

# Mineral Industry Surveys

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## IRON ORE IN JANUARY 2008

U.S. mine production of iron ore in January 2008, on a daily average basis, was 4% less than that for the prior month, according to the U.S. Geological Survey (USGS). Average daily production, at 134,000 metric tons (t), was 5,000 t less than that of December 2007.

Average daily shipments in January 2008, at 120,000 t, were 40,000 t less than those of December. Mine stocks at the end of January 2008 were 433,000 t greater than stocks held on December 31, a 7% increase. U.S. exports of iron ore in December 2007 were 14% greater than imports, with net exports of 113,000 t.

**Prices.**—Difficulties associated with the closing of Brazil's Itaguaí iron ore port, the typhoon season in Australia, and threats of increased iron ore export taxes by India were complicating talks to establish 2008-09 contract prices. Rio Tinto plc was pushing strongly for a large increase in price to improve profitability and assist in fending off a hostile bid from rival BHP Billiton Ltd. Rio Tinto was taking advantage of a clause in its long-term contracts to make customers pay existing spot prices for 10% of their contracted iron ore supplies. Negotiations were being strongly affected by a greater than 75% premium for spot iron ore over the existing contract rate (Skillings Mining Review, 2008; Matthews, 2008).

**Exploration and Development.**—ArcelorMittal announced the signing of a memorandum of understanding with Mauritania's Societe Nationale Industrielle et Miniere to jointly explore, evaluate, and eventually develop the El Agareb iron ore deposit in the northern third of Mauritania. El Agareb is estimated to contain greater than 1 billion metric tons of high grade magnetite resources. Preliminary plans call for the development of a 25-million-metric-ton-per-year (Mt/yr) mine (ArcelorMittal, 2008).

**Domestic Production.**—Cleveland-Cliffs Inc (Cleveland, OH) acquired 70-percent controlling interest in Renewafuel LLC (Rosemount, MN), a company that produces a low-emissions biofuel. The fuel cubes are made of renewable materials and are comparable in cost to Western coals, but with far lower emissions of sulfur dioxide, particulate matter, and acidic gases. Cliffs has successfully tested the fuel cubes at its

Empire Mine near Marquette, MI, and plans to use the cubes to fuel its pelletizing furnaces at several of its other operations in Michigan and Minnesota (American Metal Market, 2008).

**World Production.**—Iran's Chador Malu Mining and Industrial Co. started commercial production at its new Ardakan pellet plant. Construction of the 3.4-Mt/yr capacity plant north of Yazd began in 2004. Iron ore concentrates for the plant are being supplied by the Chador Malu Mine, which reportedly has reserves of 320 million metric tons of ore (Metal Bulletin, 2008a).

**Transportation.**—The Soo Locks closed on January 15, officially ending the Lake Superior shipping season. Iron ore tonnages for the 2007 shipping season were lower compared with those of 2006 owing to scheduled outages at two blast furnaces—one at Sault Ste. Marie in Ontario, Canada, and the other at Dearborn, MI (Eggleston, 2008).

Rio Tinto plc completed the expansion of its port at Dampier, Western Australia. The \$1.4 billion project raised Dampier's capacity from 74 Mt/yr to 140 Mt/yr with the installation of two new ship loaders and a wharf extension that allows four vessels to berth at one time (Metal Bulletin, 2008b).

## References Cited

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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
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
June	4,610	25,100	5,120	21,200
July	4,690	29,800	5,210	26,400
August	4,450	34,200	5,090	31,500
September	4,350	38,600	5,100	36,600
October	4,820	43,400	5,130	41,700
November	4,280	47,700	4,830	46,600
December	4,320	52,000	4,960	51,500
2008, January	4,170	4,170	3,730	3,730

<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 JANUARY<sup>1, 2</sup>

(Thousand metric tons)

State	Production		Shipments <sup>3</sup>		Stocks <sup>4</sup>	
	2008	2007	2008	2007	2008	2007
Michigan	834	855	1,210	820	2,170	1,830
Minnesota	3,330	3,410	2,530	1,990	4,760	5,500
Total	4,170	4,260	3,730	2,810	6,930	7,330

<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:				
December	1,960	1,250	6	3,220
Year total	19,800	13,600	105	33,600
2007:				
January	609	616	5	1,230
February	874	571	6	1,450
March	1,040	867	8	1,910
April	1,210	1,450	5	2,660
May	1,720	1,650	8	3,380
June	1,650	1,310	7	2,960
July	2,070	1,340	7	3,420
August	2,150	1,150	6	3,310
September	1,410	1,400	6	2,820
October	1,860	1,600	6	3,460
November	2,110	1,470	7	3,590
December	1,180	1,450	5	2,640
Year total	17,900	14,900	75	32,800

<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	Monthly	Year to date
2006:						
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
May	3,130	14,600	3,530	16,400	5,000	23,900
June	3,120	17,800	3,470	19,900	4,770	28,600
July	3,080	20,800	3,420	23,300	4,860	33,500
August	3,010	23,800	3,370	26,600	4,970	38,400
September	3,010	26,900	3,370	30,000	4,600	43,000
October	3,200	30,100	3,540	33,500	4,940	48,000
November	2,940	33,000	3,280	36,800	4,920	52,900
December	3,160	36,200	3,550	40,400	4,900	57,800

<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					Total
		1st quarter	2nd quarter	3rd quarter	December	4th quarter	
Algeria	340	--	213	332	--	25	570
Canada	7,610	885	2,360	1,910	828	2,190	7,340
China	100	1	286	762	3	81	1,130
Colombia	--	1	6	--	--	(3)	7
Japan	--	--	--	(3)	6	7	7
Mexico	215	1	1	64	59	82	148
Peru	--	--	5	--	--	(3)	5
Romania	--	--	87	--	--	--	87
Sweden	--	--	--	2	--	--	2
Other	10	1	4	2	(3)	1	8
<b>Total</b>	<b>8,270</b>	<b>889</b>	<b>2,960</b>	<b>3,070</b>	<b>896</b>	<b>2,390</b>	<b>9,310</b>
Pellets	8,060	885	2,930	3,010	877	2,340	9,170
Concentrates	59	1	8	31	7	9	51
Briquettes	23	--	--	--	--	1	1
Sinter	77	(3)	(3)	(3) r	11	21	22
Direct shipping ores - coarse	6	(3)	2	1	(3)	2	6
Direct shipping ores - fines	42	3	14	29	1	5	51
Roasted pyrites	1	(3)	(3)	(3) r	(3)	10	11
<b>Total</b>	<b>8,270</b>	<b>889</b>	<b>2,960</b>	<b>3,070</b>	<b>896</b>	<b>2,390</b>	<b>9,310</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
	December		Year to date			January-December
	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	255	15,000	3,210	183,000	57.13	4,530
Canada	474	26,400	5,520	326,000	59.08	6,240
Chile	--	--	279	15,700	56.21	283
China	--	--	--	--	--	(4)
Finland	--	--	8	385	48.13	9
Greece	--	--	--	--	--	15
Greenland	--	--	(4)	3	197.65	--
India	--	--	(4)	6	5,690.00	(4)
Italy	--	--	--	--	--	(4)
Mexico	--	--	35	1,630	46.46	17
Norway	--	--	8	365	45.63	--
Peru	31	840	140	4,160	29.68	52
Romania	--	--	--	--	--	(4)
Sweden	--	--	141	8,960	63.54	(4)
Trinidad and Tobago	--	--	--	--	--	299
Ukraine	--	--	--	--	--	(4)
United Kingdom	--	--	(4)	25	213.64	(4)
Venezuela	24	941	58	2,580	44.55	23
<b>Total</b>	<b>783</b>	<b>43,200</b>	<b>9,400</b>	<b>543,000</b>	<b>57.81</b>	<b>11,500</b>
Concentrates	--	--	1,280	57,500	44.92	2,380
Coarse ores	10	1,150	176	10,800	61.57	--
Fine ores	204	9,180	1,790	83,900	46.79	2,450
Pellets	570	32,800	6,050	387,000	63.89	6,620
Other agglomerates	--	--	87	3,930	45.11	17
Roasted pyrites	--	--	11	511	46.45	10
<b>Total</b>	<b>783</b>	<b>43,200</b>	<b>9,400</b>	<b>543,000</b>	<b>57.81</b>	<b>11,500</b>

-- 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 DECEMBER 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	--	10	148	98	--	--	255
Canada	--	--	25	448	--	--	474
Peru	--	--	31	--	--	--	31
Venezuela	--	--	--	24	--	--	24
Total	--	10	204	570	--	--	783

-- 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.

Source: U.S. Census Bureau.

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

Country of origin	2007					2006
	December		Year to date			January-December
	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	98	6,310	1,260	85,700	67.78	1,650
Canada	448	25,600	4,680	295,000	63.03	4,940
Mexico	--	--	19	1,220	64.37	--
Peru	--	--	9	404	44.89	--
Sweden	--	--	24	1,870	77.75	--
Trinidad and Tobago	--	--	--	--	--	15
Venezuela	24	941	58	2,580	44.55	23
Total	570	32,800	6,050	387,000	63.89	6,620

-- 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.)	December	January-December	
	2007	2007	2006
Baltimore, MD (13)	295	3,130	3,930
Buffalo, NY (09)	--	--	1
Charleston, SC (16)	--	3	1
Chicago, IL (39)	52	1,330	1,740
Cleveland, OH (41)	301	3,120	3,070
Detroit, MI (38)	--	(3)	131
Houston-Galveston, TX (53)	--	65	50
Los Angeles	--	--	(3)
Mobile, AL (19)	--	33	5
New Orleans, LA (20)	136	1,610	2,550
Nogales, AZ (26)	--	16	25
Ogdensburg, NY (07)	--	1	(3)
Philadelphia, PA (11)	--	8	9
Port Arthur, TX (21)	--	71	--
Providence, RI (05)	--	8	--
Savannah, GA (17)	--	(3)	--
St. Albans, VT (02)	--	(3)	--
St. Louis, MO (45)	--	--	(3)
Tampa, FL (18)	--	13	--
Wilmington, NC (15)	--	--	(3)
Total	783	9,400	11,500

-- 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.)	December	January-December	
	2007	2007	2006
Baltimore, MD (13)	148	1,320	1,660
Chicago, IL (39)	27	419	291
Cleveland, OH (41)	301	3,060	3,040
Detroit, MI (38)	--	(2)	131
Houston - Galveston, TX (53)	--	65	35
New Orleans, LA (20)	95	1,170	1,470
Port Arthur, TX (21)	--	24	--
Total	570	6,050	6,620

-- Zero.

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

<sup>2</sup>Less than ½ unit.

Source: U.S. Census Bureau.