PRODUCT BULLETIN

CLEARVIEWER™

Canadian Energy
SERVICES

CLEAR VIEWER™

CLEARVIEWER™

Real-Time Brine Monitoring

PRODUCT DETAILS

ClearViewer™ is a real-time brine monitoring system that streams critical brine properties directly onto your Pason or NOV platforms. See traces on your rig monitoring platform for Oxygen levels, pH and more; enabling you to optimize chemical treatments, helping prevent corrosion and drill problems before they occur.

ClearViewer™ provides transparent per second data, with no mud checks required and is offered with our EnerClear™ performance brine system as a part of our dedication to offering the most technically advanced drilling fluid solutions in the Canadian oil patch.

PRODUCTION WATER MANAGEMENT

Variability in production brine chemistry can cause major problems with drilling fluid operations. To mitigate the risks of variability in brine loads, ClearViewer™ can help with early identifications of pH and salinity variations load by load.

How ClearViewer™ will Guide You

Identify and Eliminate Sources of Mechanical Aeration

Superior Trend Analysis with Pason Per Second Data

Set Alarms for Early Warnings on Solids, Oxygen and pH Levels

Precisely Measure Your Oxygen Levels Adjusting for Salinity

DO

Oxygen

Oxygen related pitting is the number 1 cause of tool damages. Staying on top of your oxygen levels are critical to reducing corrosion related charge backs.

Watch for harmful oxygen spikes with built in alarms, or use it to optimize your rig setup and procedures to reduce your oxygen scavenger consumption and lower your brine bills.

pH

pH

Watch for trends in your pH to identify untreated brine transfers, detect H2S and CO2 influxes, and optimize your pH additions.

Reduce wild swings in your pH to achieve better corrosion results, more consistently, without increasing your corrosion inhibitor consumption.

Cl-

Conductivity

Used to help determine the overall inhibition levels of the fluid in the hole, this is vital for wellbore integrity.

Monitor for brine dilution insuring you stay above your critical salinity levels throughout your program.

LGS%

Turbidity

Solids buildup not only negatively impacts ROP, but it also can cause operational issues that lead to increased costs such as foaming.

Drill as fast as you should, and stay ahead of solids build up with early detection of “dirty” brine through turbidity monitoring.

CASE STUDY

Grande Prairie, AB Montney

CHALLENGE

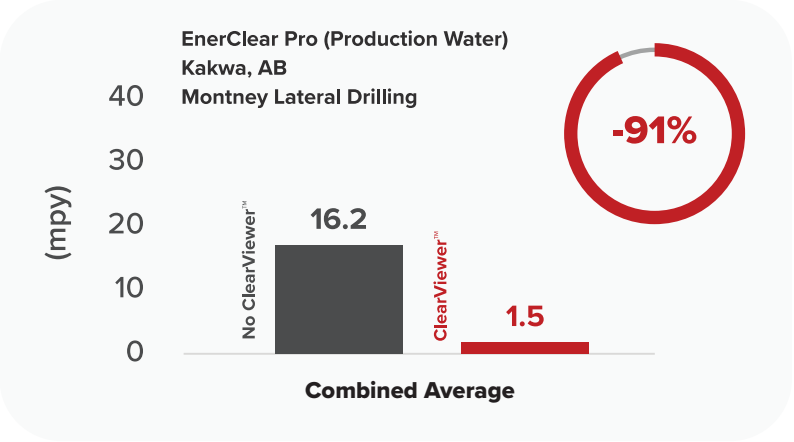
One Montney operator in the Grande Prairie, Alberta area wanted to understand if their oxygen scavenger and corrosion package spend could be optimized to deliver lower costs without sacrificing corrosion rates while drilling with production water solids free brine.

SOLUTION

ClearViewer™ - a CES proprietary Real-Time brine monitoring system was implemented at the well-site to deliver per second measurements on critical brine properties. A specific focus was made on oxygen levels and eliminating unnecessary aeration sources.

The system uses various sensors synergistically to more accurately measure brine properties, automatically adjusting for fluctuations in pH, salinity and temperature, which conventional hand held probes cannot do. These properties were streamed directly on Pason Live and showed key points during their drilling operations that led to enhanced aeration.

CORROSION RATES

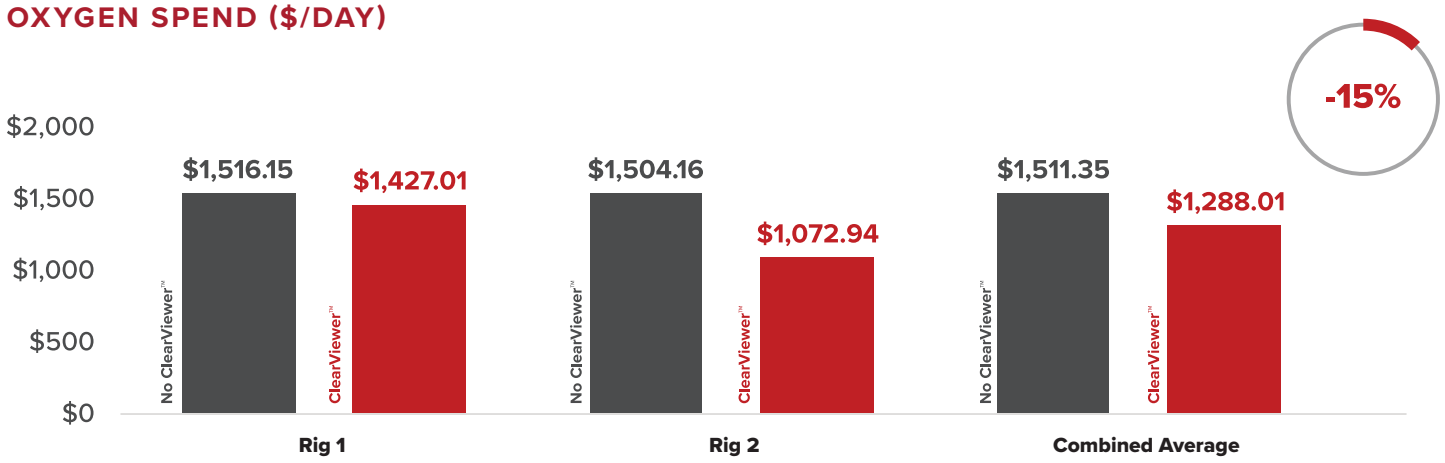


RESULTS

Using ClearViewer™ it was determined oxygen scavenger additions could be extended from 36 to 48 hours per drum, while maintaining desired dissolved oxygen levels by eliminating unnecessary fluid aeration events.

Over the 8 well trial, the average oxygen scavenger spend was reduced by 18% while the corrosion rate improved 91% over the 4 pre-trial wells using the same fluid system. The total oxygen scavenger spend was reduced by $223/day with the total corrosion spend reduced by $517/day.

OXYGEN SPEND ($/DAY)

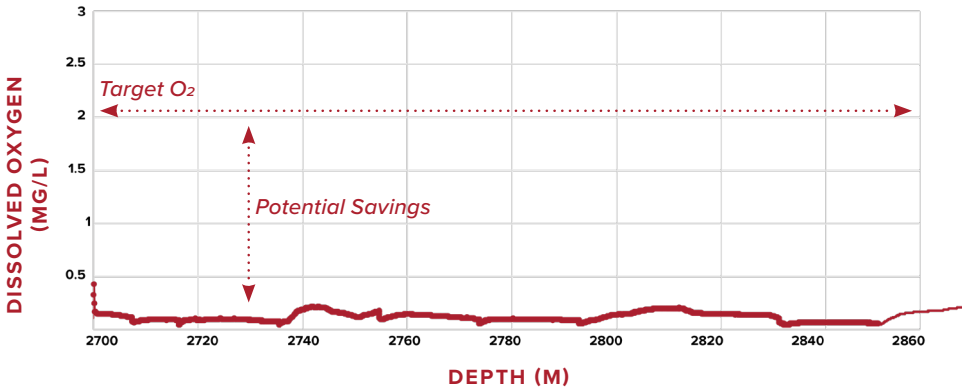


BIG DATA

Per Second Oxygen Monitoring

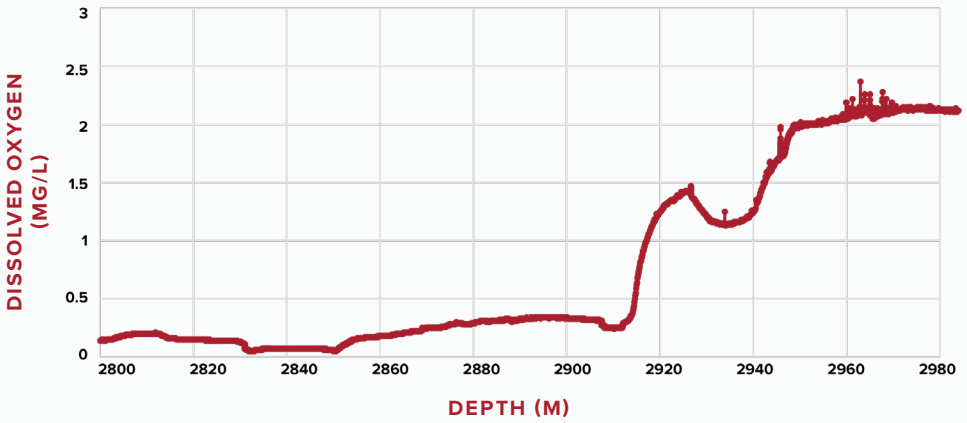
CHALLENGE:
OVERTREATMENT

This allows you to identify overtreatment making smarter additions possible.



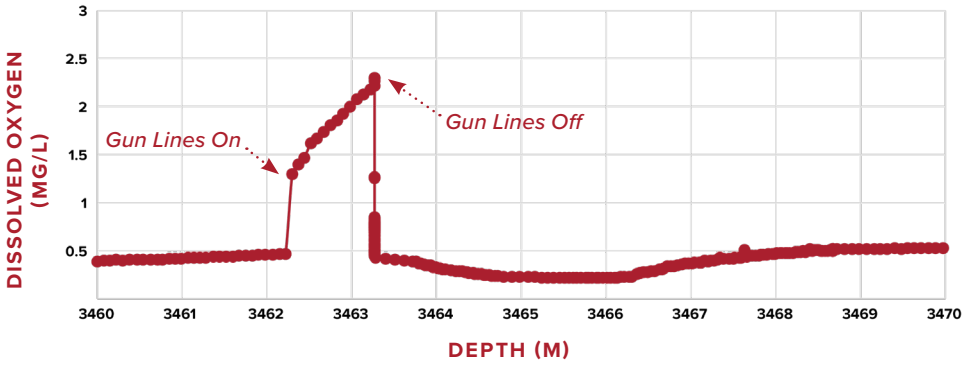
CHALLENGE:
LOWER TANK VOLUMES

Tank volume drops over extended periods were seen to cause excessive aeration due to agitators closer to surface levels.



CHALLENGE:
MECHANICAL AGITATION

Oxygen spikes can be seen and treated accordingly when using the gun lines to mix and disperse products.



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