March 16, 2017

On Wednesday, the front month WTI future settled at $48.86. This was a decline of 2.8% since last Wednesday, but above its low of the week at $47.09. The Forward curve was little changed despite the decline in spot prices. Prices a year out are now higher than spot by $1.86 versus $1.94 last week. The Brent-WTI spread widened slightly over the course the week, settling at $3.02 versus $2.92 last Wednesday.

WTI SWAPS:

	USD	CAD
CAL17	50.65	67.50
CAL18	50.86	67.79
CAL19	50.53	67.35
2ndQ17	50.23	66.95
2ndH17	50.94	67.89

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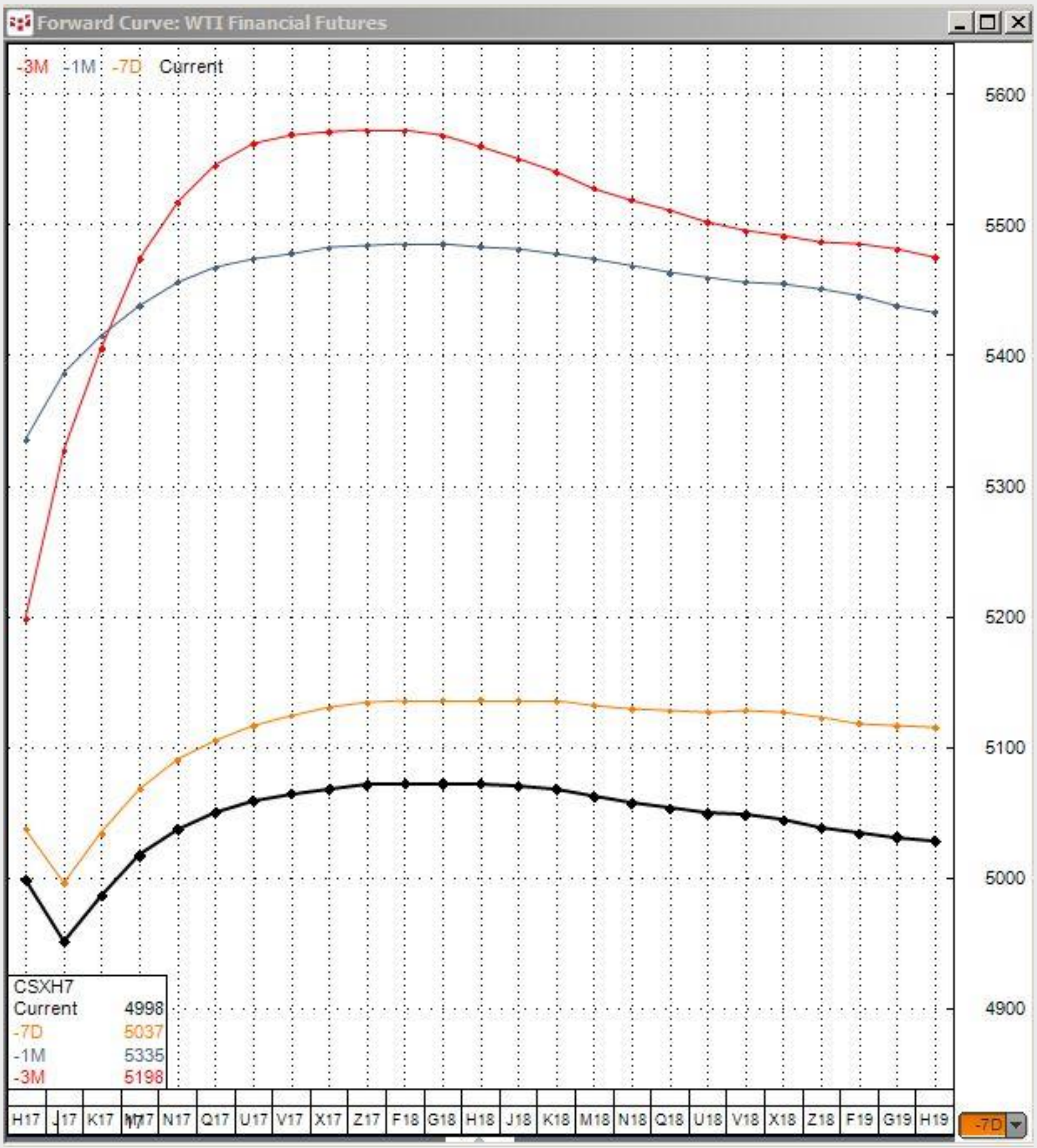


Forward Swap Curve historical view: Use this chart for time comparison: Current curve, 7 days ago, 1 month ago and 3 months ago.

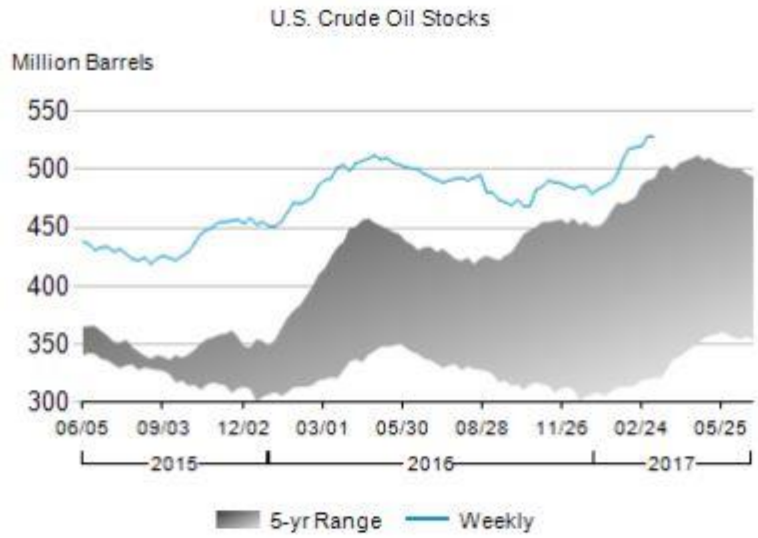
On Wednesday, the EIA released its crude oil inventory data for the week ending 3/10/17. The report showed that commercial crude oil inventories declined by a modest 200,000 barrels. This was the first draw down in inventories in ten weeks. At 528.2 million barrels, crude oil supplies remain above the five year average range for this time of year, but just below the all time high set last week. Supplies at Cushing increased by 2.1 million barrels to settle at 66.5 million barrels. Supplies of gasoline declined by 3.1 million barrels, while supplies of distillates declined by 4.2 million barrels. Domestic oil production increased to 9.109 million b/d from 9.088 million b/d. The last time production was above 9.1 million b/d was the week of 2/19/16. Refinery utilization moved lower to 85.1 from 85.9. The Baker Hughes domestic oil rig count continues to climb, rising by 8 to settle at 617 rigs. That is 60% higher than the year ago rig count of 386 and 95% higher than the all time low rig count of 316.

OPEC Math

Wednesday's supply report was generally supportive of prices and offered a welcome relief to the selloff of the last week. While the headline decline was quite modest, it broke a string of nine straight weeks of fairly large increases. Crude oil remains in a seasonal period of increasing inventories that will likely end by late April. Besides the headline number, both gasoline and distillates saw large declines. Both products are now below the upper end of the five year average range for this time of year. Domestic production continues to trend higher and we see this trend generally continuing throughout 2017.

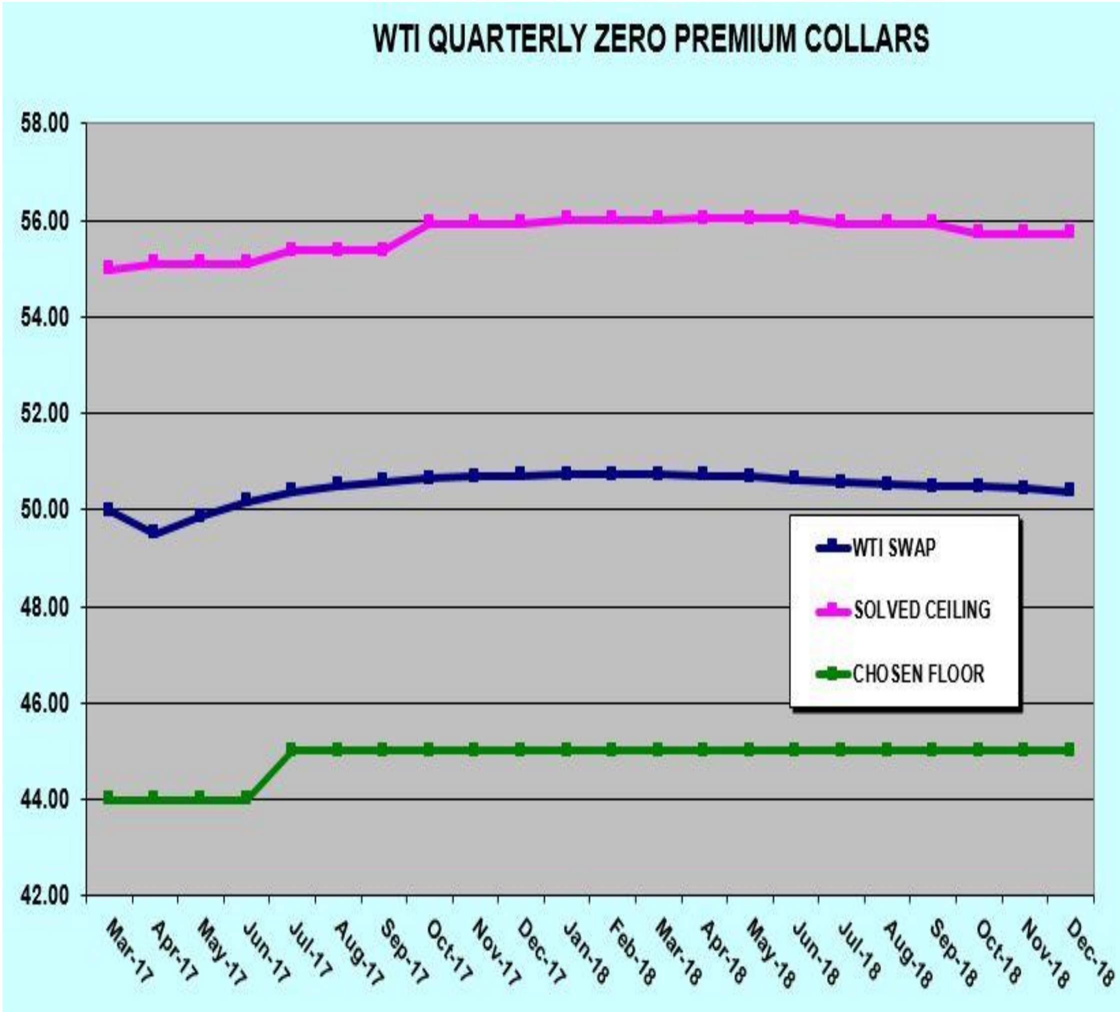
The past week saw the release of February production data for OPEC. The data showed that production was down 140,000 b/d from the prior month to just below 32 million b/d. This translates to 91% compliance to the agreement. Saudi Arabia's own data showed that their production actually increased to 10.011 million b/d from 9.748 million b/d. However, they only supplied 9.9 million b/d to the market. Therefore, in order to meet the quotas, it appears that S.A. is putting excess oil into storage. Outside of OPEC, Russian production in February saw a cut of 120,000 b/d out of a targeted 300,000 b/d. That translates into a 40% compliance rate. The conclusions that can be drawn from this data are that there is a high likelihood of compliance through June, but uncertainty beyond that. Saudi Arabia seems to be bearing an unequal burden and it is unclear how long they will be willing to do so; and the excess oil being put into storage is "powder in the keg" to unbalance the market If S.A. decides to do so.

Since the past week saw a close below $49.50, we can officially call an end to the most recent leg of the rally which began in November. The move below $49.50 saw extremely large volume and a major reduction in speculative longs (i.e. hedge funds). This is generally a healthy sign for the market. We believe the risk of WTI prices falling below $45 is still relatively low in the near term. In the intermediate term, a failure by OPEC to renew the production agreement in June would significantly increase the risk of prices falling below $45 and even $40. In the long term, increasing U.S. production will make balancing the market difficult without an increased outlook for demand. Support is at $47 and $45. Resistance is at $50.75 and $55.



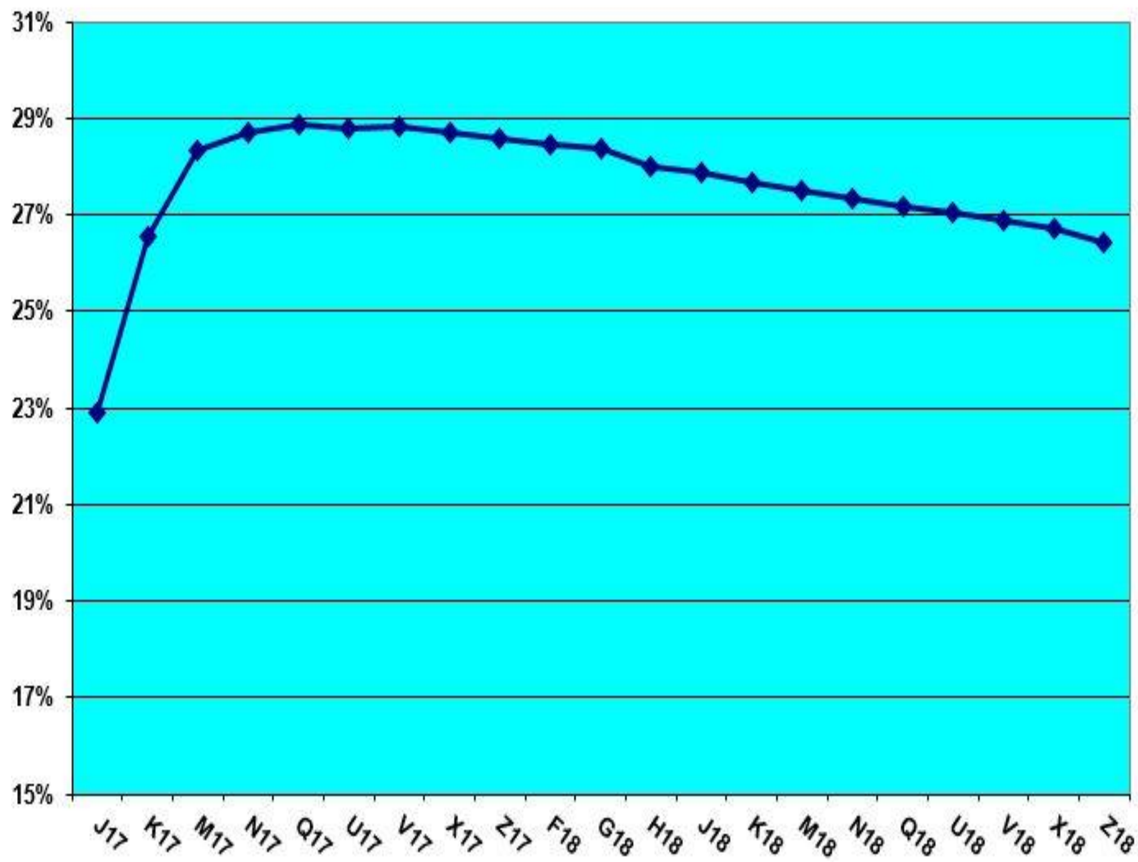
source: www.eia.gov

Below are Zero Cost (premium) Collars with 10% floor vs swap level presented on Quarterly basis as per NYMEX previous day settlements.



Volatility has continued to decline now below 30% in the front and dropping below 25% in the far dated months. We expect this trend to continue if oil either stabilizes at these levels or if prices move higher. As the forward curve flattens and potentially moves into backwardation, volatility can be expected to continue to decline as well. However, any shift to a bearish environment will give support to higher implied volatilities. The shape of the put/call volatility curves for individual months has dramatically shifted to pricing puts significantly higher than calls making collars or premium neutral strategies for producers expensive.

CRUDE OIL SWAP IMPLIED VOLATILITY



Below are time graphs; daily, weekly, monthly that provide a visual of where prices are today on a historical standard deviation basis. While predicting the price action of any asset is challenging, knowing the probability of distribution can aide in the timing and placement of hedges for price risk management purposes.

DAILY:

CLE - Crude Light (Globex), Daily Continuation
O= 4901
H= 4962
L= 4901
L= 4923^
Δ= +37
5606
5500
5400
5300
5200
5109
5000
4923
4900
4800
4700
4611
16 Mar 17
O= 4901
H= 4962
L= 4901
C= 4923
BMA= 5108.88
BHI= 5606.47
BLO= 4611.29
Feb
Mar
23
30
01
06
13
21
27
01
06
13

WEEKLY:

CLE - Crude Light (Globex), Weekly Continuation
O= 4901
H= 4962
L= 4901
L= 4925
Δ= +39
5784
5500
5250
5099
5000
4925
4750
4500
4415
4250
4000
3750
3500
3250
3000
13 Mar 17
O= 4845
H= 4962
L= 4709
C= 4925
BMA= 5099.32
BHI= 5784.08
BLO= 4414.56
Jun 16
Jul
Aug
Sep
Oct
Nov
Dec
Jan 17
Feb
Mar

MONTHLY:


CLE - Crude Light (Globex), Monthly Continuation
O= 4901
H= 4962
L= 4901
L= 4923
Δ= +37
01 Mar 17
O= 5395
H= 5444
L= 4709
C= 4923
BMA= 5077.09
BHI= 6667.55
BLO= 3486.63
12000
11000
10000
9000
8000
7000
6668
6000
5077
4923
4000
3487
3000
2000
2015
2016
2017
Jan
Jul
Jan
Jul
Jan
Jul
Jan

ANNUAL: (Just in case you forgot)

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1. We use State of the Art software built by our team which allows us to provide Real Time price discovery and negotiating expertise so you get the best structure and price possible from all your counter-parties. Savings translate into Tens to Hundreds of Thousands of dollars for typical clients annually. Now you will know exactly what you pay in hidden fees to your counter-parties and allows you to negotiate with market intelligence to ensure competitive pricing.

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Hedge Structure: Best fit strategies
Ensure Best Price on Hedges: Price discovery and transparency, $$$ saved
Counter-Parties: Introductions and Management
Monitoring: Hedge plan validity, Real time valuation
Cash Flow at Risk Analytics: Stress Testing
Forward Curve / Price Deck Solutions
Custom Report Generation
Counter-Party Invoice Generation and Tracking
Counter-Party Reconciliations
Document Storage: Contracts, ISDA's, Executions

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We welcome your call to demonstrate our proprietary models and tools and how they can make your hedging program the best in the industry.

Sincerely,

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