



2006 Minerals Yearbook

MOROCCO AND WESTERN SAHARA

THE MINERAL INDUSTRIES OF MOROCCO AND WESTERN SAHARA

By Harold R. Newman

MOROCCO

Mining was significant to the Moroccan economy. The mineral industry, which was dominated by phosphate production, was Morocco's leading foreign exchange earning sector. *Omniun Nord Africain (ONA)* was the leading private sector investor through its equity interest in *Managem S.A.* and *Société Nationale d'Investissement S.A. (SNI)*. *Managem* operated six mines in Morocco: the Akka gold mine, the Bou-Azzer cobalt mine, the Draa Sfar and the Guemassa copper-lead-zinc mines, the El Hammam fluorspar mine, and the Imiter silver mine.

Minerals in the National Economy

In 2006, more than 80 mining companies operated in Morocco, and they produced more than 25 different commodities and employed more than 37,000 people. The mineral industry accounted for 35% of the value of foreign trade and about 6% of the gross domestic product (*MBendi Information Services (Pty) Ltd.*, 2006).

Government Policies and Programs

The Office National des Hydrocarbures et des Mines (ONHY) is the Government agency responsible for the exploration and promotion of national mineral resources. *Office Chérifien des Phosphates (OCP)*, another Government agency, manages phosphate rock mining and beneficiation and owns most of the phosphoric acid and phosphate fertilizer production facilities. These agencies work closely with the Ministry of Energy and Mines. All mineral resources are the property of the state, which issues permits and licenses for exploration and exploitation of the resources.

Production

Morocco was one of the world's leading producers of phosphate rock. In terms of the value of production, phosphate rock was Morocco's most important mineral. In addition to phosphate rock, the country produced a wide variety of minerals, which included barite, clays, coal, cobalt, copper, fluorspar, gold, iron ore, lead, nickel, petroleum, salt, silver, talc, and zinc. The Bou-Azzer cobalt deposit is the world's only primary cobalt deposit, and the Imiter Mine produces substantial amounts of silver. Buoyed by external mineral demand, activities within the Moroccan mining sector continued to expand (*Report Buy*, 2006).

Structure of the Mineral Industry

The Government was taking steps to privatize selected state-owned mining assets and to launch reform programs within the

mining sector to boost its competitiveness. The structure of the mineral industry, however changed very little during the year. Table 2 is a list of major mineral industry facilities.

Trade

U.S. exports to Morocco were valued at about \$876 million in 2006 compared with \$525 million in 2005. This total included more than \$19 million for petroleum products, \$12 million for coal and other fuels, \$5 million for nonmetallic minerals, and \$3 million for metallurgical grade coal (U.S. Census Bureau, 2006a). Imports from Morocco were valued at about \$521 million in 2006 compared with \$446 million in 2005. This total included about \$104 million for sulfur and nonmetallic minerals, more than \$28 million for petroleum products and fuel, \$8 million for miscellaneous nonferrous metals, and \$880,000 for drilling and oilfield equipment (U.S. Census Bureau, 2006b).

Morocco and the United States signed a Free Trade Agreement (FTA) that went into effect on January 1, 2006; the agreement eliminated tariffs on 95% of bilateral trade, and the remaining tariffs were to be eliminated during the next 9 years. The U.S.-Morocco FTA was the first in Africa and the first under the Middle East Free Trade Initiative (U.S. Energy Information Administration, 2006).

Commodity Review

Metals

Cobalt.—*Compagnie de Tifnout Tiranime (CTT)*, which was a subsidiary of *Managem*, mined cobalt ore at Bou-Azzer. The cobalt is associated with arsenic in narrow vein structures found at the contact of a serpentine and quartz-rich diorite. The mineralized veins are vertically continuous for an estimated 200 meters (m). The deposit is accessed through shafts that reach down to 400 m below the surface. A cut and fill method of mining is used on 40-m to 50-m spaced levels. Cobalt concentrates and tailings from Bou-Azzer were refined at *Compagnie Minière de Guemassa's* plant, which also produced about 6,000 metric tons per year (t/yr) of arsenic trioxide (*Maptek (Pty) Ltd.*, 2006).

Copper.—*Odyssey Resources Ltd.* of Canada completed a sampling program at two past-productive copper-silver deposits near the company's Anti Atlas copper-silver property. A drilling program was underway at the Alous property, and the first two holes were completed. Preliminary inspection indicated that copper mineralization extended from the surface to about 70 m below the surface. Samples were shipped to *ALS Chemex of Canada* for assaying and column leach tests (*Odyssey Resources Ltd.*, 2006).

Silver.—Silver in Morocco occurs both as the primary metal in ore deposits at Igoudrane and Imiter and as a byproduct of cobalt, copper, lead, and zinc mining operations. Most of the country's silver production came from the Imiter Mine, which was owned and operated by Société Metallurgique d'Imiter (SMI), a subsidiary of Managem. SMI also produced silver ingots (Alacra Store, 2006).

Industrial Minerals

Cement.—The Moroccan cement industry comprised four companies: Asment de Temara; Holcim (Maroc) S.A.; Lafarge S.A. (Lafarge), through Lafarge Ciments (Maroc), which was a 50% owned subsidiary of the Lafarge Group of France; and Société les Ciments du Maroc S.A.

Diamond.—Metalex Ventures Ltd. of Canada continued to explore for diamond in southern Morocco during the year. The company's concession covered an area of 24,800 square kilometers (km²) of Archean cratonic and Proterozoic rocks, which the company considered to be highly prospective for diamond-bearing kimberlite. Metalex completed the preliminary exploration and was finalizing a joint-venture agreement for further exploration (Google Finance, 2006).

Phosphate Rock.—OCP was the sole producer of phosphate rock, which accounted for about one-half of the nation's income. Morocco was the world's leading exporter of phosphate rock, with a 42% share of global exports. Morocco also held the largest share (70%) of the world's total known phosphate reserves. OCP mined phosphate rock from Benguerir, Khouribga, and Youssoufia. The company's Khourigba operations covered a radius of 30 kilometers and included three mines—Sidi Chennane Mine, Mera El Arech Mine, and Sidi Daoui Mine, which had production capacities of 8 million metric tons per year (Mt/yr), 6 Mt/yr, 4 Mt/yr, respectively. Phosphate rock is found mainly in the western part of Morocco (Mining Technology, 2006).

Mineral Fuels

As of January 2006, Morocco had proven oil reserves of about 1 billion barrels and natural gas reserves of about 1.7 billion cubic meters. The country produced small volumes of natural gas and petroleum from the Essaouira Basin and small amounts of natural gas from the Gharb Basin. Morocco was North Africa's leading importer of petroleum and natural gas. The potential for hydrocarbon resources was thought to exist in large, yet-to-be-explored areas of Morocco. Morocco was a transit center for Algerian gas exports to Portugal and Spain; gas exports were transported across the Strait of Gibraltar via the Maghreb-Europe gas pipeline. Morocco's two refineries, which were located at Mohammedia and Sidi Kacem, had a combined capacity of about 155,000 barrels per day (U.S. Energy Information Administration, 2006).

Island Oil and Gas Co. announced that ONHY had approved an Exclusive Reconnaissance License in the Zag Basin onshore Morocco. The license, valid for a period of 12 months (until December 2008), covered an area of 21,807 km². The Zag Basin is an under-explored Paleozoic North African sedimentary basin

within which no seismic data had been acquired by yearend 2006. An active petroleum system was believed to be present in this basin based upon early drilling history and the presence of a source rock equivalent to that which hosts the major Palaeozoic natural gas and petroleum fields of neighboring countries (Alexander's Gas & Oil Connections, 2006).

Outlook

The Government planned to establish joint ventures with foreign companies and to bring the Jorf Lasfar phosphoric acid and sulfuric acid plants online by 2008. The Government was expected to sign a memorandum of understanding with Sinochem Corp. of China for the development of another phosphoric acid plant at Jorf Lasfar by 2011. These actions suggest that the phosphate industry is likely to continue to dominate Morocco's mineral sector for the next 6 to 8 years.

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WESTERN SAHARA

The issue of sovereignty for Western Sahara remained unresolved in 2006. The territory, a desert area bordering the Atlantic Ocean between Mauritania and Morocco, was contested by Morocco and the Popular Front for the Liberation of the Saguia el Hamra and Rio de Oro (Polisario), an independence

movement based in Tindouf, Algeria. Western Sahara's economy was dependent on pastoral nomadism, fishing, and phosphate mining. Interest in oil exploration contracts in areas offshore Western Sahara increased during 2006 (U.S. Energy Information Administration, 2006).

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TABLE 1
MOROCCO AND WESTERN SAHARA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2002	2003	2004 ^c	2005	2006 ^c
METALS					
Antimony, sodium antimonate	532	500	500	500	500
Cobalt:					
Concentrates, gross weight	16,896	16,178	18,410 ^r	13,030	13,000
Co content	1,453	1,391	1,600	1,100	1,100
Metal ³	1,354	1,431	1,594 ^r	1,613	1,405 ⁴
Copper:					
Concentrates, gross weight	17,799	17,539	14,200 ⁴	12,650	12,000
Cu content, concentrates	5,000	4,900	4,400	3,800 ^r	4,500 ^r
Gold kilograms	2,747	1,863	1,493 ^r	1,786	1,800
Iron and steel:					
Iron ore:					
Gross weight	8,736	6,300	9,900 ⁴	8,130	8,100
Fe content ^c	4,700	3,400	5,300	4,400	4,400
Metal: ^c					
Pig iron	15,000	15,000	15,000	15,000	15,000
Steel, crude	5,000	5,000	5,000	5,000	5,000
Lead:					
Concentrate:					
Gross weight	88,582	54,779	58,810 ^r	59,920	60,000
Pb content	62,400	38,600	41,400 ^r	42,200	45,000
Cupreous matte, Pb content ^c	600	600	600	600	60
Metal:					
Smelter, primary only	71,840	62,000	40,712 ^r	54,460	49,200 ⁴
Refined:					
Primary	71,840	61,473	35,000 ⁴	38,600 ^r	44,700
Secondary ^c	3,000	3,000	4,000 ⁴	4,000	3,000
Total ^c	75,000	64,000	39,000	39,000	47,700
Manganese ore, largely chemical-grade	18,064	--	9,050 ^r	11,270	11,000
Mercury ^c	10	10	10	10	10
Nickel content of nickle sulfate	109	126	130 ^r	99 ^r	80 ⁴
Silver:					
Ag content of concentrates kilograms	57,000 ^c	25,400 ^c	26,000	26,000	50,700
Ag content of matte and smelter bullion do.	220,000 ^c	175,155	170,000 ^c	170,000	195,000
Total do.	276,789	200,529	195,952 ⁴	195,952	245,700 ⁴
Zinc concentrate:					
Gross weight	178,476	136,433	146,200 ⁴	151,270	130,000
Zn content	90,487	69,200	72,363 ⁴	78,660 ⁴	72,600

See footnotes at end of table.

TABLE 1--Continued
MOROCCO AND WESTERN SAHARA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2002	2003	2004 ^c	2005	2006 ^c
INDUSTRIAL MINERALS					
Arsenic trioxide	5,469	6,872	6,866 ^r	8,939	8,900
Barite	469,934	358,500	355,800 ^r	475,575	612,800 ⁵
Cement, hydraulic	thousand metric tons	10,200 ^e	10,400	11,000	11,000
Clays, crude:					
Bentonite	58,754	67,000	85,400 ⁴	64,350	65,000
Fuller's earth (smectite)	43,243	14,944	28,700 ^r	29,060	30,000
Montmorillonite (ghassoul)	2,329	927	1,240 ^r	1,010	1,000
Feldspar	19,401	20,000	30,270 ^r	27,795	28,000
Fertilizers	thousand metric tons	2,602	2,542	2,405 ⁴	2,400
Fluorspar, acid-grade	94,911	81,255	112,100 ⁴	114,740	114,000
Gypsum ^c	600,000	600,000	600,000	600,000	600,000
Phosphate rock:					
Gross weight ⁵	thousand metric tons	23,038	22,877	26,675 ^r	28,788
P ₂ O ₅ content	do.	7,700	7,400	8,507 ^r	9,195
Phosphoric acid	do.	2,921	2,930	3,254 ⁴	3,392
Salt: ⁶					
Rock	266,903	236,700	253,800 ^r	319,900	320,000
Marine ^c	27,622 ⁴	36,000	36,000	36,000	36,000
Total	294,525	272,700	289,800 ^r	356,000	356,000
Strontium minerals, celestite	3,780	2,700	2,700	2,700	2,700
Sulfuric acid	8,600	8,900	9,500	9,500	9,500
Talc and pyrophyllite	39,612	1,959	255 ^r	--	--
MINERAL FUELS AND RELATED MATERIALS					
Coal, anthracite	322	214	200	200	200
Gas, natural:					
Gross	million cubic meters	63	61	40	40
Dry ^c	do.	55	54	35	35
Petroleum:					
Crude	thousand 42-gallon barrels	49	90	246	245
Refinery products:					
Liquefied petroleum gas	do.	2,690	1,000	3,000	3,000
Gasoline	do.	3,210	1,500	3,200	3,300
Jet fuel	do.	1,090	500	1,000	1,000
Kerosene	do.	620	300	900	900
Distillate fuel oil	do.	17,330	8,549 ^r	24,000	24,000
Residual fuel oil	do.	14,000	8,022 ^r	17,000	18,000
Other	do.	1,450	4,420 ^r	2,000	2,000
Total	do.	40,390	24,291	51,000	52,000

^c Estimated, estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. ^r Revised. -- Zero.

¹ Includes data available through November 28, 2007.

² In addition to the commodities listed, perlite and a variety of crude construction materials are produced, but information is inadequate to make reliable estimates of output.

³ Cobalt electrowon from cobalt concentrates and tailings from the Bou-Azzer Mine.

⁴ Reported figure.

⁵ Reported production.

⁶ May include production from Western Sahara.

Source: Office National des Hydrocarbures et des Mines.

TABLE 2
MOROCCO AND WESTERN SAHARA: STRUCTURE OF THE MINERAL INDUSTRIES IN 2006

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
MOROCCO			
Arsenic trioxide	Compagnie de Tifnout Tiranimine (CTT) (Managem S.A., 55.2%, and Société Metallurgique d'Imiter, 20%)	Guemassa, Marrakech	6,100
Barite	Central d'Achat et de Développement de la Région Minière du Tafilalet et de Figuig (CADETAF) (artisanal miners)	Errachidia, Figuig, and Ouarzazate	16,000
Do.	Compagnie Marocaine des Barytes (COMABAR) [Norbar Minerals AS, 55%, and Bureau de Recherches et de Participations Minières (BRPM), 45%]	Tlet Ighoud, Safi	160,000
Do.	do.	Zelmou, Figuig	110,000
Do.	Morocco Minerals Co.	Chemaia, Safi	NA
Do.	Ouiselsat Mines S.A.	Tazzarine, Ouarzazate	NA
Do.	Société de Commercialisation et d'Exploitation Minière d'Imoulasse (SCEMI)	NA	NA
Do.	Société Commerciale et Minière du Sahara (SOCOMIS)	Tichka	NA
Do.	Société de Recherches et d'Exploitation Minières Nadia	Tinitine, Marrakech	NA
Do.	Société Industrie Minière Marocaine (IMM)	Tichka, Marrakech	NA
Do.	Société Minière des Barytines d'Asni (SMBA)	NA	NA
Do.	Société Nord Africaine de Recherches et d'Exploitation des Mines d'Argana (SNAREMA)	Seksaoua, Marakech	120,000
Do.	Société Nouvelle Union des Metaux Maroc (SNUMM)	Jbel Abdellah, Errachidia	12,000
Do.	Société Zenaga	Tinjdad, Errachidia	NA
Barite, chemical grade	Société Nord Africaine de Recherches et d'Exploitation des Mines d'Argana (SNAREMA)	Argana	30,000
Bentonite	Société Minière Bentonite d'Afarha S.A. [Grupo Tolsa of Spain, 80%, and Bureau de Recherches de Participations Minières (BRPM), 20%]	Aferha	9,200
Do.	Société d'Exploitation des Mines du Rif (SEFERIF) [Bureau de Recherches de Participations Minières (BRPM), 100%]	Bou Hoed, near Ouixane	15,000
Do.	Compagnie Marocaine des Barytes (COMABAR) [Norbar Minerals AS, 55%, and Bureau de Recherches de Participations Minières (BRPM), 45%]	Azzouzet-Tidiennit	5,000
Celestite	Société Karia Mines	Jbel Kifane, Taounate	NA
Cement, portland	Asment de Temara (Cimentos de Portugal, 57.4%)	Kiln and mill at Temara	845,000
Do.	Société Lafarge Ciments S.A. (Lafarge Maroc, 69.2%; general public, 12.23%; Caisse de Dépôt et de Gestion, 8.25%; Islamic Development Bank, 5.46%)	Douar Laaouameur kiln and mill south of Casablanca	2,000,000
Do.	do.	Cadem clinker mill at Meknes	1,000,000
Do.	do.	Tamuda kiln and mill, Tetouan	800,000
Do.	do.	Kiln and mill at Tangier	250,000
Do.	do.	Tetouan II kiln and mill	(1)
Do.	Société Holcim (Maroc) S.A. (Holcim Ltd. of Switzerland, 51%; general public, 35.2%; Islamic Development Bank, 13.8%)	Kiln and mill at Oujda	1,000,000
Do.	do.	Fes, Ras El Ma kiln and mill	1,200,000
Do.	do.	Fes, Doukkarat clinker mill	600,000
Do.	do.	Nador clinker mill	400,000
Do.	Société les Ciments du Maroc S.A. (CIMAR) (Ciments Français S.A., 58.3%; general public 8.97%; Caisse Interprofessionnelle Marocaine des Retraites, 7.78%; Banque Nationale pour le Développement Economique, 5.65%; Fonds d'Abu Dhabi pour le Développement Economique Arabe, 5.38%)	Kiln and mill at Agadir	1,220,000
Do.	do.	Kiln and mill at Marrakech	1,300,000
Do.	do.	Kiln and mill at Safi	850,000
Do.	do.	Laâyoune clinker mill	350,000
Clay	Société du Ghassoul et de ses Derives SEFRIOUI SA	Tamadafelt	NA
Do.	Antonio Reyes Mine	Haddou Ammar, Nador	NA
Coal, anthracite	Charbonnages du Maroc [Bureau de Recherches de Participations Minières (BRPM), 98.89%]	Jerada ²	650,000

See footnotes at end of table.

TABLE 2--Continued
MOROCCO AND WESTERN SAHARA: STRUCTURE OF THE MINERAL INDUSTRIES IN 2006

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
MOROCCO--Continued				
Cobalt:				
Ore, gross weight		Compagnie de Tifnout Tiranimine (CTT) (Managem S.A., 55.2%, and Société Metallurgique d'Imiter, 20%)	Bou-Azzer, Ouarzazate	17,000
Metal		do.	Guemassa, Marrakech	1,400
Copper, concentrate		Société Minière de Bou Gaffer (SOMIFER) [Bureau de Recherches de Participations Minières (BRPM), 34.2%; Société Metallurgique d'Imiter, 36%; Managem S.A., 7.6%]	Bleida	50,000
Do.		Compagnie Minière de Guemassa (CMG) [Managem S.A., 74%, and Bureau de Recherches de Participations Minières (BRPM), 23.08%]	Douar Hajar Mine, Guemassa, Marrakech	18,000
Do.		Société de Développement du Cuivre de l'Anti-Atlas (SODECAT) [Bureau de Recherches de Participations Minières (BRPM), 100%]	Tiout	4,500
Fluorspar, concentrate		Société Anonyme d'Entreprises Minières (SAMINE) (Managem S.A., 58%, and Société Metallurgique d'Imiter, 42%)	El Hammam, Khémisset	120,000
Gold		Akka Gold Mining Company [Managem S.A., 70%, and Bureau de Recherches de Participations Minières (BRPM), 16.07%]	Iourim, Tiznit	3
Liquefied petroleum gas	million metric tons	Société d'Exploitation des Mines du Rif (SEFERIF) [Bureau de Recherches de Participations Minières (BRPM), 100%]	Bouhoua, Nador	12
Lead:				
Concentrate		Compagnie Minière de Guemassa (CMG) [Managem S.A., 74%, and Bureau de Recherches de Participations Minières (BRPM), 23.08%]	Douar Hajar Mine, Guemassa	29,900
Do.		Compagnie Minière de Touissit (CMT) (Compagnie Royale Asturienne des Mines S.A. of Belgium, 100%)	Touissit, Jerada	73,000
Metal ²		Société des Fonderies de Plomb de Zellidja (SFPZ) (Zellidja S.A., 50.4%)	Oued El Heimer	70,000
Manganese, concentrate		Société Anonyme Chérifienne d'Etudes Minières (SACEM) [Bureau de Recherches de Participations Minières (BRPM), 43%, and Compagnie Minière de l'Ogooué SA (COMILOG), 30%]	Imini, Ouarzazate	14,000
Perlite		Perlite Roche [Roche Investments, 70%, and Bureau de Recherches de Participations Minières (BRPM), 20%]	Tidiennit	20,000
Do.		Perlite Inc. (Roche Investments)	Expansion plant at Berrechid, near Casablanca	NA
Petroleum, refinery products	thousand 42-gallon barrels	Société Anonyme Marocaine de l'Industrie du Raffinage (SAMIR) (Group Corral Petroleum, 64.7%, and general public, 35.3%)	Mohammedia	47,000
Do.	do.	do.	Sidi Kacem	9,500
Phosphate rock		Office Chérifien des Phosphates (OCP) (Government, 100%)	Sidi Daoui Mine, Khouribga mining center	10,000,000
Do.		do.	Mera El Arech Mine, Khouribga mining center	6,000,000
Do.		do.	Benguerir open-pit mine, Gantour mining center	4,000,000
Do.		do.	Youssoufia underground mine, Gantour mining center	3,000,000
Do.		do.	Sidi Chennane Mine, Khouribga mining center	2,000,000
Phosphoric acid, P ₂ O ₅ content		Indio Maroc Phosphore S.A. [Office Chérifien des Phosphates (OCP), 50%, and K.K. Birla Group of India, 50%]	Jorf Lasfar	330,000
Do.		Office Chérifien des Phosphates (OCP)	Maroc Chimie I and II, Safi	270,000
Do.		do.	Maroc Phosphore I and II, Safi	1,100,000
Do.		do.	Maroc Phosphore III and IV, Jorf Lasfar	1,400,000
Phosphoric acid (purified), P ₂ O ₅ content		Euro-Maroc Phosphore Co. [Office Chérifien des Phosphates (OCP), 33%; Société Chimique Prayon-Rupel of Belgium, 33%; Chemische Fabrik Budenheim KG of Germany, 33%]	Jorf Lasfar ³	120,000

See footnotes at end of table.

TABLE 2--Continued
MOROCCO AND WESTERN SAHARA: STRUCTURE OF THE MINERAL INDUSTRIES IN 2006

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
MOROCCO--Continued			
Salt:			
Rock	Société de Sel de Mohammedia (SSM) [Bureau de Recherches de Participations Minières (BRPM), 100%]	Aïn Tekki, Mohammedia	226,500
Marine	Société Chérifienne des Sels (SCS) [Bureau de Recherches de Participations Minières (BRPM), 50%; Société Nouvelle des Salins du Sine Saloum (SNSSS), 50%]	Lac Zima, Safi	30,000
Silver, ore	Société Metallurgique d'Imiter (SMI) (Managem S.A., 75.72%, and general public, 24.28%)	Near Quarzazate	525
Steel products:			
Bars and sections	Société Nationale de Sidérurgie (Sonasid) (general public, 31.14%; Société Nationale d'Investissement S.A., 21.07%; Axa Assurances Maroc, 8.53%; Aceralia Redendos, 8.5%)	Jorf Lasfar	300,000
Rebar and wire rod	do.	Nador	540,000
Do.	do.	Casablanca	80,000
Cold-rolled sheet	Maghreb Steel S.A.	do.	250,000
Talc and pyrophyllite:			
Pyrophyllite	Société Industrie Minière Marocaine (IMM)	Khenifra	NA
Talc	Société Zenaga	Tinjdad, Errachidia	NA
Do.	do.	Taliouine, Ouarzazate	NA
Zinc, concentrate	Compagnie Minière de Guemassa (CMG) [Managem S.A., 74%, and Bureau de Recherches de Participations Minières (BRPM), 23.08%]	Douar Hajar Mine, Guemassa	170,000
Do.	do.	Draa Sfar	(1)
Do.	Société des Mines de Tenuous (SOMITE)	Aguerd N'Tazoult, Azilal	NA
Do.	Société Mineral et Substances	Lalla Mimouna, Taza	NA
WESTERN SAHARA			
Phosphate rock	Phosphates de Boucraa S.A. [Office Chérifien des Phosphates (OCP), 65%]	Open pit mine, Boucraa mining center	2,000,000

NA Not available.

¹Under construction.

²SFPZ also refines silver and produces copper matte and sodium antimonate.

³A second purified phosphoric acid plant with a capacity of 120,000 metric tons per year was under construction.