

# *NGPL*

## *2018-19 Winter Operations Review*

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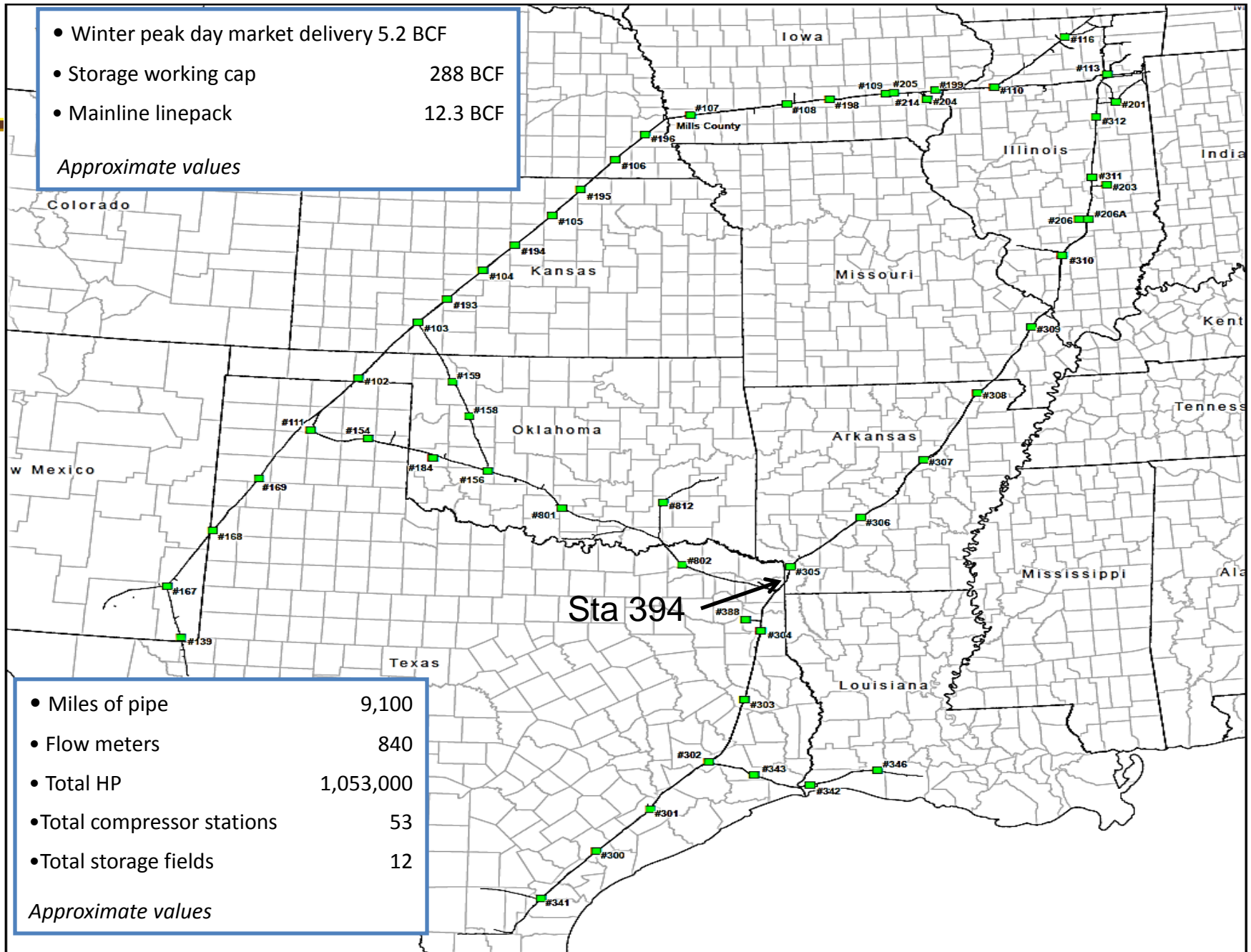
# *Pipeline Management*

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- Operations Review
  - 2017-18 Winter Recap
  - 2018 Summer Recap
  - 2018 National & NGPL Storage
  - Winter 2018/2019
    - Readiness
    - Scheduling Expectations
  - Maintenance Update
    - Completed & Waiting
- Contact Lists

- Winter peak day market delivery 5.2 BCF
- Storage working cap 288 BCF
- Mainline linepack 12.3 BCF

*Approximate values*



- Miles of pipe 9,100
- Flow meters 840
- Total HP 1,053,000
- Total compressor stations 53
- Total storage fields 12

*Approximate values*

# *Winter 2017/2018 Recap*

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- The period of Dec 27, 2017 to Jan 6, 2018 was 53% colder than normal
- April 2018 was 45% colder than normal
- Winter operational records set
- No pressure or deliverability issues

# Winter Records - NGPL

	<b>New Record</b>	<b>Previous Record</b>
Daily System Throughput	7.584 (1/2/18)	6.984 (1/6/17)
Monthly Throughput *	5.641 (Jan 2018)	5.198 (Dec 16)
Storage Withdrawals	3.377 (12/27/17)	3.349 (1/6/17)
Power Generation	1.134 (12/27/17)	1.133 (7/20/17)
LDC Takes	4.521 (1/1/18)	4.510 (1/5/17)

\* Daily average system wide deliveries

Volumes in Bcf/d

# Chicago O'Hare HDDs

	2017-2018		2016-2017	
	Actual		Actual	
	HDD's	% of Normal	HDD's	% of Normal
Nov	750	101%	540	73%
Dec	1165	101%	1231	107%
Jan	1246	97%	1117	87%
Feb	1005	96%	748	72%
Mar	<u>867</u>	<u>103%</u>	<u>785</u>	<u>93%</u>
	5033	99%	4421	87%

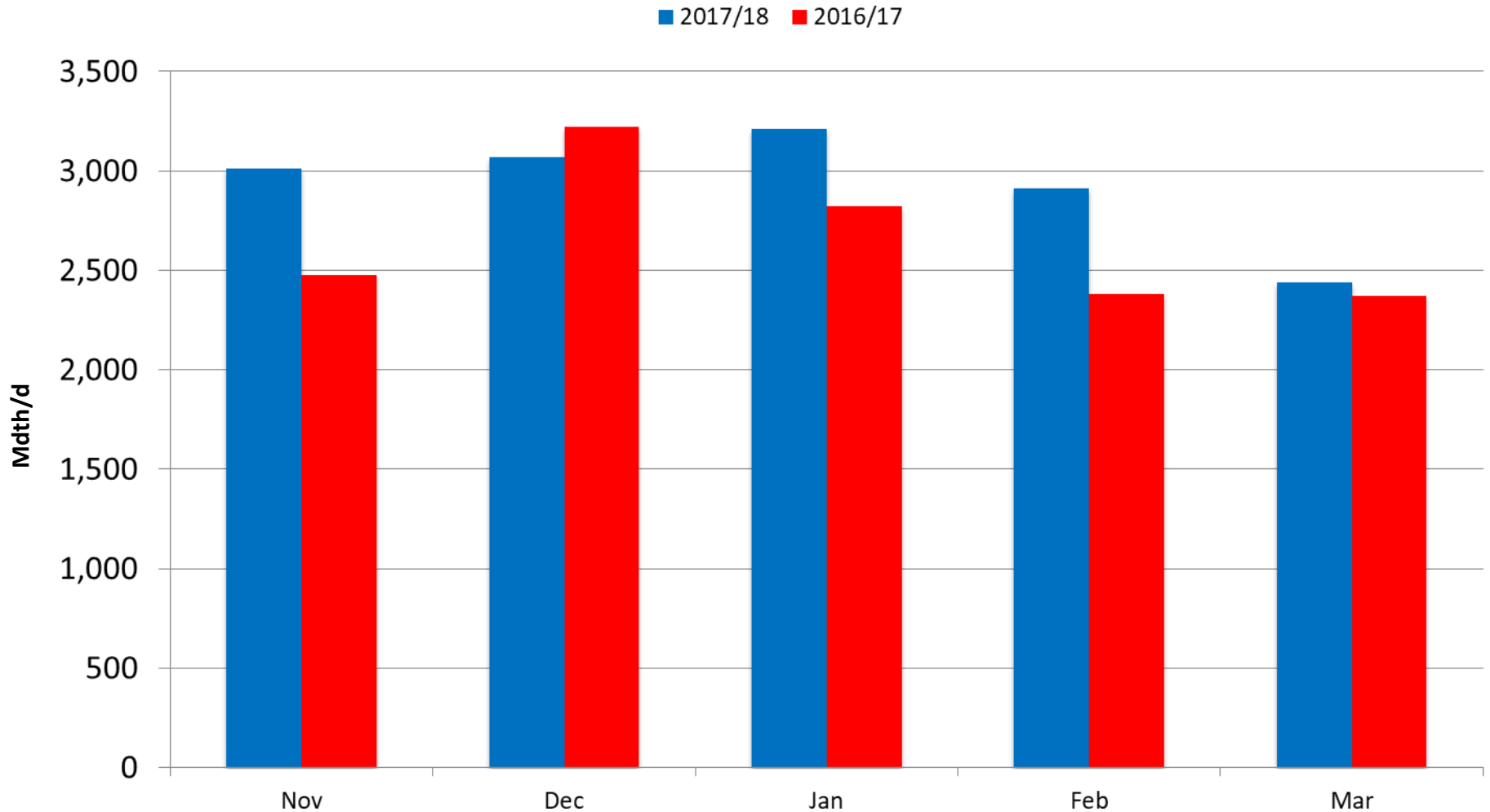
2015/16 winter 85% of normal

# November - March Throughput Comparison

	<u>2017/18</u> <u>Nov – Mar</u>	<u>2016/17</u> <u>Nov – Mar</u>	<u>% Change</u>	<u>2015/16</u> <u>Nov – Mar</u>
LDC	2,928	2,699	+ 8%	2,560
Power	442	283	+ 56%	318
Industrial	63	63	- %	61
LNG	535	587	- 9%	80
Interconnects	1,233	990	+ 25%	1,094
Storage	<u>187</u>	<u>233</u>	<u>- 20%</u>	<u>119</u>
TOTAL	5,388	4,855	+11%	4,184

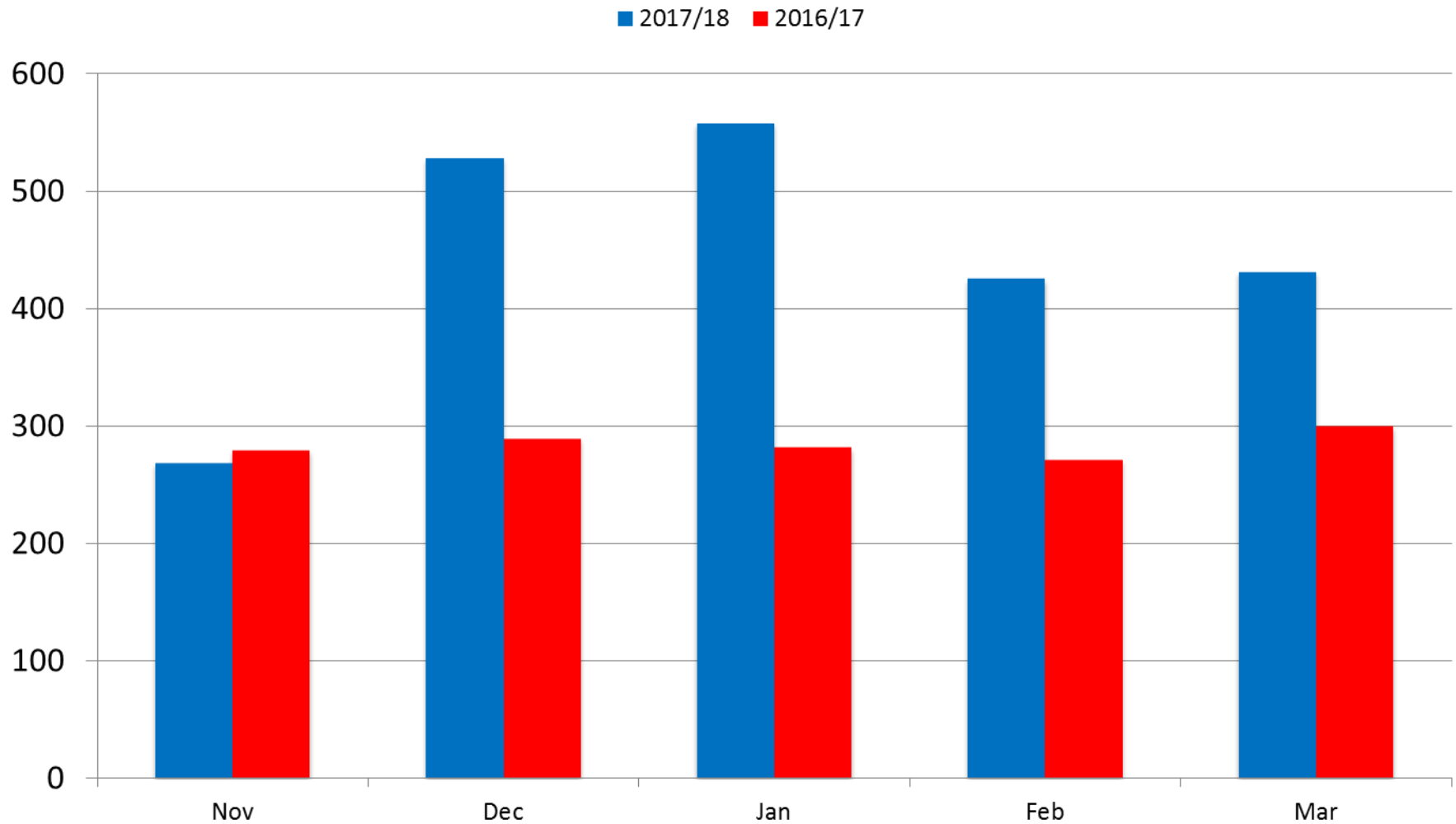
• All volumes are MDth

# Winter Average Daily LDC Demand





# Winter Average Daily Power Demand (MDth/d)



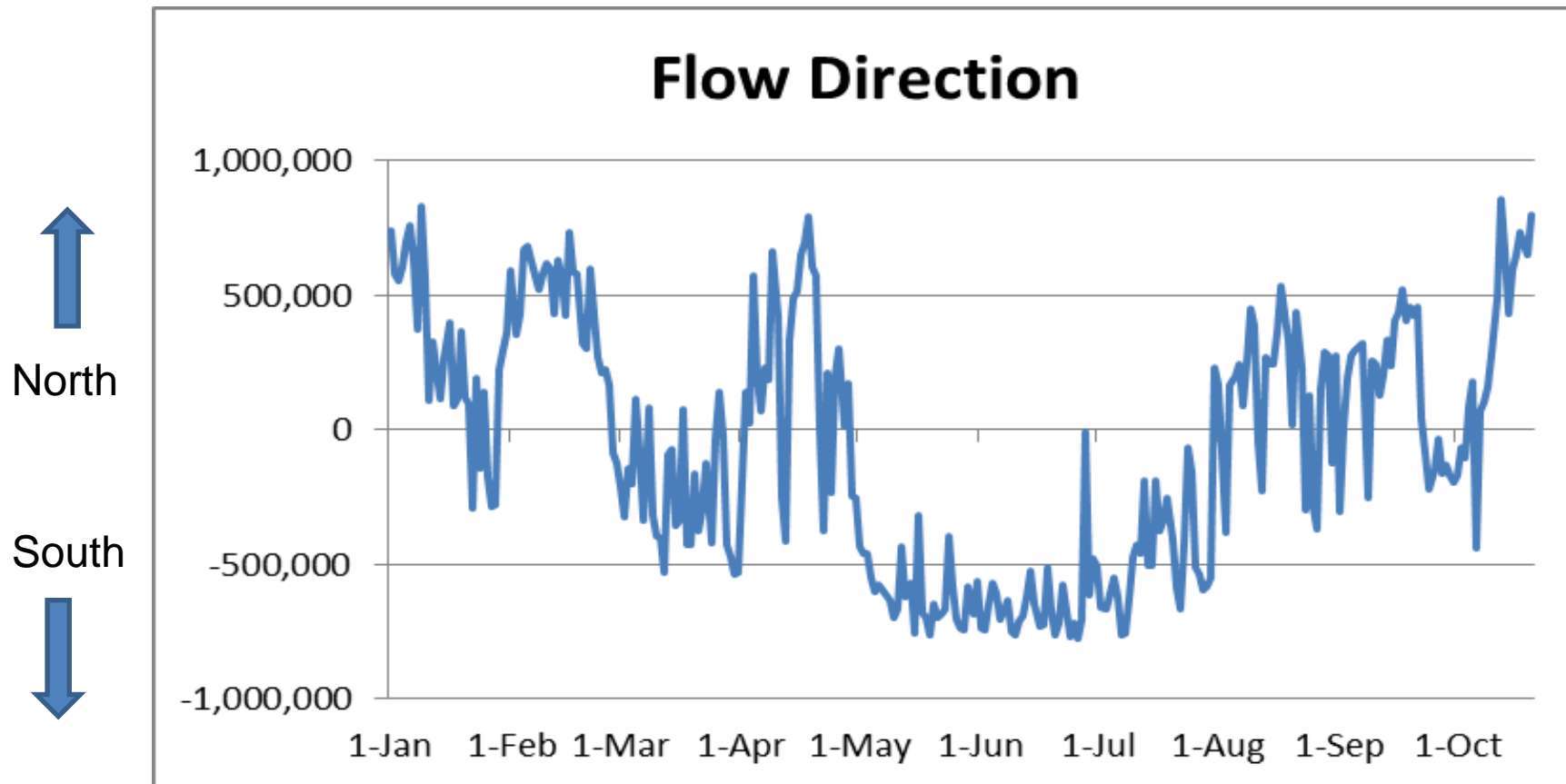
# Significant Changes Summer 2018

- April was approximately 45 % colder than normal
  - Average daily system sendout was the highest April on record (5.4 Bcf/d)
  
- Record setting power loads in July 2018. Top 5 days for power loads were:
 

• July 16, 2018	1.376 Bcf/d
• July 10, 2018	1.287
• June 18, 2018	1.274
• July 5, 2018	1.216
• July 17, 2018	1.173
  
- Top 15 power load days:
  - 12 in 2018
  - 3 in 2017
  
- Gulf Coast system continues to flow south from Station 310
  - Since Jan 1, 2018 flows are southbound approximately 53% of the time

# Gulf Coast Flow Direction

## Daily Net Flows



# Supply Area Changes

January – October daily averages

	<u>2018</u>	<u>2017</u>	<u>% vs 2017</u>
Permian	203	62	+ 227 %
Iowa – Illinois	1,628	1,300	+ 25 %
Texok	1,370	1,200	+ 14 %
South Texas	103	138	- 25 %
Midcontinent	1,251	1,308	- 4 %

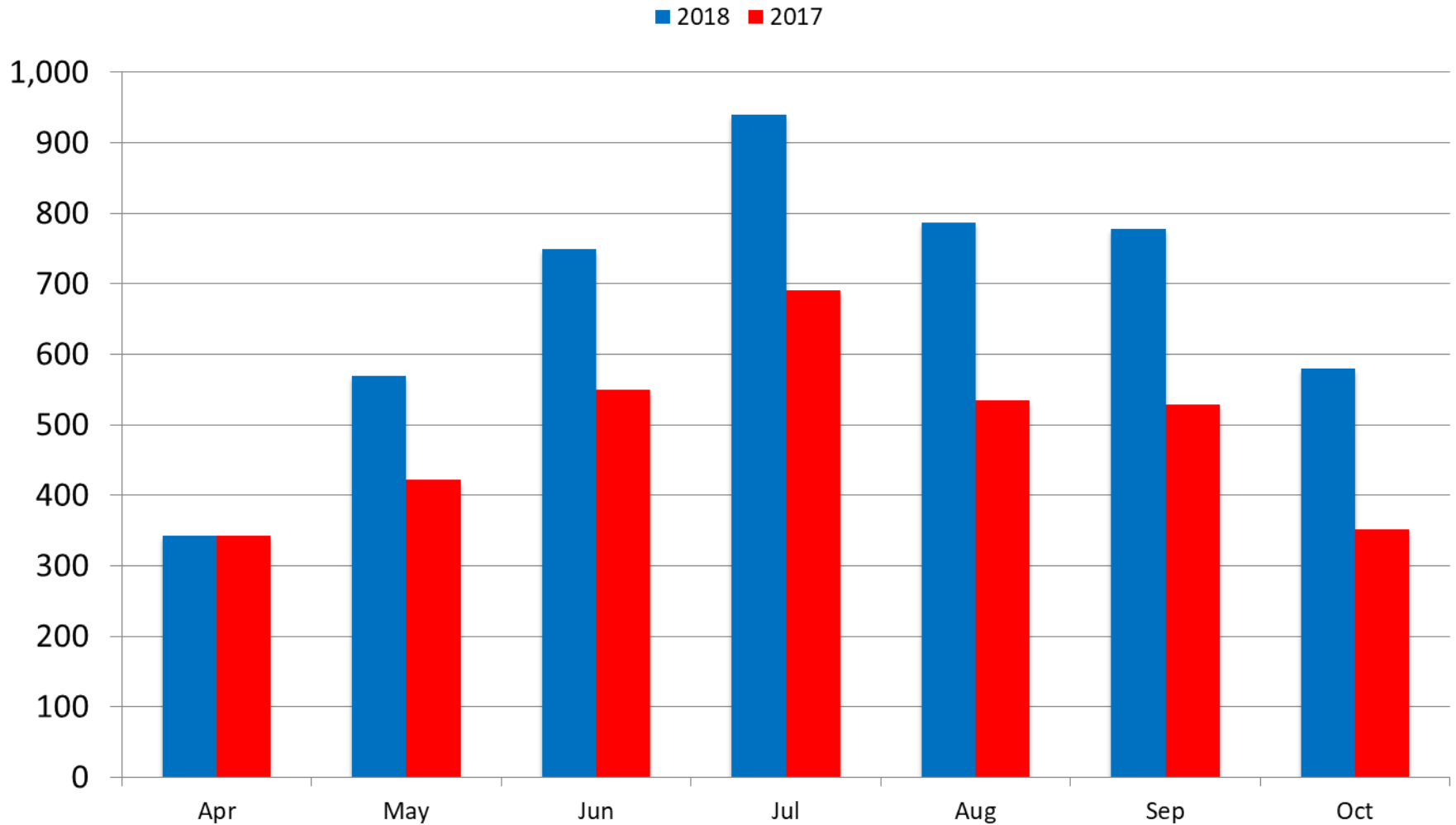
• All volumes are MDth/d

# Chicago O'Hare CDDs

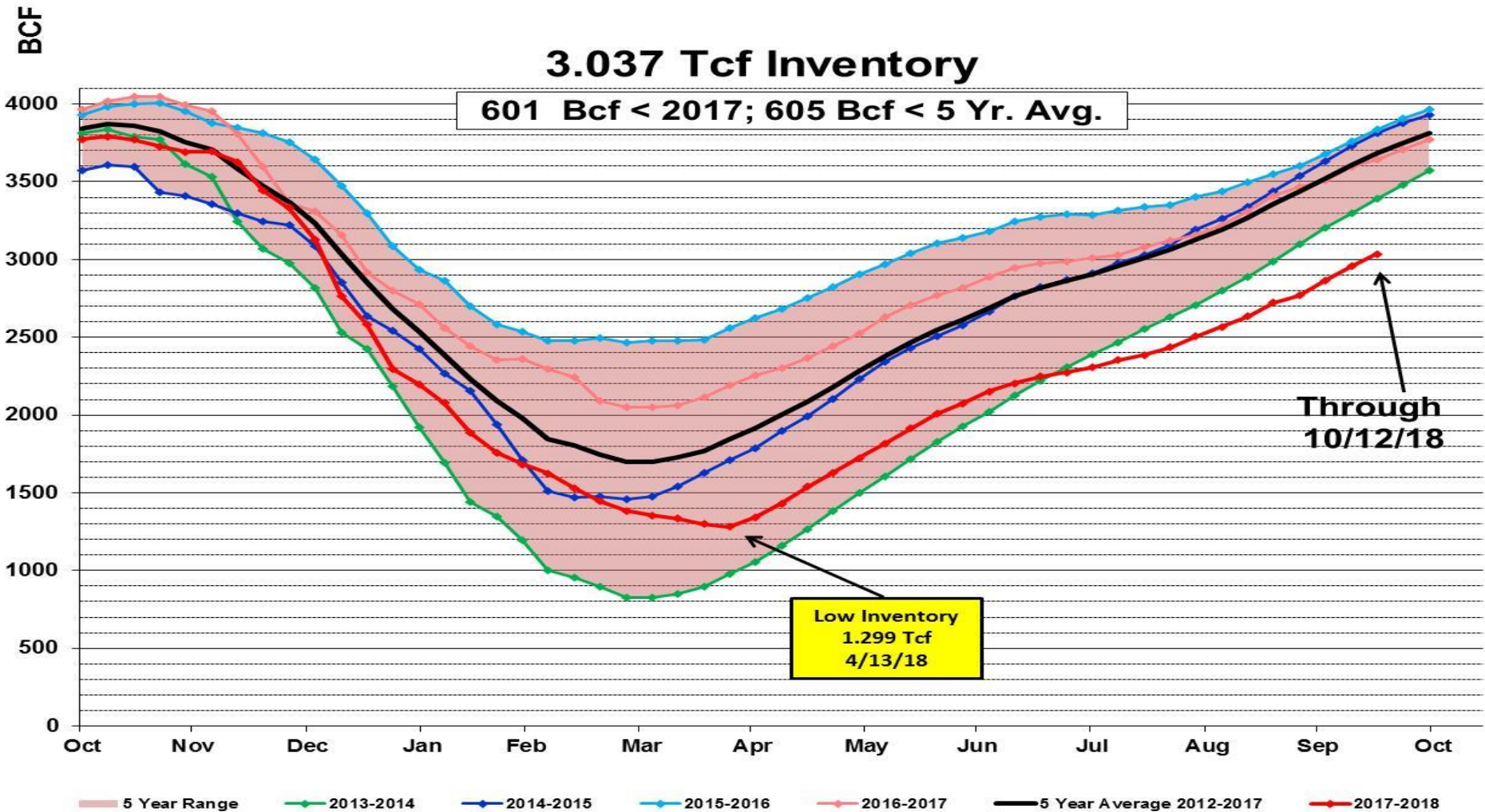
	2018		2017	
	Actual		Actual	
	CDD's	% of Normal	CDD's	% of Normal
Apr	0	0%	12	133%
May	147	334%	21	48%
Jun	215	130%	230	139%
Jul	353	125%	306	108%
Aug	350	147%	214	90%
Sep	180	196%	179	195%
Oct	<u>11</u>	<u>100%</u>	<u>29</u>	<u>264%</u>
	1256	151%	991	119%

2016 summer 139% of normal

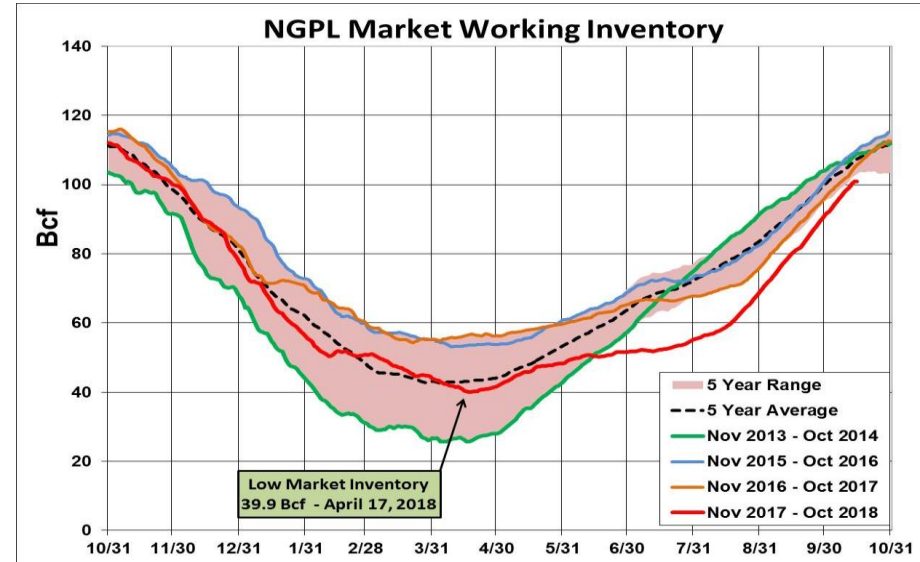
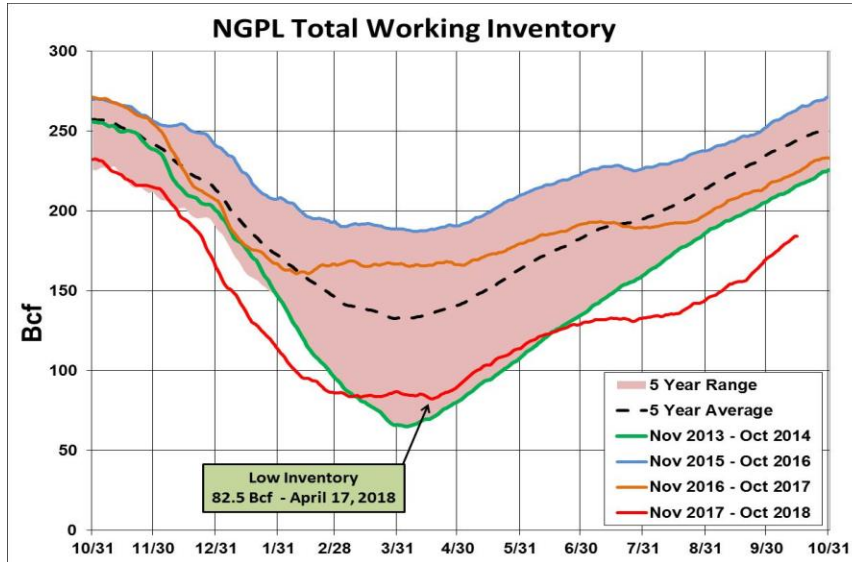
# Summer Average Daily Power Demand (MDth/d)



# National Storage Activity



# Gas Storage Update



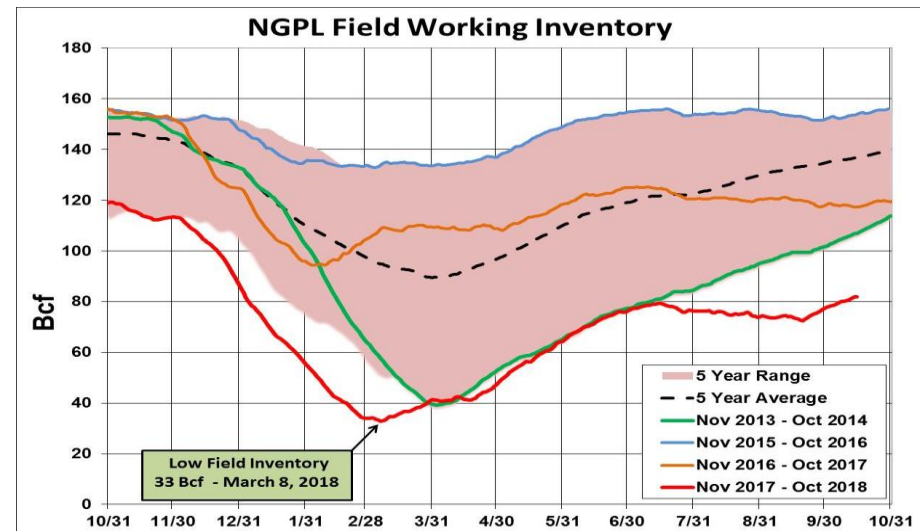
## Summary of Key Items – Q3

### 2018 Injection Season Update

- Very low field WI at the end of winter
- Reduced storage injections nominated by customers
- Market pricing impact

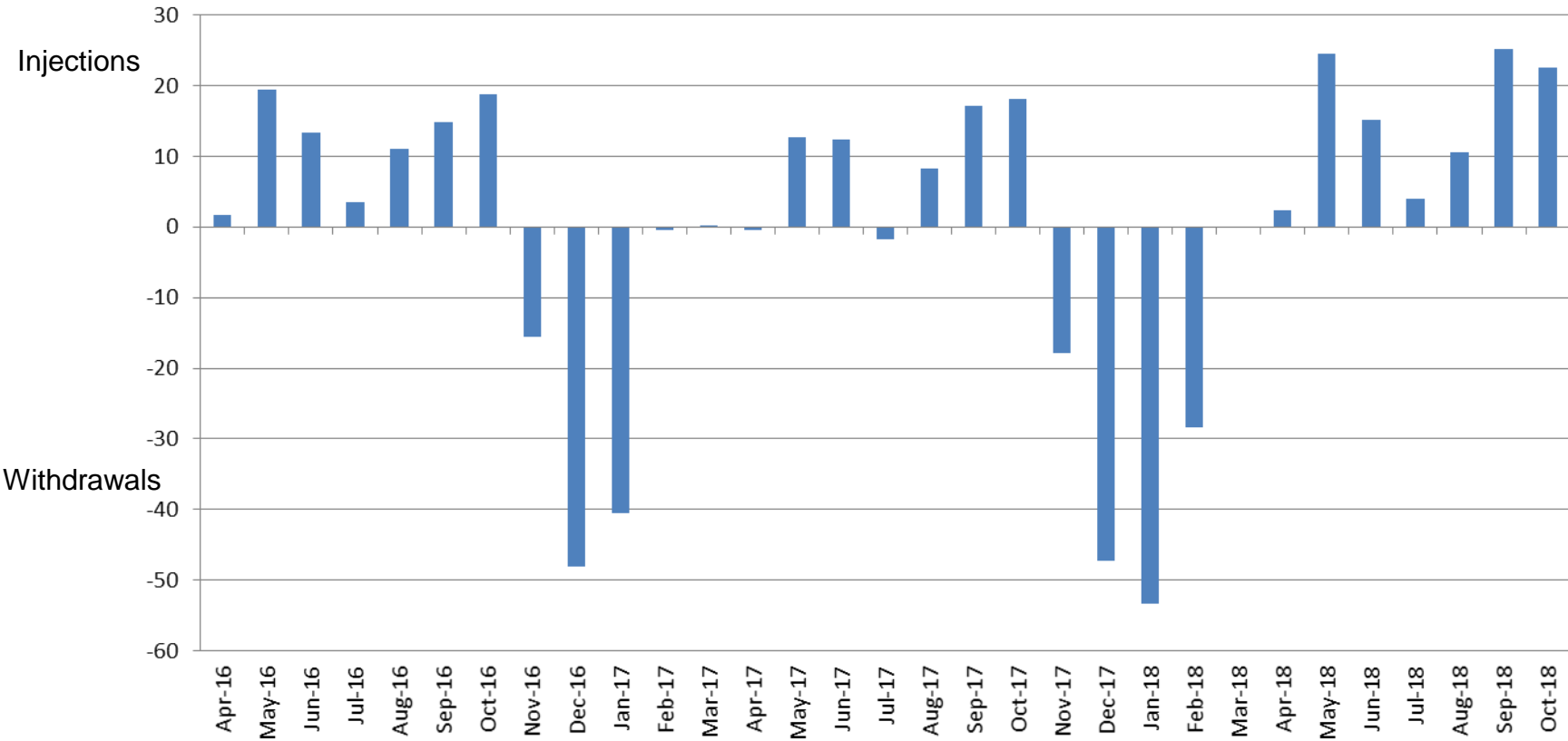
### Storage Well/Field Integrity Update

- Well work/Integrity logging ongoing
- Records management/training development ongoing
- Herscher NW Abandonment - FERC approval 8-2-18
  - 9 of 34 wells to be abandoned in 2018





# NGPL Physical Storage Activity

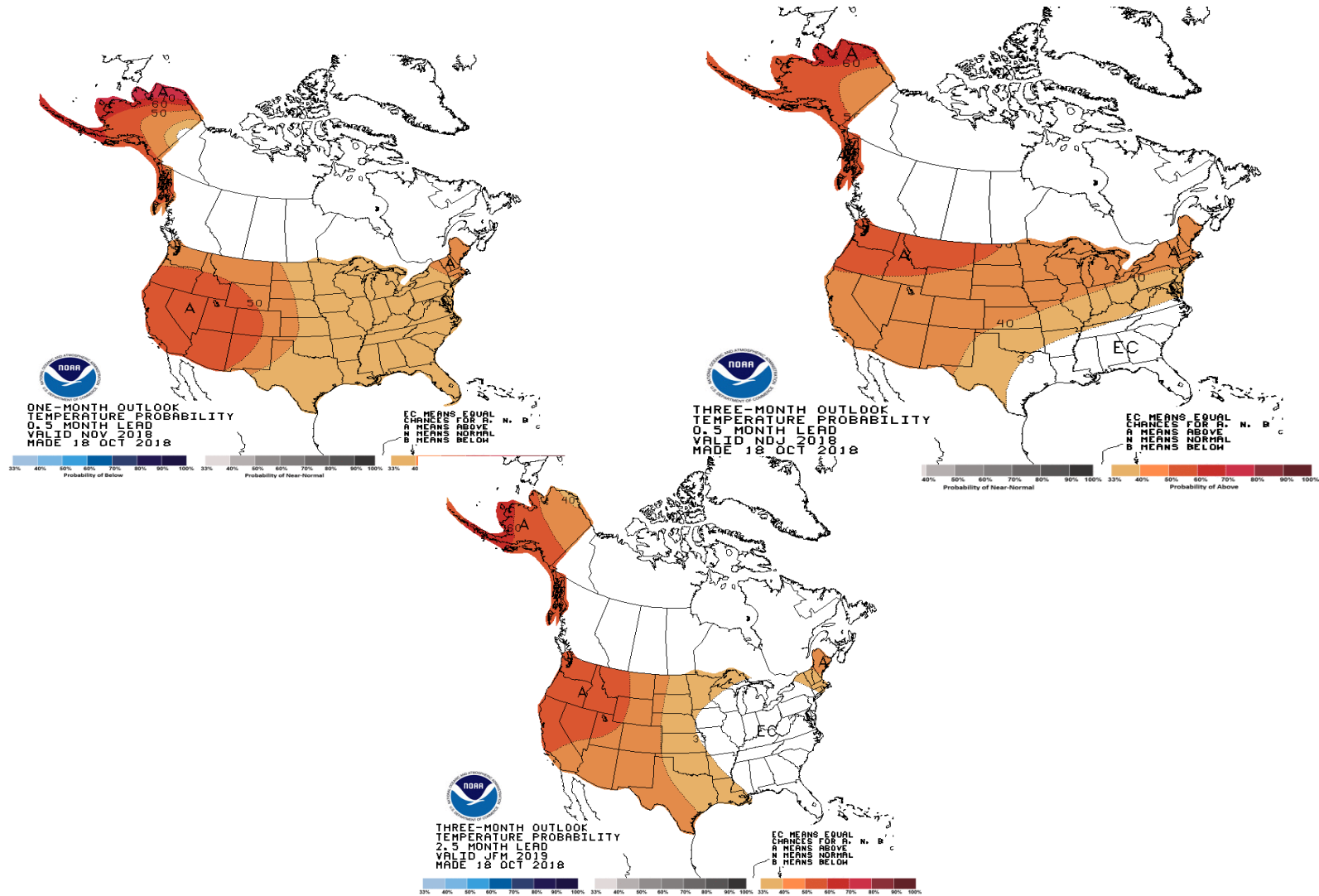


# Winter 2018/2019

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- Market area storage projected to be near 114 MMDth on Oct 31 with additional injections planned for November
- Market area maintenance projects to be complete by early Nov.
  - No expected impact
- Expected changes in pipeline flows:
  - Market area receipts encouraged
  - Traditional supply basins:
    - Texok has capacity available
    - Midcontinent will remain at capacity
- Expect scheduling restrictions to be implemented to protect Market area storage fields, delivery pressures and linepack, as necessary
  - More detailed scheduling expectations posted on EBB
    - Possible limitations may include e.g. :
      - Scheduling for unexpected outages
      - Hourly Rights restrictions
      - Point level or area OFOs
      - Withdrawals limited to WQ rights

# NOAA Weather



# Winter Checklist

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- Compression
  - Test run all compression units prior to increased demand due to colder weather
- Storage
  - All storage fields are ready for winter
    - Field storage is expected to be approximately 70% full
- Pipeline
  - Maintain linepack targets by area
  - Maintain throughput targets
  - Maintain pressures for key areas
  - Field ops to man key sites
- Scheduled Maintenance
  - Limit planned maintenance activities to those required by regulation or policy
- Customer Communication
  - NGPL posts system capacity and outage information
  - NGPL scheduling representatives and Account Directors available for questions

# *HP Readiness Checklist*

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- Amarillo
  - All mainline stations tested and are ready.
- Gulf Coast
  - All mainline stations tested and are ready.
- Market Area
  - All stations tested and are ready (113, 114, 312 & 206A).
- Storage
  - All HP and related facilities have been tested and are ready.

# *NGPL Maintenance Program*

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- Integrity IMP
- SCC
- General maintenance
  
- 2018 Integrity spending will equal approximately \$84 million
  
- **Updated 12 Month Rolling Maintenance Plan is posted on EBB around the 20<sup>th</sup> of each month**
  - A detailed listing/description of the next month's outages is also posted around the 20<sup>th</sup> of each month.

# Category Description

- In Line Inspection (ILI)
  - Smart tools used to:
    - Identify general internal and external corrosion using ‘standard’ MFL
    - Identify longitudinal defects including long-seam corrosion using C-MFL (also known as an AFD tool)
- EMAT Runs
  - Smart tool used to identify Stress Corrosion Cracking (SCC)
- Pressure and Spike Tests
  - Hydrostatic pressure tests performed in pipeline sections that are not piggable or to complement EMAT in pipeline sections within high consequence areas (HCAs)
- Direct Assessment Testing for HCAs (DE, ECDA, SCCDA)
  - Visual pipe examinations performed in pipeline sections that are relatively short and/or not conducive to ILI or hydrostatic pressure tests
- KMI Assessment Digs
  - Excavations performed to prove-up the existence of SCC using the “KMI process”

# Category Description

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- Remediation
  - Pipeline repairs / remediation of anomalies identified by a smart tool run
- Gas Storage Well Integrity Program
  - Activities related to down-hole logging (ILI) of storage wells and replacement of well head components
- Other (Geohazards, Misc)
  - Reviews, assessments, and mitigation of pipeline hazards created by geological events such as land slides, floods, erosion, etc.
- Make Piggable
  - Installing or replacing facilities to allow the use of smart tools in a previously unpiggable pipeline section
- Drip Replacement and Removal
  - Removal or replacement of pipeline drips that are no longer necessary and may pose an integrity risk



# 2018 NGPL Maintenance Program

TYPE	2018 Job Count	2017 Job Count	2016 Job Count
Integrity	217	221	187
O&M	<u>272</u>	<u>270</u>	<u>324</u>
System Total	489	491	511
Market Area and Storage	55	93	128
Amarillo projects	248	205	214
GC projects	186	124	169
Posted	96	82	58

# *Managing Outages*

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- While some outages are immediate and/or unavoidable, where possible NGPL makes every attempt to minimize the duration of outages and consolidate work to limit the number of outages and minimize the impact to Shippers.
- Kinder Morgan has a dedicated mechanical and project support team available in addition to outside contract support
- Example Amarillo #3 Force Majeure
  - 8 crews
  - 7 days a week
  - Consolidated work to limit outages

# 2018 Remaining Outage Schedule With Potential Impacts

<b>Integrity</b>	<u>Description</u>	<u>Type</u>	<u>Segment</u>	<u>Tool Run Date</u>	<u>Expected results</u>	<u>Comments</u>						
<b>Amarillo</b>	AM #3 108-109	Re-run of EMAT	13	11/6/2018	5/7/2019	50 % scheduling for 2 days						
	AM #3 109 to Miss River	EMAT	14	5/17/2018	11/14/2018	no expected segment impact, multiple lines						
	OE #1 156 to 184	AFD	6	8/14/2018	2/26/2019	no expected segment impact, possible point impact						
<b>Gulf Coast</b>	None											
				<u>Start Date</u>	<u>End Date</u>							
<b>Remediation</b>	Volo #2 make piggable	Remediation	Market	8/7/2018	11/8/2018	Slightly lower pressure profile on high demand						
<b>New HP</b>	Station 394	15,900 HP	Mars 100		10/1/2018							
	Station 303	31,800 HP	Mars 100		10/1/2018							
	Station 301	11,150 HP	Taurus 70		10/1/2018							

# NGPL 2018/2019 Contact List

## Gas Control

Emer 800-733-2490

24 hr 713-369-9400

[#GC-NGPL@kindermorgan.com](mailto:#GC-NGPL@kindermorgan.com)

Trennis Curry

713-369-9378

Cell 713-819-4577

Bill Weidlein

713-369-9131

Cell 936-524-3306

Kenny Robbins

713-369-9432

Cell 832-588-3901

Danny Ivy

713-369-9311

Cell 713-829-2761

Tom Dender

713-420-3833

Cell 205-572-1549

## Transport and Stor Services

TSS Hotline

24 hr 713-369-9683

Richard Williams

713-369-9283

Cell 713-819-1748

Gene Nowak

713-369-9329

Cell 713-252-9759

Houston TX Office  
713-369-9000  
1001 Louisiana St  
Houston, TX 77002

## Account Services

Dave Weeks

630-725-3030

Cell 630-399-1193

Mary Limbaugh

713-420-4576

Cell 972-672-4809

Jim Brett

630-725-3040

Cell 630-437-0103

Downers Grove IL Office  
630-725-3000  
3250 Lacey Rd  
Suite 700  
Downers Grove, IL 60515

## Field Operations

Dee Bennett Director

815-272-9104

Cell 815-693-0517

Joe McLaughlin VP

713-369-9847

Cell 630-269-3006

Ken Grubb COO

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