshore and offshore south Sumatra at Djambi	10,000 (1,900 offshore)	July 1968	Survey in preparation
Indotex (association of independents set up to operate in Indonesia)	United States	Halmahera Island area	N.A.	July 1968	N.A.
Virginia International and Roy Huffington	United States	East Kalimantan and south Sumatra	N.A.	August 1968	N.A.
IIAPCO/Sinclair	United States	Offshore southeast Sumatra	70,000	September 1968	Survey in preparation
Continental Oil	United States	South China Seas	39,000	October 1968	N.A.
AGIP/SPA subsidiary of Ente Nazionale Indrocarburi (ENI)	Italy	Offshore western tip of West Irian	38,000	October 1968	N.A.
Stanvac (Esso and Mobil)	United States	East side of Malaya between 0° and 5° N	N.A.	N.A.	N.A.
Asamera Oil a/	Canada	Onshore north Sumatra	1,220	N.A.	Survey in preparation
Mobil Oil	United States	Onshore north Sumatra	700	October 1968	N.A.
Frontier Oil	United States	South China Seas	38,640	November 1968	N.A.
Gulf Oil	United States	South China Seas	65,000	December 1968	N.A.

a. Companies working in Indonesia prior to 1967. Japex acquired its first contract off northeast Sumatra in 1965 from Refining Associates (Canada). No contracts were signed in 1966. Caltex is the only company to obtain new area grant under old-type work contract.



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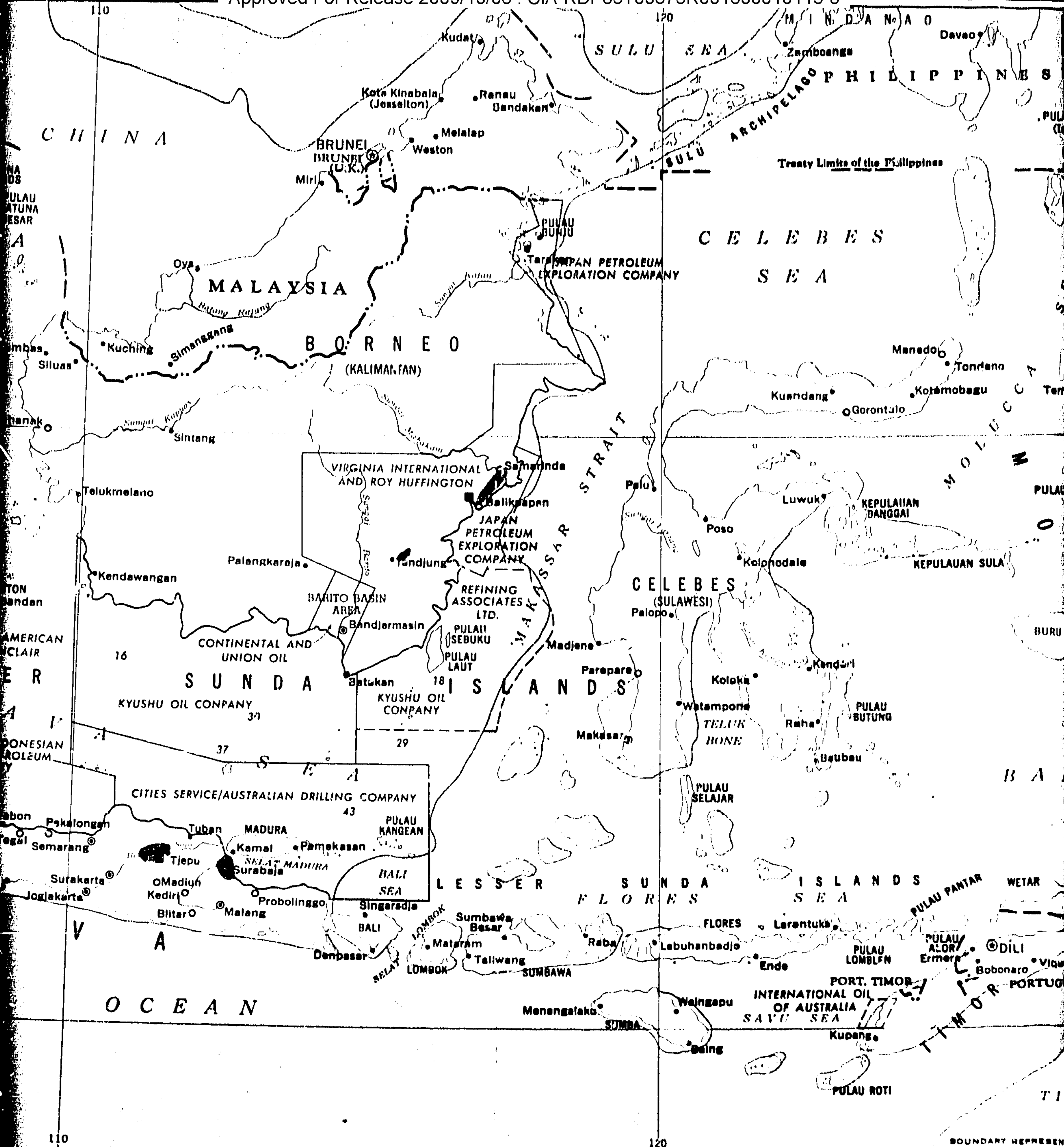
110
120
MINDANAO
Davao
SULU SEA
Zamboanga
PHILIPPINES
Kudat
Kota Kinabalu (Jesselton)
Ranau
Sandakan
SULU ARCHIPELAGO
CHINA
Melalap
Weston
BRUNEI
BRUNEI (U.K.)
Miri
Treaty Limits of the Philippines
PULAU BUNJU
Tarakan
JAPAN PETROLEUM EXPLORATION COMPANY
CELEBES SEA
Oya
MALAYSIA
Simanggang
Kuching
BORNEO
(KALIMANTAN)
Sambas
Siluas
Manado
Tondano
Kuandang
Kotamobagu
Gorontalo
Sintang
MAKASSAR STRAIT
MOLUCCA
VIRGINIA INTERNATIONAL AND ROY HUFFINGTON
Samarinda
Balikpapan
Telukmelano
JAPAN PETROLEUM EXPLORATION COMPANY
Palu
Poso
Luwuk
KEPULAUAN BANGGAI
Palangkaraja
Tandjung
Kolonodale
KEPULAUAN SULA
Kendawangan
REFINING ASSOCIATES LTD.
BARITO BASIN AREA
CELEBES (SULAWESI)
Palopo
Bandjarmasin
PULAU SEBUKU
PULAU LAUT
Madjene
BURU
AMERICAN
CONTINENTAL AND UNION OIL
16
Parepare
Kendari
SUNDA ISLANDS
Batakan
18
Kolaka
KYUSHU OIL CONPANY
KYUSHU OIL CONPANY
30
Watampone
TELUK BONE
Raha
PULAU BUTUNG
29
37
Makasar
Baubau
JAVA SEA
CITIES SERVICE/AUSTRALIAN DRILLING COMPANY
43
PULAU SELAJAR
Pekalongan
Tegal
Semarang
Tuban
MADURA
PULAU KANGEAN
Kamal
Pamekasan
Tjepu
Surabaja
SELAT MADURA
BALI SEA
Surakarta
Madiun
Kediri
Djokjakarta
Probolinggo
Blitar
Malang
LESSER SUNDA ISLANDS
FLORES SEA
WETAR
PULAU PANTAR
Singaradja
BALI
LOMBOK
Sumbawa Besar
FLORES
Larentuka
Mataram
Raba
Labuhanbadjo
PULAU ALOR
DILI
Denpasar
Taliwang
SUMBAWA
Ende
PULAU LOMBLEN
Ermera
Bobonaro
Viqueque
SELAT LOMBOK
PORT. TIMOR
PORTUGUESE
INTERNATIONAL OIL OF AUSTRALIA
INDIAN OCEAN
Menangalaku
Waingapu
SUMBA
SAVU SEA
Kupang
TIMOR
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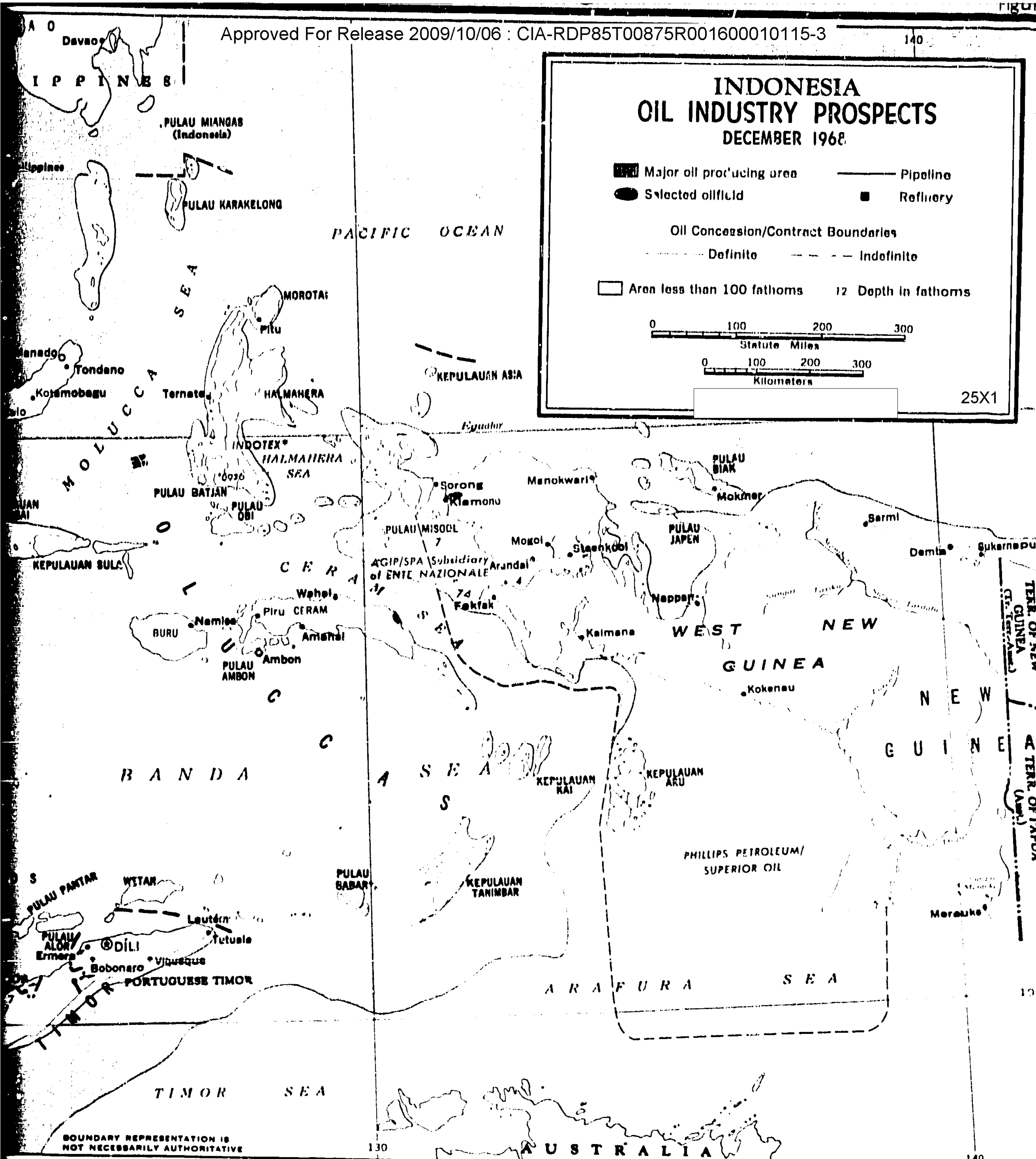
INDONESIA
OIL INDUSTRY PROSPECTS
DECEMBER 1968
Major oil producing area
Pipeline
Selected oilfield
Refinery
Oil Concession/Contract Boundaries
Definite
Indefinite
Area less than 100 fathoms
12 Depth in fathoms
0 100 200 300
Statute Miles
0 100 200 300
Kilometers
25X1
Davao
PULAU MIANGAS (Indonesia)
PULAU KARAKELONG
PACIFIC OCEAN
MOROTAI
Pitu
Manado
Tondano
Kotamobagu
Ternate
HALMAHERA
KEPULAUAN ASIA
Equator
INDOTEX
HALMAHERA SEA
PULAU BATJAN
PULAU OBI
Sorong
Klamonu
Manokwari
PULAU BIAK
Mokmer
Sarmi
PULAU MISOOL
AGIP/SPA Subsidiary of ENTE NAZIONALE
Arandai
Mogoi
Steenkool
PULAU JAPEN
Demta
Sukarnapura
KEPULAUAN SULA
CERAM SEA
Wahai
Fakfak
Nabire
Piru
CERAM
BURU
Namlea
Amahai
Ambon
PULAU AMBON
Kaimana
WEST NEW GUINEA
Kokenau
NEW GUINEA
TERR. OF NEW GUINEA (Tr. Terr.-Aust.)
TERR. OF PAPUA (Aust.)
BANDA SEA
MOLUCCA SEA
KEPULAUAN KAI
KEPULAUAN ARU
PHILLIPS PETROLEUM/ SUPERIOR OIL
PULAU PANTAR
WETAR
PULAU BABAR
KEPULAUAN TANIMBAR
Merauke
Lautem
PULAU ALOR
DILI
Ermera
Tutuala
Bobonaro
Viqueque
PORTUGUESE TIMOR
TIMOR
ARAFURA SEA
TIMOR SEA
BOUNDARY REPRESENTATION IS NOT NECESSARILY AUTHORITATIVE
130
140
AUSTRALIA

Figure 2

Indonesia
Production and Disposition of Crude Oil and Refinery Products, 1952-67

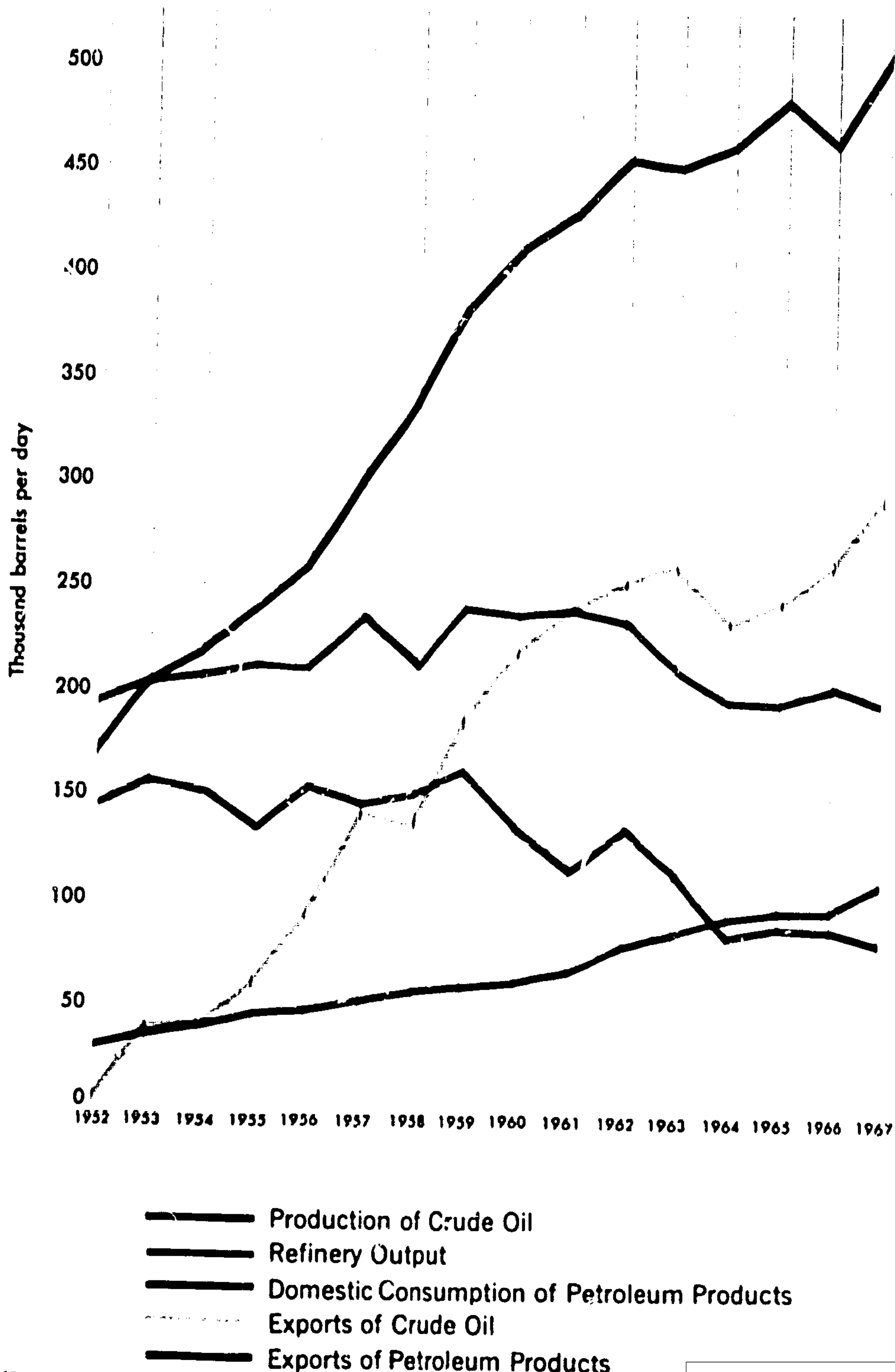

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Figure 3. Indonesia: The Shell and Standard-Vacuum Oil Companies Refineries at Palembang, Sumatra

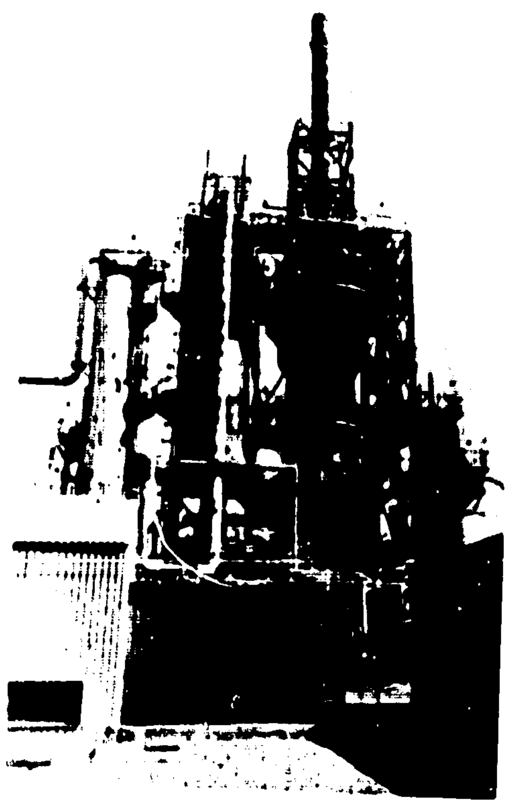
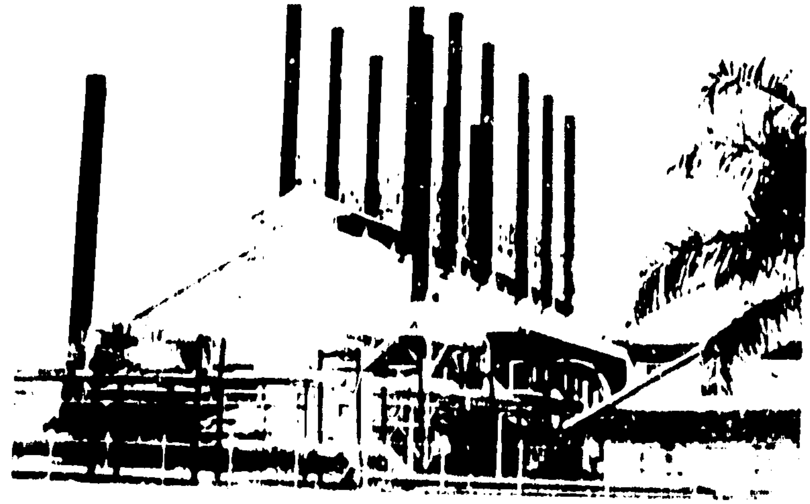
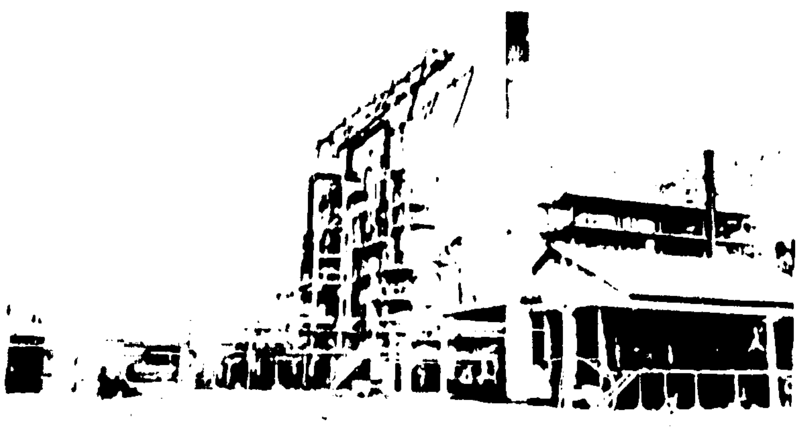


Figure 4. One Part of the Catalytic Unit at Stanvac's Sungaigerong Refinery at Palembang, Sumatra

Figure 4. (Continued)





Additional Parts of the Sungaigerong Refinery at Palembang

Figure 5. The Ferry and Small Boat Landing at the Stanvac Oil Refinery Pier on the Musi River in Sumatra

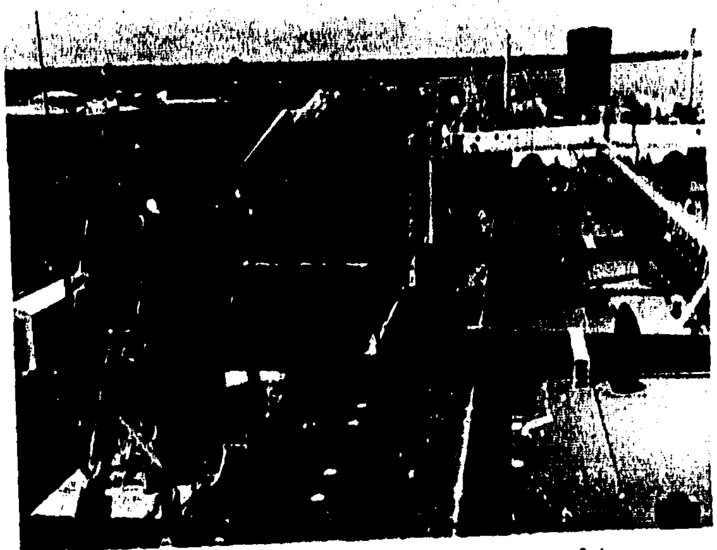


Figure 6. Indonesia: The Caltex Oil-Loading Pier at Dumai, Sumatra

Figure 7. Atmospheric Distillation Unit at the Balik Papan Refinery in Borneo

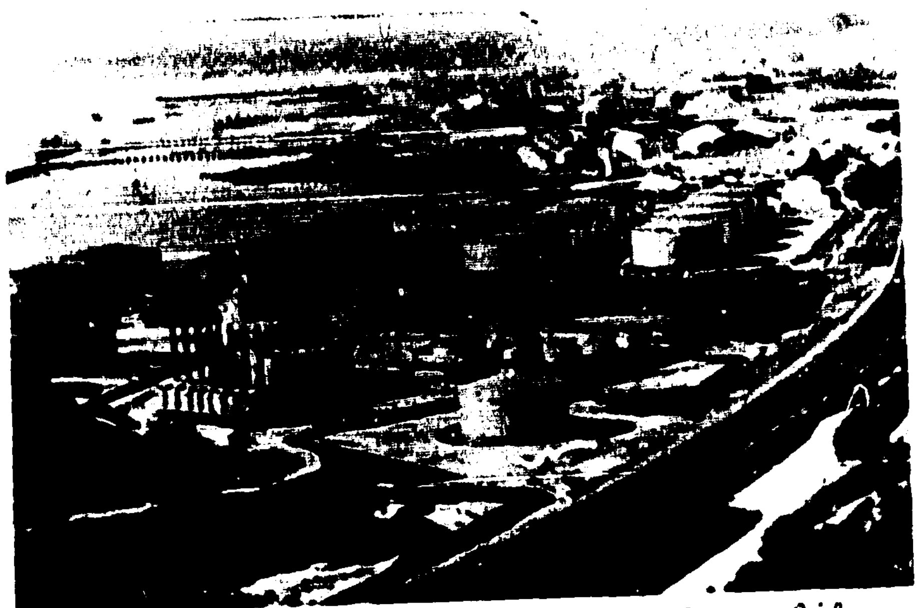


Figure 7 (Continued). The Balik Papan Oil Refinery in Borneo