

# IRAQ

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The mineral industry of Iraq was dominated by the production of hydrocarbons. The United Nations (U.N.) trade embargo (U.N. Security Council Resolution 661) imposed on Iraq after its 1990 invasion of Kuwait nominally restricted international trade with Iraq. Although official Iraqi crude oil exports had resumed in 1996 under U.N. Security Council Resolution 986 (known as the Oil for Humanitarian Aid Agreement or the oil-for-food program), other export routes were available for Iraqi crude oil and petroleum products (Corzine, 2000; Middle East Economic Digest, 2001). In 2000, the oil-for-food program was modified and renewed by resolutions 1293, 1302, and 1330.

The mineral industry was administered by the Ministry of Industry and Mineral Resources and the Ministry of Oil. Legislation that controlled mining included law 8 of 1997 and statutory instructions 1 of October 11, 1999, which included mining regulations. Petroleum legislation included law 229 of December 14, 1970, law 8 of 1997, and resolution 1400 of September 1, 1980. In September, the Government announced it would no longer accept dollars for exported oil, and by early November, Iraq's U.N.-monitored accounts were receiving payment for oil exports in euros (Sullivan and O'Connor, 2000; Arabia Online Ltd., October 9, 2000, Iraq central bank ditches dollars, accessed July 24, 2001, at URL <http://www.arabia.com/iraq/business/article/english/0,5508,300686,00.html>).

Aside from the hydrocarbon sector, mineral production was limited. Phosphate rock was mined at Akashat, and sulfur, at Mishraq. Salt was extracted from brine lakes and marine evaporation ponds. Clay, gypsum, limestone, sand and gravel, and stone were dug from a number of pits. Mineral-processing facilities included several cement plants, a direct-reduced iron plant at Khor al Zubair, nitrogenous fertilizer plants that produced ammonia and urea, a phosphate fertilizer complex at Al-Qaim, a steel plant at Khor al Zubair, and a sulfur-processing plant at Mishraq; sulfur was also recovered as a byproduct of oil and natural gas processing. Uranium was reportedly recovered in the past from the Akashat phosphate operation (Federation of American Scientists, October 9, 2000, Akashat/Ukashat, accessed June 20, 2001, at URL <http://www.fas.org/nuke/guide/iraq/facility/akashat.htm>).

Iraq produced crude oil from about 15 oilfields that included the Ain Zalah, the Bai Hassam, the Butmah, the Jambur, the Khabaz, the Kirkuk, the Saddam, and the Sufaiya in the north and the Bin Umr, the Luhais, the Missan, the West Qurna, the North Rumaila, the South Rumaila, and the Zubair in the south. Average crude oil production in 2000 was estimated to be between 2.6 and 2.8 million barrels per day (Mbbbl/d) (Allen, 2000; U.S. Energy Information Administration, 2001b). Petroleum refining facilities included the 300,000-barrel-per-day (bbl/d) refinery at Baiji, which operated at about 140,000 bbl/d; the 170,000-bbl/d refinery at Basra, which operated at near capacity; and the 100,000-bbl/d refinery at Daura, which operated at about 70,000 bbl/d. These major refineries were operating with facilities and parts recovered from smaller prewar refineries. The Security Council's sanctions committee considered most oilfield modules and parts to be "dual-use";

that is, having the potential to be modified for military use. Consequently, contracts for such parts were often suspended by the sanctions committee (United Nations Security Council, 2000, Report of the group of United Nations experts established pursuant to paragraph 30 of the security council resolution 1284 (2000), accessed October 23, 2000, at URL <http://www.un.org/Depts/oip/reports/oilexperts.htm>). In 2000, Iraq was building six new refineries, which included a 10,000-bbl/d refinery at Baiji and a 10,000-bbl/d facility at Ammarah (Iran Daily, July 3, 2000, Economic features—Iraq plans six oil installations, accessed July 3, 2000, at URL <http://www.iran-daily.com/daily.shtml>).

During 2000, about 2.2 Mbbbl/d of Iraqi crude oil was officially exported under U.N. supervision from the Ceyhan oil terminal in Turkey and the port of Mina al-Bakr, Iraq. In addition to official oil exports, Iraq also shipped about 90,000 bbl/d of crude oil and products to Jordan by truck under U.N. approval. Between 80,000 and 200,000 bbl/d of crude oil and petroleum products reportedly were smuggled out of Iraq by boat or truck to India, Iran, Pakistan, Turkey, and the United Arab Emirates (Middle East Economic Digest, 2001; Sipress, 2001). During 2000, Syria and Iraq rehabilitated the 738-kilometer (km) 700,000-bbl/d-capacity crude oil pipeline between Kirkuk, Iraq, and the port of Baniyas, Syria; the Syrian Government had closed the line in April 1982. Although Syria and Iraq claimed to be only testing the integrity of the aged pipeline, an estimated 100,000 to 150,000 bbl/d of Basra Light reportedly was moved through the line after pumping resumed in November (U.S. Embassy, Damascus, Syria, 2000; Sipress, 2001; Gulf News, November 22, 2000, Iraq confronts UN with oil sales to Syria, accessed May 14, 2001, at URL <http://www.gulf-news.com/Articles/News.asp?ArticleID=3259>; Gulf News November 23, 2000, Iraq tells UN it is getting Syria pipeline ready, accessed May 14, 2001, at URL <http://www.gulf-news.com/Articles/News.asp?ArticleID=3303>; Gulf News March 21, 2001, Oil briefs—U.S. says Syria confirms Iraq pipeline arrangement, accessed May 14, 2001, at URL <http://www.gulf-news.com/Articles/News.asp?ArticleID=12570>). In December, Iraq and Lebanon agreed to refurbish the 178-km pipeline that connected to the Iraq-Syria line at Homs, Syria, and ran to Tripoli, Lebanon (Arabia Online Ltd., December 9, 2000, Lebanon—Iraq agree to reopen oil pipeline, accessed on July 24, 2001, at URL <http://www.arabia.com/iraq/business/article/english/0,5508,35-8,00.html>).

In November, the Iraqi State Oil Marketing Organisation threatened to terminate oil loaders' access to future oil purchases unless the buyers paid a \$0.50 per barrel premium into an Iraqi-controlled account in Jordan. The United Nations notified buyers that such a scheme, which would give Iraq an estimated \$400 million per year outside U.N.-controlled funds, would be considered to be a flagrant violation of sanctions. After a 12-day cutoff of supplies at the beginning of December, Iraq reduced demands to a still illegal \$0.30 per barrel premium on Kirkuk-grade crude oil pumped to Ceyhan and an illegal \$0.40 surcharge on Basra Light-grade crude pumped to Mina al-

Bakr (Hoyos, Sullivan, and Durgin, 2000; Gulf News, November 16, 2000, Iraq asks crude lifters for 50 cent premium, accessed May 14, 2001, at URL <http://www.gulf-news.com/Articles/News.asp?ArticleID=2772>; Gulf News, December 21, 2000, Iraq revives demand for surcharge on crude exports, accessed May 14, 2001, at URL <http://www.gulf-news.com/Articles/News.asp?ArticleID=5383>).

In 2000, an average of 620,000 bbl/d of exported Iraqi crude oil reached the United States. This accounted for about 6% of net U.S. crude oil imports and was a drop from 1999 average daily imports, thus reversing the increasing trend of U.S. imports from Iraq. An average of 725,000 bbl/d was imported from Iraq in 1999, 336,000 bbl/d in 1998, 89,000 bbl/d in 1997, and 1,000 bbl/d in 1996 (U.S. Energy Information Administration, 2001a). Iraq was the United States' sixth largest crude oil supplier after Saudi Arabia, Canada, Mexico, Venezuela, and Nigeria (U.S. Energy Information Administration, 2001c).

After a 19-year hiatus, rail service resumed between Iraq and Syria in August. Negotiations were being held with Iran and Turkey for additional freight and passenger rail service.

In 1995, the Ministry of Oil estimated total proven crude oil reserves to be 112 billion barrels and natural gas reserves to be 3.1 trillion cubic meters (Arab Petroleum Research Center, 1999, p. 160, 173). Nearly 60 evaluated petroleum prospects were undeveloped, and there were substantial unexplored areas in Iraq. A number of international oil companies had entered into buy-back (post-1999) or production-sharing (pre-2000) contracts that would become active once sanctions were lifted. The Government projected that it would take 6 to 8 years after the U.N. embargo is lifted to reach a target production capacity of 6 Mbbbl/d (Oil & Gas Journal, 2000). Actual production could be subject to quotas allocated by the Organization of the Petroleum Exporting Countries, given the impact that increased production tended to have on oil prices received by other

members of the cartel. Any significant increase in production would require new export pipelines, gas-processing plants, and storage facilities (Richards, 2001). Significant increases in oil and natural gas production capacity also would raise interest in adding new metal-processing facilities, oil refineries, petrochemical plants, and power stations in Iraq.

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- 2001b, Table 4.1a—World crude oil production (including lease condensate)—1970-2000, *in* International petroleum monthly: Washington, DC, U.S. Department of Energy, June, p. 38.
- 2001c, Table S3—Crude oil and petroleum product imports—1986-present, *in* Petroleum supply monthly: Washington, DC, U.S. Department of Energy, June, p. 8-15.

TABLE 1  
IRAQ: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Thousand metric tons unless otherwise specified)

Commodity 3/	1996	1997	1998	1999	2000	
METALS						
Steel, crude	300	200	200	200	200	
INDUSTRIAL MINERALS						
Cement, hydraulic	1,600	1,700	2,000	2,000	2,000	
Nitrogen, N content of ammonia	220 r/	220 r/	220 r/	220 r/	220	
Phosphate rock, beneficiated, phosphorus pentoxide content	300	300	300	300	300	
Salt	250	250	250	300	300	
Sulfur, elemental:						
Native, Frasch	250	250	250	250	225	
Byproduct 4/	50	50	50	50	25	
Total	300	300	300	300	250	
MINERAL FUELS AND RELATED MATERIALS						
Gas, natural:						
Gross	million cubic meters	3,480 5/	3,800	6,000	7,000	7,500
Dry	do.	3,240 5/	3,000	3,000	2,800	3,000
Natural gas plant liquids	thousand 42-gallon barrels	10,000	10,000	8,000	3,000	4,000
Petroleum:						
Crude (including lease condensate)	do.	213,000 5/	433,000 5/	750,000 5/	915,000 5/	930,000
Refinery products	do.	170,000	175,000	180,000	125,000	140,000

r/ Revised.

1/ Includes data available through July 23, 2001.

2/ Data are rounded to no more than three significant digits.

3/ In addition to commodities listed, the following also were probably produced, but information is inadequate to estimate output: clay, fluorine compounds, gypsum, lime, limestone, industrial (glass) sand and gravel, stone, and uranium.

4/ Presumably from petroleum and natural gas processing.

5/ Reported figure.