

Morning Report PNR1z

Management System:	HSE	File Name:	023_PNR1z_30.10.18-RMR	
Approver:	Senior Geoscientist	Version No:	1	
Reviewer:	Frac Manager	Date of Issue:	31 th October 2018	
Author:	Frac Engineer	Proposed date of Review:	n/a	
Version	Section	Revision Information	Date	Reviser
0.1	All	Draft Publication	31/10/2018	Frac Engineer

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.

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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

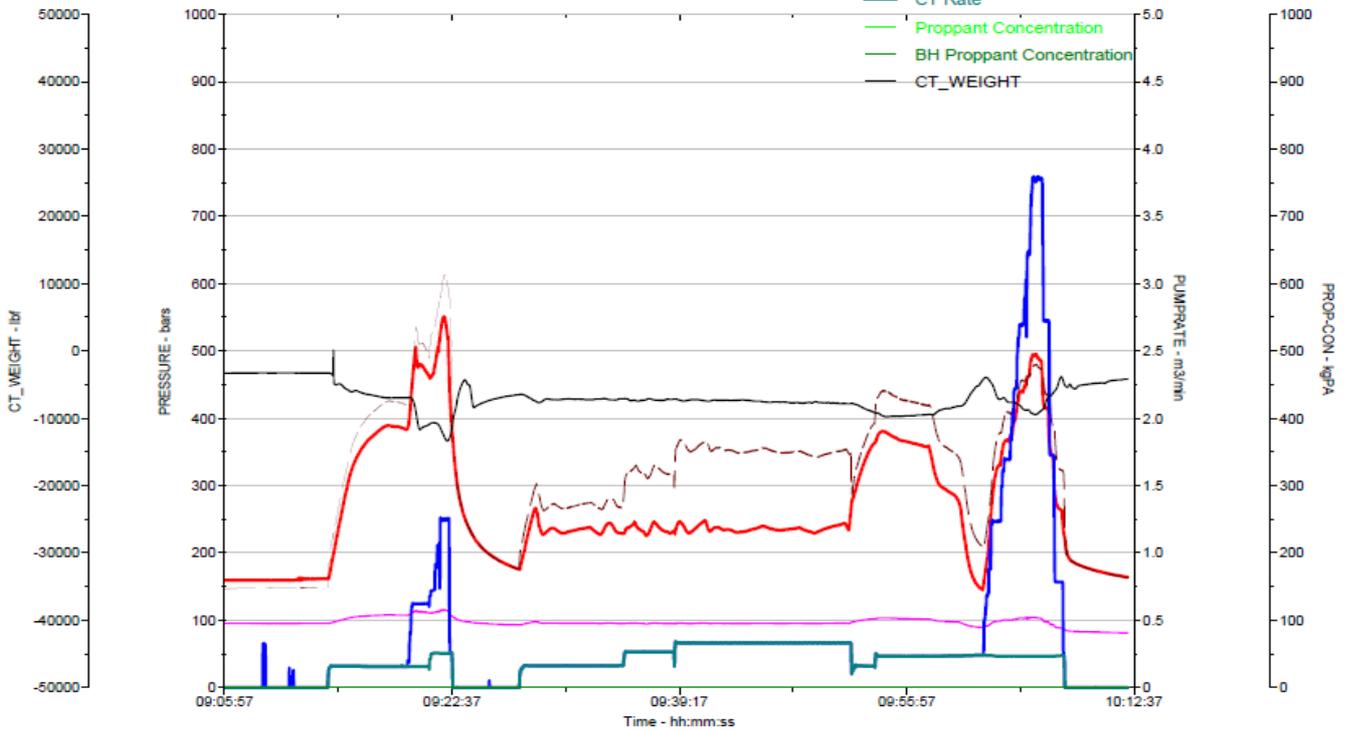
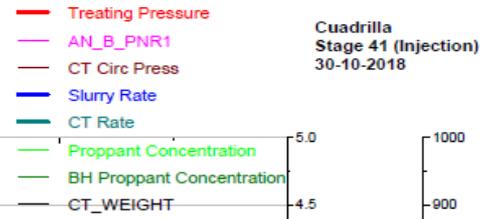
Stage 41

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

Injection Chart

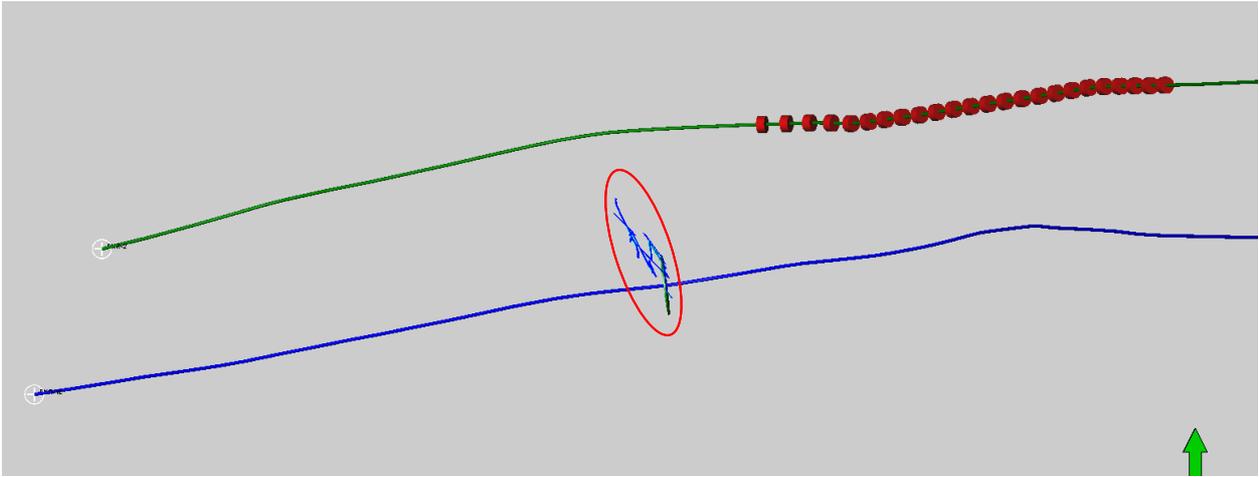
FracCAT*

Cuadrilla PNR-1z STAGE41 (INJECTION)

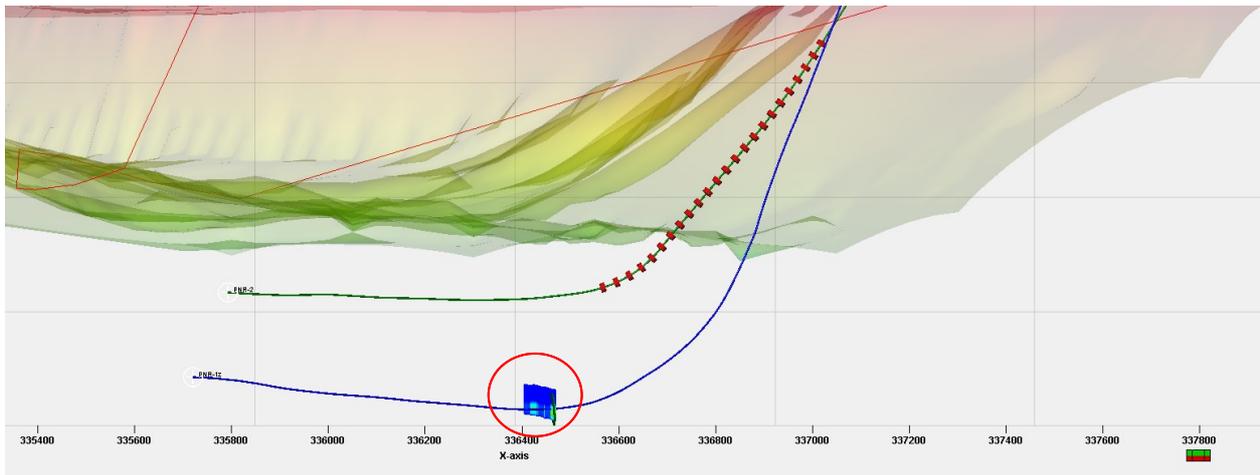


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Fracture Growth

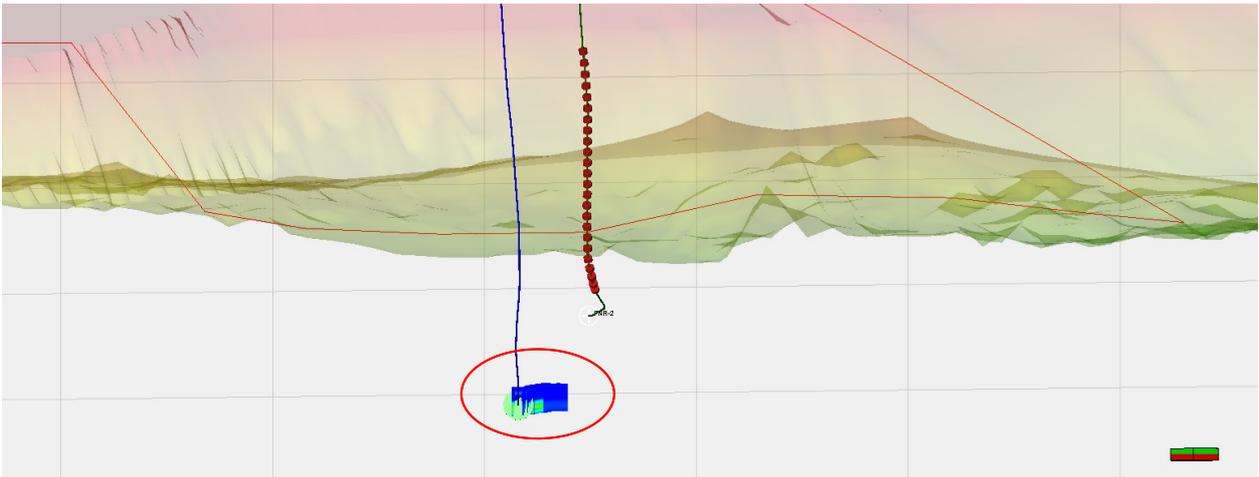


- Map View, scale north bar



- 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

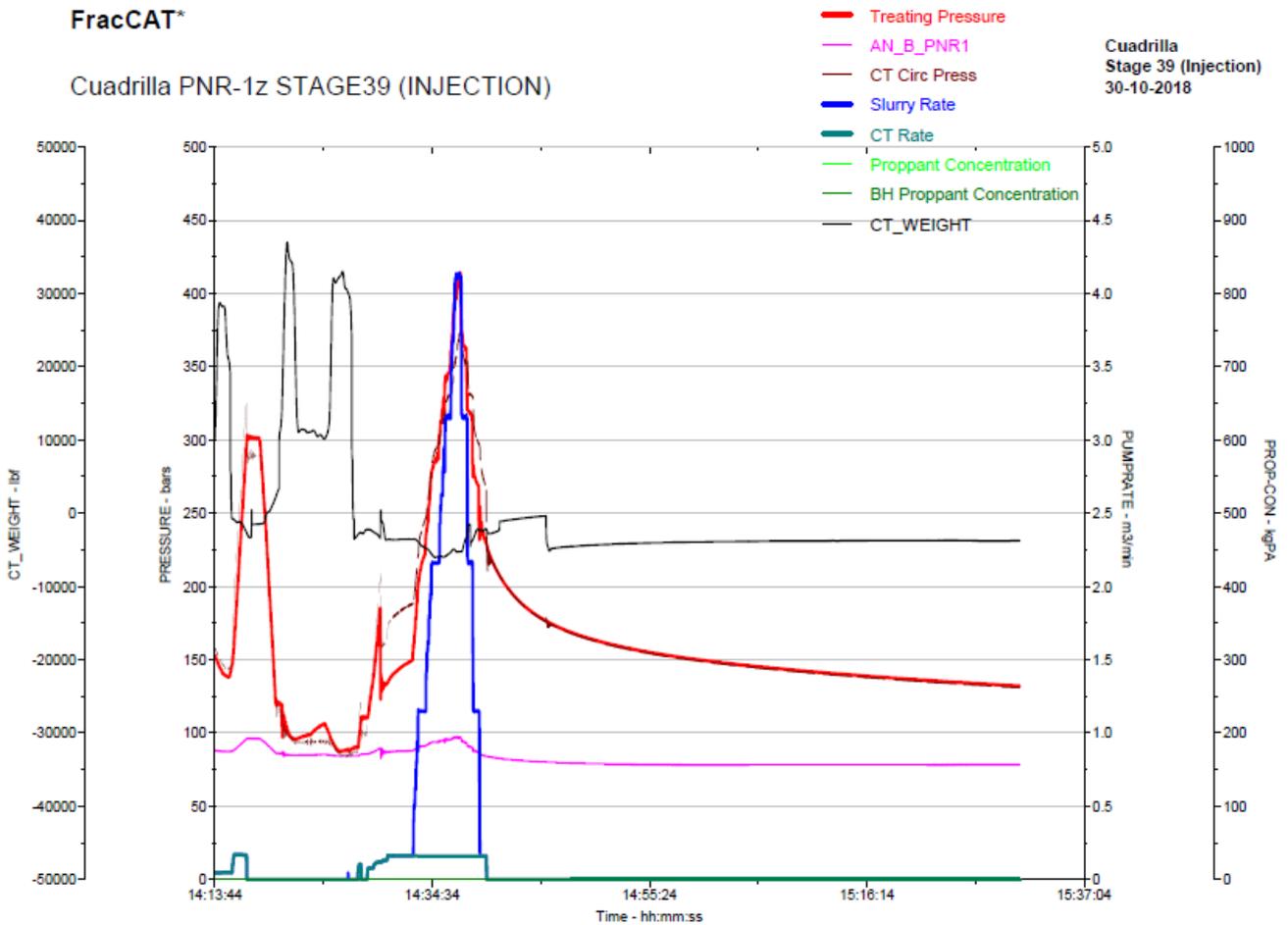
Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
-2699.57 M MDRT	Slickwater (15.3 m ³)	Slickwater	B528 Friction Reducer, Slickwater – 5 kg – 0.02%
-2344.48 M TVDRT			

Injection Chart

FracCAT*

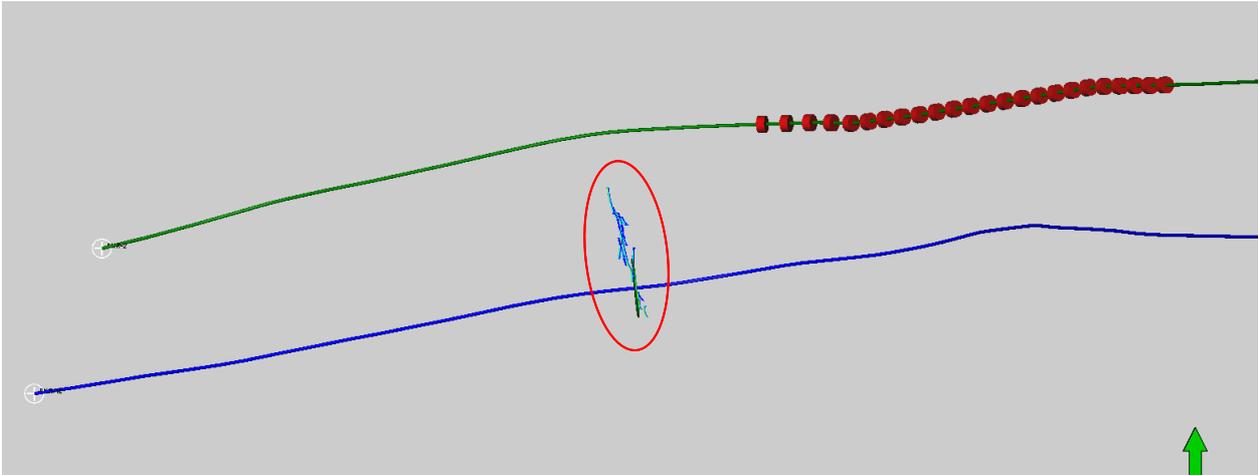
Cuadrilla PNR-1z STAGE39 (INJECTION)

Cuadrilla
Stage 39 (Injection)
30-10-2018

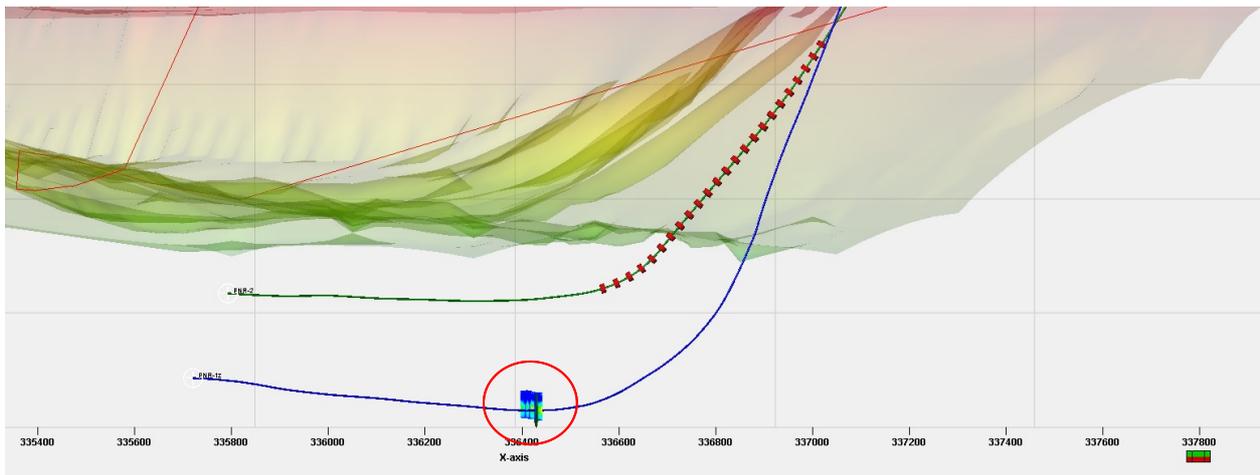


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Fracture Growth

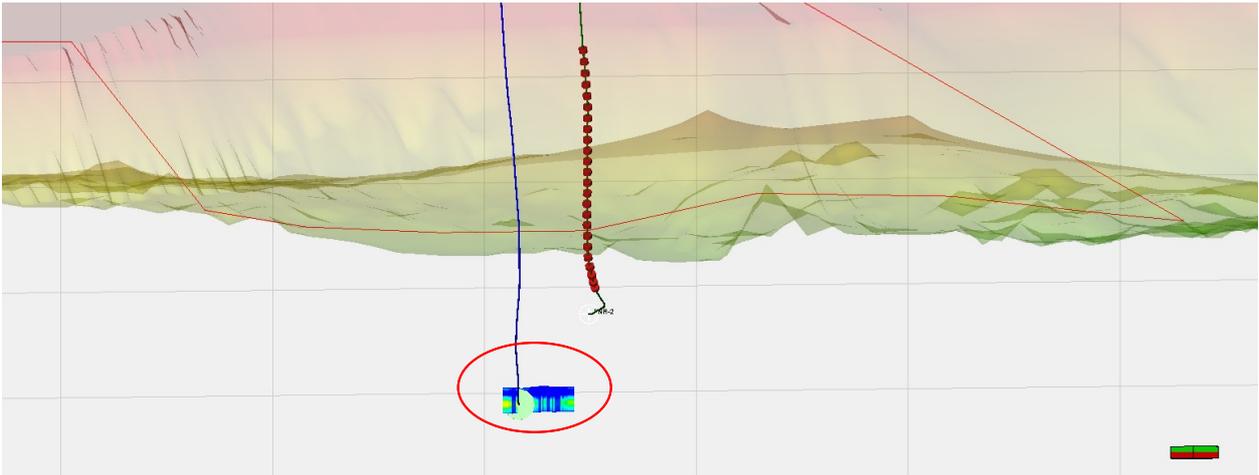


- Map View, scale north bar



- 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

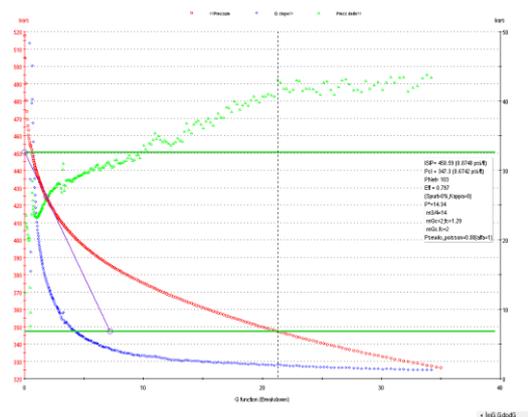
Induced Seismicity of Note

- 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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