PETROLEUM WATCH
California Energy Commission
August 2015

Recent Petroleum News and Outside Analyses

Prices

- **California Gasoline Prices:** Gasoline price differences between California and the rest of the United States increased from $0.77 above the national average in June to $1.10 during the third week in July.
- **California Diesel Prices:** In contrast to gasoline, the diesel price difference between California and the rest of the United States rose by just $0.01, from $0.32 in June to $0.33 during the week of July 20.

Refining News

- **Tesoro Corporation:** Stopped sales of unbranded wholesale gasoline in Southern California and Northern California, following a sharp spike in Los Angeles gasoline prices due to tight supply in early July.
- **Tesoro Carson Refinery:** Planned maintenance has been ongoing during July.
- **Plains All American Crude Oil Line 903:** This line remains closed and reduces crude oil shipments to the Phillips 66 Santa Maria Refinery by roughly 44,500 barrels per day.
- **Phillips 66 Santa Maria Refinery:** The Santa Maria Refinery continues to operate at restricted levels and Phillips has accelerated planned maintenance activities at the refinery.
- **Exxon Mobil Torrance Refinery:** Refinery crude oil processing units remains offline for maintenance. Minimal blending component processing is occurring.

State and Federal Policy News

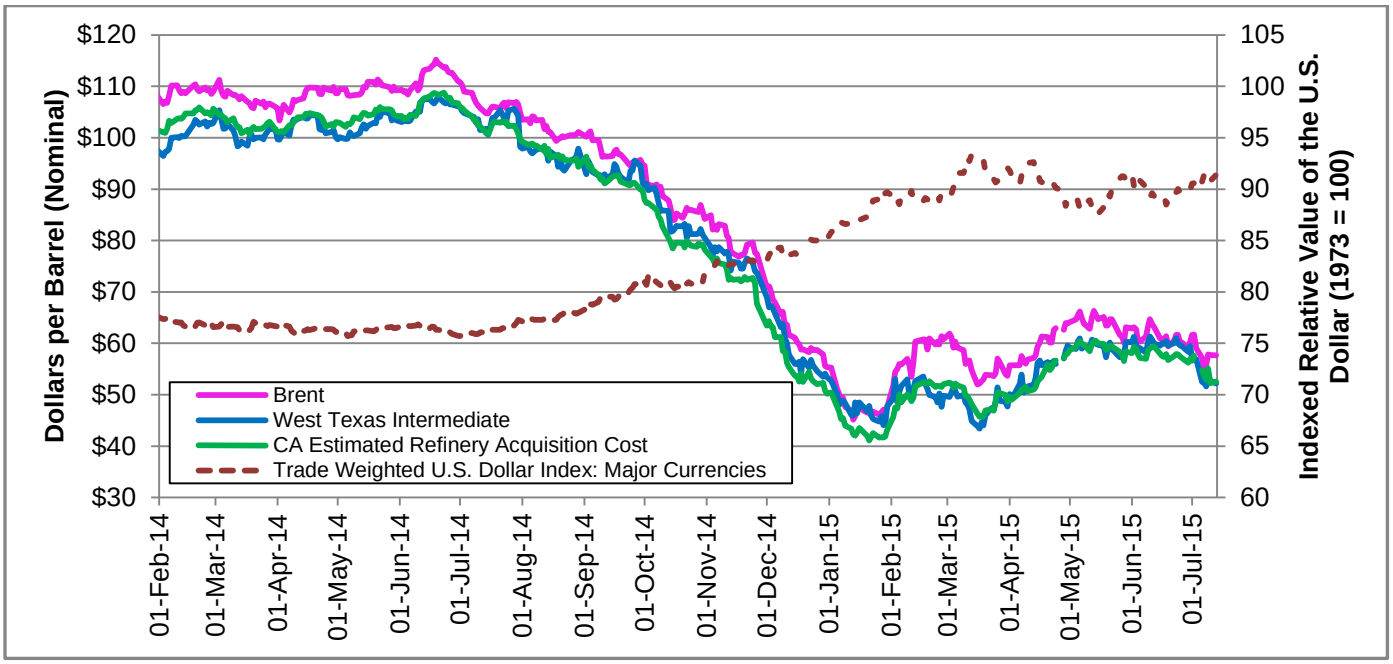
Nothing to report.

Outside Analysis

Nothing to report.

Crude Oil Prices

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



Source: U.S. Energy Information Administration, Oil Price Information Service (OPIS), and Federal Reserve Bank of St. Louis.

After leveling off in May and June, crude oil prices have fallen in July. The California Estimated Refiner Acquisition Cost[1] (CA-RAC) of crude oil was $52.37 a barrel, which is a sharp decrease from the $59.49 a barrel estimated on June 15 for the July 2015 publication of *Petroleum Watch.* (See **Figure 1.**) The spread between West Texas Intermediate (WTI) and Brent crude oil widened after being low for about a month. It increased from an average of $1.66 in June to $6.41 on July 16. This reflects the relative abundance of crude oil in the United States and the fact that domestically produced crude generally cannot be exported to countries other than Canada.

The sharp decrease in crude oil prices began at roughly the same time that the U.S. dollar began to rebound from its mid-June low (dotted line in **Figure 1**).[2]

Crude Oil Prices

July 2014 vs 2015 (Percent Change)

WTI	**49% lower**
Brent	**46% lower**
CA-RAC	**48% lower**

June 2015 Averages

WTI	**$59.82**
Brent	**$61.48**
CA-RAC	**$57.87**

July 16, 2015

WTI	**$50.90**
Brent	**$57.31**
CA-RAC	**$52.37**

1 *California Estimated Refiner Acquisition Cost* is an estimate of the average price of crude oil paid by California refineries. It is created using California refinery input proportions of California crude, Alaskan crude, and foreign crude and multiplying them by the prices of San Joaquin Valley, Alaskan North Slope, and Brent crude oil, respectively.

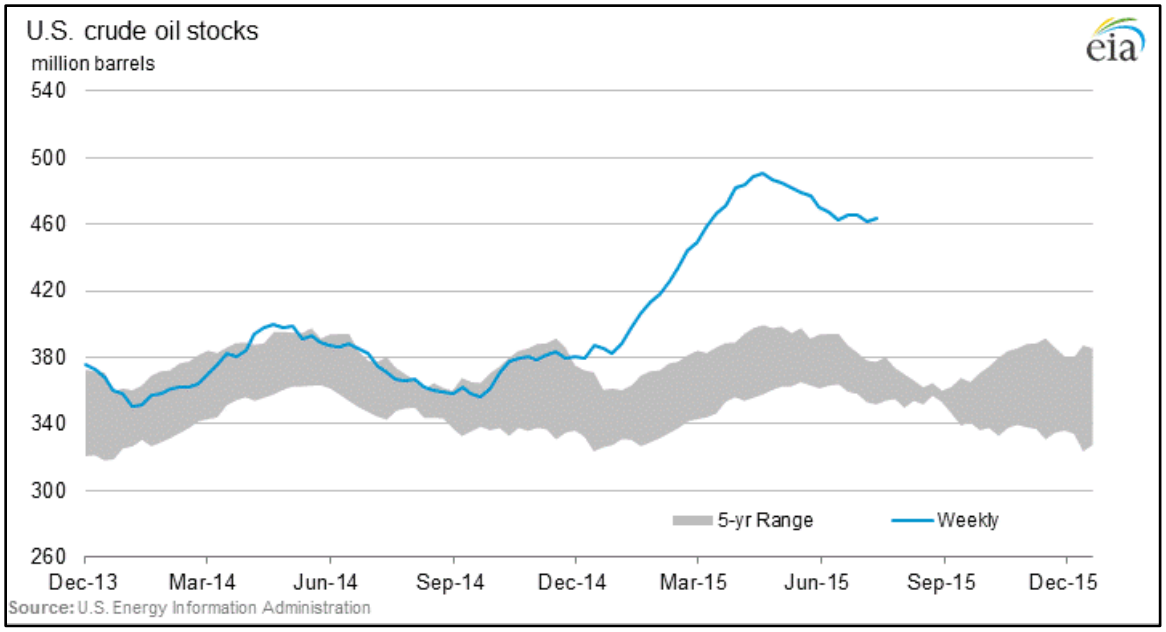
2 Federal Reserve Economic Data, provided by St. Louis Federal Reserve Bank.

Crude Oil Production and Storage

The recent contradiction of increases in both price and quantity supplied has been resolved. Prices and output of petroleum have leveled off over the past month, and the amount of crude oil in storage has fallen. Nevertheless, storage inventories remain high, and production remains at high levels. This is in part because refinery utilization remains at a high of 96 percent, up from 94 percent a month ago.

- U. S. crude oil output remains at a plateau of 9.6 million barrels per day (bpd) according to U.S. Energy Information Administration (EIA) estimates.
- Imports of Canadian crude oil have increased slightly from 2.7 million to 2.8 million bpd over the past month. This remains well below the January-to-April figures of 3 million to 3.2 million bpd, according to EIA data.
- Although crude oil inventories in the United States remain at unusually high levels, they continue to decline. (See **Figure 2.**) Storage levels have fallen from a peak of 491 million barrels in April to 464 million barrels on July 17, which is 25 percent higher than year-ago levels of 388 million barrels. If inventories continue to decline at the average fixed amount since the April 24 peak, it will take 33 weeks to reduce inventories to 380 million barrels. If the decline is at the slower average pace of the past five weeks, then it will take 120 weeks to reduce inventories to 380 million barrels.

Figure 2: U.S. Crude Oil Inventories, December 2013 to Present

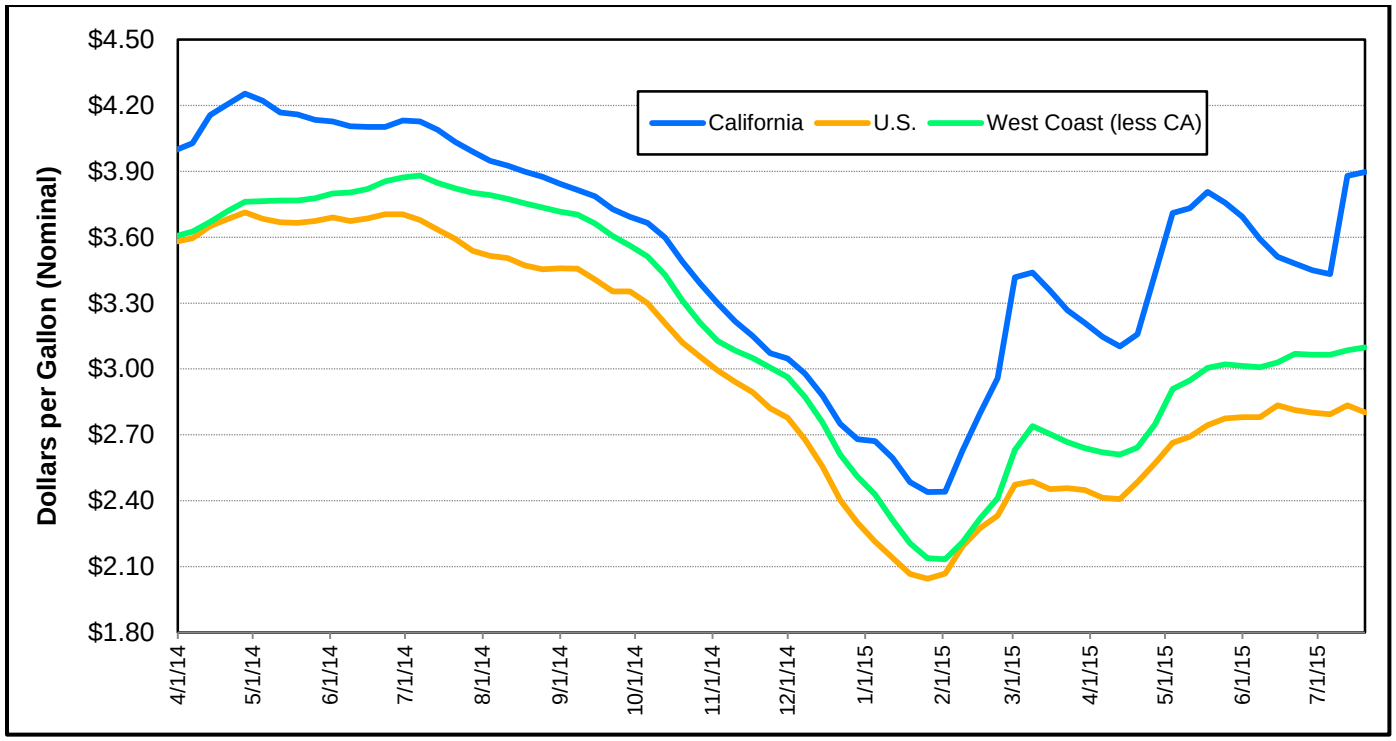


Source: EIA.

- According to the most recent data from the Organization of the Petroleum Exporting Countries (OPEC), Saudi Arabian crude output has increased slightly each month of 2015. From 9.6 million bpd in the fourth quarter of 2014 to 10.2 million barrels in June 2015, a 6 percent increase. Total OPEC production has increased by 4 percent, just over a million barrels per day, over the same period.

Gasoline and Diesel Retail Prices and Margins

Figure 3: Regular Grade Gasoline Retail Prices, California vs. PADD5[4] vs. United States



Source: EIA.

California gasoline prices rose to a new 2015 high during the week of July 20, averaging $3.90, a 10 percent increase from the $3.55 June average price. The corresponding national price showed no change over the same period. (See **Figure 3.**)

Since late February the California gasoline price has been quite volatile compared to U.S. gasoline price. The spread has moved from $0.37 on February 2 to $0.95, down to $0.67, up to $1.06, back down to $0.64 on July 6, and in just two weeks jumped to $1.10.[3] The volatility began at the time of the explosion at the Exxon refinery in Torrance and has continued, varying as other refineries experienced outages and as the levels of gasoline imports and exports changed.

This pattern is in stark contrast to that of crude oil prices seen in Figure 1. Crude prices increased from January through May and have since been flat or declining. Crude prices also showed none of the three spikes seen in the California. The price of crude oil is an important component of the price of gasoline, but is by no means the only one.

Regular Gasoline Prices

July 2014 vs 2015 (Percent Change)

California	**8% lower**
U.S.	**22% lower**
West Coast	**20% lower**

June 2015 Averages

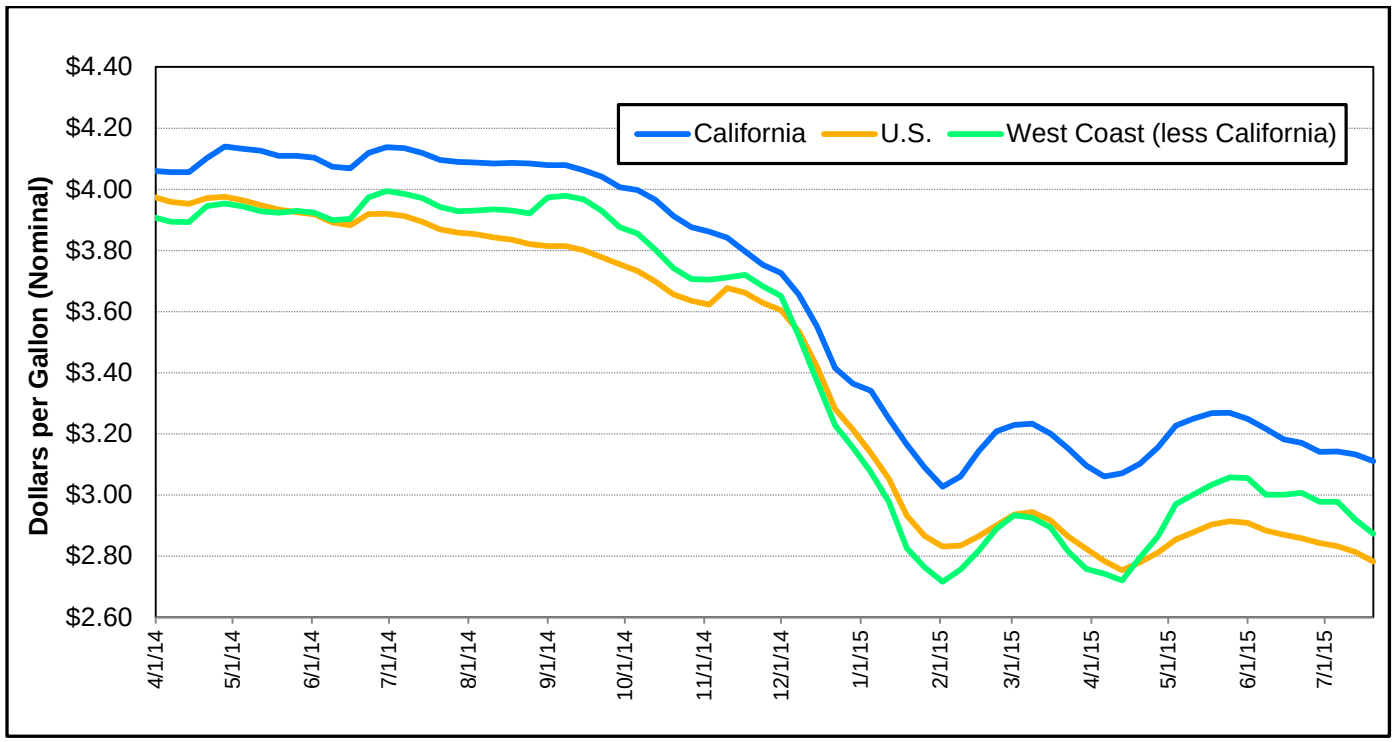
California	**$3.55**
U.S.	**$2.80**
West Coast	**$3.04**

Week of July 20, 2015

California	**$3.90**
U.S.	**$2.80**
West Coast	**$3.10**

3 *PADD* stands for Petroleum Administration for Defense Districts. PADD 5 includes the states of Hawaii, Alaska, Washington, Oregon, California, Nevada, and Arizona. *West Coast* is being defined as all PADD 5 states minus California for this report.

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



Source: EIA.

Diesel prices in California have continued to decrease since the beginning of June, to $3.11 during the week of July 20. During 2015, California diesel price trends have roughly tracked U.S. prices, with California prices being $0.31 to $0.34 more expensive. (See **Figure 4.**) It is noteworthy that diesel prices are declining at the same time gasoline prices are reaching new 2015 highs.

For the week of July 20, the difference between U.S and California diesel prices stood at $0.33, a penny higher than the June average. California diesel prices are $0.79 lower than California gasoline prices, which is a very unusual situation. Diesel usually sells at a premium to gasoline because it contains more energy, so the 25 percent premium for gasoline is unusual. The U.S. premium for gasoline is only $0.02, which is less than 1 percent.

Diesel Prices

July 2014 vs 2015
(Percent Change)

California	**24% lower**
U.S.	**28% lower**
West Coast	**26% lower**

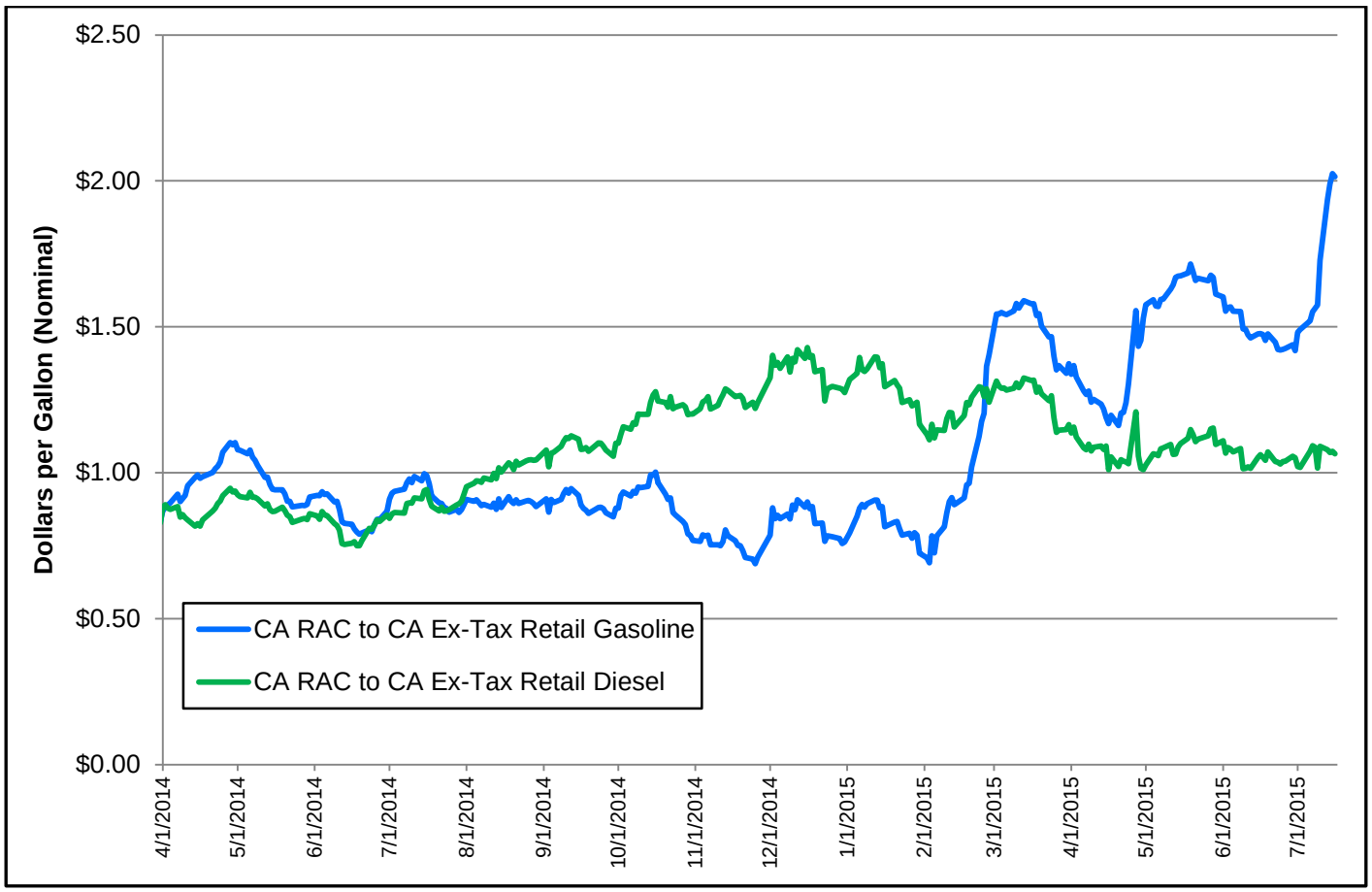
June 2015 Averages

California	**$3.19**
U.S.	**$2.87**
West Coast	**$3.01**

Week of July 20, 2015

California	**$3.11**
U.S.	**$2.78**
West Coast	**$2.87**

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



Source: EIA and OPIS.

The average July 17 CA-RAC–to–ex-tax retail margin[4] was $2.01 for regular gasoline and $1.05 for diesel. (See **Figure 5.**) Compared to the already high June price average, the gasoline margin increased $0.53. The diesel margin remained unchanged from its unremarkable June levels.

The three refinery outages, all in Southern California, noted on page one account for the three spikes of March, May, and July. Such volatility is a peculiarity of the California gasoline market, and to a lesser extent of the California diesel market. A refinery outage elsewhere in the United States can be mitigated by shipping gasoline on interstate pipelines, which is not possible in California. Gasoline can only reach California if it is shipped on a tanker or barge, which takes weeks. Additionally, California blend gasoline is not commonly produced elsewhere. Consequently, multiple refinery outages can produce spikes in the price of gasoline.

Crude to Retail Margins

July 2014 vs 2015
(Percent Change)

Gasoline	**88% higher**
Diesel	**19% higher**

June 2015 Averages

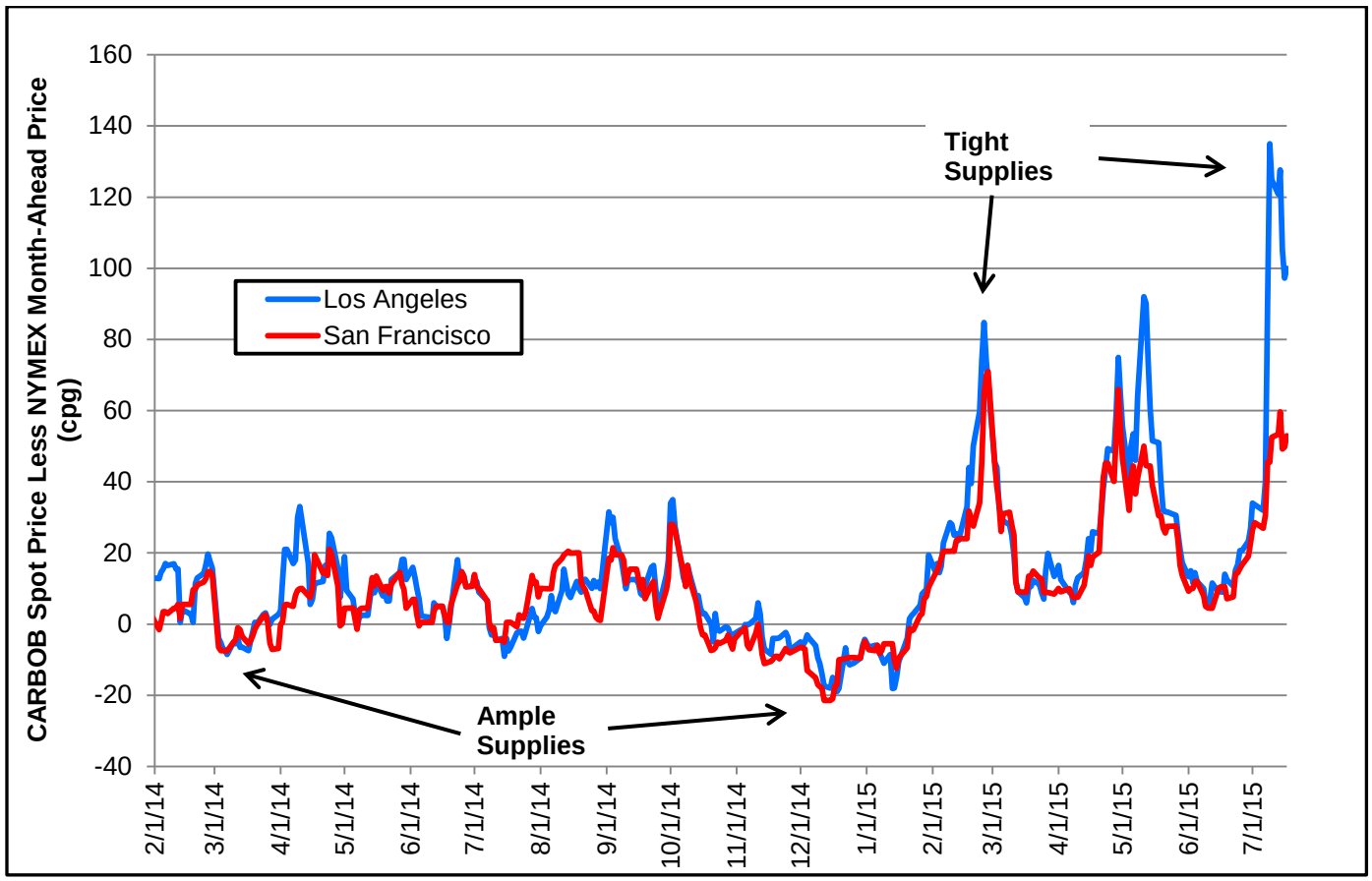
Gasoline	**$1.48**
Diesel	**$1.05**

July 17, 2015

Gasoline	**$2.01**
Diesel	**$1.05**

4 *The RAC-to-retail margin* refers to the difference between the retail price and the refiners acquisition cost for crude oil. Thus, it includes all costs of producing gasoline or diesel. *"Ex-tax"* refers to the removal of all California taxes on the price of fuel, which is done to remove any distortions from taxes that may affect this calculation.

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: EIA and OPIS.

The Los Angeles-to-New York Mercantile Exchange spot–futures spread[5] reached a 2015 high on July 9 at $1.35 a gallon before dropping to $1.00 on July 17. (See **Figure 6.**)

The San Francisco to NYMEX spot–futures spread increased by a much smaller amount and has not exceeded the 2015 high of early March. The July high for the San Francisco spread was only $0.60, reached on July 14. The Los Angeles spread is so much higher because all the notable July refinery outages were in Southern California.

Gasoline Spot–Futures Spread

July 2014 vs 2015
(cents)

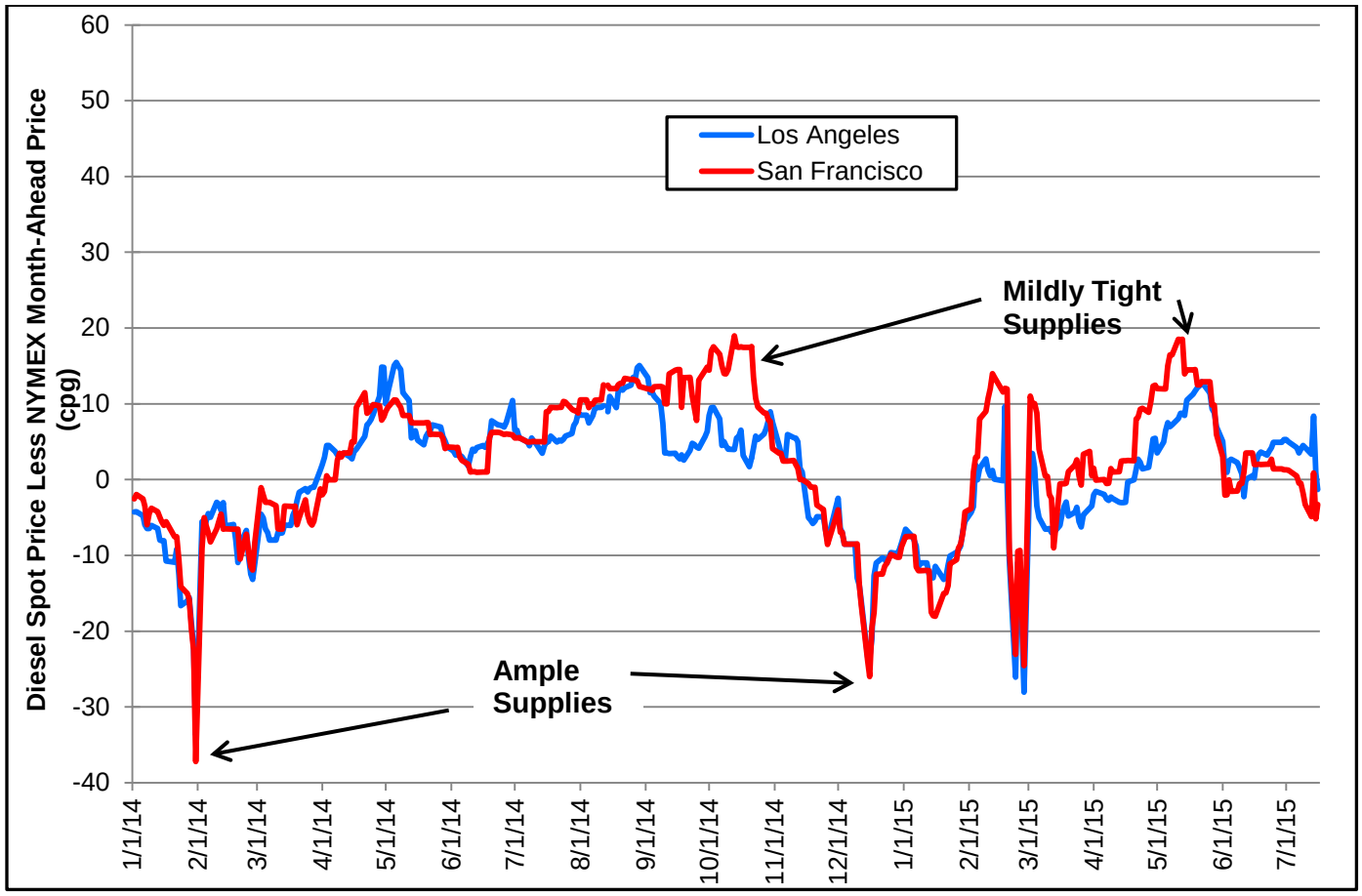
Los Angeles	**87¢ higher**
San Fran.	**40¢ higher**

June 2015 Averages

Los Angeles	**13¢**
San Francisco	**11¢**

5 A higher spread between the state's spot fuel prices and the NYMEX futures price indicates supplies are tighter in California, and a lower or negative spread indicates the market is relatively well-supplied compared to the rest of the country. The NYMEX futures price reflects the national market, while California Reformulated Gasoline Blendstock for Oxygenate Blending (CARBOB) is a gasoline blend unique to California and is usually sold at a premium to the NYMEX.

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: EIA and OPIS.

In spite of refinery outages and in stark contrast to the gasoline market, the diesel market appears to remain balanced to the NYMEX in July. (See **Figure 7.**)

In a reversal of the situation in the gasoline market, the July average diesel price is actually lower than the same time last year. In another reversal, the San Francisco to NYMEX spread is currently higher than the Los Angeles to NYMEX spread.

Diesel Spot–Futures Spread

July 2014 vs 2015
(cents)

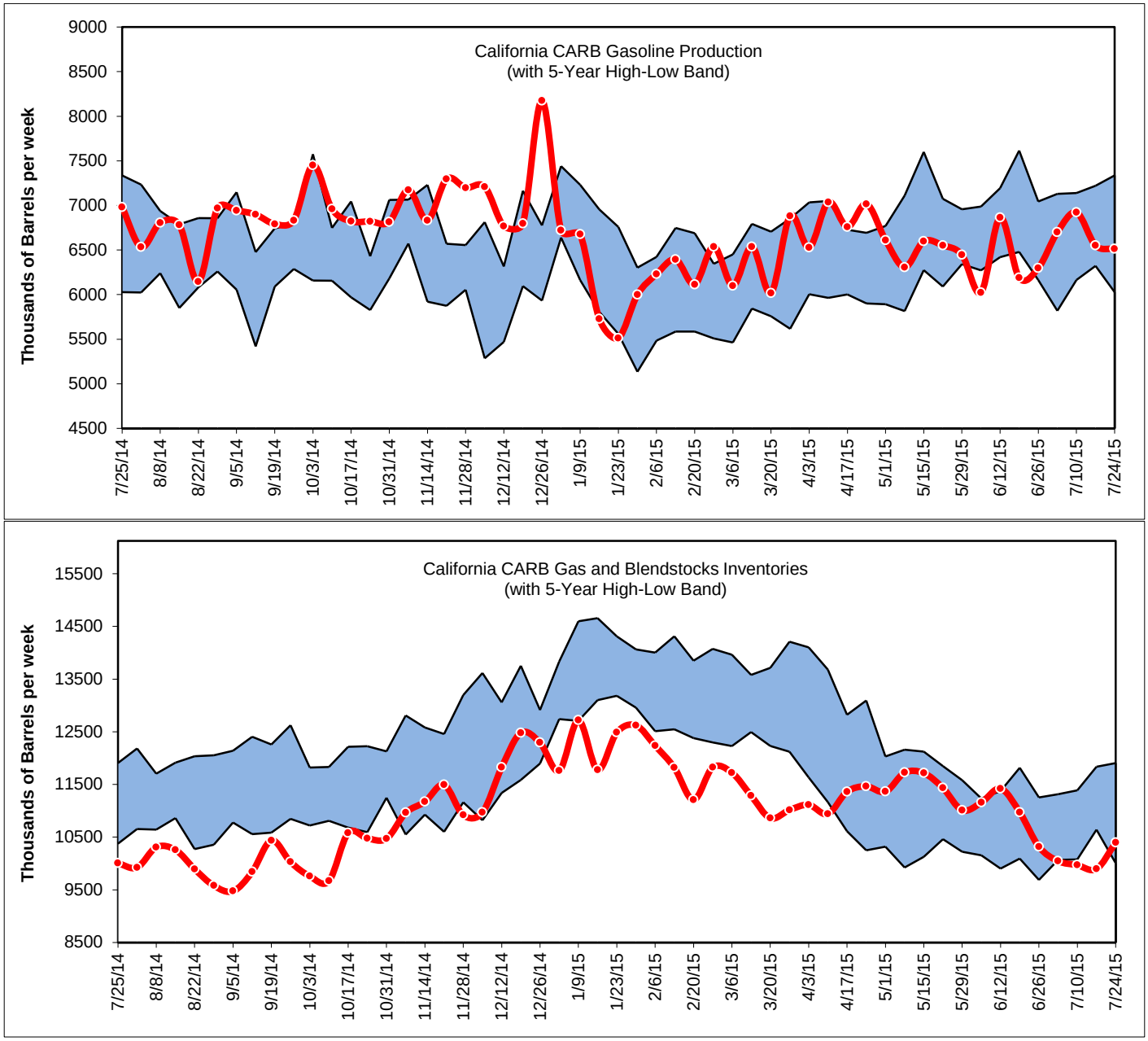
Los Angeles	**2¢ lower**
San Fran.	**9¢ lower**

June 2015 Averages

Los Angeles	**4¢**
San Francisco	**–1¢**

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

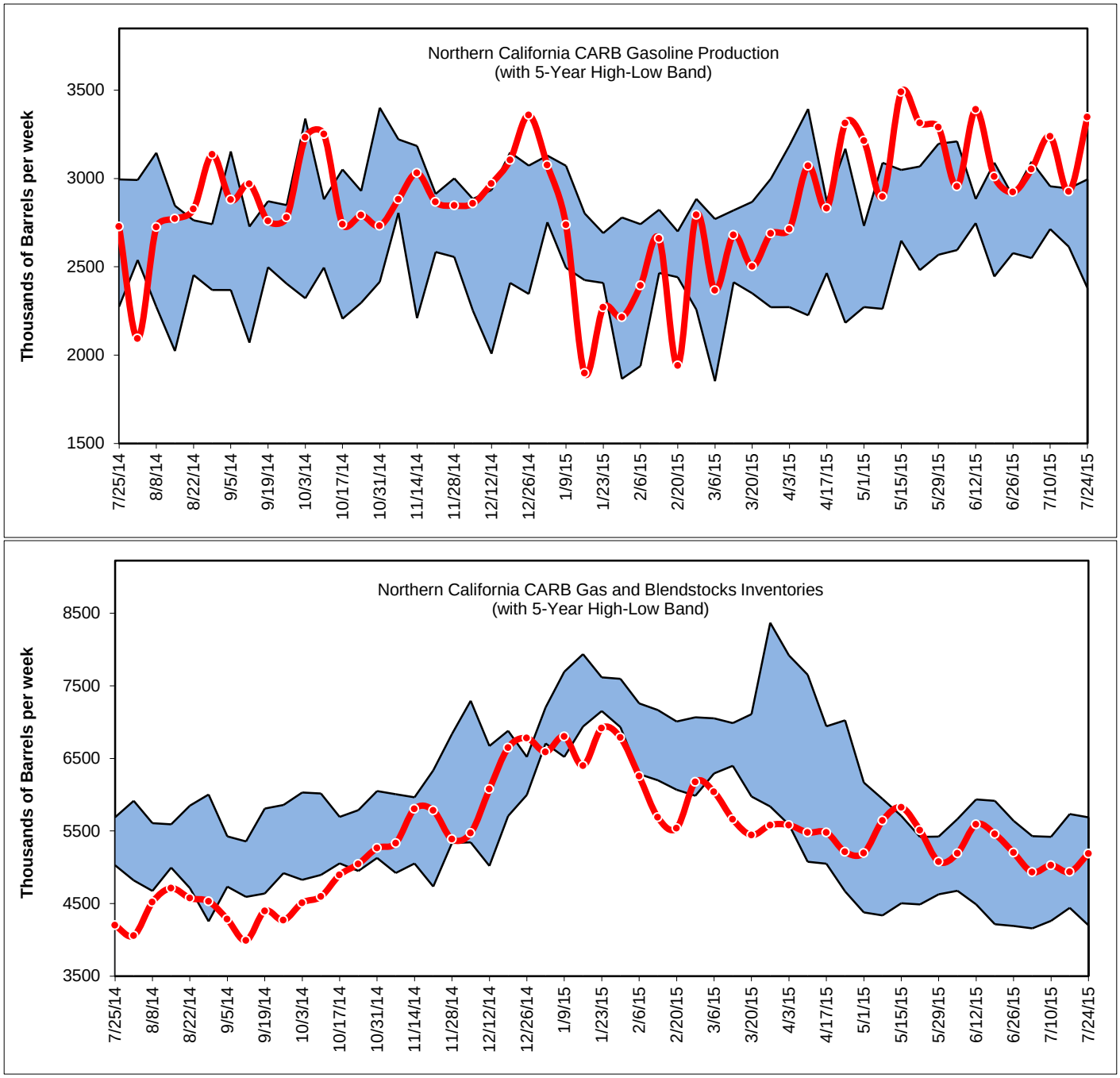


Source: Petroleum Industry Information Reporting Act data.

Since the July *Petroleum Watch*, California gasoline production increased for three consecutive weeks but settled lower, to 6.5 million barrels of production for the week of July 24. (See **Figure 8.**) This level of production is higher than the year-to-date average production level of 6.2 million barrels per week. This is down compared to the 2014 level of 6.9 million barrels per week.

Since the July *Petroleum Watch*, inventory levels have fallen from 11.5 million barrels to 10.4 million barrels for the week of July 24. Early July inventory levels dipped below 10 million barrels, breaking below the five-year lows. These low inventory levels, coupled with mild production levels, contributed to the recent price spike seen in July 2015.

Figure 9: Northern California Gasoline Production and Inventories

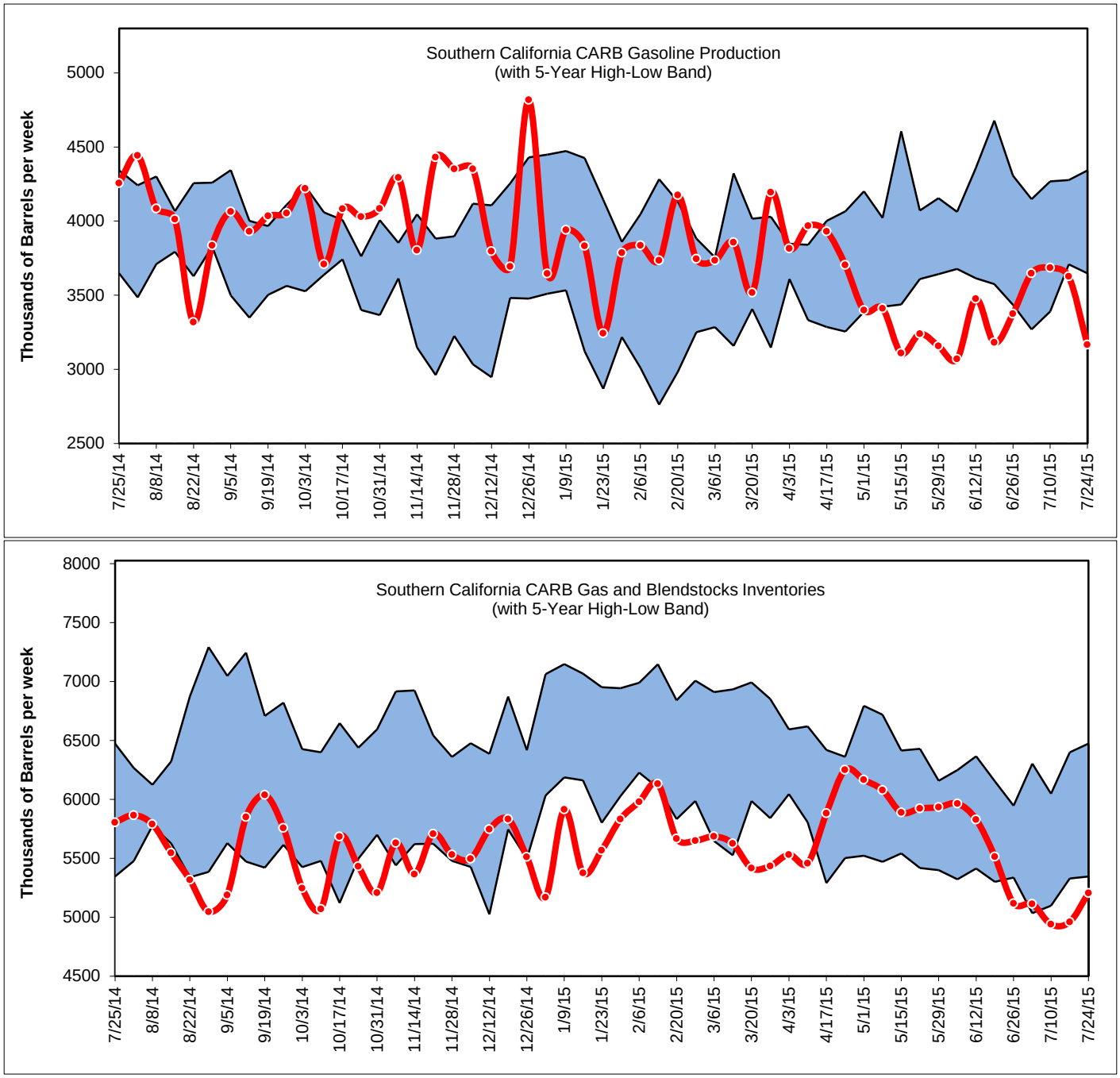


Source: Petroleum Industry Information Reporting Act data.

The recent price spike in California has seen a large $0.47 difference in wholesale spot price between San Francisco and Los Angeles. The reason behind this difference is apparent in a breakdown of Northern and Southern California production and inventory statistics.

The Northern California refining complex is currently producing at record highs with an average of 3.1 million barrels per week since April 17. (See **Figure 9.**) This is in contrast to the beginning of the year, with 2.3 million barrels per week of gasoline produced between February and March. Northern California inventory levels held steady at 4.9 million barrels since April 17, well within the five-year high/low band for each week and in a much healthier position compared to the previous year's level of 4.0 million barrels.

Figure 10: Southern California Gasoline Production and Inventories

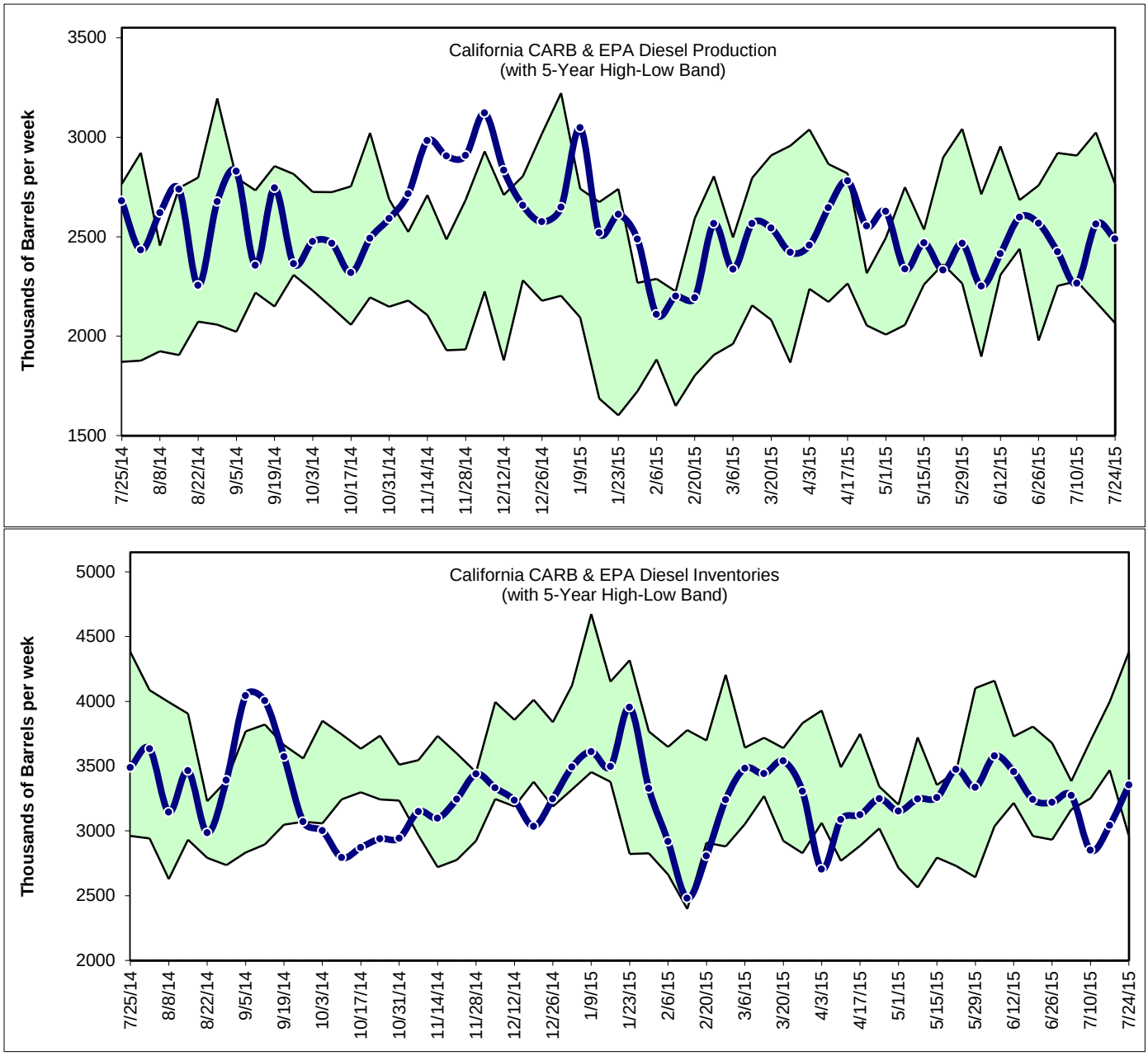


Source: Petroleum Industry Information Reporting Act data.

Southern California's gasoline production started the year at an average of 3.7 million barrels per week through April 17. (See **Figure 10.**) Since then, gasoline production fell to an average of 3.3 million barrels per week. Not only is this a 400,000 barrel or 10 percent year-to-date drop, this level set five-year lows for May contributing to the drawdown of Southern California inventory levels of gasoline.

Inventory levels held at 5.9 million barrels for most of May until being drawn down. On June 26 inventories dipped below the five-year low at 5 million barrels on June 26 and have remained stuck below that level until July 17. This difference between Northern and Southern California inventory levels has been the main contributing factor to the price differential between the two halves of the state.

Figure 11: Diesel Production and Inventories



Source: Petroleum Industry Information Reporting Act data.

Diesel production has bounced above and below an average level of 2.3 million barrels per week since May 2015, ending at 2.5 million barrels for the week ending July 24. (See **Figure 11.**) Diesel inventories set new five-year lows for the weeks of July 10, at 2.8 million barrels, and July 17, at 3.0 million barrels, before moving back above the five-year low on July 24, to 3.2 million barrels.

Diesel production and inventories have shown low variance in both production and inventory levels since April 3. The outlook on diesel remains the same as last publication: prices will continue to be as steady as crude market conditions and diesel production capacity in California will allow.