

# Mineral Industry Surveys

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**For information, contact:**

Christopher A. Tuck, Iron Ore Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4912, Fax: (703) 648-7757  
E-mail: ctuck@usgs.gov

Michelle B. Blackwell (Data)  
Telephone: (703) 648-7943  
Fax: (703) 648-7975  
E-mail: mblackwell@usgs.gov

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

## IRON ORE IN JUNE 2013

U.S. mine production of iron ore in June 2013 was 3.99 million metric tons (Mt), 7% less than that in May. Production was 133,000 metric tons (t) on a daily average basis, 4% less than that of May 2013 and 5% less than that of June 2012. U.S. iron ore shipments were 5.17 Mt in June 2013, 9% less than those in May 2013. Shipments were 172,000 t on a daily average basis, 6% less than those of May and slightly less than those of June 2012.

Mine stocks were 5.39 Mt at the end of June 2013, 15% less than those held in May and slightly higher than those in June 2012. U.S. exports of iron ore were 740,000 t in June 2013, 11% less than those in May 2013 and 44% less than those of June 2012. U.S. imports of iron ore were 213,000 t in June 2013, 25% less than those in May 2013 and 16% less than those of June 2012.

Pig iron produced by blast furnaces in June 2013 was 4% lower than that in May, and 7% lower than that in June 2012. Raw steel produced using basic oxygen furnaces was 8% lower than that in May and 5% lower than that in June 2012. Production from electric furnaces was 3% lower than that in May and slightly higher than that in June 2012 (table 4).

China's average import prices for iron ore fines at 62% iron content spot price (cost and freight Tianjin port) fell to \$114.82 per dry metric ton in June 2013, a 7% decrease from that of May 2013 and 15% lower than that of June 2012 (Index Mundi, undated).

Gogebic Taconite filed an intent-to-mine notice on June 17 along with a bulk-sampling plan to remove less than 10,000 t from five sites for testing the quality of iron ore in Ashland County, WI. The Wisconsin Department of Natural Resources will decide on the bulk-sampling plan within 45 to 75 days of the filing (Simonson, 2013).

Technological advances, environmental benefits, and reductions in shale-gas prices have resulted in renewed interest in direct-reduced iron (DRI) and hot-briquetted iron (HBI) production processes. Following the recent construction of Nucor Corp.'s DRI plant in Louisiana, the industry has proposed multiple projects using alternative energy sources to fuel DRI and HBI facilities (Gordon, 2013). Midrex Technologies Inc. was developing a process to use recycled coke oven gas as a

heat source in steel production for integrated steelmakers. Magnetation Inc. was planning to use sugar beets instead of coking coal at its planned North Dakota iron nugget plant. These developments would increase efficiency and reduce emissions.

Nucor Corp. expected production at its Louisiana DRI plant to begin by the third quarter of 2013, with full production slated for the end of the year. As a result of lower natural gas prices, Nucor planned to build multiple DRI units at the Louisiana site and to expand a plant in South Carolina. An estimated 60% to 70% of U.S. pig iron imports went to Nucor in 2011 and 2012. Imports of pig iron and scrap from Brazil, Russia, and Ukraine may decrease as more DRI becomes available (Weik, 2013).

Charter Pacific Corp. reported the potential for production of low-cost concentrates from the Kaoua iron ore project in Mauritania of an estimated 4,400 Mt of magnetite iron ore. Preliminary analysis indicates that 69%-iron-content concentrates could be produced, which, using a dry sinter process, could result in production costs of \$32 per metric ton. Jindal Steel and Power Ltd. acquired permits for sites adjacent to the Kaoua project (Proactive Investors, 2013).

## References Cited

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

(Thousand metric tons)

Period	Production		Shipments <sup>3</sup>		Stocks <sup>4</sup>
	Monthly	Year to date	Monthly	Year to date	End of Month
2012:					
June	4,200	25,300	5,270	22,900	5,340
July	4,250	29,600	5,730	28,600	3,850
August	4,350	33,900	5,220	33,800	2,980
September	4,340	38,300	4,670	38,500	2,660
October	4,750	43,000	4,460	42,900	2,970
November	4,580	47,600	4,530	47,500	3,020
December	4,650	52,200	5,500	53,000	2,200
2013:					
January	4,200	4,200	3,110	3,110	3,290
February	3,900	8,100	611	3,720	6,580
March	4,400	12,500	2,020	5,740	8,960
April	3,460	16,000	4,670	10,400	7,830
May	4,280	20,200	5,680	16,100	6,350
June	3,990	24,200	5,170	21,300	5,390

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

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

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

(Thousand dry metric tons)

Period	Newfoundland and Labrador		British Columbia	Total
		Quebec		
2012:				
June	1,320	2,290	3	3,620
July	1,390	1,550	3	2,940
August	1,410	1,620	2	3,030
September	1,280	2,040	4	3,330
October	1,210	1,430	3	2,650
November	1,460	1,800	5	3,260
December	1,410	1,970	3	3,380
January–December	15,900	20,400	34	36,300
2013:				
January	1,080 <sup>r</sup>	1,600	--	2,680 <sup>r</sup>
February	1,000 <sup>r</sup>	1,430	--	2,430 <sup>r</sup>
March	845 <sup>r</sup>	1,620	--	2,470 <sup>r</sup>
April	1,730 <sup>r</sup>	1,730	--	3,460 <sup>r</sup>
May	1,790 <sup>r</sup>	1,650	--	3,430 <sup>r</sup>
June	1,680	2,060	--	3,730

<sup>r</sup>Revised. -- Zero.

<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 3  
U.S. PRODUCTION OF PIG IRON AND RAW STEEL, 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		Electric furnace	
			Monthly	Year to date	Monthly	Year to date
2012:						
June	2,970	18,800	2,570	17,200	4,270	27,200
July	2,930	21,700	2,580	19,700	4,390	31,500
August	2,860	24,600	3,180	22,900	4,450	36,000
September	2,440	27,000	2,720	25,600	4,090	40,100
October	2,260	29,300	2,700	28,300	4,090	44,200
November	2,820	32,100	2,480	30,800	3,960	48,100
December	2,900	35,000	2,550	33,400	4,270	52,400
2013:						
January	3,060	3,060	2,740	2,740	4,300	4,300
February	2,760	5,820	2,530	5,280	4,050	8,350
March	3,040	8,860	2,660	7,940	4,300	12,600
April	2,800	11,700	2,510	10,500	4,340	17,000
May	2,880	14,500	2,660	13,100	4,480	21,500
June	2,760	17,300	2,440	15,500	4,340	25,800

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

Source: American Iron and Steel Institute.

TABLE 4  
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	2012	2013				2d quarter
		1st quarter	April	May	June	
Canada	6,370	1,290	724	437	466	1,630
China	4,110	412	175	173	110	458
Colombia	1	(3)	--	(3)	--	(3)
Germany	3	5	2	3	2	7
Hong Kong	3	--	164	--	--	164
Japan	37	--	--	--	--	--
Mexico	641	338	30	146	96	272
Slovakia	--	47	--	68	--	68
Spain	(3)	(3)	--	--	--	--
United Kingdom	--	222	64	10	66	140
Other	12	1	--	--	(3)	(3)
Total	11,200	2,320	1,160	836	740	2,740
Concentrates	1,330	485	163	254	214	631
Coarse ores	1,330	130	83	--	--	83
Fine ores	249	213	74	17	(3)	91
Pellets	8,260	1,490	773	563	525	1,860
Briquettes	(3)	--	--	--	--	--
Other agglomerates	23	--	67	3	1	70
Roasted pyrites	3	(3)	(3)	(3)	(3)	(3)
Total	11,200	2,320	1,160	836	740	2,740

-- 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 5  
 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	2012			2013		
	January–June	June		January–June		
	Thousand metric tons	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)
Argentina	40	--	--	41	7,830	191.02
Brazil	459	29	2,410	38	3,200	84.29
Canada	2,030	184	23,600	1,100	148,000	134.37
Chile	49	--	--	50	5,720	114.32
China	(4)	1	47	1	47	47.00
France	--	(4)	4	(4)	4	175.65
Germany	(4)	--	--	--	--	--
India	--	(4)	3	(4)	3	2,681.00
Mexico	47	(4)	5	(4)	5	100.00
Norway	(4)	--	--	(4)	28	299.89
Peru	8	--	--	(4)	7	1,642.50
South Africa	39	--	--	43	6,150	142.98
Sweden	53	(4)	6	18	1,920	106.61
Trinidad and Tobago	--	--	--	(4)	21	164.05
Ukraine	(4)	--	--	--	--	--
United Kingdom	76	--	--	(4)	5	4,590.00
Venezuela	33	--	--	--	--	--
<b>Total</b>	<b>2,840</b>	<b>213</b>	<b>26,000</b>	<b>1,290</b>	<b>173,000</b>	<b>133.70</b>
Concentrates	344	29	2,410	132	15,100	114.28
Coarse ores	(4)	(4)	2	19	1,730	91.16
Fine ores	218	(4)	12	345	48,100	139.30
Pellets	2,270	184	23,600	796	108,000	135.44
Briquettes	--	--	--	--	--	--
Other agglomerates	(4)	1	47	1	47	47.00
Roasted pyrites	--	(4)	3	(4)	14	2,306.83
<b>Total</b>	<b>2,840</b>	<b>213</b>	<b>26,000</b>	<b>1,290</b>	<b>173,000</b>	<b>133.70</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 6  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE IN JUNE 2013<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	29	--	--	--	--	--	29
Canada	--	--	--	184	--	--	184
China	--	--	--	--	1	--	1
France	--	--	(3)	--	--	--	(3)
India	--	--	--	--	--	(3)	(3)
Mexico	--	(3)	(3)	--	--	--	(3)
Sweden	--	--	(3)	--	--	--	(3)
Total	29	(3)	(3)	184	1	(3)	213

-- 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 7  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE PELLETS, BY COUNTRY<sup>1</sup>

Country of origin	2012		2013			
	January–June	June		January–June		
	Thousand metric tons	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)
Brazil	284	--	--	--	--	--
Canada	1,910	184	23,600	796	108,000	135.44
United Kingdom	76	--	--	--	--	--
Total	2,270	184	23,600	796	108,000	135.44

-- Zero.

<sup>1</sup>Data, with the exception of the dollars per ton column, are rounded to no more than three significant digits.

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

Source: U.S. Census Bureau.

TABLE 8  
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.)	January–June		June
	2012	2013	2013
Baltimore, MD (13)	1,440	--	--
Charleston, SC (16)	(3)	--	--
Chicago, IL (39)	196	82	29
Cleveland, OH (41)	637	718	184
Detroit, MI (38)	(3) <sup>r</sup>	(3)	--
Houston-Galveston, TX (53)	--	(3)	--
Los Angeles, CA (27)	(3)	(3)	--
Mobile, AL (19)	22	18	--
New Orleans, LA (20)	513	470	(3)
New York, NY (10)	(3)	(3)	(3)
Nogales, AZ (26)	--	(3)	--
Ogdensburg, NY (07)	(3)	--	--
Philadelphia, PA (11)	(3)	--	--
Port Arthur, TX (21)	27	--	--
San Diego, CA (25)	--	(3)	(3)
St. Albans, VT (02)	--	3	--
Total	2,840	1,290	213

<sup>r</sup>Revised. --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 9  
U.S. IMPORTS FOR CONSUMPTION OF IRON ORE PELLETS,  
BY CUSTOMS DISTRICT<sup>1</sup>

(Thousand metric tons)

Customs district (code no.)	January–June		June
	2012	2013	2013
Baltimore, MD (13)	1,260	--	--
Chicago, IL (39)	28	--	--
Cleveland, OH (41)	637	718	184
Detroit, MI (38)	--	(2)	--
New Orleans, LA (20)	345	78	--
Total	2,270	796	184

-- 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.