

# Mineral Industry Surveys

## For information, contact:

John D. Jorgenson, Iron Ore Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4912, Fax: (703) 648-7757  
E-mail: jjorgenson@usgs.gov

Alan D. Ray (Data)  
Telephone: (703) 648-7938  
Fax: (703) 648-7792  
E-mail: aray@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## IRON ORE IN MAY 2007

U.S. mine production of iron ore in May 2007, on a daily average basis, was 6% more than that for the prior month, according to the U.S. Geological Survey. Average daily production, at 153,000 metric tons (t), was 8,700 t greater than that of April 2007.

Average daily shipments in May 2007, at 176,000 t, were 2% greater than those of April. Mine stocks at the end of May were 710,000 t less than the stocks held on April 30, a 6% decrease.

U.S. exports of iron ore in April 2007 were more than 40% greater than imports, with net exports at 263,000 t.

**Exploration and Development.**—Fortescue Metals Group Ltd. (FMG) (See Iron Ore in August 2006.) agreed to supply iron ore from its Western Australian operations to China's Tangshan Iron and Steel Co. (Taigang) for 10 years beginning in 2008. The new Chichester Range mine in the Pilbara was expected to have an initial production capacity of 45 million metric tons per year (Mt/yr). Taigang agreed to purchase 11% of initial production, up to 5 Mt/yr and up to an additional 15 Mt/yr after FMG's planned expansion. In March, FMG signed a similar agreement with Baosteel Group Corporation, China's leading steelmaker (Mining Journal, 2007; Warrnambool Standard, 2007).

**World Production.**—Chinese production of iron ore for the first 4 months of 2007 reached 191 million metric tons (Mt), an increase of 34% over that of the corresponding period of 2006. By June 1, iron ore inventories at Chinese ports had risen to 45.9 Mt. Increased Indian export duties on iron ore, dramatically increased freight rates from Brazil, and an increased Chinese export duty on 80 different steel products were expected to affect this inventory within the next few months (Antaike, 2007).

In India, Maoist rebels targeted railway property and mine infrastructure. The rebels damaged the water pumping station at Essar Steel Holdings Limited's iron ore beneficiation plant and attacked National Mineral Development Corporation's rail line from the Bailadila mines—both in Chhattisgarh State. These were the latest in a series of attacks aimed at preventing the development of India's iron and steel industries and were reportedly launched in support of the Communist Party of India's pro-agrarian policies in the State (Metal Bulletin, 2007).

**Domestic Production.**—Cleveland-Cliffs Inc, manager of the Empire and Tilden Mines that both receive power from Wisconsin Electric Power Company (WEPCO), settled its dispute over energy charges with the utility. The dispute of WEPCO's unilateral change to methods for determining electricity rates began in 2005. Cliffs received \$32.5 million from its escrowed payments and a rebate of \$2.6 million for over-the-cap payments (Cleveland-Cliffs Inc, 2007, p. 56-57).

**Mergers and Acquisitions.**—Anglo American plc announced an agreement to purchase 49% of MMX Minas-Rio iron ore project in Brazil from MMX Mineração e Metálicos S.A. (See Iron Ore in March 2007.) for \$1.15 billion. The project was scheduled to start up at the end of 2009 with a production capacity of 26.6 Mt/yr and an estimated cost of \$2.5 billion. The project includes mines in Minas Gerais State and a 525-kilometer pipeline to the new port of Açú in Rio de Janeiro State. An as-yet-unscheduled expansion to the project would envision a production capacity increase to 56.6 Mt/yr with Anglo holding a 50% stake (Kinch, 2007).

**World Reserves.**—The Chinese Academy of Geological Sciences (CAGS) recently reported total Chinese iron ore reserves of 59.4 billion metric tons (Gt)—26.7 Gt of these reserves are already developed. The remaining 32.7 Gt reportedly are the undeveloped reserve base. Most of these reserves are low grade, according to CAGS, averaging between 30% and 35% iron. Sichuan is the leading Province, with a reserve base of 7.9 Gt (Skillings, 2007).

## References Cited

- Antaike, 2007, Iron ore monthly report: Antaike, 2007.6, May, 10 p.  
Cleveland-Cliffs Inc, 2007, 2006 annual report, 169 p. (Accessed June 28, 2007, via <http://www.cleveland-cliffs.com>.)  
Kinch, Diana, 2007, Brazil to play major part in Anglo's iron ore strategy: Metal Bulletin, no. 8996, May 21, p. 30.  
Metal Bulletin, 2007, Maoist rebels strike at Essar and NMDC in India: Metal Bulletin, no. 8998, June 4, p. 24.  
Mining Journal, 2007, Fortescue signs 20 Mt Tangshan off-take: Mining Journal, May 18, p. 9.  
Skillings Mining Review, 2007, China identifies low-grade iron ore reserves: Skillings Mining Review, v. 96, no. 6, June, p. 34.  
Warrnambool Standard, 2007, Fortescue in \$12 bn deal: Warrnambool Standard, May 18, p. 9.

TABLE 1  
U.S. PRODUCTION AND SHIPMENTS OF IRON ORE<sup>1,2</sup>  
(Exclusive of ore containing 5% or more of manganese)

(Thousand metric tons)

Period	Production		Shipments	
	Monthly	Year to date	Monthly	Year to date
2006:				
May	4,750	22,000	5,020	16,900
June	4,450	26,400	5,120	22,000
July	4,710	31,100	5,490	27,500
August	4,780	35,900	5,370	32,900
September	4,610	40,500	5,280	38,200
October	4,440	45,000	4,420	42,600
November	3,920	48,900	4,430	47,000
December	3,970	52,900	4,800	51,800
2007:				
January	4,260	4,260	2,810	2,810
February	3,350	7,620	574	3,390
March	3,800	11,400	2,110	5,490
April	4,330	15,700	5,150	10,600
May	4,740	20,500	5,450	16,100

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Excludes byproduct ores.

TABLE 2  
U.S. PRODUCTION, SHIPMENTS, AND STOCKS OF IRON ORE IN MAY<sup>1,2</sup>

(Thousand metric tons)

State	Production		Shipments <sup>3</sup>		Stocks <sup>4</sup>	
	2007	2006	2007	2006	2007	2006
Michigan	1,200	1,060	1,110	1,070	2,790	2,720
Minnesota	3,540	3,690	4,340	3,950	7,490	8,090
Total	4,740	4,750	5,450	5,020	10,300	10,800

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes byproduct ore.

<sup>3</sup>Includes rail and vessel.

<sup>4</sup>Includes usable (marketable) material at mines, concentrators, pelletizing plants, and loading docks. Excludes stocks of crude ore at mine and concentrates at agglomerating complexes.

TABLE 3  
CANADA: SHIPMENTS OF IRON ORE<sup>1,2</sup>

(Thousand dry metric tons)

Period	Newfoundland and Labrador	Quebec	British Columbia	Total
2006:				
April	1,840	1,180	8	3,030
May	1,670	1,610	12	3,280
June	1,550	1,180	10	2,740
July	2,040	1,220	8	3,270
August	1,740	1,740	8	3,490
September	949	1,340	8	2,300
October	2,280	963	10	3,250
November	2,590	1,010	8	3,610
December	1,960	1,250	6	3,220
Year total	19,800	13,600	105	33,600
2007:				
January	609	616	6	1,230
February	874	571	6	1,450
March	1,030	867	9	1,900
April	1,210	1,450	5	2,660

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes production from steel plant waste oxides.

Source: Natural Resources Canada.

TABLE 4  
PRODUCTION OF PIG IRON AND RAW STEEL IN THE UNITED STATES, BY TYPE OF  
FURNACE<sup>1</sup>

(Thousand metric tons)

Period	Pig iron production, blast furnace		Raw steel production			
	Monthly	Year to date	Basic oxygen furnace <sup>2</sup>		Electric furnace	
			Monthly	Year to date	Monthly	Year to date
2006:						
April	3,280	13,000	3,640	14,500	4,870	18,700
May	3,460	16,500	3,850	18,300	5,060	23,800
June	3,330	19,800	3,790	22,100	4,790	28,600
July	3,210	23,000	3,660	25,800	4,800	33,400
August	3,200	26,200	3,620	29,400	4,840	38,200
September	3,220	29,400	3,670	33,100	4,750	43,000
October	3,090	32,500	3,460	36,500	4,640	47,600
November	2,780	35,300	3,080	39,600	4,330	51,900
December	2,640	37,900	2,860	42,500	4,180	56,100
2007:						
January	2,850	2,850	3,090	3,090	4,450	4,450
February	2,610	5,450	2,940	6,040	4,690	9,140
March	3,040	8,490	3,450	9,490	4,880	14,000
April	3,010	11,500	3,370	12,900	4,840	18,900

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Raw steel production figures for the basic oxygen process are usually greater than the corresponding pig iron production figures because scrap is routinely melted in the basic oxygen furnace together with the molten pig iron.

Source: American Iron and Steel Institute.

TABLE 5  
U.S. EXPORTS OF IRON ORE, BY COUNTRY OF DESTINATION AND TYPE<sup>1,2</sup>

(Thousand metric tons)

Country of destination and type of product	2006		2007			
	4th quarter	Total	February	March	1st quarter	April
Algeria	88	340	--	--	--	88
Canada	1,830	7,610	123	182	885	736
China	--	100	(3)	--	1	73
Colombia	--	--	--	--	--	4
Mexico	180	215	(3)	(3)	1	(3)
Venezuela	--	--	--	--	--	1
Other	3	10	1	(3)	1	(3)
<b>Total</b>	<b>2,110</b>	<b>8,270</b>	<b>125</b>	<b>182</b>	<b>889</b>	<b>903</b>
Pellets	2,080	8,060	123	181	885	895
Concentrates	2	59	1	(3)	1	5
Briquettes	6	23	--	--	--	--
Sinter	(3)	77	(3)	(3)	(3)	(3)
Direct shipping ores - coarse	5	6	(3)	(3)	(3)	(3)
Direct shipping ores - fines	12	42	1	1	3	2
Roasted pyrites	(3)	1	--	--	(3)	(3)
<b>Total</b>	<b>2,110</b>	<b>8,270</b>	<b>125</b>	<b>182</b>	<b>889</b>	<b>903</b>

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE, BY COUNTRY AND TYPE<sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

Country of origin and type of product	2007					2006
	April		Year to date			January-April
	Thousand metric tons	Value <sup>3</sup> (thousand dollars)	Thousand metric tons	Value <sup>3</sup> (thousand dollars)	Value <sup>3</sup> (dollars per ton)	Thousand metric tons
Australia	--	--	--	--	--	8
Brazil	211	11,300	900	54,200	60.28	1,410
Canada	371	24,800	718	43,000	59.96	1,480
Chile	--	--	133	7,080	53.23	96
Finland	2	124	2	124	62.00	3
Greece	--	--	--	--	--	15
Mexico	21	1,270	25	1,370	54.60	6
Norway	--	--	8	365	45.63	--
Peru	35	959	36	1,030	28.56	38
Sweden	--	--	57	2,400	42.02	--
Trinidad and Tobago	--	--	--	--	--	284
United Kingdom	(4)	3	(4)	25	213.64	--
Total	640	38,500	1,880	110,000	58.40	3,340
Concentrates	29	1,560	195	9,550	48.95	668
Coarse ores	--	--	82	3,160	38.54	--
Fine ores	174	7,570	393	17,800	45.27	1,170
Pellets	433	29,200	1,200	78,800	65.81	1,490
Other agglomerates	2	47	6	142	23.67	6
Roasted pyrites	2	124	4	194	48.50	3
Total	640	38,500	1,880	110,000	58.40	3,340

-- Zero.

<sup>1</sup>Data, with the exception of the dollars per ton column, are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Customs value. Excludes international freight and insurance charges.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE IN APRIL 2007<sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Country of origin	Type of product						Total
	Concentrates	Coarse ores	Fine ores	Pellets	Briquettes and other agglomerates	Roasted pyrites	
Brazil	--	--	139	72	--	--	211
Canada	29	--	--	342	--	--	371
Finland	--	--	--	--	--	2	2
Mexico	--	--	--	19	2	--	21
Peru	--	--	35	--	--	--	35
United Kingdom	(3)	--	--	--	--	--	(3)
Total	29	--	174	433	2	2	640

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. IMPORTS FOR CONSUMPTION OF PELLETS, BY COUNTRY<sup>1</sup>

Country of origin	2007					2006
	April		Year to date			January-April
	Thousand metric tons	Value <sup>2</sup> (thousand dollars)	Thousand metric tons	Value <sup>2</sup> (thousand dollars)	Value <sup>2</sup> (dollars per ton)	Thousand metric tons
Brazil	72	4,730	549	37,800	68.82	640
Canada	342	23,300	607	38,000	62.57	849
Mexico	19	1,220	19	1,220	64.37	--
Sweden	--	--	24	1,870	77.75	--
Total	433	29,200	1,200	78,800	65.81	1,490

-- Zero.

<sup>1</sup>Data, with the exception of the dollars per ton column, are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value. Excludes international freight and insurance charges.

Source: U.S. Census Bureau.

TABLE 9  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE,  
BY CUSTOMS DISTRICT<sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

(Thousand metric tons)

Customs district (code no.)	April	January-April	
	2007	2007	2006
Baltimore, MD (13)	348	631	1,350
Charleston, SC (16)	(3)	2	--
Chicago, IL (39)	--	109	189
Cleveland, OH (41)	162	328	300
Detroit, MI (38)	--	--	51
Houston-Galveston, TX (53)	--	38	15
Mobile, AL (19)	--	33	5
New Orleans, LA (20)	126	697	1,410
Nogales, AZ (26)	2	6	13
Ogdensburg, NY (07)	--	--	(3)
Philadelphia, PA (11)	2	2	3
Port Arthur, TX (21)	--	24	--
Providence, RI (05)	--	8	--
St. Louis, MO (45)	--	--	(3)
Total	640	1,880	3,340

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes agglomerates.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 10  
U.S. IMPORTS FOR CONSUMPTION OF PELLETS,  
BY CUSTOMS DISTRICT<sup>1</sup>

(Thousand metric tons)

Customs district (code no.)	April	January-April	
	2007	2007	2006
Baltimore, MD (13)	180	251	568
Chicago, IL (39)	--	28	--
Cleveland, OH (41)	162	328	300
Detroit, MI (38)	--	--	51
Houston - Galveston, TX (53)	--	38	--
New Orleans, LA (20)	91	530	569
Port Arthur, TX (21)	--	24	--
Total	433	1,200	1,490

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.