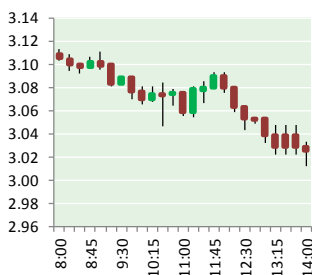


# NATURAL GAS



DECEMBER 1, 2017

## Prior Day's NYMEX Jan-18 Contract (CT)



## NYMEX NG Futures

Month	Close	Change
Jan-18	3.025	(0.154)
Feb-18	3.032	(0.147)
Mar-18	2.999	(0.138)
Apr-18	2.867	(0.078)
May-18	2.861	(0.067)
Jun-18	2.892	(0.061)
Jul-18	2.926	(0.056)
Aug-18	2.931	(0.054)
Sep-18	2.914	(0.054)
Oct-18	2.938	(0.053)
Nov-18	2.993	(0.050)
Dec-18	3.130	(0.046)
Jan-19	3.217	(0.045)
Feb-19	3.187	(0.043)
Mar-19	3.115	(0.042)
Apr-19	2.765	(0.023)
May-19	2.720	(0.022)
Jun-19	2.743	(0.021)
Jul-19	2.768	(0.021)
Aug-19	2.768	(0.021)
Sep-19	2.751	(0.021)
Oct-19	2.775	(0.019)
Nov-19	2.831	(0.019)
Dec-19	2.983	(0.019)
1YR Strip	2.959	(0.080)
2018	2.959	(0.080)
5YR Strip	2.890	(0.029)

## IN THE NEWS

**Commission Seeks Fracking Ban in Watershed Supplying NYC** — US News reported: HARRISBURG, Pa. (AP) — A commission that oversees water quality for the watershed that supplies Philadelphia and half of New York City with drinking water took another step Thursday toward permanently banning natural gas drilling and hydraulic fracturing, despite industry opposition.

- **Commission Seeks Fracking Ban in Watershed Supplying NYC**
- **Arrow Energy strikes major gas deal with Shell in Queensland's Surat Basin**

The Delaware River Basin Commission's newly published draft regulations would enact a formal ban on fracking, as well as put additional restrictions to make it harder, if not impossible, for the industry to dispose wastewater within the watershed or use water from the river and its tributaries for fracking outside the basin. It scheduled four hearings in January and a public comment period through Feb. 28, with a final vote possible next year. The area supplies drinking water to 15 million people. The decade-old drilling boom in the Marcellus Shale natural gas reservoir — which lies beneath much of Pennsylvania and extends into New York — has put pressure on the Delaware River basin to allow exploration and fracking, the technique that's spurred a U.S. production renaissance in shale gas and oil. For more visit [usnews.com](http://usnews.com) or click <http://bit.ly/2nkWHIN>

**Arrow Energy strikes major gas deal with Shell in Queensland's Surat Basin** — ABC News reported: Arrow Energy has signed a 27-year agreement to supply more than four times the forecast east coast domestic gas shortfall to Shell's Queensland Curtis Liquefied Natural Gas project every year. Arrow Energy CEO Qian Mingyang said the company's equal shareholders PetroChina and Shell had approved the agreement, which offers long-awaited infrastructure collaboration in the natural gas industry. "It will create better cost efficiencies and enable us to bring this gas to market in a challenging investment climate," Mr Qian said. He said utilising existing pipelines and infrastructure would reduce the impacts on landholders and local communities. For more visit [abc.net.au](http://abc.net.au) or click <http://ab.co/2i8qbLm>

## 12 MONTH CANDLESTICK (WEEKLY)



## Prompt Natural Gas (NG) Daily Sentiment

**BEARISH**



RESISTANCE

3.14 & 3.26

SUPPORT

2.95 & 2.89

## Trading Summary

### NATURAL GAS

Futures	Close	Change
NG	3.025	(0.154)
Volume	627,060	(550,098)
Open Int.	1,448,074	20,737

### CRUDE AND GASOLINE

Futures	Close	Change
Crude	57.40	0.10
RBOB	1.7284	(0.0025)
Crude/NG	18.98	0.95

### METALS

Futures	Close	Change
Gold	1,273.20	(0.30)

### EQUITIES

Exchange	Close	Change
DOW	24,272.35	331.67
S&P 500	2,647.58	21.51

### CURRENCY

Currency	Close	Change
EUR/USD	1.1904	0.0057
USD/CND	1.2774	(0.0124)

## Contact Us



**Mansfield Energy Corp**  
1025 Airport Pkwy  
Gainesville, GA 30501

[www.mansfield.energy](http://www.mansfield.energy)

[info@mansfieldoil.com](mailto:info@mansfieldoil.com)

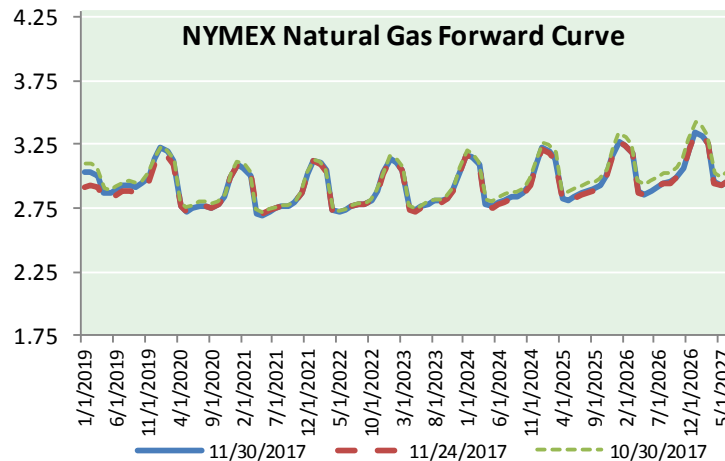
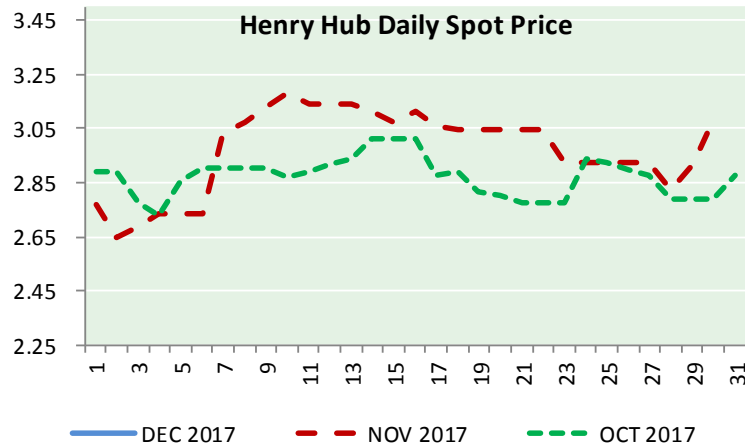
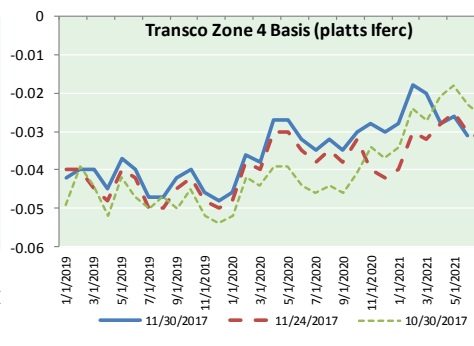
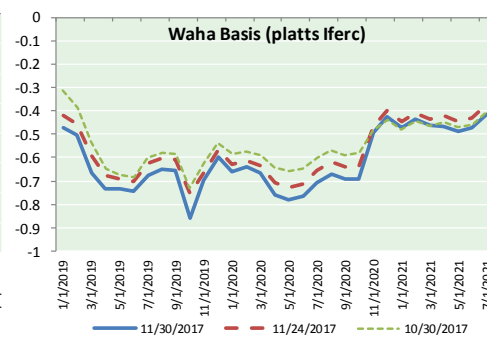
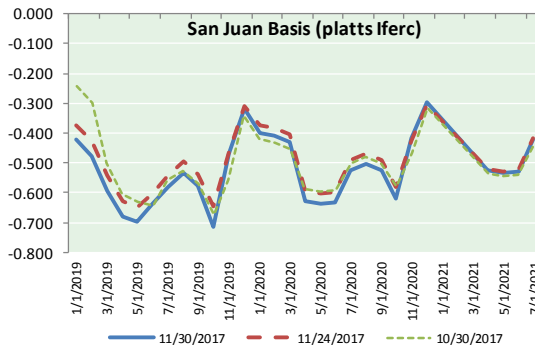
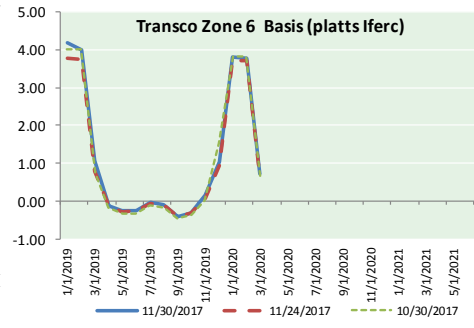
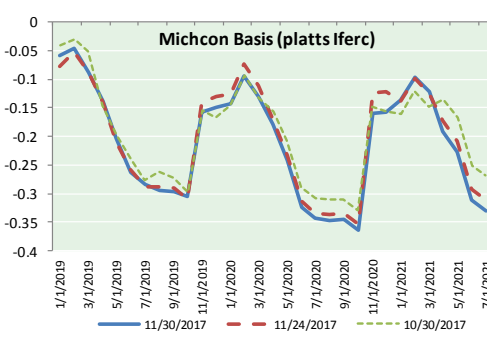
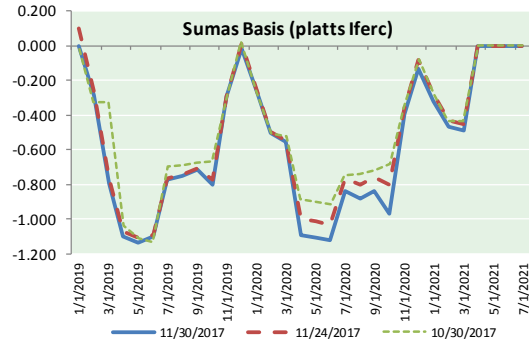
Phone: (800) 695-6626



NATURAL GAS NEWS



NATURAL GAS BASIS FUTURES, HENRY HUB SPOT PRICES, AND FORWARD CURVE



NYMEX WTI Delivery  
Month Average (\$/bbl)  
(Excluding Weekends and Holidays)

Month: December 2017

Day	Price	Day	Price
1		16	
2		17	
3		18	
4		19	
5		20	
6		21	
7		22	
8		23	
9		24	
10		25	
11		26	
12		27	
13		28	
14		29	
15		30	
		31	

Average (Dec)	#DIV/0!
	(through 11/30/2017)
Average (Nov)	56.6629
Average (Oct)	51.5945

CME NG Option Prices

ATM Call

Month	Strike	Close	Imp Vol
Jan-18	3.100	0.150	46.8
Feb-18	3.100	0.190	39.4
Mar-18	3.050	0.236	39.4
Apr-18	2.900	0.185	28.1
May-18	2.900	0.187	26.2

CME NG Option Prices

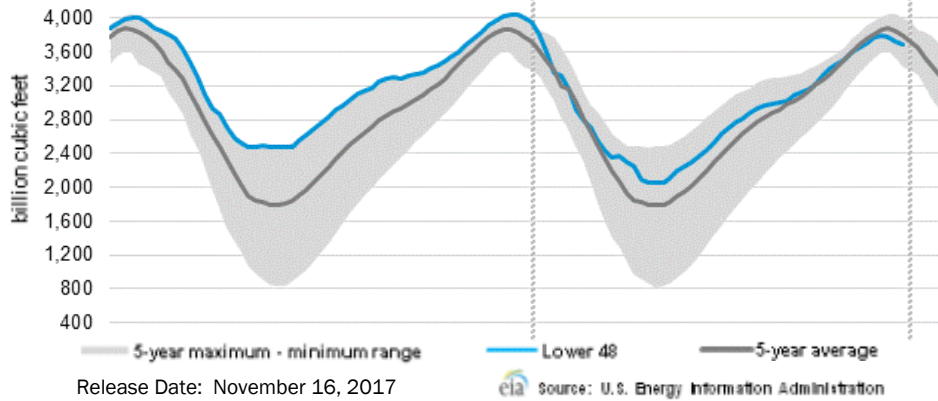
ATM Put

Month	Strike	Close	Imp Vol
Jan-18	3.100	0.186	56.2
Feb-18	3.100	0.257	52.5
Mar-18	3.050	0.293	50.6
Apr-18	2.900	0.220	33.7
May-18	2.900	0.218	29.0



# NATURAL GAS NEWS

## WEEKLY GAS IN UNDERGROUND STORAGE WITH 5-YR RANGE



## Rig Count

Report Date: November 22, 2017

	Total	Change
US -	923	+8
CN -	215	+7

## EIA Weekly NG Storage Actual and Surveys for November 23, 2017

Released November 30, 2017

PIRA— (32)

SMC— (37)

Reuters— (37)

EIA ACTUAL — (33)

## Total Working Gas In Storage

**3,693 BCF**

(33) BCF (LAST WEEK)

(309) BCF (LAST YEAR)

(107) BCF (5-YR AVG)

## U.S. Natural Gas Supply Gas Week 11/23- 11/29

Average daily values (BCF/d):

Last Year (BCF/d)

Dry Production — +79.6

Total Supply — +76.8

Last Week (BCF/d)

Dry Production — +75.8

Total Supply — +81.2

[NEXT REPORT ON Dec 7]

## U.S. Natural Gas Demand Gas Week 11/23- 11/29

Average daily values (BCF/d):

Last Year (BCF/d)

Power — +20.7

Total Demand — +81.0

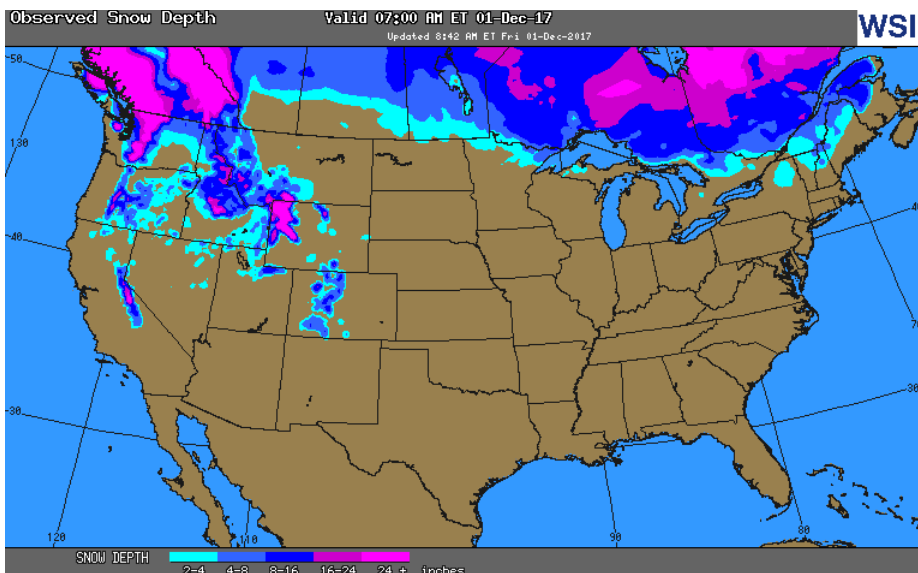
Last Week (BCF/d)

Power — +22.0

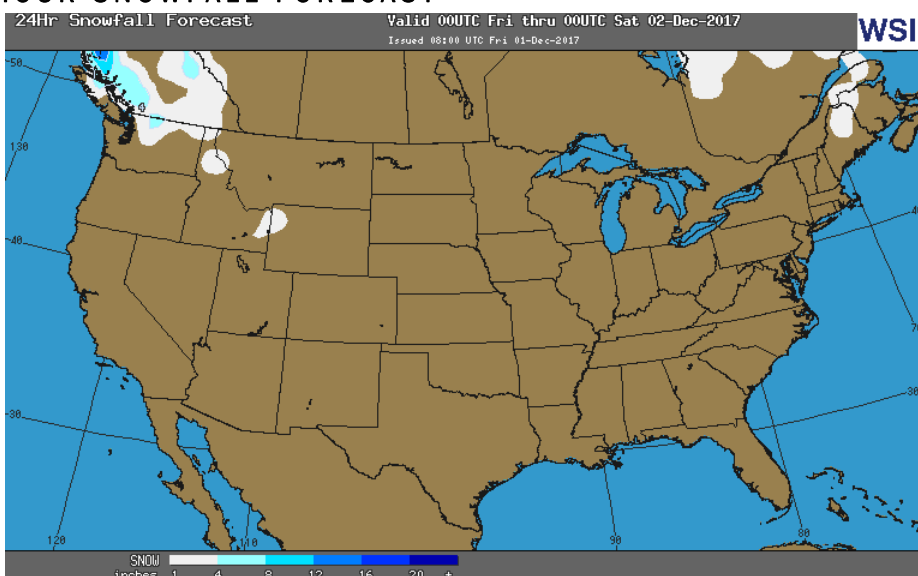
Total Demand — +85.4

[NEXT REPORT ON Nov 23]

## OBSERVED SNOW DEPTH



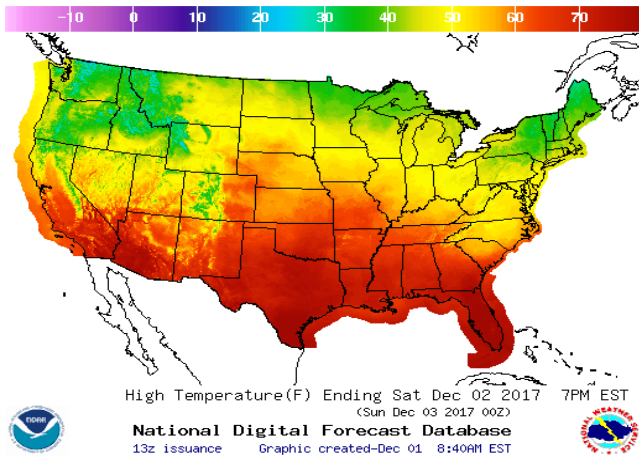
## 24 HOUR SNOWFALL FORECAST



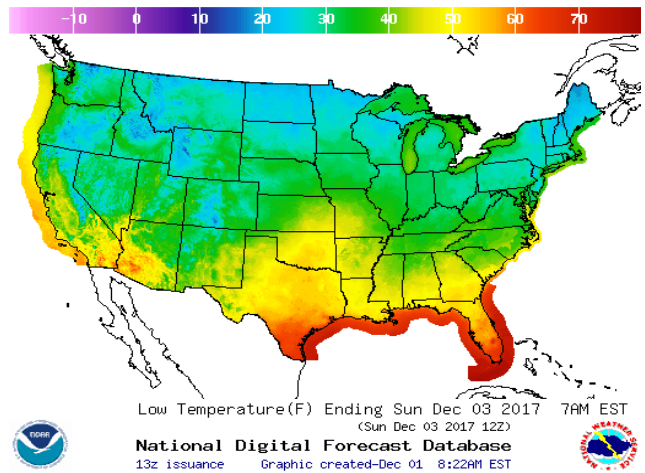


WEATHER – HIGH / LOW TEMPERATURE SATURDAY

HIGH Temperature

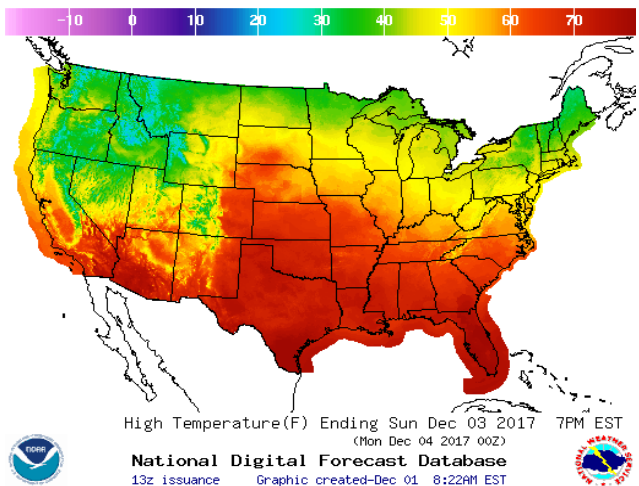


LOW Temperature

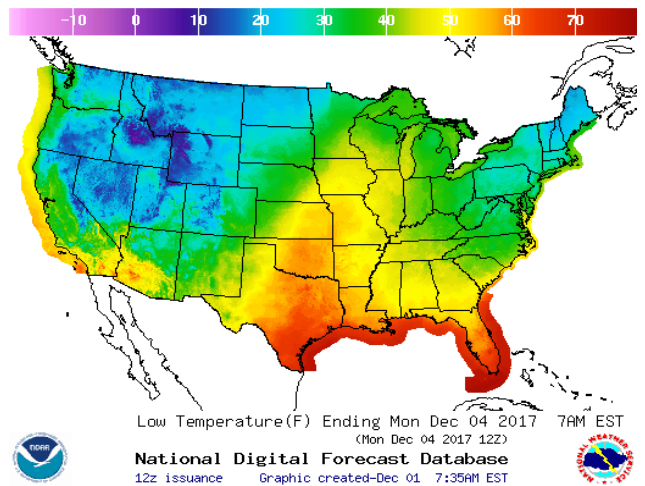


WEATHER – HIGH / LOW TEMPERATURE SUNDAY

HIGH Temperature

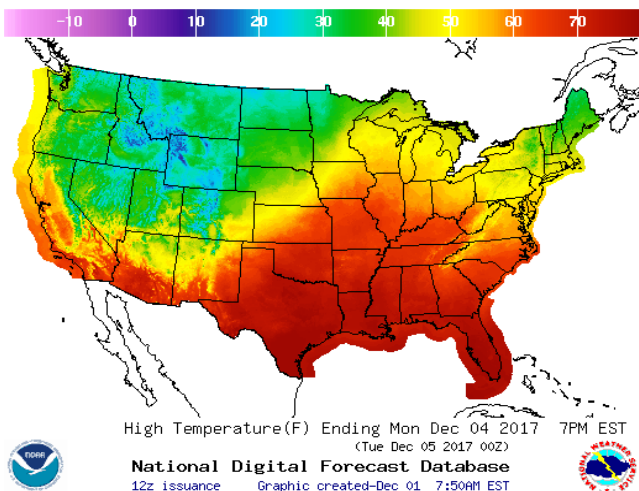


LOW Temperature

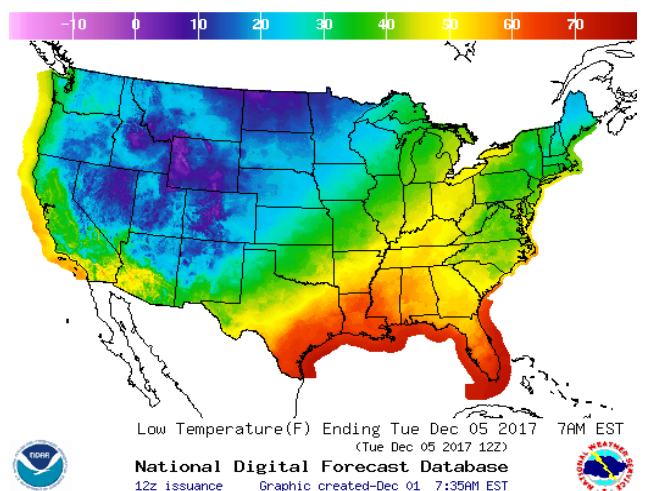


WEATHER – HIGH / LOW TEMPERATURE MONDAY

HIGH Temperature

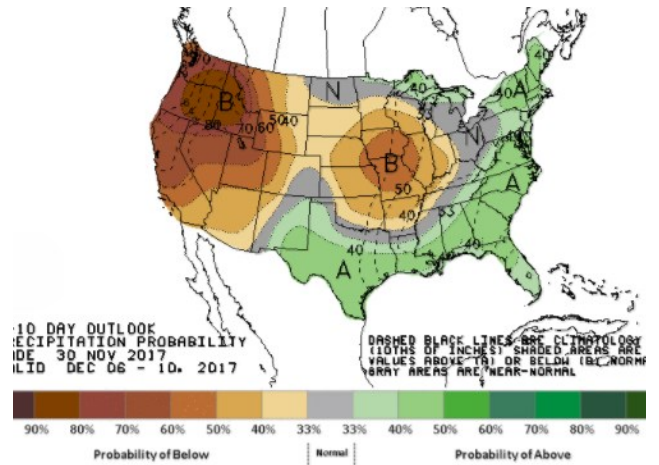
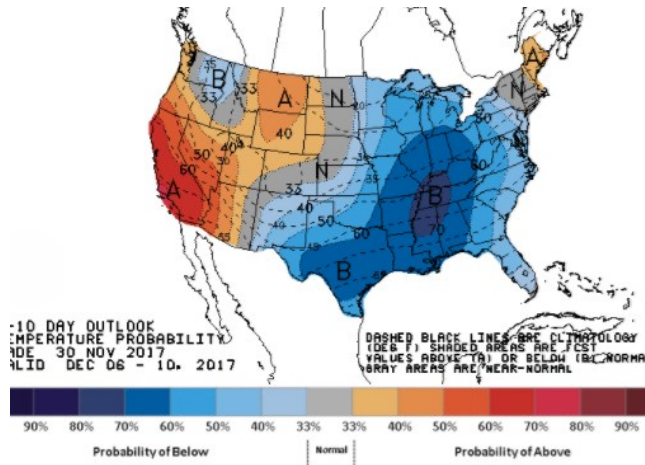


LOW Temperature



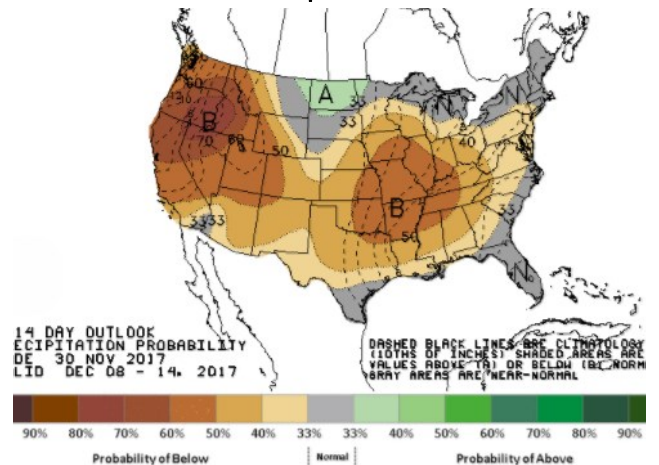
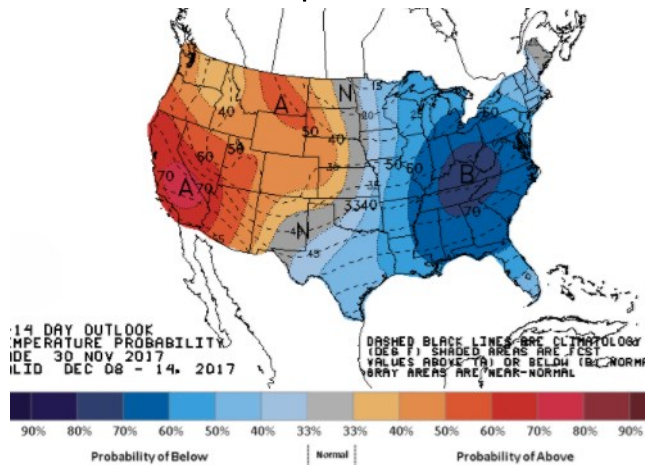
**WEATHER – 6 TO 10 DAY OUTLOOK – NOAA**  
**Temperature**

**Precipitation**



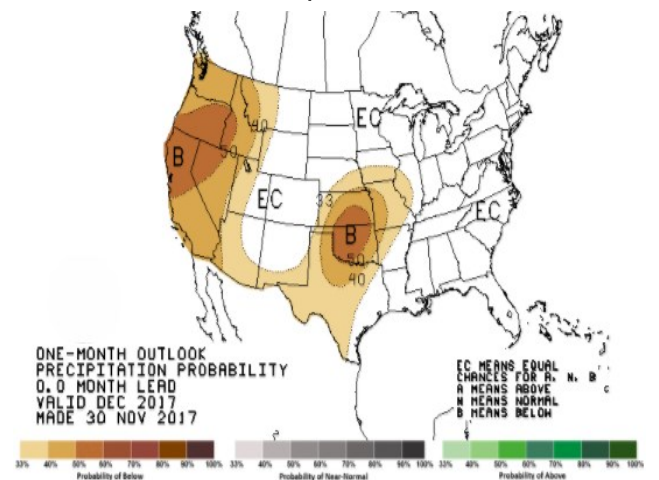
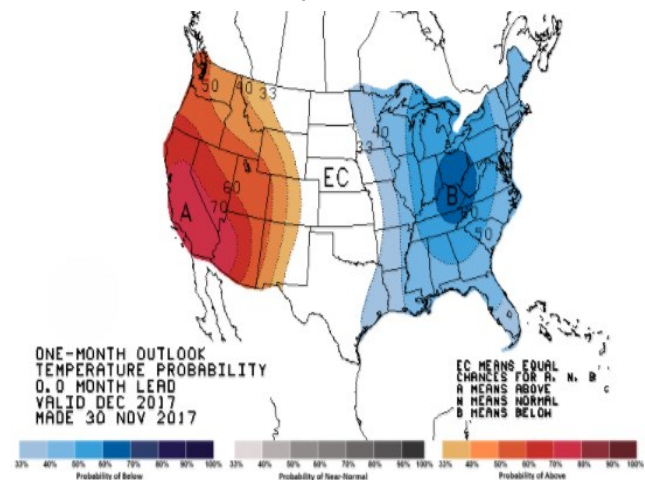
**WEATHER – 8 TO 14 DAY OUTLOOK – NOAA**  
**Temperature**

**Precipitation**



**WEATHER – 30 DAY OUTLOOK – NOAA**  
**Temperature**

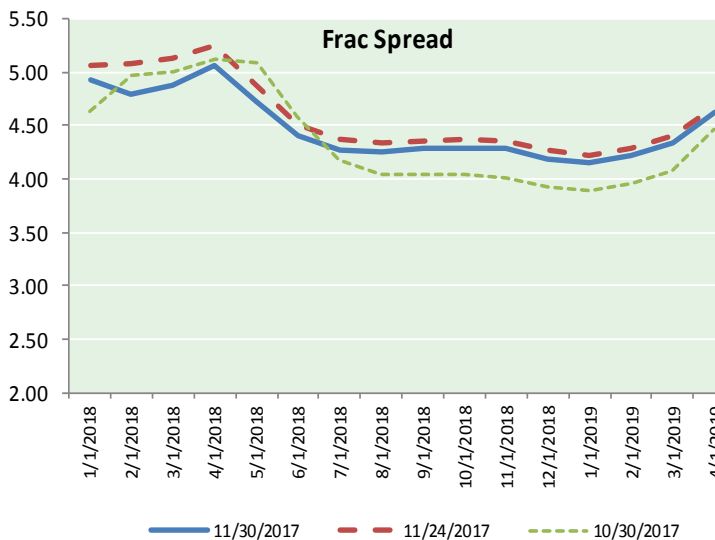
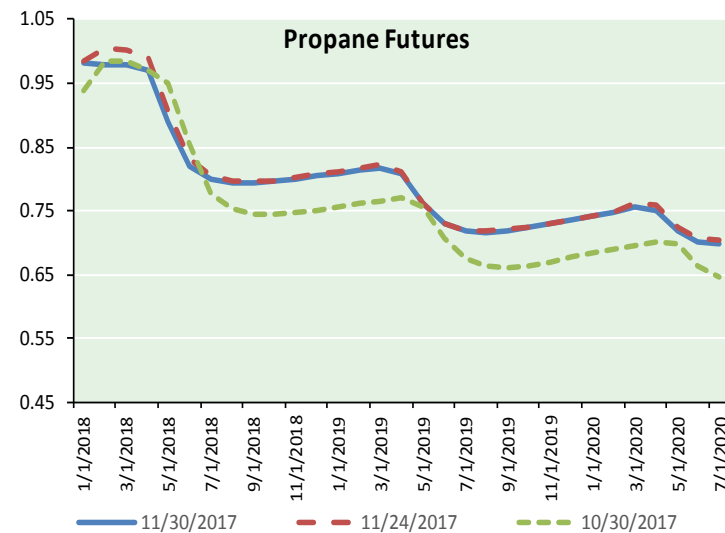
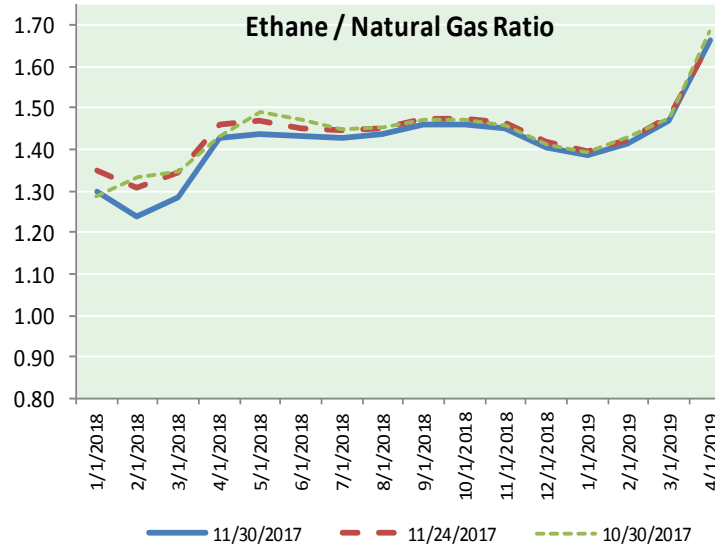
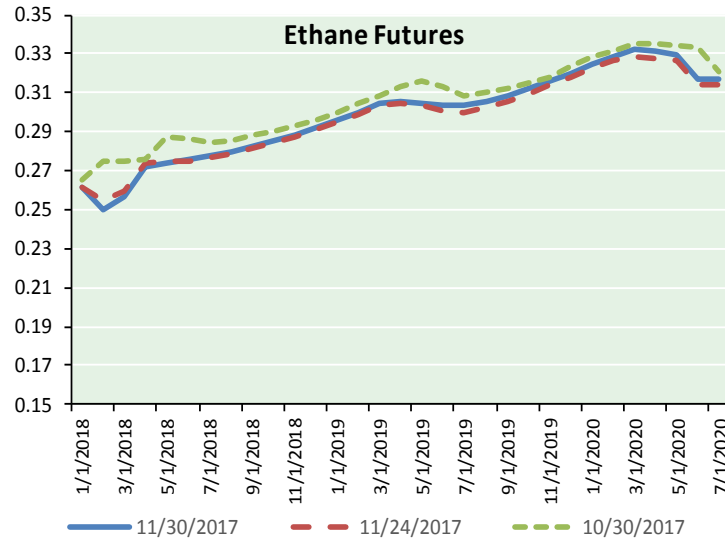
**Precipitation**



# NATURAL GAS NEWS



## ETHANE FUTURES, NG/ETHANE RATIO, PROPANE FUTURES, AND THE FRAC SPREAD



### CME Future Prices

#### Ethane (C2)

##### Non-LDH— Mont Belvieu

Month	Close	Change
Jan-18	0.261	(0.001)
Feb-18	0.250	(0.009)
Mar-18	0.256	(0.008)
Apr-18	0.272	(0.007)
May-18	0.274	(0.006)
Jun-18	0.276	(0.005)
Jul-18	0.278	(0.005)
Aug-18	0.280	(0.005)
Sep-18	0.283	(0.005)
Oct-18	0.286	(0.004)
Nov-18	0.289	(0.005)
Dec-18	0.293	(0.004)

1YR Strip 0.275 (0.005)

### CME Future Prices

#### Propane (C3)

##### Non-LDH— Mont Belvieu

Month	Close	Change
Jan-18	0.982	(0.000)
Feb-18	0.978	(0.013)
Mar-18	0.979	(0.011)
Apr-18	0.969	(0.010)
May-18	0.891	(0.007)
Jun-18	0.820	(0.005)
Jul-18	0.799	(0.002)
Aug-18	0.794	(0.001)
Sep-18	0.794	(0.001)
Oct-18	0.796	(0.002)
Nov-18	0.800	(0.002)
Dec-18	0.804	(0.002)

1YR Strip 0.867 (0.005)



# NATURAL GAS NEWS



Prompt WTI (CL) Crude  
Daily Sentiment

**BULLISH**



RESISTANCE  
55.46 & 55.93  
SUPPORT  
54.55 & 54.11

FOLLOW US ON TWITTER:



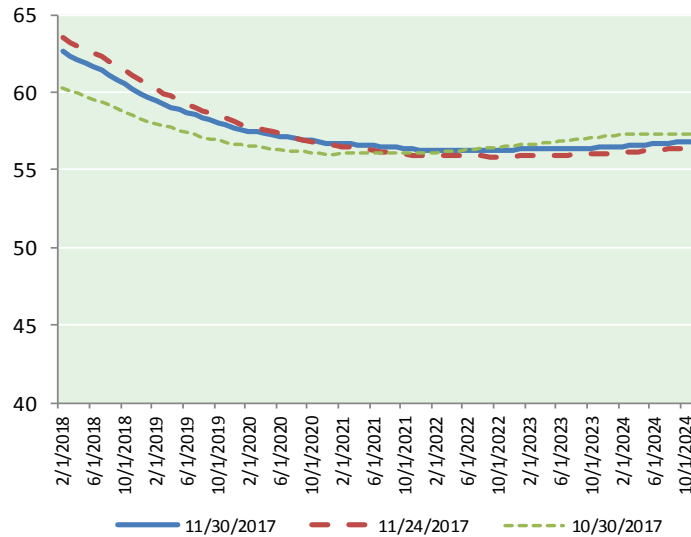
@MPG\_NatGasNews

**NYMEX Brent (BZ)**

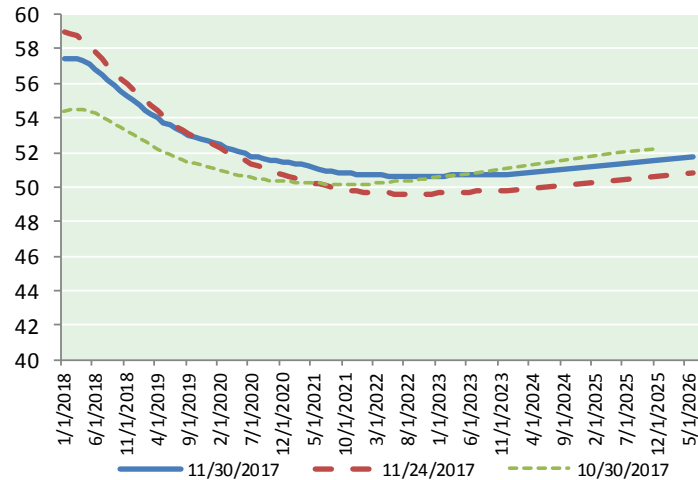
Futures

Month	Close	Change
Jan-18	63.57	0.46
Feb-18	62.63	0.10
Mar-18	62.34	0.10
Apr-18	62.07	0.08
May-18	61.84	0.06
Jun-18	61.63	0.03
Jul-18	61.40	0.00
Aug-18	61.12	(0.04)
Sep-18	60.82	(0.07)
Oct-18	60.52	(0.09)
Nov-18	60.22	(0.11)
Dec-18	59.93	(0.12)
Jan-19	59.68	(0.13)
Feb-19	59.47	(0.14)
Mar-19	59.24	(0.14)
Apr-19	59.06	(0.15)
May-19	58.86	(0.16)
Jun-19	58.64	(0.16)
Jul-19	58.52	(0.16)
Aug-19	58.35	(0.17)
Sep-19	58.20	(0.16)
Oct-19	58.07	(0.18)
Nov-19	57.90	(0.19)
Dec-19	57.73	(0.18)
1YR Strip	61.51	0.03
2018	61.51	0.03
5YR Strip	57.94	(0.08)

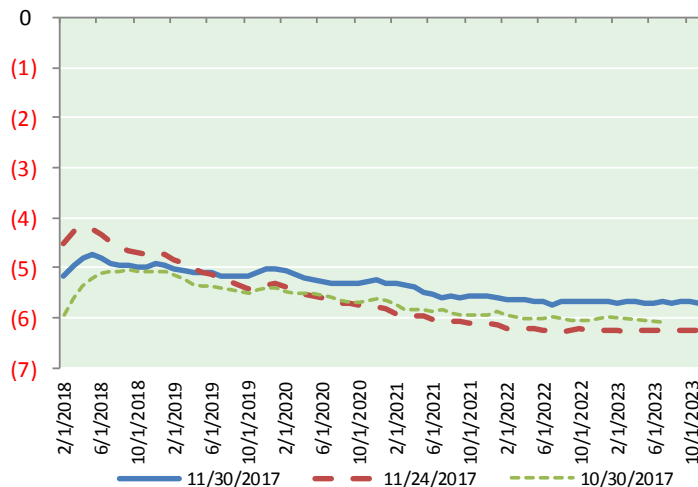
**BRENT CRUDE FORWARD CURVE**



**WTI CRUDE FORWARD CURVE**



**WTI-BRENT SPREAD**



**FRAC Spread**

**Specifications**

Ethane : 42%	66,500 btu/g
Propane: 28%	90,830 btu/g
Butane: 11%	102,916 btu/g
Iso-Butane: 6%	98,935 btu/g
Natural Gasoline: 13%	115,021 btu/g

**Prompt NGL Futures**

(\$/gallon)

	Jan-18	Close	Change
Butane	1.039	1.039	0.000
Iso-Butane	1.039	1.039	0.000
Nat Gasoline	1.358	1.358	(0.001)

**NYMEX WTI (CL) Futures**

Month	Close	Change
Jan-18	57.40	0.10
Feb-18	57.45	0.09
Mar-18	57.40	0.09
Apr-18	57.28	0.08
May-18	57.09	0.08
Jun-18	56.82	0.07
Jul-18	56.50	0.06
Aug-18	56.17	0.05
Sep-18	55.86	0.04
Oct-18	55.55	0.02
Nov-18	55.25	(0.01)
Dec-18	55.00	0.00
Jan-19	54.72	0.00
Feb-19	54.45	0.00
Mar-19	54.19	0.00
Apr-19	53.97	0.02
May-19	53.75	0.02
Jun-19	53.56	0.01
Jul-19	53.35	0.01
Aug-19	53.17	0.01
Sep-19	53.02	0.01
Oct-19	52.90	0.00
Nov-19	52.80	0.00
Dec-19	52.72	0.01
1YR Strip	56.48	0.06
2018	56.48	0.06
5YR Strip	52.65	0.02