## Mineral Industry Surveys

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## SULFUR IN JULY 2019

During July 2019, production of recovered elemental sulfur was 720,000 metric tons ( t ), which was $11 \%$ higher than that of June 2019 and 7\% lower than that of July 2018. Shipments were $725,000 \mathrm{t}$, which was $13 \%$ higher than those of June 2019. Producers’ ending stocks for July 2019 were 107,000 t (table 1).

Imports of recovered sulfur for July 2019 were estimated to be $126,000 \mathrm{t}$; exports were $120,000 \mathrm{t}$. Imports of sulfuric acid for July 2019 were 251,000 t; exports were 15,000 t (tables 24).
U.S. sulfur consumption, calculated as shipments minus exports plus imports, was 731,000 t in July 2019. This was 5\%
higher than that of June 2019 and 7\% lower than that of July 2018 (table 5).

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TABLE 1
SALIENT SULFUR STATISTICS ${ }^{1}$
(Thousand metric tons)

| Period | Production |  |  | Shipments, all sources | Stocks, end of period ${ }^{3}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Petroleum ${ }^{2}$ | Natural gas | Total |  |  |
| 2018: |  |  |  |  |  |
| January-December | 8,380 | 626 | 9,010 | 9,020 | 122 |
| January-July | 4,810 | $373{ }^{\text {r }}$ | 5,190 | 5,210 | 112 |
| July | 728 | 44 | 772 | 789 | 112 |
| August | 751 | 54 | 805 | 809 | 107 |
| September | 690 | 38 | 728 | 722 | 113 |
| October | 663 | 53 | 717 | 713 | 117 |
| November | 696 | 54 | 750 | 762 | 105 |
| December | 766 | 54 | 820 | 803 | 122 |
| 2019: |  |  |  |  |  |
| January | 699 | 47 | 746 | 767 | 101 |
| February | 592 | 26 | 618 | 613 | 109 |
| March | 650 | 28 | 678 | 664 | $120{ }^{\text {r }}$ |
| April | 625 | $28{ }^{\text {r }}$ | 652 | $666{ }^{\text {r }}$ | $108{ }^{\text {r }}$ |
| May | 621 | 25 | 647 | 646 | 107 |
| June | 623 | $22{ }^{\text {r }}$ | $647{ }^{\text {r }}$ | 639 | $113{ }^{\text {r }}$ |
| July ${ }^{\text {p }}$ | 691 | 28 | 720 | 725 | 107 |
| January-July | 4,500 | 205 | 4,710 | 4,720 | 107 |

${ }^{{ }^{~}}$ Preliminary. ${ }^{\mathrm{r}}$ Revised.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown.
${ }^{2}$ Includes a small quantity from coking operations.
${ }^{3}$ Subject to inventory adjustments.

TABLE 2
U.S. IMPORTS OF SULFUR ${ }^{1}$
(Thousand metric tons and thousand dollars)

| Period | Canada |  | Total, all countries ${ }^{2}$ |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value ${ }^{3}$ | Quantity | Value ${ }^{3}$ |
| 2018: |  |  |  |  |
| January-December | 1,510 | 90,600 | 2,230 | 205,000 |
| January-July | $839{ }^{\text {r }}$ | 45,400 ${ }^{\text {r }}$ | 1,310 ${ }^{\text {r }}$ | 118,000 |
| July | 98 | 6,200 | 198 | 20,600 |
| August | 151 | 9,040 | 214 | 18,800 |
| September | 120 | 8,200 | 155 | 13,700 |
| October | 139 | 9,310 | 190 | 17,700 |
| November | 135 | 9,250 | 185 | 26,600 |
| December | 125 | 9,390 | 173 | 10,500 |
| 2019: |  |  |  |  |
| January | 131 | 10,100 | 180 | 19,800 |
| February | 107 | 6,400 | 157 | 16,000 |
| March | 146 | 8,240 | 193 | 15,400 |
| April | 138 | 7,370 | 183 | 14,200 |
| May | 118 | 6,180 | 119 | 7,060 |
| June | 109 | 4,980 | 209 | 16,200 |
| July | $120{ }^{\text {e }}$ | 6,730 | $126{ }^{\text {e }}$ | 13,000 |
| January-July | 870 | 50,000 | 1,170 | 102,000 |

${ }^{\mathrm{e}}$ Estimated. ${ }^{\mathrm{r}}$ Revised.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown.
${ }^{2}$ May include other countries not listed.
${ }^{3}$ Declared customs valuation.

Sources: U.S. Census Bureau as adjusted by U.S. Geological Survey and Acuity Commodities.

TABLE 3
U.S. IMPORTS OF SULFURIC ACID ${ }^{1}$
(Thousand metric tons and thousand dollars)

| Period | Canada |  |  | Mexico |  |  | Total, all countries ${ }^{2}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Sulfur content | Value ${ }^{3}$ | Quantity | Sulfur content | Value ${ }^{3}$ | Quantity | Sulfur content | Value ${ }^{3}$ |
| 2018: |  |  |  |  |  |  |  |  |  |
| January-December | 1,900 | 622 | 88,100 | 470 | 154 | 18,400 | 3,050 | 997 | 170,000 |
| January-July | 1,110 | 364 | 50,600 ${ }^{\text {r }}$ | 272 | 89 | 10,800 | 1,800 | $590{ }^{\text {r }}$ | 97,400 ${ }^{\text {r }}$ |
| July | 167 | 54 | 8,030 | 49 | 16 | 2,990 | 275 | 90 | 16,800 |
| August | 149 | 49 | 6,720 | 39 | 13 | 1,420 | 236 | 77 | 14,200 |
| September | 153 | 50 | 6,420 | 33 | 11 | 1,260 | 252 | 82 | 13,300 |
| October | 164 | 53 | 7,990 | 21 | 7 | 780 | 266 | 87 | 16,300 |
| November | 136 | 45 | 6,810 | 46 | 15 | 1,870 | 220 | 72 | 14,000 |
| December | 187 | 61 | 9,480 | 57 | 19 | 2,200 | 272 | 89 | 15,000 |
| 2019: |  |  |  |  |  |  |  |  |  |
| January | 139 | 46 | 7,280 | 36 | 12 | 1,470 | 237 | 77 | 14,200 |
| February | 118 | 39 | 6,380 | 43 | 14 | 1,890 | 185 | 61 | 12,000 |
| March | 183 | 60 | 9,220 | 63 | 21 | 4,490 | 350 | 114 | 24,200 |
| April | 157 | 51 | 16,300 | 65 | 21 | 4,320 | 250 | 82 | 24,700 |
| May | 175 | 57 | 19,100 | 23 | 8 | 2,310 | 233 | 76 | 25,700 |
| June | 151 | 49 | 15,600 | 24 | 8 | 1,810 | 237 | 78 | 23,300 |
| July | 178 | 58 | 14,200 | 34 | 11 | 2,140 | 251 | 82 | 21,700 |
| January-July | 1,100 | 360 | 88,100 | 289 | 94 | 18,400 | 1,740 | 570 | 146,000 |

${ }^{\mathrm{r}}$ Revised.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown.
${ }^{2}$ May include other countries not listed.
${ }^{3}$ Declared customs valuation.
Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS OF SULFUR AND SULFURIC ACID ${ }^{1}$
(Thousand metric tons and thousand dollars)

| Period | Sulfur |  | Sulfuric acid |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Quantity | Sulfur content | Value ${ }^{2}$ |
|  | Quantity | Value ${ }^{2}$ |  |  |  |
| 2018: |  |  |  |  |  |
| January-December | 2,390 | 299,000 | 342 | 112 | 40,400 |
| January-July | 1,320 | 167,000 ${ }^{\text {r }}$ | $228{ }^{\text {r }}$ | $74{ }^{\text {r }}$ | 23,500 ${ }^{\text {r }}$ |
| July | 204 | 26,600 | 33 | 11 | 4,730 |
| August | 173 | 23,100 | 25 | 8 | 3,820 |
| September | 217 | 31,100 | 32 | 10 | 4,110 |
| October | 172 | 24,300 | 15 | 5 | 2,210 |
| November | 193 | 27,100 | 16 | 5 | 2,680 |
| December | 318 | 26,400 | 28 | 9 | 4,050 |
| 2019: |  |  |  |  |  |
| January | 349 | 29,800 | 16 | 5 | 2,980 |
| February | 119 | 15,800 | 18 | 6 | 2,990 |
| March | 144 | 14,700 | 13 | 4 | 2,610 |
| April | 116 | 14,000 | 21 | 7 | 4,240 |
| May | 210 | 21,900 | 21 | 7 | 2,910 |
| June | 150 | 13,600 | 18 | 6 | 1,920 |
| July | 120 | 12,400 | 15 | 5 | 2,890 |
| January-July | 1,210 | 122,000 | 122 | 40 | 20,500 |

${ }^{\mathrm{r}}$ Revised.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown.
${ }^{2}$ Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5
U.S. CONSUMPTION OF SULFUR ${ }^{1}$
(Thousand metric tons)

| Period | Domestic sources ${ }^{2}$ | Imports | Consumption |
| :---: | :---: | :---: | :---: |
| 2018: |  |  |  |
| January-December | 6,620 | 2,230 | 8,850 |
| January-July | 3,890 | 1,310 ${ }^{\text {r }}$ | 5,200 ${ }^{\text {r }}$ |
| July | 585 | 198 | 783 |
| August | 636 | 214 | 850 |
| September | 505 | 155 | 660 |
| October | 541 | 190 | 731 |
| November | 569 | 185 | 754 |
| December | 485 | 173 | 658 |
| 2019: |  |  |  |
| January | 418 | 180 | 598 |
| February | 494 | 157 | 651 |
| March | 520 | 193 | 713 |
| April | $550{ }^{\text {r }}$ | 183 | $733{ }^{\text {r }}$ |
| May | 436 | 119 | 555 |
| June | $489{ }^{\text {r }}$ | 209 | $698{ }^{\text {r }}$ |
| July ${ }^{\text {p }}$ | 605 | 126 | 731 |
| January-July | 3,510 | 1,170 | 4,680 |

${ }^{\mathrm{P}}$ Preliminary. ${ }^{\mathrm{r}}$ Revised.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown.
${ }^{2}$ Calculated as shipments minus exports.

TABLE 6

## RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES, BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT ${ }^{1}$

(Thousand metric tons)

| District and source | January-July $2018{ }^{2}$ |  | June 2019 |  | July 2019 ${ }^{\text {P }}$ |  | January-July $2019{ }^{\text {p. } 2}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Production | Shipments | Production | Shipments | Production | Shipments | Production | Shipments |
| PAD 1: |  |  |  |  |  |  |  |  |
| Petroleum and coke | 139 | 138 | 14 | 12 | 18 | 20 | 97 | 98 |
| Natural gas | 8 | 8 | 1 | 1 | 1 | 1 | 8 | 8 |
| Total | 147 | 146 | 15 | $13^{\text {r }}$ | 20 | 21 | 105 | 106 |
| PAD 2: |  |  |  |  |  |  |  |  |
| Petroleum and coke | 802 | 807 | 106 | 103 | 122 | 125 | 751 | 752 |
| Natural gas | 4 | 4 | 1 | -- | -- | -- | 2 | 2 |
| Total | 806 | 812 | 107 | $103{ }^{\text {r }}$ | 122 | 125 | 753 | 754 |
| PAD 3: |  |  |  |  |  |  |  |  |
| Petroleum and coke | 3,010 | 3,010 | 383 | 380 | 423 | 425 | 2,800 | 2,800 |
| Natural gas | 74 | 74 | $10^{\text {r }}$ | 9 | 10 | 10 | 71 | 68 |
| Total | 3,080 | 3,080 | 393 | $390{ }^{\text {r }}$ | 433 | 435 | 2,870 | 2,870 |
| PAD 4 and 5: |  |  |  |  |  |  |  |  |
| Petroleum and coke | 865 | 880 | 121 | 122 | 128 | 128 | 852 | 860 |
| Natural gas | 288 | 286 | 11 | 11 | 17 | 17 | 124 | 130 |
| Total | 1,150 | 1,170 | $132{ }^{\text {r }}$ | 133 | 145 | 144 | 976 | 989 |
| Grand total | 5,190 | 5,210 | $647{ }^{\text {r }}$ | 639 | 720 | 725 | 4,710 | 4,720 |

${ }^{\mathrm{p}}$ Preliminary. ${ }^{\mathrm{r}}$ Revised. -- Zero.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown.
${ }^{2}$ May include revisions to previously published data.

TABLE 7

## COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS ${ }^{1}$

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

|  | 2018 | 2019 |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | June | July | JanuaryJuly |
|  |  |  |  |  |
| Production | 9.01 | $7.87{ }^{\text {r }}$ | $8.48{ }^{\text {p }}$ | 8.11 |
| Shipments | 9.02 | $7.77{ }^{\text {r }}$ | $8.54{ }^{\text {p }}$ | 8.12 |
| Exports of sulfur | 2.39 | 1.83 | 1.42 | 2.08 |
| Imports of sulfur: |  |  |  |  |
| Canada | 1.51 | 1.33 | 1.41 | 1.50 |
| Total ${ }^{2}$ | 2.23 | 2.54 | 1.48 | 2.01 |
| Exports of $\mathrm{H}_{2} \mathrm{SO}_{4}$ | 0.34 | 0.22 | 0.17 | 0.21 |
| Imports of $\mathrm{H}_{2} \mathrm{SO}_{4}$ : |  |  |  |  |
| Canada | 1.90 | 1.83 | 2.10 | 1.89 |
| Mexico | 0.47 | 0.29 | 0.40 | 0.50 |
| Total ${ }^{2}$ | 3.05 | 2.89 | 2.95 | 3.00 |
| Consumption: |  |  |  |  |
| Domestic sources | 6.62 | $5.94{ }^{\text {r }}$ | 7.12 | 6.04 |
| Imports | 2.23 | 2.54 | 1.48 | 2.01 |
| Total | 8.85 | $8.49{ }^{\text {r }}$ | 8.60 | 8.05 |
| Sulfur export values ${ }^{3}$ | 125 | 90 | 103 | 101 |
| Sulfur import values: ${ }^{3}$ |  |  |  |  |
| Canada | 60 | 46 | 56 | 58 |
| Average ${ }^{2}$ | 92 | 78 | 103 | 87 |
| $\mathrm{H}_{2} \mathrm{SO}_{4}$ export values ${ }^{3}$ | 118 | 106 | 199 | 168 |
| $\mathrm{H}_{2} \mathrm{SO}_{4}$ import values: ${ }^{3}$ |  |  |  |  |
| Canada | 46 | 104 | 80 | 80 |
| Mexico | 39 | 76 | 63 | 64 |
| Average ${ }^{2}$ | 56 | 98 | 87 | 84 |

${ }^{\mathrm{p}}$ Preliminary. ${ }^{\mathrm{r}}$ Revised.
${ }^{1}$ Data are rounded to no more than three significant digits; may not add to totals shown. ${ }^{2}$ Includes other countries not listed.
${ }^{3}$ Average value per ton.

