



2006 Minerals Yearbook

MALI

THE MINERAL INDUSTRY OF MALI

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Mali is a landlocked country in West Africa that is bordered by Algeria, Burkina Faso, Côte d'Ivoire, Guinea, Mauritania, Niger, and Senegal. In 2006, the population was about 12 million and was growing at an estimated rate of about 2.6% per year. The country's total land and water area is 1.24 million square kilometers (km²) (U.S. Central Intelligence Agency, 2006).

Mali's mining sector was still underdeveloped even though several old and new gold mines have come into production in recent years. The country's vast undeveloped mineral resources included bauxite, chromium, copper, diamond, granite, gypsum, iron ore, kaolinite, lead, lithium, manganese, marble, nickel, niobium, palladium, phosphate rock, rutile, silver, talc, thorium, tin, titanium, tungsten, uranium, and zirconium (Direction Nationale de la Géologie et des Mines, 2006). Silver occurs in association with copper, lead, and zinc at the Tessalit polymetallic deposit in northern Mali; with uranium in Falea to the southwest of the country; and with gold at the Kalana and Morila gold mines (Mr. Fatiaga Kone, Geology Division Chief, Direction Nationale de la Géologie et des Mines, written commun., August 3, 2007).

Most of Mali's mineral deposits occur to the east and west of the country; diamond occurs mainly in the Kenieba area. Iron occurs in various geologic settings and types of deposits, the most important being the oolitic ironstones in the late Proterozoic sediments between the Bafing and the Bakoye Rivers west of Bamako, Mali's capital. A manganese deposit consisting of oxides on weathered gondites occurs to the east of the country. Bauxite deposits overlie late Proterozoic to Permian dolerites and occur in the western portion of the country along the Guinean border. The thickness of the bauxite deposits averages about 10 meters (m) and the Al₂O₃ content in these deposits varies from 39% to 48%. Lithium deposits from spodumene-bearing pegmatites occur in the southwest within the Bougouni area. Apatite, mica, niobium (pyrochlore), and rare-earth minerals are found in carbonatites along the eastern edge of the West African craton. Industrial minerals include barite, diatomite, fluorspar, kaolin, limestone, ornamental stone, and salt. Phosphate resources are located to the south and west of the Adrar des Iforas region. Limestone deposits are located in western Mali near the Bamako-Dakar railway southeast of Kayes. The In Kereit gypsum deposit is located north of Adrar des Iforas. Gypsum also occurs together with salt in the Taoudeni area within Quaternary sabkhas. Lignite and oil shale are said to occur to the west and southeast of the Adrar des Iforas Mountains. Birrimian greenstones that cover an area of about 23,000 km² host most of Mali's known gold deposits. Primary mineralization is said to be almost exclusively of two types: lode mineralization, with native gold in quartz veins and (or) in sulfides disseminated in hosting rocks; and stratabound mineralization in tourmalinized quartzites. Gold also occurs in alluvial and alluvial placers, which are the main source of gold mined by artisans (Kusnir, 1999).

Minerals in the National Economy

In 2006, the contribution of mining to the gross domestic product (GDP) increased to about 14% from 6% in 1998, mostly owing to the production of gold, which, in turn, accounted for about 80% of all mining activities in the country and 65% of the country's total exports. Artisanal and small-scale gold mining was the only source of income for many Malian families (Organisation for Economic Co-operation and Development, 2007, p. 349-350; U.S. Department of State, 2007; Lassana Guindo, Senior Geologist, Direction Nationale de la Géologie et des Mines, oral commun., Bamako, Mali, March 1, 2007).

Government Policies and Programs

The Government agency responsible for the mining sector in Mali is the Direction Nationale de la Géologie et des Mines (DNGM), which is part of the Ministère des Mines de l'Énergie et de l'Eau. Mali is divided into three mining districts: the west mining district, which comprises the administrative region of Kayes; the south mining district, which comprises the southern region of Koulikoro and Sikasso; and the north mining district, which comprises the regions of Gao, Kidal, and Tombouctou. The west mining district, in turn, is subdivided into four mining provinces: a mining province to the north of Kayes, which lies within the Guidimaka region; a mining province to the northeast of Kayes, which lies within the Nioro region; a mining province to the southeast of Kayes, which is host to the Loulo, the Sadiola, the Tabakoto, and the Yatela gold mines, to iron ore and uranium deposits, and to the majority of the country's known kimberlite pipes; and a mining province to the southeast of Kayes, which is host to bauxite, iron ore, limestone, and marble deposits. The south mining district is host to the Kalana and the Morila gold mines, to the Bale, the Kodieram, the Misséni, and the Syama gold deposits, and to the Bougouni lithium deposit. The north mining district is host to the Bah-el-heri and the Dimamou limestone deposits, the Darset gold deposit, the Tamaguilelt phosphate deposit, the Taoudeni salt mine, the Tassiga manganese deposit, and the Tessalit lead and zinc deposit (Direction Nationale de la Géologie et des Mines, 2007).

Production

In 2005, Mali was Africa's fourth ranked producer of gold after South Africa, Ghana, and Tanzania. In 2006, gold production increased by about 17% to 51,957 kilograms (kg) from 44,230 kg in 2005, mostly owing to increased production at the Kalana, the Loulo, the Sadiola, and the Yatela Mines and to new production from the Tabakoto Mine (table 1). No other mineral commodities were produced in significant quantities in the country with the exception of diamond, rock salt, and semiprecious stones, such as amethyst, epidote, garnet, prehnite, and quartz (Madame Anne Marie Camara, President, Union

Nationale des Orpailleurs du Mali, oral commun., Bamako, Mali, March 2, 2007). The Government estimated the total artisanal production of semiprecious stones to be about 10,000 metric tons per year (t/yr). Rock salt was produced by artisanal miners in Taoudenni, northern Mali, and transported by camel to Tombouctou in blocks of about 66 pounds (reported as 30 kg) where it was sold locally and also exported to Burkina Faso and Niger. Mali did not produce cement. Cement was imported from Côte d'Ivoire, Ghana, Senegal, and Togo. Sand and gravel was produced by artisanal miners solely for domestic consumption. Marble and limestone were no longer produced in the country; gypsum production was stopped in 1990 (Lassana Guindo, Senior Geologist, Direction Nationale de la Géologie et des Mines, oral commun., Bamako, Mali, March 1, 2007).

Structure of the Mineral Industry

At least 19 international companies and dozens of local companies were engaged in gold exploration and production in Mali. These included Resolute Mining Ltd. of Australia; Canadian companies African Gold Group Inc., African Metals Corporation (AMC), Avnel Gold Mining Ltd., Axmin Inc., Delta Exploration Inc., Etruscan Resources Inc., Great Quest Metals Ltd., IAMGOLD Corp., Merrex Gold Inc., Nevsun Resources Ltd., North Atlantic Resources Ltd., and Robex Resources Inc.; Cyprus-based PAGE Management Limited; Glencar Mining plc of Ireland; AngloGold Ashanti Ltd. and Central African Gold (through Mali Gold Fields SA and Songhoi Ressources SA) of South Africa; and Cluff Gold plc and Randgold Resources Ltd. of the United Kingdom. Delta Exploration also explored for copper and uranium; Central African Mining and Exploration Company plc (CAMEC) of the United Kingdom explored for bauxite; Rio Tinto plc of the United Kingdom explored for diamond and planned to conduct a multicommodity (commodities not specified) exploration program in the country. Rio Tinto opened an office in Bamako in 2005 (Rio Tinto plc., 2006, p. 3, 9). Table 2 is a list of major mineral industry facilities.

Mineral Trade

Mali's exports to the United States were valued at about \$8 million in 2006 compared with about \$3.7 million in 2005; gold accounted for \$141,000 of these exports. Imports from the United States were valued at about \$43 million in 2006 compared with about \$32 million in 2005. This total included nearly \$1.1 million for excavating machinery, \$60,000 for drilling and oilfield equipment, and \$281,000 for specialized mining equipment (U.S. Census Bureau, 2007a, b).

Commodity Review

Metals

Bauxite and Alumina.—CAMEC (80%) signed a joint-venture agreement with Mali Mining House (a company established by members of the Union Nationale des Opérateurs Miniers) (20%) for the exploration and possible development

of three areas prospective for base metals, including bauxite. The project included the 300-km² Falea concession located in southwestern Mali near the border with Senegal and Guinea, the 2,500-km² Bamako West concession, and the 1,200-km² Sikasso North concession. In 2006, the partners conducted a remote sensing study for these areas, reviewed existing information on previous bauxite exploration, and planned to conduct further exploration in the country (Central African Mining and Exploration Company plc, 2006a, p. 7; 2006b, p. 10-11).

Gold.—In Mali, gold was produced at both the artisanal and industrial levels. Most of the artisanal gold produced in the country came from the Kenieba Valley. Orpailleurs (artisanal gold miners) recovered gold from alluvial deposits in Kenieba and, to a lesser extent, from other areas to the southeast of the country. The town of Kenieba is located about 500 kilometers (km) from Bamako.

About 100,000 of the 200,000 inhabitants of Kenieba were estimated to be directly engaged in gold mining; collectively, they produced about 2,100 kilograms per year (kg/yr) of gold, or about three times what the Kalana gold mine produced in 2006. At least 50% of all artisanal miners in Mali were women; these women were actively involved in all stages of the gold mining process. Gold produced by orpailleurs was sold in Bamako at a price of about \$3.00 per gram and then exported from Bamako to the world at market prices (Madame Anne Marie Camara, President, Union Nationale des Orpailleurs du Mali, oral commun., Bamako, Mali, March 2, 2007, and Mamadou Keita, Secretary, Union Nationale des Orpailleurs du Mali, oral commun., Bamako, Mali, March 2, 2007).

Artisanal gold mining involved the use of rudimentary tools. Gold ore was crushed using large wooden poles and then processed by wind panning or water panning. In early 2007, a large migration of workers, triggered by the discovery of placer gold made by an orpailleur, started a new gold rush at the Moralia gold placer in Kenieba. Moralia is located within the premises of a gold property held under concession by Nevsun Resources. The Government estimated that about 10,000 miners were working the grounds at Moralia in 2007.

At the industrial level, gold was produced from the Kalana, the Loulo, the Morila, the Sadiola Hill, the Tabakoto, and the Yatela Mines. The Tabakoto Mine was opened on May 22, 2006; production as of yearend was 1,181 kg (reported as 37,976 troy ounces). Nevsun Resources, the company that operated the mine, was in the process of reviewing its strategy for the development of the Segala deposit, which is located about 4 km from the Tabakoto Mine, and expected to produce about 2,550 kg (reported as 82,000 troy ounces) in 2007 (Nevsun Resources Ltd., 2006b; 2007, p. 3).

Gold production at the Morila open pit gold mine decreased by about 20.6% to 16,070 kg in 2006 compared with 20,252 kg produced in 2005. Randgold Resources estimated that at current mining rates, mining activities at Morila would cease by 2009, although stockpiled material could extend the life of the mine for another 4 years. In 2006, total measured and indicated resources at Morila were reported to be about 30 million metric tons (Mt) at a grade of 2.61 grams per metric ton (g/t) gold (Randgold Resources Ltd., 2007, p. 24-31).

Gold production at Loulo was expected to increase to about

12,000 kg (reported as 400,000 troy ounces) in 2007 as a result of the opening of the Yalea underground deposit (Mining Journal, 2006b). The Loulo Mine consisted of two main pits—Yalea and Gara (formerly known as Loulo 0)—and other smaller satellite pits. In 2006, the first underground sections at Yalea were being developed, and the company planned to develop a second underground section at Gara by 2008. Measured and indicated mineral resources at Loulo were estimated to be about 61.77 Mt at a grade of 4.64 g/t gold, and inferred resources were estimated to be about 22.8 Mt at a grade of 2.91 g/t gold. The expected life of mine for the Gara deposit was 13 years, and the expected life of mine for the Yalea deposit was 18 years (Randgold Resources Ltd., 2007, p. 8-20).

Gold production from the Sadiola Hill open pit gold mine increased to 15,552 kg in 2006 from 13,748 kg in 2005, mostly owing to the availability of better mining equipment, a milder rainy season, and higher grade sulfide ores. Output for 2007 was expected to decrease to about 13,800 kg as a result of the processing of lower grades of oxide material and a lower gold recovery rate for sulfide ore (IAMGOLD Corp., 2007, p. 10).

Gold production from the Yatela open pit mine increased by about 43% to 10,936 kg from the 7,651 kg produced in 2005. The increase in production was attributed to an increase in the amount of ore processed as a result of a milder rainy season. A cutback was performed on the main Yatela pit during the first quarter of 2006 and, as a result of the deepening of the pit, the estimated life of the Yatela Mine was extended to 2010; prior to this cutback, the Yatela Mine had been expected to close by 2007. Gold production at Yatela was expected to decrease by 22% in 2007, mostly owing to a reduction in mined ore and lower ore grades (IAMGOLD Corp., 2007, p. 37-38).

Production at the redeveloped Kalana underground gold mine increased by about 51.7% to 704 kg (reported as 22,638 troy ounces) from the 464 kg (reported as 14,923 troy ounces) produced in 2005, mostly owing to higher grades being mined and higher gold recovery rates (Avnel Gold Mining Ltd., 2007). Resolute Mining planned to begin production from the redeveloped Syama gold mine during the second half of 2008 at a cost of \$120 million. The mine was expected to produce about 7,800 kg/yr of gold (reported as 250,000 troy ounces) (Mining Journal, 2006a).

Industrial Minerals

Diamond.—In Mali, diamond was recovered from both alluvial deposits (as a byproduct of artisanal gold mining) and from kimberlite pipes (tables 3, 4). The Kenieba region has been host to most diamond discoveries in the country, although some diamond had been recovered from gravels near the Bagoé, the Doundi, and the Niger Rivers.

The presence of diamond in the Kenieba region reportedly came to be known almost by accident. A 1954 police report generated in the city of Kankan, Guinea, which indicated the clandestine sale of a 137.5-carat diamond, allegedly from the Sansanto gold placer near the town of Kenieba, triggered a series of diamond exploration campaigns in the region. These exploration campaigns were undertaken by both the Government and private companies, and they were divided into two phases.

One phase was undertaken between 1954 and 1984, and the other, between 1995 and 1998. The first exploration campaign (1954-1957) was conducted by Direction Fédérale des Mines et de la Géologie (DFMG), a Federal Government agency when Mali, known then as The French Sudan, was part of French West Africa (AOF). DFMG's exploration campaign led to the discovery of a 98-carat diamond in the Sansanto placer on the Doundi River in 1955, and of four kimberlite pipes known as the Kassama, the Kobato, the Sekonomata, and the Toromaya. The second and third independent exploration campaigns took place simultaneously from 1963 to 1966 and were conducted by Société Nationale de Recherche et d'Exploitation Minière (SONAREM) and Selection Trust (SELCO), a private company. Selection Trust's work resulted in the discovery of an additional seven kimberlite pipes: the Batifara, the Bilali, the Dabora, the Fanson, the Kenieba, the Orange, and the Silifoundou. The final exploration campaign (1978-1984) of the first phase was carried out by Syndicat Diamant Mali (SDM), which was a joint venture of the Government of Mali (DNGM), the Bureau de Recherches Géologiques et Minières (BRGM), and Mines et Ressources S.A. (MINERSA) of France (de la Cuesta, 1999, p. 10-14; Aussant and others, 2005, p. 20-25). DeBeers reportedly also evaluated the Kenieba area but the details of its findings were not disclosed. Exploration stopped after Mali's independence and the dissolution of AOF (Girard, 1998, p. 24; de la Cuesta, 1999, p. 1-30; Aussant and others, 2005, p. 20).

Exploration in Kenieba was resumed in 2003 after the Government granted an exploration permit to African Metals Corp. of Canada. As of yearend 2006, at least three Canadian companies were exploring for diamond in the area, including African Metals, Great Quest Metals, and Nevsun Resources. African Metals and Nevsun Mali Exploration Ltd. S.A. (a subsidiary of Nevsun Resources) signed a memorandum of agreement on July 5, 2006, to pool their interests in five diamond concessions in western Mali, known respectively as Dar Salam, Kenieba Nord, Kenieba Sud, Medinandi Sud, and Soumala. These two companies held under concession 23 of the 30 kimberlite pipes known to exist in Mali and 7 of the 9 kimberlite pipes known to be diamondiferous (Nevsun Resources Ltd., 2006a).

The largest diamond discovered to date in Mali was a 232.7-carat diamond known as La Belle de Sudan, which was recovered by orpailleurs near the Doundi River and was reportedly sold in Liberia (Madame Anne Marie Camara, President, Union Nationale des Orpailleurs du Mali, oral commun., Bamako, Mali, March 2, 2007, and Mamadou Keita, Secretary, Union Nationale des Orpailleurs du Mali, oral commun., Bamako, Mali, March 2, 2007).

In 2006, Mali's diamond industry consisted mainly of alluvial diamond recovered by orpailleurs as a byproduct of gold mining. The diamond production chain from discovery to export involved the artisanal miner, a merchant, a collector, and a buyer, which also appraised and exported the diamond from Bamako. The country had at least three appraiser-buyer-exporters, all of which were located in Bamako. Preliminary diamond production estimates were reported to be about 3,000 carats per year. This estimate is based on the account of three diamond buyers in Bamako, each of which exported about

900 carats per year, plus an additional 10% estimate to account for diamond sold by collectors elsewhere. Reportedly, not all diamond was sold through official channels and, as a result, many of the sales were unrecorded. In addition, some collectors south of Kenieba reportedly preferred to cross the border to Guinea to sell their diamond to buyers in the city of Kankan, and in other instances, artisanal miners decided to make the trip to Bamako to have their diamond appraised to avoid the use of an intermediary (François Lampietti, Consulting Geologist, U.S. Geological Survey, oral commun. Bamako, Mali, March 2, 2007, and Madame Anne Marie Camara, President, Union Nationale des Orpailleurs du Mali, oral communication, Bamako, Mali, March 2, 2007). As of yearend 2006, the country's diamond industry remained undeveloped; Mali was not a member of the Kimberley Process Certification Scheme.

Semiprecious Stones.—Artisanal miners produced semiprecious stones, including amethyst, epidote, garnet, prehnite, and quartz. The Government did not collect information on production but estimated the production of all semiprecious stones to be about 10,000 t/yr. Most of the garnet produced in the country was exported to Germany, and most of the prehnite was exported to China; semiprecious stones in general, however, were cut and polished by artisanal miners in Bamako (who were trained by the DNGM) and exported to markets in Asia, Europe, and the United States (Madame Anne Marie Camara, President, Union Nationale des Orpailleurs du Mali, oral commun., Bamako, Mali, March 2, 2007).

Mineral Fuels and Related Materials

Uranium.—In November 2006, Delta Exploration, through Société Delta Exploration Mali SARL, signed an agreement with the Government to explore and develop the Falea copper-uranium deposit. This deposit is located about 350 km west of Bamako and about 240 km south of Kayes (Delta Exploration Inc., 2006).

Outlook

The gold sector is likely to continue to dominate Mali's mineral industry in the short run. Total production of gold for 2007 is expected to decrease by about 10%, mostly owing to a decrease in production at the Sadiola Hill and the Yatela gold mines as a result of the processing of lower ore grades. In the next 4 to 5 years, however, the planned growth of the Loulo Mine, based on the development of the Yalea underground deposit, in addition to new production from the development of the Segala deposit and the extension of the life of mine at the Yatela Mine, will together help counterbalance the tapering off in production from the Morila Mine which is scheduled to stop producing from its main pit in 2009.

Mali has the potential to develop a competitive mineral industry in the region. The presence of at least 19 companies engaged in gold exploration in the country in 2006, political stability, and a seemingly investor-friendly environment, which has recently attracted the interest of several foreign companies in assessing the country's undeveloped bauxite, copper, diamond, and uranium resources, seems to suggest that the

presence of foreign mining interests in the country is likely to increase significantly in the coming years.

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TABLE 1
MALI: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²		2002	2003	2004	2005	2006
Gold, mine output, gold content ³	kilograms	56,043	45,535	37,911	44,230	51,957
Gypsum		-- ^r	-- ^r	-- ^r	-- ^r	--
Salt ⁶		6,000	6,000	6,000	6,000	6,000
Semiprecious stones ⁴		NA	NA	NA	NA	10,000 ⁵

⁶Estimated; estimated data are rounded to no more than three significant digits. NA Not available. ^rRevised. -- Zero.

¹Table includes data available through July 2007.

²In addition to the commodities listed, Mali also produced sand and gravel solely for domestic consumption, but information is inadequate to make reliable estimates of output.

³Excludes artisanal production, which is estimated to be about 2,100 kilograms per year.

⁴Artisanal production of semiprecious stones includes amethyst, epidote, garnet, prehnite, and quartz.

⁵Reported figure.

Source: Direction Nationale de la Géologie et des Mines

TABLE 2
MALI: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities ¹	Annual capacity
Gold		Société de la Mine d'or de Kalana (Avel Gold Mining Ltd., 80%, and Government, 20%)	Kalana Mine, 300 km south of Bamako	60,000 ore.
Do.	kilograms	Société des Mines de Loulo (Randgold Resources Ltd., 80%, and Government, 20%)	Loulo Mine, 350 km west of Bamako	7,800. ²
Do.		Morila S.A. [a subsidiary of Morila Ltd., 80% (AngloGold Ashanti Ltd., 40%; Randgold Resources Ltd., 40%; Government, 20%)	Morila Mine, 180 km southeast of Bamako	4,200,000 ore.
Do.		Société d'Exploitation des Mines d'Or de Sadiola S.A. (AngloGold Ashanti Ltd., 38%; IAMGOLD Corp., 38%; Government, 18%; International Finance Corp., 6%)	Sadiola Hill Mine, 77 km south of Kayes	5,300,000 ore.
Do.		Société des Mines de Syama S.A. (Resolute Mining Ltd., 80%, and Government, 20%)	Syama Mine, 300 km southeast of Bamako	Not operating. ³
Do.		Société d'Exploitation des Mines d'Or de Yatela (AngloGold Ashanti Ltd., 40%; IAMGOLD Corp., 40%; Government, 20%)	Yatela Mine, 50 km southwest of Kayes	2,500,000 ore.
Do.	kilograms	Nevsun Resources	Kenieba valley	2,000.
Do.	do.	Artisanal miners	do.	2,100.

NA Not available.

¹Abbreviations for units of measure in this table include the following: km--kilometer.

²Production comes from the Gara and the Yalea open pits, as well as other smaller satellite pits. Production was expected to remain at about 7,800 kilograms per year (kg/yr) until 2009 and then to average above 10,900 kg/yr from 2009 to 2015.

³According to Resolute Mining Ltd. company reports, the feasibility study on the redevelopment of the Syama Mine was completed in 2005. The company announced a total resource of about 200,000 kilograms (reported as 6.4 million troy ounces of gold). A decision to proceed with the full development of the mine had not been reached as of yearend 2006.

TABLE 3
MALI: KIMBERLITE PIPE DISCOVERIES AS OF 1999¹

Name	Weight (in carats)	Discoverer
North Cirque	6.01; 0.80; 0.44; 0.08	Direction Fédérale des Mines et de la Géologie (DFMG).
South Cirque	0.3	do.
Pipe 117	15 micro diamonds	Bureau de Recherches Géologiques et Minières (BRGM).
Orange River	0.05	Selection Trust (SELCO).
South Bilali	22.36 ²	do.
Batifara	0.15	do.
Sekonomata	0.22	Direction Fédérale des Mines et de la Géologie (DFMG).
Fougola	micro diamond	Bureau de Recherches Géologiques et Minières (BRGM).
Mission	0.05	Selection Trust (SELCO).
Kassama	NA	Mali Diamond Exploration B.V. (MADE)
Kereko	NA	do.
Tenin-Camara	NA	do.
Delys	NA	do.
Yaya	NA	do.
Samba	NA	do.
Fili-Yoro	NA	do.
Sounkourou	NA	do.
Koufara	NA	do.
Kobato	NA	Direction Fédérale des Mines et de la Géologie (DFMG).
Toromaya	NA	do.
Koufara	NA	Bureau de Recherches Géologiques et Minières (BRGM).
Maniaguinti	NA	do.
Dabora	NA	Selection Trust (SELCO).
Pipe 47	NA	Bureau de Recherches Géologiques et Minières (BRGM).
Kenieba	NA	Selection Trust (SELCO).
Pipe 49	NA	Bureau de Recherches Géologiques et Minières (BRGM).
Silifoudou	NA	Selection Trust (SELCO).
Fanson	NA	do.
Sakola	NA	Société Nationale de Recherche et d'Exploitation Minière (SONAREM).
North Bilali	NA	Selection Trust (SELCO).

NA Not available.

¹Modified from de la Cuesta 1999, Mink International Resources Corp.

²Ten diamonds totaling 22.36 carats including one diamond of 7.4 carats and one diamond of 3.04 carats.

TABLE 4
MALI: ALLUVIAL DIAMOND DISCOVERIES AS OF 1999¹

Location	Weight (in carats)	Discoverer
Sansanto	232.70	Orpailleur
Sansanto	137.50	do.
Sansanto/Doundi	102.00	do.
Sansanto	98.00	Bureau de Recherches Géologiques et Minières (BRGM).
Toubandi	95.30	Orpailleur
Grioto/Doundi	55.50	do.
Sansanto	51.70	do.
Doundi	38.50	do.
Kassama	35.00	do.
Guindissou	34.00	do.
Dialafoundou	32.00	do.
Barroya/Doundi	15.00	do.
Doundi	15.00	do.
Kenieba/Doundi	3.68; 1.25; 1.0; 0.97; 0.40	do.
Fekola/Faleme	1.60; 1.30	do.
Diabakou/Disse	1.00; 0.28; 0.23; 0.03	Orpailleur/Bureau de Recherches Géologiques et Minières (BRGM).
Babara/Bayaya Fedo	1.00	Orpailleur
Heramakono/Gara	0.90; 0.70; 0.70; 0.10	do.
Wasehi	0.70	do.
Selou/Selouko	0.50	do.
Daloto/Doundi	0.50	do.
Kourafing/Koulia	0.42; 0.17; 0.15	do.
Disse/Doundi	0.40; 0.15	do.
Bilali Stream	0.35	Bureau de Recherches Géologiques et Minières (BRGM).
Sansanto	0.34; 0.01; < 0.01	Orpailleur/Bureau de Recherches Géologiques et Minières (BRGM).
Baboto/Gara River	0.30; 0.10; 0.03	Orpailleur
Diangadara/Diabokou	0.30	do.
Stakili/Sekoto	0.27	do.
Dialafara/Tamba	0.20	do.
Sauradia/Faleme	0.18	do.
Soumala	0.16; 0.09	do.
Babara South	0.16	do.
Sanboula/Diaoulaf	0.10	Bureau de Recherches Géologiques et Minières (BRGM).
Khassana	0.07	do.
Dabia	0.05	Orpailleur
Linguekoto/Gara	0.05	do.
Koundam	0.01; micro diamond	Bureau de Recherches Géologiques et Minières (BRGM).
Diakema/Tamba	0.01	Selection Trust (SELCO).
Faleme/Gara	micro diamond	Bureau de Recherches Géologiques et Minières (BRGM).
Faleme/Doundi	micro diamond	do.

¹Modified from de la Cuesta 1999, Mink International Resources Corp.