

AFPM United States Refining and Storage Capacity Report



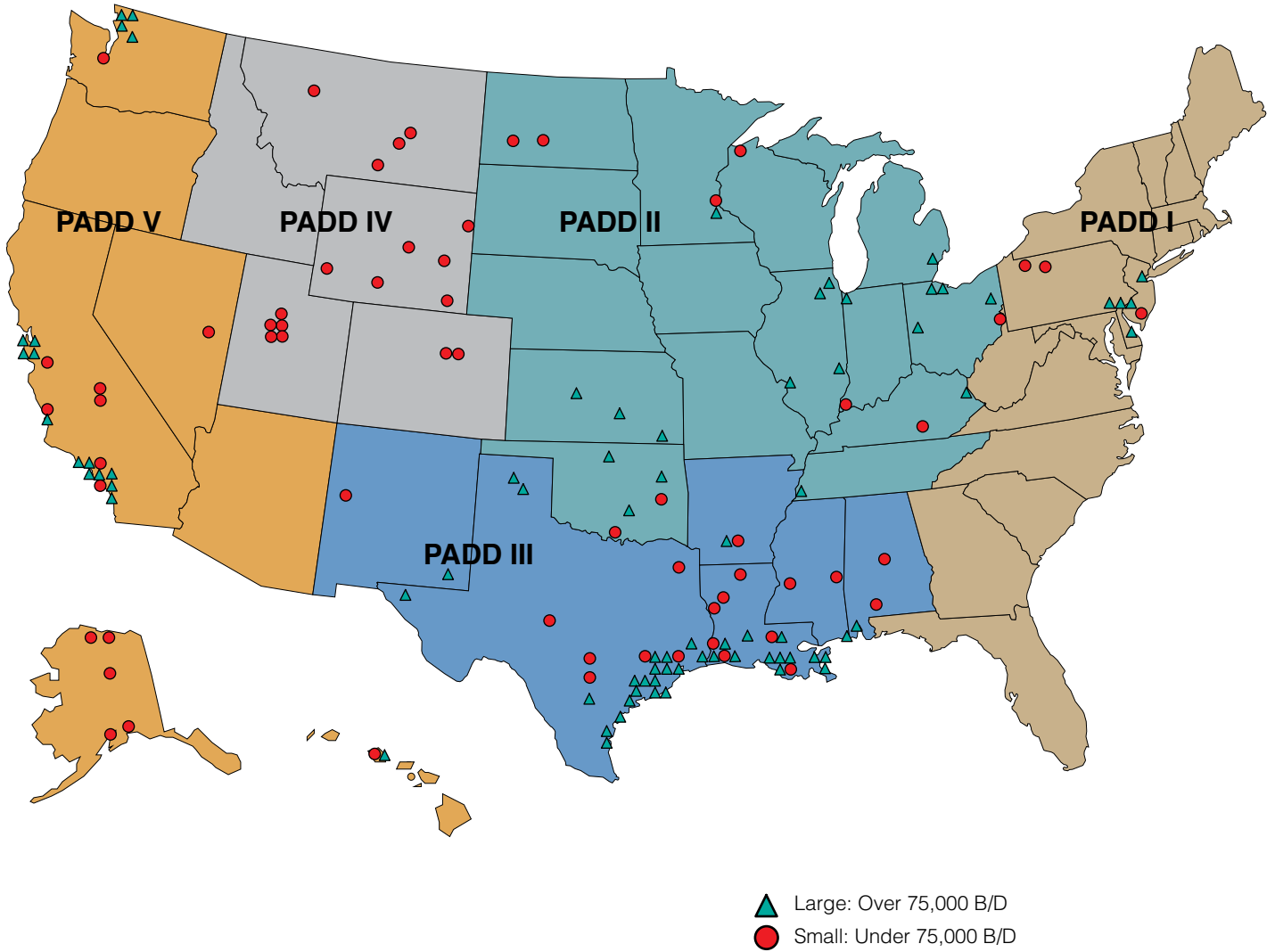
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Locations of
U.S. Refineries 2017



Refining Capacity Report January 1, 2017

AFPM United States Refining and Storage Capacity Report

The enclosed statistics provide U.S. refining and storage capacity data as reported by the DOE Energy Information Administration in their 2017 Petroleum Supply Annual. These data, along with other DOE statistics, are also available electronically. (See the note at the bottom for details). This report is also available on the AFPM website (www.afpm.org) under Publications/Statistical Reports.

On January 1, 2017, there were 141^a operable refineries in the United States with total crude distillation capacity of about 18.62 million barrels per calendar day (bpcd) and 19.80 million barrels per stream day (bpsd). Of these, 137 refineries were operating on January 1, 2016, with operating capacity listed at 18.31 million barrels per calendar day (bpcd) and 19.47 million bpsd.

Overall, U.S. refining capacity increased 300,000 bpcd in 2017. The number of idle refineries on January 1 increased from two to four from 2016 to 2017.

The following table lists the total U.S. refining capacity for the past five years:

January 1 Total Capacity in Thousands of Barrels Per Calendar Day

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|----------------|--------|--------|--------|--------|--------|
| U.S. Capacity | 17,823 | 17,925 | 17,967 | 18,317 | 18,617 |
| Puerto Rico | – | – | – | – | – |
| Virgin Islands | 0 | 0 | 0 | 0 | 0 |

Percentage Change in U.S. Capacity from Previous Year

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|--|-------|-------|-------|-------|-------|
| | 2.89% | 0.57% | 0.23% | 1.95% | 1.64% |

This summary of petroleum refineries in the United States and U.S. territories is taken from the Department of Energy's Petroleum Supply Annual 2017, published June 22, 2017. Capacity data are reproduced by AFPM as a courtesy to members. The data enclosed, as well as other DOE refining statistics, are available electronically from DOE (<http://www.eia.doe.gov>). For more information, call EIA's National Information Center at 202.586.8800. email at: infoctr@eia.doe.gov.

^a The total count of operational refineries (141) includes a chemical plant that produces gasoline blending components (Equistar Chemicals LP, Channelview, TX); a condensate splitter (Kinder Morgan, Galena Park, TX); two pairs of refineries that are operated as a single entity (Suncor, Commerce City, CO; HollyFrontier, Tulsa, OK); and three other facilities which do not operate distillation capacity (Alon, Bakersfield, CA; Excel Paralubes, Westlake, LA; South Hampton Resources, Silsbee, TX).

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Table 1. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 2017

| PAD District and State | Number of Operable Refineries | | | Atmospheric Crude Oil Distillation Capacity | | | | | |
|-------------------------|-------------------------------|------------|-------------------|---|-------------------|-------------------|------------------------|-------------------|-------------------|
| | | | | Barrels per Calendar Day | | | Barrels per Stream Day | | |
| | Total | Operating | Idle ^a | Total | Operating | Idle ^b | Total | Operating | Idle ^b |
| PAD District I | 9 | 8 | 1 | 1,255,500 | 1,181,500 | 74,000 | 1,353,400 | 1,275,400 | 78,000 |
| Delaware..... | 1 | 1 | 0 | 182,200 | 182,200 | 0 | 190,200 | 190,200 | 0 |
| New Jersey..... | 3 | 2 | 1 | 475,000 | 401,000 | 74,000 | 500,400 | 422,400 | 78,000 |
| Pennsylvania..... | 4 | 4 | 0 | 576,000 | 576,000 | 0 | 639,800 | 639,800 | 0 |
| West Virginia..... | 1 | 1 | 0 | 22,300 | 22,300 | 0 | 23,000 | 23,000 | 0 |
| PAD District II | 27 | 26 | 1 | 3,998,855 | 3,906,555 | 92,300 | 4,283,764 | 4,185,264 | 98,500 |
| Illinois..... | 4 | 4 | 0 | 981,540 | 959,540 | 22,000 | 1,043,200 | 1,020,200 | 23,000 |
| Indiana..... | 2 | 2 | 0 | 441,700 | 441,700 | 0 | 460,800 | 460,800 | 0 |
| Kansas..... | 3 | 3 | 0 | 361,000 | 361,000 | 0 | 373,500 | 373,500 | 0 |
| Kentucky..... | 2 | 2 | 0 | 278,500 | 278,500 | 0 | 298,300 | 298,300 | 0 |
| Michigan..... | 1 | 1 | 0 | 132,000 | 132,000 | 0 | 144,000 | 144,000 | 0 |
| Minnesota..... | 2 | 2 | 0 | 388,515 | 388,515 | 0 | 442,700 | 442,700 | 0 |
| North Dakota..... | 2 | 2 | 0 | 93,300 | 93,300 | 0 | 94,600 | 94,600 | 0 |
| Ohio..... | 4 | 4 | 0 | 583,000 | 583,000 | 0 | 633,000 | 633,000 | 0 |
| Oklahoma..... | 5 | 4 | 1 | 511,300 | 441,000 | 70,300 | 548,664 | 473,164 | 75,500 |
| Tennessee..... | 1 | 1 | 0 | 190,000 | 190,000 | 0 | 195,000 | 195,000 | 0 |
| Wisconsin..... | 1 | 1 | 0 | 38,000 | 38,000 | 0 | 50,000 | 50,000 | 0 |
| PAD District III | 58 | 57 | 1 | 9,737,871 | 9,695,371 | 42,500 | 10,340,255 | 10,290,255 | 50,000 |
| Alabama..... | 3 | 3 | 0 | 131,675 | 131,675 | 0 | 140,500 | 140,500 | 0 |
| Arkansas..... | 2 | 2 | 0 | 90,500 | 90,500 | 0 | 92,700 | 92,700 | 0 |
| Louisiana..... | 18 | 18 | 0 | 3,343,206 | 3,343,206 | 0 | 3,530,355 | 3,530,355 | 0 |
| Mississippi..... | 3 | 3 | 0 | 377,500 | 377,500 | 0 | 409,800 | 409,800 | 0 |
| New Mexico..... | 2 | 2 | 0 | 123,500 | 123,500 | 0 | 141,000 | 141,000 | 0 |
| Texas..... | 30 | 29 | 1 | 5,671,490 | 5,628,990 | 42,500 | 6,025,900 | 5,975,900 | 50,000 |
| PAD District IV | 16 | 16 | 0 | 692,030 | 682,430 | 9,600 | 731,400 | 721,400 | 10,000 |
| Colorado..... | 2 | 2 | 0 | 103,000 | 103,000 | 0 | 110,500 | 110,500 | 0 |
| Montana..... | 4 | 4 | 0 | 214,700 | 205,100 | 9,600 | 222,400 | 212,400 | 10,000 |
| Utah..... | 5 | 5 | 0 | 196,830 | 196,830 | 0 | 209,100 | 209,100 | 0 |
| Wyoming..... | 5 | 5 | 0 | 177,500 | 177,500 | 0 | 189,400 | 189,400 | 0 |
| PAD District V | 31 | 30 | 1 | 2,932,771 | 2,848,271 | 84,500 | 3,091,000 | 3,001,000 | 90,000 |
| Alaska..... | 5 | 5 | 0 | 158,900 | 158,900 | 0 | 178,500 | 178,500 | 0 |
| California..... | 18 | 17 | 1 | 1,990,671 | 1,906,171 | 84,500 | 2,096,000 | 2,006,000 | 90,000 |
| Hawaii..... | 2 | 2 | 0 | 147,500 | 147,500 | 0 | 152,000 | 152,000 | 0 |
| Nevada..... | 1 | 1 | 0 | 2,000 | 2,000 | 0 | 5,000 | 5,000 | 0 |
| Washington..... | 5 | 5 | 0 | 633,700 | 633,700 | 0 | 659,500 | 659,500 | 0 |
| U.S. Total | 141 | 137 | 4 | 18,617,027 | 18,314,127 | 302,900 | 19,799,819 | 19,473,319 | 326,500 |

Table 1. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 2017

| PAD District and State | Downstream Charge Capacity (Barrels per Stream Day) | | | | | | | |
|-------------------------------|---|---------------------|--------------------|---------------|---------------------------------|------------------------|-----------------------------------|----------------------------------|
| | Vacuum Distillation | Thermal Cracking | Catalytic Cracking | | Catalytic Hydro- Cracking | Catalytic Reforming | Hydrotreating/ Desulfurization | Fuels Solvent Deasphalting |
| | | | Fresh | Recycled | | | | |
| PAD District I | 586,400 | 81,500 | 497,500 | 5,000 | 45,300 | 249,200 | 1,032,600 | 22,000 |
| Delaware | 104,600 | 54,500 | 82,000 | 4,000 | 22,300 | 43,800 | 151,500 | 0 |
| New Jersey | 197,000 | 27,000 | 200,000 | 0 | 0 | 64,000 | 335,100 | 22,000 |
| Pennsylvania | 276,200 | 0 | 215,500 | 1,000 | 23,000 | 136,700 | 521,900 | 0 |
| West Virginia | 8,600 | 0 | 0 | 0 | 0 | 4,700 | 24,100 | 0 |
| PAD District II | 1,790,642 | 581,085 | 1,343,412 | 15,800 | 351,700 | 896,593 | 3,913,379 | 22,350 |
| Illinois | 471,900 | 211,200 | 324,300 | 0 | 95,500 | 247,700 | 930,450 | 0 |
| Indiana | 277,900 | 102,000 | 183,200 | 7,200 | 0 | 71,500 | 468,800 | 0 |
| Kansas | 148,000 | 69,000 | 104,000 | 500 | 38,500 | 81,000 | 394,700 | 0 |
| Kentucky | 130,000 | 0 | 104,000 | 0 | 0 | 55,300 | 273,300 | 13,000 |
| Michigan | 77,900 | 33,500 | 40,000 | 0 | 0 | 21,500 | 130,500 | 0 |
| Minnesota | 284,600 | 69,000 | 117,500 | 2,500 | 50,000 | 75,700 | 441,530 | 4,500 |
| North Dakota | 0 | 0 | 27,000 | 3,600 | 0 | 12,500 | 52,060 | 0 |
| Ohio | 159,500 | 58,000 | 208,300 | 0 | 109,000 | 170,300 | 516,900 | 0 |
| Oklahoma | 220,342 | 38,385 | 154,112 | 2,000 | 32,200 | 117,093 | 543,439 | 4,850 |
| Tennessee | 0 | 0 | 70,000 | 0 | 26,500 | 36,000 | 129,000 | 0 |
| Wisconsin | 20,500 | 0 | 11,000 | 0 | 0 | 8,000 | 32,700 | 0 |
| PAD District III | 4,863,425 | 1,639,680 | 3,060,900 | 33,500 | 1,377,500 | 1,872,370 | 9,394,045 | 262,400 |
| Alabama | 47,000 | 32,000 | 0 | 0 | 20,500 | 37,300 | 122,100 | 0 |
| Arkansas | 48,850 | 0 | 21,000 | 0 | 0 | 15,300 | 98,250 | 7,400 |
| Louisiana | 1,787,900 | 567,100 | 1,137,200 | 5,500 | 488,400 | 606,890 | 3,030,140 | 71,000 |
| Mississippi | 338,875 | 105,000 | 88,000 | 0 | 117,500 | 95,600 | 299,300 | 0 |
| New Mexico | 29,600 | 0 | 35,500 | 3,000 | 18,000 | 31,300 | 118,100 | 18,000 |
| Texas | 2,611,200 | 935,580 | 1,779,200 | 25,000 | 733,100 | 1,085,980 | 5,726,155 | 166,000 |
| PAD District IV | 255,400 | 90,800 | 219,460 | 4,990 | 60,800 | 133,850 | 593,260 | 6,000 |
| Colorado | 33,500 | 0 | 30,000 | 500 | 0 | 21,900 | 85,000 | 0 |
| Montana | 118,400 | 47,100 | 64,660 | 990 | 30,200 | 39,550 | 218,260 | 0 |
| Utah | 34,500 | 10,000 | 71,300 | 3,000 | 15,000 | 36,800 | 141,600 | 6,000 |
| Wyoming | 69,000 | 33,700 | 53,500 | 500 | 15,600 | 35,600 | 148,400 | 0 |
| PAD District V | 1,629,706 | 600,600 | 886,200 | 16,400 | 586,000 | 597,800 | 2,688,200 | 80,300 |
| Alaska | 26,000 | 0 | 0 | 0 | 12,500 | 13,500 | 24,500 | 0 |
| California | 1,231,756 | 506,800 | 718,500 | 13,400 | 488,500 | 426,500 | 2,179,300 | 56,000 |
| Hawaii | 71,000 | 11,000 | 22,000 | 0 | 20,000 | 13,500 | 16,500 | 0 |
| Nevada | 2,750 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 298,200 | 82,800 | 145,700 | 3,000 | 65,000 | 144,300 | 467,900 | 24,300 |
| U.S. Total | 9,125,573 | 2,993,665 | 6,007,472 | 75,690 | 2,421,300 | 3,749,813 | 17,621,484 | 393,050 |

^a Refineries where distillation units were completely idle but not permanently shutdown on January 1, 2017.

^b Includes capacity from refineries that are either completely or partially idle.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 2. Production Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| PAD District and State | Production Capacity | | | | | | | |
|-------------------------|---------------------|----------------|----------------------|----------------|----------------|---------------------------|-------------------------------|-------------------------|
| | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | Lubricants | Marketable Petroleum Coke | Hydrogen ^a (MMcfd) | Sulfur (short tons/day) |
| PAD District I | 84,729 | 10,111 | 92,765 | 22,300 | 20,045 | 21,120 | 84 | 1,110 |
| Delaware | 11,729 | 5,191 | 0 | 6,000 | 0 | 13,620 | 40 | 596 |
| New Jersey | 30,000 | 0 | 70,000 | 4,000 | 12,000 | 7,500 | 31 | 280 |
| Pennsylvania | 43,000 | 4,920 | 22,065 | 12,300 | 2,945 | 0 | 10 | 233 |
| West Virginia | 0 | 0 | 700 | 0 | 5,100 | 0 | 3 | 1 |
| PAD District II | 282,916 | 113,200 | 268,714 | 168,500 | 9,100 | 178,409 | 612 | 8,464 |
| Illinois | 85,400 | 17,200 | 38,100 | 16,000 | 0 | 66,695 | 202 | 2,380 |
| Indiana | 33,200 | 16,800 | 33,700 | 29,600 | 0 | 30,000 | 0 | 1,913 |
| Kansas | 33,500 | 0 | 4,000 | 32,300 | 0 | 23,064 | 120 | 824 |
| Kentucky | 21,000 | 3,200 | 35,400 | 17,000 | 0 | 0 | 0 | 448 |
| Michigan | 7,000 | 0 | 24,000 | 0 | 0 | 11,800 | 0 | 459 |
| Minnesota | 19,150 | 0 | 58,400 | 28,500 | 0 | 23,600 | 186 | 1,264 |
| North Dakota | 4,830 | 0 | 0 | 0 | 0 | 0 | 2 | 19 |
| Ohio | 28,950 | 20,000 | 23,800 | 31,200 | 0 | 14,200 | 0 | 683 |
| Oklahoma | 35,586 | 21,000 | 43,414 | 13,900 | 9,100 | 9,050 | 72 | 324 |
| Tennessee | 12,700 | 29,000 | 0 | 0 | 0 | 0 | 30 | 116 |
| Wisconsin | 1,600 | 6,000 | 7,900 | 0 | 0 | 0 | 0 | 34 |
| PAD District III | 638,050 | 199,664 | 211,225 | 328,210 | 192,295 | 504,208 | 860 | 25,182 |
| Alabama | 0 | 0 | 15,000 | 5,350 | 0 | 7,120 | 40 | 228 |
| Arkansas | 5,000 | 0 | 21,500 | 7,500 | 5,500 | 0 | 13 | 157 |
| Louisiana | 220,200 | 49,900 | 67,000 | 103,720 | 66,000 | 168,877 | 118 | 6,773 |
| Mississippi | 18,600 | 21,000 | 36,125 | 0 | 48,000 | 35,500 | 243 | 1,355 |
| New Mexico | 10,900 | 0 | 7,000 | 0 | 0 | 0 | 38 | 202 |
| Texas | 383,350 | 128,764 | 64,600 | 211,640 | 72,795 | 292,711 | 408 | 16,467 |
| PAD District IV | 47,950 | 0 | 82,350 | 16,935 | 0 | 28,030 | 194 | 1,033 |
| Colorado | 0 | 0 | 12,250 | 985 | 0 | 0 | 22 | 116 |
| Montana | 17,050 | 0 | 44,300 | 6,750 | 0 | 13,830 | 110 | 489 |
| Utah | 20,900 | 0 | 1,800 | 9,200 | 0 | 2,500 | 0 | 95 |
| Wyoming | 10,000 | 0 | 24,000 | 0 | 0 | 11,700 | 62 | 333 |
| PAD District V | 246,762 | 1,500 | 71,433 | 213,400 | 39,800 | 166,650 | 1,259 | 5,977 |
| Alaska | 0 | 0 | 13,000 | 5,000 | 0 | 0 | 13 | 25 |
| California | 205,662 | 1,500 | 48,833 | 170,200 | 39,800 | 143,000 | 1,088 | 5,092 |
| Hawaii | 5,000 | 0 | 0 | 3,200 | 0 | 0 | 21 | 38 |
| Nevada | 0 | 0 | 1,600 | 0 | 0 | 0 | 0 | 0 |
| Washington | 36,100 | 0 | 8,000 | 35,000 | 0 | 23,650 | 137 | 822 |
| U.S. Total | 1,300,407 | 324,475 | 726,487 | 749,345 | 261,240 | 898,417 | 3,009 | 41,766 |

^a Includes hydrogen production capacity of hydrogen plants on refinery grounds.

MMcfd = Million cubic feet per day.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Directory of Operable Petroleum Refineries on Tables 3 and 4

| Refiner | State(s) | Refiner | State(s) |
|---|----------------|---|----------------------------|
| Alon Bakersfield Operating Inc..... | | CA Island Energy Services Downstream..... | HI |
| Alon Refining Krotz Springs Inc..... | | LA Kern Oil & Refining Co..... | CA |
| Alon USA Energy Inc..... | | TX Kinder Morgan Crude & Condensate..... | TX |
| American Refining Group Inc..... | | PA Lazarus Energy LLC..... | TX |
| Axeon Specialty Products LLC..... | | NJ Lima Refining Company..... | OH |
| BP Exploration Alaska Inc..... | | AK Lion Oil Co..... | AR |
| BP Products North America Inc..... | | IN Little America Refining Co..... | WY |
| BP West Coast Products LLC..... | | WA Lunday Thagard Co..... | CA |
| BP-Husky Refining LLC..... | | OH Magellan Terminal Holdings LP..... | TX |
| Big West Oil Co..... | | UT Marathon Petroleum Co LP..... | IL, KY, LA, MI, OH, TX |
| Buckeye Texas Processing LLC..... | | TX Monroe Energy LLC..... | PA |
| CHS McPherson Refinery Inc..... | | KS Motiva Enterprises LLC..... | LA, TX |
| Calcasieu Refining Co..... | | LA PDV Midwest Refining LLC..... | IL |
| Calumet Lubricants Co..... | | TX Paramount Petroleum Corporation..... | CA |
| Calumet Lubricants Co LP..... | | LA, WI Pasadena Refining Systems Inc..... | TX |
| Calumet Montana Refining LLC..... | | MT Paulsboro Refining Co LLC..... | NJ |
| Calumet Shreveport LLC..... | | LA Petro Star Inc..... | AK |
| Cenex Harvest States Coop..... | | MT Petromax Refining Co LLC..... | TX |
| Chalmette Refining LLC..... | | LA Philadelphia Energy Solutions..... | PA |
| Chevron USA Inc..... | CA, MS, UT | Phillips 66 Company..... | CA, LA, MT, NJ, OK, TX, WA |
| Citgo Petroleum Corp..... | | LA Placid Refining Co..... | LA |
| Citgo Refining & Chemical Inc..... | | TX Premcor Refining Group Inc..... | TN, TX |
| Coffeyville Resources Rfg & Mktg..... | | KS San Joaquin Refining Co Inc..... | CA |
| ConocoPhillips Alaska Inc..... | | AK Santa Maria Refining Company..... | CA |
| Continental Refining Company LLC..... | | KY Shell Chemical LP..... | AL |
| Countrymark Cooperative Inc..... | | IN Shell Oil Products US..... | CA, LA, WA |
| Cross Oil Refining & Marketing Inc..... | | AR Silver Eagle Refining..... | UT, WY |
| Deer Park Refining LTD Partnership..... | | TX Sinclair Wyoming Refining Co..... | WY |
| Delaware City Refining Co LLC..... | | DE South Hampton Resources Inc..... | TX |
| Delek Refining LTD..... | | TX St Paul Park Refining Co LLC..... | MN |
| Equistar Chemicals LP..... | | TX Suncor Energy (USA) Inc..... | CO |
| Ergon Refining Inc..... | | MS Tesoro Alaska Petroleum Co..... | AK |
| Ergon West Virginia Inc..... | | WV Tesoro Refining & Marketing Co..... | CA, ND |
| Excel Paralubes..... | | LA Tesoro West Coast..... | ND, UT, WA |
| ExxonMobil Refining & Supply Co..... | IL, LA, MT, TX | Toledo Refining Co LLC..... | OH |
| Flint Hills Resources LP..... | | MN, TX Torrance Refining Co LLC..... | CA |
| Foreland Refining Corp..... | | NV Total Petrochemicals & Refining USA..... | TX |
| Goodway Refining LLC..... | | AL US Oil & Refining Co..... | WA |
| Hawaii Independent Energy LLC..... | | HI United Refining Co..... | PA |
| Hermes Consolidated LLC..... | | WY Valero Energy Corporation..... | LA, TX |
| HollyFrontier Cheyenne Refining LLC..... | | WY Valero Refining Co California..... | CA |
| HollyFrontier El Dorado Refining LLC..... | | KS Valero Refining Co Oklahoma..... | OK |
| HollyFrontier Navajo Refining LLC..... | | NM Valero Refining Co Texas LP..... | TX |
| HollyFrontier Tulsa Refining LLC..... | | OK Valero Refining New Orleans LLC..... | LA |
| HollyFrontier Woods Cross Refining LLC..... | | UT WRB Refining LP..... | IL, TX |
| Houston Refining LP..... | | TX Western Refining Company LP..... | TX |
| Hunt Refining Co..... | | AL Western Refining Southwest Inc..... | NM |
| Hunt Southland Refining Co..... | | MS Wynnewood Refining Co..... | OK |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | |
|------------------------------------|---|---------------|------------------------|---------------|----------------------------|------------------|---------------|--------------|---------------|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil |
| Alabama | 131,675 | 0 | 140,500 | 0 | 47,000 | 32,000 | 0 | 0 | 0 |
| Goodway Refining LLC | | | | | | | | | |
| Atmore | 4,100 | 0 | 5,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hunt Refining Co | | | | | | | | | |
| Tuscaloosa | 36,000 | 0 | 40,000 | 0 | 18,000 | 32,000 | 0 | 0 | 0 |
| Shell Chemical LP | | | | | | | | | |
| Saraland | 91,575 | 0 | 95,500 | 0 | 29,000 | 0 | 0 | 0 | 0 |
| Alaska | 158,900 | 0 | 178,500 | 0 | 26,000 | 0 | 0 | 0 | 0 |
| BP Exploration Alaska Inc | | | | | | | | | |
| Prudhoe Bay | 6,500 | 0 | 8,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| ConocoPhillips Alaska Inc | | | | | | | | | |
| Prudhoe Bay | 15,000 | 0 | 16,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petro Star Inc | | | | | | | | | |
| North Pole | 19,700 | 0 | 22,500 | 0 | 0 | 0 | 0 | 0 | 0 |
| Valdez | 55,000 | 0 | 60,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro Alaska Petroleum Co | | | | | | | | | |
| Kenai | 62,700 | 0 | 72,000 | 0 | 26,000 | 0 | 0 | 0 | 0 |
| Arkansas | 90,500 | 0 | 92,700 | 0 | 48,850 | 0 | 0 | 0 | 0 |
| Cross Oil Refining & Marketing Inc | | | | | | | | | |
| Smackover | 7,500 | 0 | 7,700 | 0 | 3,850 | 0 | 0 | 0 | 0 |
| Lion Oil Co | | | | | | | | | |
| El Dorado | 83,000 | 0 | 85,000 | 0 | 45,000 | 0 | 0 | 0 | 0 |
| California | 1,906,171 | 84,500 | 2,006,000 | 90,000 | 1,231,756 | 449,800 | 52,000 | 5,000 | 0 |
| Alon Bakersfield Operating Inc | | | | | | | | | |
| Bakersfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chevron USA Inc | | | | | | | | | |
| El Segundo | 269,000 | 0 | 290,500 | 0 | 169,100 | 76,700 | 0 | 0 | 0 |
| Richmond | 245,271 | 0 | 257,200 | 0 | 123,456 | 0 | 0 | 0 | 0 |
| Kern Oil & Refining Co | | | | | | | | | |
| Bakersfield | 26,000 | 0 | 27,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lunday Thagard Co | | | | | | | | | |
| South Gate | 8,500 | 0 | 10,000 | 0 | 7,000 | 0 | 0 | 0 | 0 |
| Paramount Petroleum Corporation | | | | | | | | | |
| Paramount | 0 | 84,500 | 0 | 90,000 | 30,000 | 0 | 0 | 0 | 0 |
| Phillips 66 Company | | | | | | | | | |
| Rodeo | 120,200 | 0 | 128,000 | 0 | 93,200 | 51,000 | 0 | 0 | 0 |
| Wilmington | 139,000 | 0 | 147,000 | 0 | 82,000 | 53,200 | 0 | 0 | 0 |
| San Joaquin Refining Co Inc | | | | | | | | | |
| Bakersfield | 15,000 | 0 | 25,000 | 0 | 14,300 | 0 | 0 | 5,000 | 0 |
| Santa Maria Refining Company | | | | | | | | | |
| Santa Maria | 9,500 | 0 | 10,000 | 0 | 10,000 | 0 | 0 | 0 | 0 |
| Shell Oil Products US | | | | | | | | | |
| Martinez | 156,400 | 0 | 158,000 | 0 | 102,000 | 25,000 | 22,500 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|------------------------------------|----------------------------|---------------|-------------------------|----------------|----------|---------------------|----------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| Alabama | 0 | 0 | 0 | 20,500 | 0 | 15,300 | 22,000 | 0 |
| Goodway Refining LLC | | | | | | | | |
| Atmore | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hunt Refining Co | | | | | | | | |
| Tuscaloosa | 0 | 0 | 0 | 20,500 | 0 | 15,300 | 0 | 0 |
| Shell Chemical LP | | | | | | | | |
| Saraland | 0 | 0 | 0 | 0 | 0 | 0 | 22,000 | 0 |
| Alaska | 0 | 0 | 0 | 12,500 | 0 | 13,500 | 0 | 0 |
| BP Exploration Alaska Inc | | | | | | | | |
| Prudhoe Bay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ConocoPhillips Alaska Inc | | | | | | | | |
| Prudhoe Bay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petro Star Inc | | | | | | | | |
| North Pole | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Valdez | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro Alaska Petroleum Co | | | | | | | | |
| Kenai | 0 | 0 | 0 | 12,500 | 0 | 13,500 | 0 | 0 |
| Arkansas | 21,000 | 0 | 0 | 0 | 0 | 15,300 | 0 | 7,400 |
| Cross Oil Refining & Marketing Inc | | | | | | | | |
| Smackover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lion Oil Co | | | | | | | | |
| El Dorado | 21,000 | 0 | 0 | 0 | 0 | 15,300 | 0 | 7,400 |
| California | 718,500 | 13,400 | 191,900 | 296,600 | 0 | 205,800 | 220,700 | 56,000 |
| Alon Bakersfield Operating Inc | | | | | | | | |
| Bakersfield | 0 | 0 | 0 | 15,000 | 0 | 8,000 | 0 | 0 |
| Chevron USA Inc | | | | | | | | |
| El Segundo | 73,800 | 0 | 0 | 53,200 | 0 | 49,000 | 0 | 0 |
| Richmond | 90,000 | 0 | 0 | 103,400 | 0 | 71,300 | 0 | 56,000 |
| Kern Oil & Refining Co | | | | | | | | |
| Bakersfield | 0 | 0 | 0 | 0 | 0 | 2,500 | 3,300 | 0 |
| Lunday Thagard Co | | | | | | | | |
| South Gate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paramount Petroleum Corporation | | | | | | | | |
| Paramount | 0 | 0 | 0 | 0 | 0 | 0 | 12,000 | 0 |
| Phillips 66 Company | | | | | | | | |
| Rodeo | 0 | 0 | 0 | 65,000 | 0 | 0 | 34,000 | 0 |
| Wilmington | 51,600 | 0 | 27,500 | 0 | 0 | 0 | 36,200 | 0 |
| San Joaquin Refining Co Inc | | | | | | | | |
| Bakersfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Santa Maria Refining Company | | | | | | | | |
| Santa Maria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shell Oil Products US | | | | | | | | |
| Martinez | 72,000 | 0 | 42,400 | 0 | 0 | 31,000 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|---|----------------|-----------------------|----------------|---------------------|----------|------------------|---------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| Alabama | 37,100 | 0 | 2,500 | 18,000 | 24,000 | 0 | 40,500 | 0 |
| Goodway Refining LLC Atmore | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hunt Refining Co Tuscaloosa | 12,100 | 0 | 2,500 | 0 | 24,000 | 0 | 10,500 | 0 |
| Shell Chemical LP Saraland | 25,000 | 0 | 0 | 18,000 | 0 | 0 | 30,000 | 0 |
| Alaska | 13,000 | 0 | 0 | 11,500 | 0 | 0 | 0 | 0 |
| BP Exploration Alaska Inc Prudhoe Bay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ConocoPhillips Alaska Inc Prudhoe Bay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petro Star Inc North Pole | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Valdez | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro Alaska Petroleum Co Kenai | 13,000 | 0 | 0 | 11,500 | 0 | 0 | 0 | 0 |
| Arkansas | 20,000 | 8,750 | 0 | 35,000 | 0 | 0 | 21,000 | 13,500 |
| Cross Oil Refining & Marketing Inc Smackover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,500 |
| Lion Oil Co El Dorado | 20,000 | 8,750 | 0 | 35,000 | 0 | 0 | 21,000 | 8,000 |
| California | 443,100 | 280,500 | 198,100 | 341,300 | 123,100 | 0 | 723,000 | 70,200 |
| Alon Bakersfield Operating Inc Bakersfield | 8,000 | 0 | 0 | 0 | 0 | 0 | 21,000 | 0 |
| Chevron USA Inc El Segundo | 59,000 | 0 | 36,300 | 45,500 | 14,000 | 0 | 73,700 | 0 |
| Richmond | 57,600 | 64,800 | 96,000 | 64,800 | 0 | 0 | 65,000 | 34,000 |
| Kern Oil & Refining Co Bakersfield | 5,000 | 0 | 0 | 0 | 9,000 | 0 | 0 | 0 |
| Lunday Thagard Co South Gate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paramount Petroleum Corporation Paramount | 15,000 | 0 | 8,500 | 13,000 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Rodeo | 27,500 | 0 | 0 | 35,000 | 0 | 0 | 0 | 0 |
| Wilmington | 50,800 | 0 | 12,900 | 32,000 | 0 | 0 | 55,000 | 0 |
| San Joaquin Refining Co Inc Bakersfield | 0 | 0 | 0 | 0 | 3,600 | 0 | 1,800 | 0 |
| Santa Maria Refining Company Santa Maria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shell Oil Products US Martinez | 27,500 | 92,500 | 0 | 0 | 49,000 | 0 | 84,500 | 14,500 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | |
|--|---|---------------|------------------------|---------------|----------------------------|------------------|---------------|---------------|---------------|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil |
| California | 1,906,171 | 84,500 | 2,006,000 | 90,000 | 1,231,756 | 449,800 | 52,000 | 5,000 | 0 |
| Tesoro Refining & Marketing Co | | | | | | | | | |
| Carson | 269,200 | 0 | 276,000 | 0 | 140,000 | 67,100 | 0 | 0 | 0 |
| Martinez | 166,000 | 0 | 170,000 | 0 | 156,900 | 53,000 | 0 | 0 | 0 |
| Wilmington | 94,900 | 0 | 107,000 | 0 | 65,000 | 42,000 | 0 | 0 | 0 |
| Torrance Refining Co LLC | | | | | | | | | |
| Torrance | 150,900 | 0 | 157,800 | 0 | 102,300 | 53,000 | 0 | 0 | 0 |
| (Formerly ExxonMobil Refining & Supply Co) | | | | | | | | | |
| Valero Refining Co California | | | | | | | | | |
| Benicia | 145,000 | 0 | 149,000 | 0 | 85,500 | 0 | 29,500 | 0 | 0 |
| Wilmington Asphalt Plant | 6,300 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 0 |
| Wilmington Refinery | 85,000 | 0 | 87,000 | 0 | 46,000 | 28,800 | 0 | 0 | 0 |
| Colorado | 103,000 | 0 | 110,500 | 0 | 33,500 | 0 | 0 | 0 | 0 |
| Suncor Energy (USA) Inc | | | | | | | | | |
| Commerce City East | 36,000 | 0 | 38,000 | 0 | 8,500 | 0 | 0 | 0 | 0 |
| Commerce City West | 67,000 | 0 | 72,500 | 0 | 25,000 | 0 | 0 | 0 | 0 |
| Delaware | 182,200 | 0 | 190,200 | 0 | 104,600 | 0 | 54,500 | 0 | 0 |
| Delaware City Refining Co LLC | | | | | | | | | |
| Delaware City | 182,200 | 0 | 190,200 | 0 | 104,600 | 0 | 54,500 | 0 | 0 |
| Hawaii | 147,500 | 0 | 152,000 | 0 | 71,000 | 0 | 0 | 11,000 | 0 |
| Hawaii Independent Energy LLC | | | | | | | | | |
| Ewa Beach | 93,500 | 0 | 95,000 | 0 | 40,000 | 0 | 0 | 11,000 | 0 |
| Island Energy Services Downstream | | | | | | | | | |
| Honolulu | 54,000 | 0 | 57,000 | 0 | 31,000 | 0 | 0 | 0 | 0 |
| (Formerly Chevron USA Inc) | | | | | | | | | |
| Illinois | 959,540 | 22,000 | 1,020,200 | 23,000 | 471,900 | 211,200 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co | | | | | | | | | |
| Joliet | 238,600 | 0 | 260,000 | 0 | 126,700 | 57,500 | 0 | 0 | 0 |
| Marathon Petroleum Co LP | | | | | | | | | |
| Robinson | 231,000 | 0 | 245,000 | 0 | 71,500 | 30,000 | 0 | 0 | 0 |
| PDV Midwest Refining LLC | | | | | | | | | |
| Lemont | 175,940 | 0 | 185,200 | 0 | 77,200 | 40,700 | 0 | 0 | 0 |
| WRB Refining LP | | | | | | | | | |
| Wood River | 314,000 | 22,000 | 330,000 | 23,000 | 196,500 | 83,000 | 0 | 0 | 0 |
| Indiana | 441,700 | 0 | 460,800 | 0 | 277,900 | 102,000 | 0 | 0 | 0 |
| BP Products North America Inc | | | | | | | | | |
| Whiting | 413,500 | 0 | 430,000 | 0 | 263,900 | 102,000 | 0 | 0 | 0 |
| Countrymark Cooperative Inc | | | | | | | | | |
| Mount Vernon | 28,200 | 0 | 30,800 | 0 | 14,000 | 0 | 0 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|--|----------------------------|---------------|-------------------------|----------------|----------|---------------------|----------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| California | 718,500 | 13,400 | 191,900 | 296,600 | 0 | 205,800 | 220,700 | 56,000 |
| Tesoro Refining & Marketing Co | | | | | | | | |
| Carson | 102,500 | 0 | 55,000 | 0 | 0 | 0 | 47,000 | 0 |
| Martinez | 72,000 | 1,000 | 0 | 37,000 | 0 | 26,000 | 0 | 0 |
| Wilmington | 35,000 | 0 | 10,000 | 23,000 | 0 | 0 | 33,000 | 0 |
| Torrance Refining Co LLC | | | | | | | | |
| Torrance | 90,000 | 12,400 | 23,000 | 0 | 0 | 0 | 18,000 | 0 |
| (Formerly ExxonMobil Refining & Supply Co) | | | | | | | | |
| Valero Refining Co California | | | | | | | | |
| Benicia | 75,300 | 0 | 34,000 | 0 | 0 | 0 | 37,200 | 0 |
| Wilmington Asphalt Plant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilmington Refinery | 56,300 | 0 | 0 | 0 | 0 | 18,000 | 0 | 0 |
| Colorado | 30,000 | 500 | 0 | 0 | 0 | 21,900 | 0 | 0 |
| Suncor Energy (USA) Inc | | | | | | | | |
| Commerce City East | 9,000 | 500 | 0 | 0 | 0 | 11,000 | 0 | 0 |
| Commerce City West | 21,000 | 0 | 0 | 0 | 0 | 10,900 | 0 | 0 |
| Delaware | 82,000 | 4,000 | 0 | 22,300 | 0 | 43,800 | 0 | 0 |
| Delaware City Refining Co LLC | | | | | | | | |
| Delaware City | 82,000 | 4,000 | 0 | 22,300 | 0 | 43,800 | 0 | 0 |
| Hawaii | 22,000 | 0 | 2,000 | 18,000 | 0 | 13,500 | 0 | 0 |
| Hawaii Independent Energy LLC | | | | | | | | |
| Ewa Beach | 0 | 0 | 2,000 | 18,000 | 0 | 13,500 | 0 | 0 |
| Island Energy Services Downstream | | | | | | | | |
| Honolulu | 22,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (Formerly Chevron USA Inc) | | | | | | | | |
| Illinois | 324,300 | 0 | 0 | 95,500 | 0 | 212,800 | 34,900 | 0 |
| ExxonMobil Refining & Supply Co | | | | | | | | |
| Joliet | 99,300 | 0 | 0 | 0 | 0 | 52,600 | 0 | 0 |
| Marathon Petroleum Co LP | | | | | | | | |
| Robinson | 54,500 | 0 | 0 | 41,500 | 0 | 80,500 | 0 | 0 |
| PDV Midwest Refining LLC | | | | | | | | |
| Lemont | 69,500 | 0 | 0 | 0 | 0 | 0 | 34,900 | 0 |
| WRB Refining LP | | | | | | | | |
| Wood River | 101,000 | 0 | 0 | 54,000 | 0 | 79,700 | 0 | 0 |
| Indiana | 183,200 | 7,200 | 0 | 0 | 0 | 6,500 | 65,000 | 0 |
| BP Products North America Inc | | | | | | | | |
| Whiting | 175,000 | 7,000 | 0 | 0 | 0 | 0 | 65,000 | 0 |
| Countrymark Cooperative Inc | | | | | | | | |
| Mount Vernon | 8,200 | 200 | 0 | 0 | 0 | 6,500 | 0 | 0 |

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(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|--|---|----------------|-----------------------|----------------|---------------------|----------|------------------|---------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| California | 443,100 | 280,500 | 198,100 | 341,300 | 123,100 | 0 | 723,000 | 70,200 |
| Tesoro Refining & Marketing Co | | | | | | | | |
| Carson | 45,000 | 37,000 | 10,000 | 22,000 | 0 | 0 | 95,000 | 0 |
| Martinez | 27,000 | 43,000 | 0 | 40,000 | 19,500 | 0 | 69,500 | 0 |
| Wilmington | 34,000 | 0 | 19,000 | 10,000 | 23,000 | 0 | 45,000 | 0 |
| Torrance Refining Co LLC | | | | | | | | |
| Torrance | 24,700 | 0 | 0 | 19,000 | 0 | 0 | 106,500 | 0 |
| (Formerly ExxonMobil Refining & Supply Co) | | | | | | | | |
| Valero Refining Co California | | | | | | | | |
| Benicia | 30,000 | 43,200 | 15,400 | 15,000 | 5,000 | 0 | 39,000 | 21,700 |
| Wilmington Asphalt Plant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilmington Refinery | 32,000 | 0 | 0 | 45,000 | 0 | 0 | 67,000 | 0 |
| Colorado | 21,900 | 0 | 12,100 | 21,000 | 0 | 0 | 30,000 | 0 |
| Suncor Energy (USA) Inc | | | | | | | | |
| Commerce City East | 11,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Commerce City West | 10,900 | 0 | 12,100 | 21,000 | 0 | 0 | 30,000 | 0 |
| Delaware | 50,000 | 33,000 | 16,500 | 52,000 | 0 | 0 | 0 | 0 |
| Delaware City Refining Co LLC | | | | | | | | |
| Delaware City | 50,000 | 33,000 | 16,500 | 52,000 | 0 | 0 | 0 | 0 |
| Hawaii | 13,000 | 0 | 0 | 0 | 0 | 0 | 0 | 3,500 |
| Hawaii Independent Energy LLC | | | | | | | | |
| Ewa Beach | 13,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Island Energy Services Downstream | | | | | | | | |
| Honolulu | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,500 |
| (Formerly Chevron USA Inc) | | | | | | | | |
| Illinois | 432,900 | 115,500 | 66,950 | 308,300 | 0 | 0 | 0 | 6,800 |
| ExxonMobil Refining & Supply Co | | | | | | | | |
| Joliet | 169,500 | 0 | 0 | 78,000 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP | | | | | | | | |
| Robinson | 68,000 | 41,500 | 0 | 79,500 | 0 | 0 | 0 | 0 |
| PDV Midwest Refining LLC | | | | | | | | |
| Lemont | 111,100 | 0 | 13,700 | 94,500 | 0 | 0 | 0 | 6,800 |
| WRB Refining LP | | | | | | | | |
| Wood River | 84,300 | 74,000 | 53,250 | 56,300 | 0 | 0 | 0 | 0 |
| Indiana | 78,000 | 6,500 | 46,000 | 134,300 | 0 | 0 | 204,000 | 0 |
| BP Products North America Inc | | | | | | | | |
| Whiting | 69,000 | 0 | 46,000 | 120,800 | 0 | 0 | 204,000 | 0 |
| Countrymark Cooperative Inc | | | | | | | | |
| Mount Vernon | 9,000 | 6,500 | 0 | 13,500 | 0 | 0 | 0 | 0 |

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(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | |
|---|---|----------|------------------------|----------|----------------------------|------------------|--------------|-------------|---------------|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil |
| Kansas | 361,000 | 0 | 373,500 | 0 | 148,000 | 69,000 | 0 | 0 | 0 |
| CHS McPherson Refinery Inc McPherson | 96,000 | 0 | 97,500 | 0 | 38,000 | 25,000 | 0 | 0 | 0 |
| Coffeyville Resources Rfg & Mktg Coffeyville | 115,000 | 0 | 125,000 | 0 | 46,000 | 25,000 | 0 | 0 | 0 |
| HollyFrontier El Dorado Refining LLC El Dorado | 150,000 | 0 | 151,000 | 0 | 64,000 | 19,000 | 0 | 0 | 0 |
| Kentucky | 278,500 | 0 | 298,300 | 0 | 130,000 | 0 | 0 | 0 | 0 |
| Continental Refining Company LLC Somerset | 5,500 | 0 | 6,300 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Catlettsburg | 273,000 | 0 | 292,000 | 0 | 130,000 | 0 | 0 | 0 | 0 |
| Louisiana | 3,343,206 | 0 | 3,530,355 | 0 | 1,787,900 | 556,500 | 0 | 0 | 10,600 |
| Alon Refining Krotz Springs Inc Krotz Springs | 80,000 | 0 | 83,000 | 0 | 36,200 | 0 | 0 | 0 | 0 |
| Calcasieu Refining Co Lake Charles | 104,000 | 0 | 105,000 | 0 | 36,000 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co LP Cotton Valley | 13,020 | 0 | 14,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Princeton | 8,300 | 0 | 8,655 | 0 | 7,000 | 0 | 0 | 0 | 0 |
| Calumet Shreveport LLC Shreveport | 57,000 | 0 | 60,000 | 0 | 28,000 | 0 | 0 | 0 | 0 |
| Chalmette Refining LLC Chalmette | 190,000 | 0 | 197,000 | 0 | 169,000 | 30,000 | 0 | 0 | 0 |
| Citgo Petroleum Corp Lake Charles | 425,000 | 0 | 440,000 | 0 | 230,000 | 110,000 | 0 | 0 | 0 |
| Excel Paralubes Westlake | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co Baton Rouge | 502,500 | 0 | 523,200 | 0 | 246,100 | 123,500 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Garyville | 543,000 | 0 | 580,000 | 0 | 301,000 | 94,500 | 0 | 0 | 0 |
| Motiva Enterprises LLC Convent | 227,586 | 0 | 260,000 | 0 | 116,300 | 0 | 0 | 0 | 0 |
| Norco | 225,800 | 0 | 250,000 | 0 | 91,300 | 28,500 | 0 | 0 | 0 |
| Phillips 66 Company Belle Chasse | 247,000 | 0 | 260,000 | 0 | 103,000 | 26,000 | 0 | 0 | 0 |
| Westlake | 260,000 | 0 | 273,000 | 0 | 132,000 | 60,000 | 0 | 0 | 10,600 |
| Placid Refining Co Port Allen | 75,000 | 0 | 82,500 | 0 | 27,000 | 0 | 0 | 0 | 0 |
| Shell Oil Products US Saint Rose | 45,000 | 0 | 46,000 | 0 | 25,000 | 0 | 0 | 0 | 0 |
| Valero Energy Corporation Meraux | 125,000 | 0 | 128,000 | 0 | 60,000 | 0 | 0 | 0 | 0 |
| Valero Refining New Orleans LLC Norco | 215,000 | 0 | 220,000 | 0 | 180,000 | 84,000 | 0 | 0 | 0 |

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(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|----------------------------|--------------|-------------------------|----------------|---------------|---------------------|----------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| Kansas | 104,000 | 500 | 0 | 38,500 | 0 | 57,500 | 23,500 | 0 |
| CHS McPherson Refinery Inc McPherson | 24,000 | 500 | 0 | 38,500 | 0 | 24,000 | 0 | 0 |
| Coffeyville Resources Rfg & Mktg Coffeyville | 36,000 | 0 | 0 | 0 | 0 | 26,000 | 0 | 0 |
| HollyFrontier El Dorado Refining LLC El Dorado | 44,000 | 0 | 0 | 0 | 0 | 7,500 | 23,500 | 0 |
| Kentucky | 104,000 | 0 | 0 | 0 | 0 | 22,000 | 33,300 | 13,000 |
| Continental Refining Company LLC Somerset | 0 | 0 | 0 | 0 | 0 | 0 | 1,300 | 0 |
| Marathon Petroleum Co LP Catlettsburg | 104,000 | 0 | 0 | 0 | 0 | 22,000 | 32,000 | 13,000 |
| Louisiana | 1,137,200 | 5,500 | 55,000 | 378,900 | 54,500 | 500,690 | 106,200 | 71,000 |
| Alon Refining Krotz Springs Inc Krotz Springs | 34,000 | 0 | 0 | 0 | 0 | 0 | 13,000 | 0 |
| Calcasieu Refining Co Lake Charles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co LP Cotton Valley | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Princeton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Shreveport LLC Shreveport | 0 | 0 | 0 | 0 | 0 | 12,000 | 0 | 0 |
| Chalmette Refining LLC Chalmette | 75,600 | 0 | 0 | 0 | 0 | 22,700 | 0 | 0 |
| Citgo Petroleum Corp Lake Charles | 148,000 | 3,000 | 0 | 51,200 | 0 | 60,000 | 53,200 | 0 |
| Excel Paralubes Westlake | 0 | 0 | 0 | 43,000 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co Baton Rouge | 244,500 | 0 | 27,000 | 0 | 0 | 77,000 | 0 | 0 |
| Marathon Petroleum Co LP Garyville | 144,000 | 0 | 0 | 117,000 | 0 | 128,500 | 0 | 38,000 |
| Motiva Enterprises LLC Convent | 92,300 | 0 | 0 | 0 | 54,500 | 0 | 40,000 | 0 |
| Norco | 118,800 | 0 | 0 | 44,000 | 0 | 40,000 | 0 | 0 |
| Phillips 66 Company Belle Chasse | 105,000 | 2,000 | 0 | 0 | 0 | 48,490 | 0 | 0 |
| Westlake | 50,000 | 0 | 0 | 0 | 0 | 44,000 | 0 | 0 |
| Placid Refining Co Port Allen | 25,000 | 500 | 0 | 0 | 0 | 11,000 | 0 | 11,000 |
| Shell Oil Products US Saint Rose | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Valero Energy Corporation Meraux | 0 | 0 | 0 | 48,700 | 0 | 32,000 | 0 | 22,000 |
| Valero Refining New Orleans LLC Norco | 100,000 | 0 | 28,000 | 75,000 | 0 | 25,000 | 0 | 0 |

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(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|---|----------------|-----------------------|----------------|---------------------|---------------|------------------|---------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| Kansas | 122,500 | 47,000 | 21,000 | 127,200 | 27,000 | 0 | 50,000 | 0 |
| CHS McPherson Refinery Inc McPherson | 38,000 | 0 | 0 | 43,200 | 0 | 0 | 0 | 0 |
| Coffeyville Resources Rfg & Mktg Coffeyville | 36,000 | 22,000 | 9,000 | 30,000 | 27,000 | 0 | 0 | 0 |
| HollyFrontier El Dorado Refining LLC El Dorado | 48,500 | 25,000 | 12,000 | 54,000 | 0 | 0 | 50,000 | 0 |
| Kentucky | 56,800 | 0 | 31,000 | 78,500 | 0 | 0 | 107,000 | 0 |
| Continental Refining Company LLC Somerset | 1,300 | 0 | 0 | 1,000 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Catlettsburg | 55,500 | 0 | 31,000 | 77,500 | 0 | 0 | 107,000 | 0 |
| Louisiana | 711,940 | 770,900 | 242,000 | 918,100 | 44,000 | 12,500 | 305,700 | 25,000 |
| Alon Refining Krotz Springs Inc Krotz Springs | 14,000 | 18,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calcasieu Refining Co Lake Charles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co LP Cotton Valley | 6,200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Princeton | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Shreveport LLC Shreveport | 16,000 | 0 | 0 | 14,000 | 0 | 0 | 21,100 | 1,200 |
| Chalmette Refining LLC Chalmette | 42,000 | 46,000 | 0 | 35,000 | 0 | 0 | 65,600 | 0 |
| Citgo Petroleum Corp Lake Charles | 121,000 | 85,400 | 68,000 | 100,000 | 0 | 0 | 0 | 23,800 |
| Excel Paralubes Westlake | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co Baton Rouge | 76,000 | 242,000 | 0 | 202,500 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Garyville | 108,000 | 114,000 | 81,000 | 159,500 | 0 | 0 | 106,000 | 0 |
| Motiva Enterprises LLC Convent | 96,000 | 0 | 42,000 | 76,300 | 0 | 0 | 40,000 | 0 |
| Norco | 38,500 | 77,000 | 0 | 70,000 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Belle Chasse | 50,540 | 70,000 | 0 | 74,800 | 0 | 0 | 0 | 0 |
| Westlake | 50,000 | 38,500 | 24,000 | 55,000 | 0 | 12,500 | 49,000 | 0 |
| Placid Refining Co Port Allen | 11,000 | 20,000 | 0 | 25,000 | 0 | 0 | 0 | 0 |
| Shell Oil Products US Saint Rose | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Valero Energy Corporation Meraux | 37,700 | 0 | 15,000 | 40,000 | 0 | 0 | 0 | 0 |
| Valero Refining New Orleans LLC Norco | 45,000 | 60,000 | 12,000 | 66,000 | 44,000 | 0 | 24,000 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | |
|--|---|---------------|------------------------|---------------|----------------------------|------------------|---------------|-------------|---------------|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil |
| Michigan | 132,000 | 0 | 144,000 | 0 | 77,900 | 33,500 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Detroit | 132,000 | 0 | 144,000 | 0 | 77,900 | 33,500 | 0 | 0 | 0 |
| Minnesota | 388,515 | 0 | 442,700 | 0 | 284,600 | 69,000 | 0 | 0 | 0 |
| Flint Hills Resources LP Saint Paul | 290,000 | 0 | 339,000 | 0 | 234,000 | 69,000 | 0 | 0 | 0 |
| St Paul Park Refining Co LLC Saint Paul | 98,515 | 0 | 103,700 | 0 | 50,600 | 0 | 0 | 0 | 0 |
| Mississippi | 377,500 | 0 | 409,800 | 0 | 338,875 | 105,000 | 0 | 0 | 0 |
| Chevron USA Inc Pascagoula | 340,000 | 0 | 370,000 | 0 | 314,000 | 105,000 | 0 | 0 | 0 |
| Ergon Refining Inc Vicksburg | 26,500 | 0 | 27,300 | 0 | 18,000 | 0 | 0 | 0 | 0 |
| Hunt Southland Refining Co Sandersville | 11,000 | 0 | 12,500 | 0 | 6,875 | 0 | 0 | 0 | 0 |
| Montana | 205,100 | 9,600 | 212,400 | 10,000 | 118,400 | 36,700 | 10,400 | 0 | 0 |
| Calumet Montana Refining LLC Great Falls | 24,000 | 9,600 | 25,000 | 10,000 | 20,000 | 0 | 0 | 0 | 0 |
| Cenex Harvest States Coop Laurel | 59,600 | 0 | 61,100 | 0 | 29,000 | 15,000 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co Billings | 61,500 | 0 | 62,900 | 0 | 32,300 | 0 | 10,400 | 0 | 0 |
| Phillips 66 Company Billings | 60,000 | 0 | 63,400 | 0 | 37,100 | 21,700 | 0 | 0 | 0 |
| Nevada | 2,000 | 0 | 5,000 | 0 | 2,750 | 0 | 0 | 0 | 0 |
| Foreland Refining Corp Ely | 2,000 | 0 | 5,000 | 0 | 2,750 | 0 | 0 | 0 | 0 |
| New Jersey | 401,000 | 74,000 | 422,400 | 78,000 | 197,000 | 27,000 | 0 | 0 | 0 |
| Axon Specialty Products LLC Paulsboro | 0 | 74,000 | 0 | 78,000 | 32,000 | 0 | 0 | 0 | 0 |
| Paulsboro Refining Co LLC Paulsboro | 160,000 | 0 | 166,000 | 0 | 90,000 | 27,000 | 0 | 0 | 0 |
| Phillips 66 Company Linden | 241,000 | 0 | 256,400 | 0 | 75,000 | 0 | 0 | 0 | 0 |
| New Mexico | 123,500 | 0 | 141,000 | 0 | 29,600 | 0 | 0 | 0 | 0 |
| HollyFrontier Navajo Refining LLC Artesia | 98,000 | 0 | 115,000 | 0 | 29,600 | 0 | 0 | 0 | 0 |
| Western Refining Southwest Inc Gallup | 25,500 | 0 | 26,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| North Dakota | 93,300 | 0 | 94,600 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro Refining & Marketing Co Dickinson | 19,500 | 0 | 20,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| (Formerly Dakota Prairie Refining LLC) | | | | | | | | | |
| Tesoro West Coast Mandan | 73,800 | 0 | 74,600 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|----------------------------|--------------|-------------------------|----------------|----------|---------------------|---------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| Michigan | 40,000 | 0 | 0 | 0 | 0 | 21,500 | 0 | 0 |
| Marathon Petroleum Co LP Detroit | 40,000 | 0 | 0 | 0 | 0 | 21,500 | 0 | 0 |
| Minnesota | 117,500 | 2,500 | 50,000 | 0 | 0 | 37,000 | 38,700 | 4,500 |
| Flint Hills Resources LP Saint Paul | 87,000 | 0 | 50,000 | 0 | 0 | 37,000 | 13,800 | 0 |
| St Paul Park Refining Co LLC Saint Paul | 30,500 | 2,500 | 0 | 0 | 0 | 0 | 24,900 | 4,500 |
| Mississippi | 88,000 | 0 | 0 | 117,500 | 0 | 61,600 | 34,000 | 0 |
| Chevron USA Inc Pascagoula | 88,000 | 0 | 0 | 117,500 | 0 | 61,600 | 34,000 | 0 |
| Ergon Refining Inc Vicksburg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hunt Southland Refining Co Sandersville | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montana | 64,660 | 990 | 6,200 | 24,000 | 0 | 12,500 | 27,050 | 0 |
| Calumet Montana Refining LLC Great Falls | 3,000 | 0 | 0 | 24,000 | 0 | 0 | 1,000 | 0 |
| Cenex Harvest States Coop Laurel | 16,500 | 0 | 0 | 0 | 0 | 12,500 | 0 | 0 |
| ExxonMobil Refining & Supply Co Billings | 23,660 | 0 | 6,200 | 0 | 0 | 0 | 12,500 | 0 |
| Phillips 66 Company Billings | 21,500 | 990 | 0 | 0 | 0 | 0 | 13,550 | 0 |
| Nevada | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Foreland Refining Corp Ely | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New Jersey | 200,000 | 0 | 0 | 0 | 0 | 64,000 | 0 | 22,000 |
| Axeon Specialty Products LLC Paulsboro | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paulsboro Refining Co LLC Paulsboro | 55,000 | 0 | 0 | 0 | 0 | 32,000 | 0 | 0 |
| Phillips 66 Company Linden | 145,000 | 0 | 0 | 0 | 0 | 32,000 | 0 | 22,000 |
| New Mexico | 35,500 | 3,000 | 0 | 18,000 | 0 | 24,000 | 7,300 | 18,000 |
| HollyFrontier Navajo Refining LLC Artesia | 27,000 | 0 | 0 | 18,000 | 0 | 24,000 | 0 | 18,000 |
| Western Refining Southwest Inc Gallup | 8,500 | 3,000 | 0 | 0 | 0 | 0 | 7,300 | 0 |
| North Dakota | 27,000 | 3,600 | 0 | 0 | 0 | 0 | 12,500 | 0 |
| Tesoro Refining & Marketing Co Dickinson (Formerly Dakota Prairie Refining LLC) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro West Coast Mandan | 27,000 | 3,600 | 0 | 0 | 0 | 0 | 12,500 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|--|---|---------------|-----------------------|----------------|---------------------|----------|------------------|---------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| Michigan | 34,000 | 0 | 7,000 | 46,000 | 0 | 0 | 43,500 | 0 |
| Marathon Petroleum Co LP Detroit | 34,000 | 0 | 7,000 | 46,000 | 0 | 0 | 43,500 | 0 |
| Minnesota | 88,200 | 49,700 | 53,600 | 95,630 | 9,000 | 0 | 145,400 | 0 |
| Flint Hills Resources LP Saint Paul | 49,800 | 49,700 | 43,500 | 62,000 | 9,000 | 0 | 115,000 | 0 |
| St Paul Park Refining Co LLC Saint Paul | 38,400 | 0 | 10,100 | 33,630 | 0 | 0 | 30,400 | 0 |
| Mississippi | 57,300 | 0 | 30,000 | 37,200 | 0 | 0 | 104,000 | 70,800 |
| Chevron USA Inc Pascagoula | 57,300 | 0 | 30,000 | 35,000 | 0 | 0 | 104,000 | 50,000 |
| Ergon Refining Inc Vicksburg | 0 | 0 | 0 | 2,200 | 0 | 0 | 0 | 20,800 |
| Hunt Southland Refining Co Sandersville | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montana | 46,950 | 26,500 | 19,400 | 46,750 | 25,000 | 0 | 45,760 | 7,900 |
| Calumet Montana Refining LLC Great Falls | 2,500 | 0 | 6,000 | 6,000 | 0 | 0 | 0 | 0 |
| Cenex Harvest States Coop Laurel | 17,000 | 0 | 0 | 0 | 25,000 | 0 | 20,000 | 0 |
| ExxonMobil Refining & Supply Co Billings | 13,900 | 20,500 | 7,600 | 11,000 | 0 | 0 | 0 | 7,900 |
| Phillips 66 Company Billings | 13,550 | 6,000 | 5,800 | 29,750 | 0 | 0 | 25,760 | 0 |
| Nevada | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Foreland Refining Corp Ely | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New Jersey | 97,500 | 37,000 | 29,100 | 154,000 | 17,500 | 0 | 0 | 0 |
| Axeon Specialty Products LLC Pauisboro | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pauisboro Refining Co LLC Pauisboro | 32,000 | 37,000 | 29,100 | 46,000 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Linden | 65,500 | 0 | 0 | 108,000 | 17,500 | 0 | 0 | 0 |
| New Mexico | 43,600 | 0 | 12,000 | 44,500 | 0 | 0 | 18,000 | 0 |
| HollyFrontier Navajo Refining LLC Artesia | 36,000 | 0 | 12,000 | 40,000 | 0 | 0 | 18,000 | 0 |
| Western Refining Southwest Inc Gallup | 7,600 | 0 | 0 | 4,500 | 0 | 0 | 0 | 0 |
| North Dakota | 13,600 | 0 | 0 | 31,800 | 6,660 | 0 | 0 | 0 |
| Tesoro Refining & Marketing Co Dickinson | 0 | 0 | 0 | 8,000 | 0 | 0 | 0 | 0 |
| (Formerly Dakota Prairie Refining LLC) | | | | | | | | |
| Tesoro West Coast Mandan | 13,600 | 0 | 0 | 23,800 | 6,660 | 0 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | |
|---|---|---------------|------------------------|---------------|----------------------------|------------------|---------------|-------------|---------------|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil |
| Ohio | 583,000 | 0 | 633,000 | 0 | 159,500 | 58,000 | 0 | 0 | 0 |
| BP-Husky Refining LLC Toledo | 153,000 | 0 | 160,000 | 0 | 71,500 | 35,000 | 0 | 0 | 0 |
| Lima Refining Company Lima | 177,000 | 0 | 185,000 | 0 | 53,000 | 23,000 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Canton | 93,000 | 0 | 100,000 | 0 | 35,000 | 0 | 0 | 0 | 0 |
| Toledo Refining Co LLC Toledo | 160,000 | 0 | 188,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oklahoma | 441,000 | 70,300 | 473,164 | 75,500 | 220,342 | 38,385 | 0 | 0 | 0 |
| HollyFrontier Tulsa Refining LLC Tulsa East | 0 | 70,300 | 0 | 75,500 | 27,000 | 0 | 0 | 0 | 0 |
| Tulsa West | 85,000 | 0 | 91,020 | 0 | 32,000 | 11,000 | 0 | 0 | 0 |
| Phillips 66 Company Ponca City | 200,000 | 0 | 219,144 | 0 | 89,042 | 27,385 | 0 | 0 | 0 |
| Valero Refining Co Oklahoma Ardmore | 86,000 | 0 | 88,000 | 0 | 32,000 | 0 | 0 | 0 | 0 |
| Wynnewood Refining Co Wynnewood | 70,000 | 0 | 75,000 | 0 | 40,300 | 0 | 0 | 0 | 0 |
| Pennsylvania | 576,000 | 0 | 639,800 | 0 | 276,200 | 0 | 0 | 0 | 0 |
| American Refining Group Inc Bradford | 11,000 | 0 | 11,800 | 0 | 0 | 0 | 0 | 0 | 0 |
| Monroe Energy LLC Trainer | 190,000 | 0 | 208,000 | 0 | 73,000 | 0 | 0 | 0 | 0 |
| Philadelphia Energy Solutions Philadelphia | 310,000 | 0 | 350,000 | 0 | 163,200 | 0 | 0 | 0 | 0 |
| United Refining Co Warren | 65,000 | 0 | 70,000 | 0 | 40,000 | 0 | 0 | 0 | 0 |
| Tennessee | 190,000 | 0 | 195,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Premcor Refining Group Inc Memphis | 190,000 | 0 | 195,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Texas | 5,628,990 | 42,500 | 5,975,900 | 50,000 | 2,611,200 | 893,580 | 42,000 | 0 | 0 |
| Alon USA Energy Inc Big Spring | 73,000 | 0 | 74,000 | 0 | 24,000 | 0 | 0 | 0 | 0 |
| Buckeye Texas Processing LLC Corpus Christi | 46,250 | 0 | 50,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co San Antonio | 20,000 | 0 | 21,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Citgo Refining & Chemical Inc Corpus Christi | 157,500 | 0 | 163,500 | 0 | 85,300 | 44,900 | 0 | 0 | 0 |
| Deer Park Refining LTD Partnership Deer Park | 325,700 | 0 | 340,000 | 0 | 180,000 | 90,000 | 0 | 0 | 0 |
| Delek Refining LTD Tyler | 72,000 | 0 | 75,000 | 0 | 28,000 | 6,500 | 0 | 0 | 0 |
| Equistar Chemicals LP Channelview | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co Baytown | 560,500 | 0 | 584,000 | 0 | 297,000 | 54,000 | 42,000 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|----------------------------|---------------|-------------------------|----------------|---------------|---------------------|----------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| Ohio | 208,300 | 0 | 52,000 | 57,000 | 0 | 63,500 | 106,800 | 0 |
| BP-Husky Refining LLC Toledo | 55,000 | 0 | 0 | 31,000 | 0 | 42,000 | 0 | 0 |
| Lima Refining Company Lima | 45,300 | 0 | 0 | 26,000 | 0 | 0 | 55,000 | 0 |
| Marathon Petroleum Co LP Canton | 26,000 | 0 | 0 | 0 | 0 | 21,500 | 0 | 0 |
| Toledo Refining Co LLC Toledo | 82,000 | 0 | 52,000 | 0 | 0 | 0 | 51,800 | 0 |
| Oklahoma | 154,112 | 2,000 | 14,000 | 18,200 | 0 | 63,500 | 53,593 | 4,850 |
| HollyFrontier Tulsa Refining LLC Tulsa East | 25,000 | 2,000 | 0 | 0 | 0 | 25,000 | 0 | 0 |
| Tulsa West | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Ponca City | 76,912 | 0 | 0 | 0 | 0 | 0 | 53,593 | 0 |
| Valero Refining Co Oklahoma Ardmore | 30,000 | 0 | 14,000 | 0 | 0 | 20,500 | 0 | 0 |
| Wynnewood Refining Co Wynnewood | 22,200 | 0 | 0 | 18,200 | 0 | 18,000 | 0 | 4,850 |
| Pennsylvania | 215,500 | 1,000 | 23,000 | 0 | 0 | 50,000 | 86,700 | 0 |
| American Refining Group Inc Bradford | 0 | 0 | 0 | 0 | 0 | 0 | 2,200 | 0 |
| Monroe Energy LLC Trainer | 53,000 | 0 | 23,000 | 0 | 0 | 50,000 | 0 | 0 |
| Philadelphia Energy Solutions Philadelphia | 137,500 | 0 | 0 | 0 | 0 | 0 | 70,500 | 0 |
| United Refining Co Warren | 25,000 | 1,000 | 0 | 0 | 0 | 0 | 14,000 | 0 |
| Tennessee | 70,000 | 0 | 26,500 | 0 | 0 | 36,000 | 0 | 0 |
| Premcor Refining Group Inc Memphis | 70,000 | 0 | 26,500 | 0 | 0 | 36,000 | 0 | 0 |
| Texas | 1,779,200 | 25,000 | 246,300 | 411,800 | 75,000 | 970,700 | 115,280 | 166,000 |
| Alon USA Energy Inc Big Spring | 25,000 | 0 | 0 | 0 | 0 | 21,500 | 0 | 10,000 |
| Buckeye Texas Processing LLC Corpus Christi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co San Antonio | 0 | 0 | 0 | 0 | 0 | 0 | 6,000 | 0 |
| Citgo Refining & Chemical Inc Corpus Christi | 83,800 | 0 | 0 | 0 | 0 | 51,500 | 0 | 0 |
| Deer Park Refining LTD Partnership Deer Park | 75,000 | 5,000 | 0 | 60,000 | 0 | 45,000 | 24,500 | 0 |
| Delek Refining LTD Tyler | 20,250 | 0 | 0 | 0 | 0 | 13,000 | 4,500 | 0 |
| Equistar Chemicals LP Channelview | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co Baytown | 215,000 | 8,000 | 29,900 | 0 | 0 | 127,500 | 0 | 47,000 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|------------------------------------|---|------------------|-----------------------|------------------|---------------------|----------------|------------------|----------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| Ohio | 180,400 | 107,000 | 69,500 | 82,000 | 0 | 0 | 78,000 | 0 |
| BP-Husky Refining LLC | | | | | | | | |
| Toledo | 40,000 | 0 | 0 | 22,000 | 0 | 0 | 51,000 | 0 |
| Lima Refining Company | | | | | | | | |
| Lima | 63,000 | 35,000 | 24,000 | 36,000 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP | | | | | | | | |
| Canton | 31,500 | 0 | 13,500 | 24,000 | 0 | 0 | 27,000 | 0 |
| Toledo Refining Co LLC | | | | | | | | |
| Toledo | 45,900 | 72,000 | 32,000 | 0 | 0 | 0 | 0 | 0 |
| Oklahoma | 155,411 | 102,987 | 18,500 | 134,581 | 37,590 | 0 | 58,338 | 36,032 |
| HollyFrontier Tulsa Refining LLC | | | | | | | | |
| Tulsa East | 22,000 | 29,000 | 0 | 45,000 | 0 | 0 | 0 | 0 |
| Tulsa West | 28,000 | 0 | 0 | 0 | 0 | 0 | 0 | 21,600 |
| Phillips 66 Company | | | | | | | | |
| Ponca City | 51,511 | 58,987 | 18,500 | 31,981 | 37,590 | 0 | 23,888 | 14,432 |
| Valero Refining Co Oklahoma | | | | | | | | |
| Ardmore | 27,000 | 0 | 0 | 32,000 | 0 | 0 | 34,450 | 0 |
| Wynnewood Refining Co | | | | | | | | |
| Wynnewood | 26,900 | 15,000 | 0 | 25,600 | 0 | 0 | 0 | 0 |
| Pennsylvania | 185,600 | 104,000 | 5,000 | 70,300 | 157,000 | 0 | 0 | 0 |
| American Refining Group Inc | | | | | | | | |
| Bradford | 3,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Monroe Energy LLC | | | | | | | | |
| Trainer | 80,000 | 34,000 | 0 | 53,300 | 0 | 0 | 0 | 0 |
| Philadelphia Energy Solutions | | | | | | | | |
| Philadelphia | 78,000 | 65,000 | 0 | 0 | 157,000 | 0 | 0 | 0 |
| United Refining Co | | | | | | | | |
| Warren | 24,000 | 5,000 | 5,000 | 17,000 | 0 | 0 | 0 | 0 |
| Tennessee | 52,000 | 39,000 | 0 | 38,000 | 0 | 0 | 0 | 0 |
| Premcor Refining Group Inc | | | | | | | | |
| Memphis | 52,000 | 39,000 | 0 | 38,000 | 0 | 0 | 0 | 0 |
| Texas | 1,411,590 | 1,054,800 | 629,700 | 1,366,125 | 16,000 | 184,000 | 918,240 | 145,700 |
| Alon USA Energy Inc | | | | | | | | |
| Big Spring | 25,500 | 0 | 5,000 | 23,000 | 0 | 0 | 6,500 | 0 |
| Buckeye Texas Processing LLC | | | | | | | | |
| Corpus Christi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co | | | | | | | | |
| San Antonio | 6,000 | 0 | 0 | 8,000 | 0 | 0 | 0 | 0 |
| Citgo Refining & Chemical Inc | | | | | | | | |
| Corpus Christi | 52,800 | 45,100 | 0 | 95,300 | 0 | 0 | 70,900 | 0 |
| Deer Park Refining LTD Partnership | | | | | | | | |
| Deer Park | 75,500 | 43,000 | 40,000 | 45,000 | 0 | 0 | 49,500 | 43,000 |
| Delek Refining LTD | | | | | | | | |
| Tyler | 28,000 | 13,000 | 0 | 36,000 | 0 | 0 | 0 | 0 |
| Equistar Chemicals LP | | | | | | | | |
| Channelview | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co | | | | | | | | |
| Baytown | 155,500 | 196,000 | 132,700 | 146,300 | 0 | 0 | 117,000 | 46,500 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | |
|--|---|---------------|------------------------|---------------|----------------------------|------------------|---------------|-------------|---------------|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil |
| Texas | 5,628,990 | 42,500 | 5,975,900 | 50,000 | 2,611,200 | 893,580 | 42,000 | 0 | 0 |
| ExxonMobil Refining & Supply Co | | | | | | | | | |
| Beaumont | 362,300 | 0 | 377,400 | 0 | 148,800 | 48,000 | 0 | 0 | 0 |
| Flint Hills Resources LP | | | | | | | | | |
| Corpus Christi | 296,470 | 0 | 304,000 | 0 | 87,500 | 15,500 | 0 | 0 | 0 |
| Houston Refining LP | | | | | | | | | |
| Houston | 263,776 | 0 | 296,300 | 0 | 196,500 | 100,000 | 0 | 0 | 0 |
| Kinder Morgan Crude & Condensate | | | | | | | | | |
| Galena Park | 84,000 | 0 | 100,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lazarus Energy LLC | | | | | | | | | |
| Nixon | 13,765 | 0 | 15,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Magellan Terminal Holdings LP | | | | | | | | | |
| Corpus Christi | 0 | 42,500 | 0 | 50,000 | 0 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP | | | | | | | | | |
| Galveston Bay | 459,000 | 0 | 481,000 | 0 | 237,000 | 33,000 | 0 | 0 | 0 |
| Texas City | 86,000 | 0 | 89,500 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motiva Enterprises LLC | | | | | | | | | |
| Port Arthur | 603,000 | 0 | 635,000 | 0 | 331,800 | 164,500 | 0 | 0 | 0 |
| Pasadena Refining Systems Inc | | | | | | | | | |
| Pasadena | 112,229 | 0 | 115,700 | 0 | 38,000 | 0 | 0 | 0 | 0 |
| Petromax Refining Co LLC | | | | | | | | | |
| Houston | 25,000 | 0 | 27,500 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips 66 Company | | | | | | | | | |
| Sweeny | 247,000 | 0 | 260,000 | 0 | 132,100 | 78,700 | 0 | 0 | 0 |
| Premcor Refining Group Inc | | | | | | | | | |
| Port Arthur | 335,000 | 0 | 415,000 | 0 | 220,000 | 99,600 | 0 | 0 | 0 |
| South Hampton Resources Inc | | | | | | | | | |
| Silsbee | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Petrochemicals & Refining USA | | | | | | | | | |
| Port Arthur | 225,500 | 0 | 245,000 | 0 | 117,000 | 60,000 | 0 | 0 | 0 |
| Valero Energy Corporation | | | | | | | | | |
| Sunray | 195,000 | 0 | 200,000 | 0 | 50,000 | 0 | 0 | 0 | 0 |
| Three Rivers | 89,000 | 0 | 91,000 | 0 | 33,500 | 0 | 0 | 0 | 0 |
| Valero Refining Co Texas LP | | | | | | | | | |
| Corpus Christi | 293,000 | 0 | 300,000 | 0 | 97,000 | 17,000 | 0 | 0 | 0 |
| Houston | 191,000 | 0 | 197,000 | 0 | 38,000 | 0 | 0 | 0 | 0 |
| Texas City | 225,000 | 0 | 231,000 | 0 | 133,500 | 53,500 | 0 | 0 | 0 |
| Western Refining Company LP | | | | | | | | | |
| El Paso | 122,000 | 0 | 134,000 | 0 | 56,200 | 0 | 0 | 0 | 0 |
| WRB Refining LP | | | | | | | | | |
| Borger | 146,000 | 0 | 154,000 | 0 | 80,000 | 28,380 | 0 | 0 | 0 |
| Utah | 196,830 | 0 | 209,100 | 0 | 34,500 | 10,000 | 0 | 0 | 0 |
| Big West Oil Co | | | | | | | | | |
| North Salt Lake | 30,500 | 0 | 33,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chevron USA Inc | | | | | | | | | |
| Salt Lake City | 54,500 | 0 | 56,000 | 0 | 27,500 | 10,000 | 0 | 0 | 0 |
| HollyFrontier Woods Cross Refining LLC | | | | | | | | | |
| Woods Cross | 39,330 | 0 | 41,400 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|--|----------------------------|---------------|-------------------------|----------------|---------------|---------------------|----------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| Texas | 1,779,200 | 25,000 | 246,300 | 411,800 | 75,000 | 970,700 | 115,280 | 166,000 |
| ExxonMobil Refining & Supply Co Beaumont | 117,700 | 0 | 67,000 | 0 | 0 | 146,000 | 0 | 0 |
| Flint Hills Resources LP Corpus Christi | 110,000 | 0 | 0 | 15,000 | 0 | 0 | 0 | 0 |
| Houston Refining LP Houston | 110,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kinder Morgan Crude & Condensate Galena Park | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lazarus Energy LLC Nixon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Magellan Terminal Holdings LP Corpus Christi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Galveston Bay | 137,000 | 0 | 77,500 | 0 | 75,000 | 139,000 | 0 | 17,000 |
| Texas City | 58,500 | 0 | 0 | 0 | 0 | 0 | 11,000 | 0 |
| Motiva Enterprises LLC Port Arthur | 90,000 | 0 | 0 | 105,000 | 0 | 129,500 | 0 | 0 |
| Pasadena Refining Systems Inc Pasadena | 52,000 | 0 | 0 | 0 | 0 | 23,000 | 0 | 0 |
| Petromax Refining Co LLC Houston | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Sweeny | 107,700 | 12,000 | 0 | 0 | 0 | 37,500 | 0 | 0 |
| Premcor Refining Group Inc Port Arthur | 75,000 | 0 | 0 | 124,800 | 0 | 55,000 | 0 | 0 |
| South Hampton Resources Inc Silsbee | 0 | 0 | 0 | 0 | 0 | 1,600 | 0 | 0 |
| Total Petrochemicals & Refining USA Port Arthur | 80,000 | 0 | 0 | 0 | 0 | 43,000 | 0 | 15,500 |
| Valero Energy Corporation Sunray | 54,500 | 0 | 0 | 29,000 | 0 | 29,000 | 18,000 | 14,500 |
| Three Rivers | 23,500 | 0 | 0 | 28,000 | 0 | 23,500 | 10,000 | 10,500 |
| Valero Refining Co Texas LP Corpus Christi | 95,500 | 0 | 0 | 50,000 | 0 | 39,000 | 10,000 | 0 |
| Houston | 71,750 | 0 | 71,900 | 0 | 0 | 0 | 0 | 18,000 |
| Texas City | 86,000 | 0 | 0 | 0 | 0 | 18,100 | 0 | 33,500 |
| Western Refining Company LP El Paso | 35,000 | 0 | 0 | 0 | 0 | 28,000 | 0 | 0 |
| WRB Refining LP Borger | 56,000 | 0 | 0 | 0 | 0 | 0 | 31,280 | 0 |
| Utah | 71,300 | 3,000 | 0 | 15,000 | 0 | 0 | 36,800 | 6,000 |
| Big West Oil Co North Salt Lake | 12,300 | 0 | 0 | 0 | 0 | 0 | 8,500 | 0 |
| Chevron USA Inc Salt Lake City | 15,500 | 0 | 0 | 0 | 0 | 0 | 8,500 | 0 |
| HollyFrontier Woods Cross Refining LLC Woods Cross | 17,500 | 0 | 0 | 15,000 | 0 | 0 | 8,400 | 6,000 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|--|---|------------------|-----------------------|------------------|---------------------|----------------|------------------|----------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| Texas | 1,411,590 | 1,054,800 | 629,700 | 1,366,125 | 16,000 | 184,000 | 918,240 | 145,700 |
| ExxonMobil Refining & Supply Co Beaumont | 159,800 | 25,000 | 51,000 | 42,000 | 0 | 0 | 0 | 19,500 |
| Flint Hills Resources LP Corpus Christi | 93,800 | 75,000 | 54,000 | 78,000 | 0 | 0 | 54,000 | 0 |
| Houston Refining LP Houston | 60,500 | 76,000 | 43,500 | 92,175 | 0 | 0 | 116,100 | 5,200 |
| Kinder Morgan Crude & Condensate Galena Park | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lazarus Energy LLC Nixon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Magellan Terminal Holdings LP Corpus Christi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Marathon Petroleum Co LP Galveston Bay | 121,000 | 57,000 | 79,000 | 55,000 | 0 | 0 | 105,000 | 0 |
| Texas City | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Motiva Enterprises LLC Port Arthur | 163,150 | 55,000 | 78,000 | 170,800 | 0 | 0 | 50,000 | 21,000 |
| Pasadena Refining Systems Inc Pasadena | 22,000 | 40,000 | 0 | 0 | 16,000 | 0 | 0 | 0 |
| Petromax Refining Co LLC Houston | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Sweeny | 67,300 | 68,700 | 0 | 123,700 | 0 | 0 | 107,000 | 0 |
| Premcor Refining Group Inc Port Arthur | 48,700 | 85,000 | 33,000 | 104,600 | 0 | 0 | 60,000 | 0 |
| South Hampton Resources Inc Silsbee | 11,000 | 0 | 0 | 0 | 0 | 0 | 0 | 4,000 |
| Total Petrochemicals & Refining USA Port Arthur | 57,500 | 51,600 | 31,000 | 70,000 | 0 | 0 | 54,400 | 0 |
| Valero Energy Corporation Sunray | 43,000 | 39,600 | 0 | 47,500 | 0 | 0 | 0 | 0 |
| Three Rivers | 24,000 | 0 | 10,000 | 25,000 | 0 | 0 | 20,000 | 0 |
| Valero Refining Co Texas LP Corpus Christi | 64,000 | 60,000 | 11,000 | 63,250 | 0 | 74,000 | 30,000 | 0 |
| Houston | 9,000 | 33,600 | 15,000 | 0 | 0 | 0 | 0 | 0 |
| Texas City | 25,000 | 61,500 | 28,000 | 55,000 | 0 | 110,000 | 0 | 6,500 |
| Western Refining Company LP El Paso | 33,000 | 29,700 | 10,000 | 50,000 | 0 | 0 | 0 | 0 |
| WRB Refining LP Borger | 65,540 | 0 | 8,500 | 35,500 | 0 | 0 | 77,840 | 0 |
| Utah | 44,900 | 8,000 | 2,900 | 49,800 | 28,800 | 0 | 0 | 7,200 |
| Big West Oil Co North Salt Lake | 11,500 | 0 | 0 | 11,000 | 0 | 0 | 0 | 0 |
| Chevron USA Inc Salt Lake City | 8,500 | 0 | 0 | 13,300 | 18,000 | 0 | 0 | 7,200 |
| HollyFrontier Woods Cross Refining LLC Woods Cross | 12,500 | 0 | 2,900 | 0 | 10,800 | 0 | 0 | 0 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Atmospheric Crude Oil Distillation Capacity | | | | Downstream Charge Capacity | | | | | |
|---|---|----------------|------------------------|----------------|----------------------------|------------------|----------------|---------------|---------------|--|
| | Barrels per Calendar Day | | Barrels per Stream Day | | Vacuum Distillation | Thermal Cracking | | | | |
| | Operating | Idle | Operating | Idle | | Delayed Coking | Fluid Coking | Visbreaking | Other/Gas Oil | |
| Utah | 196,830 | 0 | 209,100 | 0 | 34,500 | 10,000 | 0 | 0 | 0 | |
| Silver Eagle Refining Woods Cross | 15,000 | 0 | 15,700 | 0 | 7,000 | 0 | 0 | 0 | 0 | |
| Tesoro West Coast Salt Lake City | 57,500 | 0 | 63,000 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Washington | 633,700 | 0 | 659,500 | 0 | 298,200 | 82,800 | 0 | 0 | 0 | |
| BP West Coast Products LLC Ferndale | 227,000 | 0 | 236,000 | 0 | 112,000 | 57,500 | 0 | 0 | 0 | |
| Phillips 66 Company Ferndale | 101,000 | 0 | 107,500 | 0 | 50,700 | 0 | 0 | 0 | 0 | |
| Shell Oil Products US Anacortes | 145,000 | 0 | 149,000 | 0 | 65,800 | 25,300 | 0 | 0 | 0 | |
| Tesoro West Coast Anacortes | 120,000 | 0 | 125,000 | 0 | 50,500 | 0 | 0 | 0 | 0 | |
| US Oil & Refining Co Tacoma | 40,700 | 0 | 42,000 | 0 | 19,200 | 0 | 0 | 0 | 0 | |
| West Virginia | 22,300 | 0 | 23,000 | 0 | 8,600 | 0 | 0 | 0 | 0 | |
| Ergon West Virginia Inc Newell | 22,300 | 0 | 23,000 | 0 | 8,600 | 0 | 0 | 0 | 0 | |
| Wisconsin | 38,000 | 0 | 50,000 | 0 | 20,500 | 0 | 0 | 0 | 0 | |
| Calumet Lubricants Co LP Superior | 38,000 | 0 | 50,000 | 0 | 20,500 | 0 | 0 | 0 | 0 | |
| Wyoming | 177,500 | 0 | 189,400 | 0 | 69,000 | 33,700 | 0 | 0 | 0 | |
| Hermes Consolidated LLC New Castle | 18,000 | 0 | 18,500 | 0 | 0 | 0 | 0 | 0 | 0 | |
| (Formerly Wyoming Refining Co) | | | | | | | | | | |
| HollyFrontier Cheyenne Refining LLC Cheyenne | 47,000 | 0 | 52,000 | 0 | 28,000 | 13,700 | 0 | 0 | 0 | |
| Little America Refining Co Evansville | 24,500 | 0 | 25,500 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Silver Eagle Refining Evanston | 3,000 | 0 | 3,400 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sinclair Wyoming Refining Co Sinclair | 85,000 | 0 | 90,000 | 0 | 41,000 | 20,000 | 0 | 0 | 0 | |
| U.S. Total | 18,314,127 | 302,900 | 19,473,319 | 326,500 | 9,125,573 | 2,808,165 | 158,900 | 16,000 | 10,600 | |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|----------------------------|---------------|-------------------------|------------------|----------------|---------------------|------------------|----------------------------|
| | Catalytic Cracking | | Catalytic Hydrocracking | | | Catalytic Reforming | | Fuels Solvent Deasphalting |
| | Fresh | Recycled | Distillate | Gas Oil | Residual | Low Pressure | High Pressure | |
| Utah | 71,300 | 3,000 | 0 | 15,000 | 0 | 0 | 36,800 | 6,000 |
| Silver Eagle Refining Woods Cross | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro West Coast Salt Lake City | 26,000 | 3,000 | 0 | 0 | 0 | 0 | 11,400 | 0 |
| Washington | 145,700 | 3,000 | 0 | 65,000 | 0 | 115,800 | 28,500 | 24,300 |
| BP West Coast Products LLC Ferndale | 0 | 0 | 0 | 65,000 | 0 | 65,000 | 0 | 0 |
| Phillips 66 Company Ferndale | 38,500 | 0 | 0 | 0 | 0 | 18,400 | 0 | 0 |
| Shell Oil Products US Anacortes | 57,900 | 0 | 0 | 0 | 0 | 0 | 21,700 | 0 |
| Tesoro West Coast Anacortes | 49,300 | 3,000 | 0 | 0 | 0 | 32,400 | 0 | 24,300 |
| US Oil & Refining Co Tacoma | 0 | 0 | 0 | 0 | 0 | 0 | 6,800 | 0 |
| West Virginia | 0 | 0 | 0 | 0 | 0 | 4,700 | 0 | 0 |
| Ergon West Virginia Inc Newell | 0 | 0 | 0 | 0 | 0 | 4,700 | 0 | 0 |
| Wisconsin | 11,000 | 0 | 0 | 0 | 0 | 8,000 | 0 | 0 |
| Calumet Lubricants Co LP Superior | 11,000 | 0 | 0 | 0 | 0 | 8,000 | 0 | 0 |
| Wyoming | 53,500 | 500 | 15,600 | 0 | 0 | 14,200 | 21,400 | 0 |
| Hermes Consolidated LLC New Castle | 7,500 | 0 | 0 | 0 | 0 | 0 | 4,000 | 0 |
| (Formerly Wyoming Refining Co) | | | | | | | | |
| HollyFrontier Cheyenne Refining LLC Cheyenne | 12,500 | 0 | 0 | 0 | 0 | 9,200 | 0 | 0 |
| Little America Refining Co Evansville | 11,500 | 500 | 0 | 0 | 0 | 5,000 | 0 | 0 |
| Silver Eagle Refining Evanston | 0 | 0 | 0 | 0 | 0 | 0 | 2,900 | 0 |
| Sinclair Wyoming Refining Co Sinclair | 22,000 | 0 | 15,600 | 0 | 0 | 0 | 14,500 | 0 |
| U.S. Total | 6,007,472 | 75,690 | 682,500 | 1,609,300 | 129,500 | 2,675,590 | 1,074,223 | 393,050 |

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Downstream Charge Capacity | | | | | | | |
|---|---|------------------|-----------------------|------------------|---------------------|----------------|------------------|----------------|
| | Desulfurization (incl. Catalytic Hydrotreating) | | | | | | | |
| | Naphtha/ Reformer Feed | Gasoline | Kerosene/ Jet Fuel | Diesel Fuel | Other Distillate | Residual | Heavy Gas Oil | Other |
| Utah | 44,900 | 8,000 | 2,900 | 49,800 | 28,800 | 0 | 0 | 7,200 |
| Silver Eagle Refining Woods Cross | 1,000 | 0 | 0 | 3,000 | 0 | 0 | 0 | 0 |
| Tesoro West Coast Salt Lake City | 11,400 | 8,000 | 0 | 22,500 | 0 | 0 | 0 | 0 |
| Washington | 176,100 | 90,300 | 39,000 | 162,500 | 0 | 0 | 0 | 0 |
| BP West Coast Products LLC Ferndale | 74,000 | 0 | 20,000 | 55,000 | 0 | 0 | 0 | 0 |
| Phillips 66 Company Ferndale | 19,000 | 22,100 | 0 | 32,300 | 0 | 0 | 0 | 0 |
| Shell Oil Products US Anacortes | 33,500 | 35,700 | 19,000 | 40,700 | 0 | 0 | 0 | 0 |
| Tesoro West Coast Anacortes | 39,200 | 32,500 | 0 | 26,300 | 0 | 0 | 0 | 0 |
| US Oil & Refining Co Tacoma | 10,400 | 0 | 0 | 8,200 | 0 | 0 | 0 | 0 |
| West Virginia | 7,700 | 0 | 0 | 9,500 | 0 | 0 | 6,900 | 0 |
| Ergon West Virginia Inc Newell | 7,700 | 0 | 0 | 9,500 | 0 | 0 | 6,900 | 0 |
| Wisconsin | 11,000 | 7,500 | 7,700 | 6,500 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co LP Superior | 11,000 | 7,500 | 7,700 | 6,500 | 0 | 0 | 0 | 0 |
| Wyoming | 44,400 | 16,500 | 15,000 | 52,500 | 0 | 0 | 20,000 | 0 |
| Hermes Consolidated LLC New Castle | 4,000 | 0 | 0 | 6,000 | 0 | 0 | 0 | 0 |
| (Formerly Wyoming Refining Co) | | | | | | | | |
| HollyFrontier Cheyenne Refining LLC Cheyenne | 10,000 | 10,000 | 0 | 18,000 | 0 | 0 | 0 | 0 |
| Little America Refining Co Evansville | 7,500 | 6,500 | 0 | 10,500 | 0 | 0 | 0 | 0 |
| Silver Eagle Refining Evanston | 3,900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sinclair Wyoming Refining Co Sinclair | 19,000 | 0 | 15,000 | 18,000 | 0 | 0 | 20,000 | 0 |
| U.S. Total | 4,650,491 | 2,905,437 | 1,574,550 | 4,472,886 | 515,650 | 196,500 | 2,919,338 | 386,632 |

Note: Refer to Table 5 for corporate ownership information. Some names of previously independent companies have been preserved by acquiring companies.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Directory of Operable Petroleum Refineries on Tables 3 and 4

| Refiner | State(s) | Refiner | State(s) |
|---|----------------|--|----------------------------|
| Alon Bakersfield Operating Inc..... | CA | Island Energy Services Downstream..... | HI |
| Alon Refining Krotz Springs Inc..... | LA | Kern Oil & Refining Co..... | CA |
| Alon USA Energy Inc..... | TX | Kinder Morgan Crude & Condensate..... | TX |
| American Refining Group Inc..... | PA | Lazarus Energy LLC..... | TX |
| Axeon Specialty Products LLC..... | NJ | Lima Refining Company..... | OH |
| BP Exploration Alaska Inc..... | AK | Lion Oil Co..... | AR |
| BP Products North America Inc..... | IN | Little America Refining Co..... | WY |
| BP West Coast Products LLC..... | WA | Lunday Thagard Co..... | CA |
| BP-Husky Refining LLC..... | OH | Magellan Terminal Holdings LP..... | TX |
| Big West Oil Co..... | UT | Marathon Petroleum Co LP..... | IL, KY, LA, MI, OH, TX |
| Buckeye Texas Processing LLC..... | TX | Monroe Energy LLC..... | PA |
| CHS McPherson Refinery Inc..... | KS | Motiva Enterprises LLC..... | LA, TX |
| Calcasieu Refining Co..... | LA | PDV Midwest Refining LLC..... | IL |
| Calumet Lubricants Co..... | TX | Paramount Petroleum Corporation..... | CA |
| Calumet Lubricants Co LP..... | LA, WI | Pasadena Refining Systems Inc..... | TX |
| Calumet Montana Refining LLC..... | MT | Paulsboro Refining Co LLC..... | NJ |
| Calumet Shreveport LLC..... | LA | Petro Star Inc..... | AK |
| Cenex Harvest States Coop..... | MT | Petromax Refining Co LLC..... | TX |
| Chalmette Refining LLC..... | LA | Philadelphia Energy Solutions..... | PA |
| Chevron USA Inc..... | CA, MS, UT | Phillips 66 Company..... | CA, LA, MT, NJ, OK, TX, WA |
| Citgo Petroleum Corp..... | LA | Placid Refining Co..... | LA |
| Citgo Refining & Chemical Inc..... | TX | Premcor Refining Group Inc..... | TN, TX |
| Coffeyville Resources Rfg & Mktg..... | KS | San Joaquin Refining Co Inc..... | CA |
| ConocoPhillips Alaska Inc..... | AK | Santa Maria Refining Company..... | CA |
| Continental Refining Company LLC..... | KY | Shell Chemical LP..... | AL |
| Countrymark Cooperative Inc..... | IN | Shell Oil Products US..... | CA, LA, WA |
| Cross Oil Refining & Marketing Inc..... | AR | Silver Eagle Refining..... | UT, WY |
| Deer Park Refining LTD Partnership..... | TX | Sinclair Wyoming Refining Co..... | WY |
| Delaware City Refining Co LLC..... | DE | South Hampton Resources Inc..... | TX |
| Delek Refining LTD..... | TX | St Paul Park Refining Co LLC..... | MN |
| Equistar Chemicals LP..... | TX | Suncor Energy (USA) Inc..... | CO |
| Ergon Refining Inc..... | MS | Tesoro Alaska Petroleum Co..... | AK |
| Ergon West Virginia Inc..... | WV | Tesoro Refining & Marketing Co..... | CA, ND |
| Excel Paralubes..... | LA | Tesoro West Coast..... | ND, UT, WA |
| ExxonMobil Refining & Supply Co..... | IL, LA, MT, TX | Toledo Refining Co LLC..... | OH |
| Flint Hills Resources LP..... | MN, TX | Torrance Refining Co LLC..... | CA |
| Foreland Refining Corp..... | NV | Total Petrochemicals & Refining USA..... | TX |
| Goodway Refining LLC..... | AL | US Oil & Refining Co..... | WA |
| Hawaii Independent Energy LLC..... | HI | United Refining Co..... | PA |
| Hermes Consolidated LLC..... | WY | Valero Energy Corporation..... | LA, TX |
| HollyFrontier Cheyenne Refining LLC..... | WY | Valero Refining Co California..... | CA |
| HollyFrontier El Dorado Refining LLC..... | KS | Valero Refining Co Oklahoma..... | OK |
| HollyFrontier Navajo Refining LLC..... | NM | Valero Refining Co Texas LP..... | TX |
| HollyFrontier Tulsa Refining LLC..... | OK | Valero Refining New Orleans LLC..... | LA |
| HollyFrontier Woods Cross Refining LLC..... | UT | WRB Refining LP..... | IL, TX |
| Houston Refining LP..... | TX | Western Refining Company LP..... | TX |
| Hunt Refining Co..... | AL | Western Refining Southwest Inc..... | NM |
| Hunt Southland Refining Co..... | MS | Wynnewood Refining Co..... | OK |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen ^a (MMcfd) | Sulfur (short tons per day) |
|------------------------------------|-----------|-----------|----------------------|-----------|--------------------------|-----------|------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Alabama | 0 | 0 | 15,000 | 1,150 | 4,200 | 0 | 0 | 7,120 | 40 | 228 |
| Hunt Refining Co | | | | | | | | | | |
| Tuscaloosa | 0 | 0 | 15,000 | 0 | 4,200 | 0 | 0 | 7,120 | 40 | 195 |
| Shell Chemical LP | | | | | | | | | | |
| Saraland | 0 | 0 | 0 | 1,150 | 0 | 0 | 0 | 0 | 0 | 33 |
| Alaska | 0 | 0 | 13,000 | 0 | 5,000 | 0 | 0 | 0 | 13 | 25 |
| Petro Star Inc | | | | | | | | | | |
| North Pole | 0 | 0 | 3,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tesoro Alaska Petroleum Co | | | | | | | | | | |
| Kenai | 0 | 0 | 10,000 | 0 | 5,000 | 0 | 0 | 0 | 13 | 25 |
| Arkansas | 5,000 | 0 | 21,500 | 0 | 7,500 | 0 | 5,500 | 0 | 13 | 157 |
| Cross Oil Refining & Marketing Inc | | | | | | | | | | |
| Smackover | 0 | 0 | 1,000 | 0 | 0 | 0 | 5,500 | 0 | 3 | 0 |
| Lion Oil Co | | | | | | | | | | |
| El Dorado | 5,000 | 0 | 20,500 | 0 | 7,500 | 0 | 0 | 0 | 10 | 157 |
| California | 205,662 | 1,500 | 48,833 | 40,400 | 129,600 | 200 | 39,800 | 143,000 | 1,088 | 5,092 |
| Alon Bakersfield Operating Inc | | | | | | | | | | |
| Bakersfield | 0 | 0 | 0 | 300 | 500 | 200 | 0 | 0 | 23 | 70 |
| Chevron USA Inc | | | | | | | | | | |
| El Segundo | 33,300 | 0 | 0 | 10,500 | 22,300 | 0 | 0 | 25,500 | 77 | 894 |
| Richmond | 32,662 | 0 | 0 | 7,200 | 46,000 | 0 | 34,000 | 0 | 181 | 789 |
| Kern Oil & Refining Co | | | | | | | | | | |
| Bakersfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Lunday Thagard Co | | | | | | | | | | |
| South Gate | 0 | 0 | 5,833 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017

(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|--|---------------|--------------|----------------------|--------------|--------------------------|-----------|------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| | | | | | | | | | | |
| Paramount Petroleum Corporation | | | | | | | | | | |
| Paramount | 0 | 0 | 16,500 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| Phillips 66 Company | | | | | | | | | | |
| Rodeo | 0 | 0 | 0 | 3,800 | 10,000 | 0 | 0 | 14,500 | 22 | 560 |
| Wilmington | 16,000 | 0 | 0 | 3,100 | 12,800 | 0 | 0 | 16,800 | 105 | 370 |
| San Joaquin Refining Co Inc | | | | | | | | | | |
| Bakersfield | 0 | 1,500 | 8,000 | 0 | 0 | 0 | 5,800 | 0 | 4 | 6 |
| Santa Maria Refining Company | | | | | | | | | | |
| Santa Maria | 0 | 0 | 6,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shell Oil Products US | | | | | | | | | | |
| Martinez | 12,500 | 0 | 0 | 0 | 15,000 | 0 | 0 | 9,000 | 193 | 413 |
| Tesororo Refining & Marketing Co | | | | | | | | | | |
| Carson | 17,000 | 0 | 0 | 3,500 | 23,000 | 0 | 0 | 16,700 | 105 | 476 |
| Martinez | 15,400 | 0 | 0 | 0 | 0 | 0 | 0 | 15,000 | 82 | 200 |
| Wilmington | 12,500 | 0 | 0 | 7,800 | 0 | 0 | 0 | 12,000 | 15 | 280 |
| Torrance Refining Co LLC | | | | | | | | | | |
| Torrance | 27,200 | 0 | 0 | 0 | 0 | 0 | 0 | 16,700 | 146 | 400 |
| (Formerly ExxonMobil Refining & Supply Co) | | | | | | | | | | |
| Valero Refining Co California | | | | | | | | | | |
| Benicia | 17,100 | 0 | 9,000 | 4,200 | 0 | 0 | 0 | 6,800 | 135 | 303 |
| Wilmington Asphalt Plant | 0 | 0 | 3,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wilmington Refinery | 22,000 | 0 | 0 | 0 | 0 | 0 | 0 | 10,000 | 0 | 280 |
| Colorado | 0 | 0 | 12,250 | 985 | 0 | 0 | 0 | 0 | 22 | 116 |
| Suncor Energy (USA) Inc | | | | | | | | | | |
| Commerce City East | 0 | 0 | 0 | 985 | 0 | 0 | 0 | 0 | 0 | 2 |
| Commerce City West | 0 | 0 | 12,250 | 0 | 0 | 0 | 0 | 0 | 22 | 114 |
| Delaware | 11,729 | 5,191 | 0 | 6,000 | 0 | 0 | 0 | 13,620 | 40 | 596 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|-----------------------------------|---------------|---------------|----------------------|--------------|--------------------------|-----------|------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Delaware City Refining Co LLC | | | | | | | | | | |
| Delaware City | 11,729 | 5,191 | 0 | 6,000 | 0 | 0 | 0 | 13,620 | 40 | 596 |
| Hawaii | 5,000 | 0 | 0 | 3,200 | 0 | 0 | 0 | 0 | 21 | 38 |
| Hawaii Independent Energy LLC | | | | | | | | | | |
| Ewa Beach | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 38 |
| Island Energy Services Downstream | | | | | | | | | | |
| Honolulu | 5,000 | 0 | 0 | 3,200 | 0 | 0 | 0 | 0 | 3 | 0 |
| (Formerly Chevron USA Inc) | | | | | | | | | | |
| Illinois | 85,400 | 17,200 | 38,100 | 0 | 16,000 | 0 | 0 | 66,695 | 202 | 2,380 |
| ExxonMobil Refining & Supply Co | | | | | | | | | | |
| Joliet | 29,100 | 0 | 15,100 | 0 | 0 | 0 | 0 | 18,595 | 0 | 683 |
| Marathon Petroleum Co LP | | | | | | | | | | |
| Robinson | 13,000 | 3,300 | 0 | 0 | 16,000 | 0 | 0 | 7,500 | 0 | 202 |
| PDV Midwest Refining LLC | | | | | | | | | | |
| Lemont | 21,500 | 9,400 | 0 | 0 | 0 | 0 | 0 | 12,700 | 12 | 487 |
| WRB Refining LP | | | | | | | | | | |
| Wood River | 21,800 | 4,500 | 23,000 | 0 | 0 | 0 | 0 | 27,900 | 190 | 1,008 |
| Indiana | 33,200 | 16,800 | 33,700 | 0 | 29,600 | 0 | 0 | 30,000 | 0 | 1,913 |
| BP Products North America Inc | | | | | | | | | | |
| Whiting | 31,000 | 16,800 | 30,000 | 0 | 26,400 | 0 | 0 | 30,000 | 0 | 1,904 |
| Countrymark Cooperative Inc | | | | | | | | | | |
| Mount Vernon | 2,200 | 0 | 3,700 | 0 | 3,200 | 0 | 0 | 0 | 0 | 9 |
| Kansas | 33,500 | 0 | 4,000 | 5,300 | 27,000 | 0 | 0 | 23,064 | 120 | 824 |
| CHS McPherson Refinery Inc | | | | | | | | | | |
| McPherson | 9,500 | 0 | 0 | 3,800 | 12,000 | 0 | 0 | 7,364 | 42 | 280 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|--------------------------------------|----------------|---------------|----------------------|---------------|--------------------------|-----------|---------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Coffeyville Resources Rig & Mktg | | | | | | | | | | |
| Coffeyville | 10,000 | 0 | 0 | 0 | 0 | 0 | 0 | 8,700 | 22 | 229 |
| HollyFrontier El Dorado Refining LLC | | | | | | | | | | |
| El Dorado | 14,000 | 0 | 4,000 | 1,500 | 15,000 | 0 | 0 | 7,000 | 56 | 315 |
| Kentucky | 21,000 | 3,200 | 35,400 | 0 | 17,000 | 0 | 0 | 0 | 0 | 448 |
| Marathon Petroleum Co LP | | | | | | | | | | |
| Catlettsburg | 21,000 | 3,200 | 35,400 | 0 | 17,000 | 0 | 0 | 0 | 0 | 448 |
| Louisiana | 220,200 | 49,900 | 67,000 | 26,500 | 77,220 | 0 | 66,000 | 168,877 | 118 | 6,773 |
| Alon Refining Krotz Springs Inc | | | | | | | | | | |
| Krotz Springs | 0 | 0 | 0 | 0 | 6,220 | 0 | 0 | 0 | 0 | 0 |
| Calcasieu Refining Co | | | | | | | | | | |
| Lake Charles | 0 | 0 | 0 | 3,500 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calumet Lubricants Co LP | | | | | | | | | | |
| Cotton Valley | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 0 | 2 | 0 |
| Princeton | 0 | 0 | 2,000 | 0 | 0 | 0 | 7,000 | 0 | 4 | 3 |
| Calumet Shreveport LLC | | | | | | | | | | |
| Shreveport | 0 | 0 | 6,500 | 0 | 0 | 0 | 12,500 | 0 | 12 | 40 |
| Chalmette Refining LLC | | | | | | | | | | |
| Chalmette | 16,800 | 10,500 | 10,000 | 0 | 0 | 0 | 0 | 9,000 | 0 | 920 |
| Citigo Petroleum Corp | | | | | | | | | | |
| Lake Charles | 26,400 | 20,900 | 0 | 0 | 28,000 | 0 | 0 | 32,820 | 0 | 717 |
| Excel Paratlubes | | | | | | | | | | |
| Westlake | 0 | 0 | 0 | 0 | 0 | 0 | 30,000 | 0 | 0 | 185 |
| ExxonMobil Refining & Supply Co | | | | | | | | | | |
| Baton Rouge | 41,000 | 0 | 0 | 0 | 0 | 0 | 16,500 | 31,525 | 0 | 800 |
| Marathon Petroleum Co LP | | | | | | | | | | |
| Garyville | 33,000 | 0 | 33,000 | 23,000 | 26,500 | 0 | 0 | 33,000 | 0 | 1,476 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|---------------------------------|---------------|---------------|----------------------|--------------|--------------------------|-----------|---------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| | | | | | | | | | | |
| Motiva Enterprises LLC | | | | | | | | | | |
| Convent | 16,700 | 0 | 0 | 0 | 16,000 | 0 | 0 | 0 | 0 | 728 |
| Norco | 16,800 | 0 | 0 | 0 | 0 | 0 | 0 | 7,316 | 0 | 180 |
| Phillips 66 Company | | | | | | | | | | |
| Belle Chasse | 35,000 | 15,500 | 0 | 0 | 0 | 0 | 0 | 6,716 | 0 | 125 |
| Westlake | 6,000 | 0 | 2,500 | 0 | 0 | 0 | 0 | 22,500 | 0 | 440 |
| Placid Refining Co | | | | | | | | | | |
| Port Allen | 7,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 |
| Shell Oil Products US | | | | | | | | | | |
| Saint Rose | 0 | 0 | 13,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Valero Energy Corporation | | | | | | | | | | |
| Meraux | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 224 |
| Valero Refining New Orleans LLC | | | | | | | | | | |
| Norco | 21,000 | 3,000 | 0 | 0 | 0 | 0 | 0 | 26,000 | 100 | 880 |
| Michigan | 7,000 | 0 | 24,000 | 0 | 0 | 0 | 0 | 11,800 | 0 | 459 |
| Marathon Petroleum Co LP | | | | | | | | | | |
| Detroit | 7,000 | 0 | 24,000 | 0 | 0 | 0 | 0 | 11,800 | 0 | 459 |
| Minnesota | 19,150 | 0 | 58,400 | 1,000 | 27,500 | 0 | 0 | 23,600 | 186 | 1,264 |
| Flint Hills Resources LP | | | | | | | | | | |
| Saint Paul | 12,500 | 0 | 45,000 | 0 | 18,000 | 0 | 0 | 23,600 | 176 | 1,142 |
| St Paul Park Refining Co LLC | | | | | | | | | | |
| Saint Paul | 6,650 | 0 | 13,400 | 1,000 | 9,500 | 0 | 0 | 0 | 10 | 122 |
| Mississippi | 18,600 | 21,000 | 36,125 | 0 | 0 | 0 | 48,000 | 35,500 | 243 | 1,355 |
| Chevron USA Inc | | | | | | | | | | |
| Pascagoula | 18,600 | 21,000 | 20,000 | 0 | 0 | 0 | 25,000 | 35,500 | 230 | 1,355 |
| Ergon Refining Inc | | | | | | | | | | |
| Vicksburg | 0 | 0 | 10,000 | 0 | 0 | 0 | 23,000 | 0 | 13 | 0 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|--|---------------|-----------|----------------------|--------------|--------------------------|-----------|---------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Hunt Southland Refining Co Sandersville | 0 | 0 | 6,125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Montana | 17,050 | 0 | 44,300 | 5,250 | 1,500 | 0 | 0 | 13,830 | 110 | 489 |
| Calumet Montana Refining LLC | | | | | | | | | | |
| Great Falls | 700 | 0 | 10,000 | 0 | 1,500 | 0 | 0 | 0 | 20 | 0 |
| Cenex Harvest States Coop | | | | | | | | | | |
| Laurel | 4,000 | 0 | 19,800 | 1,250 | 0 | 0 | 0 | 4,100 | 33 | 243 |
| ExxonMobil Refining & Supply Co | | | | | | | | | | |
| Billings | 5,100 | 0 | 14,500 | 0 | 0 | 0 | 0 | 4,000 | 23 | 0 |
| Phillips 66 Company | | | | | | | | | | |
| Billings | 7,250 | 0 | 0 | 4,000 | 0 | 0 | 0 | 5,730 | 34 | 246 |
| Nevada | 0 | 0 | 1,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Foreland Refining Corp | | | | | | | | | | |
| Ely | 0 | 0 | 1,600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| New Jersey | 30,000 | 0 | 70,000 | 4,000 | 0 | 0 | 12,000 | 7,500 | 31 | 280 |
| Axeon Specialty Products LLC | | | | | | | | | | |
| Paulsboro | 0 | 0 | 49,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Paulsboro Refining Co LLC | | | | | | | | | | |
| Paulsboro | 11,200 | 0 | 21,000 | 0 | 0 | 0 | 12,000 | 7,500 | 9 | 280 |
| Phillips 66 Company | | | | | | | | | | |
| Linden | 18,800 | 0 | 0 | 4,000 | 0 | 0 | 0 | 0 | 22 | 0 |
| New Mexico | 10,900 | 0 | 7,000 | 0 | 0 | 0 | 0 | 0 | 38 | 202 |
| HollyFrontier Navajo Refining LLC | | | | | | | | | | |
| Artesia | 9,100 | 0 | 7,000 | 0 | 0 | 0 | 0 | 0 | 38 | 200 |
| Western Refining Southwest Inc | | | | | | | | | | |
| Gallup | 1,800 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|--|-----------|-----------|----------------------|-----------|--------------------------|-----------|------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| North Dakota | 4,830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 19 |
| Tesoro Refining & Marketing Co | | | | | | | | | | |
| Dickinson | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| (Formerly Dakota Prairie Refining LLC) | | | | | | | | | | |
| Tesoro West Coast | | | | | | | | | | |
| Mandan | 4,830 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Ohio | 28,950 | 20,000 | 23,800 | 12,500 | 18,700 | 0 | 0 | 14,200 | 0 | 683 |
| BP-Husky Refining LLC | | | | | | | | | | |
| Toledo | 11,500 | 0 | 9,000 | 0 | 0 | 0 | 0 | 10,000 | 0 | 353 |
| Lima Refining Company | | | | | | | | | | |
| Lima | 0 | 9,200 | 0 | 4,500 | 18,700 | 0 | 0 | 4,200 | 0 | 110 |
| Marathon Petroleum Co LP | | | | | | | | | | |
| Canton | 7,500 | 0 | 14,800 | 0 | 0 | 0 | 0 | 0 | 0 | 104 |
| Toledo Refining Co LLC | | | | | | | | | | |
| Toledo | 9,950 | 10,800 | 0 | 8,000 | 0 | 0 | 0 | 0 | 0 | 116 |
| Oklahoma | 35,586 | 21,000 | 43,414 | 900 | 13,000 | 0 | 9,100 | 9,050 | 72 | 324 |
| HollyFrontier Tulsa Refining LLC | | | | | | | | | | |
| Tulsa East | 5,500 | 0 | 15,200 | 0 | 13,000 | 0 | 0 | 0 | 0 | 75 |
| Tulsa West | 0 | 0 | 6,500 | 900 | 0 | 0 | 9,100 | 2,750 | 0 | 0 |
| Phillips 66 Company | | | | | | | | | | |
| Ponca City | 17,574 | 0 | 0 | 0 | 0 | 0 | 0 | 6,300 | 35 | 0 |
| Valero Refining Co Oklahoma | | | | | | | | | | |
| Ardmore | 7,012 | 0 | 14,714 | 0 | 0 | 0 | 0 | 0 | 27 | 249 |
| Wynnewood Refining Co | | | | | | | | | | |
| Wynnewood | 5,500 | 21,000 | 7,000 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| Pennsylvania | 43,000 | 4,920 | 22,065 | 3,800 | 8,500 | 0 | 2,945 | 0 | 10 | 233 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|------------------------------------|----------------|----------------|----------------------|---------------|--------------------------|-----------|---------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| American Refining Group Inc | | | | | | | | | | |
| Bradford | 0 | 0 | 65 | 0 | 0 | 0 | 2,945 | 0 | 0 | 0 |
| Monroe Energy LLC | | | | | | | | | | |
| Trainer | 12,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| Philadelphia Energy Solutions | | | | | | | | | | |
| Philadelphia | 26,500 | 4,920 | 0 | 3,800 | 0 | 0 | 0 | 0 | 0 | 76 |
| United Refining Co | | | | | | | | | | |
| Warren | 4,500 | 0 | 22,000 | 0 | 8,500 | 0 | 0 | 0 | 10 | 67 |
| Tennessee | 12,700 | 29,000 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 116 |
| Premcor Refining Group Inc | | | | | | | | | | |
| Memphis | 12,700 | 29,000 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 116 |
| Texas | 383,350 | 128,764 | 64,600 | 61,400 | 150,240 | 0 | 72,795 | 292,711 | 408 | 16,467 |
| Alon USA Energy Inc | | | | | | | | | | |
| Big Spring | 5,000 | 1,000 | 7,600 | 0 | 0 | 0 | 0 | 0 | 0 | 150 |
| Citigo Refining & Chemical Inc | | | | | | | | | | |
| Corpus Christi | 23,100 | 16,300 | 0 | 0 | 0 | 0 | 0 | 17,374 | 0 | 368 |
| Deer Park Refining LTD Partnership | | | | | | | | | | |
| Deer Park | 18,500 | 0 | 0 | 0 | 0 | 0 | 0 | 34,000 | 0 | 1,085 |
| Delek Refining LTD | | | | | | | | | | |
| Tyler | 4,700 | 0 | 0 | 0 | 0 | 0 | 0 | 1,500 | 0 | 39 |
| Equistar Chemicals LP | | | | | | | | | | |
| Channelview | 22,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ExxonMobil Refining & Supply Co | | | | | | | | | | |
| Baytown | 41,000 | 0 | 0 | 0 | 0 | 0 | 28,000 | 22,750 | 0 | 1,828 |
| Beaumont | 14,900 | 0 | 0 | 11,200 | 25,800 | 0 | 0 | 15,039 | 0 | 661 |
| Flint Hills Resources LP | | | | | | | | | | |
| Corpus Christi | 15,500 | 0 | 0 | 4,900 | 3,500 | 0 | 0 | 3,968 | 0 | 426 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|-------------------------------------|-----------|-----------|----------------------|-----------|--------------------------|-----------|------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Houston Refining LP | | | | | | | | | | |
| Houston | 11,250 | 19,500 | 0 | 0 | 0 | 0 | 3,895 | 29,850 | 0 | 1,123 |
| Marathon Petroleum Co LP | | | | | | | | | | |
| Galveston Bay | 41,000 | 36,500 | 0 | 0 | 0 | 0 | 0 | 11,900 | 0 | 1,452 |
| Texas City | 14,500 | 2,900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| Motiva Enterprises LLC | | | | | | | | | | |
| Port Arthur | 20,000 | 0 | 0 | 0 | 49,140 | 0 | 39,000 | 48,820 | 0 | 3,203 |
| Pasadena Refining Systems Inc | | | | | | | | | | |
| Pasadena | 12,500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Phillips 66 Company | | | | | | | | | | |
| Sweeny | 21,700 | 11,600 | 0 | 0 | 10,100 | 0 | 0 | 22,800 | 0 | 915 |
| Premcor Refining Group Inc | | | | | | | | | | |
| Port Arthur | 19,500 | 0 | 0 | 0 | 0 | 0 | 0 | 32,240 | 0 | 1,490 |
| South Hampton Resources Inc | | | | | | | | | | |
| Slisbee | 0 | 1,064 | 0 | 0 | 4,400 | 0 | 0 | 0 | 0 | 0 |
| Total Petrochemicals & Refining USA | | | | | | | | | | |
| Port Arthur | 6,700 | 13,600 | 0 | 0 | 7,800 | 0 | 0 | 19,200 | 0 | 806 |
| Valero Energy Corporation | | | | | | | | | | |
| Sunray | 9,800 | 0 | 12,000 | 3,000 | 0 | 0 | 0 | 0 | 30 | 75 |
| Three Rivers | 6,500 | 10,800 | 0 | 3,000 | 0 | 0 | 1,900 | 0 | 0 | 134 |
| Valero Refining Co Texas LP | | | | | | | | | | |
| Corpus Christi | 21,300 | 15,500 | 38,000 | 17,000 | 12,000 | 0 | 0 | 6,270 | 275 | 1,288 |
| Houston | 11,900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 336 |
| Texas City | 14,700 | 0 | 0 | 0 | 6,500 | 0 | 0 | 19,000 | 0 | 680 |
| Western Refining Company LP | | | | | | | | | | |
| El Paso | 13,300 | 0 | 7,000 | 7,300 | 0 | 0 | 0 | 0 | 12 | 0 |
| WRB Refining LP | | | | | | | | | | |
| Borger | 14,000 | 0 | 0 | 15,000 | 31,000 | 0 | 0 | 8,000 | 91 | 340 |
| Utah | 20,900 | 0 | 1,800 | 3,200 | 6,000 | 0 | 0 | 2,500 | 0 | 95 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refinery/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen (MMcfd) ^a | Sulfur (short tons per day) |
|--|---------------|--------------|----------------------|--------------|--------------------------|-----------|--------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Big West Oil Co | | | | | | | | | | |
| North Salt Lake | 3,000 | 0 | 0 | 1,900 | 3,000 | 0 | 0 | 0 | 0 | 4 |
| Chevron USA Inc | | | | | | | | | | |
| Salt Lake City | 5,600 | 0 | 0 | 1,300 | 0 | 0 | 0 | 2,500 | 0 | 63 |
| HollyFrontier Woods Cross Refining LLC | | | | | | | | | | |
| Woods Cross | 5,300 | 0 | 1,800 | 0 | 3,000 | 0 | 0 | 0 | 0 | 10 |
| Tesororo West Coast | | | | | | | | | | |
| Salt Lake City | 7,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Washington | 36,100 | 0 | 8,000 | 6,500 | 28,500 | 0 | 0 | 23,650 | 137 | 822 |
| BP West Coast Products LLC | | | | | | | | | | |
| Ferndale | 0 | 0 | 0 | 0 | 24,000 | 0 | 0 | 15,250 | 137 | 284 |
| Phillips 66 Company | | | | | | | | | | |
| Ferndale | 10,200 | 0 | 0 | 2,700 | 0 | 0 | 0 | 0 | 0 | 123 |
| Shell Oil Products US | | | | | | | | | | |
| Anacortes | 12,100 | 0 | 0 | 0 | 0 | 0 | 0 | 8,400 | 0 | 350 |
| Tesororo West Coast | | | | | | | | | | |
| Anacortes | 13,800 | 0 | 0 | 3,800 | 0 | 0 | 0 | 0 | 0 | 54 |
| US Oil & Refining Co | | | | | | | | | | |
| Tacoma | 0 | 0 | 8,000 | 0 | 4,500 | 0 | 0 | 0 | 0 | 11 |
| West Virginia | 0 | 0 | 700 | 0 | 0 | 0 | 5,100 | 0 | 3 | 1 |
| Ergon West Virginia Inc | | | | | | | | | | |
| Newell | 0 | 0 | 700 | 0 | 0 | 0 | 5,100 | 0 | 3 | 1 |
| Wisconsin | 1,600 | 6,000 | 7,900 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Calumet Lubricants Co LP | | | | | | | | | | |
| Superior | 1,600 | 6,000 | 7,900 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Wyoming | 10,000 | 0 | 24,000 | 0 | 0 | 0 | 0 | 11,700 | 62 | 333 |

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2017
(Barrels per Stream Day, Except Where Noted)

| State/Refiner/Location | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | | | Lubricants | Marketable Petroleum Coke | Hydrogen ^a (MMcfd) | Sulfur (short tons per day) |
|--|------------------|----------------|----------------------|----------------|--------------------------|------------|----------------|---------------------------|-------------------------------|-----------------------------|
| | | | | Isobutane | Isopentane and Isohexane | Isooctane | | | | |
| Hermes Consolidated LLC | | | | | | | | | | |
| New Castle (Formerly Wyoming Refining Co) | 1,300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HollyFrontier Cheyenne Refining LLC | | | | | | | | | | |
| Cheyenne | 4,200 | 0 | 16,000 | 0 | 0 | 0 | 0 | 4,700 | 10 | 116 |
| Little America Refining Co | | | | | | | | | | |
| Evansville | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Sinclair Wyoming Refining Co | | | | | | | | | | |
| Sinclair | 4,500 | 0 | 8,000 | 0 | 0 | 0 | 0 | 7,000 | 52 | 207 |
| U.S. Total | 1,300,407 | 324,475 | 726,487 | 182,085 | 567,060 | 200 | 261,240 | 898,417 | 3,009 | 41,766 |

^a Includes hydrogen production capacity of hydrogen plants on refinery grounds.

Note: Refer to Table 5 for corporate ownership information. Some names of previously independent companies have been preserved by acquiring companies.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2017

| CORPORATION / Refiner / Location | Barrels per Calendar Day | CORPORATION / Refiner / Location | Barrels per Calendar Day |
|--|--------------------------|---|--------------------------|
| Companies with Capacity Over 100,000 bbl/cd | | | |
| VALERO ENERGY CORP | 2,180,300 | Baytown, Texas | 560,500 |
| Valero Refining Co Texas LP | | Baton Rouge, Louisiana | 502,500 |
| Corpus Christi, Texas | 293,000 | Beaumont, Texas | 362,300 |
| Texas City, Texas | 225,000 | Joliet, Illinois | 238,600 |
| Houston, Texas | 191,000 | Billings, Montana | 61,500 |
| Premcor Refining Group Inc | | PHILLIPS 66 COMPANY | 1,615,200 |
| Port Arthur, Texas | 335,000 | Phillips 66 Company | |
| Memphis, Tennessee | 190,000 | Westlake, Louisiana | 260,000 |
| Valero Energy Corporation | | Belle Chasse, Louisiana | 247,000 |
| Sunray, Texas | 195,000 | Sweeny, Texas | 247,000 |
| Meraux, Louisiana | 125,000 | Linden, New Jersey | 241,000 |
| Three Rivers, Texas | 89,000 | Ponca City, Oklahoma | 200,000 |
| Valero Refining Co California | | Wilmington, California | 139,000 |
| Benicia, California | 145,000 | Rodeo, California | 120,200 |
| Wilmington Refinery, California | 85,000 | Ferndale, Washington | 101,000 |
| Wilmington Asphalt Plant, California | 6,300 | Billings, Montana | 60,000 |
| Valero Refining New Orleans LLC | | MOTIVA ENTERPRISES LLC | 1,056,386 |
| Norco, Louisiana | 215,000 | (50% Royal Dutch/Shell Group, 50% Saudi Aramco) | |
| Valero Refining Co Oklahoma | | Motiva Enterprises LLC | |
| Ardmore, Oklahoma | 86,000 | Port Arthur, Texas | 603,000 |
| MARATHON PETROLEUM CORP | 1,817,000 | Convent, Louisiana | 227,586 |
| Marathon Petroleum Co LP | | Norco, Louisiana | 225,800 |
| Garyville, Louisiana | 543,000 | CHEVRON CORP | 908,771 |
| Galveston Bay, Texas | 459,000 | Chevron USA Inc | |
| Catlettsburg, Kentucky | 273,000 | Pascagoula, Mississippi | 340,000 |
| Robinson, Illinois | 231,000 | El Segundo, California | 269,000 |
| Detroit, Michigan | 132,000 | Richmond, California | 245,271 |
| Canton, Ohio | 93,000 | Salt Lake City, Utah | 54,500 |
| Texas City, Texas | 86,000 | | |
| EXXON MOBIL CORP | 1,725,400 | | |
| ExxonMobil Refining & Supply Co | | | |

Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2017

| CORPORATION / Refiner / Location | Barrels per Calendar Day | CORPORATION / Refiner / Location | Barrels per Calendar Day |
|----------------------------------|--------------------------|--|--------------------------|
| TESORO CORP | 863,600 | Whiting, Indiana | 413,500 |
| Tesoro Refining & Marketing Co | | BP West Coast Products LLC | |
| Carson, California | 269,200 | Ferndale, Washington | 227,000 |
| Martinez, California | 166,000 | BP Exploration Alaska Inc | |
| Wilmington, California | 94,900 | Prudhoe Bay, Alaska | 6,500 |
| Dickinson, North Dakota | 19,500 | KOCH INDUSTRIES INC | 586,470 |
| Tesoro West Coast | | Flint Hills Resources LP | |
| Anacortes, Washington | 120,000 | Corpus Christi, Texas | 296,470 |
| Mandan, North Dakota | 73,800 | Saint Paul, Minnesota | 290,000 |
| Salt Lake City, Utah | 57,500 | HOLLYFRONTIER CORP | 489,630 |
| Tesoro Alaska Petroleum Co | | HollyFrontier Tulsa Refining LLC | |
| Kenai, Alaska | 62,700 | Tulsa West, Oklahoma | 85,000 |
| PBF ENERGY CO LLC | 843,100 | Tulsa East, Oklahoma | 70,300 |
| Chalmette Refining LLC | | HollyFrontier El Dorado Refining LLC | |
| Chalmette, Louisiana | 190,000 | El Dorado, Kansas | 150,000 |
| Delaware City Refining Co LLC | | HollyFrontier Navajo Refining LLC | |
| Delaware City, Delaware | 182,200 | Artesia, New Mexico | 98,000 |
| Paulsboro Refining Co LLC | | HollyFrontier Cheyenne Refining LLC | |
| Paulsboro, New Jersey | 160,000 | Cheyenne, Wyoming | 47,000 |
| Toledo Refining Co LLC | | HollyFrontier Woods Cross Refining LLC | |
| Toledo, Ohio | 160,000 | Woods Cross, Utah | 39,330 |
| Torrance Refining Co LLC | | WRB REFINING LP | 482,000 |
| Torrance, California | 150,900 | WRB Refining LP | |
| PDV AMERICA INC | 758,440 | Wood River, Illinois | 336,000 |
| Citgo Petroleum Corp | | (50% Phillips 66, 50% Cenovus) | |
| Lake Charles, Louisiana | 425,000 | Borger, Texas | 146,000 |
| PDV Midwest Refining LLC | | (50% Phillips 66, 50% Cenovus) | |
| Lemont, Illinois | 175,940 | | |
| Citgo Refining & Chemical Inc | | | |
| Corpus Christi, Texas | 157,500 | | |
| BP PLC | 647,000 | | |
| BP Products North America Inc | | | |

Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2017

| CORPORATION / Refiner / Location | Barrels per Calendar Day | CORPORATION / Refiner / Location | Barrels per Calendar Day |
|---|--------------------------|---|--------------------------|
| ROYAL DUTCH/SHELL GROUP | 437,975 | Port Arthur, Texas | 225,500 |
| Shell Oil Products US | | DELTA AIR LINES INC | |
| Martinez, California | 156,400 | Monroe Energy LLC | |
| Anacortes, Washington | 145,000 | Trainer, Pennsylvania | 190,000 |
| Saint Rose, Louisiana | 45,000 | CVR ENERGY | 185,000 |
| Shell Chemical LP | | Coffeyville Resources Rfg & Mktg | |
| Saraland, Alabama | 91,575 | Coffeyville, Kansas | 115,000 |
| DEER PARK REFINING LTD PTNRSHIP (50% Royal Dutch/Shell Group, 50% Pemex) | | Wynnewood Refining Co | |
| Deer Park Refining LTD Partnership | | Wynnewood, Oklahoma | 70,000 |
| Deer Park, Texas | 325,700 | HUSKY ENERGY INC | |
| CARLYLE GROUP | | Lima Refining Company | |
| Philadelphia Energy Solutions | | Lima, Ohio | 177,000 |
| Philadelphia, Pennsylvania | 310,000 | CALUMET SPECIALTY PRODUCTS PARTNERS, L.P. | 169,920 |
| ACCESS INDUSTRIES | | Calumet Lubricants Co LP | |
| Houston Refining LP | | Superior, Wisconsin | 38,000 |
| Houston, Texas | 263,776 | Cotton Valley, Louisiana | 13,020 |
| WESTERN REFINING INC. | 246,015 | Princeton, Louisiana | 8,300 |
| Western Refining Company LP | | Calumet Shreveport LLC | |
| El Paso, Texas | 122,000 | Shreveport, Louisiana | 57,000 |
| St Paul Park Refining Co LLC | | Calumet Montana Refining LLC | |
| Saint Paul, Minnesota | 98,515 | Great Falls, Montana | 33,600 |
| Western Refining Southwest Inc | | Calumet Lubricants Co | |
| Gallup, New Mexico | 25,500 | San Antonio, Texas | 20,000 |
| ALON ISRAEL OIL COMPANY LTD | 237,500 | CHS INC | 155,600 |
| Paramount Petroleum Corporation | | CHS McPherson Refinery Inc | |
| Paramount, California | 84,500 | McPherson, Kansas | 96,000 |
| Alon Refining Krotz Springs Inc | | Cenex Harvest States Coop | |
| Krotz Springs, Louisiana | 80,000 | Laurel, Montana | 59,600 |
| Alon USA Energy Inc | | | |
| Big Spring, Texas | 73,000 | | |
| TOTAL SA | | | |
| Total Petrochemicals & Refining USA | | | |

Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2017

| CORPORATION / Refiner / Location | Barrels per Calendar Day | CORPORATION / Refiner / Location | Barrels per Calendar Day |
|---|--------------------------|--|--------------------------|
| DELEK GROUP LTD | 155,000 | Kinder Morgan Crude & Condensate | |
| Lion Oil Co | | Galena Park, Texas | 84,000 |
| El Dorado, Arkansas | 83,000 | PLACID OIL CO | |
| Delek Refining LTD | | Placid Refining Co | |
| Tyler, Texas | 72,000 | Port Allen, Louisiana | 75,000 |
| BP-HUSKY REFINING LLC (50% BP, 50% Husky) | | ARCTIC SLOPE REGIONAL CORP | 74,700 |
| BP-Husky Refining LLC | | Petro Star Inc | |
| Toledo, Ohio | 153,000 | Valdez, Alaska | 55,000 |
| PETROBRAS AMERICA INC | | North Pole, Alaska | 19,700 |
| Pasadena Refining Systems Inc | | LINDSAY GOLDBERG LLC | |
| Pasadena, Texas | 112,229 | Axeon Specialty Products LLC | |
| PAR PACIFIC HOLDINGS | 111,500 | Paulsboro, New Jersey | 74,000 |
| Hawaii Independent Energy LLC | | RED APPLE GROUP INC | |
| Ewa Beach, Hawaii | 93,500 | United Refining Co | |
| Hermes Consolidated LLC d | | Warren, Pennsylvania | 65,000 |
| New Castle, Wyoming | 18,000 | ISLAND ENERGY SERVICES LLC | |
| SINCLAIR OIL CORP | 109,500 | Island Energy Services Downstream e | |
| Sinclair Wyoming Refining Co | | Honolulu, Hawaii | 54,000 |
| Sinclair, Wyoming | 85,000 | ERGON OIL PURCHASING INC | 48,800 |
| Little America Refining Co | | Ergon Refining Inc | |
| Evansville, Wyoming | 24,500 | Vicksburg, Mississippi | 26,500 |
| TRANSWORLD OIL USA INC | | Ergon West Virginia Inc | |
| Calcasieu Refining Co | | Newell, West Virginia | 22,300 |
| Lake Charles, Louisiana | 104,000 | HUNT CONSLD INC | 47,000 |
| SUNCOR ENERGY INC | 103,000 | Hunt Refining Co | |
| Suncor Energy (USA) Inc | | Tuscaloosa, Alabama | 36,000 |
| Commerce City West, Colorado | 67,000 | Hunt Southland Refining Co | |
| Commerce City East, Colorado | 36,000 | Sandersville, Mississippi | 11,000 |
| Total | 17,745,512 | | |
| Companies with Capacity 30,001 to 100,000 bbl/cd | | | |
| KINDER MORGAN ENERGY PTNRS LP | | | |

Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2017

| CORPORATION / Refiner / Location | Barrels per Calendar Day | CORPORATION / Refiner / Location | Barrels per Calendar Day |
|--|--------------------------|--|--------------------------|
| BUCKEYE PARTNERS LP | | San Joaquin Refining Co Inc | |
| Buckeye Texas Processing LLC | | Bakersfield, California | 15,000 |
| Corpus Christi, Texas | 46,250 | BLUE DOLPHIN ENERGY CO | |
| MAGELLAN MIDSTREAM PARTNERS LP | | Lazarus Energy LLC | |
| Magellan Terminal Holdings LP | | Nixon, Texas | 13,765 |
| Corpus Christi, Texas | 42,500 | AMERICAN REFINING GROUP INC | |
| TRAILSTONE LP | | American Refining Group Inc | |
| US Oil & Refining Co | | Bradford, Pennsylvania | 11,000 |
| Tacoma, Washington | 40,700 | Total..... | 151,965 |
| FJ MANAGEMENT INC | | Companies with Capacity 10,000 bbl/cd or Less | |
| Big West Oil Co | | GREKA ENERGY | |
| North Salt Lake, Utah | 30,500 | Santa Maria Refining Company | |
| Total..... | 682,450 | Santa Maria, California | 9,500 |
| Companies with Capacity 10,001 to 30,000 bbl/cd | | WORLD OIL CO | |
| COUNTRYMARK COOP INC | | Lunday Thagard Co | |
| Countrymark Cooperative Inc | | South Gate, California | 8,500 |
| Mount Vernon, Indiana | 28,200 | MARTIN RESOURCE MGMT CORP | |
| KERN OIL & REFINING CO | | Cross Oil Refining & Marketing Inc | |
| Kern Oil & Refining Co | | Smackover, Arkansas | 7,500 |
| Bakersfield, California | 26,000 | CONTINENTAL REFINING CO LLC | |
| PETROMAX REFINING CO LLC | | Continental Refining Company LLC | |
| Petromax Refining Co LLC | | Somerset, Kentucky | 5,500 |
| Houston, Texas | 25,000 | GOODWAY REFINING LLC | |
| SILVER EAGLE REFINING INC | | Goodway Refining LLC | |
| Silver Eagle Refining | | Atmore, Alabama | 4,100 |
| Woods Cross, Utah | 15,000 | FORELAND REFINING CORP | |
| Evanston, Wyoming | 3,000 | Foreland Refining Corp | |
| CONOCOPHILLIPS | | Ely, Nevada | |
| ConocoPhillips Alaska Inc | | Total..... | 37,100 |
| Prudhoe Bay, Alaska | 15,000 | U.S. Total..... | 18,617,027 |
| SAN JOAQUIN REFINING CO INC | | | |

Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2017

| CORPORATION / Refiner / Location | Barrels per Calendar Day | CORPORATION / Refiner / Location | Barrels per Calendar Day |
|----------------------------------|-----------------------------|----------------------------------|-----------------------------|
| | | | |

^a Formerly owned by Dakota Prairie Refining LLC

^b Formerly owned by ExxonMobil Refining & Supply Co

^c Formerly owned by Northern Tier Energy LLC

^d Formerly owned by Wyoming Refining Co

^e Formerly owned by Chevron USA Inc

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 6. Operable Crude Oil and Downstream Charge Capacity of Petroleum Refineries, January 1, 1988 to January 1, 2017
(Thousand Barrels per Stream Day, Except Where Noted)

| Year/PAD District | Atmospheric Crude Oil Distillation | Downstream Charge Capacity | | | | | | | |
|---------------------------------|--|----------------------------|---------------------|--------------------|-----------|---------------------------------|------------------------|-----------------------------------|----------------------------------|
| | | Vacuum Distillation | Thermal Cracking | Catalytic Cracking | | Catalytic Hydro- Cracking | Catalytic Reforming | Hydrotreating/ Desulfurization | Fuels Solvent Deasphalting |
| | | | | Fresh | Recycled | | | | |
| JAN 1, 1988 | 16,825 | 7,198 | 2,080 | 5,424 | 381 | 1,202 | 3,891 | 9,170 | 240 |
| JAN 1, 1989 | 16,568 | 7,225 | 2,073 | 5,324 | 326 | 1,238 | 3,911 | 9,440 | 245 |
| JAN 1, 1990 | 16,507 | 7,245 | 2,108 | 5,441 | 314 | 1,282 | 3,896 | 9,537 | 279 |
| JAN 1, 1991 | 16,557 | 7,276 | 2,158 | 5,559 | 304 | 1,308 | 3,926 | 9,676 | 271 |
| JAN 1, 1992 | 16,633 | 7,127 | 2,100 | 5,608 | 280 | 1,363 | 3,907 | 9,644 | 276 |
| JAN 1, 1993 | 15,935 | 6,892 | 2,082 | 5,540 | 244 | 1,397 | 3,728 | 9,677 | 269 |
| JAN 1, 1994 | 15,904 | 6,892 | 2,107 | 5,586 | 191 | 1,376 | 3,875 | 10,616 | 261 |
| JAN 1, 1995 | 16,326 | 7,248 | 2,123 | 5,583 | 169 | 1,386 | 3,867 | 10,916 | 251 |
| JAN 1, 1997 | 16,287 | 7,349 | 2,050 | 5,595 | 155 | 1,388 | 3,727 | 11,041 | 275 |
| JAN 1, 1999 | 17,155 | 7,538 | 2,046 | 5,920 | 153 | 1,552 | 3,779 | 11,461 | 319 |
| JAN 1, 2000 | 17,393 | 7,617 | 2,163 | 5,949 | 99 | 1,576 | 3,770 | 11,440 | 351 |
| JAN 1, 2001 | 17,511 | 7,798 | 2,277 | 5,983 | 86 | 1,615 | 3,797 | 11,673 | 350 |
| JAN 1, 2002 | 17,676 | 7,779 | 2,329 | 5,989 | 80 | 1,633 | 3,753 | 11,845 | 362 |
| JAN 1, 2003 | 17,675 | 7,788 | 2,377 | 6,052 | 79 | 1,644 | 3,777 | 11,987 | 350 |
| JAN 1, 2004 | 17,815 | 7,964 | 2,435 | 6,098 | 87 | 1,602 | 3,812 | 13,501 | 366 |
| JAN 1, 2005 | 18,031 | 8,120 | 2,491 | 6,151 | 87 | 1,624 | 3,836 | 14,087 | 384 |
| JAN 1, 2006 | 18,308 | 8,398 | 2,540 | 6,188 | 87 | 1,637 | 3,859 | 14,808 | 386 |
| JAN 1, 2007 | 18,425 | 8,251 | 2,564 | 6,219 | 82 | 1,791 | 3,908 | 15,447 | 379 |
| JAN 1, 2008 | 18,558 | 8,421 | 2,606 | 6,266 | 79 | 1,770 | 3,892 | 15,807 | 378 |
| JAN 1, 2009 | 18,681 | 8,542 | 2,639 | 6,292 | 79 | 1,743 | 3,829 | 16,131 | 381 |
| JAN 1, 2010 | 18,581 | 8,543 | 2,632 | 6,140 | 92 | 1,820 | 3,700 | 16,023 | 383 |
| JAN 1, 2011 | 18,953 | 8,650 | 2,672 | 6,220 | 96 | 1,856 | 3,721 | 16,683 | 383 |
| JAN 1, 2012 | 18,560 | 8,680 | 2,763 | 6,033 | 85 | 1,880 | 3,642 | 16,565 | 375 |
| JAN 1, 2013 | 18,972 | 8,938 | 2,877 | 6,089 | 84 | 2,081 | 3,758 | 16,860 | 368 |
| JAN 1, 2014 | 19,064 | 8,987 | 2,959 | 6,032 | 76 | 2,208 | 3,759 | 17,095 | 370 |
| JAN 1, 2015 | 19,134 | 8,979 | 2,975 | 6,012 | 76 | 2,305 | 3,741 | 17,324 | 370 |
| JAN 1, 2016 | 19,508 | 9,073 | 2,983 | 6,052 | 76 | 2,318 | 3,743 | 17,483 | 371 |
| JAN 1, 2017 | 19,800 | 9,126 | 2,994 | 6,007 | 76 | 2,421 | 3,750 | 17,621 | 393 |
| PADD I | 1,353 | 586 | 82 | 498 | 5 | 45 | 249 | 1,033 | 22 |
| PADD II | 4,284 | 1,791 | 581 | 1,343 | 16 | 352 | 897 | 3,913 | 22 |
| PADD III | 10,340 | 4,863 | 1,640 | 3,061 | 34 | 1,378 | 1,872 | 9,394 | 262 |
| PADD IV | 731 | 255 | 91 | 219 | 5 | 61 | 134 | 593 | 6 |
| PADD V | 3,091 | 1,630 | 601 | 886 | 16 | 586 | 598 | 2,688 | 80 |
| JAN 1, 2018 ^a | 19,816 | 9,126 | 2,994 | 6,011 | 76 | 2,431 | 3,783 | 17,703 | 393 |
| PADD I | 1,353 | 586 | 82 | 498 | 5 | 45 | 249 | 1,056 | 22 |
| PADD II | 4,284 | 1,791 | 581 | 1,343 | 16 | 352 | 897 | 3,933 | 22 |
| PADD III | 10,357 | 4,864 | 1,640 | 3,064 | 34 | 1,388 | 1,906 | 9,431 | 262 |
| PADD IV | 731 | 255 | 91 | 220 | 5 | 61 | 134 | 594 | 6 |
| PADD V | 3,091 | 1,630 | 601 | 886 | 16 | 586 | 598 | 2,688 | 80 |
| 2017-2018 ^a | 16 | 0 | 0 | 4 | 0 | 10 | 33 | 82 | 0 |
| PADD I | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 |
| PADD II | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| PADD III | 17 | 1 | 0 | 3 | 0 | 10 | 34 | 37 | 0 |
| PADD IV | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| PADD V | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

^a Projected data from refiners.

Notes:

NA = Not available.

Totals may not equal sum of components due to independent rounding.

The EIA-820 refinery capacity survey was not conducted for January 1, 1996 or January 1, 1998.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 7. Operable Production Capacity of Petroleum Refineries, January 1, 1988 to January 1, 2017

(Thousand Barrels per Stream Day, Except Where Noted)

| Year/PAD District | Production Capacity | | | | | | | |
|--------------------------------|---------------------|------------|----------------------------|------------|------------|---------------------------------|----------------------------------|-------------------------------|
| | Alkylates | Aromatics | Asphalt and Road Oil | Isomers | Lubricants | Marketable Petroleum Coke | Hydrogen ^a (MMcfd) | Sulfur (short tons/day) |
| JAN 1, 1988 | 993 | 289 | 788 | 465 | 232 | 368 | 2,418 | 27,639 |
| JAN 1, 1989 | 1,015 | 290 | 823 | 469 | 230 | 333 | 2,501 | 28,369 |
| JAN 1, 1990 | 1,030 | 290 | 844 | 456 | 232 | 341 | 2,607 | 24,202 |
| JAN 1, 1991 | 1,077 | 292 | 866 | 490 | 229 | 367 | 2,527 | 23,875 |
| JAN 1, 1992 | 1,095 | 290 | 812 | 494 | 217 | 356 | 2,644 | 23,811 |
| JAN 1, 1993 | 1,083 | 286 | 814 | 499 | 217 | 393 | 2,674 | 25,940 |
| JAN 1, 1994 | 1,086 | 278 | 793 | 499 | 213 | 410 | 2,940 | 24,554 |
| JAN 1, 1995 | 1,105 | 285 | 846 | 502 | 217 | 427 | 3,139 | 24,885 |
| JAN 1, 1997 | 1,120 | 288 | 872 | 577 | 244 | 458 | 3,052 | 26,466 |
| JAN 1, 1999 | 1,172 | 302 | 846 | 667 | 233 | 441 | 3,104 | 26,423 |
| JAN 1, 2000 | 1,185 | 315 | 886 | 643 | 218 | 464 | 3,143 | 26,645 |
| JAN 1, 2001 | 1,191 | 318 | 900 | 654 | 214 | 538 | 3,230 | 27,446 |
| JAN 1, 2002 | 1,181 | 313 | 917 | 658 | 218 | 548 | 3,244 | 29,107 |
| JAN 1, 2003 | 1,191 | 316 | 873 | 679 | 216 | 646 | 3,265 | 29,766 |
| JAN 1, 2004 | 1,205 | 322 | 887 | 688 | 210 | 672 | 3,258 | 30,606 |
| JAN 1, 2005 | 1,229 | 318 | 881 | 703 | 217 | 696 | 2,965 | 31,004 |
| JAN 1, 2006 | 1,238 | 319 | 893 | 708 | 220 | 709 | 2,823 | 32,421 |
| JAN 1, 2007 | 1,227 | 306 | 877 | 739 | 234 | 722 | 3,100 | 33,021 |
| JAN 1, 2008 | 1,261 | 285 | 858 | 727 | 249 | 735 | 3,109 | 33,487 |
| JAN 1, 2009 | 1,261 | 299 | 847 | 736 | 230 | 762 | 2,914 | 33,500 |
| JAN 1, 2010 | 1,249 | 271 | 844 | 715 | 240 | 760 | 2,985 | 34,058 |
| JAN 1, 2011 | 1,262 | 297 | 828 | 703 | 243 | 778 | 3,082 | 35,483 |
| JAN 1, 2012 | 1,247 | 297 | 796 | 688 | 242 | 823 | 3,215 | 36,663 |
| JAN 1, 2013 | 1,269 | 318 | 741 | 737 | 241 | 867 | 3,047 | 39,478 |
| JAN 1, 2014 | 1,266 | 297 | 744 | 739 | 240 | 883 | 3,094 | 41,375 |
| JAN 1, 2015 | 1,267 | 316 | 710 | 757 | 265 | 887 | 3,102 | 41,266 |
| JAN 1, 2016 | 1,286 | 323 | 733 | 755 | 273 | 889 | 2,997 | 41,343 |
| JAN 1, 2017 | 1,300 | 324 | 726 | 749 | 261 | 898 | 3,009 | 41,766 |
| PADD I | 85 | 10 | 93 | 22 | 20 | 21 | 84 | 1,110 |
| PADD II | 283 | 113 | 269 | 169 | 9 | 178 | 612 | 8,464 |
| PADD III | 638 | 200 | 211 | 328 | 192 | 504 | 860 | 25,182 |
| PADD IV | 48 | 0 | 82 | 17 | 0 | 28 | 194 | 1,033 |
| PADD V | 247 | 2 | 71 | 213 | 40 | 167 | 1,259 | 5,977 |
| JAN 1, 2018^b | 1,304 | 327 | 728 | 749 | 261 | 898 | 3,046 | 41,687 |
| PADD I | 85 | 10 | 93 | 22 | 20 | 21 | 84 | 1,110 |
| PADD II | 283 | 113 | 269 | 169 | 9 | 178 | 612 | 8,464 |
| PADD III | 642 | 202 | 213 | 328 | 192 | 504 | 860 | 25,103 |
| PADD IV | 48 | 0 | 82 | 17 | 0 | 28 | 231 | 1,033 |
| PADD V | 247 | 2 | 71 | 213 | 40 | 167 | 1,259 | 5,977 |
| 2017-2018^b | 4 | 3 | 2 | 0 | 0 | 0 | 37 | -79 |
| PADD I | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PADD II | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PADD III | 4 | 2 | 2 | 0 | 0 | 0 | 0 | -79 |
| PADD IV | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 |
| PADD V | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

^a Includes hydrogen production capacity of hydrogen plants on refinery grounds.^b Projected data from refiners.

Notes:

NA = Not available. MMcfd = Million cubic feet per day.

Totals may not equal sum of components due to independent rounding.

The EIA-820 refinery capacity survey was not conducted for January 1, 1996 or January 1, 1998.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 8. Capacity and Fresh Feed Input to Selected Downstream Units at U.S. Refineries, 2015 - 2017
(Barrels per Calendar Day)

| Year/PAD District | Cokers | | Catalytic Crackers | | Hydrocrackers | | Reformers | |
|----------------------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|
| | Capacity | Inputs | Capacity | Inputs | Capacity | Inputs | Capacity | Inputs |
| 2015 | 2,686,299 | 2,352,121 | 5,583,169 | 4,854,359 | 2,123,431 | 1,691,118 | 3,392,641 | 2,725,784 |
| PADD I | 74,900 | 51,699 | 473,800 | 406,197 | 41,500 | 34,847 | 237,550 | 181,389 |
| PADD II | 519,740 | 438,638 | 1,217,590 | 1,052,268 | 312,850 | 252,674 | 814,550 | 653,589 |
| PADD III | 1,489,899 | 1,346,805 | 2,882,183 | 2,606,227 | 1,202,201 | 948,452 | 1,702,952 | 1,391,997 |
| PADD IV | 82,500 | 68,090 | 188,576 | 166,455 | 28,500 | 18,792 | 117,160 | 99,811 |
| PADD V | 519,260 | 446,888 | 821,020 | 623,211 | 538,380 | 436,353 | 520,429 | 398,997 |
| 2016 | 2,650,839 | 2,421,178 | 5,596,552 | 4,976,347 | 2,121,715 | 1,783,738 | 3,385,049 | 2,776,883 |
| PADD I | 74,900 | 52,921 | 475,800 | 405,260 | 41,500 | 32,918 | 241,050 | 185,708 |
| PADD II | 521,543 | 473,022 | 1,235,625 | 1,094,899 | 292,600 | 274,380 | 812,460 | 653,497 |
| PADD III | 1,458,026 | 1,372,675 | 2,867,837 | 2,614,648 | 1,193,745 | 984,126 | 1,700,570 | 1,423,956 |
| PADD IV | 82,500 | 66,637 | 195,480 | 163,027 | 51,700 | 22,773 | 118,830 | 99,626 |
| PADD V | 513,870 | 455,923 | 821,810 | 698,514 | 542,170 | 469,541 | 512,139 | 414,096 |
| 2017 | 2,689,470 | NA | 5,530,482 | NA | 2,220,779 | NA | 3,419,464 | NA |
| PADD I | 74,900 | NA | 464,000 | NA | 41,500 | NA | 213,600 | NA |
| PADD II | 528,230 | NA | 1,235,100 | NA | 320,900 | NA | 821,765 | NA |
| PADD III | 1,485,330 | NA | 2,805,942 | NA | 1,267,439 | NA | 1,736,879 | NA |
| PADD IV | 84,900 | NA | 202,640 | NA | 57,950 | NA | 119,990 | NA |
| PADD V | 516,110 | NA | 822,800 | NA | 532,990 | NA | 527,230 | NA |

NA = Not Available.

Note: Capacities are as of January 1 of the indicated year.

Sources: Capacities are from the Energy Information Administration (EIA) Form EIA-820, "Annual Refinery Report." Inputs are from the form EIA-810, "Monthly Refinery Report." Year 2015 data is final, 2016 data is preliminary.

Table 9. Refinery Receipts of Crude Oil by Method of Transportation by PAD District, 2016^a
(Thousand Barrels)

| Method | PAD Districts | | | | | United States |
|-------------------------|----------------|------------------|------------------|----------------|----------------|------------------|
| | I | II | III | IV | V | |
| Pipeline | 25,952 | 1,297,359 | 1,930,196 | 179,055 | 291,209 | 3,723,771 |
| Domestic | 2,534 | 676,766 | 1,595,883 | 87,502 | 208,194 | 2,570,879 |
| Foreign | 23,418 | 620,593 | 334,313 | 91,553 | 83,015 | 1,152,892 |
| Tanker | 297,094 | 0 | 948,739 | 0 | 513,283 | 1,759,116 |
| Domestic | 20,860 | 0 | 17,387 | 0 | 180,701 | 218,948 |
| Foreign | 276,234 | 0 | 931,352 | 0 | 332,582 | 1,540,168 |
| Barge | 12,768 | 5,601 | 199,780 | 0 | 22,494 | 240,643 |
| Domestic | 5,950 | 5,601 | 152,653 | 0 | 355 | 164,559 |
| Foreign | 6,818 | 0 | 47,127 | 0 | 22,139 | 76,084 |
| Tank Cars (Rail) | 61,124 | 502 | 7,273 | 89 | 52,283 | 121,271 |
| Domestic | 58,949 | 502 | 1,239 | 89 | 49,505 | 110,284 |
| Foreign | 2,175 | 0 | 6,034 | 0 | 2,778 | 10,987 |
| Trucks | 2,430 | 20,528 | 93,256 | 40,113 | 7,951 | 164,278 |
| Domestic | 2,299 | 20,528 | 93,256 | 40,113 | 7,751 | 163,947 |
| Foreign | 131 | 0 | 0 | 0 | 200 | 331 |
| Total | 399,368 | 1,323,990 | 3,179,244 | 219,257 | 887,220 | 6,009,079 |
| Domestic | 90,592 | 703,397 | 1,860,418 | 127,704 | 446,506 | 3,228,617 |
| Foreign | 308,776 | 620,593 | 1,318,826 | 91,553 | 440,714 | 2,780,462 |

^a Receipts are reported by the last method of transportation used if the distance traveled is greater than 100 miles. If several methods are used and none are greater than 100 miles, the method which represents the greatest distance traveled is reported. For example, if crude oil traveled by rail for 1,500 miles and then by barge for 120 miles, then the reported mode of transportation would be barge rather than rail.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

Table 10a. Fuel Consumed at Refineries by PAD District, 2016
(Thousand Barrels, Except Where Noted)

| Commodity | PAD Districts | | | | | United States |
|-------------------------------------|---------------|---------|---------|--------|---------|---------------|
| | I | II | III | IV | V | |
| Crude Oil | 0 | 0 | 0 | 0 | 0 | 0 |
| Liquefied Petroleum Gases | 1 | 1,199 | 693 | 26 | 579 | 2,498 |
| Distillate Fuel Oil | 0 | 36 | 140 | 2 | 224 | 402 |
| Residual Fuel Oil | 0 | 23 | 4 | 3 | 244 | 274 |
| Still Gas | 15,571 | 52,515 | 114,261 | 8,567 | 46,604 | 237,518 |
| Marketable Petroleum Coke | 0 | 0 | 0 | 439 | 0 | 439 |
| Catalyst Petroleum Coke | 8,277 | 17,922 | 44,326 | 2,847 | 12,223 | 85,595 |
| Natural Gas (million cubic feet) | 52,323 | 152,725 | 462,107 | 29,716 | 184,740 | 881,611 |
| Coal (thousand short tons) | 12 | 0 | 0 | 0 | 0 | 12 |
| Purchased Electricity (million kWh) | 2,562 | 13,014 | 25,059 | 2,224 | 4,529 | 47,388 |
| Purchased Steam (million pounds) | 4,323 | 9,508 | 94,607 | 1,669 | 13,426 | 123,533 |
| Other Products ^a | 122 | 88 | 280 | 0 | 514 | 1,004 |

Note: Includes volumes used as fuel at refineries and all nonprocessing losses of crude oil and petroleum products (e.g., spills, fire losses, contamination, etc.)

^a Includes pentanes plus, other hydrocarbons, oxygenates, hydrogen, unfinished oils, gasoline, special naphthas, jet fuel, lubricants, asphalt and road oil, and miscellaneous products.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report," and Form EIA-810, "Monthly Refinery Report."

Table 10b. Natural Gas Used as Feedstock for Hydrogen Production by PAD District, 2016
(Million Cubic Feet)

| Commodity | PAD Districts | | | | | United States |
|---|---------------|--------|--------|--------|--------|---------------|
| | I | II | III | IV | V | |
| Natural Gas Used As Feedstock For Hydrogen Production | 5,558 | 49,505 | 54,614 | 14,574 | 62,333 | 186,584 |

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report".

Table 11. New, Shutdown and Reactivated Refineries During 2016

| PAD District / Refinery | Location | Total Atmospheric Crude Oil Distillation Capacity (bbl/cd) ^a | Total Downstream Charge Capacity (bbl/sd) ^b | Date Operable | Date of Last Operation | Date Shutdown |
|-------------------------------|--------------------|---|--|---------------|------------------------|---------------|
| NEW | | | | | | |
| PAD District III | | 42,500 | | | | |
| Magellan Terminal Holdings LP | Corpus Christi, TX | 42,500 | | 01/17 | | |
| SHUTDOWN | | | | | | |
| PAD District IV | | 3,800 | 0 | | | |
| Antelope Refining LLC | Douglas, WY | 3,800 | 0 | | 02/15 | 12/16 |

^a bbl/cd=Barrels per calendar day.

^b bbl/sd=Barrels per stream day.

Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report" and Form EIA-820, "Annual Refinery Report."

Table 12. Refinery Sales During 2016

| Former Corporation/Refiner | Total Atmospheric Crude Oil Distillation Capacity (bbl/cd) | New Corporation/Refiner | Date of Sale |
|--|--|--|--------------|
| Black Elk Refining LLC/Wyoming Refining Co New Castle, WY | 18,000 | PAR Pacific Holdings/Hermes Consolidated LLC | 7/16 |
| Dakota Prairie Refining LLC Dickinson, ND | 19,500 | Tesoro Corp/Tesoro Refining and Marketing Co | 7/16 |
| ExxonMobil Corporation/ExxonMobil Refining & Supply Torrance, CA | 150,900 | PBF Energy Co LLC/Torrance Refining Co LLC | 7/16 |
| Northern Tier Energy LLC/St. Paul Park Refining Co LLC St. Paul, MN | 98,515 | Western Refining Inc/St. Paul Park Refining Co LLC | 7/16 |
| Chevron Corporation/Chevron USA Inc Honolulu, HI | 54,000 | Island Energy Services LLC/Island Energy Services Downstream | 11/16 |

bbl/cd= Barrels per calendar day

Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report" and Form EIA-820, "Annual Refinery Report."

Table 13. Refineries Permanently Shutdown By PAD District Between January 1, 1990 and January 1, 2017

| PAD District / Refinery | Location | Total Atmospheric Crude Oil Distillation Capacity (bbl/cd) | Total Downstream Charge Capacity (bbl/sd) | Date of Last Operation | Date Shutdown |
|-------------------------------------|-------------------|--|---|------------------------|---------------|
| PAD District I | | 570,450 | | | |
| GNC Energy Corp | Greensboro, NC | 3,000 | 0 | a | |
| Primary Energy Corp | Richmond, VA | 6,100 | 0 | a | |
| Saint Mary's Refining Co | Saint Mary's, WV | 4,000 | 4,480 | 02/93 | 03/93 |
| Cibro Refining | Albany, NY | 41,850 | 27,000 | 07/93 | 09/93 |
| Calumet Lubricants Co LP | Rouseville, PA | 12,800 | 26,820 | 03/00 | 06/00 |
| Young Refining Corp. | Douglasville, GA | 5,400 | 0 | 07/04 | 07/04 |
| Sunoco Inc | Westville, NJ | 145,000 | 263,000 | 11/09 | 02/10 |
| Western Refining Yorktown Inc | Yorktown, VA | 66,300 | 182,600 | 09/11 | 12/11 |
| Sunoco Inc | Marcus Hook, PA | 178,000 | 278,000 | 12/11 | 12/11 |
| Chevron USA Inc | Perth Amboy, NJ | 80,000 | 47,000 | 03/08 | 07/12 |
| Hess Corporation | Port Reading, NJ | 0 | 115,000 | 02/13 | 03/13 |
| Axeon Specialty Products LLC | Savannah, GA | 28,000 | 0 | 09/12 | 12/14 |
| PAD District II | | 472,315 | | | |
| Coastal Refining & Mktg | El Dorado, KS | 0 | 20,000 | b | |
| Intercoastal Energy Svcs Corp | Troy, IN | 1,250 | 2,250 | 11/90 | 03/91 |
| Farmland Industries | Phillipsburg, KS | 26,400 | 22,800 | 12/91 | 07/92 |
| Coastal Refining & Mktg | Wichita, KS | 28,800 | 41,300 | 05/93 | 06/93 |
| Coastal Refining & Mktg | Augusta, KS | 0 | 21,000 | 06/93 | 06/93 |
| Crystal Refining | Carson City, MI | 3,000 | 0 | 10/92 | 09/93 |
| Marathon | Indianapolis, IN | 50,000 | 68,000 | 09/93 | 10/93 |
| Indian Refining | Lawrenceville, IL | 80,750 | 103,000 | 09/95 | 10/95 |
| Cyril Petrochemical Corp | Cyril, OK | 7,500 | 0 | 09/95 | 12/95 |
| Laketon Refining | Laketon, IN | 11,100 | 0 | 06/95 | 01/96 |
| Total Petroleum, Inc. | Arkansas City, KS | 56,000 | 74,840 | 08/96 | 09/96 |
| TPI Petro Inc. | Alma, MI | 51,000 | 63,300 | 11/99 | 12/99 |
| Premcor Refining Group | Blue Island, IL | 80,515 | 124,500 | 01/01 | 04/01 |
| Premcor Refining Group | Hartford, IL | 64,000 | 116,700 | 09/02 | 10/02 |
| Ventura Refining & Transmission LLC | Thomas, OK | 12,000 | 0 | 10/10 | 11/14 |

Table 13. Refineries Permanently Shutdown By PAD District Between January 1, 1990 and January 1, 2017

| PAD District / Refinery | Location | Total Atmospheric Crude Oil Distillation Capacity (bbl/cd) | Total Downstream Charge Capacity (bbl/sd) | Date of Last Operation | Date Shutdown |
|--------------------------------|--------------------|--|---|------------------------|---------------|
| PAD District III | | 299,480 | | | |
| Imron Refining, Inc. | San Leon, TX | 7,000 | 0 | c | 08/90 |
| Eagle Refining | Jackson, TX | 1,800 | 1,800 | 01/90 | 10/90 |
| Vulcan Refining | Cordova, AL | 9,500 | 5,000 | 09/90 | 12/90 |
| Sabine Resources | Stonewall, LA | 12,000 | 0 | c | 02/92 |
| Rattlesnake Refining | Wickett, TX | 8,000 | 10,400 | 02/92 | 03/92 |
| Longview Refining Assoc | Longview, TX | 13,300 | 13,800 | 08/92 | 09/92 |
| Thriftway Co | Bloomfield, NM | 4,000 | 3,250 | 01/92 | 10/92 |
| El Paso Refining | El Paso, TX | 50,000 | 76,000 | 10/92 | 12/92 |
| Dubach Gas | Dubach, LA | 8,500 | 3,000 | 12/93 | 12/93 |
| Amerada Hess | Purvis, MS | 30,000 | 50,500 | 01/94 | 02/94 |
| Barrett Refg Corp | Vicksburg, MS | 8,000 | 0 | 06/95 | 01/96 |
| Arcadia Refining & Mktg | Lisbon, LA | 7,350 | 6,700 | 01/96 | 02/96 |
| Canal Refg Co. | Chuch Point, LA | 9,500 | 2,100 | 07/95 | 09/97 |
| Gold Line Refining LTD | Jennings, LA | 12,000 | 0 | 07/97 | 01/98 |
| Petrolite Corp | Kilgore, TX | 600 | 750 | 12/97 | 02/98 |
| Pride Refining Inc. | Abilene, TX | 42,750 | 40,500 | 05/98 | 04/98 |
| Shell Oil Co | Odessa, TX | 28,300 | 33,500 | 10/98 | 11/98 |
| Berry Petroleum Co. | Stephens, AR | 6,700 | 3,700 | 07/99 | 02/00 |
| Dow Haltermann Products | Channelview, TX | 880 | 0 | 09/04 | 12/05 |
| Hunt Southland Refining Co | Lumberton, MS | 5,800 | 0 | 03/05 | 12/06 |
| Gulf Atlantic Operations LLC | Mobile, AL | 16,700 | 15,400 | 03/06 | 09/07 |
| Western Refining Southwest Inc | Bloomfield, NM | 16,800 | 19,500 | 12/09 | 11/12 |
| Trigeant LTD | Corpus Christi, TX | 0 | 29,000 | 12/13 | 12/14 |
| Pelican Refining Company LLC | Lake Charles, LA | 0 | 12,000 | 12/14 | 01/15 |
| PAD District IV | | 61,800 | | | |
| Amoco Oil Co. | Casper, WY | 40,000 | 44,900 | 12/91 | 12/91 |
| Landmark Refining | Fruita, CO | 10,000 | 25,900 | 01/92 | 11/93 |
| Pennzoil Producing Co. | Roosevelt, UT | 8,000 | 12,900 | 09/94 | 10/94 |
| Antelope Refining LLC | Douglas, WY | 3,800 | 0 | 02/15 | 12/16 |

Table 13. Refineries Permanently Shutdown By PAD District Between January 1, 1990 and January 1, 2017

| PAD District / Refinery | Location | Total Atmospheric Crude Oil Distillation Capacity (bbl/cd) | Total Downstream Charge Capacity (bbl/sd) | Date of Last Operation | Date Shutdown |
|---------------------------------|----------------------|--|---|------------------------|---------------|
| PAD District V | | 410,360 | | | |
| Gibson Oil & Refining | Bakersfield, CA | 9,600 | 0 | 07/87 | 12/90 |
| Chevron USA Inc | Kenai, AK | 22,000 | 0 | 06/91 | 07/91 |
| Anchor Refining Co. | McKittrick, CA | 10,000 | 6,000 | 06/91 | 08/91 |
| Golden West | Santa Fe Springs, CA | 47,000 | 94,300 | 02/92 | 03/92 |
| Eco Asphalt Inc. | Long Beach, CA | 10,550 | 7,000 | c | 10/92 |
| Fletcher Oil & Refining | Carson, CA | 29,675 | 48,100 | 09/92 | 10/92 |
| Sunbelt Refining | Coolidge, AZ | 10,000 | 7,000 | 08/93 | 09/93 |
| Chemoil Refining Corp | Long Beach, CA | 18,000 | 0 | 02/94 | 04/94 |
| Powerine Oil Co. | Santa Fe Springs, CA | 46,500 | 100,300 | 06/95 | 09/95 |
| Sunland Refining Corp. | Bakersfield, CA | 12,000 | 2,650 | 03/95 | 12/95 |
| Intermountain Refining Co. | Fredonia, AZ | 3,800 | 2,000 | 01/94 | 05/96 |
| Pacific Refining Co. | Hercules, CA | 50,000 | 62,400 | 07/95 | 09/97 |
| Sound Refining Inc | Tacoma, WA | 11,900 | 6,000 | 10/98 | 12/98 |
| Chevron USA Inc. | Richmond Beach, WA | 0 | 6,200 | 05/00 | 06/00 |
| Foreland Refining Corp. | Tonopah, NV | 0 | 3,000 | 02/01 | 01/02 |
| Tricor Refining LLC | Bakersfield, CA | 0 | 14,400 | 07/01 | 01/02 |
| Paramount Petroleum Corporation | Portland, OR | 0 | 10,000 | 11/06 | 12/08 |
| Tenby Inc | Oxnard, CA | 2,800 | 0 | 12/11 | 12/11 |
| Flint Hills Resources LP | North Pole, AK | 126,535 | 5,500 | a | 06/14 |
| U.S. Total | | 1,814,405 | | | |
| PAD District VI | | 704,300 | | | |
| Arochem International | Ponce, PR | 75,600 | 37,000 | 12/91 | 12/92 |
| Peerless Oil & Chemical | Ponce, PR | 8,800 | 45,200 | 09/94 | 12/94 |
| Chevron Phillips Chem | Guayama, PR | 0 | 93,200 | 03/01 | 01/02 |
| Caribbean Petroleum Corp | San Juan, PR | 42,000 | 60,500 | 12/00 | 01/05 |
| Shell Chem Yabucoa Inc | Yabucoa, PR | 77,900 | 91,300 | 10/08 | 12/09 |
| Hovensa LLC | Kingshill, VI | 500,000 | 1,086,000 | 02/12 | 02/12 |

a. Facility in operation as other than a refinery since it no longer processes crude oil or unfinished oils.

b. Facility maintained asphalt production capacity until September, 2004.

c. Never Operated

bbl/cd=Barrels per calendar day

bbl/sd=Barrels per stream day.

Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report" and Form EIA-820, "Annual Refinery Report."

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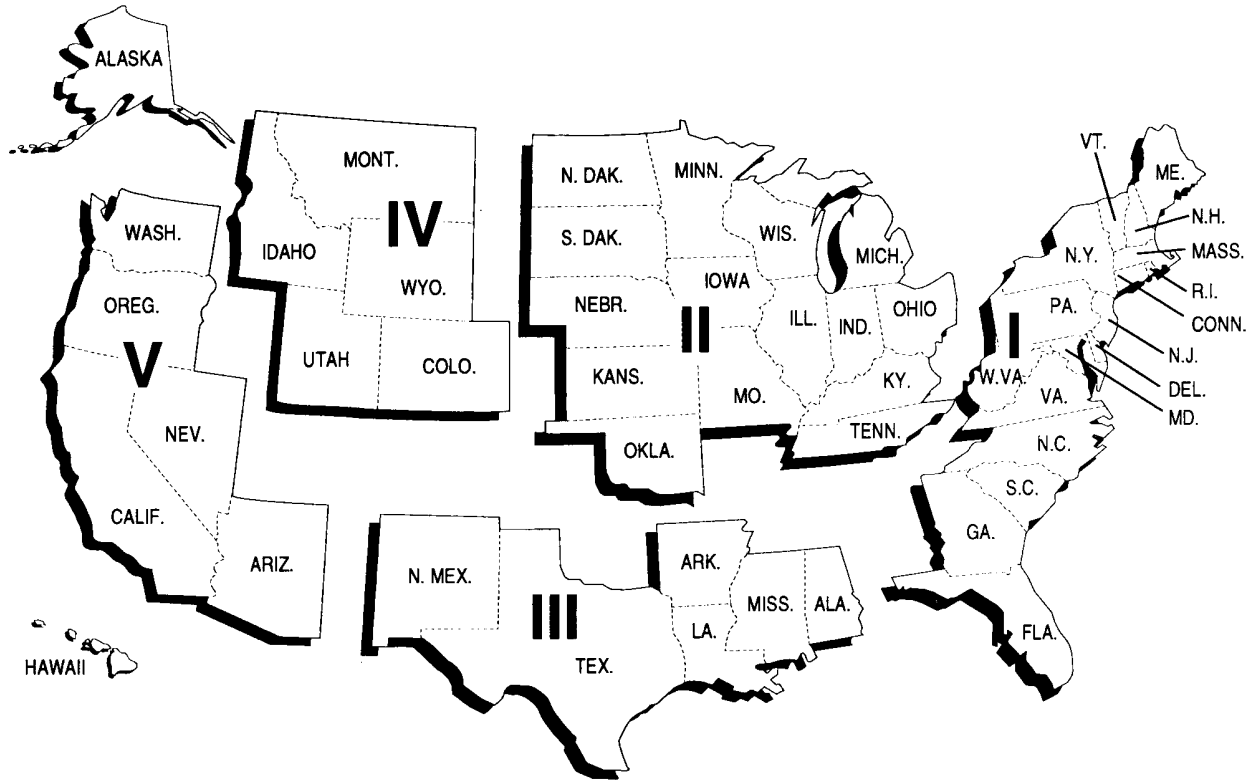
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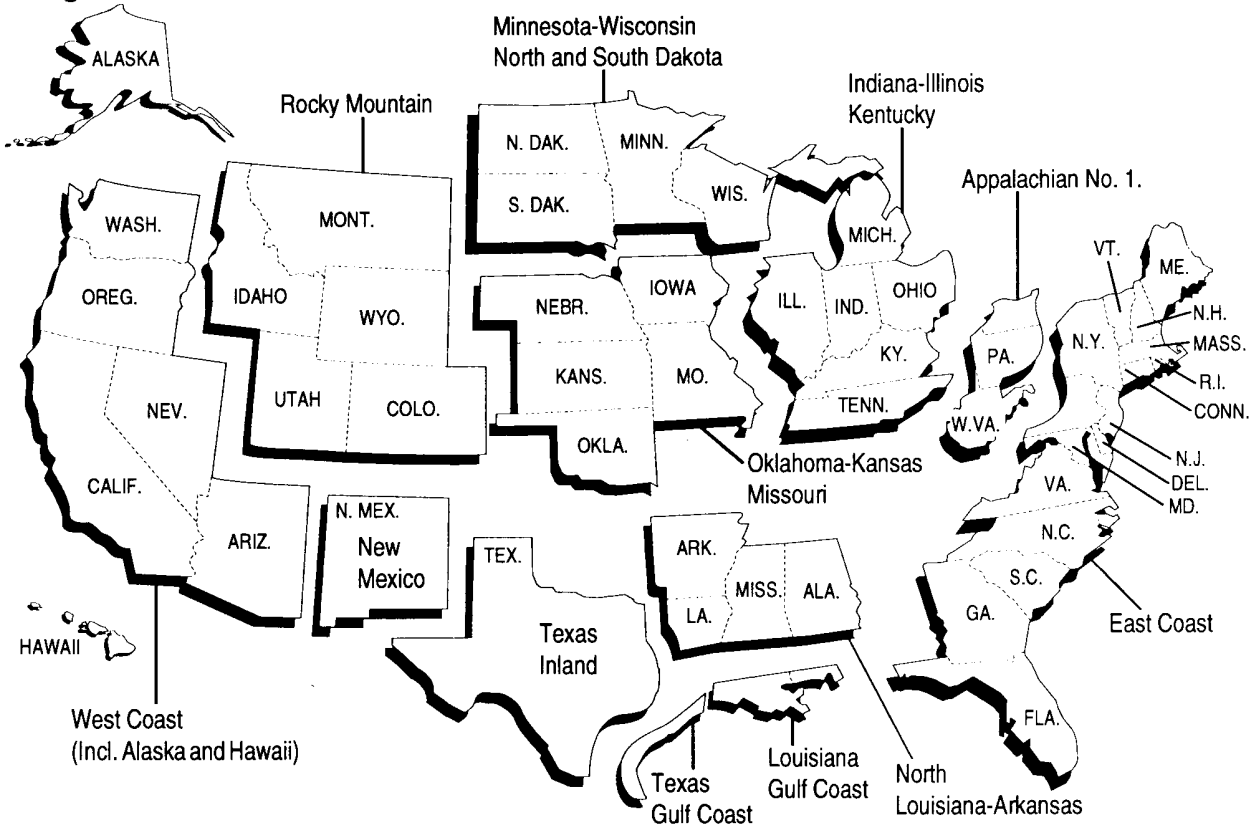
APPENDIX A:

DISTRICT DESCRIPTIONS AND MAPS

Petroleum Administration for Defense (PAD) Districts



Refining Districts



Appendix A

District Descriptions and Maps

The following are the Refining Districts which make up the Petroleum Administration for Defense (PAD) Districts.

PAD District I

East Coast: District of Columbia and the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, and the following counties of the State of New York: Cayuga, Tompkins, Chemung, and all counties east and north thereof. Also the following counties in the State of Pennsylvania: Bradford, Sullivan, Columbia, Montour, Northumberland, Dauphin, York, and all counties east thereof.

Appalachian No. 1: The State of West Virginia and those parts of the States of Pennsylvania and New York not included in the East Coast District.

Sub-PAD District I

New England: The States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

Central Atlantic: The District of Columbia and the States of Delaware, Maryland, New Jersey, New York, and Pennsylvania.

Lower Atlantic: The States of Florida, Georgia, North Carolina, South Carolina, Virginia and West Virginia.

PAD District II

Indiana-Illinois-Kentucky: The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and Ohio.

Minnesota-Wisconsin-North and South Dakota: The States of Minnesota, Wisconsin, North Dakota, and South Dakota.

Oklahoma-Kansas-Missouri: The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.

PAD District III

Texas Inland: The State of Texas except the Texas Gulf Coast District.

Texas Gulf Coast: The following counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Aransas, San Patricio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.

Louisiana Gulf Coast: The following Parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, West Feliciana, East Feliciana, Saint Helena, Tangipahoa, Washington, and all Parishes south thereof. Also the following counties of the State of Mississippi: Pearl River, Stone, George, Hancock, Harrison, and Jackson. Also the following counties of the State of Alabama: Mobile and Baldwin.

North Louisiana-Arkansas: The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.

New Mexico: The State of New Mexico.

PAD District IV

Rocky Mountain: The States of Montana, Idaho, Wyoming, Utah, and Colorado.

PAD District V

West Coast: The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.

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APPENDIX B:

EXPLANATORY NOTES

Appendix B

Survey Methodology

Description of Survey Form

The Form EIA-820, “Annual Refinery Report,” is the primary source of data in the “Refinery Capacity Report” tables. The form collects data on the consumption of purchased steam, electricity, coal, and natural gas; refinery receipts of crude oil by method of transportation; operable capacity for atmospheric crude oil distillation units and downstream units; and production capacity for crude oil and petroleum products.

Frame

The respondent frame consists of all operating and idle petroleum refineries, located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam and other U.S. possessions. As of January 1, 2017 there were 141 refineries.

The respondent frame is maintained by monitoring the monthly Form EIA-810, “Monthly Refinery Report,” and industry publications for changes and developments in the petroleum industry such as refinery sales, mergers and new operations.

Collection

The Form EIA-820 is sent to respondents in January. Survey forms can be submitted by electronic mail or facsimile. Completed forms are required to be submitted by the 15th day of February of the current report year. Receipt of the reports is monitored using an automated respondent mailing list. Telephone follow-up calls are made to secure responses from those companies failing to report by February 15th.

Processing and Micro Editing

Upon receipt, all reported data are transformed into a standard format and sent through a log-in and prescreening process to validate respondent control information and resolve any discrepancies. The data are then processed using generalized edit and imputation procedures. Automated editing procedures check current data for consistency with past data and for internal consistency (e.g., totals equal to the sums of the parts).

After the edit failures are resolved and imputation performed for nonrespondents, preliminary tables are produced and used to identify anomalies. Anomalies result in further review of respondent data which in turn may result in additional flagged data and imputation.

Imputation and Estimation

Imputation is performed for companies that fail to file prior to the publication deadline. When nonresponse occurs, values for these companies are imputed from data reported on the most recent year’s Form EIA-820 and/or from data reported on Form EIA-810, “Monthly Refinery Report,” for that company. For most surveyed items, the value imputed for nonrespondents is the value that the company reported on the Form EIA-820 for the most recent year. For three categories of information however, the imputed value is also based on their data from the Form EIA-810 as follows:

Part 4: Refinery Receipts of Crude Oil by Method of Transportation

The imputation methodology for this section is based on data reported on both the monthly Form EIA-810 and the annual Form EIA-820. Annual refinery receipts of domestic and foreign crude oil for a nonrespondent are imputed by aggregating the values for the refinery on the monthly survey. These values are allocated to the method of transportation by using the percentages reported for the refinery in the previous year.

Part 5: Atmospheric Crude Oil Distillation Capacity

Operable atmospheric crude oil distillation capacity in barrels per calendar day is collected on the monthly Form EIA-810 as of the first day of each month and on the annual Form EIA-820 as of January 1. As part of the editing process for the Form EIA-820, these two values are compared. Companies are contacted and any discrepancies are resolved by the time of publication. Imputed values for operable atmospheric crude oil distillation capacity in barrels per calendar day are taken directly from the January Form EIA-810. A barrel per stream day capacity is then derived by dividing the reported barrels per calendar day capacity by .95.

Parts 6 and 7: Downstream Charge Capacity and Production Capacity

Current year and projected year data for downstream charge capacity and production capacity are taken directly from the previous year's annual report.

Macro Editing

A comparison of the data collected on the EIA-820 with other similar data series and industry trade journals is performed each year.

Dissemination

Prior to 2006, the data collected on Form EIA-820, "Annual Refinery Report," was published in the *Petroleum Supply Annual, Volume 1*. Beginning with data for 2006, the Form EIA-820 data are published as a standalone product in the EIA publication "Refinery Capacity Report." This report contains statistics on consumption of purchased steam, electricity, coal, and natural gas; refinery receipts of crude oil by method of transportation; current and projected capacities for atmospheric crude oil distillation, downstream charge and production capacities. The data are also published in the *Annual Energy Review*. The "Refinery Capacity Report" can be found at:

<http://www.eia.gov/petroleum/refinerycapacity/>

Additional Sources of Data

The Form EIA-820, "Annual Refinery Report," is the primary source of data in the "Refinery Capacity Report" tables. In addition, some data collected on the Form EIA-810, "Monthly Refinery Report," are included.

Quality

Response Rates

The response rate for the Form EIA-820 is normally 100 percent.

Non-sampling Errors

There are two types of errors usually associated with data produced from a survey -sampling errors and nonsampling errors. Because estimates from the Form

EIA-820 survey are based on a complete census of the frame of petroleum refineries, there is no sampling error in the data presented in this report. The data, however, are subject to nonsampling errors. Nonsampling errors are those which can arise from: (1) the inability to obtain data from all companies in the frame or sample (nonresponse) and the method used to account for nonresponses; (2) definitional difficulties and/or improperly worded questions which lead to different interpretations; (3) mistakes in recording or coding the data obtained from respondents; and (4) other errors of collection, response, coverage, and estimation. Quality control procedures are employed in the collection and editing operations to minimize misrepresentation and misreporting. Nonresponse follow-up procedures are employed to reduce the number of nonrespondents, and procedures employed to impute missing data, introduce a minimal amount of error, given the relatively small volume of imputed data.

Resubmissions

EIA-820 resubmissions are required whenever an error greater than 5 percent of the true value is discovered. In the event of a reporting error, company reports are updated after contact with the company and are followed up by corrected report resubmissions.

Revision Policy

The "Refinery Capacity Report" reflects EIA's final data on refinery capacity and will be revised only if, in EIA's judgment, a revision is expected to substantively affect understanding of the U.S. refinery capacity.

Confidentiality

Information on operable atmospheric crude oil distillation capacity, downstream charge capacity, and production capacity reported on Parts 5, 6, and 7 of Form EIA-820 are not considered confidential and are published in the "Refinery Capacity Report." All other information reported on Form EIA-820 (i.e. Parts 3 and 4 and respondent information) will be protected and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. §552, the DOE regulations, 10 C.F.R. §1004.11, implementing the FOIA, and the Trade Secrets Act, 18 U.S.C. §1905.

The Federal Energy Administration Act requires the EIA to provide company-specific data to other Federal agencies when requested for official use. The information reported on this form may also be made available, upon request, to another component of the Department of Energy (DOE); to any Committee of Congress, the General Accountability Office, or other Federal agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order. The information may be used for any nonstatistical purposes such as administrative, regulatory, law enforcement, or adjudicatory purposes.

Company specific data are also provided to other DOE offices for the purpose of examining specific petroleum operations in the context of emergency response planning and actual emergencies.

Disclosure limitation procedures are not applied to the statistical data published from this survey's information. Thus, there may be some statistics that are based on data from fewer than three respondents, or that are dominated by data from one or two large respondents. In these cases, it may be possible for a knowledgeable person to estimate the information reported by a specific respondent.

Refinery Capacity History

Refinery capacity data collection was begun in 1918 by the Bureau of Mines, then in the Department of Commerce, and was operated on a voluntary basis until 1980. In 1980, the mandatory Energy Information Administration (EIA) Form EIA-177, "Capacity of Petroleum Refineries," was implemented. Information on refining capacity was expanded to include not only current year operations, but two-year projections, and refinery input/production data. Working storage capacity data was also added to the form and product categories were added for total coverage. Information on refinery downstream facilities was expanded to include a breakdown of thermal operations and to add vacuum distillation, catalytic hydrotreating and hydrorefining. Production capacity was also added to include information on isomerization, alkylation, aromatics, asphalt/road oil, coking, lubricants and hydrogen.

In 1983, the form was revised to improve the consistency and quality of the data collected by the EIA and redesignated as Form EIA-820, "Annual Refinery

Report." Two sections for data previously reported monthly were added: (1) refinery receipts of crude oil by method of transportation, and (2) fuels consumed for all purposes at refineries. Also, the second year projections on refining capacity were eliminated. As a result of a study conducted by the EIA evaluating motor gasoline data collected by the Federal Highway Administration (FHWA) and by the EIA, motor gasoline blending plants were included for the first time in the respondent frame in order to produce more accurate statistics on the production of motor gasoline.

In 1987, the form was revised to reduce respondent burden and to better reflect current refinery operations through updated terminology. Information on projected input/production of refinery processing facilities was deleted. Several categories under catalytic hydrotreating were combined: naphtha and reformer feeds were combined into a single category as well as residual fuel oil and "other." Thermal cracking types, gas oil and "other" were also combined into a single category. Catalytic reforming types, conventional and bi-metallic were replaced with low and high pressure processing units. Two new categories were added: fuels solvent deasphalting was added to downstream charge capacity and sulfur recovery was added to production capacity.

In 1994, the form was revised to enable EIA to calculate utilization rates for certain downstream processing units and to reflect storage capacity of fuels mandated by the Clean Air Act Amendments of 1990. Additions to the form included calendar day downstream charge capacity for fluid and delayed coking, catalytic cracking, and catalytic hydrocracking. Also storage capacity categories for reformulated, oxygenated, and other finished motor gasoline were added, as well as oxygenate storage capacity and separate categories for high and low sulfur distillate fuel oil.

In 1995, motor gasoline blending plants were dropped from the survey frame, since by this time, the only section of the form that applied to them was working and shell storage capacity. Also in 1995, a decision was made to no longer collect storage capacity from shutdown refineries; therefore, these refineries were also eliminated from the survey frame.

In 1996, the survey was moved to a biennial schedule (every other year) and was renamed "Biennial Refinery Report." The survey was not conducted for January 1, 1996 or January 1, 1998. Respondents were not required

to submit data for crude oil and petroleum products consumed at refineries during 1995 and 1997. These data are available from the Form EIA-810, “Monthly Refinery Report.” The requirement to submit data for refinery consumption of natural gas, coal, and purchased steam and electricity on the Form EIA-820 remained.

In 2000, the survey was moved to an annual schedule.

In 2004, the survey form was amended to reflect the increasing emphasis on the removal of sulfur from transportation fuels.

In 2009, natural gas used as feedstock for hydrogen plant production was added to the form. Also, isooctane production capacity was added.

In 2010, the survey form was amended to reflect the increasing use of bio-fuels. Storage capacities of biomass-based diesel fuel, other renewable diesel fuel and other renewable fuels were added to the form. Also, barrels per calendar day capacity of the catalytic reformer was added; previously this was only collected on a stream day basis.

In 2011, storage capacity data was removed from the form. Storage capacity is now being collected as of March 31 and September 30 on the Form EIA-810, “Monthly Refinery Report.”

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GLOSSARY



Definitions of Petroleum Products and Other Terms (Revised June 2017)

Alcohol. The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group; CH₃ (CH₂)_n-OH (e.g., methanol, ethanol, and tertiary butyl alcohol).

Alkylate. The product of an alkylation reaction. It usually refers to the high octane product from alkylation units. This alkylate is used in blending high octane gasoline.

Alkylation. A refining process for chemically combining isobutane with olefin hydrocarbons (e.g., propylene, butylenes) through the control of temperature and pressure in the presence of an acid catalyst, usually sulfuric acid or hydrofluoric acid. The product, alkylate, an isoparaffin, has high octane value and is blended with motor and aviation gasoline to improve the antiknock value of the fuel.

API Gravity. A scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API; it may be calculated in terms of the following formula:

$$\text{Degrees API} = 141.5/\text{sp.gr.} \cdot 60^\circ \text{ F}/60^\circ \text{ F} - 131.5$$

The higher the API gravity, the lighter the compound. Light crudes generally exceed 38 degrees API and heavy crudes are commonly labeled as all crudes with an API gravity of 22 degrees or below. Intermediate crudes fall in the range of 22 degrees to 38 degrees API gravity.

Aromatics. Hydrocarbons characterized by unsaturated ring structures of carbon atoms. Commercial petroleum aromatics are benzene, toluene, and xylenes (BTX).

Asphalt. A dark-brown-to-black cement-like material containing bitumens as the predominant constituent obtained by petroleum processing; used primarily for road construction. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. Note: The conversion factor for asphalt is 5.5 barrels per short ton.

ASTM. The acronym for the American Society for Testing and Materials.

Atmospheric Crude Oil Distillation. The refining process of separating crude oil components at atmospheric pressure by heating to temperatures of about 600 degrees Fahrenheit to 750 degrees Fahrenheit (depending on the nature of the crude oil and desired products) and subsequent condensing of the fractions by cooling.

Aviation Gasoline (Finished). A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D 910 and Military Specification MIL-G-5572. Note: Data on blending components are not counted in data on finished aviation gasoline.

Aviation Gasoline Blending Components. Naphtha's which will be used for blending or compounding into finished aviation gasoline (e.g., straight-run gasoline, alkylate, reformat, benzene, toluene, and xylenes). Excludes oxygenates (alcohols, ethers), butanes, and pentanes.. Oxygenates are reported as other hydrocarbons, hydrogen, and oxygenates.

Barrel. A unit of volume equal to 42 U.S. gallons.

Barrels per Calendar Day. The amount of input that a distillation facility can process under usual operating conditions. The amount is expressed in terms of capacity during a 24-hour period and reduces the maximum processing capability of all units at the facility under continuous operation (see Barrels per Stream Day) to account for the following limitations that may delay, interrupt, or slow down production: the capability of downstream facilities to absorb the output of crude oil processing facilities of a given refinery. No reduction is made when a planned distribution of intermediate streams through other than downstream facilities is part of a refinery's normal operation; the types and grades of inputs to be processed; the types and grades of products expected to be manufactured; the environmental constraints associated with refinery operations; the reduction of capacity for scheduled downtime due to such conditions as routine inspection, maintenance, repairs, and turnaround; and the reduction of capacity for unscheduled downtime due to such conditions as mechanical problems, repairs, and slowdowns.

Barrels Per Stream Day. The maximum number of barrels of input that a distillation facility can process within a 24-hour period when running at full capacity under optimal crude and product slate conditions with no allowance for downtime.

Benzene (C₆H₆). An aromatic hydrocarbon present in small proportion in some crude oils and made commercially from petroleum by the catalytic reforming of naphthenes in petroleum naphtha. It is also made from coal in the manufacture of coke. Used as a solvent, in manufacturing detergents, synthetic fibers, and petrochemicals and as a component of high-octane gasoline.

Blending Components. See *Motor* or *Aviation Gasoline Blending Components*.

Blending Plant. A facility which has no refining capability but is either capable of producing finished motor gasoline through mechanical blending or blends oxygenates with motor gasoline.

Bonded Petroleum Imports. Petroleum imported and entered into Customs bonded storage. These imports are not included in the import statistics until they are: (1) withdrawn from storage free of duty for use as fuel for vessels and aircraft engaged in international trade; or (2) withdrawn from storage with duty paid for domestic use.

BTX. The acronym for the commercial petroleum aromatics benzene, toluene, and xylenes. See individual categories for definitions.

Bulk Station. A facility used primarily for the storage and/or marketing of petroleum products which has a total bulk storage capacity of less than 50,000 barrels and receives its petroleum products by tank car or truck.

Bulk Terminal. A facility used primarily for the storage and/or marketing of petroleum products which has a total bulk storage capacity of 50,000 barrels or more and/or receives petroleum products by tanker, barge, or pipeline.

Butane (C₄H₁₀). A normally gaseous four-carbon straight-chain or branched-chain hydrocarbon extracted from natural gas or refinery gas streams. It includes normal butane and refinery-grade butane and is designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial butane.

Refinery-Grade Butane (C₄H₁₀). A refinery-produced stream that is composed predominantly of normal butane and/or isobutane and may also contain propane and/or natural gasoline. These streams may also contain significant levels of olefins and/or fluorides contamination.

Butylenes (C₄H₈). A four-carbon olefinic hydrocarbon recovered from refinery processes.

Captive Refinery Oxygenate Plants.

Oxygenate production facilities located within or adjacent to a refinery complex.

Catalytic Cracking. The refining process of breaking down the larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules. Catalytic cracking is accomplished by the use of a catalyst and is an effective process for increasing the yield of gasoline from crude oil. Catalytic cracking processes fresh feeds and recycled feeds.

Fresh Feeds. Crude oil or petroleum distillates which are being fed to processing units for the first time.

Recycled Feeds. Streams that have been processed and are fed back to the reactor for additional processing.

Catalytic Hydrocracking. A refining process that uses hydrogen and catalysts with relatively low temperatures and high pressures for converting middle boiling or residual material to high-octane gasoline, reformer charge stock, jet fuel, and/or high grade fuel oil. The process uses one or more catalysts, depending upon product output, and can handle high sulfur feedstocks without prior desulfurization.

Catalytic Hydrotreating. A refining process for treating petroleum fractions from atmospheric or vacuum distillation units (e.g., naphthas, middle distillates, reformer feeds, residual fuel oil, and heavy gas oil) and other petroleum (e.g., cat cracked naphtha, coker naphtha, gas oil, etc.) in the presence of catalysts and substantial quantities of hydrogen. Hydrotreating includes desulfurization, removal of substances (e.g., nitrogen compounds) that deactivate catalysts, conversion of olefins to paraffins to reduce gum formation in gasoline, and other processes to upgrade the quality of the fractions.

Catalytic Reforming. A refining process using controlled heat and pressure with catalysts to rearrange certain hydrocarbon molecules,

thereby converting paraffinic and naphthenic hydrocarbons (e.g., low-octane gasoline boiling range fractions) into petrochemical feedstocks and higher octane stocks suitable for blending into finished gasoline. Catalytic reforming is reported in two categories. They are:

Low Pressure. A processing unit operating at less than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

High Pressure. A processing unit operating at either equal to or greater than 225 pounds per square inch gauge (PSIG) measured at the outlet separator.

Charge Capacity. The input (feed) capacity of the refinery processing facilities.

Coal. A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

Commercial Kerosene-Type Jet Fuel. See *Kerosene-type Jet Fuel*.

Conventional Gasoline. See *Motor Gasoline (Finished)*.

Crude Oil. A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Depending upon the characteristics of the crude stream, it may also include:

Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric pressure after being recovered from oil well (casinghead) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included;

Small amounts of nonhydrocarbons produced from oil, such as sulfur and various metals;

Drip gases, and liquid hydrocarbons produced from oil sands, gilsonite, and oil shale.

Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

Crude oil is considered as either domestic or foreign, according to the following:

Domestic. Crude oil produced in the United States or from its "outer continental shelf" as defined in 43 USC 1331.

Foreign. Crude oil produced outside the United States. Imported Athabasca hydrocarbons (derived from Canadian oil sands) are included.

Crude Oil, Refinery Receipts. Receipts of domestic and foreign crude oil at a refinery. Includes all crude oil in transit except crude oil in transit by pipeline. Foreign crude oil is reported as a receipt only after entry through customs. Crude oil of foreign origin held in bonded storage is excluded.

Crude Oil Losses. Represents the volume of crude oil reported by petroleum refineries as being lost in their operations. These losses are due to spills, contamination, fires, etc. as opposed to refinery processing losses.

Crude Oil Production. The volume of crude oil produced from oil reservoirs during given periods of time. The amount of such production for a given period is measured as volumes delivered from lease storage tanks (i.e., the point of custody transfer) to pipelines, trucks, or other media for transport to refineries or terminals with adjustments for (1) net differences between opening and closing lease inventories, and (2) basic sediment and water (BS&W).

Crude Oil Qualities. Refers to two properties of crude oil, the sulfur content and API gravity, which affect processing complexity and product characteristics.

Delayed Coking. A process by which heavier crude oil fractions can be thermally decomposed under conditions of elevated temperatures and low pressure to produce a mixture of lighter oils and petroleum coke. The light oils can be processed further in other refinery units to meet product specifications. The coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Desulfurization. The removal of sulfur, from molten metals, petroleum oil, or flue gases. Petroleum desulfurization is a process that removes sulfur and its compounds from various streams during the refining process. Desulfurization processes include catalytic hydrotreating and other chemical/physical processes such as adsorption. Desulfurization processes vary based on the type of stream treated (e.g. naphtha, distillate, heavy gas oil, etc.) and the amount of sulfur removed (e.g. sulfur reduction to 10 ppm). See **Catalytic Hydrotreating**.

Disposition. The components of petroleum disposition are stock change, crude oil losses, refinery inputs, exports, and products supplied for domestic consumption.

Distillate Fuel Oil. A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and electric power generation.

No. 1 Distillate. A light petroleum distillate that can be used as either a diesel fuel or a fuel oil.

No. 1 Diesel Fuel. A light distillate fuel oil that has distillation temperatures of 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines generally operated under frequent speed and load changes, such as those in city buses and similar vehicles.

No. 1 Fuel Oil. A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90-percent point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters.

No. 2 Distillate. A petroleum distillate that can be used as either a diesel fuel or a fuel oil.

No. 2 Diesel Fuel. A fuel that has distillation temperatures of 500 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90 percent recovery point and meets the specifications defined in ASTM

Specification D 975. It is used in high speed diesel engines that are generally operated under uniform speed and load conditions, such as those in railroad locomotives, trucks, and automobiles.

Low Sulfur No. 2 Diesel Fuel. No. 2 diesel fuel that has a sulfur level no higher than 0.05 percent by weight. It is used primarily in motor vehicle diesel engines for on-highway use.

High Sulfur No. 2 Diesel Fuel. No. 2 diesel fuel that has a sulfur level above 0.05 percent by weight.

No. 2 Fuel Oil (Heating Oil). A distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 640 degrees Fahrenheit at the 90-percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units.

No. 4 Fuel. A distillate fuel oil made by blending distillate fuel oil and residual fuel oil stocks. It conforms with ASTM Specification D 396 or Federal Specification VV-F-815C and is used extensively in industrial plants and in commercial burner installations that are not equipped with preheating facilities. It also includes No. 4 diesel fuel used for low-and medium-speed diesel engines and conforms to ASTM Specification D 975.

No. 4 Diesel Fuel. See **No. 4 Fuel**.

No. 4 Fuel Oil. See **No. 4 Fuel**.

Electricity (Purchased). Electricity purchased for refinery operations that is not produced within the refinery complex.

Ending Stocks. Primary stocks of crude oil and petroleum products held in storage as of 12 midnight on the last day of the month. Primary stocks include crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tank farms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in-transit by water from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. Primary Stocks exclude stocks of foreign origin that are held in bonded warehouse storage.

ETBE (Ethyl tertiary butyl ether) ($\text{CH}_3)_3\text{COC}_2\text{H}_5$. An oxygenate blend stock formed by the catalytic etherification of isobutylene with ethanol.

Ethane (C_2H_6). A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -127.48 degrees Fahrenheit. It is extracted from natural gas and refinery gas streams.

Ether. A generic term applied to a group of organic chemical compounds composed of carbon, hydrogen, and oxygen, characterized by an oxygen atom attached to two carbon atoms (e.g., methyl tertiary butyl ether).

Ethylene (C_2H_4). An olefinic hydrocarbon recovered from refinery processes or petrochemical processes. Ethylene is used as a petrochemical feedstock for numerous chemical applications and the production of consumer goods.

Exports. Shipments of crude oil and petroleum products from the 50 States and the District of Columbia to foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Field Production. Represents crude oil production on leases, natural gas liquids production at natural gas processing plants, new supply of other hydrocarbons/ oxygenates and motor gasoline blending components, and fuel ethanol blended into finished motor gasoline.

Flexicoking. A thermal cracking process which converts heavy hydrocarbons such as crude oil, oil sands bitumen, and distillation residues into light hydrocarbons. Feedstocks can be any pumpable hydrocarbons including those containing high concentrations of sulfur and metals.

Fluid Coking. A thermal cracking process utilizing the fluidized-solids technique to remove carbon (coke) for continuous conversion of heavy, low-grade oils into lighter products.

Fresh Feed Input. Represents input of material (crude oil, unfinished oils, natural gas liquids, other hydrocarbons and oxygenates or finished products) to processing units at a refinery that is being processed (input) into a particular unit for the first time.

Examples:

(1) Unfinished oils coming out of a crude oil distillation unit which are input into a catalytic cracking unit are considered fresh feed to the catalytic cracking unit.

(2) Unfinished oils coming out of a catalytic cracking unit being looped back into the same catalytic cracking unit to be reprocessed are not considered fresh feed.

Fuel Ethanol ($\text{C}_2\text{H}_5\text{OH}$). An anhydrous denatured aliphatic alcohol intended for gasoline blending as described in Oxygenates definition.

Fuels Solvent Deasphalting. A refining process for removing asphalt compounds from petroleum fractions, such as reduced crude oil. The recovered stream from this process is used to produce fuel products.

Gas Oil. A liquid petroleum distillate having a viscosity intermediate between that of kerosene and lubricating oil. It derives its name from having originally been used in the manufacture of illuminating gas. It is now used to produce distillate fuel oils and gasoline.

Gasohol. A blend of finished motor gasoline containing alcohol (generally ethanol but sometimes methanol) at a concentration of 10 percent or less by volume. Data on gasohol that has at least 2.7 percent oxygen, by weight, and is intended for sale inside carbon monoxide nonattainment areas are included in data on oxygenated gasoline. See Oxygenates.

Gasoline Blending Components. Naphthas which will be used for blending or compounding into finished aviation or motor gasoline (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, and xylenes). Excludes oxygenates (alcohols, ethers), butane, and natural gasoline.

Gross Input to Atmospheric Crude Oil Distillation Units. Total input to atmospheric crude oil distillation units. Includes all crude oil, lease condensate, natural gas plant liquids, unfinished oils, liquefied refinery gases, slop oils, and other liquid hydrocarbons produced from oil sands, gilsonite, and oil shale.

Heavy Gas Oil. Petroleum distillates with an approximate boiling range from 651 degrees Fahrenheit to 1000 degrees Fahrenheit.

Hydrogen. The lightest of all gases, occurring chiefly in combination with oxygen in water; exists also in acids, bases, alcohols, petroleum, and other hydrocarbons.

Idle Capacity. The component of operable capacity that is not in operation and not under active repair, but capable of being placed in operation within 30 days; and capacity not in operation but under active repair that can be completed within 90 days.

Imported Crude Oil Burned As Fuel. The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. Imported crude oil burned as fuel includes lease condensate and liquid hydrocarbons produced from oil sands, gilsonite, and oil shale.

Imports. Receipts of crude oil and petroleum products into the 50 States and the District of Columbia from foreign countries, Puerto Rico, the Virgin Islands, and other U.S. possessions and territories.

Isobutane (C₄H₁₀). A normally gaseous four-carbon, branched-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 10.9 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams.

Isobutylene (C₄H₈). An olefinic four-carbon hydrocarbon recovered from refinery processes or petrochemical processes.

Isohexane (C₆H₁₄). A saturated six-carbon branched-chain hydrocarbon. It is a colorless liquid that boils at a temperature of 156.2 degrees Fahrenheit.

Isomerization. A refining process which alters the fundamental arrangement of atoms in the molecule without adding or removing anything from the original material. Used to convert normal butane into isobutane (C₄), an alkylation process feedstock, and normal pentane and hexane into isopentane (C₅) and isohexane (C₆), high-octane gasoline components.

Isopentane. See *Natural Gasoline*

Kerosene. A light petroleum distillate that is used in space heaters, cook stoves, and water heaters and is suitable for use as a light source when burned in wick-fed lamps. Kerosene has a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point, a final boiling point of 572 degrees Fahrenheit, and a minimum flash point of 100 degrees Fahrenheit. Included are No. 1-K and No. 2-K, the two grades recognized by ASTM Specification D 3699 as well as all other grades

of kerosene called range or stove oil, which have properties similar to those of No. 1 fuel oil. See *Kerosene-Type Jet Fuel*.

Kerosene-Type Jet Fuel. A kerosene-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10-percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting ASTM Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbojet and turboprop aircraft engines.

Commercial. Kerosene-type jet fuel intended for use in commercial aircraft.

Military. Kerosene-type jet fuel intended for use in military aircraft.

Lease Condensate. A mixture consisting primarily of pentanes and heavier hydrocarbons which is recovered as a liquid from natural gas in lease separation facilities. This category excludes natural gas liquids, such as butane and propane, which are recovered at downstream natural gas processing plants or facilities. See *Natural Gas Liquids*.

Light Gas Oils. Liquid petroleum distillates heavier than naphtha, with an approximate boiling range from 401 degrees Fahrenheit to 650 degrees Fahrenheit.

Liquefied Petroleum Gases (LPG). A group of hydrocarbon-based gases derived from crude oil refining or natural gas fractionation. They include: ethane, ethylene, propane, propylene, normal butane, butylenes, isobutane, and isobutylene. For convenience of transportation, these gases are liquefied through pressurization.

Liquefied Refinery Gases (LRG). Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration, they are retained in the liquid state. The reported categories are ethane/ethylene, propane/propylene, normal butane/butylenes, and isobutane/isobutylene. Excludes still gas.

Lubricants. Substances used to reduce friction between bearing surfaces or as process materials either incorporated into other materials used as processing aids in the manufacture of other products, or used as carriers of other materials. Petroleum lubricants may be produced either from distillates or residues. Lubricants include all grades of lubricating oils from spindle oil to cylinder oil and those used in greases.

Merchant Oxygenate Plants. Oxygenate production facilities that are not associated with a petroleum refinery. Production from these facilities is sold under contract or on the spot market to refiners or other gasoline blenders.

Methanol (CH₃OH). A light, volatile alcohol intended for gasoline blending as described in Oxygenate definition.

Middle Distillates. A general classification of refined petroleum products that includes distillate fuel oil and kerosene.

Military Kerosene-Type Jet Fuel. See **Kerosene-Type Jet Fuel.**

Miscellaneous Products. Includes all finished products not classified elsewhere (e.g., petrolatum, lube refining byproducts (aromatic extracts and tars), absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and specialty oils). Note: Beginning with January 2004 data, naphtha-type jet fuel is included in Miscellaneous Products.

Motor Gasoline (Finished). A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. "Motor Gasoline" includes conventional gasoline; all types of oxygenated gasoline, including gasohol; and reformulated gasoline, but excludes aviation gasoline. Note: Volumetric data on blending components, such as oxygenates, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline.

Conventional Gasoline. Finished motor gasoline not included in the oxygenated or reformulated gasoline categories. Note: This category excludes reformulated gasoline blendstock for oxygenate blending (RBOB) as well as other blendstock.

OPRG. "Oxygenated Fuels Program Reformulated Gasoline" is reformulated gasoline which is intended for use in an oxygenated fuels program control area.

Oxygenated Gasoline (Including Gasohol). Oxygenated gasoline includes all finished motor

gasoline, other than reformulated gasoline, having oxygen content of 2.0 percent or higher by weight. Gasohol containing a minimum 5.7 percent ethanol by volume is included in oxygenated gasoline. Oxygenated gasoline was reported as a separate product from January 1993 until December 2003 inclusive. Beginning with monthly data for January 2004, oxygenated gasoline is included in conventional gasoline. Historical data for oxygenated gasoline excluded Federal Oxygenated Program Reformulated Gasoline (OPRG). Historical oxygenated gasoline data also excluded other reformulated gasoline with a seasonal oxygen requirement regardless of season.

Reformulated Gasoline. Finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. It includes gasoline produced to meet or exceed emissions performance and benzene content standards of federal-program reformulated gasoline even though the gasoline may not meet all of the composition requirements (e.g. oxygen content) of federal-program reformulated gasoline. Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) and Gasoline Treated as Blendstock (GTAB). Historical reformulated gasoline statistics included Oxygenated Fuels Program Reformulated Gasoline (OPRG).

Reformulated (Blended with Ether). Reformulated gasoline blended with an ether component (e.g. methyl tertiary butyl ether) at a terminal or refinery to raise the oxygen content.

Reformulated (Blended with Alcohol). Reformulated gasoline blended with an alcohol component (e.g. fuel ethanol) at a terminal or refinery to raise the oxygen content.

Reformulated (Non-Oxygenated). Reformulated gasoline without added ether or alcohol components.

Motor Gasoline Blending. Mechanical mixing of motor gasoline blending components, and oxygenates when required, to produce finished motor gasoline. Finished motor gasoline may be further mixed with other motor gasoline blending components or oxygenates, resulting in increased volumes of finished motor gasoline and/or changes in the formulation of finished motor gasoline (e.g., conventional motor

gasoline mixed with MTBE to produce oxygenated motor gasoline).

Motor Gasoline Blending Components.

Naphthas (e.g., straight-run gasoline, alkylate, reformate, benzene, toluene, xylenes) used for blending or compounding into finished motor gasoline. These components include reformulated gasoline blendstock for oxygenate blending (RBOB) but exclude oxygenates (alcohols, ethers), butane, and pentanes. Note: Oxygenates are reported as individual components and are included in the total for other hydrocarbons and oxygenates.

Conventional Blendstock for Oxygenate Blending (CBOB).

Conventional gasoline blendstock intended for blending with oxygenates downstream of the refinery where it was produced. CBOB must become conventional gasoline after blending with oxygenates. Motor gasoline blending components that require blending other than with oxygenates to become finished conventional gasoline are reported as All Other Motor Gasoline Blending Components. Excludes reformulated blendstock for oxygenate blending (RBOB).

Gasoline Treated as Blendstock (GTAB).

Non-certified Foreign Refinery gasoline classified by an importer as blendstock to be either blended or reclassified with respect to reformulated or conventional gasoline. GTAB is classified as either reformulated or conventional based on emissions performance and the intended end use.

Reformulated Blendstock for Oxygenate Blending (RBOB). Specially produced reformulated gasoline blendstock intended for blending with oxygenates downstream of the refinery where it was produced. Includes RBOB used to meet requirements of the Federal reformulated gasoline program and other blendstock intended for blending with oxygenates to produce finished gasoline that meets or exceeds emissions performance requirements of Federal reformulated gasoline (e.g. California RBOB and Arizona RBOB). Excludes conventional gasoline blendstocks for oxygenate blending (CBOB).

RBOB for Blending with Ether. Motor gasoline blending components intended to be blended with an ether component (e.g. methyl tertiary butyl ether) at a terminal or refinery to raise the oxygen content.

RBOB for Blending with Alcohol. Motor gasoline blending components intended to be blended with an alcohol component (e.g. fuel ethanol) at a terminal or refinery to raise the oxygen content.

All Other Motor Gasoline Blending Components.

Naphthas (e.g. straight-run gasoline, alkylate, reformate, benzene, toluene, xylenes) used for blending or compounding into finished motor gasoline. Includes receipts and inputs of Gasoline Treated as Blendstock (GTAB). Excludes conventional blendstock for oxygenate blending (CBOB), reformulated blendstock for oxygenate blending, oxygenates (e.g. fuel ethanol and methyl tertiary butyl ether), butane, and natural gasoline.

MTBE (Methyl tertiary butyl ether)

(CH₃)₃COCH₃. An ether intended for gasoline blending as described in Oxygenate definition.

Naphtha. A generic term applied to a petroleum fraction with an approximate boiling range between 122 degrees Fahrenheit and 400 degrees Fahrenheit.

Naphtha Less Than 401° F. See **Petrochemical Feedstocks.**

Naphtha-Type Jet Fuel. A fuel in the heavy naphtha boiling range having an average gravity of 52.8 degrees API, 20 to 90 percent distillation temperatures of 290 degrees to 470 degrees Fahrenheit, and meeting Military Specification MIL-T-5624L (Grade JP-4). It is used primarily for military turbojet and turboprop aircraft engines because it has a lower freeze point than other aviation fuels and meets engine requirements at high altitudes and speeds. Note: Beginning with January 2004 data, naphtha-type jet fuel is included in **Miscellaneous Products.**

Natural Gas. A gaseous mixture of hydrocarbon compounds, the primary one being **methane.**

Natural Gas Field Facility. A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to recover propane, normal butane, natural gasoline, etc., and to control the quality of natural gas to be marketed.

Natural Gas Liquids. Those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption,

condensation, adsorption, or other methods in gas processing or cycling plants. Generally such liquids consist of propane and heavier hydrocarbons and are commonly referred to as lease condensate, natural gasoline, and liquefied petroleum gases. Natural gas liquids include natural gas plant liquids (primarily ethane, propane, butane, and isobutane; see **Natural Gas Plant Liquids**) and lease condensate (primarily pentanes produced from natural gas at lease separators and field facilities; see **Lease Condensate**).

Natural Gas Plant Liquids. Those hydrocarbons in natural gas that are separated as liquids at natural gas processing plants, fractionating and cycling plants, and, in some instances, field facilities. Lease condensate is excluded. Products obtained include ethane; liquefied petroleum gases (propane, butanes, propane-butane mixtures, ethane-propane mixtures); isopentane; and other small quantities of finished products, such as motor gasoline, special naphthas, jet fuel, kerosene, and distillate fuel oil.

Natural Gas Processing Plant. Facilities designed to recover natural gas liquids from a stream of natural gas that may or may not have passed through lease separators and/or field separation facilities. These facilities control the quality of the natural gas to be marketed. Cycling plants are classified as gas processing plants.

Natural Gasoline and Isopentane. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Processors Association. Includes isopentane which is a saturated five-carbon branched-chain hydrocarbon, (C₅H₁₂), obtained by fractionation of natural gasoline or isomerization of normal pentane.

Net Receipts. The difference between total movements into and total movements out of each PAD District by pipeline, tanker, and barge.

Normal Butane. See **Butane**.

OPEC. The acronym for the Organization of Petroleum Exporting Countries, that have organized for the purpose of negotiating with oil companies on matters of oil production, prices and future concession rights. Current members are Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela. The Neutral Zone

between Kuwait and Saudi Arabia is considered part of OPEC. Prior to January 1, 1993, Ecuador was a member of OPEC. Prior to January 1995, Gabon was a member of OPEC.

Operable Capacity. The amount of capacity that, at the beginning of the period, is in operation; not in operation and not under active repair, but capable of being placed in operation within 30 days; or not in operation but under active repair that can be completed within 90 days. Operable capacity is the sum of the operating and idle capacity and is measured in barrels per calendar day or barrels per stream day.

Operating Capacity. The component of operable capacity that is in operation at the beginning of the period.

Operable Utilization Rate. Represents the utilization of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operable refining capacity of the units.

Operating Utilization Rate. Represents the utilization of the atmospheric crude oil distillation units. The rate is calculated by dividing the gross input to these units by the operating refining capacity of the units.

Other Hydrocarbons. Materials received by a refinery and consumed as a raw material. Includes hydrogen, coal tar derivatives, gilsonite, and natural gas received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

Other Oils Equal To or Greater Than 401° F. See **Petrochemical Feedstocks**.

Other Oxygenates. Other aliphatic alcohols and aliphatic ethers intended for motor gasoline blending (e.g., isopropyl ether (IPE) or n-propanol).

Oxygenated Gasoline. See Motor Gasoline (Finished).

Oxygenates. Substances which, when added to gasoline, increase the amount of oxygen in that gasoline blend. Fuel Ethanol, Methyl Tertiary Butyl Ether (MTBE), Ethyl Tertiary Butyl Ether (ETBE), and methanol are common oxygenates.

Fuel Ethanol. Blends of up to 10 percent by volume anhydrous ethanol (200 proof) (commonly referred to as the “gasohol waiver”).

Methanol. Blends of methanol and gasoline-grade tertiary butyl alcohol (GTBA) such that the total oxygen content does not exceed 3.5 percent by weight and the ratio of methanol to GTBA is less than or equal to 1. It is also specified that this blended fuel must meet ASTM volatility specifications (commonly referred to as the "ARCO" waiver).

Blends of up to 5.0 percent by volume methanol with a minimum of 2.5 percent by volume co-solvent alcohols having a carbon number of 4 or less (i.e., ethanol, propanol, butanol, and/or GTBA). The total oxygen must not exceed 3.7 percent by weight, and the blend must meet ASTM volatility specifications as well as phase separation and alcohol purity specifications (commonly referred to as the "DuPont" waiver).

MTBE (Methyl tertiary butyl ether). Blends up to 15.0 percent by volume MTBE which must meet the ASTM D4814 specifications. Blenders must take precautions that the blends are not used as base gasolines for other oxygenated blends (commonly referred to as the "Sun" waiver).

Pentanes Plus. A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. Includes isopentane, natural gasoline, and plant condensate.

Persian Gulf. The countries that comprise the Persian Gulf are: Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates.

Petrochemical Feedstocks. Chemical feedstocks derived from petroleum principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics. The categories reported are "Naphtha Less Than 401° F" and "Other Oils Equal To or Greater Than 401° F."

Naphtha less Than 401° F. A naphtha with a boiling range of less than 401 degrees Fahrenheit that is intended for use as a petrochemical feedstock.

Other Oils Equal To or Greater Than 401° F. Oils with a boiling range equal to or greater than 401 degrees Fahrenheit that are intended for use as a petrochemical feedstock.

Petroleum Administration for Defense (PAD) Districts. Geographic aggregations of the 50 States and the District of Columbia into five districts by the Petroleum Administration for Defense in 1950. These districts were originally defined during World War II for purposes of administering oil allocation.

Petroleum Coke. A residue high in carbon content and low in hydrogen that is the final product of thermal decomposition in the condensation process in cracking. This product is reported as marketable coke. The conversion is 5 barrels (of 42 U.S. gallons each) per short ton. Coke from petroleum has a heating value of 6.024 million Btu per barrel.

Marketable Coke. Those grades of coke produced in delayed or fluid cokers which may be recovered as relatively pure carbon. This "green" coke may be sold as is or further purified by calcining.

Catalyst Coke. The only catalytic coke used as a fuel is the coke on catalyst in the FCC process. In other catalytic processes there is coke deposited on catalyst, but it is not regenerated in a way such that the heat of combustion is recovered.

Petroleum Products. Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Pipeline (Petroleum). Crude oil and product pipelines used to transport crude oil and petroleum products respectively, (including interstate, intrastate, and intra-company pipelines) within the 50 States and the District of Columbia.

Plant Condensate. One of the natural gas liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

Processing Gain. The volumetric amount by which total output is greater than input for a given period of time. This difference is due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

Processing Loss. The volumetric amount by which total refinery output is less than input for a given period of time. This difference is due to the processing of crude oil into products which, in

total, have a higher specific gravity than the crude oil processed.

Product Supplied, Crude Oil. Crude oil burned on leases and by pipelines as fuel.

Production Capacity. The maximum amount of product that can be produced from processing facilities.

Products Supplied. Approximately represents consumption of petroleum products because it measures the disappearance of these products from primary sources, i.e., refineries, natural gas processing plants, blending plants, pipelines, and bulk terminals. In general, product supplied of each product in any given period is computed as follows: field production, plus refinery production, plus imports, plus unaccounted for crude oil, (plus net receipts when calculated on a PAD District basis), minus stock change, minus crude oil losses, minus refinery inputs, minus exports.

Propane (C₃H₈). A normally gaseous three-carbon straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.

Propylene (C₃H₆). An olefinic three-carbon hydrocarbon recovered from refinery processes or petrochemical processes.

Propylene (C₃H₆) (nonfuel use). Propylene that is intended for use in nonfuel applications such as petrochemical manufacturing. Nonfuel use propylene includes chemical-grade propylene, polymer-grade propylene, and trace amounts of propane. Nonfuel use propylene also includes the propylene component of propane/propylene mixes where the propylene will be separated from the mix in a propane/propylene splitting process. Excluded is the propylene component of propane/propylene mixes where the propylene component of the mix is intended for sale into the fuel market.

Refinery. An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas liquids, other hydrocarbons, and oxygenates.

Refinery-Grade Butane. See *Butane*.

Refinery Input, Crude Oil. Total crude oil (domestic plus foreign) input to crude oil

distillation units and other refinery processing units (cokers, etc.).

Refinery Input, Total. The raw materials and intermediate materials processed at refineries to produce finished petroleum products. They include crude oil, products of natural gas processing plants, unfinished oils, other hydrocarbons and oxygenates, motor gasoline and aviation gasoline blending components and finished petroleum products.

Refinery Production. Petroleum products produced at a refinery or blending plant. Published production of these products equals refinery production minus refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. Refinery production of unfinished oils, and motor and aviation gasoline blending components appear on a net basis under refinery input.

Refinery Yield. Refinery yield (expressed as a percentage) represents the percent of finished product produced from input of crude oil and net input of unfinished oils. It is calculated by dividing the sum of crude oil and net unfinished input into the individual net production of finished products. Before calculating the yield for finished motor gasoline, the input of natural gas liquids, other hydrocarbons and oxygenates, and net input of motor gasoline blending components must be subtracted from the net production of finished motor gasoline. Before calculating the yield for finished aviation gasoline, input of aviation gasoline blending components must be subtracted from the net production of finished aviation gasoline.

Reformulated Gasoline. See *Motor Gasoline (Finished)*.

Residual Fuel Oil. A general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations. It conforms to ASTM Specifications D 396 and D 975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in steam-powered vessels in government service and inshore power plants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production of electric

power, space heating, vessel bunkering, and various industrial purposes.

Residuum. Residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1000 degrees Fahrenheit.

Road Oil. Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

Shell Storage Capacity. The design capacity of a petroleum storage tank which is always greater than or equal to working storage capacity.

Special Naphthas. All finished products within the naphtha boiling range that are used as paint thinners, cleaners, or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836 and D484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Steam (Purchased). Steam, purchased for use by a refinery that was not generated from within the refinery complex.

Still Gas (Refinery Gas). Any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylenes, propane, propylene, etc. Still gas is used as a refinery fuel and a petrochemical feedstock. The conversion factor is 6 million BTU's per fuel oil equivalent barrel.

Stock Change. The difference between stocks at the beginning of the reporting period and stocks at the end of the reporting period. Note: A negative number indicates a decrease (i.e., a drawdown) in stocks and a positive number indicates an increase (i.e., a buildup) in stocks during the reporting period.

Strategic Petroleum Reserve (SPR). Petroleum stocks maintained by the Federal Government for use during periods of major supply interruption.

Sulfur. A yellowish nonmetallic element, sometimes known as "brimstone." It is present at

various levels of concentration in many fossil fuels whose combustion releases sulfur compounds that are considered harmful to the environment. Some of the most commonly used fossil fuels are categorized according to their sulfur content, with lower sulfur fuels usually selling at a higher price. Note: No. 2 Distillate fuel is currently reported as having either a 0.05 percent or lower sulfur level for on-highway vehicle use or a greater than 0.05 percent sulfur level for off-highway use, home heating oil, and commercial and industrial uses. This also includes Ultra Low Sulfur Diesel (<15 ppm sulfur). Residual fuel, regardless of use, is classified as having either no more than 1 percent sulfur or greater than 1 percent sulfur. Coal is also classified as being low-sulfur at concentrations of 1 percent or less or high-sulfur at concentrations greater than 1 percent.

Supply. The components of petroleum supply are field production, refinery production, imports, and net receipts when calculated on a PAD District basis.

TAME (Tertiary amyl methyl ether) $(CH_3)_2(C_2H_5)COCH_3$. An oxygenate blend stock formed by the catalytic etherification of isoamylene with methanol.

Tank Farm. An installation used by gathering and trunk pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

Tanker and Barge. Vessels that transport crude oil or petroleum products. Data are reported for movements between PAD Districts; from a PAD District to the Panama Canal; or from the Panama Canal to a PAD District.

TBA (Tertiary butyl alcohol) $(CH_3)_3COH$. An alcohol primarily used as a chemical feedstock, a solvent or feedstock for isobutylene production for MTBE; produced as a co-product of propylene oxide production or by direct hydration of isobutylene.

Thermal Cracking. A refining process in which heat and pressure are used to break down, rearrange, or combine hydrocarbon molecules. Thermal cracking includes gas oil, visbreaking, fluid coking, delayed coking, and other thermal cracking processes (e.g., Flexicoking). See individual categories for definition.

Toluene $(C_6H_5CH_3)$. Colorless liquid of the aromatic group of petroleum hydrocarbons, made by the catalytic reforming of petroleum naphthas containing methyl cyclohexane. A

high-octane gasoline-blending agent, solvent, and chemical intermediate, base for TNT.

Unaccounted for Crude Oil. Represents the arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Unfinished Oils. All oils requiring further processing, except those requiring only mechanical blending. Unfinished oils are produced by partial refining of crude oil and include naphthas and lighter oils, kerosene and light gas oils, heavy gas oils, and residuum.

Unfractionated Streams. Mixtures of unsegregated natural gas liquid components excluding, those in plant condensate. This product is extracted from natural gas.

United States. The United States is defined as the 50 States and the District of Columbia.

Vacuum Distillation. Distillation under reduced pressure (less than atmospheric) which lowers the boiling temperature of the liquid being distilled. This technique prevents cracking or

decomposition of the charge stock which occurs above 1000°F.

Visbreaking. A thermal cracking process in which heavy atmospheric or vacuum-still bottoms are cracked at moderate temperatures to increase production of distillate products and reduce viscosity of the distillation residues.

Wax. A solid or semi-solid material consisting of a mixture of hydrocarbons obtained or derived from petroleum fractions, or through a Fischer-Tropsch type process, in which the straight-chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point (ASTM D 938) between 100 and 200 degrees Fahrenheit and a maximum oil content (ASTM D 3235) of 50 weight percent.

Working Storage Capacity. The difference in volume between the maximum safe fill capacity and the quantity below which pump suction is ineffective (bottoms).

Xylenes ($C_6H_4(CH_3)_2$). Colorless liquid of the aromatic group of hydrocarbons made the catalytic reforming of certain naphthenic petroleum fractions. Used as high-octane motor and aviation gasoline blending agents, solvents, chemical intermediates. Isomers are metaxylene, orthoxylene, paraxylene.

Notes

Notes



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