Fracture Interpretation Summary – Boggess-3H

(Preliminary version, date July-8th-2019)



Rose diagram (strike plot) summary for all fractures, faults and bedding dip



Total number of features interpreted in the entire well

Rose diagram (strike plot) summary for all bedding dips



Rose diagram (strike plot) summary for all fracture/fault dips



Rose diagram (strike plot) summary for each fracture/fault type



Open Fractures



Low Amplitude Fractures



High Amplitude Fractures





Fracture density along the wellbore

(vertical presentation view)

Fracture density along the wellbore

(Horizontal presentation view)



3-D view of all fractures and faults along wellbore – Boggess-3H







Fracture Type – Low Amplitude Fracture

- A low amplitude fracture which is not evident on caliper images
- It maybe a feature crossing the entire wellbore (upper example), or a feature interact part of the wellbore only (lower example)

Fracture Type – High Amplitude Fracture





Fracture Type – Open Fracture

The open fracture is defined if a low amplitude fracture is also evident on caliper images as a "longer caliper" feature (darker)

> A continuous low amplitude fracture is likely partial open indicated by caliper images

A dis-continuous low amplitude fracture which is evident on part of the wellbore only. This is the predominant fracture tyep in the well.

Fracture Type – Fault

• Obvious lithology change is observed across the medium angle fault plane (see GR)





Bed boundary

Artifact - Spiral hole

| Death/Fride : | | Low Amplitude Amplitude Images (S1) (DY | | High Amplit S1) (DYN) | nqe | Tadpole Plot | | | Low Ampl | Amplitude Images (S2) (DYN) | | | nplitude | Low Amplitude High Amplitude Caliper Images (STA) | | | | | | | |
|---------------|------|--|-------------|--------------------------|-----|--------------|------|-------------------|----------|-----------------------------|-----------------|-----|----------|--|------------------|------|----|-----|-------|------|------------|
| | - 60 | R_C 240 | H Death (th | 0° | 90° | 180° | 270° | 0°0° | þ | 90 | O Bries Diances | 0° | 90° | namic - Equal Elni - Lin Indow: 1.00 ft, Step: 0.00 preihole Highnide, 256 col | ar or 270° | 0° | 0° | 90° | 180° | 270° | 0 ° |
| | | | 11098 | P | 2 | | 等. | | | | | | | 62 | | | E, | | | | * |
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• This is observed in many sections in the wells.

Boggess-13H

Artifact - Noise on images

• This is observed locally only and more obvious on S1 images in this example.

| | Deathalfader Ilde Cestidani (CA 20 (de 0) 100 | Short | iper Images | (STA) | Long Low | Amplitude Amplitude In Dynamic Window: | nages (S2) - Equal Bini - Linear 1.00 ft, Step: 0.00 ft | High Amplitude (DYN) | | Tadpole Plot | Low Amplitude Am | plitude Images | (S1) (DYN) | Higin Amplitude |
|--------------------|---|--------|-------------|-------|----------|---|---|-------------------------|----------------|--------------|---------------------|----------------|------------|-----------------|
| (4140) | | 0° 90° | 180° | 270° | 0°p° | 90° | 180° 255 color | 270° C | O M.Depth (15) | 0° 90° | 0° 90 |)° 180° | 270° | 0° |
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| 14179 | | | - | | | | | | 14179 | | | | | |
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Artifact



- This is another type of common artifact on wellbore which is possibly caused by drill-pipe (joint?) rotation
- They are well straight across the wellbore regardless well deviation
- They are well repeated and sometimes can be correlated wit the drill-pipe length between the two repeated artifacts.