

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 |
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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 | | | |

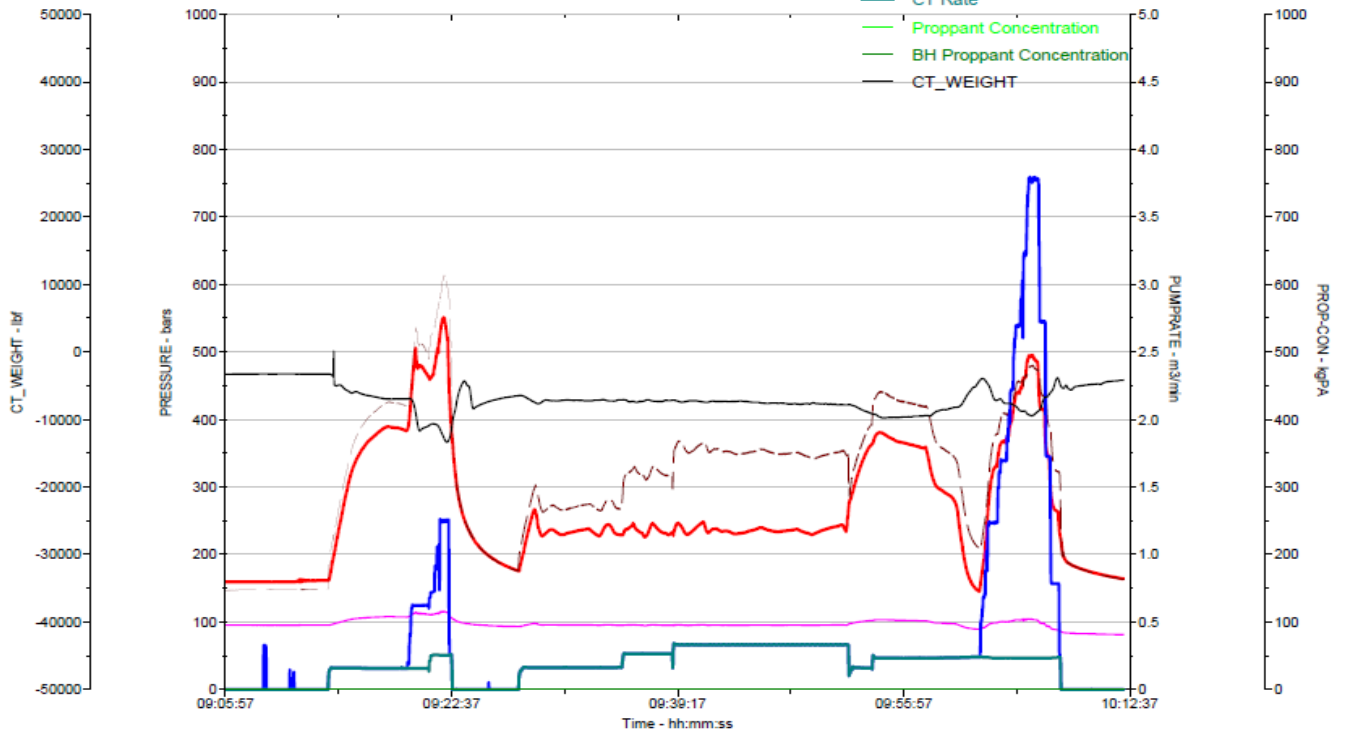
Injection Chart

FracCAT*

Cuadrilla PNR-1z STAGE41 (INJECTION)

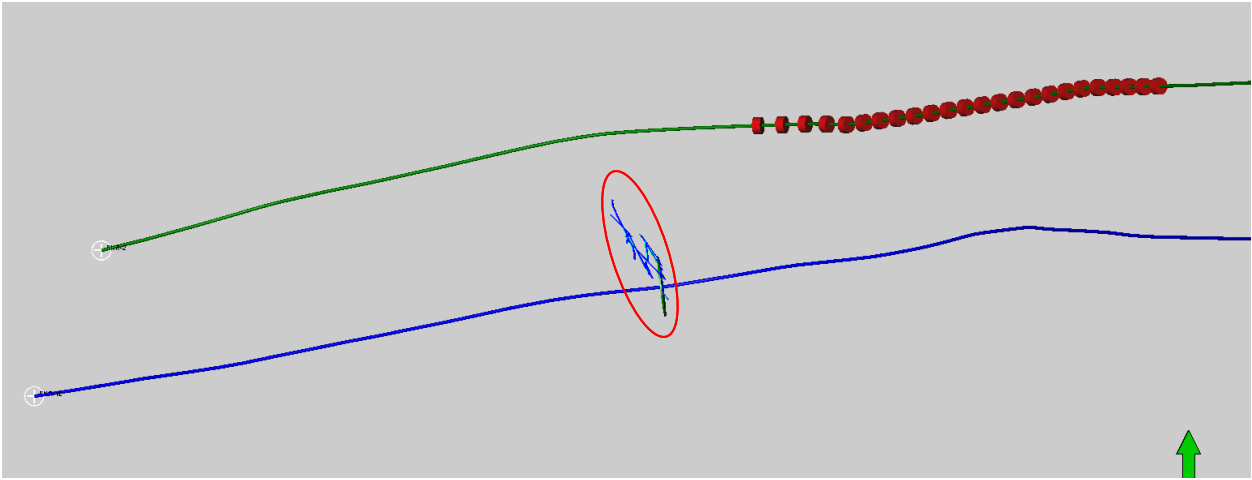
— Treating Pressure
— AN_B_PNR1
— CT Circ Press
— Slurry Rate
— CT Rate
— Proppant Concentration
— BH Proppant Concentration
— CT_WEIGHT

Cuadrilla
Stage 41 (Injection)
30-10-2018

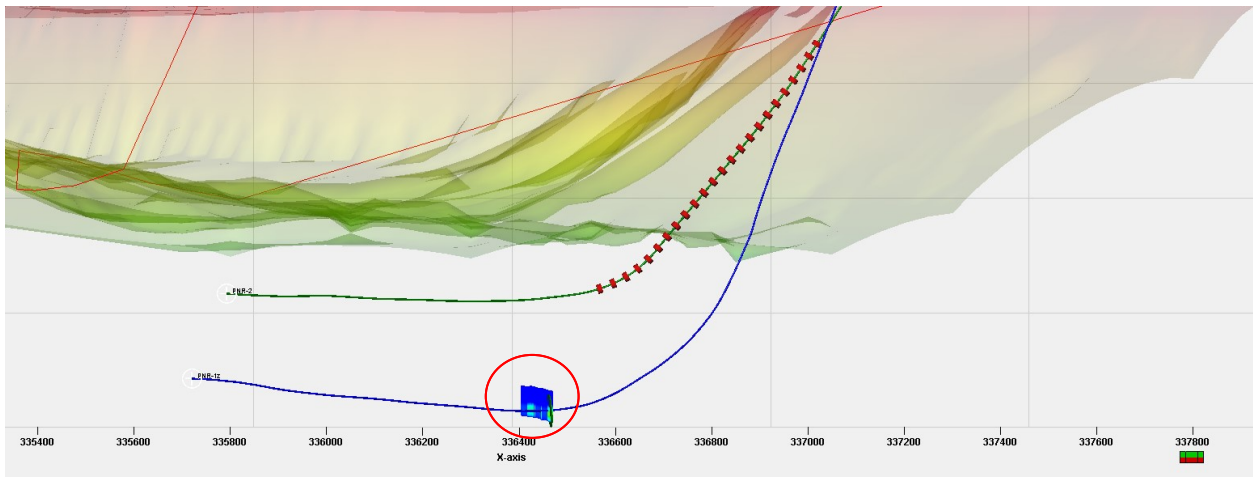


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Fracture Growth

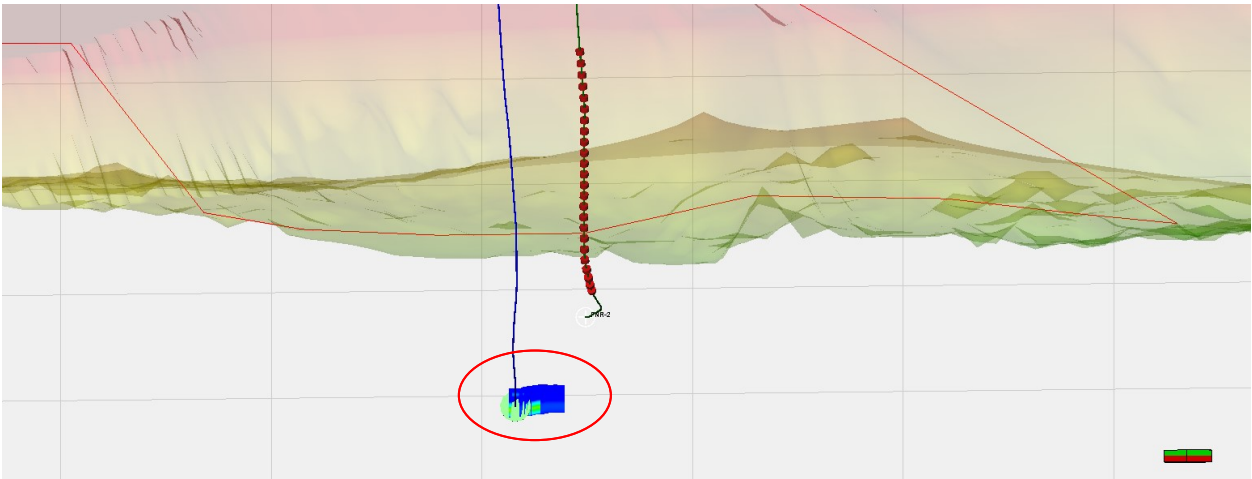


- Map View, scale north bar



- X-section due north

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

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Injection Summary

Stage 39

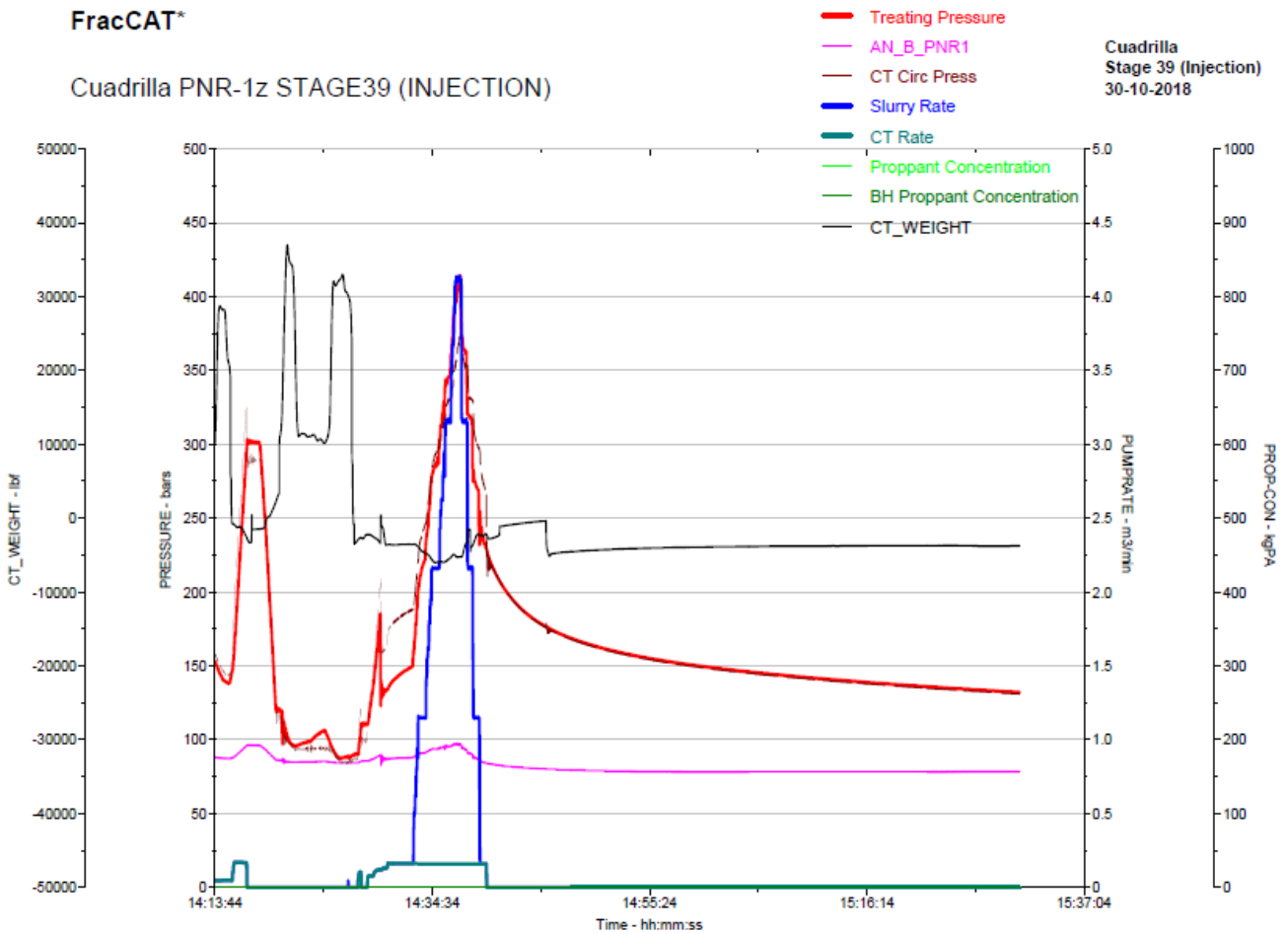
| Injection Depth m (RT) | Volume (fluid m3, proppant tonne) | Fluid System | Additives (type, mass kg, %) |
|------------------------|-----------------------------------|--------------|--|
| -2699.57 M MDRT | Slickwater (15.3 m ³) | Slickwater | B528 Friction Reducer, Slickwater – 5 kg – 0.02% |
| -2344.48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

Injection Chart

FracCAT*

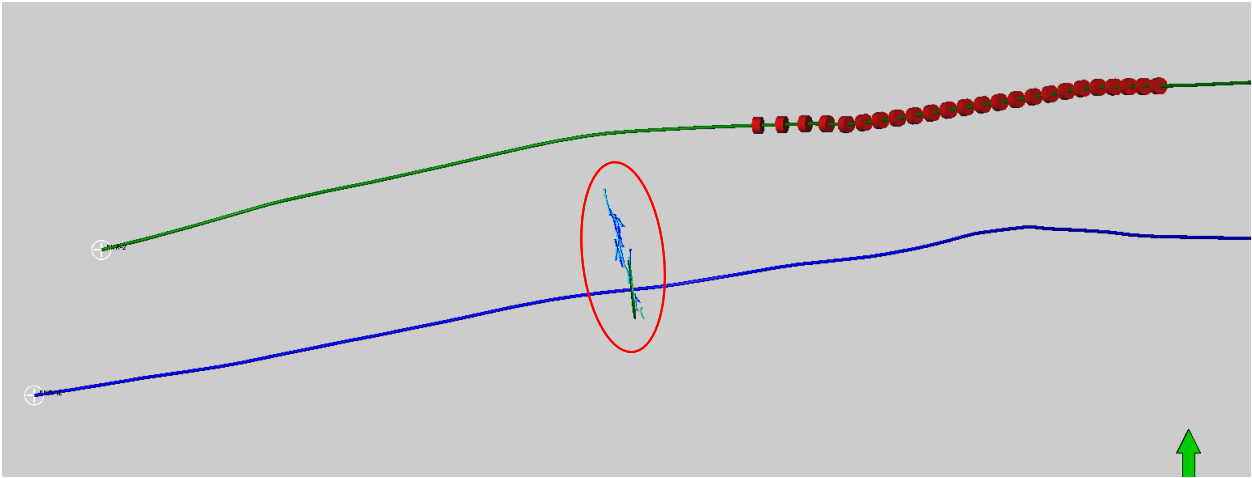
Cuadrilla PNR-1z STAGE39 (INJECTION)

Cuadrilla
Stage 39 (Injection)
30-10-2018

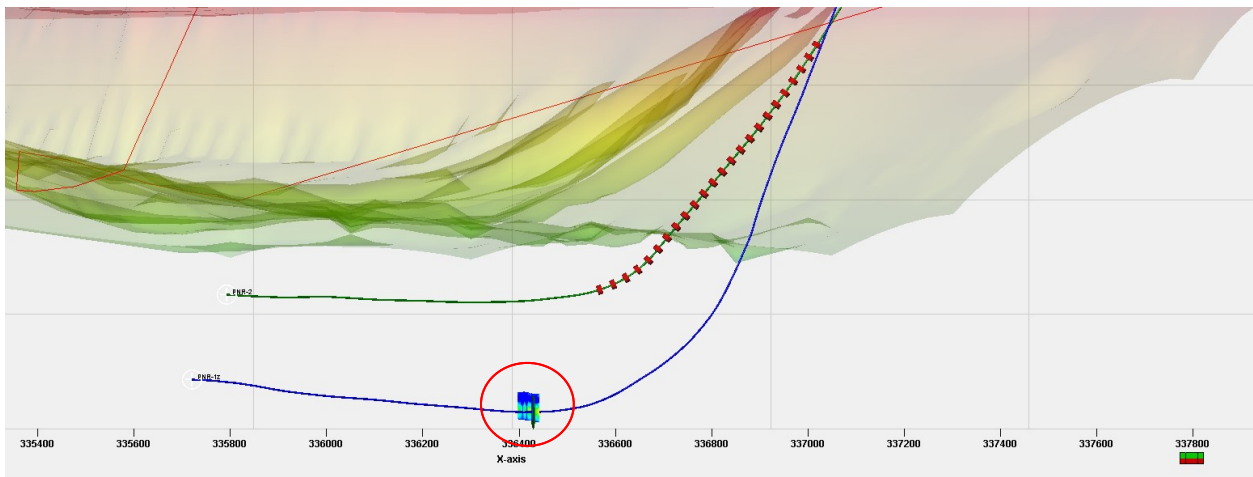


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Fracture Growth

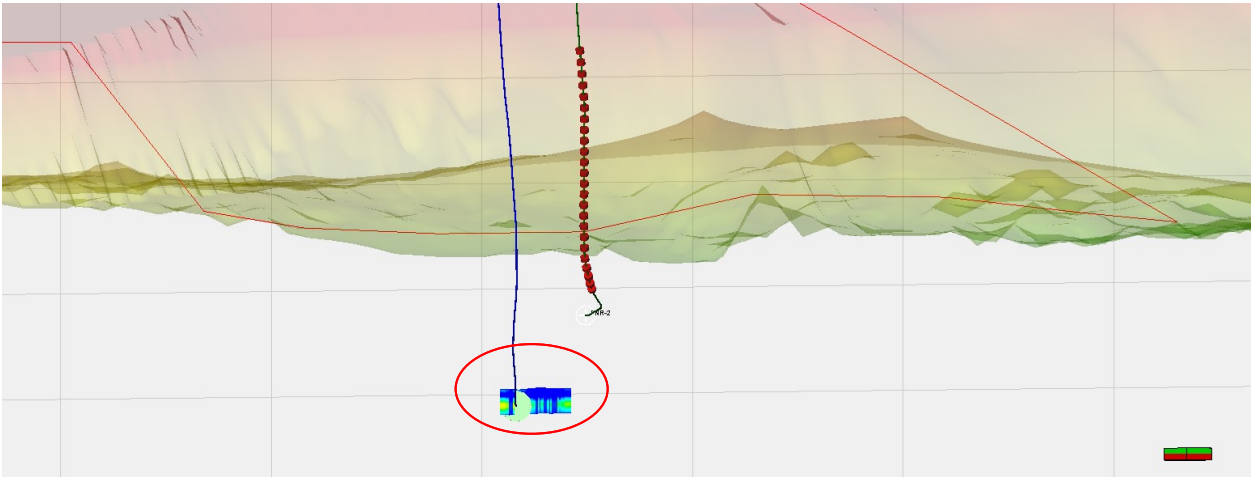


- Map View, scale north bar



- 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

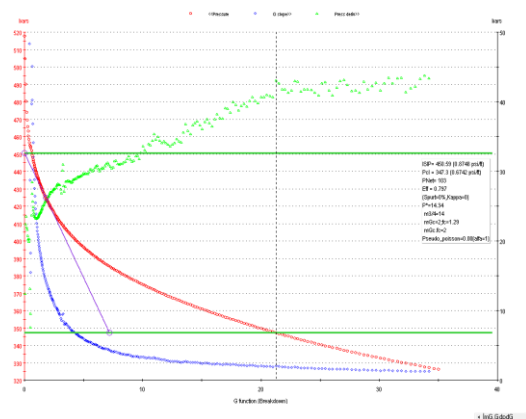
Induced Seismicity of Note

- 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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