The Mineral Industry of Iraq

By John L. Albright [1]

Petroleum provided an estimated 60% of Iraq's income and accounted for more than 90% of the country's exports; petroleum industry activities far exceeded developments in all other sectors of the economy. New ocean tankers, oil wells, pipelines, and refining units were placed in service, and the country maintained its position as the fourth largest oil producer in the Middle East. Iraq Company for Oil Operations (ICOO) took over petroleum activities at the northern oilfields after nationalization of Iraq Petroleum Co., Ltd.'s (IPC) oil wells and pipelines, and Iraq National Oil Co. (INOC) brought the North Rumaila oilfield into production and announced a large extension of that field which should significantly increase the country's oil reserves. Iraq's oil reserves were estimated at 33 billion barrels, and natural gas reserves were placed at 20 trillion cubic feet. Numerous foreign markets for the nationalized oil were developed, and INOC and Basrah Petroleum Co., Ltd. (BPC) embarked on programs to expand oil production and exports. Mosul Petroleum Co. Ltd. (MPC) continued its modest oil production in northern Iraq. Iraq joined the Organization of Arab Petroleum Exporting Countries (OAPEC) and applied for associate membership in the Council for Mutual Economic Assistance (COMECON). Iraq's second sulfur facility began commercial production, and the country's cement plants were being enlarged. Bentonite was discovered in northern Iraq, and geological and geophysical surveys were carried out for oil and numerous nonpetroleum minerals.

Electricity produced in 1972 reached 3.9 billion kilowatt hours, up 0.4 billion kilowatt hours from the previous year. Increased demand for electric power by Iraq's expanding industries was met as the National Electricity Administration placed the country's first hydroelectric powerplant in service in mid-1972 at Sāmarrā on the Tigris River in northern Iraq.[2] This estimated $18 million, 84,000-kilowatt facility, representing about 10% of Iraq's total installed capacity, is one of the largest powerplants in the country.

PRODUCTION

Iraq's 1972 crude oil production was 15% below that of the previous year. However, increases in production by BPC and the significant production from the nationalized IPC fields and INOC's North Rumaila field permitted the country to account for an estimated 8% of the 1972 Middle East production. The country's average daily crude oil production was estimated as follows:

Company	Thousand barrels
Basrah Petroleum Co., Ltd. (BPC)	656.4
Iraq Petroleum Co., Ltd. (IPC)	390.9
Iraq Company for Oil Operations (ICOO) and Iraq National Oil Co. (INOC)	388.6
Mosul Petroleum Co., Ltd. (MPC)	10.5
Total	1,446.5

[1]Data may not add to total shown because of independent rounding.

Bai Hassen, Jambur, and Kirkuk oilfields were operated by IPC from January through May and by ICOO from June through December. INOC's important North Rumaila field began producing crude oil April 1972.

Cement production remained unchanged from its 1970–71 level, and sulfur production increased appreciably as improved operations were registered at the Kirkuk recovery plant and production began at the Mishraq sulfur deposit.

[1] Mineral specialist (petroleum), Division of Fossil Fuels—Mineral Supply.

[2] Baghdad Observer. July 19, 1972.

Table 1.—Iraq: Production of mineral commodities

Commodity [1]		1970	1971	1972 [p]
Cement, hydraulic [e]	thousand metric tons	1,400	1,400	1,400
Gas, natural:				
Gross production	million cubic feet	200,000	220,000	185,000
Marketed production	do	27,720	30,722	30,000
Petroleum:				
Crude [2]	thousand 42-gallon barrels	[r] 569,726	624,312	529,419
Refinery products:				
Gasoline	do	3,239	3,636	6,698
Jet fuel	do	608	972	6,112
Kerosine	do	4,480	4,637	
Distillate fuel oil	do	5,737	5,775	10,468
Residual fuel oil	do	9,790	10,749	5,270
Lubricants	do	329	757	NA
Other	do	1,062	767	5,197
Refinery fuel and losses [e]	do	1,515	1,969	1,318
Total [e]	do	26,760	29,262	35,063
Salt	thousand metric tons	[r] 51	54	[e] 55
Sulfur, elemental: [e]				
Native	do	--	NA	100
Byproduct, recovered	do	NA	60	110

[e] Estimate. [p] Preliminary. [r] Revised. NA Not available.

[1] In addition to the commodities listed, juss (an impure sandy gypsum), lime and a variety of crude construction materials (clays, stone, sand, and gravel) are produced, but output is not reported quantitatively, and available information is inadequate to permit formulation of reliable estimates of output levels.

[2] Includes an estimate for production from the Government-owned Naft Khaneh field.

TRADE

Petroleum was the most important commodity in international trade. Crude oil exports from Mediterranean and Persian Gulf ports declined by 17.5% during 1972, owing to a conflict between the Government and the producing companies. However, the estimated value of the oil exports was $903.8 million, representing 98.8% of the value of Iraq's mineral exports. Cement, valued at $7.9 million, was the most important nonpetroleum mineral exported during the year, and large quantities of sulfur were scheduled for export beginning in 1973. Manufactured iron and steel products accounted for most of the mineral imports, supplied mainly by European countries including the U.S.S.R.

Table 2.—Iraq: Exports and reexports of mineral commodities

(Metric tons unless otherwise specified)

Commodity	1970	1971
METALS		
Copper metal and alloys, all forms	1,200	
Iron and steel:		
Waste and scrap	24,359	
Semimanufactures	53	
Magnesium and beryllium	70	
Silver metal, partly worked but not rolled, kilograms	1	
Zinc metal and alloys, unwrought	100	
NONMETALS		
Cement	335,638	NA
Clays, products, refractory and nonrefractory	199	
Diamond (other than industrial), not set or strung, thousand carats	295	
Gypsum and plasters	3,481	
Stone, sand and gravel:		
Dimension stone:		
Crude	9	
Worked	9	
Gravel and crushed rock	37,542	
Sand excluding metal bearing	74	

See footnotes at end of table.

Table 2.—Iraq: Exports and reexports of mineral commodities—Continued

(Metric tons unless otherwise specified)

Commodity		1970	1971
Petroleum:			
Crude and partly refined	thousand 42-gallon barrels	537,761	593,414
Refinery products:			
Gasoline	do	(1)	8
Kerosine	do	--	[2] 150
Distillate fuel oil	do	563	[2] 845
Residual fuel oil	do	--	[2] 11
Lubricants	do	54	95
Naphtha	do	64	
Bitumen	do	228	157
Other	do	6	
Total	do	915	1,266

NA Not available.
[1] Less than ½ unit.
[2] Excludes bunker loadings as follows in thousand barrels: distillate fuel oil and jet fuel—14; residual fuel oil—545.
Sources: 1970—Central Statistical Organization, Ministry of Planning, Republic of Iraq, Baghdad. Foreign Trade Statistics, 1970, 816 pp.; 1971—U.S. Bureau of Mines. World Petroleum Annual 1971. 1973, 32 pp.

Table 3.—Iraq: Imports of mineral commodities

(Metric tons unless otherwise specified)

Commodity		1970	1971
METALS			
Aluminum:			
Oxide and hydroxide		3	
Metal, including alloys, all forms		3,424	
Arsenic trioxide		7	
Chromium oxide and hydroxide		14	
Copper metal, including alloys, all forms		1,310	
Iron and steel:			
Sponge, shot, grit, iron pellets		369	
Steel:			
Ingots		966	
Blooms, billets, slabs, sheet, bars		25	
Tubes and pipe blanks		22,564	
Semimanufactures		311,529	
Lead metal, including alloys, all forms		167	
Magnesium and beryllium		119	
Mercury	76-pound flasks	67	
Nickel metal, including alloys, all forms		8	
Platinum-group metals, partly worked or unworked	troy ounces	289	
Tin metal, including alloys, all forms	long tons	195	
Titanium oxides		303	
Zinc:			
Oxide and peroxide		17	NA
Metal, including alloys, all forms		124	
Other:			
Ore and concentrate of nonferrous base metals n.e.s		81	
Oxides, hydroxides, and peroxides of metals n.e.s		114	
Metals, metalloids		26	
NONMETALS			
Abrasives, natural, n.e.s.:			
Pumice stone, emery, natural corundum, and other		9	
Grinding and polishing wheels and stones		242	
Asbestos		2,000	
Barite and witherite		154	
Cement		22,935	
Chalk		673	
Clays and products (including all refractory brick):			
Crude n.e.s		4,666	
Products:			
Refractory (including nonclay bricks)		3,145	
Nonrefractory		4,271	
Diamond:			
Gem not set or strung	carats	140,000	
Industrial	do	10,000	

See footnotes at end of table.

Table 3.—Iraq: Imports of mineral commodities—Continued
(Metric tons unless otherwise specified)

Commodity	1970	1971
Nonmetals—Continued		
Fertilizer materials:		
Crude, nitrogenous	94	
Manufactured:		
Nitrogenous	45,504	
Phosphatic	7,005	
Other, including mixed	1	
Ammonia	253	
Graphite, natural	4	
Gypsum and plasters	176	
Lime	50	
Mica	29	
Pigments, mineral:		
Natural, crude	819	
Iron oxides, processed	60	
Salt	407	
Sodium and potassium compounds n.e.s.:		
Caustic soda	3,007	NA
Caustic potash, sodic and potassic peroxides	63	
Stone, sand and gravel:		
Dimension stone, crude and partly worked	1,992	
Gravel and crushed rock	10	
Limestone	60	
Sand, excluding metal bearing	74	
Sulfur:		
Elemental:		
Other than colloidal	610	
Colloidal	51	
Sulfur dioxide	1	
Sulfuric acid	41	
Talc, steatite, natural	592	
Other:		
Bromine, iodine, chlorine, fluorine	(1)	
Oxides, hydroxides, and peroxides of barium, strontium, and magnesium	24	
MINERAL FUELS AND RELATED MATERIALS		
Asphalt and bitumen, natural	35	
Carbon black	98	
Coal and briquets	348	
Coke and semicoke	56	NA
Hydrogen and rare gases	6	
Peat, including peat briquets and litter	2	
Petroleum refinery products:		
Gasoline—thousand 42-gallon barrels	10	--
Distillate fuel oil—do	--	47
Residual fuel oil—do	--	117
Lubricants—do	3	3
Other:		
Jelly and wax—do	1	
Nonlubricating oils n.e.s—do	2	
Bitumen and other residues—do	1	1
Bituminous mixtures n.e.s—do	1	
Mineral tar and other coal-, petroleum-, or gas-derived crude chemicals	7	NA

NA Not available.
[1] Less than ½ unit.
Sources: 1970—Central Statistical Organization, Ministry of Planning, Republic of Iraq, Baghdad. Foreign Trade Statistics, 1970, 816 pp.; 1971—U.S. Bureau of Mines. World Petroleum Annual 1971. 1973, 32 pp.

COMMODITY REVIEW

Two geological teams searched for minerals in Iraq. Surveys of phosphate deposits were carried out in the desert areas west of the Euphrates River, in the northern areas of Iraq. Surveys were conducted for asbestos, bentonite, ceramic clay, copper, lead, lime, salt, and zinc deposits. Results were not announced. An airborne geophysical survey between Baghdad and Karbalā' in central Iraq, utilizing magnetic and radiometric equipment, was scheduled for June 1972 by the Canadian firm Spartan Air Services, Ltd. The Canadians obtained a $1.8 million contract from the Iraq National Minerals Co. (INMC) to conduct a 2-year aerial geophysical survey of the entire country. The search focused on petroleum, radioactive elements, and iron, lead, and zinc ores. In January 1972 Iraqi representatives joined geologists from the Arab Republic of Egypt, Jordan, and Syria in forming the Arab Geologists Federation

(AGF). Exchange of geological information is the principal aim of AGF members.[3]

METALS

Iron and Steel.—Preliminary operations began at yearend at the $7.6 million factory constructed at Basrah to produce 20,000 tons per year of steel pipes. Plans were reviewed by the Iraqi Government to build a natural-gas-fired steel rolling mill which will probably also be located in the Basrah area. In December 1972 a delegation from India visited the country and discussed the rolling mill project with Iraqi officials.

NONMETALS

Cement.—More than three-fourths of Iraq's cement output was used in domestic construction, and the remainder was exported. Expansion at the Samawah cement plant continued during the year and was expected to be completed in early 1973. Plans were announced for a new plant at Al Fallūjah, about 56 kilometers west of Baghdad, to serve central Iraq. The plant is scheduled to begin operation in 1974 with an annual capacity of 200,000 tons.

Clays.—*Bentonite.*—INMC announced an important discovery of bentonite in the northern part of the country, with preliminary estimates of reserves set at more than one-half million tons. During the year mineral prospecting and geologic surveys continued for this and other minerals, and Iraqi-Soviet talks were held concerning a proposed bentonite plant for producing petroleum industry drilling muds.

Fertilizer Materials.—In January 1972 Iraqi officials signed a contract valued at nearly $816,000 for the export of 10,000 tons of urea and 15,000 tons of ammonium sulfate to the People's Republic of China (PRC). Later in the year, the Indian Government proposed the establishment of an ammonia plant in Iraq to have a capacity of either 1,000 or 2,000 tons per day. The plant will utilize natural gas feedstocks, and the entire production is to be shipped to India.

Sulfur.—In January 1972 INMC and a Polish engineering firm Centrozap, began commercial production operations at the Mishraq deposit, the first Frasch-type sulfur mine in the Middle East. The Frasch process has been employed in mining sulfur in Mexico, Poland, the United States, and the U.S.S.R., but sulfur production in Middle East countries had been restricted to recovering the element from petroleum and natural gas. On a dry basis Mishraq sulfur is rated 99.6% to 99.9% pure, and reserves are estimated at 100 million tons. First-year production totaled 100,000 tons, less than half of the mine's 1972 target capacity of 250,000 tons. Developments continued during the year under the guidance of Centrozap, and the 1-million-ton-per-year production rate should be reached in 1973. Sulfur exports were scheduled to begin in November 1972, but delays were encountered and none was reported for the year. Exports will begin in 1973, with India to receive 100,000 tons at the rate of 12,000 tons per month, and a minimum of 100,000 tons annually for the next 5 years will be shipped to the PRC.[4] A direct railroad connection between northern Iraq and the Syrian port of Tartus remained in the planning stage. Until it is completed, initial consignments of Mishraq sulfur will be railed nearly 1,300 kilometers to the ocean terminal facilities at Umm Qasr in southern Iraq for export.

Repairs and modifications were completed early in the year at the Government's Kirkuk sulfur plant. The technical problems were solved which had held recovery of sulfur from natural gas to about 200 tons per day in 1971. By mid-1972 the plant was producing sulfur at the rate of 400 tons per day.

MINERAL FUELS

Natural Gas.—Field surveys were carried out in 1971, and in 1972 Swiss technicians from the Chemical Construction Corp. (Chemico) completed feasibility studies of a projected natural gas liquefaction plant for southern Iraq.

Nearly 4.5 billion cubic feet of Rumaila associated gas was piped to the Government's Najibiyah electric power generating plant near Basrah, and 2.7 billion cubic feet of Rumalia and Zubair natural gas was consumed in BPC operations. ICOO reported that 13.1 million cubic feet of associated gas was sent to the Kirkuk sulfur recovery plant and nearby powerplant by yearend. A 25-centimeter, 140-kilometer natural gas pipeline for moving North Rumaila gas to the port of Fao was under consideration by INOC. Iraq continued

[3] Iraq National Oil Co. Weekly Bulletin. 2d year, No. 12, Jan. 9, 1972, pp. 8–9.
[4] Canada Commerce (Ottawa). V. 136, No. 5, May 1972, p. 42.

discussions with Turkey concerning the planned natural gas trunkline from Kirkuk field to Batman, Turkey, but final agreements were not signed. This line's planned annual capacity was 200 million cubic feet.

Petroleum.—On June 1, 1972, the Iraqi Government nationalized IPC's major oilfields and supporting facilities in northern Iraq. This culminated a series of threats by the Government resulting from declining production, especially from the large Kirkuk field. The company contended cost differentials between crudes shipped from Eastern Mediterranean and Persian Gulf terminals in early 1972 were too wide and that it could land in northern Europe oil from its Persian Gulf outlet at $0.24 per barrel cheaper than exports from the Mediterranean ports. From January to April IPC's northern oilfield production dropped from 1.1 million to less than 700,000 barrels per day and exports fell accordingly. The Government's Revolutionary Command Council (RCC) complained of severe revenue losses from reduced royalties and taxes and instructed IPC to resume full northern production and exports. IPC-RCC negotiated without an agreement being reached, and the Government nationalized IPC's Bai Hassan, Jambur, and Kirkuk oilfields; supporting installations; and the Iraqi section of the crude oil pipeline to Syria and Lebanon. BPC and MPC operations were unchallenged. The Government formed ICOO to take over the IPC properties and announced that IPC's owners would be paid for the seized properties. However, by yearend IPC and RCC had not reached an agreement settling outstanding disputes and nationalization. An interim agreement was signed with Cie. Française des Pétroles, one of IPC's owners, allowing the French company to continue lifting their 23.75% share of the nationalized crude oil.

In June 1972 Syria nationalized the section of IPC's pipeline within its borders, but Lebanon did not take over the pipeline within its boundaries. Syria and Iraq disputed transit fees, but deliveries of oil continued through the pipeline to the port of Banias.

During the year an agreement was signed calling for an undisclosed amount of INOC crude oil to be shipped to East Germany over the next 5 years, and India ordered 14.9 million barrels of Iraqi crude oil to be delivered over the next 3 years. The first two deliveries were made to India by yearend 1972. Extensive negotiations took place and large barter deals and loans were arranged by INOC with industrial and governmental representatives from numerous countries. Early in the year Iraq signed a long-term contract with the Brazilian enterprise Petróleo Brasileiro S.A. (Petrobrás) under which Brazil will supply goods and services valued at $5 million in exchange for 14.9 million barrels of crude oil. Petroleum deliveries were scheduled for 1972 through 1976. INOC and Bulgarian Government officials signed contracts providing for seismic surveying and exploratory operations in northern Iraq by Technoexportstroy, within the framework of a 1970 economic agreement. A $50 million Czechoslovakian loan was extended to Iraq, of which 90% of the value is to be repaid in crude oil. Czechoslovakia will purchase 16.4 million barrels of Kirkuk and North Rumaila crude oil over the next 3 years. During the year the Arab Republic of Egypt signed contracts to barter 2.0 million barrels of Iraqi crude oil for Egyptian commodities, and two countries held discussions concerning the possible shipment of a further 14.9 million barrels of crude oil in 1973. Over the next 10 years, the French will provide technical assistance for Iraqi industrial development and receive 104.3 million barrels of Kirkuk crude oil. A joint INOC-Enterprise de Recherches et d'Activités Pétrolierès (Erap) company is to be formed to carry out the petroleum activities in Iraq. In 1972 the Iraqis agreed to sell 149.1 million barrels of crude oil to the Italian firm Ente Nazionale Idrocarburi (ENI) over a period of 10 years, with the Italians paying for the oil with industrial plants, machinery, and services. During the year Hungary agreed to supply Iraq with oil industry goods and services valued at $50 million. Iraqi payments are to be made predominantly in crude oil. In 1972 Spain and Iraq signed a 5-year barter agreement calling for Spanish industrial goods and services in exchange for Iraqi crude oil. Contracts specify that 44.7 million barrels of crude oil are to be purchased by Spain between 1973 and 1975. The U.S.S.R. will assist Iraq in developing the Khānaqīn, Nahr Umr, and North Rumaila oilfields and possibly the Quayara field, and the Soviets are studying plans for a Baghdad-Basrah petroleum products pipeline and bentonite plant to produce petroleum industry drilling muds. The U.S.S.R.

has agreed to help Iraq establish an oil industry institute for design and planning. During 1972 Soviet and Iraqi negotiators agreed that all loans for Soviet goods and services may be paid in crude oil. Yugoslavia and Iraq signed a 1972 protocol for Yugoslavian imports of 10,000 barrels per day of Kirkuk crude oil for a period of 5 years. Payments are to be made in cash, industrial equipment, and services.

A Soviet-Iraqi team completed a 9-month-long study of oil and gas areas in southern Iraq, and similar studies were conducted in the central and northern areas. At yearend the Russians completed a study of Iraqi oil and gas reserves, but results were not announced. During the year three INOC teams, with a total manpower of 300, carried out seismic surveys mainly in the Hawr al Hammār area near Basrah in southern Iraq. INOC's Seismic Interpretation Center completed analysis of field data obtained from Gerishan, Luhais, Nahr Umr, Rachi, and Ratawi structures. Petrobrás obtained a 7-year service contract to search for oil over 7,500 square kilometers in three areas in central and southern Iraq and began seismic surveys in December 1972 near Basrah and 'Alī al Gharbī. Wildcat drilling can begin within 18 months of the contract date.[5] Fieldwork will probably be carried out by the newly formed Petrobrás subsidiary, Petrobrás Internacional S.A. (Braspetro). A joint-venture protocol was reportedly signed in midyear by INOC and West Germany's Deminex for exploration and production in east-central Iraq, but details of the agreement were not made public.

IPC did not conduct geological or geophysical activities, nor did they drill any new wells in 1972, and the BPC carried out workovers on three Zubair wells and one Rumaila well. The Hungarian firm Chemocomplex completed the first of three wells in the Jambur oilfield, and at yearend drilling operations proceeded at the second well site. During 1972, ICOO drilled three producing wells in the Bai Hassan oilfield, completed two wells and began drilling a third in the Kirkuk oilfield, and spudded a well at Jabal Hamrīn. INOC's 1972 exploratory drilling was limited to one wildcat well spudded in the Luhais oilfield. It drilled well No. 4 in the Nahr Umr oilfield, delineated sites for two wells in the Quayara oilfield (production is to be piped to the nearby petroleum refinery), and drilled its first of four wells in the Ratawi field. INOC's efforts were concentrated on the development of the North Rumaila field. Three rigs drilled nine wells, four new well sites were delineated for 1973 drilling operations, a degassing station was placed in service, and construction was completed on the crude oil trunkline to Fao. North Rumaila wells began producing on April 7, 1972, and export operations commenced 5 days later when a Soviet tanker left Fao with a cargo of 156,500 barrels of crude oil. INOC announced the discovery of large oil deposits at Hawr al Hammār, which reportedly will double the national reserves. The deposit extends northward from the Rumaila field for more than 50 kilometers and is estimated to exceed 20 kilometers in width.[6]

Refinery construction activities were carried out during the year at three locations, Basrah, Hammām al 'Alīl, and Kirkuk, in an effort to raise Iraq's daily refining capacity by 120,000 barrels. New units installed or contracted for during 1972 will more than double the country's refining capability, but Iraq will remain one of the smallest refiners in the Middle East. Czechoslovakia's Technoexport continued work on the 70,000-barrel-per-day refinery near Basrah. Government Oil Refineries Administration (GORA) will begin operations at this plant in late 1973 or early 1974, producing gas oil, kerosine, and motor gasoline for domestic and foreign markets. During the year an agreement was concluded with the Soviet firm Neftekhimpromexport for the construction of an INOC petroleum refinery at Hammām al 'Alīl, 22 kilometers southeast of Mosul. Scheduled for completion in 1974, this $33 million plant will supply petroleum products to northern Iraq, and surplus production will be exported to Syria and possibly Turkey. Major units will be a crude distillation unit with a crude oil throughput capacity of 30,000 barrels per day, a 12,200-barrels-per-day desulfurization unit, and a 3,660-barrel-per-day gasoline improvement unit. Crude oil will be transported to the plant site by a 170-kilometer-long pipeline from the K2 pumping station on the former IPC pipeline from Kirkuk. Diesel oil, fuel oil, gas oil, gasoline, jet fuel, and

[5] Oil and Gas Journal. V. 70, No. 35, Aug. 28, 1972, p. 28.
[6] Middle East Economic Survey (Beirut, Lebanon). V. 15, No. 25, Apr. 14, 1972, p. 10.

kerosine will be distributed by railroad tank cars and highway trucks. Electric power will be supplied by the Hammām al 'Alīl powerplant.[7] Near yearend GORA plans were finalized and preliminary construction began to increase the refining capacity in the Kirkuk area by 20,000 barrels per day. Twin 10,000-barrel-per-day prefabricated units were ordered from the U.S. firm Howe-Baker Engineers, Inc. The first unit arrived at Kirkuk in December 1972, and the second was scheduled for delivery in February 1973. Near yearend, construction activities were underway at the refinery's storage depot, and a 30-centimeter-diameter, 1.4-kilometer-long pipeline connected the new refining area to the storage facility. GORA planned to begin producing diesel oil, fuel oil, and kerosine at the $3.8 million plant by the end of first quarter 1973. A lubricating oil plant was under consideration for the Basrah area, and INOC studied plans to participate in petroleum refinery operations in Belgium, India, and Romania. During the year Chemico conducted a survey of international markets for Iraqi-produced liquefied petroleum gases.

In February 1972 deliveries began on the seven 35,470-deadweight-ton oil tankers that Iraq had ordered from Spain in 1970. By yearend *Rumaila, Kirkuk,* and *Ain Zala* were in service, and the remaining four tankers were scheduled for delivery in 1973. In April 1972 the Oil Tankers Co. (OTC) was established as a wholly owned subsidiary of INOC to transport Iraq's crude oil and refined petroleum products. OTC placed Iraq's newly acquired tankers and two chartered Soviet tankers in service delivering Iraqi crude oil to foreign countries. Iraq was admitted to OAPEC in March 1972, and during the third quarter 1972 the Government ratified an OAPEC agreement establishing the Arab Oil Transport Co.[8] Talks were finalized in Moscow near yearend concerning the establishment of a joint Iraqi-Soviet oil tanker company.

During 1972 plans were finalized for two offshore supertanker terminals to be built near Fao in the Persian Gulf. One will be built at Khor al-Amaya and the other at Khor al-Khafji. BPC began construction of a third berth at its Khor al-Amaya tanker terminal, an $8.5 million structure to accommodate ships as large as 330,000 deadweight tons. INOC port facilities at Fao were enlarged with the completion of several storage tanks, a new administration building, and a laboratory, but shipping was restricted to 35,000-deadweight-ton tankers. Plans were completed for an offshore deepwater terminal to facilitate supertankers which will transport North Rumaila oil. Several foreign engineering firms have been consulted, and an estimated $100 to $120 million loading facility capable of servicing 300,000-deadweight-ton tankers is scheduled for service in 1976.

During 1972 one crude oil pipeline was placed in service, and more than 3,800 kilometers of large-capacity petroleum pipelines were planned. In first quarter 1972 crude oil began flowing through the 138-kilometer-long, 71-centimeter-diameter line from the North Rumaila oilfield to the Fao marine petroleum terminal at the rate of 360,000 barrels per day. Three domestic and two international crude oil trunklines were planned, and a refined products pipeline 600 kilometers in length may be constructed between petroleum processing and storage facilities in Baghdad and Basrah. By yearend 1975 a new pipeline is also to be laid parallel to the North Rumaila-Fao line to increase the export capability from producing wells in the area, and a 655-kilometer-long pipeline may interconnect oilfields in Kirkuk and North Rumaila. Soviet engineers planned a crude oil line to supply the new petroleum refinery near Mosul. That pipeline will extend approximately 170 kilometers from the K2 pumping station and will have an initial capacity of 30,000 barrels per day. Studies were conducted on the two proposed international trunklines by the Italian firm Snam Progetti S.p.A. Survey works were completed for the 1,250-kilometer-long, 1-million-barrel-per-day connection from the North Rumaila oilfield to Syrian ports on the Mediterranean Sea, and a crude oil line of more than 1,000 kilometers in length is planned from the Kirkuk oilfields to Turkish port facilities at Dortyol. Construction of the Dortyol line is expected to begin in 1974 and should be completed by 1976. Plans call for 373 kilometers of pipes to be laid in Iraq, and the Turkey section will be 632 kilometers in length. Forty percent of the

[7] Petroleum Times (London). V. 76, No. 1949, Nov. 17, 1972, p. 8.
[8] Petroleum Intelligence Weekly. V. 11, No. 36, Sept. 4, 1972, p. 8.

throughput will be purchased by Turkey, and the remainder will be exported. INOC considered a long-distance crude oil pipeline to Mediterranean ports from producing wells in the Abu Ghirab, Buzurgan, and Jambur fields. The line may not be built, since Essence et Lubrifiant de France-Entreprise de Recherches et d'Activités Pétrolières (Elf-ERAP) reported discoveries in the Abu Ghirab-Buzurgan fields may not justify commercial exploitation.