



# Parkway West Unit Increase Allowable

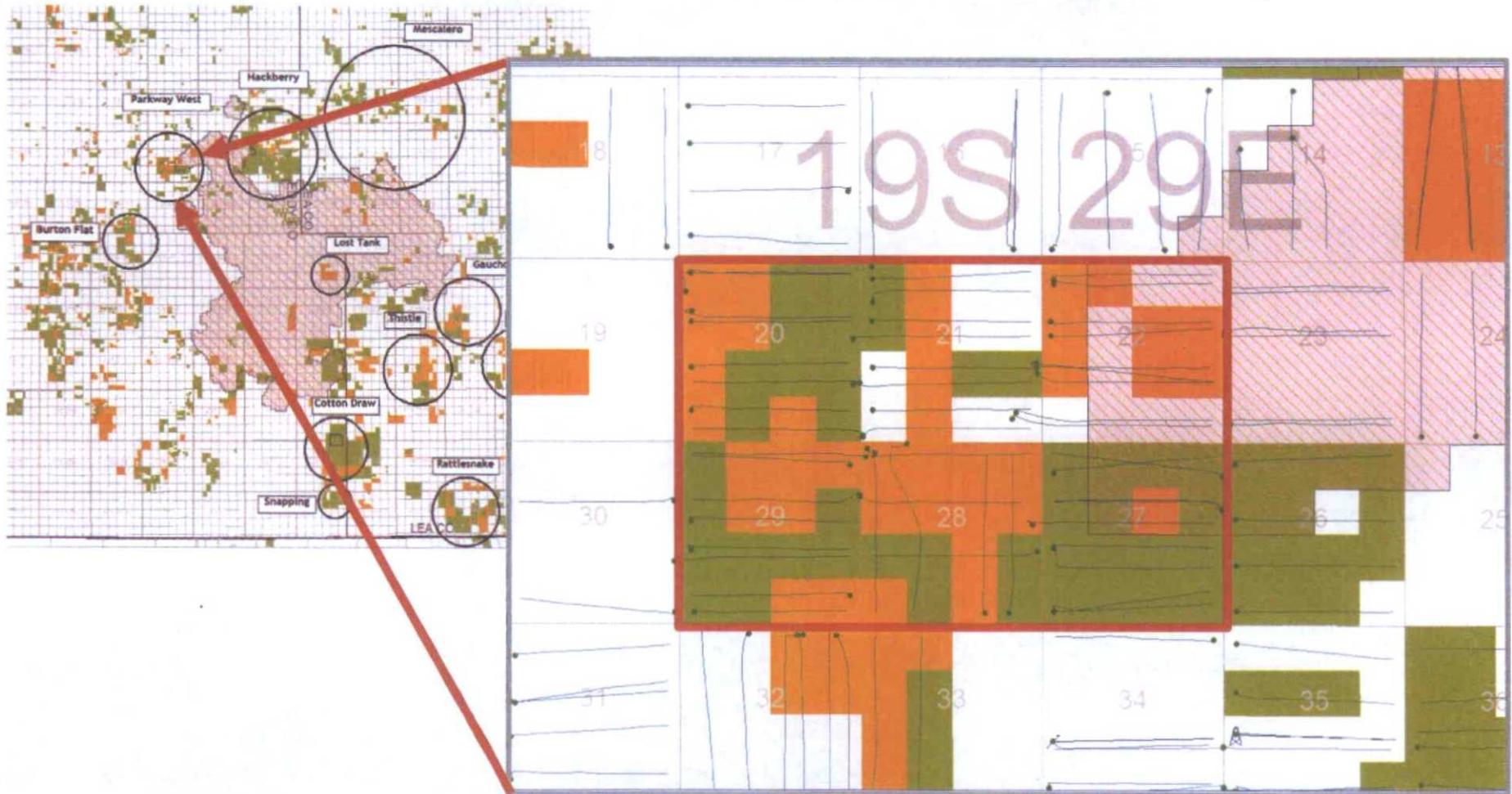
December 3, 2015 | Santa Fe, NM

NYSE: DVN  
devonenergy.com

Oil Conservation Division  
Case No. \_\_\_\_\_  
Exhibit No. 16

# Parkway West Unit Allowable

19S-29E: SEC 20, 21, 22, 27, 28, 29



Existing 1<sup>st</sup> and 2<sup>nd</sup> bone spring producers

# Parkway West Unit Allowable

## Overview

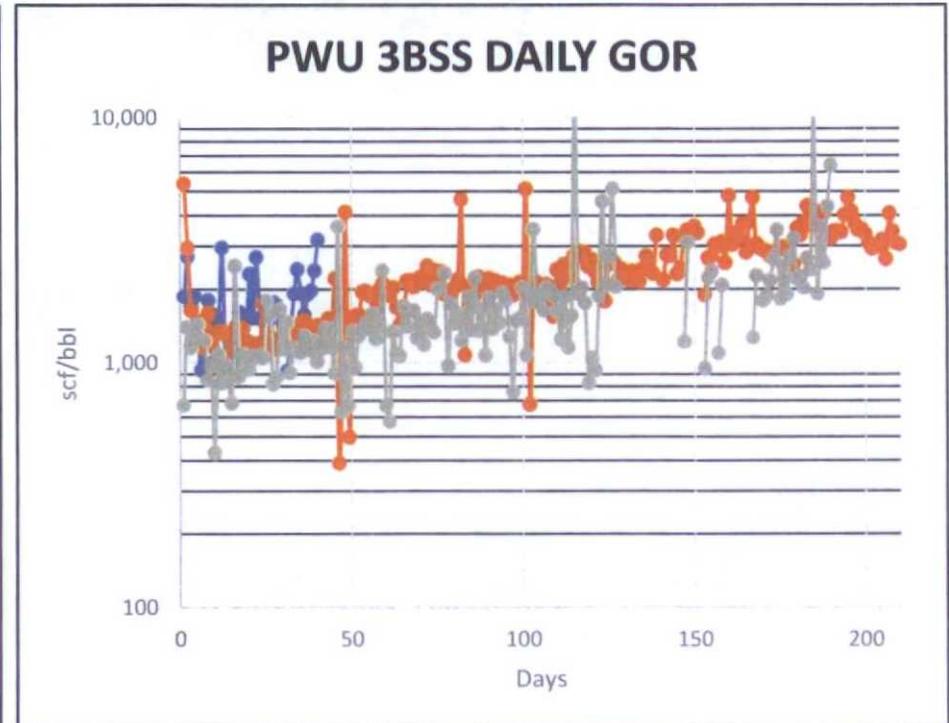
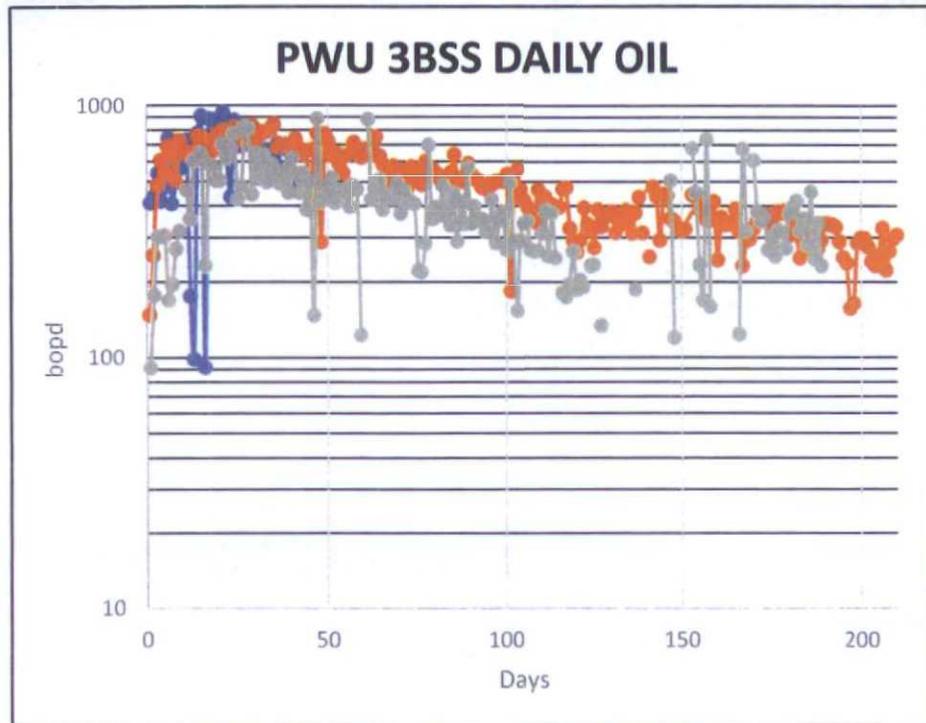


- Current maximum allowable on existing 1<sup>st</sup> and 2<sup>nd</sup> bone spring allowable
  - 230 bopd/40 acre unit = 920 bopd/160 acre unit = 1,840 bop/320 acre unit
  - 2,000 scf/stb
- Requesting an allowable increase to develop 3<sup>rd</sup> bone springs
  - 562.5 bopd/40 acre unit = 2,250 bopd/160 acre unit = 4500 bopd/320 acre unit
  - 5,625 mscfd/40 acre unit = 22,500 mscfd/160 acre unit = 45,000 mscfd/320 acre unit  
or (GOR = 10,000 scf/stb)
- Increased allowable will allow for increased well density from 4 wells/section to 10 wells/section for future development in the 3<sup>rd</sup> bone spring
- This increased well density will allow for optimum project economics and maximize resource recovery.
- Numerical modeling technique, Tag Frac & pressure build-up monitoring were used in predicting production rates in each spacing scenario.



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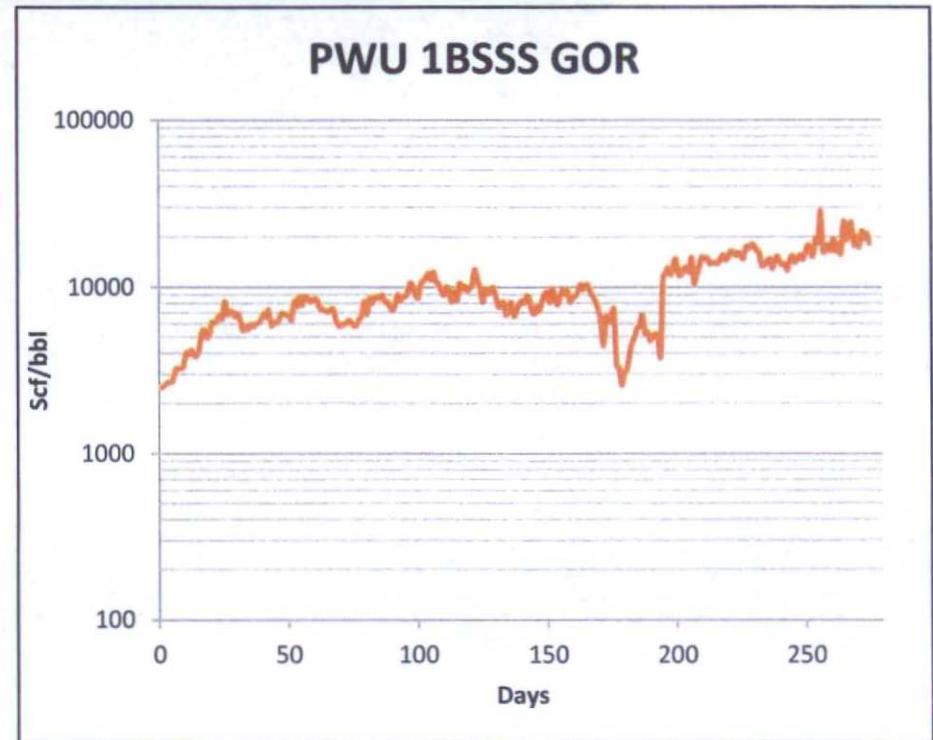
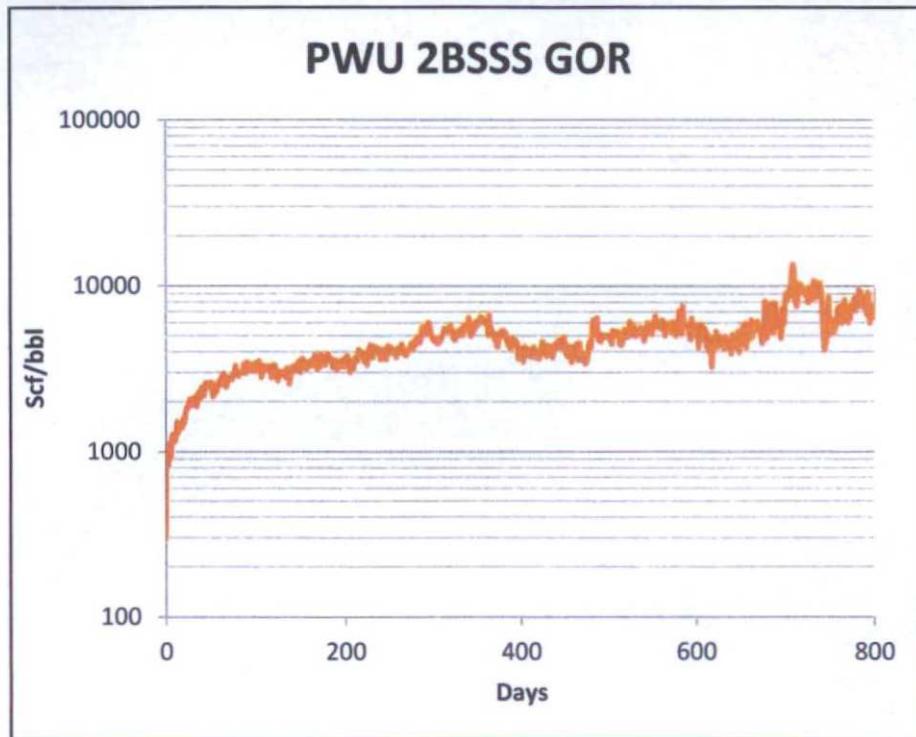
3<sup>rd</sup> Bone Spring Historical Production



- 3 wells currently producing (2 from the G sand and 1 from the F sand)
- Peak Rate Avg 850 bopd
- GOR increases from 1250 scf/bbl to 4000 scf/bbl in 6 months. ✓
- Propose new allowable of 562.5 bbl/40 acre & GOR of 10,000 scf/bbl

# Parkway West Unit Allowable

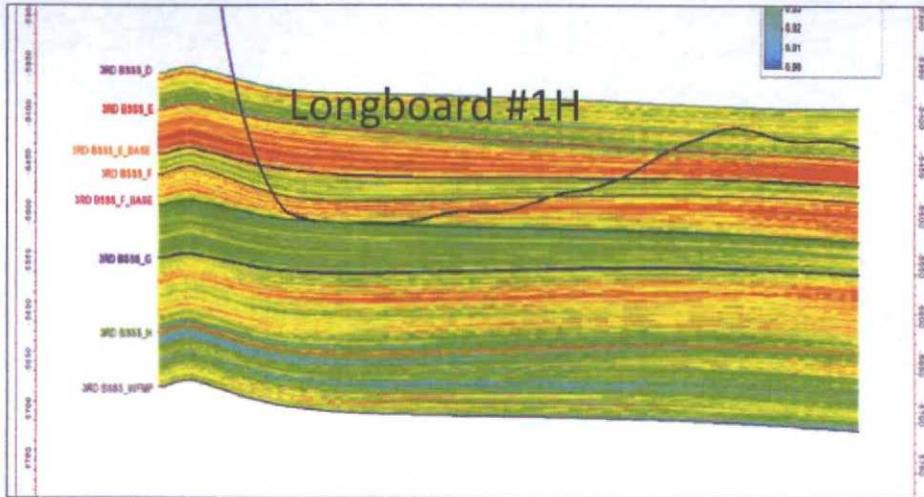
## Other Bone Springs Historical Production



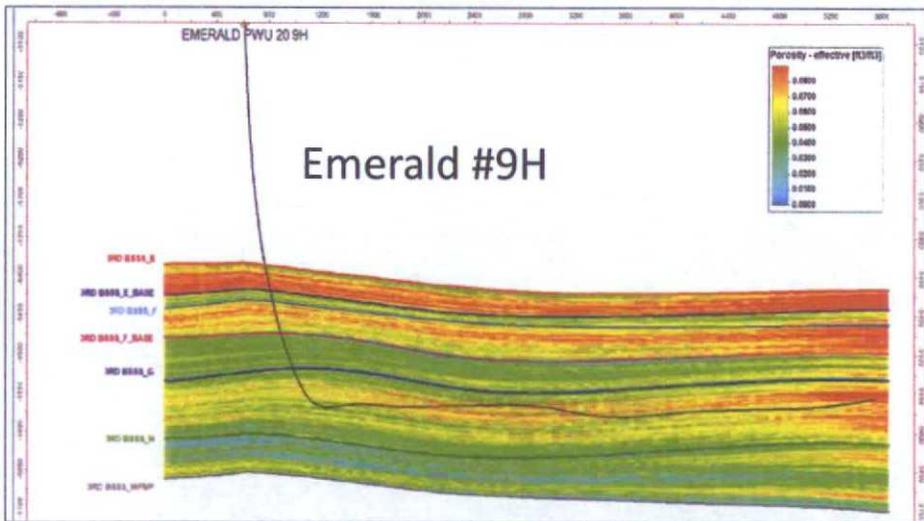
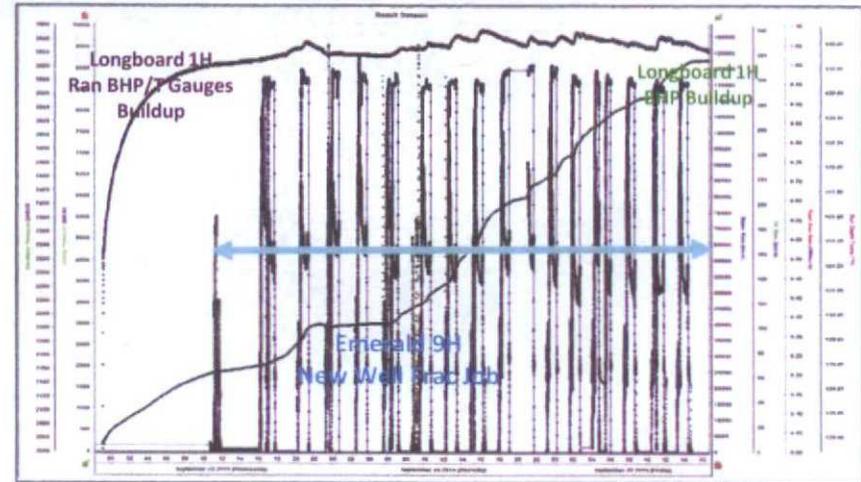
- 2<sup>nd</sup> bsp GOR increases from 1000 scf/bbl to 10,000 scf/bbl
- 1<sup>st</sup> bsp GOR increases from 2500 scf/bbl to 20,000 scf/bbl

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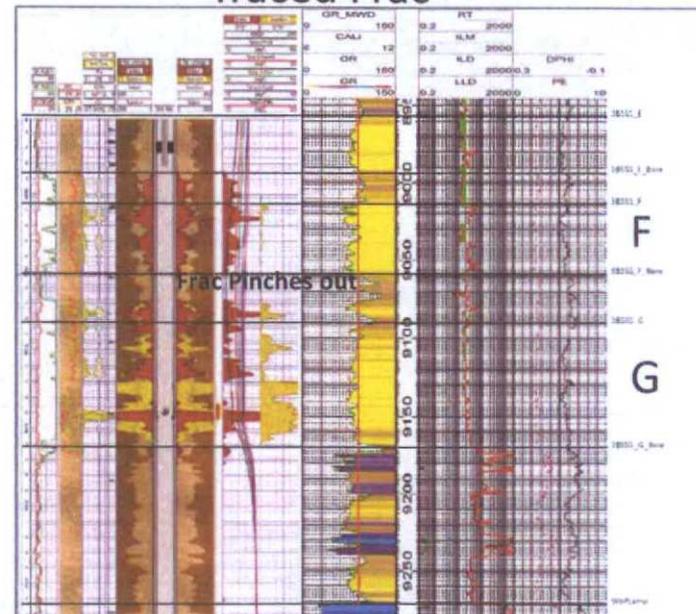
## Staggered Lateral



## Build Up Test



## Traced Frac



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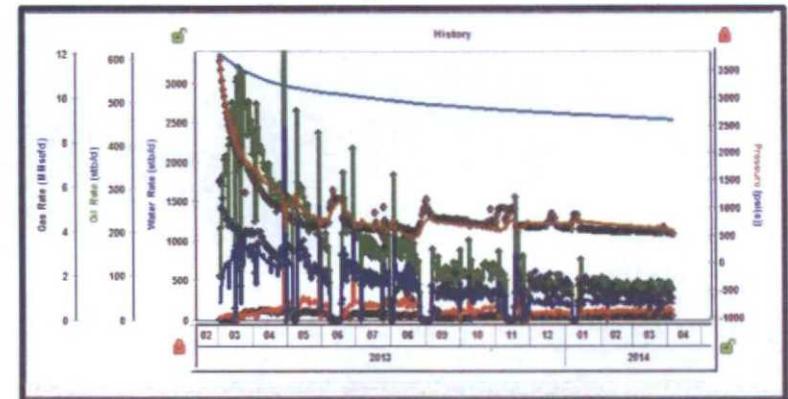
## Fekete Harmony Numerical Model Work Flow



Disciplines	Inputs	Sources
Geology	TVD Net Pay Porosity Fluid Saturation Matrix Perm	Logs, Core
Reservoir	Res. Pressure Res. Temperature API FVF Viscosity Bubble Point Compressibility GOR	DFIT PVT
Drilling & Operation	Deviation Survey Csg/Tbg Sizes Perfs Production Rates FBH Pressures	Wellview OFM

Fekete  
Harmony

### History Match



Use to make business decisions regarding to:

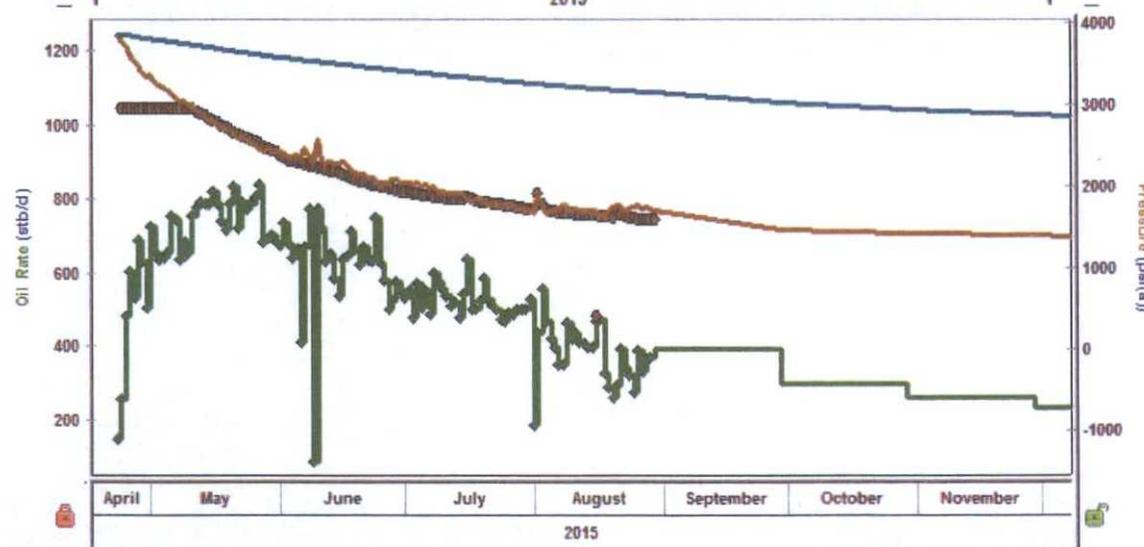
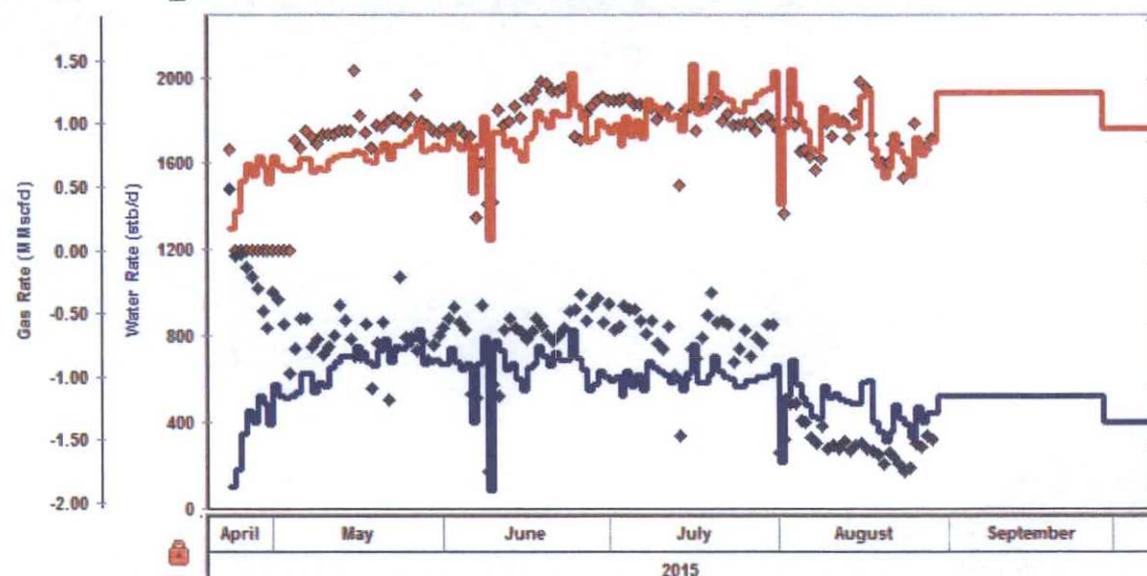
- Reserves Forecast & Estimation
- Recovery Factor
- Field Development Scenario (**Spacing**, Facilities development, drilling Pattern scenarios)

# Parkway West Unit Allowable

## 3<sup>rd</sup> Bsp Landing Targets

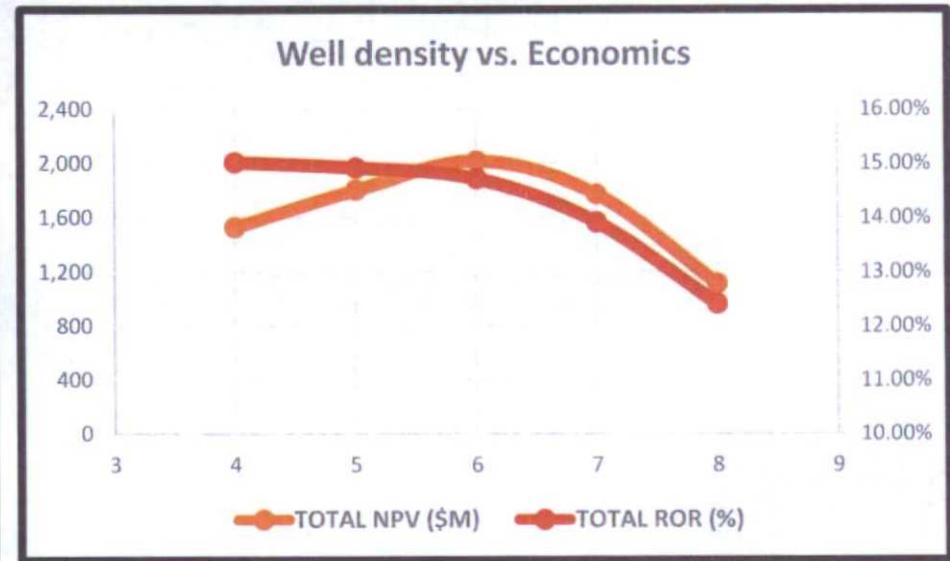
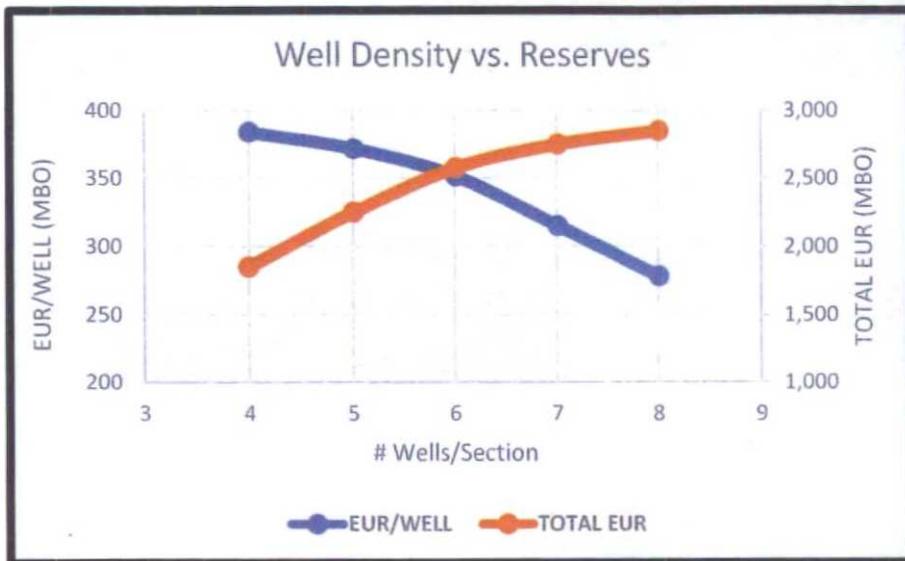


Variable	Value
Reservoir P	3850 psi
# fractures	40
1/2 length	250'
Height	85'
k1	15 uD
k2	5 uD
Sw	55%
A(SRV)	73 acres
OOIP	1636 Mstb



# Parkway West Unit Allowable

## Economics Sensitivities



- Reserves Recovery Acceleration with increase well density
- ROR Degrade with increase well density
- 6 Wells/section is Optimal well density based on NPV
- 7-8 wells/section still profitable but provide less “bang for the buck” compare to 6

# Parkway West Unit Allowable

*3<sup>rd</sup> Bone Spring Downspacing*



- Observed  $A_{srV}$  is less than 80 Acres
- High remaining residual oil Saturation on current spacing, need for an acceleration/downspacing program
- Optimal well density is 6 wells/section in thickest sand based on NPV10
- Tag Frac analysis and no bashing effect observed during fracking show no communication between the two productive sands
- Pressure build up test and Traced Frac monitoring show potential for staggered laterals in the second prospective sand of the 3<sup>rd</sup> bone spring. 4 additional wells in the F sand
- Peak rates average of 850 bopd/well is expected with a total of 10 wells/section
- GOR expected to increase with time