

Morning Report PNR1z

Management System:	HSE	File Name:	026_PNR1z_02.11.18_RMR	
Approver:	Senior Geoscientist	Version No:	1	
Reviewer:	Frac Manager	Date of Issue:	3 rd November 2018	
Author:	Senior Frac Engineer	Proposed date of Review:	n/a	
Version	Section	Revision Information	Date	Reviser
0.1	All	Draft Publication	03/11/2018	Senior 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:

- Flowed back stages 30 and 31 (both open at the same time) – 8.61 m³
- Minifrac injected into Stage 38
- Flowback performed – none
- Minifrac injected into Stage 35
- Flowback performed – none
- Induced seismicity - none
- No red line boundary breached

Injection Summary

Stage 38

Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
-2717.17 M MDRT	Slickwater Frac (14.3 m ³)	Slickwater	B528 Friction Reducer, Slickwater Frac – 3.9 kg – 0.02 %
-2344.57 M TVDRT			

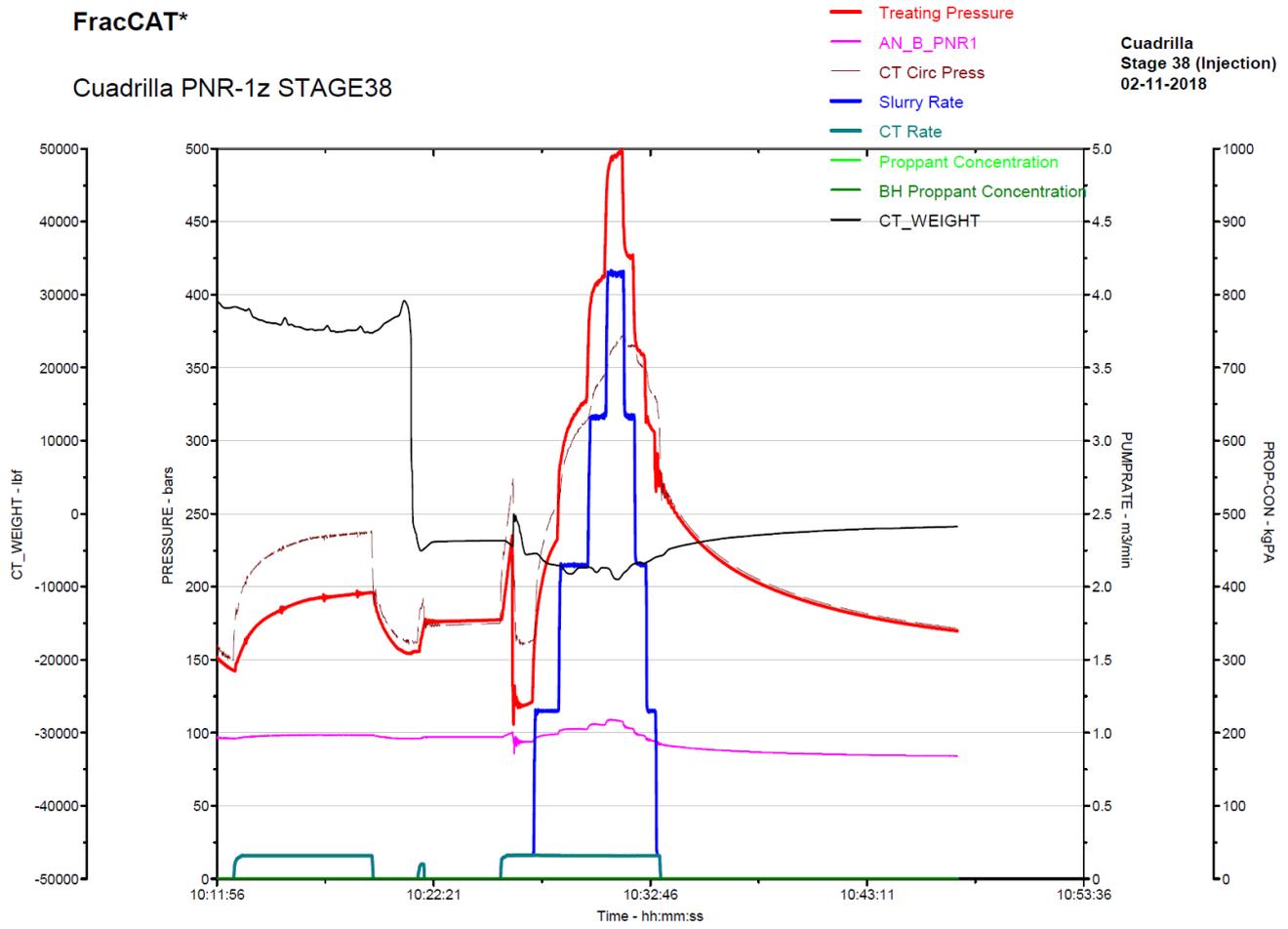
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Injection Chart

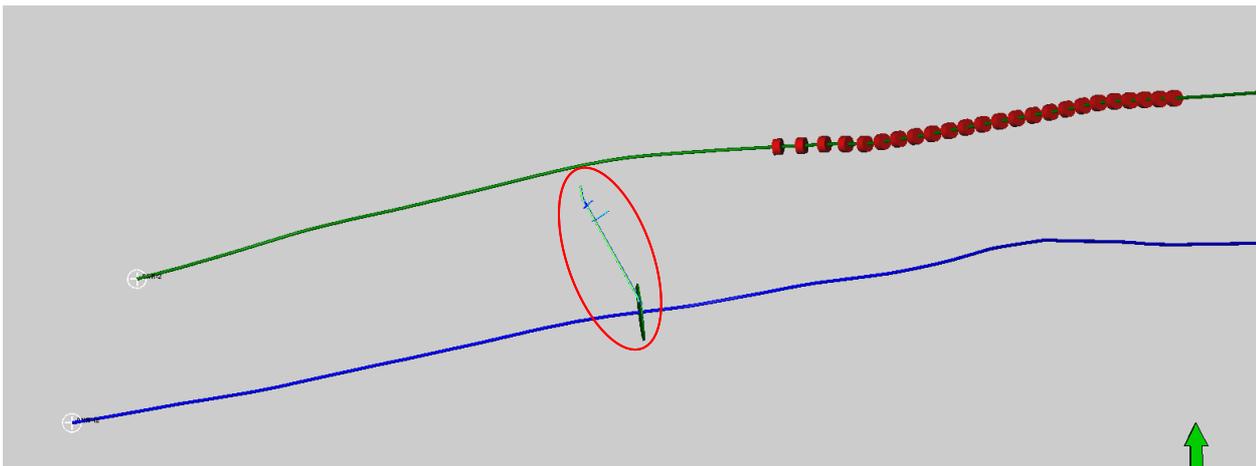
FracCAT*

Cuadrilla PNR-1z STAGE38

Cuadrilla
Stage 38 (Injection)
02-11-2018

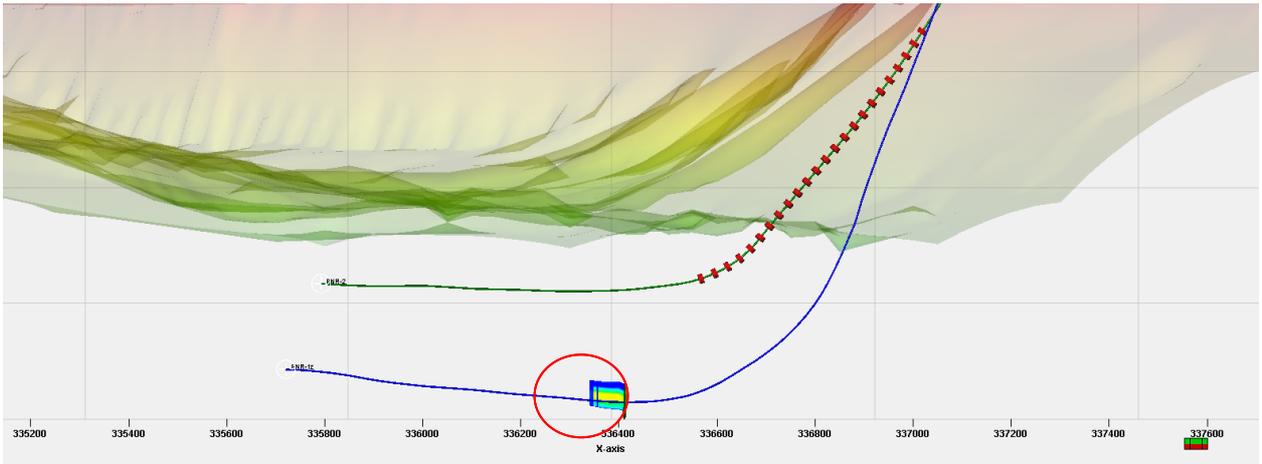


Fracture Growth

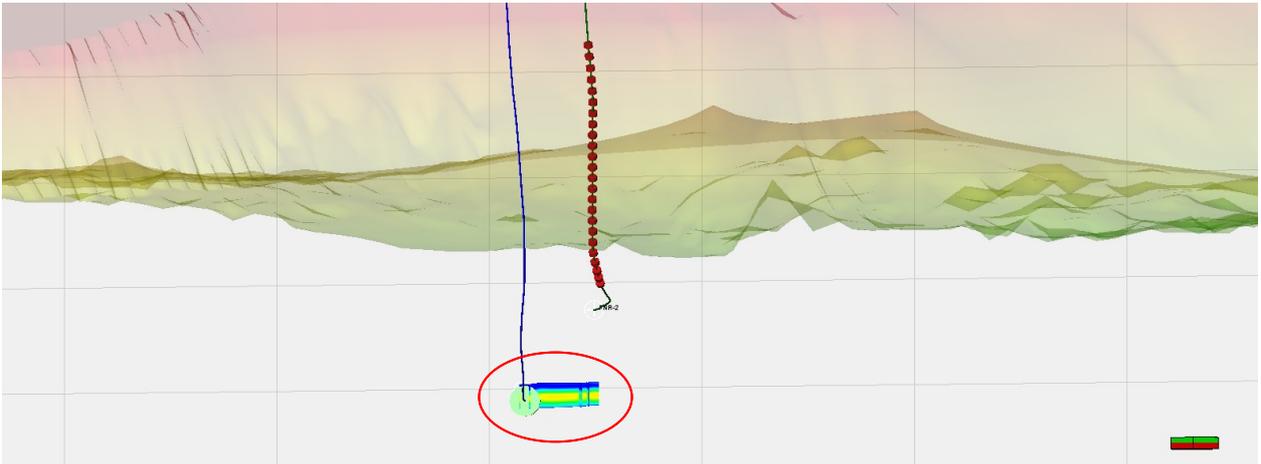


- Map View, scale north bar

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- X-section due north



- X-section due east

- Max hydraulic frac half length: 198.8 m
- Hydraulic frac height at well: 55.98 m

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Injection Summary

Stage 35

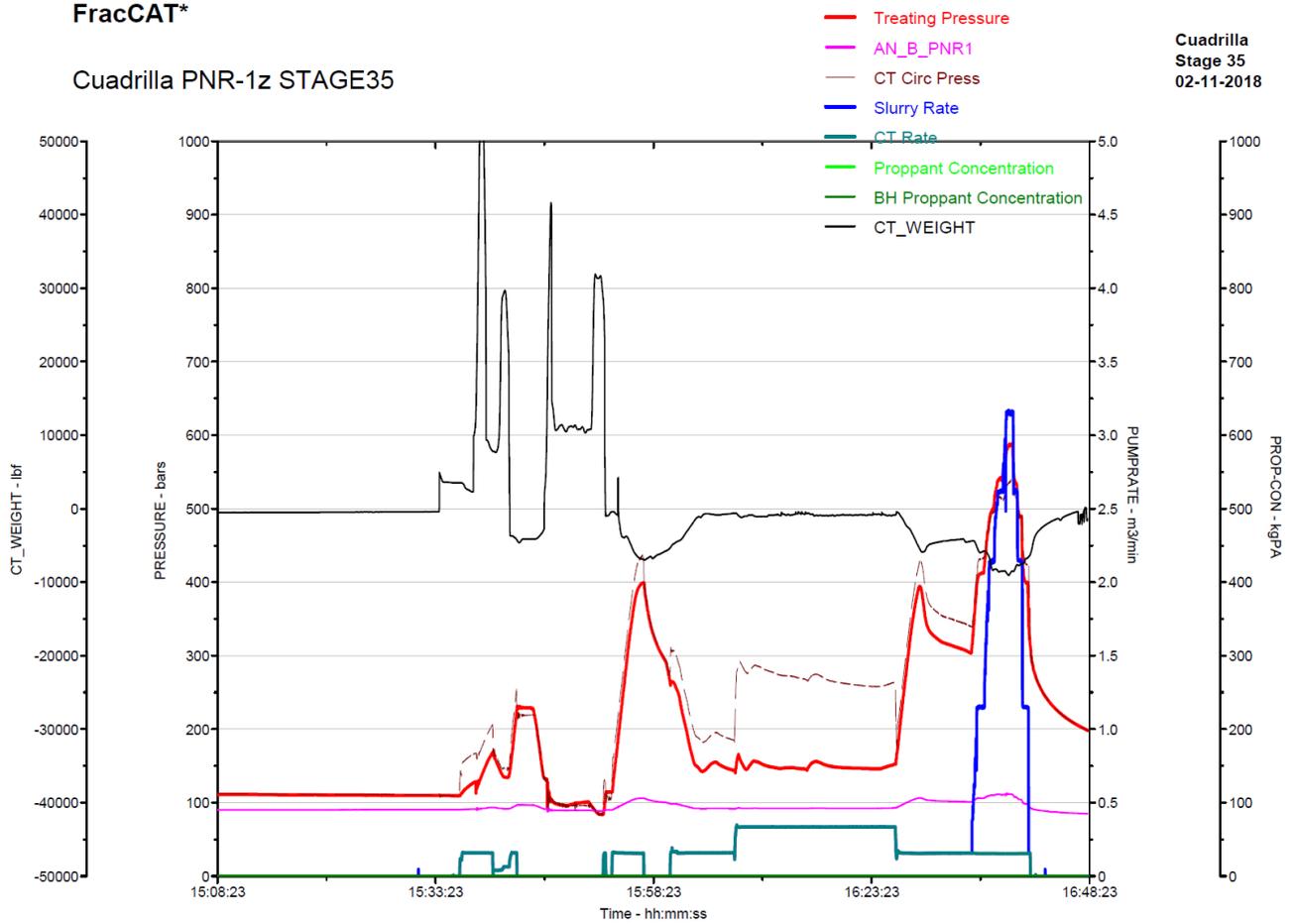
Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
-2770.01 M MDRT	Slickwater Frac (14.25 m ³) Acid (0.75 m ³)	Slickwater 10% HCl	B528 Friction Reducer, Slickwater Frac – 3.8 kg – 0.02 %
-2342.19 M TVDRT			

Injection Chart

FracCAT*

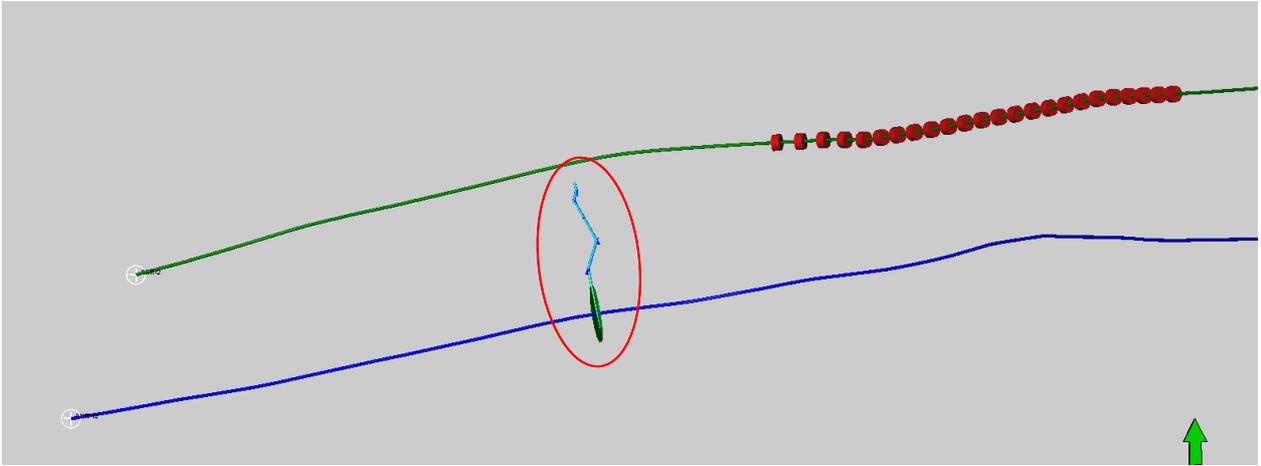
Cuadrilla PNR-1z STAGE35

Cuadrilla
Stage 35
02-11-2018

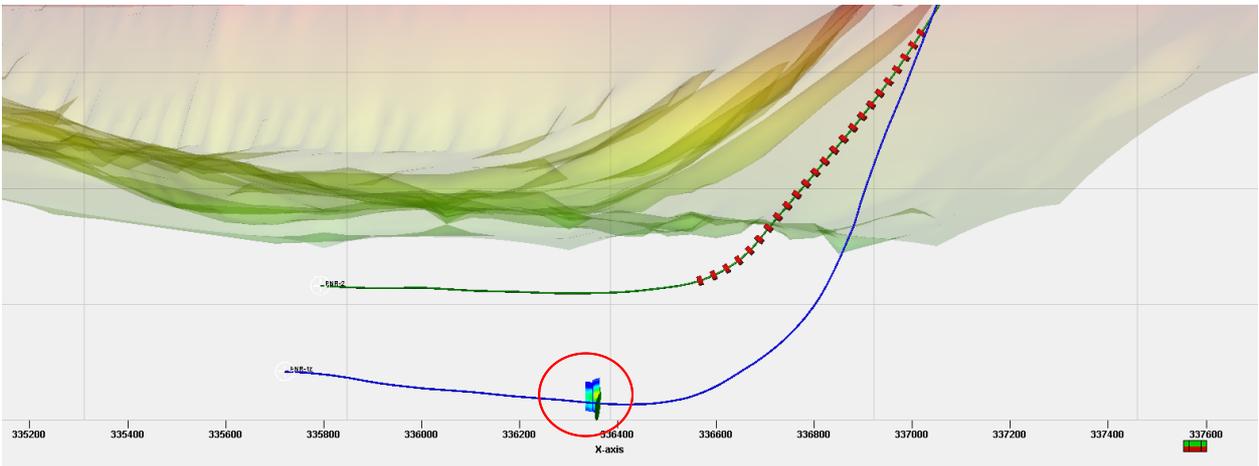


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Fracture Growth

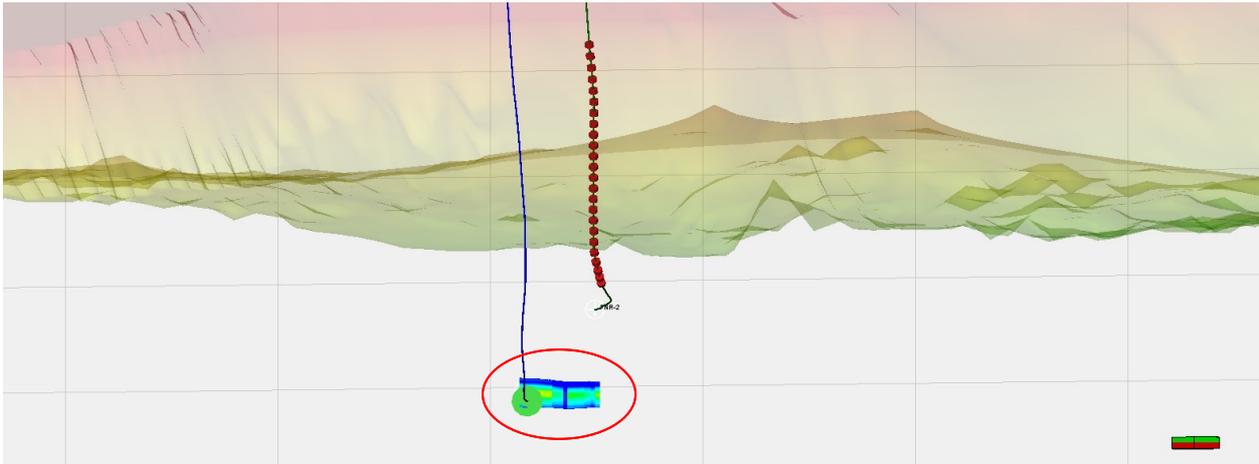


- Map View, scale north bar



- X-section due north

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- X-section due east

- Max hydraulic frac half length: 197.3 m
- Hydraulic frac height at well: 50.01 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
- $S_{Hmin} = 0.0148$ MPa/m

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