

Morning Report PNR1z				
<b>Management System:</b>		HSE	<b>File Name:</b>	023_PNR1z_30.10.18-RMR
<b>Approver:</b>		Senior Geoscientist	<b>Version No:</b>	1
<b>Reviewer:</b>		Frac Manager	<b>Date of Issue:</b>	31 <sup>th</sup> October 2018
<b>Author:</b>		Frac Engineer	<b>Proposed date of Review:</b>	n/a
Version	Section	Revision Information	Date	Reviser
0.1	All	Draft Publication	31/10/2018	Frac Engineer
<i>Documents are reviewed as per proposed review date, or sooner if a significant change to the operation has taken place, to ensure relevance to the systems and process that they define.</i>				

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## Summary

Overview of day's operations:

- Minifrac Operation Performed on Stages 41 & Stage 39
- Flowback performed – none
- Induced seismicity - none
- No red line boundary breached

## Injection Summary

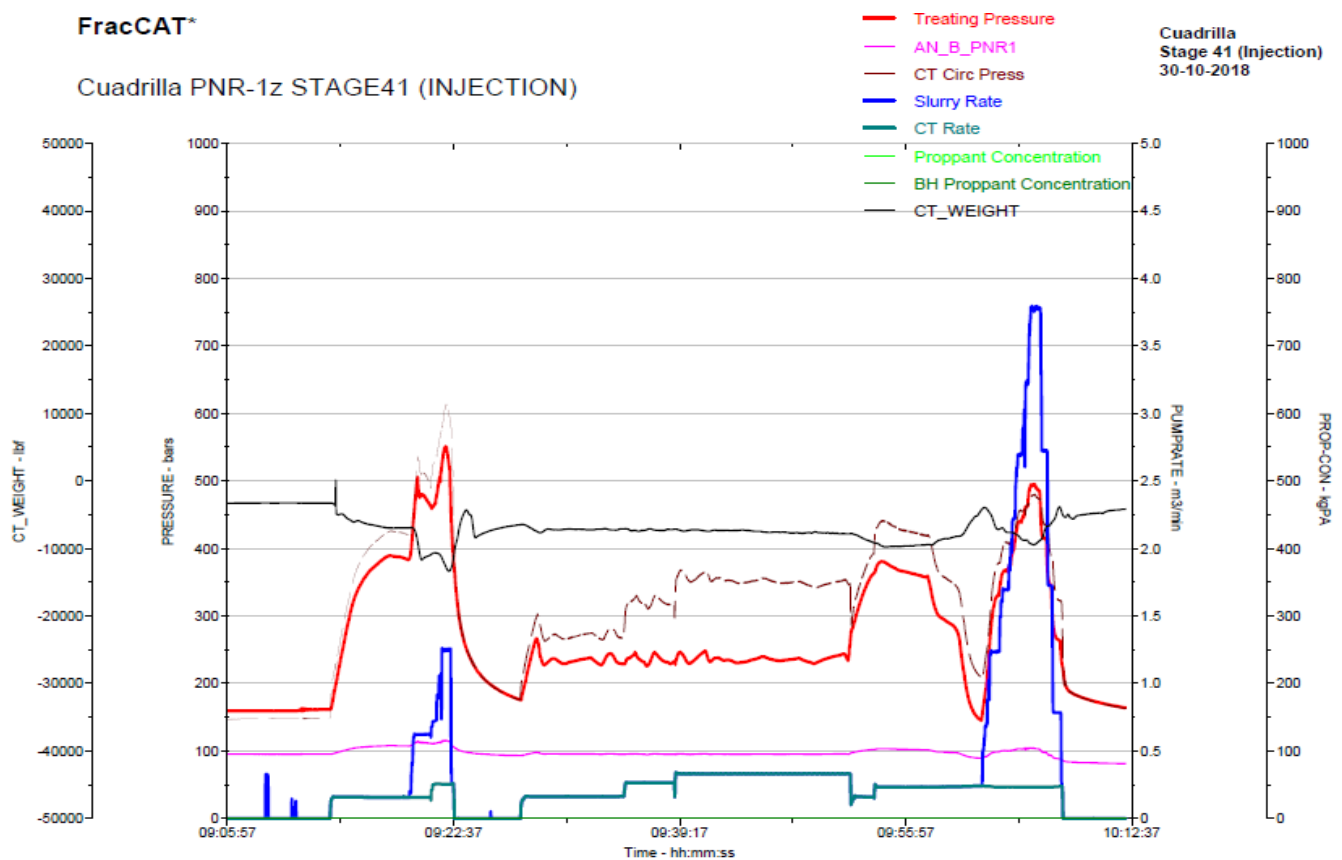
### Stage 41

Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
-2664.26 M MDRT	Slickwater (15.7 m <sup>3</sup> ) 10% HCl (1 m <sup>3</sup> )	Slickwater HCl	B528 Friction Reducer, Slickwater – 5 kg – 0.02%
-2343.18 M TVDRT			

## Injection Chart

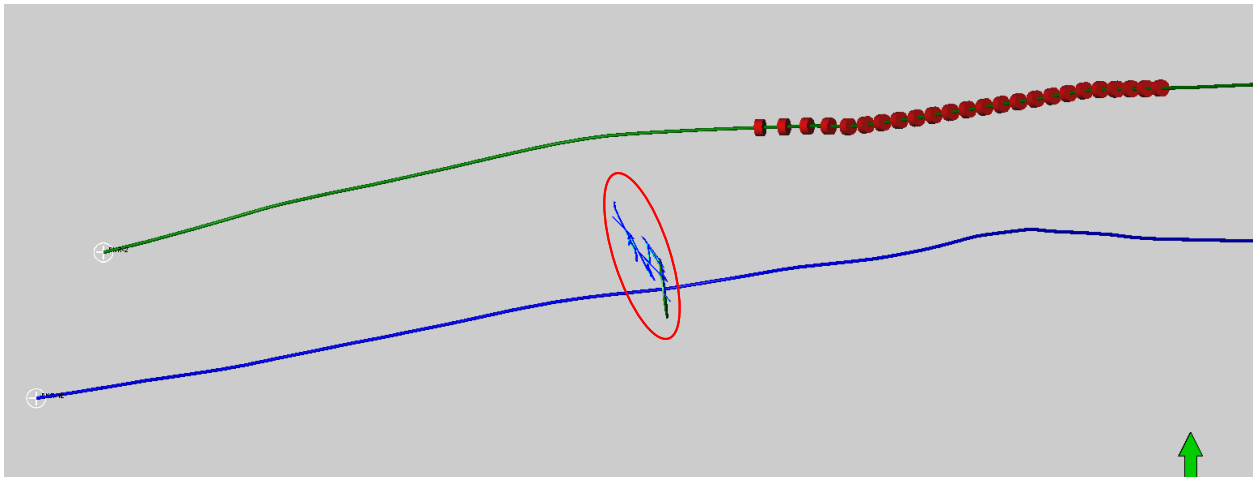
FracCAT\*

Cuadrilla PNR-1z STAGE41 (INJECTION)

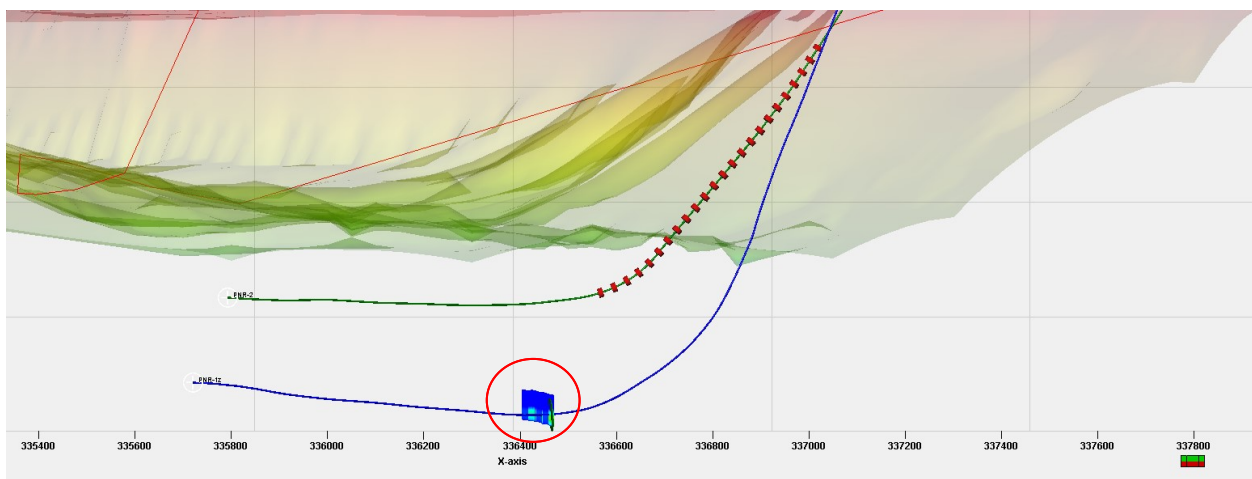


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## Fracture Growth

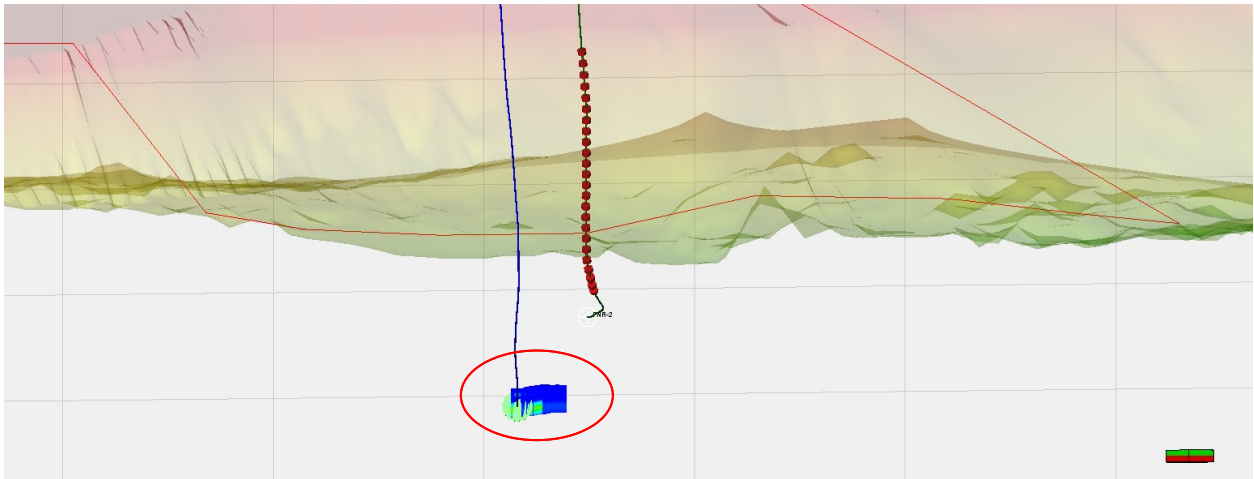


- Map View, scale north bar



- X-section due north

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- X-section due east
- Max hydraulic frac half length: 127.3 m
- Hydraulic frac height at well: 64.90 m

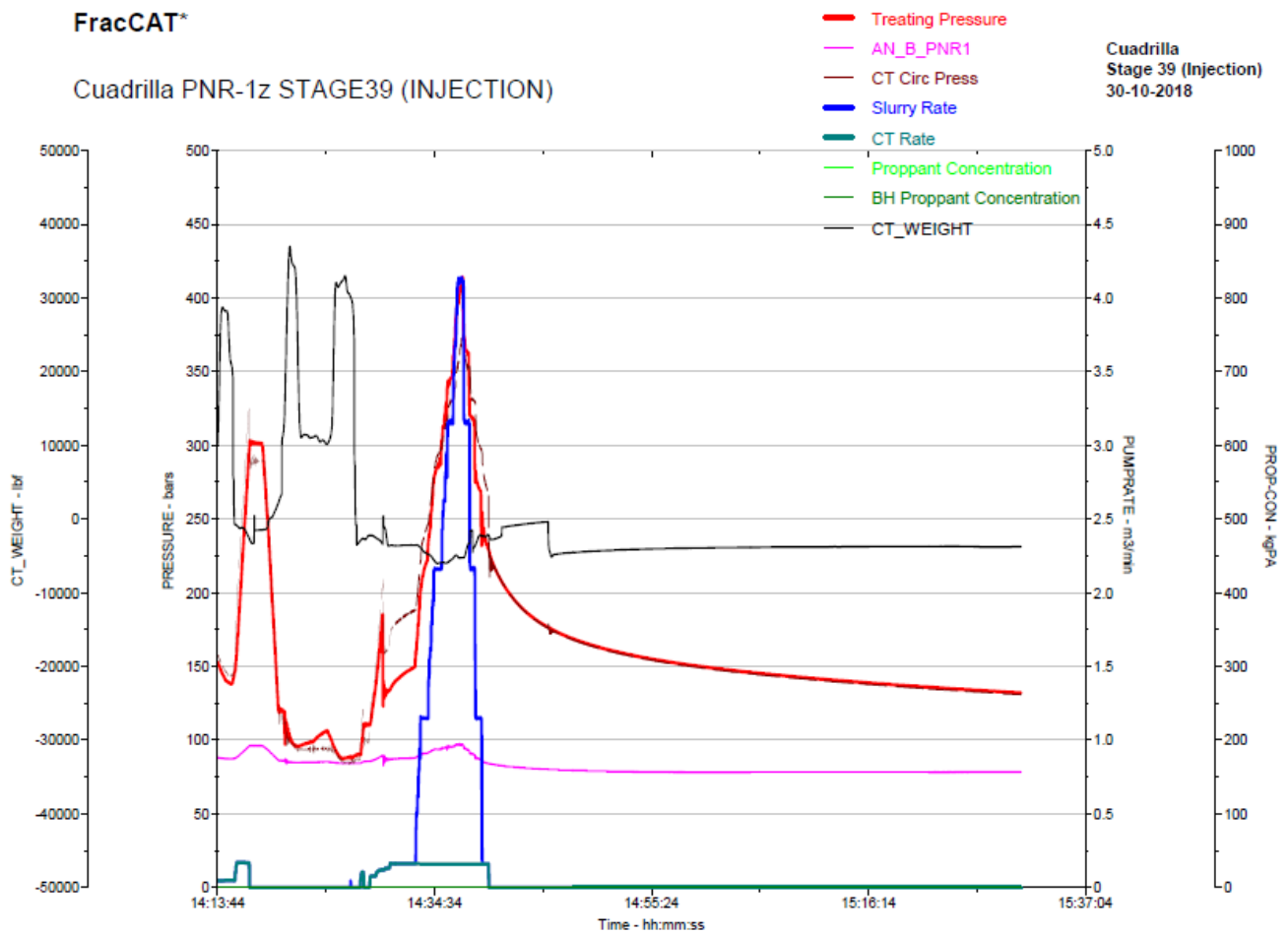
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## Injection Summary

### Stage 39

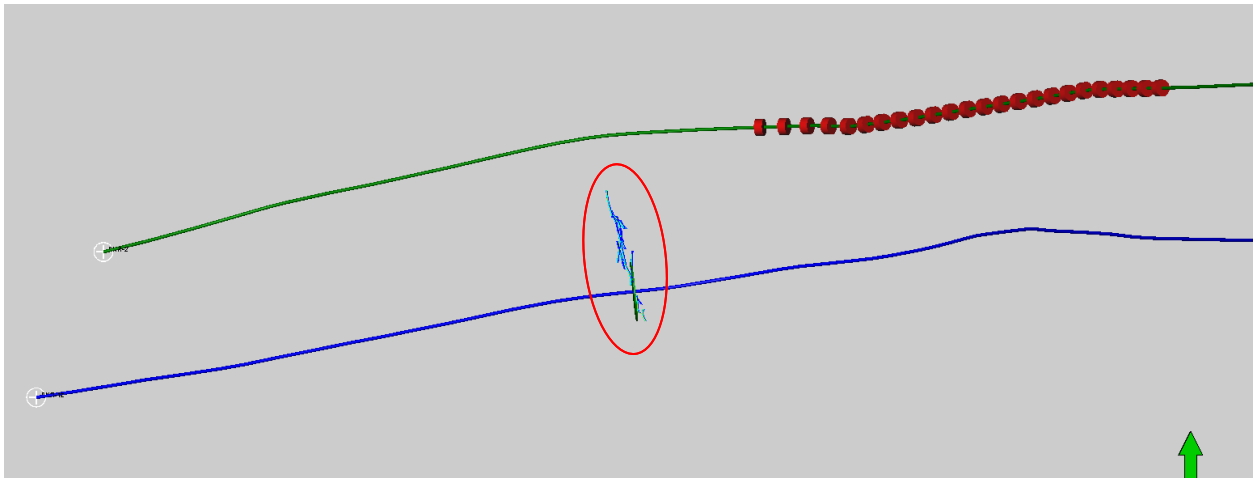
Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
-2699.57 M MDRT	Slickwater (15.3 m <sup>3</sup> )	Slickwater	B528 Friction Reducer, Slickwater – 5 kg – 0.02%
-2344.48 M TVDRT			

### Injection Chart

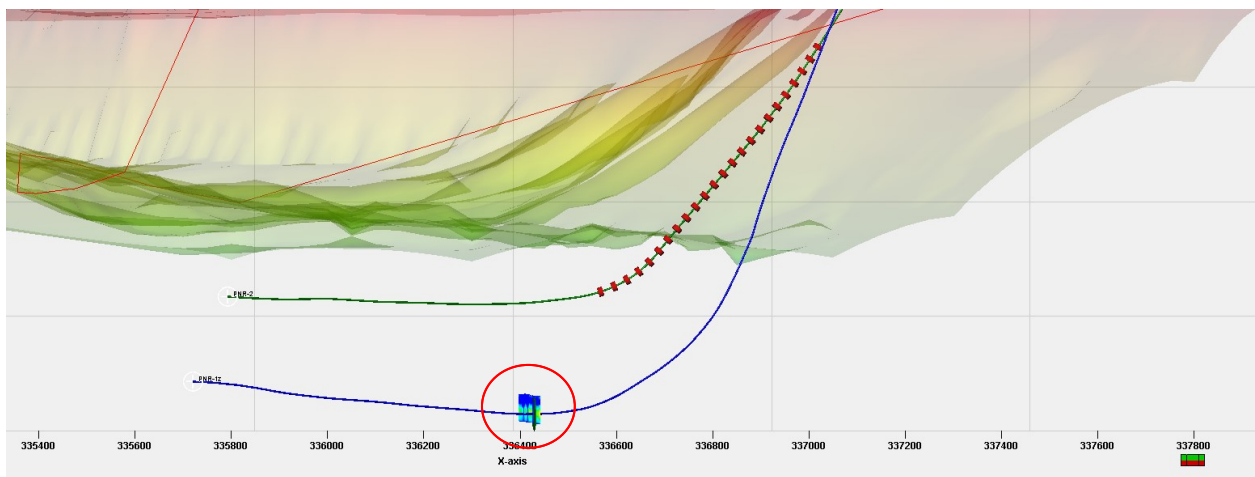


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## Fracture Growth

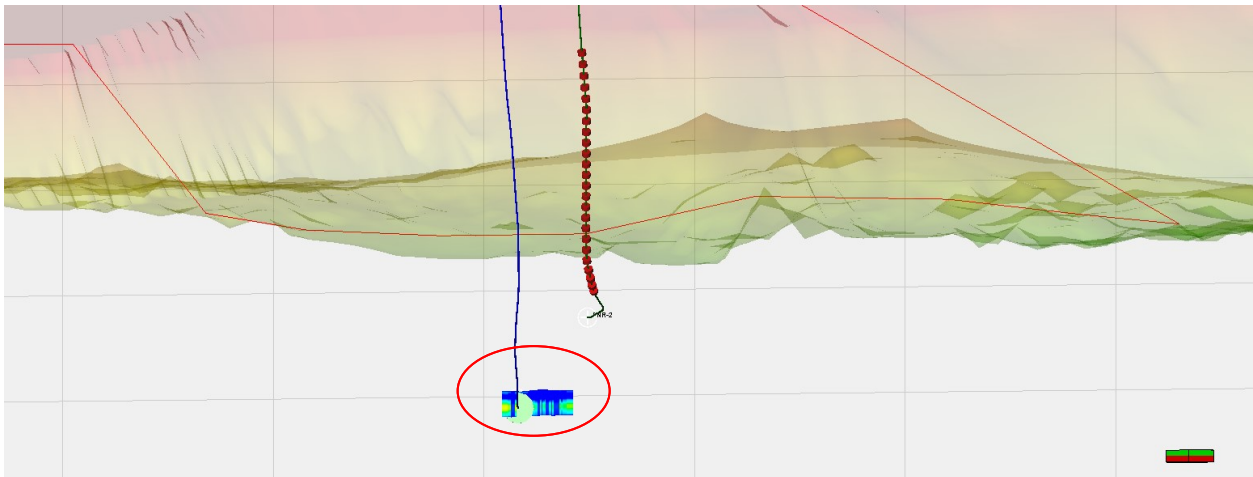


- Map View, scale north bar



- X-section due north

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- X-section due east
- Max hydraulic frac half length: 156.8 m
- Hydraulic frac height at well: 41.79 m

### Well Integrity Status

- No change

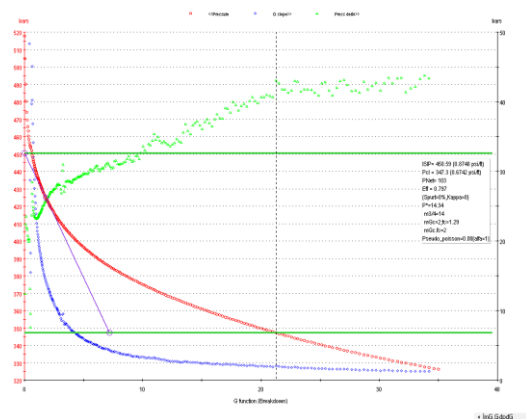
### Induced Seismicity of Note

- None

### Update to Stress Magnitude

No update to stress magnitude as closure was not observed

- $S_{Hmin} = 0.0152 \text{ MPa/m}$



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