

# Mineral Industry Surveys

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## IRON ORE IN NOVEMBER 2015

U.S. mine production and shipments of iron ore in November 2015 were 3.70 million metric tons (Mt) and 3.23 Mt, respectively (fig. 1, table 1). Average daily production of iron ore was 123,000 metric tons (t), 12% greater than that of October 2015 and 23% less than that of November 2014. Average daily shipments of iron ore were 108,000 t, 12% less than those of October and 37% less than those in November 2014. Mine stocks at the end of November 2015 were 7% greater than those held in October and 20% greater than those held in November 2014. As of November 2015, four iron ore mines and one direct-reduced iron (DRI) facility were either shut down or idled in 2015, resulting in reduced production, reduced shipments, and increased stocks. Five pellet operations, two tailings reclamation operations, and one DRI facility were operational during the month.

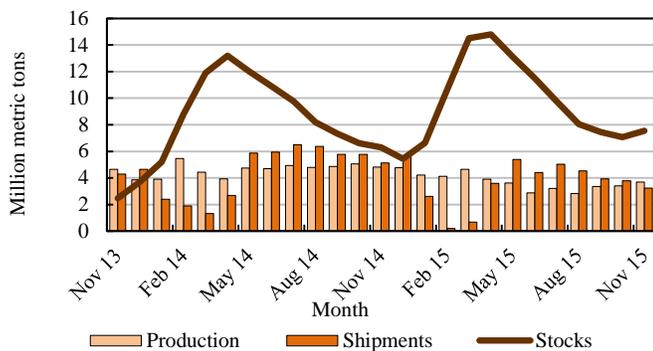


Figure 1. Monthly domestic production, shipments, and stocks of iron ore from November 2013–November 2015. Source: U.S. Geological Survey

Monthly iron ore data are reported as gross weight unless otherwise noted and do not include iron metalics such as pig iron, direct-reduced iron, hot-briquetted iron, or iron nuggets. Data for iron metalics can be found in the Iron Ore chapter in the USGS Minerals Yearbook, Volume I, Metals and Minerals.

U.S. exports of iron ore totaled 501,000 t in November 2015, 27% greater than those in October and about 32% less than those in November 2014. U.S. imports of iron ore totaled

276,000 t in November 2015, almost one-half those in October 2015 and 3% greater than those in November 2014 (fig. 2).

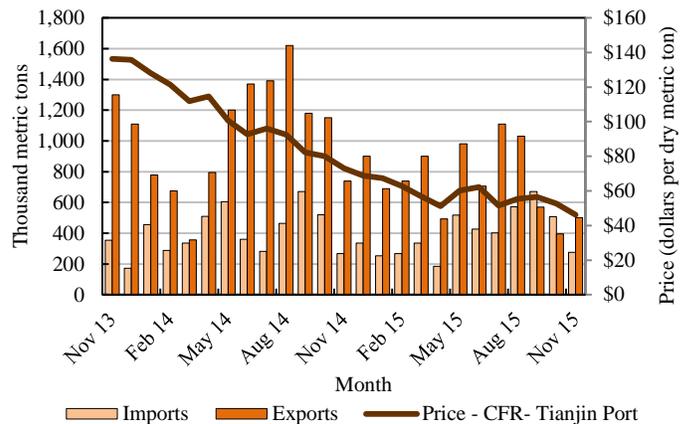


Figure 2. Monthly domestic imports and exports of iron ore and spot prices for iron ore import fines, 62% iron content CFR, at Tianjin Port, from November 2013–November 2015. Source: U.S. Census Bureau and Index Mundi, undated.

### Industry News

Cliffs Natural Resources Inc. planned to temporarily idle its Northshore Mining operation in Silver Bay, MN, on December 1, 2015, owing to reduced capacity utilization rates and decreased demand from its domestic customers' blast furnace operations. The 6.2-million-metric-ton-per-year (Mt/yr) facility produced 5.3 Mt in 2014. The company expects the Northshore Mine and United Taconite, another Cliffs' mine that was idled in August, to remain idled through the first quarter of 2016. Cliffs planned to meet customers' needs from stocks. These two mines accounted for approximately one-third of the company's total reported production in 2014 (30 Mt), production capacity (32 Mt/yr), and work force (1,043 employees) (Cliffs Natural Resources, 2015).

U.S. Steel Corp. planned to idle its Granite City Works operation, which includes two blast furnaces and basic oxygen furnaces with a 2.5-Mt/yr steelmaking capacity. This follows the

permanent closure of the company's Fairfield Works operation, which included a blast furnace and three basic oxygen furnaces with a 2.2-Mt/yr steelmaking capacity (U.S. Steel Corp., 2015). Iron ore is primarily consumed in blast furnaces where it is converted to hot pig iron, which is then consumed by basic oxygen furnaces to make steel. U.S. Steel has adjusted production for its steelmaking operations throughout 2015 in response to reduced consumption of domestically-produced steel, which resulted in the idling the Keetac Mine since March and the idling of Minntac Mine from March through July.

Magnetation LLC announced the potential idling of Plant 2 in Bovey, MN, on or after January 31, 2016. No duration for the shutdown was announced; however, company executives were hopeful that they would be able to restart operations later in 2016. Plant 2, a tailings reclamation operation with a 1.1-Mt/yr capacity, would be the second operation the company had shut down within a 12-month period (Magnetation LLC, 2015).

On November 5, two dams burst at the Samarco Mine in Minas Gerais, Brazil, killing 13 people and flooding surrounding villages and areas. The dams' failures released approximately 60 million cubic meters of water and mine waste from the site's tailings ponds into the Rio Doce estuary, which leads into the southern Atlantic Ocean. The 30.5-Mt/yr pellet facility is a joint venture between BHP Billiton Ltd. and Vale S.A. Concerns regarding the environmental impact of the dam failure prompted the Environment Minister of Brazil to file a lawsuit against the operators to establish a \$5.2 billion fund to pay for environmental recovery and victim compensation (Guardian, The, 2015). Early reports estimated that the mine would run out of inventory for shipments around the end of November and no estimate was provided as to when the facility would resume operations.

*List services and Web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <http://minerals.usgs.gov/minerals/>.*

## 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
	Monthly	Year to date	Monthly	Year to date	End of Month
2014:					
November	4,810	49,500	5,130	48,500	6,290
December	4,770	54,300	5,630	54,100	5,430
2015:					
January	4,210	4,210	2,610	2,610	6,640
February	4,130	8,340	194	2,810	10,600
March	4,640	13,000	670	3,480	14,500
April	3,910	16,900	3,600	7,080	14,800
May	3,620	20,500	5,400	12,500	13,100
June	2,870	23,400	4,400	16,900	11,500
July	3,220	26,600	5,020	21,900	9,740
August	2,840	29,400	4,540	26,400	8,040
September	3,360	32,800	3,940	30,400	7,460
October	3,400	36,200	3,790	34,200	7,070
November	3,700	39,900	3,230	37,400	7,550

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

<sup>2</sup>Excludes byproduct ores and iron metallics.

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

TABLE 2  
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
2014:						
November	2,740	29,800	2,400	27,300	4,480	50,800
December	2,860	32,600	2,490	29,700	4,350	55,200
2015:						
January	2,760	2,760	2,380	2,380	4,500	4,500
February	2,310	5,070	1,980	4,370	3,870	8,370
March	2,390	7,460	1,990	6,360	4,050	12,400
April	2,330	9,790	1,990	8,340	4,080	16,500
May	2,530	12,300	2,180	10,500	4,310	20,800
June	2,670	15,000	2,340	12,900	4,180	25,000
July	2,830	17,800	2,460	15,300	4,200	29,200
August	2,690	20,500	2,330	17,600	4,240	33,400
September	2,390	22,900	2,090	19,700	4,170	37,600
October	2,270	25,200	1,990	21,700	4,270	41,900
November	2,120	27,300	1,780	23,500	3,710	45,600

<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 3  
U.S. EXPORTS OF IRON ORE, BY COUNTRY AND TYPE<sup>1,2</sup>  
(Exclusive of ore containing 20% or more manganese)

Country and type of product	2014			2015		
	January–November	November		January–November		
	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)
Canada	7,900	280	\$23,700	5,790	\$506,000	\$87.34
China	1,640	182	6,370	525	18,500	35.17
Philippines	--	39	2,600	39	2,600	66.59
Other	1,680	(4)	92	578	41,200	71.33
<b>Total</b>	<b>11,200</b>	<b>501</b>	<b>32,700</b>	<b>6,930</b>	<b>568,000</b>	<b>81.94</b>
Concentrates	1,440	(4)	92	98	11,900	121.93
Fine ores	95	(4)	37	16	1,840	115.06
Pellets	8,880	461	30,000	6,320	525,000	83.04
Other	804	39	2,640	493	29,000	58.91
<b>Total</b>	<b>11,200</b>	<b>501</b>	<b>32,700</b>	<b>6,930</b>	<b>568,000</b>	<b>81.94</b>

-- Zero.

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

<sup>2</sup>All countries with less than 5,000 metric tons of exports per month included in "Other."

<sup>3</sup>Free alongside ship (FAS) value.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
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	2014			2015		
	January–November	November		January–November		
	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)
Brazil	1,660	55	2,010	2,000	157,000	78.64
Canada	2,670	200	21,700	1,780	225,000	126.41
Sweden	124	21	1,810	62	4,950	79.76
Other	311	--	--	310	25,200	74.93
<b>Total</b>	<b>4,760</b>	<b>276</b>	<b>25,500</b>	<b>4,150</b>	<b>412,000</b>	<b>99.36</b>
Concentrates	620	163	9,700	861	44,200	51.29
Fine ores	357	8	542	183	11,700	64.08
Pellets	3,740	92	14,000	3,050	352,000	115.43
Other	45	13	1,270	54	4,230	78.24
<b>Total</b>	<b>4,760</b>	<b>276</b>	<b>25,500</b>	<b>4,150</b>	<b>412,000</b>	<b>99.36</b>

-- Zero.

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

<sup>2</sup>All countries with less than 5,000 metric tons of imports per month included in "Other."

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

Source: U.S. Census Bureau.

TABLE 5  
 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.)	Pellets			Total, all products		
	January–November		November	January–November		November
	2014	2015	2015	2014	2015	2015
Baltimore, MD (13)	282	308	--	301	328	21
Chicago, IL (39)	139	13	--	789	812	163
Cleveland, OH (41)	780	950	92	781	950	92
Other	2,540	1,780	--	2,890	2,060	1
Total	3,740	3,050	92	4,760	4,150	276

-- Zero.

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

<sup>2</sup>Customs Districts with less than 5,000 metric tons of imports per month included in "Other."

Source: U.S. Census Bureau.