

# Mineral Industry Surveys

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## LEAD IN JUNE 2016

Domestic mine production (recoverable) of lead in June was 28,400 metric tons (t). Average daily mine production in June was 945 t, 9% more than that in the previous month. Lead mine production during the first half of 2016 was 5% less than that during the same period in 2015 owing primarily to decreased production in Missouri. The Doe Run Company (St. Louis, MO) previously announced that it would reduce production of lead in concentrates at its mines in southeastern Missouri in 2016 by about 10%. (See Lead in November 2015.) Teck Resources Ltd. (Canada) reported that the Red Dog Mine in Alaska produced 59,400 t of lead in concentrate in the first half of the 2016, 4% less than that produced in the first half of 2015, and that the Pend Oreille Mine in Washington produced about 2,500 t of lead in concentrate during the first half of 2016, 17% less than that during the same period of 2015 (Teck Resources Ltd., 2016, p. 33). Secondary refinery production of lead in June was 6% less than that in the previous month, and year-to-date production was slightly less than that in the same period in 2015 (fig. 1, table 1).

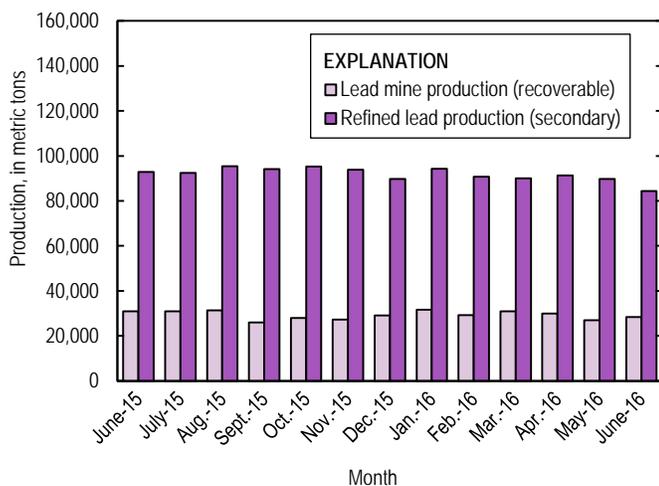


Figure 1. U.S. production of lead from June 2015 through June 2016. Source: U.S. Geological Survey.

Total imports of lead for consumption in June 2016 were 8% more than those in the previous month but during the first half of 2016 were about 6% less than that during the same period of 2015. Year to date, Canada (51%), the Republic of Korea (22%), and Mexico (12%) accounted for the majority of imports of lead in pigs and bars (fig. 2, table 7).

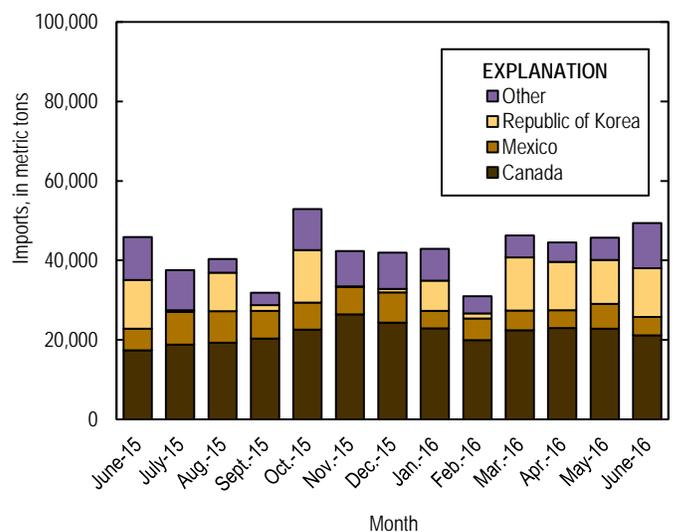


Figure 2. U.S. imports of lead in pigs and bars from June 2015 through June 2016. Source: U.S. Census Bureau.

Total exports of lead, exclusive of scrap during the first half of 2016 were slightly less than those in the same period of 2015. China (33%), the Republic of Korea (26%), and Canada (20%) were the leading destinations for ore and concentrates during the first half of 2016 (fig. 3, table 6). Exports of used lead-acid batteries for starting engines (in units) during the first half of 2016 were 38% less than those during the same period of 2015, the majority of which were exported to Canada and Mexico.

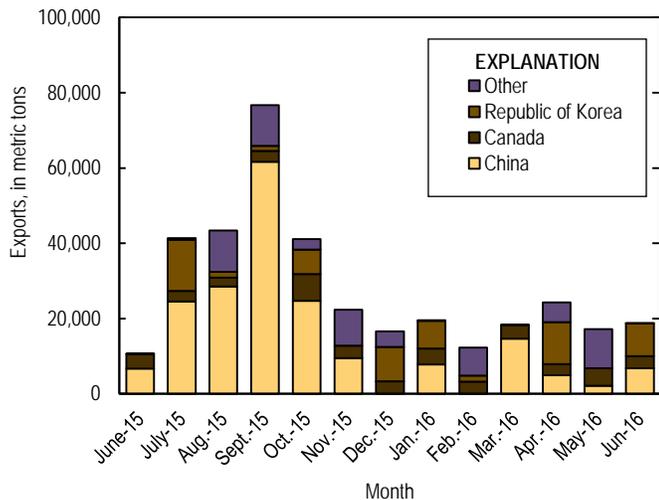


Figure 3. U.S. exports of lead in ore and concentrates from June 2015 through June 2016. Source: U.S. Census Bureau.

The Platts Metals Week average North American Market price for lead in June 2016 was \$0.87 per pound and the London Metal Exchange, Ltd. (LME) cash price was \$0.78 per pound, essentially unchanged for the second consecutive month, and 6% and 7% less, respectively, than those in June 2015 (fig. 4). During the first half of 2016, the Platts Metals Week average North American Market price for lead averaged \$0.88 per pound and the LME cash price was \$0.78 per pound, 8% less than those during the first half of 2015. The Platts average U.S. used lead-acid batteries (Midwest) price in June 2016 increased for the fifth consecutive month to \$0.34 per pound, slightly more than that in the previous month and essentially unchanged from that in June 2015 (table 2). The majority of secondary lead is produced from used lead-acid batteries.

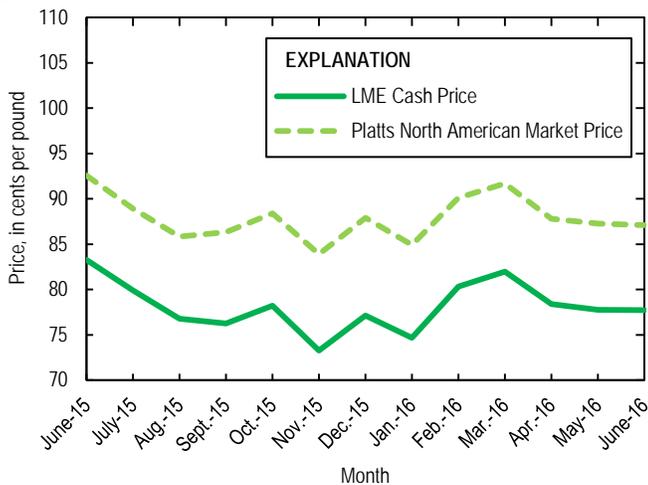


Figure 4. Average monthly prices for refined lead metal from June 2015 through June 2016. Source: Platts Metals Week.

Global LME lead stocks at the end of June 2016 were 185,150 t, essentially unchanged from stocks at the end of May 2016 and 6% more than those at the end of June 2015 (fig. 5).

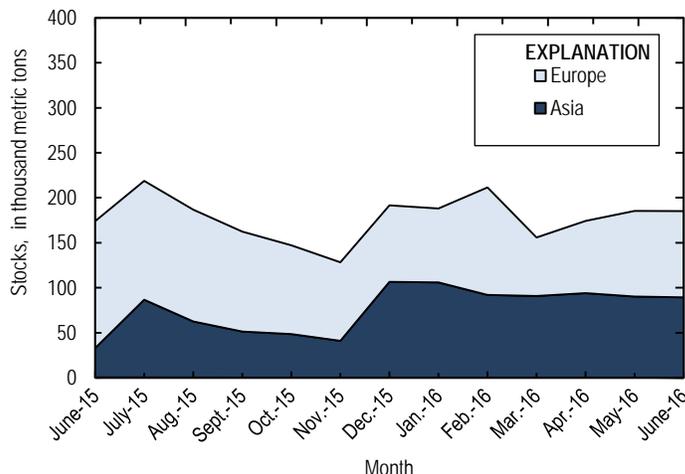


Figure 5. Global LME stocks of lead from June 2015 through June 2016. Source: London Metal Exchange, Ltd.

The Battery Council International reported that during the first half of 2016, North American producers shipped 51.5 million replacement lead-acid automotive batteries, essentially unchanged from shipments in the first half of 2015, and 11.0 million original equipment lead-acid automotive batteries, a slight increase from shipments in the same period of 2015 (Battery Council International, 2016).

According to China's National Bureau of Statistics, refined lead production in China was 369,000 t in June, a 6% increase from that in June 2015, and 2 million metric tons during the first half of 2016, a nearly 3% increase from that during the same period of 2015 (Yee, 2016).

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## References Cited

- Battery Council International, 2016, BCI 2016 monthly shipment report: Chicago, IL, Battery Council International, September 6, 12 p.
- Teck Resources Ltd., 2016, Teck reports unaudited second quarter results for 2016: Vancouver, British Columbia, Canada, Teck Resources Ltd. news release, July 28, 57 p. (Accessed September 6, 2016, at <http://www.teck.com/media/16-29-TR.pdf>.)
- Yee, Alvin, 2016, China's June output of lead rises 6% on year to 369,000 mt—NBS: Platts Metals Daily, v. 5, no. 144, July 25, p. 11.

TABLE 1  
SALIENT LEAD STATISTICS IN THE UNITED STATES<sup>1</sup>

(Metric tons, lead content, unless otherwise specified)

	2015 <sup>p</sup>		2016		
	January– December	January– June <sup>2</sup>	May	June	January– June <sup>2</sup>
<b>Production:</b>					
Mine (recoverable)	358,000	186,000	27,000 <sup>r</sup>	28,400	177,000
<b>Secondary refinery:</b>					
Reported by smelters/refineries	1,030,000	544,000	89,700	84,400	536,000
Estimated	9,740	5,500	906	852	5,430
Recovered from copper-base scrap <sup>c</sup>	15,000	7,500	1,250	1,250	7,500
Total secondary	1,050,000	557,000	91,900	86,500	549,000
Consumption of refined lead, apparent <sup>e,3</sup>	1,520,000	811,000	128,000	133,000	782,000
Stocks, end of period, consumers and secondary smelters	63,600	62,400	70,000	70,000	70,000
<b>Imports for consumption:</b>					
Bullion	343	344	--	138	138
Wrought and unwrought	523,000	276,000	45,700	49,400	259,000
<b>Exports:</b>					
Ore and concentrate	349,000	107,000	17,200	18,800	111,000
Bullion	596	397	(4)	(4)	574
Wrought and unwrought lead	58,800	27,600	5,830	3,290	20,200
TEL/TML preparations, based on lead compounds	724	77	17	26	192
Scrap (gross weight)	46,200	27,100	3,910	3,540	21,200
<b>Platts Metals Week North American Market price (cents per pound)</b>					
	91.20	95.51	87.27	87.11	88.15

<sup>c</sup>Estimated. <sup>p</sup>Preliminary. <sup>r</sup>Revised. -- Zero.

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Smelter production plus imports for consumption minus domestic exports plus stock change.

<sup>4</sup>Less than ½ unit.

TABLE 2  
MONTHLY AVERAGE LEAD PRICES

	North	London Metal Exchange		Used lead-acid
	American Market <sup>1</sup>	cash		batteries <sup>2</sup>
	¢/lb	¢/lb	\$/t	¢/lb
<b>2015:</b>				
June	92.57	83.28	1,836.03	33.60
July	88.94	79.92	1,762.00	32.88
August	85.83	76.77	1,692.49	31.13
September	86.32	76.27	1,681.56	30.30
October	88.41	78.21	1,724.18	31.00
November	83.92	73.28	1,615.54	29.63
December	87.92	77.15	1,700.87	28.00
January–December	91.20	81.02	1,786.08	31.48
<b>2016:</b>				
January	84.91	74.69	1,646.54	28.00
February	90.12	80.34	1,771.20	29.00
March	91.70	81.99	1,807.48	29.60
April	87.79	78.40	1,728.41	31.38
May	87.27	77.75	1,714.05	33.25
June	87.11	77.73	1,713.60	33.75
January–June	88.15	78.48	1,730.21	30.83

<sup>1</sup>Platts Metals Week North American Market price. Reflects the LME lead cash price plus the Platts premium for 99.97% lead.

<sup>2</sup>Platts Metals Week assessment for used lead-acid automotive batteries (50% lead) picked up in U.S. Midwest, suitable for delivery to secondary smelters within 30 days.

Source: Platts Metals Week.

TABLE 3  
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP IN JUNE 2016<sup>1</sup>

(Metric tons, gross weight)

Item	Stocks	Net	Consumption	Stocks
	May 31, 2016	receipts		June 30, 2016
Battery-lead	41,000 <sup>r</sup>	82,500	74,600	48,800
Other <sup>2</sup>	4,250 <sup>r</sup>	1,950	2,580	3,620
Total	45,200 <sup>r</sup>	84,400	77,200	52,400
Percent change from preceding month <sup>3</sup>	XX	-3.8	-11.6	+15.9

<sup>r</sup>Revised. XX Not applicable.

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

<sup>2</sup>Includes soft lead, solder, drosses and residues, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap.

<sup>3</sup>Based on unrounded data; preceding monthly data may have been revised.

TABLE 4  
LEAD, TIN, AND ANTIMONY RECOVERED FROM  
LEAD-BASE SCRAP IN JUNE 2016<sup>1</sup>

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	63,900	--	--
Remelt lead	2,760	--	W
Antimonial lead	17,100	W	W
Other <sup>2</sup>	587	W	--
Total lead-base	84,400	164	302

W Withheld to avoid disclosing company proprietary data; included in "Other." -- Zero.

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

<sup>2</sup>Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 5  
U.S. APPARENT CONSUMPTION OF LEAD<sup>1</sup>

(Metric tons)

Period	Production	Imports <sup>2,3</sup>	Exports <sup>2,3</sup>	Stock change during period	Apparent consumption <sup>4</sup>
2015: <sup>p</sup>					
June	82,500	45,800	4,180	(335)	125,000
July	79,800	37,600	3,720	(1,460)	115,000
August	82,700	40,400	4,320	6,200	113,000
September	83,600	31,900	4,230	2,430	109,000
October	84,800	52,900	6,450	(959)	132,000
November	81,300	42,400	5,010	(704)	119,000
December	78,900	41,900	5,970	(3,450)	118,000
January–December	1,050,000	523,000	55,900	(2,070)	1,520,000
2016:					
January	94,300	42,900	1,420	3,470	132,000
February	90,800	31,000	2,980	(1,070)	120,000
March	92,300	46,300	3,500	(671)	136,000
April	93,500	44,500	2,560	2,350	133,000
May	91,900	45,700	5,500	4,540	128,000
June	86,500	49,400	2,990	(41)	133,000
January–June	549,000	260,000	18,900	8,570	782,000

<sup>p</sup>Preliminary.

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

<sup>2</sup>Import and export data are for Harmonized Tariff Schedule of the United States (HTS) codes 7801.10.0000, 7801.91.0000, 7801.99.9030, 7801.99.9050.

<sup>3</sup>Source: U.S. Census Bureau.

<sup>4</sup>Smelter production plus imports for consumption minus domestic exports plus stock change.

TABLE 6  
U.S. EXPORTS OF LEAD, BY CLASS<sup>1</sup>

(Metric tons unless otherwise specified)

	2015		2016		
	Year	January–June <sup>2</sup>	May	June	January–June <sup>2</sup>
Lead content:					
Ore and concentrates	349,000	107,000	17,200	18,800	111,000
Bullion	596	397	( <sup>3</sup> )	( <sup>3</sup> )	574
Wrought and unwrought lead	58,800	27,600	5,830	3,290	20,200
TEL/TML preparations, based on lead compounds	724	77	17	26	192
Total	409,000	136,000	23,100	22,100	132,000
Gross weight, scrap	46,200	27,100	3,910	3,540	21,200
Spent lead-acid batteries, used for starting engines (units)	25,900,000	14,800,000	1,350,000	1,650,000	9,220,000

<sup>1</sup>Data are rounded to more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION BY TYPE OF MATERIALS AND BY  
COUNTRY OF ORIGIN<sup>1</sup>

(Metric tons, lead content)

Material and country of origin	2015		2016		
	Year	January– June <sup>2</sup>	May	June	January– June <sup>2</sup>
<b>Bullion:</b>					
Mexico	203	203	--	--	--
Venezuela	46	46	--	--	--
Other	94	95	--	138	138
Total	343	344	--	138	138
<b>Wrought and unwrought:</b>					
Australia	4,750	4,590	--	--	2,480
Brazil	--	--	301	203	3,750
Canada	251,000	119,000	22,900	21,200	132,000
Chile	989	--	227	71	742
China	1,250	( <sup>3</sup> )	273	--	273
Dominican Republic	50	50	--	--	--
Ecuador	12,400	5,260	294	1,050	3,460
France	79	--	--	--	--
Germany	9,630	5,940	--	--	1,230
India	21,700	11,300	1,310	1,360	8,570
Indonesia	1,050	1,050	--	--	--
Israel	1,180	960	--	--	--
Kazakhstan	22,900	13,400	--	--	538
Korea, Republic of	57,300	31,600	11,100	12,300	57,800
Mexico	111,000	66,800	6,190	4,590	30,100
Netherlands	6,020	2,390	--	--	--
Nigeria	522	522	--	--	--
Panama	848	400	--	--	300
Russia	10,700	7,230	1,510	3,010	9,000
Spain	1,650	178	--	--	633
Sri Lanka	1,290	694	--	100	950
Ukraine	275	275	--	--	--
United Kingdom	2,560	1,940	97	--	191
Venezuela	3,930	2,530	114	582	1,010
Other	79	--	1,480	4,970	6,060
Total	523,000	276,000	45,700	49,400	259,000
Grand total	524,000	277,000	45,700	49,500	259,000

-- Zero.

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

<sup>2</sup>May include revisions to previously published data.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.