

# **2009 Minerals Yearbook**

# UGANDA

# THE MINERAL INDUSTRY OF UGANDA

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Uganda's Sustainable Management of Mineral Resources Project (SMMRP), which began in 2004 and was funded by the Asian Development Bank, the Government of Uganda, the Nordic Development Fund, and the World Bank, continued to create investment opportunities in the mineral sector in 2009. The focus of the SMMRP was to acquire geologic data and create an environment that would attract investors to the mineral resource sector. Final results of the SMMRP-funded airborne geophysical surveys that covered about 80% of the country will be useful for mineral exploration. A variety of minerals were identified by Paterson, Grant & Watson Ltd. of Canada using the four geophysical surveys they performed in 2008 and 2009 for the SMMRP and included asbestos, beryllium, bismuth, clay, copper, chromite, diamond, gold, graphite, kyanite, marble, niobium (columbium)/tantalum, phosphates, silica sand, talc, tin, uranium, vermiculite, wolframite, and minor occurrences of other minerals. SMMRP also ensured that financial support in the form of small grants was available to encourage smallscale miners and artisanal operators to legalize their operations (Kasita, 2009a). Information about airborne geophysical data for Uganda is available at the Web site for the Ministry of Energy and Mineral Development (Ministry of Energy and Mineral Development, 2011).

The Government requested a 2-year extension of the original SMMRP closing date of yearend 2009 despite the project's cost overrun that was owing to higher-than-expected costs for technical assistance on geologic information analysis and mapping. The additional funding would support existing and new contracts in order to complete all activities originally planned under the project. Exploration was expected to increase as a result of the SMMRP (World Bank, The, 2009).

The Ministry of Energy and Mineral Development's purpose is to provide policy guidance for the development and exploitation of the country's energy and mineral resources; to acquire, process, and interpret technical data to establish the energy and mineral resources of the country; to create a financial environment that will attract investment in the exploration, development, and utilization of energy and mineral resources; and to inspect, regulate, monitor, and evaluate activities of private companies in the energy and mineral sectors to ensure that the resources are developed, exploited, and used on a rational and sustainable basis. The Ministry consists of four technical departments and a support services organization under one directorate. The four technical departments are the Energy Resources Department, the Geological Survey and Mines Department, the Petroleum Exploration and Production Department, and the Petroleum Supply Department (Ministry of Energy and Mineral Development, 2009).

#### **Minerals in the National Economy**

The Government expected to earn about \$55 million from its mineral commodity exports in 2009 compared with \$52.7 million

earned in 2008 (Biryabarema, 2009). The revenue from the issuance of mining licenses increased from U Sh1.2 billion (\$519,000<sup>1</sup>) in 2004 to U Sh3.3 billion (\$2.4 million) at yearend 2009. By midyear 2009, the Government had issued 498 mining licenses as part of its efforts to develop the mineral resource sector. The upward trend was expected to continue as more geologic information became available (Bugembe and Kasita, 2009).

#### Production

Uganda produced several metallic minerals, including cobalt, gold, iron ore, steel, and tungsten. Uganda also produced industrial minerals, such as gypsum, kaolin and other clays, lime, salt, and vermiculite, and such building materials as cement, limestone, and pozzolanic materials. Most of Uganda's aggregate, cobalt, gold, and vermiculite production was exported; production of these commodities was dependent upon world market conditions. Production and consumption of cement, limestone, pozzolanic materials, and steel depended primarily on the domestic construction sector. Data on Uganda's mineral production are in table 1.

#### Structure of the Mineral Industry

Table 2 is a list of the major mineral industry facilities in Uganda. The table provides the location and production capacities of these facilities.

#### **Commodity Review**

#### Metals

**Copper.**—After about 32 years of near dormancy, a \$200 million bid was made by A-Tec Industries of Austria to restart the Government-owned Kilembe Copper Mines at Jinja. A-Tec also signed a sublease to refurbish and operate the dilapidated smelter at the Kilembe Copper Mines site. A-Tec had set up a subsidiary in Uganda, A-Tec Industries (U) Ltd., which was to lead its efforts to tap into the natural resources in Eastern and Central Africa, starting with Uganda. When Kilembe had produced copper previously, the ore was transported by train to Jinja for smelting, but A-Tec stated that its plan was to build a plant in Kasese to do the preliminary processing and to transport some material by road. An estimated 400 metric tons (t) of copper ore was stockpiled along with a quantity of copper slabs that would be recycled. There was also a potential for recoverable cobalt and gold as coproducts from the copper ore (Magumba, 2009).

**Gold.**—Occurrences of gold are found in Bushenyl, Busia, Hojma, Jinja, Kabale, Kabarole, Karamoja, Kibale, Kitgum,

<sup>&</sup>lt;sup>1</sup>Where necessary, values have been converted from Uganda shillings (U Sh) to U.S. dollars (US\$) at a rate of U Sh2,313=US\$1.00.

Mbale, Mubende, Rukungiri, and West Nile. Only two gold mines (Busia and Mubende) were established in 2009. The Tira Mine had been operating since 1994 (Kasita, 2009b).

**Iron and Steel.**—The Uganda Investment Authority was reported to be promoting the establishment of a pig iron plant to supply the steel manufacturing industry. Most mills were using scrap as the basic material. There was a potential for the mining of iron ore in Uganda. The country's steel consumption was about 80,000 metric tons per year (t/yr) but production was about 7,000 t/yr. The demand was increasing at a rate of 10% per year. The Kasenyi iron ore deposits have estimated proven reserves of about 5 million metric tons (Mt); however, additional resources were estimated to be 50 Mt (AllAfrica. com, 2009).

Steel Rolling Mills Ltd. was a significant producer of steel products in East Africa and specialized in the manufacture of various high-tensile profiles and sections that conform to British Standard 4449:1997, Specifications for Carbon Steel Bar. Steel Rolling Mills was a leading producer of ingots, which are used in rolling mills, and it had one of the most modern furnaces in East Africa. The company was in a position to double its output; however, the scarcity of scrap hindered its efforts to do this (Steel Rolling Mills Ltd., 2009).

**Niobium (Columbium), Tantalum, Tin, and Tungsten.**—A large occurrence of niobium (columbium)-tantalum was associated with the country's carbonatite intrusions, notably at Sukulu in eastern Uganda where pyrochlore occurs in eluvial soils. Small deposits of placer tin occur in southern Uganda and in southwestern Uganda. Artisanal production was difficult to quantify. Tungsten mineralization was found in two main zones—as wolframite and ferberite in quartz veins associated with graphitic shale and as wolframite in beryl-bearing apatite (MBendi Information Services (Pty) Ltd., 2009).

#### **Industrial Minerals**

**Cement.**—Hima Cement Industries Ltd. (a subsidiary of the Lafarge Group of France) posted a profitable first 6 months of 2009; however, it was concerned about the inexpensive cement imports that were entering Uganda. One reason for the low cost of these imports was that in midyear 2008, East African Governments had removed cement from the list of sensitive products that needed to be protected from competition; this reduced the common external tariff from 55% to 25% and opened the market to the possibility of imported cement flooding the market. These imports were often sold at below market price and tended to be of substandard quality (Matsiko, 2009).

**Vermiculite.**—Gulf Resources Ltd. of Australia announced estimated inferred reserves of 54.9 Mt of vermiculite grading 26.7% at its Namekara project, which is located in eastern Uganda about 190 kilometers (km) east of Kampala. Gulf Resources asserted that Namekara, which it purchased from Rio Tinto plc in early 2009, was the world's leading deposit of the coarser grained construction and horticulture vermiculite. Gulf Resources planned to inject \$500,000 of working capital into the operation to achieve 8,000 metric tons per year (t/yr). The company was also planning to increase production to 25,000 t/yr by 2012 (Industrial Minerals, 2009b). Gulf Resources stated that it had signed a supply contract to sell 5,000 t/yr of vermiculite to an unidentified customer in Europe that had agreed to a 10-year offtake. The amount of vermiculite was more than 60% of the forecasted production of the Namekara Mine (Industrial Minerals, 2009a).

#### Mineral Fuels and Related Materials

**Petroleum.**—By yearend 2009, test flow data results encountered on all petroleum wells drilled in Uganda and other data were used to estimate that Uganda's petroleum resources were about 2 billion barrels (Gbbl) of recoverable petroleum in the western and northwestern areas and might exceed 6 Gbbl of recoverable petroleum as exploration continued. If these projections prove to be accurate, Uganda would move into the upper echelon of Africa's petroleum producers. Out of 34 wells drilled, 32 had encountered natural gas or petroleum. Commercially viable reserves were first discovered in 2006 in the region along the border with the Democratic Republic of the Congo [Congo (Kinshasa)] (Rigzone.com, 2009).

The Government announced that it supported the proposed takeover of Heritage Oil plc of the United Kingdom's interests in Uganda by Eni S.p.A. of Italy. The Government stated that Uganda needed larger companies to help exploit its petroleum reserves and fully supported Eni's plans to take over Heritage's interests. Eni was planning to review all available geologic data on Heritage Oil's properties (Bariyo, 2009b).

Tullow Oil plc of the United Kingdom announced that it would start a comprehensive study of its Ugandan oil properties to determine the best options to exploit them. Uganda's petroleum is very low in sulfur content, which makes it competitive on the world petroleum market; it has very high wax content, however, and solidifies if allowed to drop below 29° Celsius, which means that it probably would have to be chemically treated and heated to be transported in a pipeline. Uganda's petroleum region is remote and is located about 1,300 km from the Port of Mombasa, Kenya, so an export project would require a pipeline, as well as other support infrastructure, such as a rail line and roads (Bariyo, 2009a).

Tullow Oil announced that the Kasamene-2 appraisal well, which is located in the Butiaba region of Uganda Block 2, encountered 39 meters (m) of net crude pay and 8 m of gas pay within a 132-m gross interval. The well is located near the crest of the field and 1 km northeast of the Kasamene-1 well; it was drilled to a total depth of 866 m. The reservoir quality was excellent, and the net pay thickness was the largest encountered in the Butiaba area in 2009. An additional four appraisal wells were planned to be drilled in 2010 to delineate the other discoveries in the area. Tullow had interests in three licenses in the Lake Albert Rift Basin. Tullow was the owner and operater of Block 2 (100% interest) and it had a 50% interest in Blocks 1 and 3A, which were operated by Heritage Oil (Market Watch, 2010).

Tullow Oil also announced that the Giraffe-1 exploration well, which is located in the Butiaba region of Block 1, encountered more than 38 m of net crude pay within an 89-m gross crude-bearing interval. The results demonstrated that the Giraffe-1, which was drilled 6.5 km south of the crest of the Buffalo-Giraffe structure, was a down-dip extension of the Buffalo discovery, making this a significant discovery in the Lake Albert Rift Basin (Tullow Oil plc, 2009a).

Tullow Oil announced that the Kigogole-3 exploration well, which is located in the Butiaba region of Block-2, encountered more than 20 m of net crude pay in two separate zones. Located about 1 km from the crest of the structure, the well was drilled to a total depth of 575 m. Kasamene-type reservoir sands were encountered in the lower zone with more than 15 m of net pay. Kigogole-3 was the eighth successful test of the Victoria Nile Delta play fairway within the Lake Albert Rift Basin (Tullow Oil plc, 2009b).

Tullow Oil announced that the Ngassa-2 well, which is located in the Kaiso-Tonya region of Block 2, encountered 7 m of crude oil pay in 14 m of gross sand. Ngassa-2 was a deviated well drilled from the Angara spit, 3.5 km from the crest of the structure, to a total depth of 3,392 m beneath the lake. Logging, down-hole pressure testing, and sampling confirmed the presence of movable oil, which had been recovered at the surface. The reservoir quality was excellent and the oil was of similar quality to that encountered in the Kingfisher and the Mputa discoveries. Tullow Oil stated that it considered the Ngassa structure to have the potential to be the largest oilfield in the Lake Albert Rift Basin following the success of the Ngassa-2 well (Tullow Oil plc, 2009c).

The Government issued an international tender for feasibility studies on the construction of a 150,000-barrel-per-day refinery as it moved closer to the start of petroleum production. The Government did not want to export unrefined crude petroleum when it started production in the next 3 to 4 years. The feasibility studies would examine the anticipated petroleum production, the viability of the refinery, the location of the refinery, and the regional oil-product market. The study was being funded by the Government of Norway (Dow Jones Newswires, 2009).

**Uranium.**—The Atomic Energy Act of 2008 did not come into force in 2009 because Uganda's Atomic Energy Council had not been established. The creation of the Council was necessary for controlling the movement of radioactive material in the country. The Government initiated a more than \$1 million technical assistance program with the International Atomic Energy Agency to set up a program called the National Energy Program for Uganda (African Mining Intelligence, 2009).

IBI Corp. of Canada outlined its uranium strategy to the Government, which was to develop any viable uranium deposits it discovers on its 2,000 square kilometers of land designated for uranium exploration, with a view to exploiting these resources. IBI's uranium strategy anticipated working with the Government towards a nuclear electrical power generation program to meet the current and future need for increased electrical power in Uganda and all of East Africa (Filing Services Canada, 2009).

#### Outlook

Most of Uganda's cobalt, columbite-tantalite, gold, and vermiculite production will likely continue to be exported; the outlook for these commodities depends heavily upon world market conditions. For cement, limestone, and pozzolanic materials, the outlook depends primarily upon the strength of the domestic construction sector. The aid provided to Uganda by the African Development Fund, the Nordic Development Fund, and the World Bank Group under the SMMRP will continue to assist the country in increasing production and tax revenues from its mining sector. Exploration for petroleum is expected to continue to be strong, and the sector is expected continue to develop as the success rate of the exploration wells drilled increases. The continued unreliability of power supplies is expected to pose difficulties for mining and mineral processing operations.

#### **References Cited**

- African Mining Intelligence, 2009, New law on uranium blocked: African Mining Intelligence, no. 29, April, p. 29.
- AllAfrica.com, 2009, Uganda—Guaranteed returns in pig iron production: AllAfrica.com. (Accessed February 9, 2011, at http://allafrica.com/ stories/200907131240.html.)
- Bariyo, Nicholas, 2009a, Tullow to start Uganda oil devt study next year: Dow Jones & Company, September 21. (Accessed September 23, 2009, at http://www.rigzone.com/news/article.asp?a\_id=80536.)
- Bariyo, Nicholas, 2009b, Uganda Govt backs Eni-Heritage takeover deal: The Wall Street Journal. (Accessed December 9, 2009, at http://online.wsj.com/ article/BT-CO-20091209-702778.html.)
- Biryabarema, Elias, 2009, Uganda's 2009 mineral exports earnings seen edging up: Thomson Reuters. (Accessed December 7, 2009, at http://af.reuters.com/ articlePrint?articleId=AFJOE5B306720091205.)
- Bugembe, Anthony, and Kasita, Ibrahim, 2009, Uganda—Govt. gets sh3.3 billion from mining licenses: New Vision. (Accessed January 9, 2011, at http://www.allafrica.com/stories/200907200008.html.)
- Dow Jones Newswires, 2009, Uganda issues international tenders for refinery feasible studies: Dow Jones & Company, Inc. (Accessed September 18, 2009, at http://english.capital.gr/news.asp?id=7967713.)
- Filing Services Canada, 2009, President of Uganda receptive to IBI uranium exploration and development strategy: Filing Services Canada. (Accessed February 10, 2009, at http://www.usetdas.com/TDAS/ NewsArticle.aspx?NewsID=13065.)
- Industrial Minerals, 2009a, Gulf vermiculite supply contract: Industrial Minerals, October 8. (Accessed November 28, 2009, at http://www.indmin.com/Print.aspx?ArticleId=2312434.)
- Industrial Minerals, 2009b, Uganda—World class vermiculite: Industrial Minerals, July 27. (Accessed September 17, 2009, at http://www.indmin.com/ Print.aspx?ArticleId=2261120.)
- Kasita, Ibrahim, 2009a, Uganda—Country in mineral boom: New Vision, July 15. (Accessed June 1, 2010, at http://www.allafrica.com/stories/200907160091.html.)
- Kasita, Ibrahim, 2009b, Uganda—Gold in Mubende, Arua, Jinja, and Kitgum: New Vision. (Accessed January 9, 2011, at http://www.allafrica.com/ stories/200907160110.hrtml.)
- Magumba, Tom, 2009, Austrian investor tables bid for Kilembe mines: Daily Monitor 2009. (Accessed July 14, 2009, at http://www.monitor.co.ug/ artman/publish/business\_power/Austrian\_investor\_tables\_bid\_for\_Kilembe\_ mines\_73434.shtm.)
- Market Watch, 2010, Kasamene-2 appraisal well—A success for early development plans: Tullow Oil plc, January 22. (Accessed January 25, 2010, at http://www.marketwatch.com/story/tullow-oil-finds-gas-at-kasamene-2-well-2010/-01-22.)

Matsiko, Haggae, 2009, Rising cement imports threaten Hima survival: Observer, The, September 9. (Accessed September 14, 2009, at http://www.observer.ug/index.php?option=com\_content&task=view&id= 5043&ltemid=68.)

- MBendi Information Services (Pty) Ltd., 2009, Mining in Uganda—Overview: MBendi Information Services Ltd. (Accessed January16, 2011, at http://www.mbendi.com/indy/ming/af/ug/p0005.htm.)
- Ministry of Energy and Mineral Development, 2009, About us— Departments—Ministry of Energy and Mineral Development: Ministry of Energy and Mineral Development. (Accessed April 1, 2010, at http://www.energyandminerals.go.ug/strat.php.)
- Ministry of Energy and Mineral Development, 2011, Airborne geophysical digital data dissemination policy: Ministry of Energy and Mineral Development. (Accessed August 23, 2011, at http://www.uganda-mining.go.ug/magnoliaPublic/en/InvestorsGuide/mainColumnParagraphs/00/content\_files/file/Uganda\_Airborne\_data.pdf.)

Rigzone.com, 2009, Uganda's oil reserves could reach six billion barrels: Rigzone.com. (Accessed August 21, 2009, at http://www.rigzone.com/news/ article\_pf.asp?a\_id=79783.)

Steel Rolling Mills Ltd., 2009, The most reliable steel bars in the region: Alam Group. (Accessed June 1, 2009, at http://www.alam-group.com/srm.html.)

- Tullow Oil plc, 2009a, Major discovery in the Giraffe-1 exploration well in Uganda: Tullow Oil plc, January 13. (Accessed January 14, 2009, at http://www.tullowoil.com/tlw/media/news/2009/2009-01-13.)
- Tullow Oil plc, 2009b, Oil discovery in the Kigogole-3 exploration well in Uganda: Tullow Oil plc, June 16. (Accessed June 22, 2009, at http://www.tullowoil.com/mobile/index.asp?pageid=13&newsid=634.)
- Tullow Oil plc, 2009c, Oil discovery in the Ngassa-2 exploration well in Uganda: Tullow Oil plc, September 17. (Accessed September 17, 2009, at http://www.tullowoil.com/mobile/index.asp?pageid=13&newsid=640.)
- Bariyo, Nicholas, 2009b, Uganda Govt backs Eni-Heritage takeover deal: The Wall Street Journal. (Accessed December 9, 2009, at http://online.wsj.com/ article/BT-CO-20091209-702778.html.)
- World Bank, The, 2009, Sustainable management of mineral resources additional funding: The World Bank. (Accessed September 10, 2009, at http://www.worldbank.org/external/projects/Main?pagePK=64312881&piPK= 64302848.)

# TABLE 1 UGANDA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

#### (Metric tons unless otherwise specified)

| Commodity <sup>2</sup>                                 |           | 2005            | 2006             | 2007                    | 2008             | 2009 <sup>e</sup> |
|--------------------------------------------------------|-----------|-----------------|------------------|-------------------------|------------------|-------------------|
| Aggregate, svenitic                                    |           | 4.519           | 6,080            | 8,994                   | 9,000            | 10,000            |
| Beryllium, mine output, Be content                     |           | 2               |                  | 2                       | 2                | 2                 |
| Cement. hydraulic <sup>e</sup>                         |           | 630,000         | 630,000          | 650,000                 | 650,000          | 620,000           |
| Clay:                                                  |           |                 |                  |                         |                  |                   |
| Kaolin                                                 |           | 55              | <sup>r</sup>     | 8,152 <sup>r, 3</sup>   | 8,200            | 8,000             |
| Other <sup>e</sup>                                     |           | 51,000          | 50,000           | 50,000                  | 50,000           | 50,000            |
| Cobalt, refined                                        |           | 638             | 689              | 632 <sup>r, 3</sup>     | 663 <sup>3</sup> | 660               |
| Gold, mine output, Au content <sup>4</sup>             | kilograms | 46              | 22               | 25 <sup>r, 3</sup>      | 25 <sup>r</sup>  | 25                |
| Gypsum                                                 |           | 285             | 121              | 168 <sup>r, 3</sup>     | 175 <sup>r</sup> | 170               |
| Iron ore                                               |           | 209             | 209 <sup>r</sup> | 366 <sup>r, 3</sup>     | 360 <sup>r</sup> | 360               |
| Lead, metal content                                    |           |                 | 46               | 38                      | 40               | 45                |
| Lime, hydrated and quick <sup>e</sup>                  |           | 10,000          | 10,000           | 10,000                  | 10,000           | 10,000            |
| Limestone                                              |           | 540,756         | 425,611          | 447,463 <sup>r, 3</sup> | 450,000          | 450,000           |
| Niobium (columbium) and tantalum, ore and concentrate: |           |                 |                  |                         |                  |                   |
| Gross weight                                           | kilograms | 273             | 275              | 275                     | 275              | 275               |
| Nb content <sup>e</sup>                                | do.       | 130             | 130              | 130                     | 130              | 130               |
| Ta content <sup>e</sup>                                | do.       | 70              | 70               | 70                      | 70               | 70                |
| Pozzolanic material                                    |           | 138,933         | 213,640          | 280,522 <sup>r, 3</sup> | 200,000          | 200,000           |
| Salt <sup>e</sup>                                      |           | 1,500           | 1,500            | 1,500                   | 1,500            | 1,500             |
| Steel <sup>e</sup>                                     |           | 30,000          | 20,000           | 7,000                   | 7,000            | 7,000             |
| Tin, mine output, Sn content                           |           |                 |                  | 23 <sup>r, 3</sup>      |                  |                   |
| Tungsten, mine output, W content                       |           | 45 <sup>r</sup> | 95 <sup>r</sup>  | 108 <sup>r</sup>        | r                |                   |
| Vermiculite                                            |           | 2,574           | 3,512            | 3,269 <sup>r, 3</sup>   | 3,200            | 3,200             |

<sup>e</sup> Estimated; estimated data are rounded to no more than three significant digits. do. Ditto. <sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through December 31, 2010.

<sup>2</sup>In addition to the commodities listed, the following are presumably produced but available information is inadequate to estimate output: corundum,

lead, marble, sand and gravel, silica sand, and soapstone.

<sup>3</sup>Reported figure.

<sup>4</sup>Does not include smuggled artisanal production.

### TABLE 2 UGANDA: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

#### (Metric tons unless otherwise specified)

|                         |           |                                                                |                             | Annual           |
|-------------------------|-----------|----------------------------------------------------------------|-----------------------------|------------------|
| Commodity               |           | Major operating companies and major equity owners              | Location of main facilities | capacity         |
| Cement                  |           | Tororo Cement Industries Ltd.                                  | Tororo                      | 700,000          |
| Do.                     |           | Hima Cement Industries Ltd. (Bamburi Cement Ltd., 70%)         | Kasese                      | 350,000          |
| Cobalt, refined         |           | Kasese Cobalt Company Ltd. (Blue Earth Refineries Ltd.,        | do.                         | 1,000            |
|                         |           | 75%, and Government, 25%)                                      |                             |                  |
| Gold                    | kilograms | Busitema Mining Company Ltd. (Grey Crown Resources Ltd.)       | Mines at Busia and Mubende  | 400              |
| Lead, refined secondary |           | Uganda Batteries Ltd.                                          | Kampala                     | 1,000            |
| Niobium (columbium)     | kilograms | M/S Technical Support and Services Ltd.                        | Wampewo                     | NA               |
| and tantalum            |           |                                                                |                             |                  |
| Steel:1                 |           |                                                                |                             |                  |
| Crude                   |           | Steel Corp. of East Africa Ltd. (subsidiary of Madhvani Group) | Jinja                       | 25,000 2         |
| Do.                     |           | Steel Rolling Mills Ltd. (subsidiary of Alam Group Ltd.)       | do.                         | 21,000           |
| Billet                  |           | Steel Corp. of East Africa Ltd. (subsidiary of Madhvani Group) | do.                         | 60,000 2         |
| Rolled                  |           | do.                                                            | do.                         | 101,200 2        |
| Do.                     |           | Steel Rolling Mills Ltd. (subsidiary of Alam Group Ltd.)       | do.                         | 40,000           |
| Do.                     |           | BM Technical Services Ltd.                                     | Mbarara                     | 20,000           |
| Do.                     |           | Sembule Steel Mills Ltd.                                       | Kampala                     | 20,000           |
| Stone, crushed          |           | Hima Cement Industries Ltd.                                    | Kasese district             | NA               |
| Do.                     |           | Kilembe Mines Ltd.                                             | do.                         | NA               |
| Do.                     |           | Tororo Cement Industries Ltd.                                  | Tororo district             | NA               |
| Do.                     |           | Zzimwe Construction Ltd.                                       | Mukono district             | 690,000          |
| Soapstone               |           | African Minerals Ltd.                                          | Moroto                      | NA               |
| Tungsten                |           | Krone Uganda Ltd.                                              | Nyamurilo                   | 115 <sup>2</sup> |
| Vermiculite             |           | Canmin Resources Ltd. (subsidiary of International             | Namekara                    | 25,000           |
|                         |           | Business Investments Corp.)                                    |                             |                  |

<sup>e</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>In addition to its crude, billet, and rolled steel facilities, Uganda has a galvanized steel plant with a capacity of 30,000 metric tons per year.

<sup>2</sup>Not operating in 2009.