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The Mineral Industry of Libya

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Libya was the world's 17th-ranked country in terms of its area, which covers about 1.76 million square kilometers, and the 108th-ranked country in terms of its population, which was estimated to be 6.1 million inhabitants in 2013. Libya was Africa's leading country in terms of the size of its proven crude oil reserves, which were estimated by the Organization of the Petroleum Exporting Countries (OPEC) to be 48,363 million barrels in 2013. Globally, according to the BP Statistical Review of World Energy Statistics, Libya was the ninth-ranked country in terms of the volume of its crude oil reserves, which accounted for 2.9% of the world's total. The country also held 1.5 trillion cubic meters of natural gas reserves by the end of 2013, which accounted for 0.8% of the world's total. In 2013, Libya was Africa's fourth-ranked producer of crude oil and condensate after Nigeria, Angola, and Algeria; it was also the fourth-ranked producer of natural gas after Algeria, Nigeria, and Egypt, and it accounted for 0.4% of the world's total natural gas output. In 2013, Libya exported ammonia, crude oil, natural gas, refined petroleum products, methanol, sulfur, and urea. The country also produced modest quantities of cement, crude steel, direct-reduced iron (DRI), gypsum, lime, and salt for domestic consumption (table 1; BP p.l.c., 2014, p. 6, 8, 20, 22, 24; Organization of the Petroleum Exporting Countries, 2014, p. 8, 22; U.S. Central Intelligence Agency, 2014).

Minerals in the National Economy

Libya's economy continued to be highly dependent on petroleum earnings, and thus it remained vulnerable to external and internal shocks, such as changes in crude oil prices and disruptions in petroleum production and exports. Petroleum activities were estimated to contribute 65% of the country's gross domestic product (GDP) in current prices in 2012 (the latest year for which comprehensive information was available). According to International Monetary Fund estimates, Libya's real GDP decreased by 13.6% in 2013 following an increase of 104.5% in 2012 and a decrease of 62.1% in 2011. The sharp change in economic growth in 2013 was attributed to interruptions in crude oil and natural gas production in the second half of 2013 and the blockade of eastern ports by armed militia following the resumption of production and export operations in 2012. Consequently, the value of hydrocarbon sector activity decreased by 31.6% in 2013 compared with an increase of 211.4% in 2012 and a decrease of 16.0% in 2011. Hydrocarbon revenues accounted for 87% of the total Government revenue in 2013 compared with 95% in 2012 (Central Bank of Libya, 2014, p. 53; International Monetary Fund, 2014, p. 27).

The contribution of nonfuel mining and quarrying sector activities to the country's GDP has been insignificant; it was estimated to be 0.2% in 2011 and 0.3% in 2010. The value of the nonfuel mining and quarrying sector's activities was estimated to be $89 million[1] in 2012 compared with $81 million in 2011 and $194 million in 2010 (Central Bank of Libya, 2014, p. 48).

Government Policies and Programs

State-owned Al-Muassasah Al-Libiyah Lilnaft [National Oil Corp. (NOC)] played a dual role as a regulator and a production partner in the hydrocarbon sector. The Geologic Research and Mining Department (GRMD) of the Industrial Research Center (IRC), which is a Government agency under the Ministry of Industry, is responsible for carrying out chemical, geologic, and physical analyses; exploration and prospecting studies; geologic mapping; and field, geographical information systems (GIS), and remote sensing services. The IRC was established by decree No. 25 of 1970 to advance the country's industrial development. The GRMD became more active in recent years in identifying Libya's nonfuel mineral resources, conducting mineral exploration studies, and proposing potential mining methods (National Oil Corp., 2013; Industrial Research Center, 2014).

The National Mining Corp. (NMC) was created by Resolution No. 161 of 2007 to invest in the country's natural resources and minerals to ensure that national demand for minerals is met by domestic industries (where possible), and to attract foreign investment to the mining sector. The shareholders in the NMC include state-owned producers of cement and iron and steel as well as local banks and investment agencies. In 2013, the NMC was seeking to establish joint ventures with other companies to exploit the country's mineral resources, namely clays, granite, gypsum, iron ore, marble, and silica sand (National Mining Corp., 2013).

Law No. 2 of 1971 and its amendments regulate mining and quarrying activities in Libya; law No. 5 of 1997 regulates foreign investment in the nonoil sectors and assigns the NMC the authority to grant mining licenses, enter into investment contracts with companies, and collect revenue generated by mines and quarries. Petroleum law No. 25 of 1955, Petroleum Regulations Nos. 8 and 9, and the provisions of the regulations pertaining to production-sharing agreements between the Government and international oil companies govern the hydrocarbon sector operations in Libya. Collectively, these agreements are known as "5-year Exploration and Production-Sharing Agreement IV." Additionally, law No. 443 of 2006 also applies to international companies, including hydrocarbon and mineral production commodity companies that intend to operate in Libya. This legislation requires foreign companies to have a local partner (either state owned or private) that holds a minimum of a 35% share in any joint venture. A new law adopted by the Government in 2013 (the New Companies Law) allows foreign investors to own up to a 49% interest in new joint ventures. This law replaced law No. 103 of

[1]Where necessary, values have been converted from Libyan dinar (LYD) to U.S. dollars (US$) at an average rate of US$1.00=LYD0.79 for 2013.

2012, which allowed foreign investors to own up to 65% of new joint ventures (African Development Bank, 2014, p. 6).

Production

Production of crude oil decreased by 35% in 2013 compared with that of 2012 owing to the blockade of oil terminals in eastern Libya by rebels and militia groups demanding greater regional autonomy. Petroleum output partially rebounded in 2012 following the stoppage in 2011 because of the conflict, which lasted for most of the year. Ammonia, methanol, refined petroleum products, and urea outputs increased significantly in 2013 compared with those of 2012 when operations were halted for most of the year. Ammonia, methanol, and urea production increased by 363%, 309%, and 7,267%, respectively, in 2013 compared with that of 2012, but remained well below prewar production levels. Crude steel output increased by 127%; and that of DRI, by 87%. Production of some industrial minerals, such as gypsum and lime, was estimated to have increased because of the resumption of construction activity, but no verifiable data were available. Production of sulfur as a byproduct of petroleum and natural gas decreased by 51% in 2013 compared with that of 2012 (table 1; Central Bank of Libya, 2014, p. 58; Midrex Technologies, Inc., 2014, p. 8).

Structure of the Mineral Industry

In 2013, the NOC was the full owner of nine oil and oil-related services companies, including Arabian Gulf Oil Co., Azzawiya Oil Refining Co., Brega Petroleum Marketing Co., Jwofe Oil Technology, National Oil Fields and Terminals Catering Co., National Oil Well Drilling and Workover Co., North Africa Geophysical Exploration Co., Ras Lanuf Oil and Gas Processing Co., and Sirte Oil Co. The NOC was also a partner in joint-venture oil and gas companies that were operating in Libya, including Akakus Oil Operations A.G. with Repsol YPF S.A. of Spain; Harouge Oil Operations Co. with Petro-Canada (a subsidiary of Suncor Energy Inc. of Canada); Mabruk Oil Operations with Total S.A. of France and Wintershall Holding GmbH of Switzerland; Mellitah Oil Co. with Eni S.p.A. of Italy; Waha Oil Co. with ConocoPhillips Co., Hess Corp., and Marathon Oil Corp. of the United States; Wintershall joint venture with Wintershall Holding GmbH; and Zuweitina Oil Co. with OMV A.G. of Austria (table 2; National Oil Corp., 2013; Central Bank of Libya, 2014, p. 35).

Twenty-eight international oil companies were working in Libya under exploration and production-sharing agreements that they had signed with the NOC. These companies included, in alphabetical order of their country of registration, Sonatrach S.p.A. of Algeria; Woodside Petroleum Ltd. of Australia; Petróleo Brasileiro S.A. of Brazil; Petro-Canada Libya Co. of Canada; Great Wall Drilling Co. (a subsidiary of China National Petroleum Corp.) of China; Total E&P Libye (a subsidiary of Total S.A.) of France; RWE Dea North Africa/Middle East GmbH and Wintershall Holding GmbH of Germany; Oil India Ltd. and ONGC Videsh Ltd. of India; Pertamina E & P Libya Ltd. Co. of Indonesia; Inpex Corp., Japan Petroleum Exploration Co. Ltd., and Nippon Oil Exploration Ltd. of Japan; Statoil ASA of Norway; OAO Gazprom and OAO Tatneft of Russia; Turkish Petroleum Overseas Co. (TPOC) of Turkey; BG Group and Royal Dutch Shell p.l.c. of the United Kingdom; and Amerada Hess Libya Exploration Ltd., Chevron Corp., ExxonMobil Libya Ltd., and Occidental Petroleum Corp. of the United States (National Oil Corp., 2013).

Government-owned Libyan Iron and Steel Co. (Lisco) was the country's main steelmaker and one of the top steelmaking companies in North Africa. Lisco produced crude steel, DRI, and semifinished and finished steel products at its plants in Misuratah (Misrata), which is located on the Mediterranean coast in northwestern Libya (Libyan Iron and Steel Co., 2014).

Mineral Trade

In 2013, Libya's hydrocarbon exports, which included crude oil, natural gas, and other petroleum products, decreased in both value and volume compared with those of 2012, when the country's hydrocarbon exports recovered much of the losses of 2011. The value of hydrocarbon exports decreased by 33% to $40.2 billion from $61.2 billion in 2012. The volume of crude oil exports decreased by 39% to 589,000 barrels per day (bbl/d) from about 962,000 bbl/d; natural gas exports decreased by 11% to 5.51 billion cubic meters from 6.22 billion cubic meters in 2012; and the volume of refined petroleum products exports increased by 90% to 76,000 bbl/d from 40,000 bbl/d in 2012. Most of Libya's crude oil production was exported to Europe, including Italy (which received 23% of Libya's exports, in terms of value), Germany (13%), France (10%), and the United Kingdom (5%). Libya exported natural gas to Italy by way of the Greensteam pipeline. The 540-kilometer (km)-long pipeline transported natural gas from the Mellitah gas and oil terminal on the Mediterranean Sea to Gela on the island of Sicily in Italy and had a maximum capacity to discharge 11 million cubic meters per year. Libya's crude oil prices decreased slightly in 2013 compared with those of 2012. The average price for Ess Sider crude decreased to $108.51 per barrel from $111.86 per barrel in 2012, and that of Brega crude decreased to $108.88 per barrel from $111.45 in 2012 (U.S. Energy Information Administration, 2013; Organization of the Petroleum Exporting Countries, 2014, p. 11, 82–83).

Commodity Review

Metals

Gold and Iron Ore.—A recent study by the GRMD provided updated information on the discovery of banded iron formations at the Arkenu and Al Uwaynat regions, and the potential for development of gold and iron ore mines. The two regions are located in southeastern Libya near the border with Egypt (Suwesi, 2014, p. 565). The NMC reaffirmed the existence of iron ore deposits at the Wadi As Shati in southwestern Libya, which is located about 900 km from the Mediterranean coast. These deposits had the potential to feed Lisco's steel complex in Misuratah, which has been importing its iron ore from such countries as Brazil. The Wadi As Shati deposit covers an area of 4,000 square kilometers (km^2) and holds more than 5 billion metric tons (Gt) of iron ore, including 900 million metric tons (Mt) of proven reserves at the Tharot

lens, 750 Mt of probable reserves at the Arrwisa lens, and 500 Mt of probable reserves at the Ashkeda lens. The Wadi As Shati deposit includes one of the world's largest oolitic iron ore resources; it holds 1.52 Gt of iron ore grading 40% iron. Although the Government was interested in developing the Wadi As Shati iron ore deposits, foreign investment would likely be needed to develop the mine and construct the 900-km-long railway needed to transport the iron ore to Lisco's steel complex and to the Port of Tripoli. Technology to produce DRI from oolitic iron ores (such as the Hatch™-Ironstone chloride segregation process) would be required to reduce phosphorous impurities in the iron ore to acceptable levels (Hernandes and others, 2013; National Mining Corp., 2013).

Iron and Steel.—In 2013, Libya's DRI production, which was solely produced by Lisco, increased by 87% to 950,000 metric tons (t) from 508,000 t in 2012. Lisco's output of crude steel increased by 127% to 715,000 t from 315,000 t in 2012; hot-rolled products, by 65% to 150,179 t from 90,847 t in 2012; and concrete-reinforcing bar (rebar) and rods, by 96% to 516,345 t from 262,856 t in 2012. In 2013, the company began an expansion project to increase its capacity to produce finished steel products to 2.4 million metric tons per year (Mt/yr) from 1.6 Mt/yr. The project was expected to be completed in April 2015 (Libyan Iron and Steel Co., 2014; World Steel Association, 2014).

Industrial Minerals

Clay and Shale.—Libya's mineral resources of clays were estimated to be about 1 Gt, including 125 Mt and 875 Mt of proven and probable reserves, respectively. At least 13 locations throughout the country were identified by the NMC for potential production of clay that could be used in cement, porcelain pottery, pottery, and oilfield drilling (National Mining Corp., 2013).

Diatomite.—Diatomite reserves in the Al Hishah formation that could be mined by open pit were estimated to be 30 Mt. The Al Hishah formation, which covers about 45 km^2, is located south of Ajdabyia in north-central Libya in the Subkhat Ghuzayil depression of the eastern Sirt basin (Eldernawi and others, 2014, p. 851).

Gypsum.—Eighteen locations for gypsum deposits in the Bir Algnam formation were identified by the NMC in the Al Jabal Al Gharbi, the Awbari Benghazi, and the Gulf of Sirte regions. Gypsum resources at these locations were estimated to be 8.4 Mt with thicknesses of up to 350 meters. The company estimated that the Jefren deposit contains one of the world's highest concentrations of pure gypsum (up to 99.5% calcium sulfate) (National Mining Corp., 2013).

Nitrogen.—The Libyan Norwegian Fertilizer Co. (Lifeco) produced ammonia and urea fertilizers at its plant in the Marsa El Brega complex on the Mediterranean coast. Production, which was halted for most of 2011 owing to civil unrest, resumed partial operations in 2012, and continued operating throughout most of 2013. Lifeco halted production at the end of 2013 because of security concerns in the Marsa El Brega area. The company was a joint venture of Yara International ASA of Norway (50% interest) and NOC and Libyan Investment Authority (25% interest each) and had a production capacity of 2,200 metric tons per day (t/d) of liquid ammonia and 2,750 t/d of granular urea (Libyan Norwegian Fertilizer Co., 2014).

Silica.—The NMC promoted the silica sands deposits at sites in the North Idri region in southeastern Libya as potential sites for mining and development. The Shaybat site held 1.30 Mt of proven reserves and 1.22 Mt of probable reserves of silica sands and the Mominyat site held 389,000 t of proven reserves and 411,000 t of probable reserves of silica sands (National Mining Corp., 2013).

Mineral Fuels

Petroleum.—Crude oil output decreased by about 35% in 2013 compared with that of 2012. Subsequently, the daily average production of crude oil decreased to about 1 million barrels per day (Mbbl/d) from about 1.45 Mbbl/d in 2012. The number of crude-oil-producing wells in Libya decreased by 602 wells to 1,308 wells from 1,910 wells in 2012. The number of wells completed, including development and exploration wells, increased by 38 wells to 106 wells from 68 wells in 2012. Libya had 31 active oil rigs in 2013 compared with 23 rigs in 2012. Nine companies produced crude oil in Libya in 2013, including Akakus Oil Operations, which was responsible for 23.6% of the country's total production, followed by Arab Gulf Oil Co. (19.5%), Waha Oil Co. (19.4%), Mellitah Oil Co. (13.1%), Sirte Oil Co. (6.8%), Mabruk Oil Operations (6.0%), Harouge Oil Operations Co. (4.6%), Wintershall (4.5%), and Zuweitina Oil Co. (3.1%). Seven oil and gas discoveries were reported in Libya in 2013. These discoveries were expected to add 6,719 bbl/d and 1.2 million cubic meters per day of new capacity (Central Bank of Libya, 2014, p. 52–54; Organization of the Petroleum Exporting Countries, 2014, p. 25–27).

In July, Libya's oil sector was crippled by work-related protests, which later escalated into demands for autonomy in the Cyrenaica region of eastern Libya, and alleged corruption charges. The conflict led to the closure of oil terminals, loading ports, oilfields, and pipelines and caused security issues at oil installations in the central and eastern regions of Libya. Protests forced the complete or partial closing of oilfields linked to the ports. Owing to protests at ports and at some oilfields, crude oil production decreased to 1.0 Mbbl/d in July and to 228,000 bbl/d by December from 1.4 Mbbl/d in the first half of 2013. At the end of August, militia members blocked the pipelines that linked the El Sharara oilfield to the Zawiya petroleum export terminal and the El Feel field to the Mellitah petroleum export terminal in western Libya, forcing the shutdown of those fields. The country's production plunged to about 200,000 bbl/d during the second half of 2013 and continued at that level into April 2014 (U.S. Energy Information Administration, 2013; Economist, The, 2014; Nield, 2014).

Outlook

The outlook for the mineral industry of Libya remains positive despite the continued armed conflict following the fall of the Qaddafi Government in 2011. Production of mineral commodities, such as cement, crude oil, crude steel, and nitrogen fertilizer, is expected to increase to previous levels once

the civil war is over. Libyan officials, engineers, geologists, and researchers appear to be determined to develop the country's vast and untapped mineral resources, including such metals as gold and iron ore and such industrial minerals as diatomite, gypsum, kaolin, marble, and silica sands (Eldernawi and others, 2014; Suwesi, 2014).

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TABLE 1
LIBYA: PRODUCTION OF MINERAL COMMODITIES[1]

(Thousand metric tons unless otherwise specified)

Commodity[2]		2009	2010	2011	2012	2013
METALS						
Iron and steel, metal:						
Direct-reduced iron[3]		1,097	1,270	165	508	950
Crude steel		914	825	100	315	715
INDUSTRIAL MINERALS						
Cement, hydraulic[e]		6,500	7,000	3,500	2,000 r	2,000
Gypsum[e]		250	250	125	150	200
Lime[e]		250	250	125	150	200
Nitrogen:						
N content of ammonia		530	580	71	78 r	359
N content of urea		358	414	53	3	221
Salt[e]		40	40	20	30	30
Sulfur, byproduct of petroleum and natural gas[e]		130	132	37 r	138 r	67
MINERAL FUELS AND RELATED MATERIALS						
Gas, natural:						
Gross	million cubic meters	29,289	30,257	9,861	23,435	22,874
Dry	do.	15,900	16,814	7,855	18,118	18,463
Methanol		664	638	85	65 r	266
Petroleum:						
Crude	thousand 42-gallon barrels	602,980	605,535	174,835	550,785	360,620
Refinery products:						
Liquefied petroleum gas	do.	2,409	2,409	2,372	2,400	2,400 e
Gasoline	do.	6,424	5,913	4,855	5,242	5,463
Kerosene and jet fuel	do.	15,294	15,805	6,216	5,913 r	5,986
Naphtha	do.	20,336	20,196	5,332	11,149 r	12,604
Distillate fuel oil	do.	32,631	35,186	11,354	16,791	20,702
Residual fuel oil	do.	47,924	51,502	14,932	15,111 r	28,367
Other	do.	2,732	3,284	1,739	9,856 r	7,794
Total	do.	127,750	134,295	46,800	66,462 r	83,300

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [r]Revised. do. Ditto.

[1]Table includes data available through March 16, 2015.

[2]In addition to the commodities listed, a variety of clay, dolomite, limestone, sand, and crushed construction stone was produced, and natron (soda ash) may have been produced, but available information is inadequate to make reliable estimates of output. Natural gas liquids also were produced but were blended with crude petroleum and reported as part of that total.

[3]Includes hot-briquetted iron.

TABLE 2
LIBYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Joint Libyan Cement Co. (JLCC) [Libyan Manufacturing Joint Venture Co., 90%, and plant employees, 10%]	Benghazi	1,000
Do.		do.	El Fataih, Derna	1,000
Do.		do.	El Hawari	1,000
Do.		Arab Union Contracting Co.	Burj Cement 1 at Zliten	1,400
Do.		do.	Burj Cement 2 at Zliten	1,600
Do.		Alahliya Cement Co. [National Investment Co., 64.9%; Economic and Social Development Fund (ESDF), 32.8%; others, 2.3%]	Lubda	1,000
Do.		do.	Souk el Khamis	1,000
Do.		do.	Zliten	1,000
Do.		do.	El Margueb	300
Dolomite and lime		Libyan Iron and Steel Co. (Government, 100%)	Sedada quarry, east of Misuratah	88
Gypsum		Alahliya Cement Co.	Ghadames	100
Do.		do.	Souk el Khamis	9
Do.		Arab Union Contracting Co.	Burj Cement 1 at Zliten	35
Iron and steel:				
Iron:				
Direct-reduced (sponge iron)		Libyan Iron and Steel Co. (Government, 100%)	Misuratah	1,100
Hot-briquetted iron		do.	do.	650
Steel:				
Crude		do.	do.	1,241
Rolled:				
Bar and rod		do.	do.	800
Cold-rolled strip		do.	do.	140
Hot-rolled strip		do.	do.	580
Methanol		Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Marsa El Brega	680
Natural gas:				
Dry	million cubic meters	Mellitah Oil Co. [National Oil Corp. (NOC), 50%, and Eni S.p.A., 50%]	Mellitah	10,000
Liquefied		Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Mersa El Brega	700 [1]
Nitrogen:				
Ammonia		Libyan Norwegian Fertilizer Co. (Lifeco) [Yara International ASA, 50%; National Oil Corp. (NOC), 25%; Libyan Investment Authority, 25%]	do.	800
Urea		do.	do.	1,000
Petroleum:				
Crude	thousand 42-gallon barrels	Akakus Oil Operations A.G. [National Oil Corp. (NOC), 88%, and Repsol YPF S.A., 12%]	El Sharara (NC–115 and NC–186) oilfield	124,000 [2]
Do.	do.	Zuweitina Oil Co. [National Oil Corp. (NOC), 88%, and OMV A.G., 12%]	Oilfields include the Al Fedaa, the Al Hakeem, the Al Sabah, the Zella, 29C, 103A, 103B, 103C, and 103D	120,500
Do.	do.	Waha Oil Co. [National Oil Corp. (NOC), 59.2%, and ConocoPhillips Co., Marathon Oil Corp., and Hess Corp., 40.8%]	Oilfields include the Dahra, the Farigh, the Gialo, the Samah, and the Waha	107,800
Do.	do.	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Oilfields include the Sarir and the Nagoora Augila	107,500
Do.	do.	Sirte Oil Co. [National Oil Corp. (NOC), 100%]	Oilfields include the Assumud, the Attahadi, and the Raguba	73,000

See footnotes at end of table.

TABLE 2—Continued
LIBYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum—Continued:				
Crude—Continued	thousand 42-gallon barrels	Mellitah Oil Co. [National Oil Corp. (NOC), 50%, and Eni S.p.A., 50%]	Oilfields include the Bhar Essalam, the Bouri, the Bu Attifel, the El Feel, KK, NC–125, NC–169, NC–174, OO–82, the Rimal, UU–82, XX–82, and the Wafa	72,700 [2]
Do.	do.	Wintershall joint venture [National Oil Corp. (NOC), 51%, and Wintershall Holding GmbH, 49%]	Oilfields include the As-Sarah, the Hamid, the Jakhir, the Nakhla, and the Tauma	30,500
Do.	do.	Mabruk Oil Operations [National Oil Corp. (NOC), 73%; Total S.A., 20.25%; Wintershall Holding GmbH, 6.75%]	Mabruk oilfield	24,700
Do.	do.	Harouge Oil Operations Co. [National Oil Corp. (NOC), 88%, and Petro-Canada, 12%]	Oilfields include the Amal, the En Naga the Farigh, the Ghani, and the Tibisti	2,550
Refined	do.	Ras Lanuf Oil and Gas Processing Co. [National Oil Corp. (NOC), 100%]	Ras Lanuf	80,300
Do.	do.	Azzawiya Oil Refining Co. [National Oil Corp. (NOC), 100%]	Az Zawiya	43,800
Do.	do.	Arabian Gulf Oil Co. [National Oil Corp. (NOC), 100%]	Tobruk	7,300
Do.	do.	do.	Sarir	3,650
Do.	do.	National Oil Corp. (NOC)	Marsa el Brega	2,920
Sulfur		Mellitah Oil Co. [National Oil Corp. (NOC), 50%, and Eni S.p.A., 50%]	Mellitah	128

Do., do. Ditto.
[1]Liquefied natural gas production was suspended in 2011.
[2]Production from the El Feel and the El Sharara fields was stopped during 2013 and resumed in 2014.