



# PETROLEUM WATCH

## California Energy Commission

### August 2016

## Recent Petroleum News and Outside Analyses

### Prices

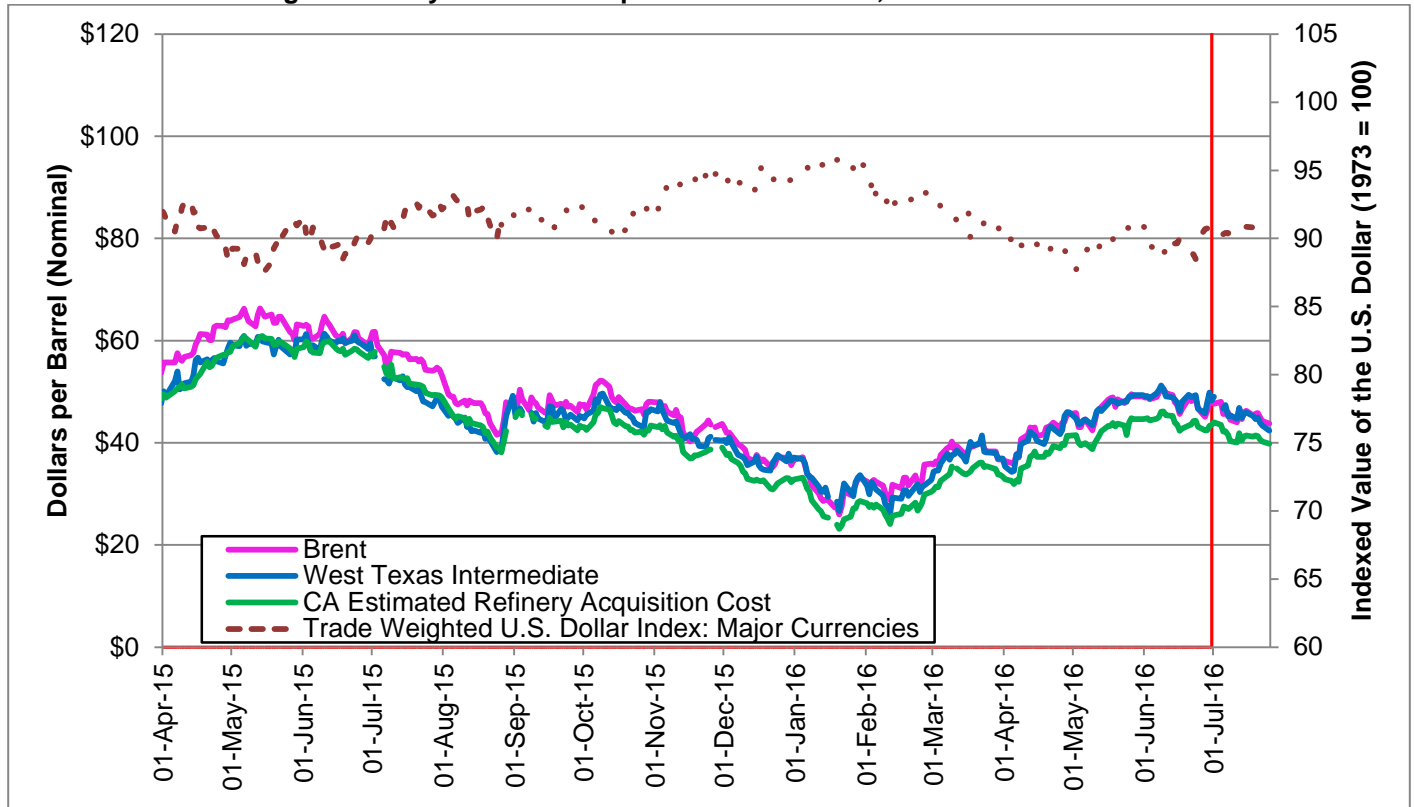
- **Crude Oil Prices:** Prices have reversed their recent uptrend: Brent and West Texas Intermediate (WTI) crude prices closed at \$42.40 and \$43.76 on July 25, respectively, down about 15 percent from the June peak. Prices are 10 to 20 percent below year-ago levels.
- **California Retail Gasoline Prices:** On July 25, prices had reached \$2.79, a drop of \$0.14 since the end of June. Through July 25, California prices averaged \$0.62 higher than the national average.
- **California Retail Diesel Prices:** On July 25, prices had reached \$2.76, a decrease of \$0.04 from the end of June. Through July 25 California prices averaged \$0.39 higher than the national average.

### Refining News

- **PBF Energy Torrance Refinery:** On July 1, PBF Energy completed the purchase of the Torrance refinery from ExxonMobil. On July 11, the Fluid Catalytic Converter (FCC) and Hydrotreater units experienced an unplanned outage, but were restarted later in the week.
- **Chevron El Segundo Refinery:** On June 22, the FCC unit was unexpectedly shut down for about three days. On July 22, the FCC unit was again unexpectedly shut down for about three days.

# Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, June 2014 to Present



Source: U.S. Energy Information Administration (U.S. EIA), Oil Price Information Service (OPIS), and Federal Reserve Bank of St. Louis.  
 Note: All vertical red lines on graphs indicate the start of new data since last month's Petroleum Watch.

As of July 25, crude oil prices reversed the trend in effect for most of the year and fell from the June 8 highs of \$51 per barrel (Figure 1). WTI has fallen nearly \$9 from its high to \$42.40, a 17 percent fall. Brent prices have not fallen quite as much, dropping nearly \$7 to \$43.76, a 14 percent decline.

Crude oil prices remain well above their January lows of \$26 to \$27, but have fallen below year-ago levels, as seen in the table at right. Throughout this period, the average price paid by California refiners has remained about \$4 lower than either the Brent or WTI prices.

## Crude Oil Prices

### July 2016 vs 2015 (Percent Change)

Brent	19% lower
WTI	11% lower
CA-RAC <sup>1</sup>	21% lower

### July 2016 Averages

Brent	\$45.59
WTI	\$45.39
CA-RAC	\$41.39

### July 25, 2016

Brent	\$43.76
WTI	\$42.40
CA-RAC	\$39.82

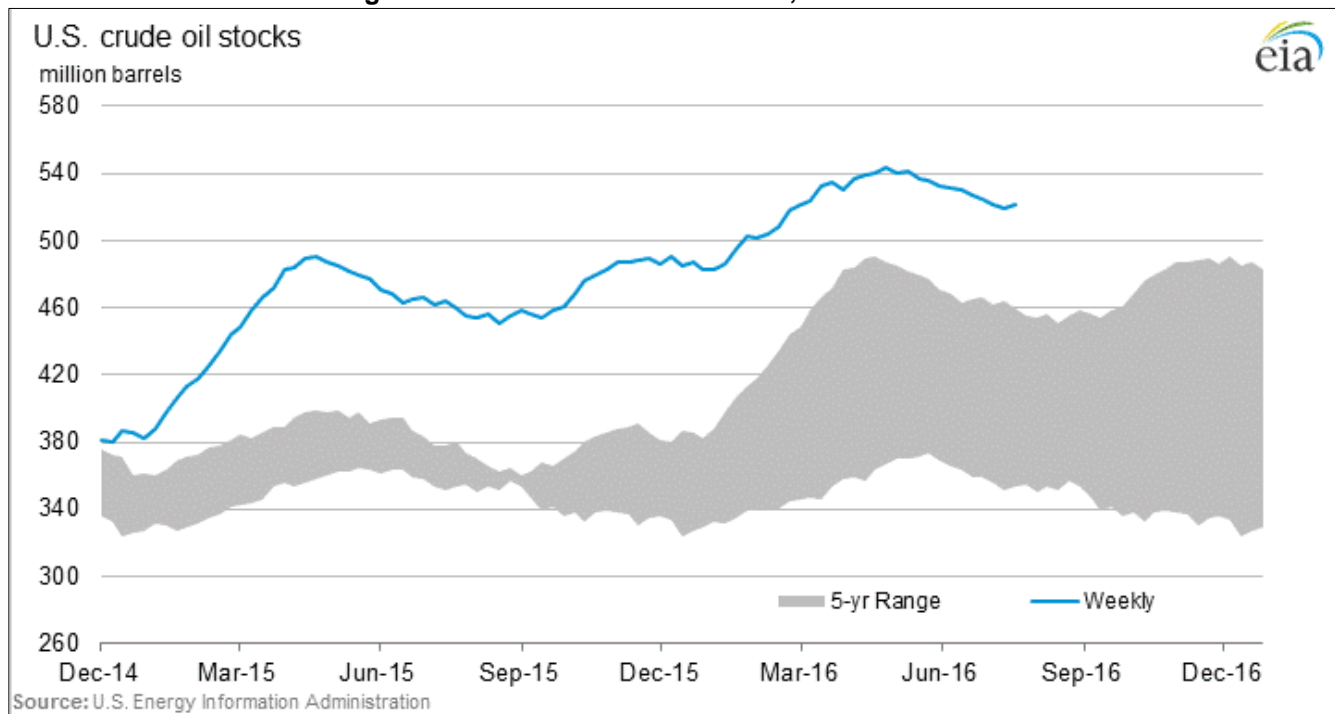
<sup>1</sup> California estimated refiner acquisition cost is an estimate of the average price of crude oil paid by California refineries. Energy Commission staff estimate a weighted average of the prices of California (San Joaquin Valley) crude, Alaskan crude, and foreign crude.

# Crude Oil Production and Storage

U.S. crude oil inventories have decreased slightly over the past month (Figure 2). The high inventories have served as a cap on crude oil prices, which have fallen to \$42 per barrel from the June highs of \$51. A decline in domestic crude oil production has been nearly offset by an increase in imports. Output from the Organization of the Petroleum Exporting Countries (OPEC) producers remains fairly steady.

- U.S. crude oil production for July is estimated by EIA at 8.5 million barrels per day (bpd), down from 8.6 million barrels in June. This is a 1 million bpd decline from year-ago production levels. Imports, on the other hand, have increased: in July they are estimated at 8.2 million bpd, up from 8.0 million bpd in June. Compared to year-ago imports, this is an increase of 750 thousand bpd, which offsets most of the decline in U.S. production.
- Crude oil inventories in the U. S. fell by 5 million barrels during July to 521 million barrels. Although inventories have fallen since they peaked at the end of April, this decline is less than the decline in 2015: 1.9 million barrels per week (bpw) in 2016 compared to 2.3 million bpw in 2015. This means that inventories have increased relative to the already high levels of 2015.
- Since the beginning of May 2016, U.S. crude oil refinery inputs have tracked 2015 levels very closely (16.7 and 16.8 million bpd respectively in July). U.S. refineries have not increased their consumption of crude oil in response to the higher inventories. While it is possible that U.S. refineries could increase crude oil consumption and export the corresponding increase in gasoline and diesel production, this is not the case in 2016.

**Figure 2: U.S. Crude Oil Inventories, June 2014 to Present**

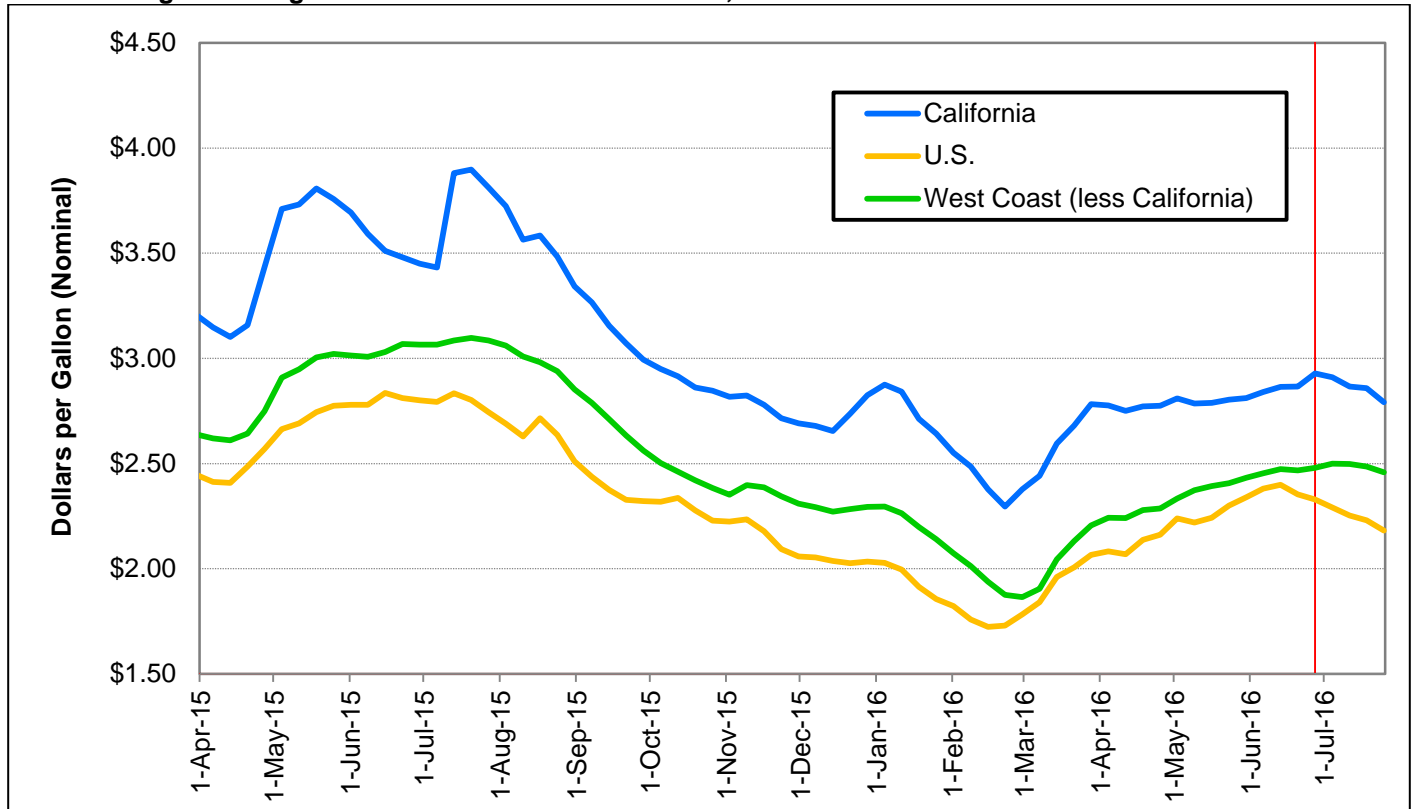


Source: U.S. EIA

- According to May data from OPEC, Saudi Arabian crude output remained unchanged from April's revised figure at 10.2 million bpd. Total May OPEC production declined to 32.4 million bpd, down 100 thousand bpd since April. The fall is due largely to a production decline in Nigeria, which has been undergoing substantial unrest, with oil industry facilities often the target of attacks.

# Gasoline and Diesel Retail Prices

Figure 3: Regular Grade Gasoline Retail Prices, California vs. West Coast vs. United States



Source: U.S. EIA

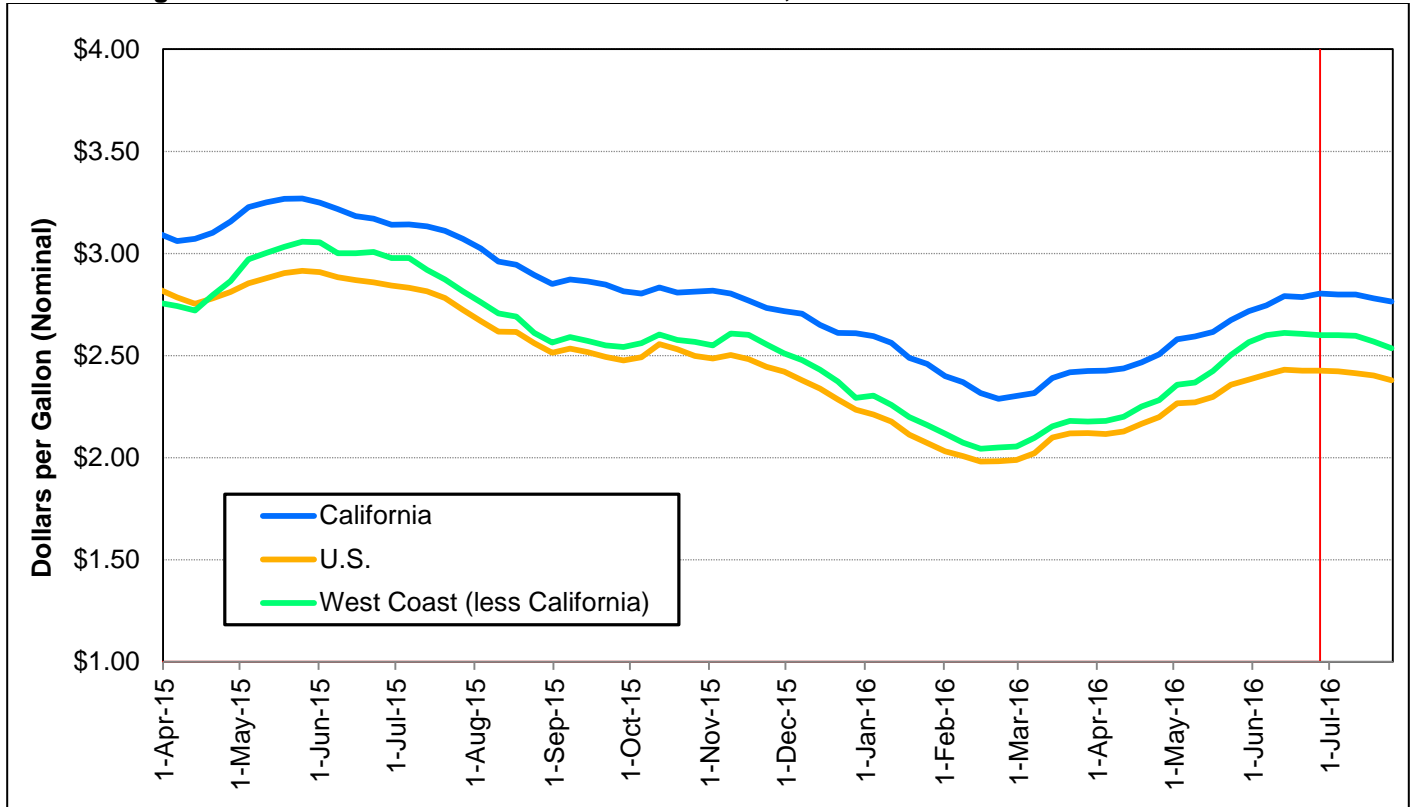
Breaking an uptrend that ended in late June, average California gasoline prices fell throughout July, reaching \$2.79 during the week of July 25 (Figure 3). Through July 25, the monthly average retail price fell to \$2.86, only a penny lower than the June average. Prices have fallen substantially from the July 2015 average of \$3.76.

California prices ended June at \$2.93, the 2016 high, and have fallen every week since then. U.S. prices peaked two weeks earlier, on June 10, and have also fallen every week since the peak of \$2.40. The two-week delay in the decline of California prices could be due to the low level of inventories in Southern California, which bottomed on June 10 (see Figure 10), when the Torrance refinery resumed full operations. Building gasoline inventories for the subsequent two weeks would typically exert downward pressure on prices.

Through the week of July 25, California prices averaged \$0.62 higher than the average U.S. price, a penny less than the July 2015 average. The July difference is bigger than the June difference of \$0.51 because U.S. prices began to decline earlier.

<b>Gasoline Prices</b>	
<b>July 2016 vs 2015</b>	
<b>(Percent Change)</b>	
California	24% lower
U.S.	20% lower
West Coast	19% lower
<b>July 2016 Averages</b>	
California	\$2.86
U.S.	\$2.24
West Coast	\$2.49
<b>Week of July 25, 2016</b>	
California	\$2.79
U.S.	\$2.18
West Coast	\$2.46

**Figure 4: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States**



Source: U.S. EIA

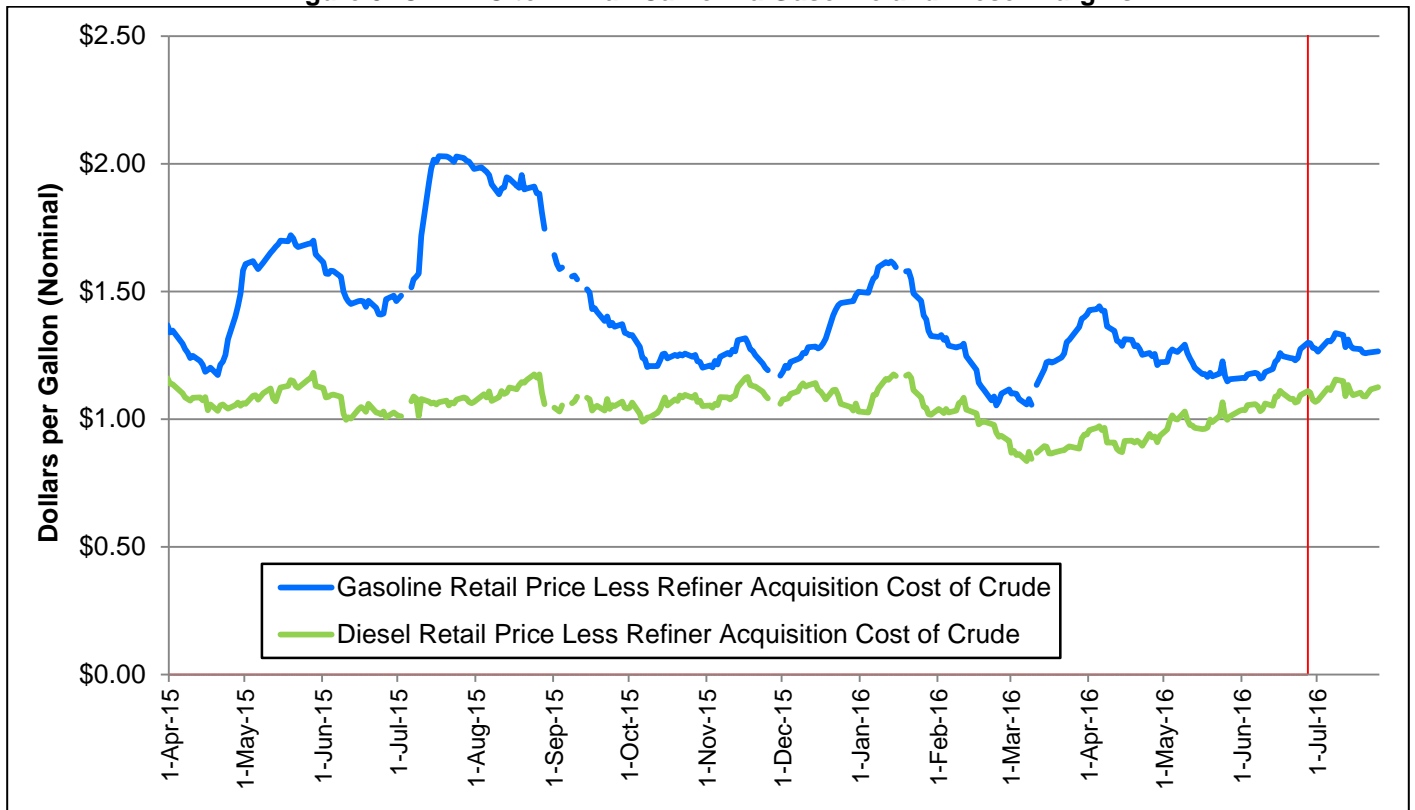
California’s diesel prices also fell throughout July, reaching \$2.76 during the week of July 25 (**Figure 4**). Nevertheless, the monthly average price through July 25 rose by a penny from the June average to \$2.79. Although the July monthly average is the highest of the year, it is \$0.33 lower than July 2015 prices.

California prices ended June at \$2.80, the 2016 high, remained unchanged through mid-July, and have fallen since. U.S. prices peaked two weeks earlier, just like gasoline prices, but fell every week since the peak of \$2.43. Through July 25, California prices averaged \$0.39 higher than average U.S. prices, \$0.04 more than the 2016 average.

In January 2015, diesel sold at a premium of \$0.66 to gasoline. Then in February 2015, the explosion at the ExxonMobil refinery in Torrance reduced in-state gasoline refining capacity. Since then diesel has been priced at an average discount of \$0.23 to the price of gasoline. In July, the price of diesel averaged \$0.07 lower than the price of gasoline. This is the smallest differential of 2016.

<b><u>Diesel Prices</u></b>	
<b><u>July 2016 vs 2015</u></b>	
<b>(Percent Change)</b>	
<b>California</b>	<b>11% lower</b>
<b>U.S.</b>	<b>14% lower</b>
<b>West Coast</b>	<b>11% lower</b>
<b><u>July 2016 Averages</u></b>	
<b>California</b>	<b>\$2.79</b>
<b>U.S.</b>	<b>\$2.40</b>
<b>West Coast</b>	<b>\$2.58</b>
<b><u>Week of July 25, 2016</u></b>	
<b>California</b>	<b>\$2.76</b>
<b>U.S.</b>	<b>\$2.38</b>
<b>West Coast</b>	<b>\$2.54</b>

**Figure 5: CA-RAC to Ex-Tax California Gasoline and Diesel Margins**



Source: U.S. EIA and OPIS

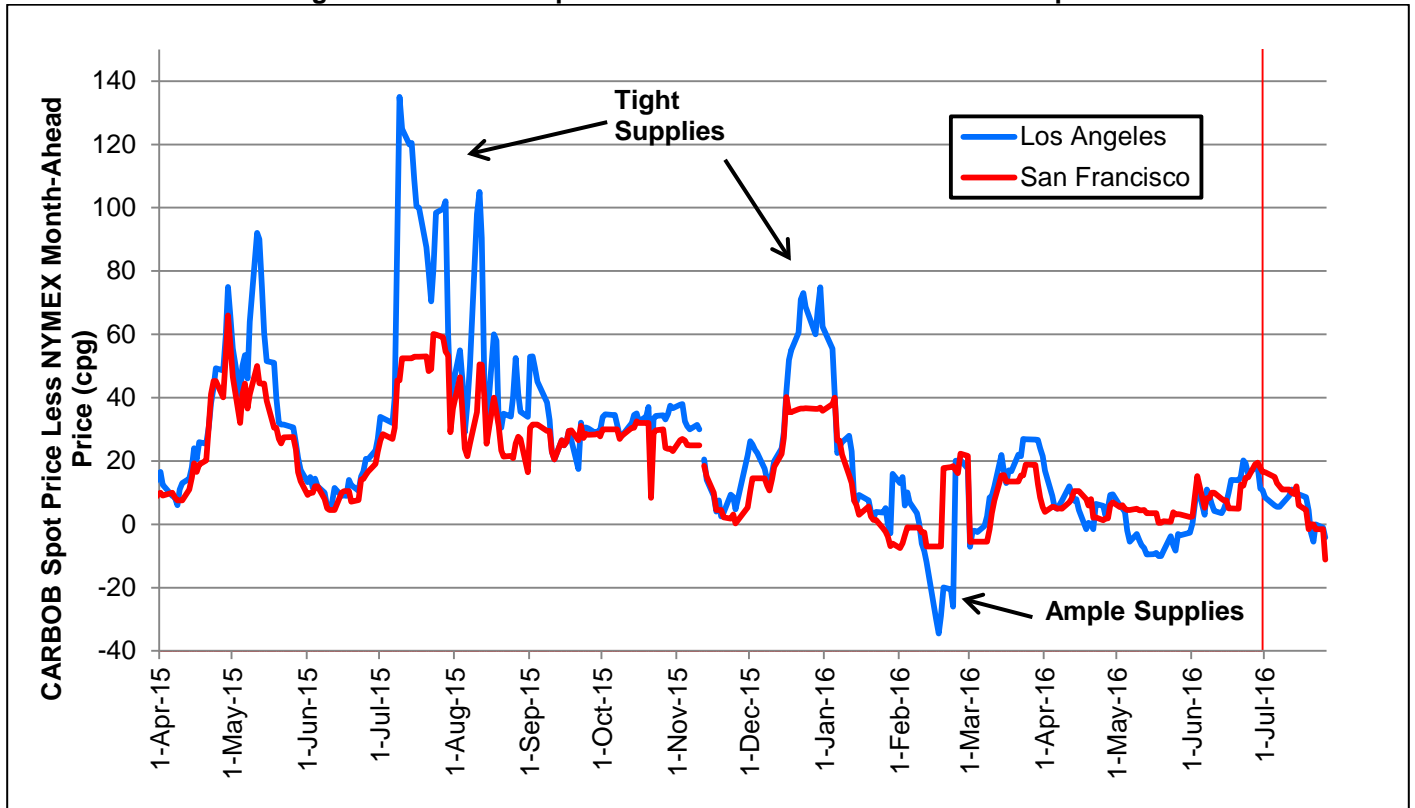
The difference between the ex-tax California retail gasoline price and the California refiner acquisition cost of crude—which includes the cost of refining, wholesaling, and retailing—stayed within \$0.04 of the June 27 level of \$1.30 (Figure 5). There has been no trend since then, and the difference ended at \$1.27 on July 25.

Similarly, the difference between the ex-tax California retail diesel price and the California refiner acquisition cost of crude stayed within a nickel of the June 27 level of \$1.11. The difference ended at \$1.13 on July 25.

Gasoline markets appear to have achieved the same stability as diesel markets have shown over much of the past year. This is due to the Torrance refinery outage affecting primarily the gasoline market.

<u>Crude to Retail Margins</u>	
<u>July 2016 vs 2015</u>	
<b>(Percent Change)</b>	
<b>Gasoline</b>	<b>31% lower</b>
<b>Diesel</b>	<b>5% higher</b>
<u>July 2016 Averages</u>	
<b>Gasoline</b>	<b>\$1.29</b>
<b>Diesel</b>	<b>\$1.11</b>
<u>July 25, 2016</u>	
<b>Gasoline</b>	<b>\$1.27</b>
<b>Diesel</b>	<b>\$1.13</b>

**Figure 6: California Spot Gasoline to NYMEX Futures Price Spread**



Source: U.S. EIA and OPIS

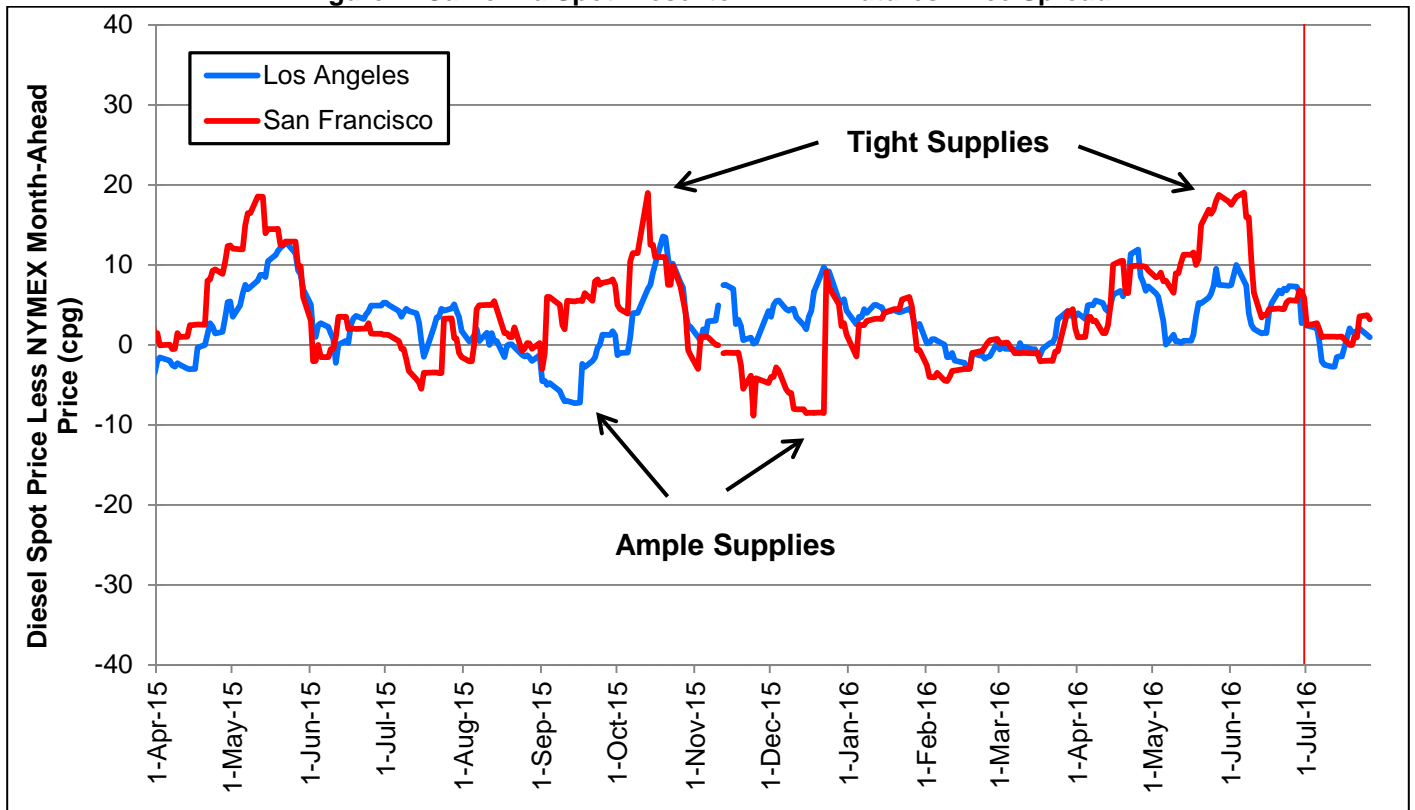
During July, the Los Angeles (LA) spot less NYMEX futures spread fell from its recent peak of \$0.20 on June 22 into negative territory at -\$0.04 on July 26. The San Francisco (SF) spot less NYMEX futures spread also decreased during July, dropping from its peak of \$0.19 on June 28 into negative territory at -\$0.11 on July 26 (**Figure 6**).

The monthly average for the LA-less-NYMEX spread decreased from \$0.11 in June to \$0.05 in July. The SF-less-NYMEX spread closely followed the LA spread and decreased from \$0.11 in June to \$0.06 in July.

Both the LA-less-NYMEX and SF-less-NYMEX spreads are much lower than a year ago, likely due to the Torrance refinery restart. The LA and SF spreads are much closer to each other than they were during the Torrance outage, which lasted from February 18, 2015 to May 10, 2016. This is because the Torrance refinery outage had a bigger impact on the local market in the Los Angeles area.

<u>Gasoline Spot-Futures Spread</u>	
<u>July 2016 vs 2015</u>	
(cents)	
Los Angeles	77¢ lower
San Francisco	44¢ lower
<u>July 2016 Averages</u>	
Los Angeles	5¢
San Francisco	6¢
<u>July 26, 2016</u>	
Los Angeles	-4¢
San Francisco	-11¢

**Figure 7: California Spot Diesel to NYMEX Futures Price Spread**



Source: U.S. EIA and OPIS

The LA-less-NYMEX spread decreased from \$0.03 on June 30 to a penny on July 25. The SF-less-NYMEX spread was a little higher for most of the month, decreasing from \$0.06 to \$0.03 over the same period (Figure 7).

The monthly average LA-less-NYMEX spread decreased from \$0.05 in June to zero in July, which is \$0.03 lower than a year ago. The monthly average SF-less-NYMEX spread decreased from \$0.08 to \$0.02 over the same period, and is \$0.03 higher than a year ago.

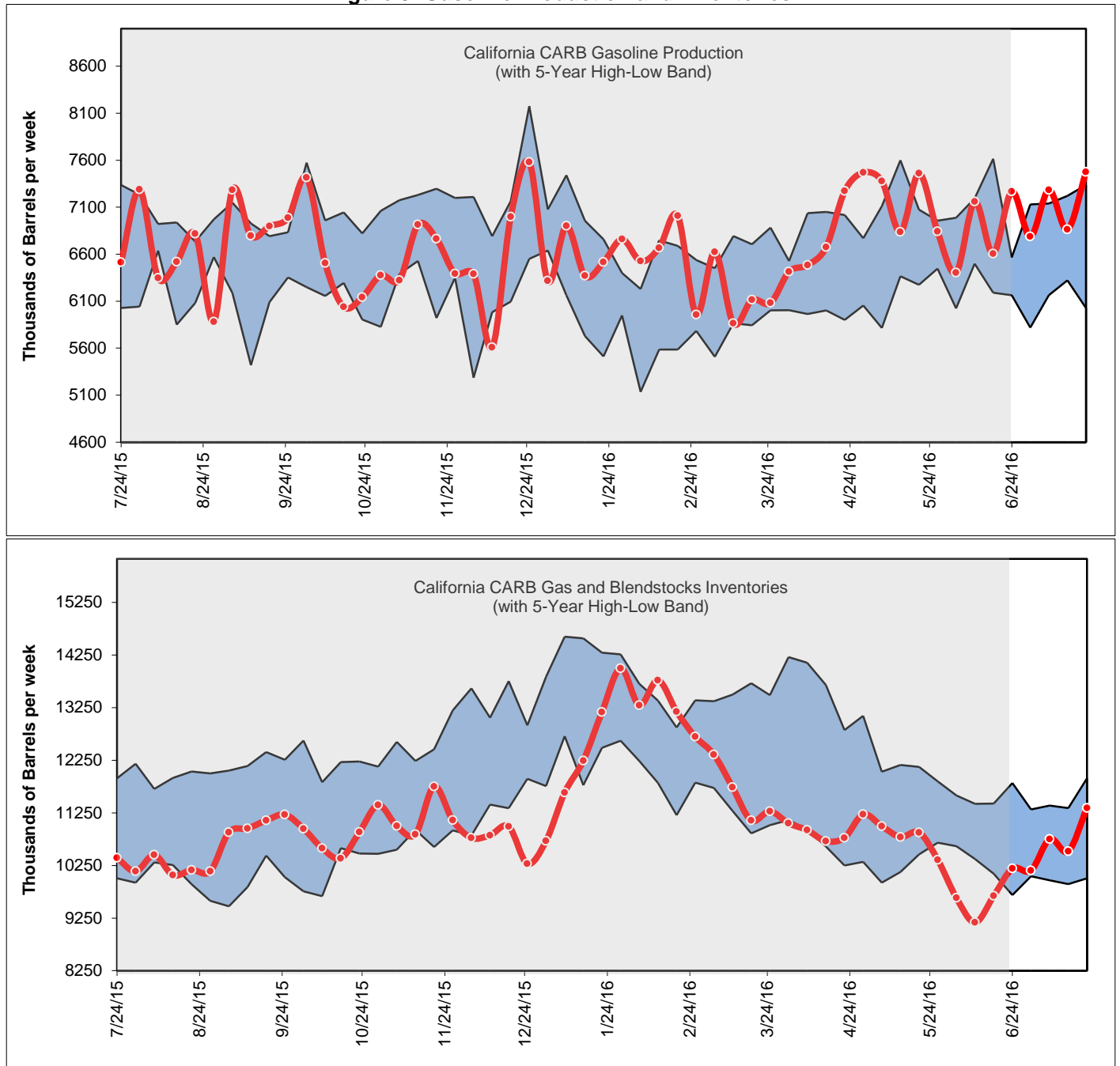
For over a year, both diesel spreads have been stable compared to gasoline spreads. Throughout the past fifteen months spreads have stayed between \$0.20 and -\$0.10. The two gasoline spreads, on the other hand, ranged between \$1.40 and -\$0.40, with a downward trend during the past year.

<u>Diesel Spot–Futures Spread</u>	
<u>July 2016 vs 2015</u>	
(cents)	
Los Angeles	3¢ lower
San Francisco	3¢ higher
<u>July 2016 Averages</u>	
Los Angeles	0¢
San Francisco	2¢
<u>July 26, 2016</u>	
Los Angeles	1¢
San Francisco	3¢



# California Gasoline and Diesel Production and Inventories

**Figure 8: Gasoline Production and Inventories**



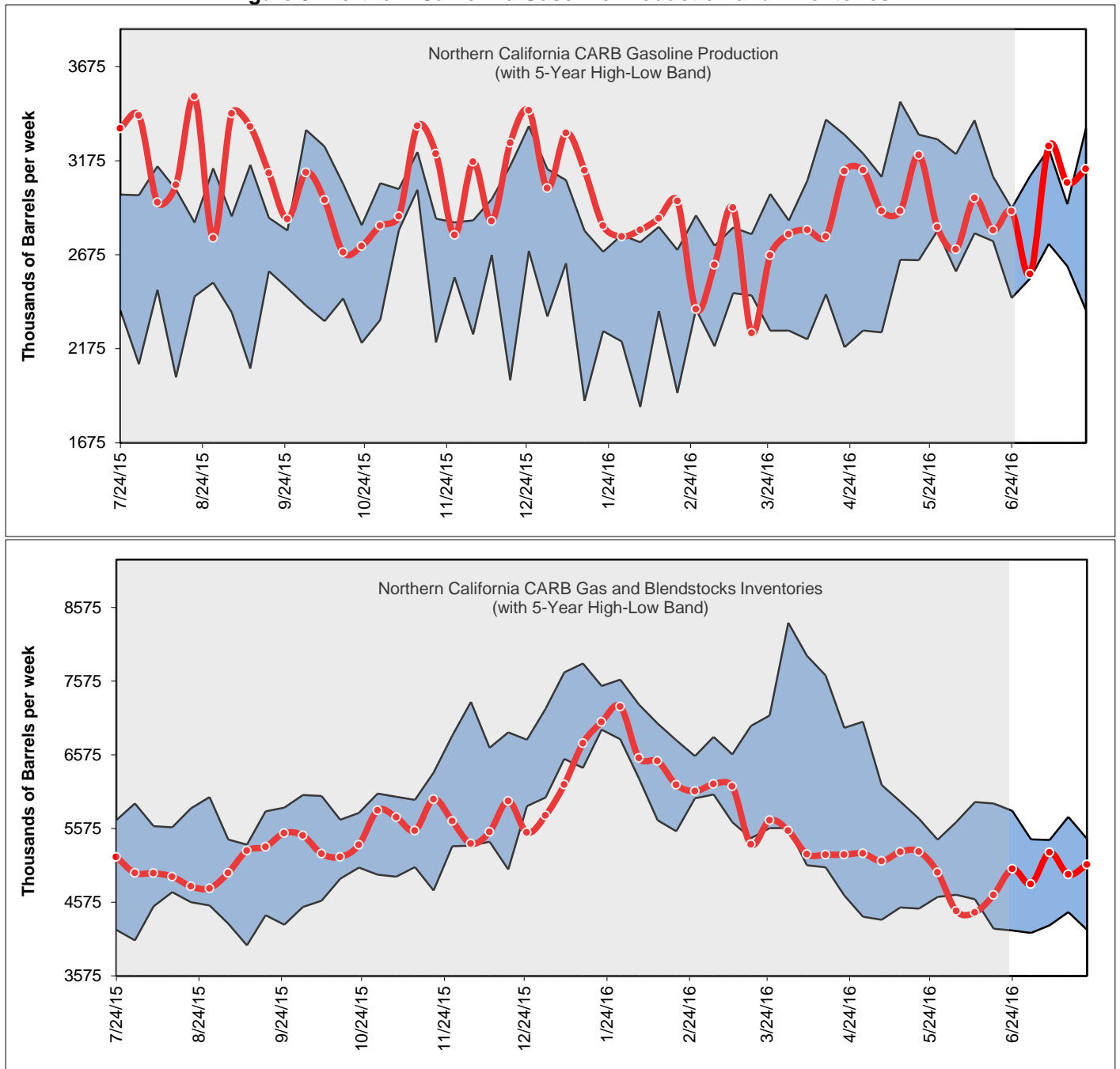
Source: PIIRA data

Note: All shaded areas on graphs indicate previous report data. Unshaded areas indicate new data since last month's *Petroleum Watch*.

During the weeks of June 24 to July 22, California gasoline production remained near or above five-year highs, in spite of weekly oscillations (**Figure 8**). This continues a pattern that began in June, weekly oscillations that move in a gradual upward trend, and that occurs to weaker, irregular degrees in both Northern and Southern California.

California gasoline inventories increased over the same period. They are approaching the five-year high, marking a sharp change from early June, when inventories were well below the five-year low due to an inventory build in Southern California.

**Figure 9: Northern California Gasoline Production and Inventories**

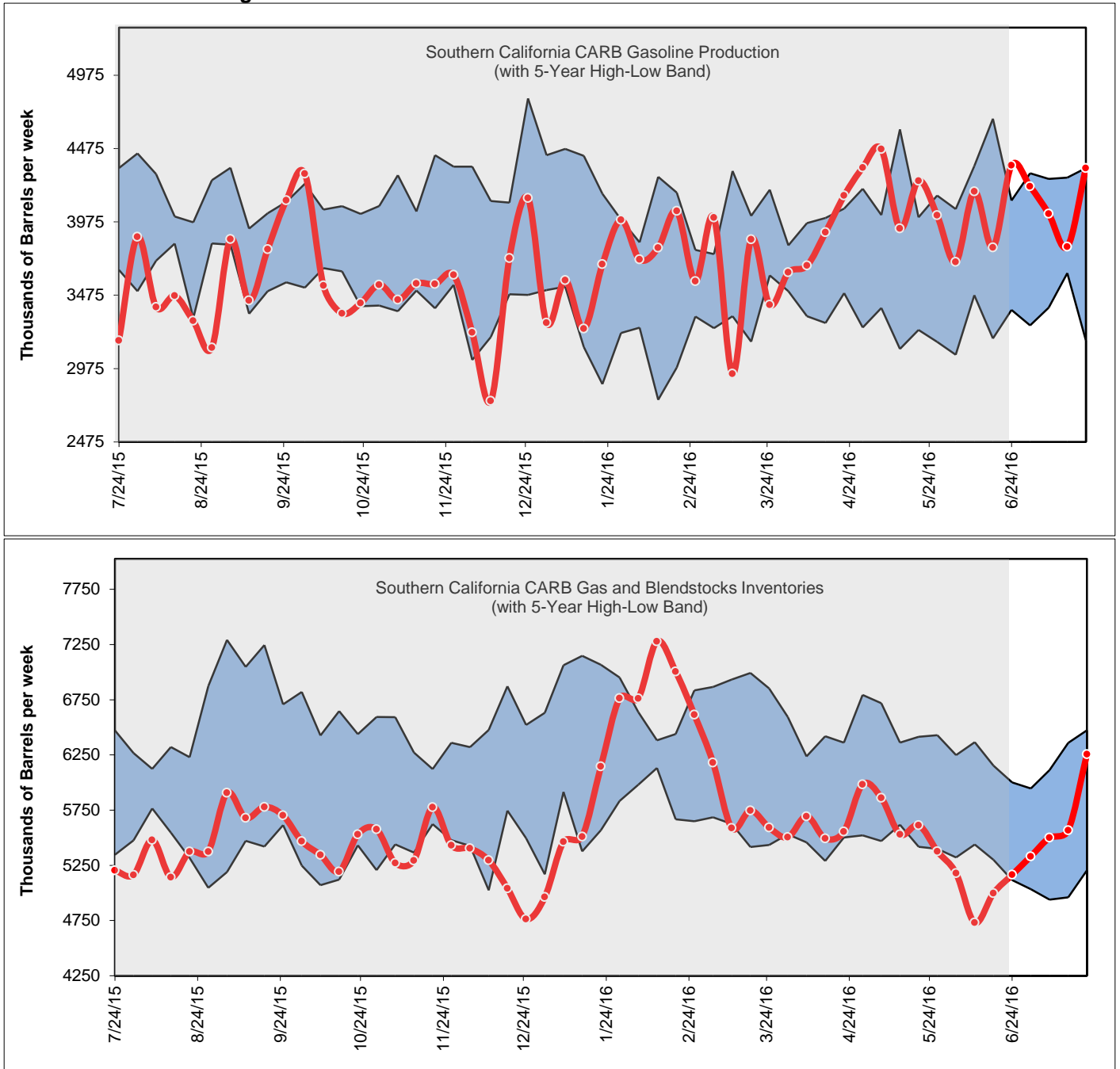


Source: PIIRA data

During the weeks of July 8 to July 22, Northern California gasoline production was near or just above the five-year highs, a sharp increase from July 1, when production was at the five-year low (**Figure 9**). July production shows higher volatility than the April-to-June period, when production stayed entirely within the five-year bands.

Northern California gasoline inventories followed the statewide pattern seen in **Figure 8**. They showed a smaller increase than statewide inventories, having been closer to or within the five-year bands in June.

**Figure 10: Southern California Gasoline Production and Inventories**

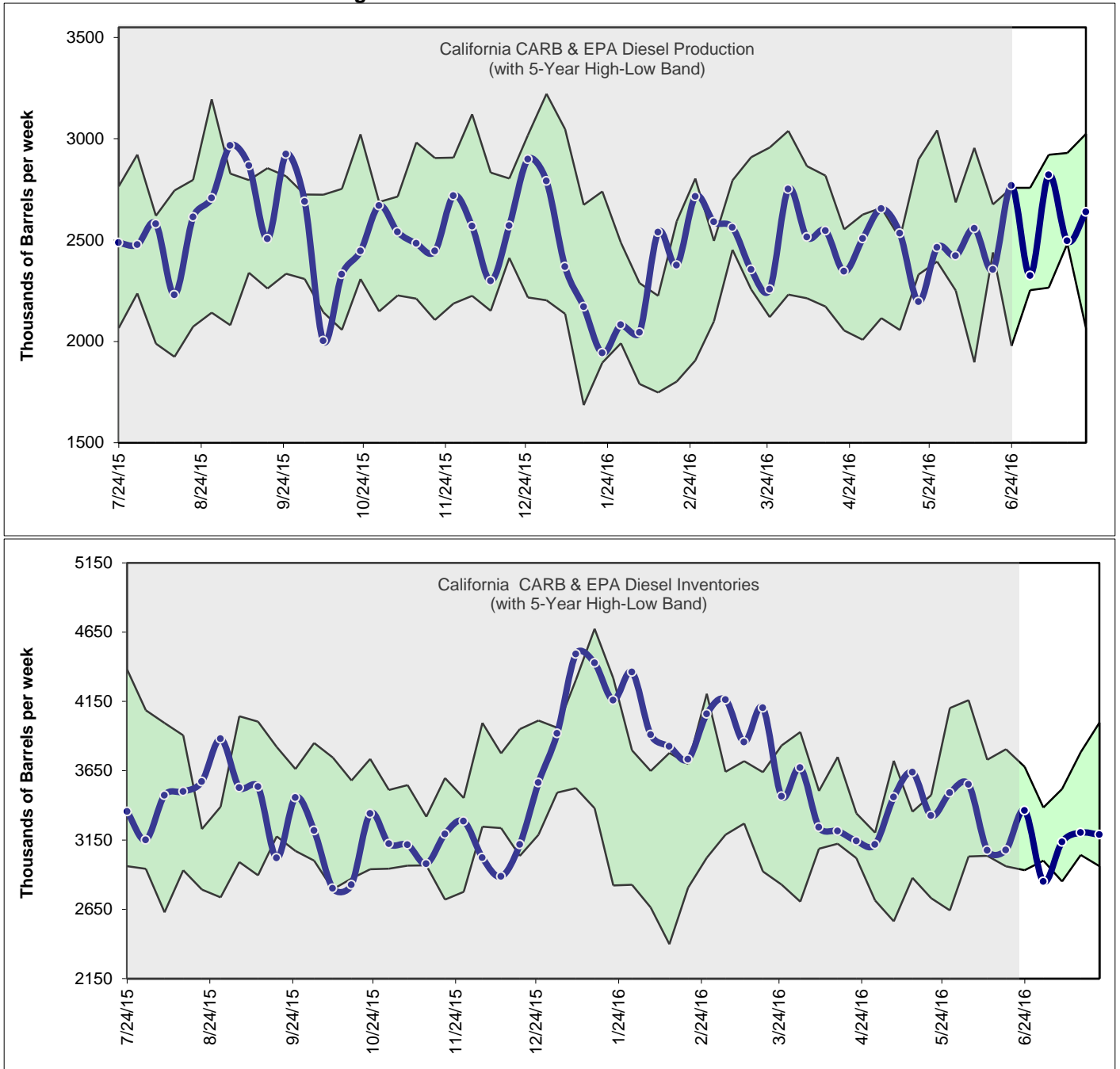


Source: PIIRA data

Since June 24, Southern California gasoline production fell for three weeks, only to regain the June 24 high on July 22. Since May 6, production has varied, with occasional peaks above the five-year highs, but has not shown either a rising or declining trend (see **Figure 10**). The May–July period shows distinctly higher production than the past 52 weeks, which could be explained by the restart of the Torrance refinery.

Inventory levels have increased since June 10, when they were both below the five-year low and at a 52-week low. This trend could be the result of the higher production that has occurred since the restart of the Torrance refinery.

**Figure 11: Diesel Production and Inventories**



Source: PIIRA data

Since May 27, California diesel production has moved in opposite directions from week to week. It has remained within the five-year band during this period (**Figure 11**). For the past 52 weeks, production has remained fairly stable, never moving far from the five-year band, which was breached on just nine occasions. Gasoline production, breached the five-year bands on 19 occasions during the same period.

California diesel inventories have been moving in a pattern of lower peaks and lower valleys since the January 8 peak. They fell from 4.5 million barrels at that time to 3.2 million barrels for the week of July 22. This cannot be entirely explained by seasonality, since January 8 and seven other weeks through May 13 exceeded the five-year high, and the five-year low was only breached during the week of July 1.