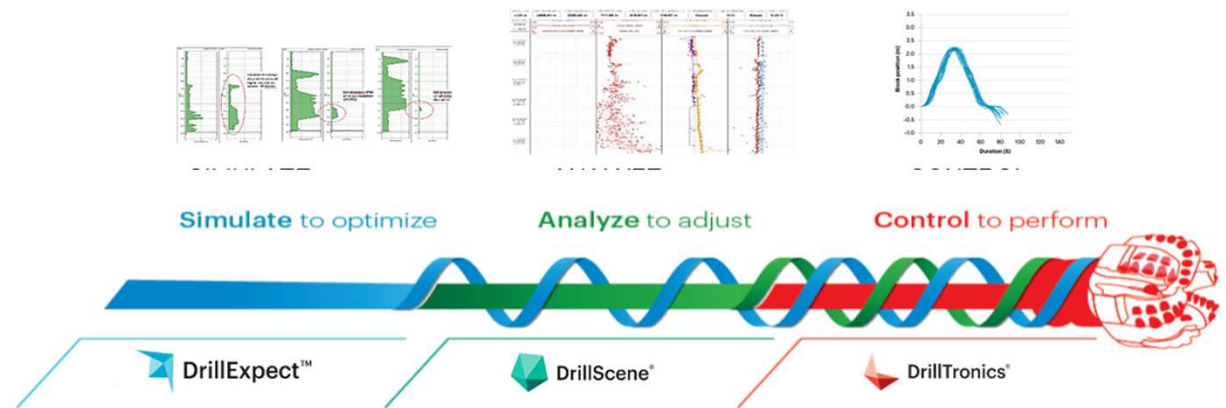


 **Sumitomo Australia Pty Ltd**



REAL-TIME DRILLING OPTIMIZATION

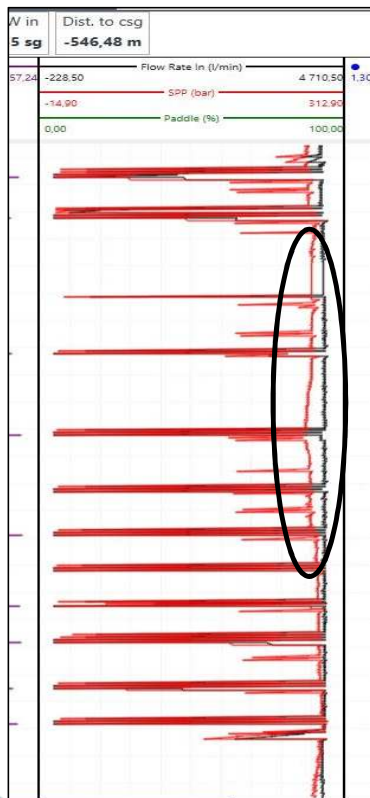
DRIVING DRILLING EXCELLENCE

USE CASES

Sekal case: 1

- / Replay for client; BHA and drillstring was lost and the section had to be re-drilled.
- / Washout continued over a timeframe of 24 hrs. Hard to identify washout with the traditional tools.
- / DrillScene clearly identified trends allowing the team to early detect washout and react correctly
- / DrillScene SPP trend clearly identified 24 hrs before section was lost - Section could have been saved if using DrillScene.

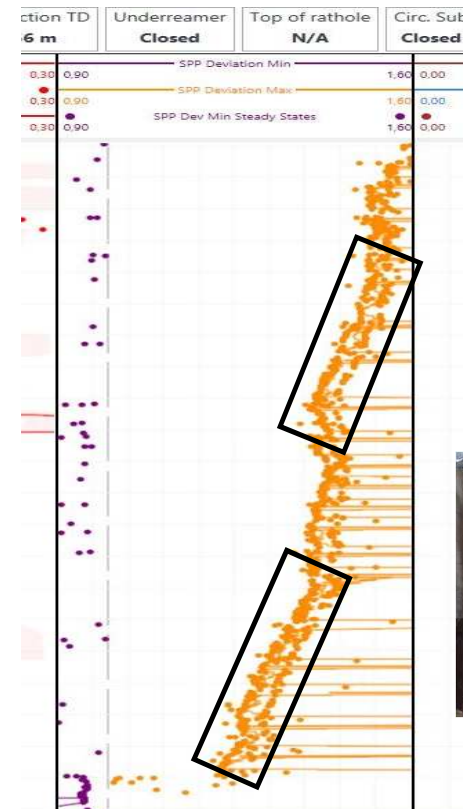
Potential client value: Identify washout, POOH and save the section. Avoid sidetrack, estimated cost USD 8,4 mill



TRADITIONAL WAY TO MONITOR:

TEAM NOT ABLE TO IDENTIFY WASHOUT OVER THE 24 HRS PERIOD.

BHA LOST, SECTION HAD TO BE RE-DRILLED



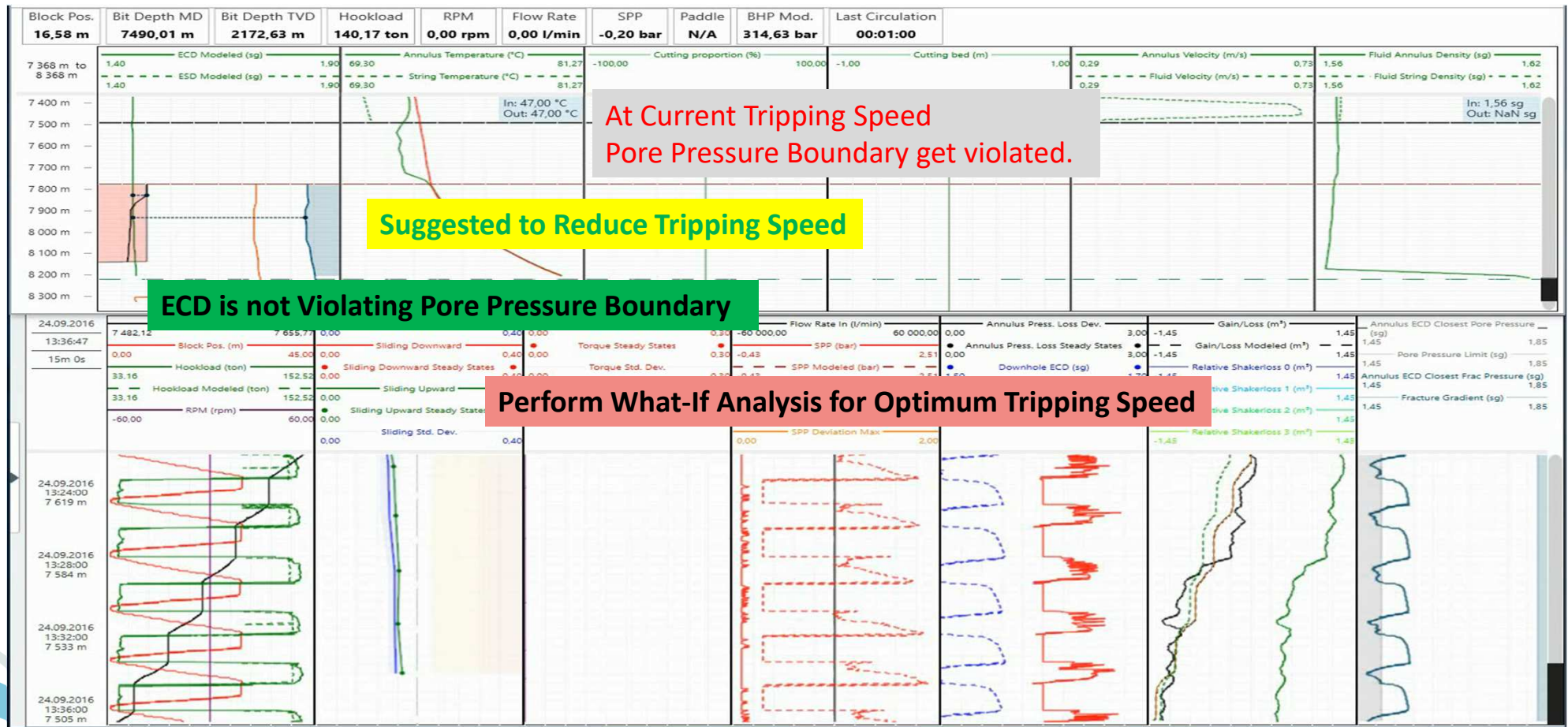
DRILLSCENE:

SPP CLEAR IDENTIFICATION OF WASHOUT 24 HOURS PRIOR TO LOOSING BHA

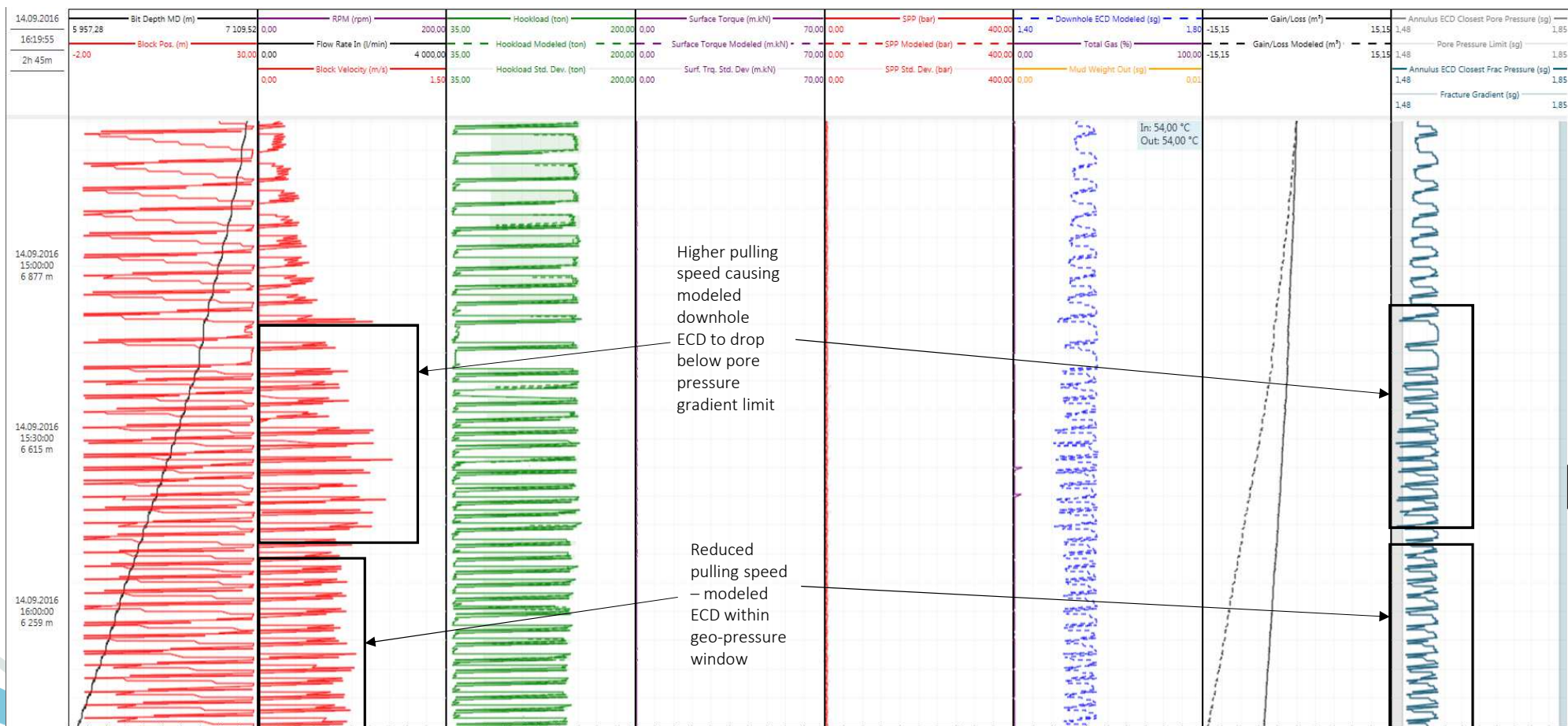
WITH DRILLSCENE RE-DRILL COULD HAVE BEEN AVOIDED.



Case 2: Real-time Drilling Optimisation – ‘What-if’ Analysis Tripping Operation - Pulling out of hole



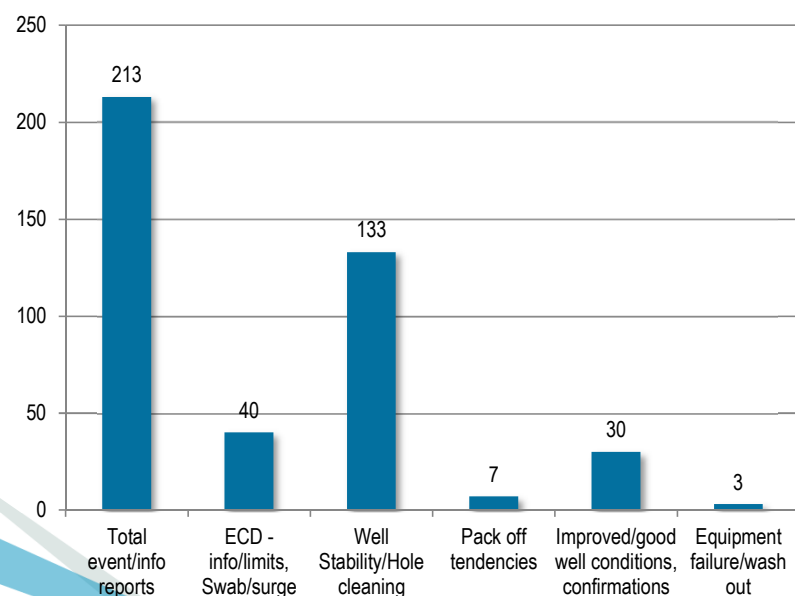
Event Summary: Observed downhole modeled dynamic ECD violating pore pressure gradient (1.50 sg) from 6793m MD. Called rig, POOH velocity reduced



DrillScene® – Reduce NPT

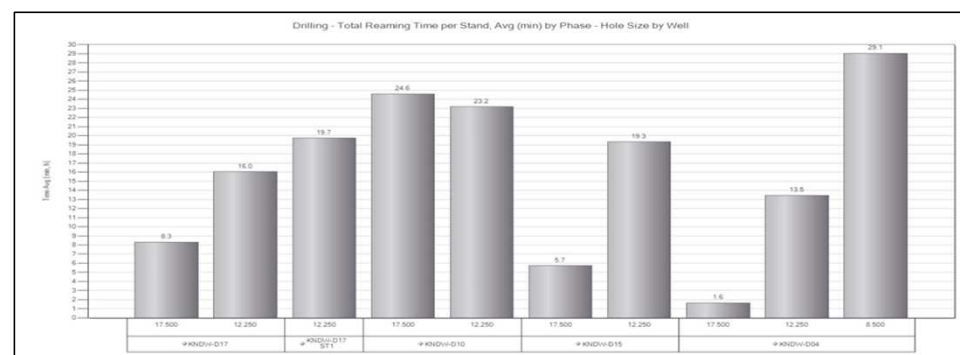


- Significant reduction of technical side tracks
- DrillScene on 65 drilling operations (1000+ drilling days)
- Utilise IRIS Well Simulator, DrillExpect, DrillScene and DrillTronics.
- Improved downhole awareness reduced escalating wellbore problems



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Hole Cleaning - Sekal identified that back reaming practice was wasting time. Cost Rig rate USD \$70K /day, Spread cost equal to rig rate



Wells Monitored	D17	D17ST1	D10	D15	D04
#of Stands	130	100	130	130	130
ILT/stand min	24	20	47	25	43
ILT per well hours	52	33	102	54	93
Potential Savings	\$151,667	\$97,222	\$297,014	\$157,986	\$271,736
Total Potential Savings	\$975,625				
Spread cost Factor 2	\$1,951,250				



Real-time Drilling Optimisation – Efficient Drilling



- Pre- and Lookahead simulations optimised drilling operations, significantly reduced NPT
- No drilling and liner run problems due to THM driven DrillScene® forecasting and trend analysis
- 9 + 2 wells drilling program
- First well AFE 110 days, completed in 125 days
 - Wellbore instability issues – No simulations were performed
- Well 2 reduced time from 110 days to 61 days (P10)
 - Simulation support to optimize;
 - hole cleaning
 - pump start-up
 - Liner/casing running speeds
 - RT Monitoring, Forecasting and Trend Analysis
 - No technical side-tracks during the campaign
 - Last two wells monitored by Maersk
- Following wells completed ahead of AFE

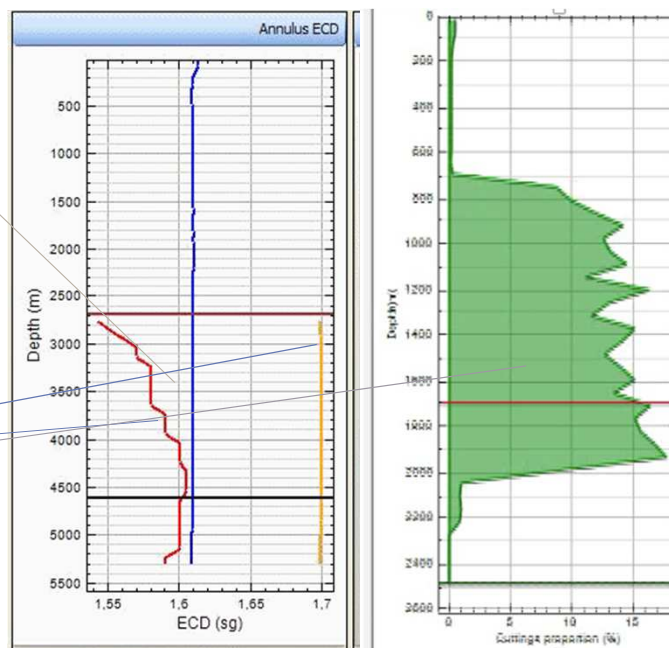
PROVEN VALUE PROPOSITION

NPT and Safety

- Secure Well Integrity – Stay within pressure window
 - Avoid swab, collapse and surge
- Avoid Stuck Pipe - Mechanical or Differential
- Avoid Pipe failure

ILT

- Knowledge of limits allows optimization
 - Tripping and casing running speed
 - Cuttings transport
 - ROP

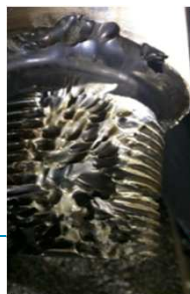


Average stuck pipe cost for one of our clients: **USD \$7.5 Million**

Statistically saved technical side-tracks where Sekal's DrillScene Technology has been used :

82 sidetracks

Value : **USD \$615 Million**



Washout detected by DrillScene with potential cost of **USD \$3.8 Million**

Cost of unnecessary reaming for one of our clients: **USD \$2 Million**



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