THE MINERAL INDUSTRY OF

IRAQ

By Philip M. Mobbs and Bernadette Michalski[1]

Nonfuel mineral production—principally cement, phosphate rock, salt, steel, and sulfur—was limited to satisfying domestic consumption as a result of the United Nations (U.N.) trade embargo (U.N. Security Council Resolution 661) imposed on Iraq after the 1990 invasion of Kuwait. Iraqi crude oil exports resumed in December 1996, authorized under U.N. Resolution 986 (known as the Oil for Humanitarian Aid Agreement or the oil-for-food program). This recreated an economic scenario similar to that prior to the Gulf War when crude oil and petroleum products accounted for 90% to 95% of Iraq's foreign currency earnings. By using the purchasing power parity calculation, the gross domestic product for the Iraqi centrally planned economy was estimated to be $42.8 billion in 1997, the last year for which data are available. Proposals for renewed international investment in other mineral-related production, such as fertilizer and sulfur, have not been approved by the U.N. Security Council (Arab Petroleum Research Center, 1999, p. 154).

In December 1997, U.N. Resolution 1143 renewed the oil-for-food program for a third phase, permitting the sale of Iraqi crude oil valued at $2 billion during a period of 180 days, ending on June 2, 1998. In February 1998, U.N. Resolution 1153 authorized an increase in value of Iraqi crude oil exports to $5.3 billion that became effective when U.N. Resolution 1175 extended the oil-for-food program for a fourth stage from June 4, 1998, to November 25, 1998. U.N. Resolution 1175 also authorized that an amount up to $300 million be made available to finance Iraqi requested (and U.N. approved) contracts for necessary spare parts and equipment to enable Iraq to increase its petroleum production capacity. U.N. Resolution 1210 authorized a fifth 180-day phase of the export scheme, beginning on November 26, 1998.

According to the Arab Petroleum Research Center (1999, p. 154), 66% of the oil export revenue financed the humanitarian aid for Iraq. This aid included the Iraqi import of foodstuffs, health supplies, medicine, and sundry civilian expenses for the estimated population of 21.7 million people. The U.N. Compensation Fund received 30% of export income, 3.2% of Iraqi oil proceeds was used to cover administrative costs of the program, and 0.8% was used to fund the U.N. Special Commission on Weapons Monitoring. In 1998, an average of 336,000 barrels per day (bbl/d) of crude oil was exported to the United States, about 3.9% of total U.S. crude oil imports, compared with an average of 89,000 bbl/d in 1997 and 1,000 bbl/d in 1996 (U.S. Energy Information Administration, 1999, p. 8-15).

In 1998, the state-owned South Oil Co. brought the West Qurna Oilfield on-stream. Between 1987 and 1990, Technoexport of the U.S.S.R. drilled about 200 wells at West Qurna. Development was disrupted after the invasion of Kuwait and ensuing sanctions prohibited continued operations. Iraq produced crude oil from 15 fields of the 74 evaluated petroleum prospects in the country. Dozens of international petroleum companies were in negotiations with Iraq, actively seeking petroleum production-sharing contracts for implementation after sanctions are lifted; however, some Governments, most notably the United Kingdom and the United States, actively discouraged such negotiations (Arab Petroleum Research Center, 1999, p. 165).

Iraqi oil exports have increased with each phase of the oil-for-food program—from a volume of 670,000 bbl/d in phase 1 to 990,000 bbl/d in phase 2, 1.03 million barrels per day (Mbbl/d) in phase 3, 1.71 Mbbl/d in phase 4, and a projected 1.84 Mbbl/d for phase 5. Deteriorating Iraqi pipeline and well conditions and low international oil prices, however, have restricted Iraq's ability to reach the authorized $5.3-billion-per-180-day revenue target (Arab Petroleum Research Center, 1999, p. 172; U.S. Energy Information Agency, November 1998, Iraq, accessed September 14, 1999, at URL http://www.eia.doe.gov/ emeu/iraq.html). Iraq was not included in the Organization of Petroleum Exporting Countries production-quota reductions of 1998, so lower world oil prices led to Iraq's increasing production to maintain its revenue stream at the expense of other oil-producing companies and nations (Corzine and Gooding, 1998; Oil & Gas Journal, 1998).

During 1998, about 760,000 bbl/d of Iraqi crude oil was piped from Kirkuk to the Ceyhan oil terminal at Yumurtalık, Turkey, on the Mediterranean Sea, and about 770,000 bbl/d was delivered to the port of Mina al-Bakr, Iraq, on the Arabian Gulf. Iraq also shipped about 90,000 bbl/d of crude oil and products to Jordan by truck under U.N. approval. In addition to official oil exports, about 5,000 bbl/d of crude oil and petroleum products were reportedly smuggled out through Iran, and about 3,000 bbl/d of diesel fuel entered Turkey at Habur (Petroleum Economist, 1998; Arab Petroleum Research Center, 1999, p. 170). About 560,000 bbl/d was produced to meet domestic fuel requirements (Middle East Economic Digest, 1998b, p. 15).

The Iraqi Ministry of Oil placed total proven crude oil reserves at 112 billion barrels and natural gas reserves at 3.1 trillion cubic meters (Arab Petroleum Research Center, 1999, p.

[1]Deseased.

160 and 173).

The transportation infrastructure of this 437,072-square-kilometer Middle Eastern country included 47,400 kilometers (km) of highway, 2,032 km of standard-gauge railroad, 4,350 km of crude oil pipeline, and 1,360 km of natural gas pipeline (U.S. Central Intelligence Agency, 1999, World Factbook—Iraq, accessed September 19, 1999, at URL http://www.odci.gov/cia/publications/factbook/iz.html). In November, while waiting on U.N. approval of contracts for railway rehabilitation, the Government announced that it would begin the overhaul itself (Middle East Economic Digest, 1998a).

U.N. sanctions have weighed heavily on Iraq, and although limited crude oil exports were realized during the year, the need remains for extensive repairs and refurbishment of the petroleum export network and oil well workovers if exports are to increase. With the exception of petroleum exports under the oil-for-food program, the U.N. trade embargo has remained in place, causing a severe restriction on Iraq's economy, particularly the mineral sector, which is largely dependent upon foreign capital, equipment, and replacement parts. Should there be a return to normal trade relations, Iraqi oil authorities have indicated that priority would be given to the rehabilitation of existing oil production facilities, followed by development of already discovered giant fields, and finally the exploration of new acreage in the western desert.

References Cited

Arab Petroleum Research Center, 1999, Iraq, *in* Arab oil & gas directory: Paris, Arab Petroleum Research Center, 640 p.

Corzine, Robert, and Gooding, Kenneth, 1998, Report on Iraqi exports hits oil: Financial Times [London], July 8, p. 26.

Middle East Economic Digest, 1998a, Iraq: Middle East Economic Digest, v. 42, no. 45, November 6, p. 26.

———1998b, Summer test for production pact: Middle East Economic Digest, v. 42, no. 30, July 24, p. 11-20.

Oil & Gas Journal, 1998, Editorial—Iraq and the oil market: Oil & Gas Journal, v. 96, no. 25, June 22, p. 21.

Petroleum Economist, 1998, News in brief—Middle East—Iraq: Petroleum Economist, v. 65, no. 10, p. 45.

U.S. Energy Information Administration, 1999, Petroleum supply monthly: U.S. Department of Energy, July, 149 p.

TABLE 1
IRAQ: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity 2/		1994	1995	1996	1997	1998
METALS						
Steel, crude		300	300	300	200 r/	200
INDUSTRIAL MINERALS						
Cement, hydraulic		2,000	2,108 3/	1,600 r/	1,700 r/	2,000
Nitrogen, N content of ammonia		500	500	500	500	450
Phosphate rock:						
Beneficiated 4/		1,000	1,000	1,000	1,000	1,000
Phosphorus pentoxide content		300	300	300	300	300
Salt		300	250	250	250	250
Sulfur, elemental:						
Native, Frasch		250	250	250	250	250
Byproduct 5/		225	225	225	200 r/	200
Total		475	475	475	450 r/	450
MINERAL FUELS AND RELATED MATERIALS						
Gas, natural:						
Gross	million cubic meters	3,000 r/	3,500 r/	3,480 r/ 3/	4,500 r/	6,000
Dry	do.	2,500 r/	3,000 r/	3,240 r/ 3/	3,600 r/	4,000
Natural gas plant liquids	thousand 42-gallon barrels	10,000	10,000	10,000	10,000	8,000
Petroleum:						
Crude (including lease condensate)	do.	200,000 3/	205,000 3/	213,000 3/	433,000 3/	750,000
Refinery products	do.	160,000	190,000	190,000	200,000	150,000

r/ Revised.
1/ Includes data available through September 18, 1999.
2/ In addition to commodities listed, the following also were produced but information is inadequate to reliably estimate output: gypsum for cement, plaster, mortar, and other products; limestone for cement (about 1.3 metric tons per metric ton of finished cement), lime, and construction stone; clay and/or shale for cement (about 0.4 ton per ton of finished cement); other construction materials (e.g., clays for brick and tile, sand and gravel, stone); uranium and fluorine compounds from phosphate rock processing; industrial sand for foundry use and glass manufacture; and clays for ceramics and refractories.
3/ Reported figure.
4/ Estimated to contain 30% phosphorous pentoxide.
5/ Presumably from petroleum and natural gas processing.