

PRODUCT BULLETIN

ENERSCAV C



Canadian Energy
SERVICES

**CLEAR
VIEW-R™**

ENERSCAV C

Patented Oxygen Scavenger

PRODUCT DETAILS

EnerScav C is a CES patented organic liquid oxygen scavenger that is 100% compatible with production waters and hi-divalent brines. It will not form scales or precipitates that can be formed with inorganic oxygen scavengers, resulting in excessive increased pitting potential of downhole tubulars and potential formation damage.

EnerScav C (DEHA) is highly concentrated and acts fast at low dosages. It can maintain more stable oxygen levels for longer than inorganic salts such as Sodium Erythorbate.

Capable of inducing passivation layers it also acts to lower corrosion rates when used in conjunction with CES Corrosion inhibitors.

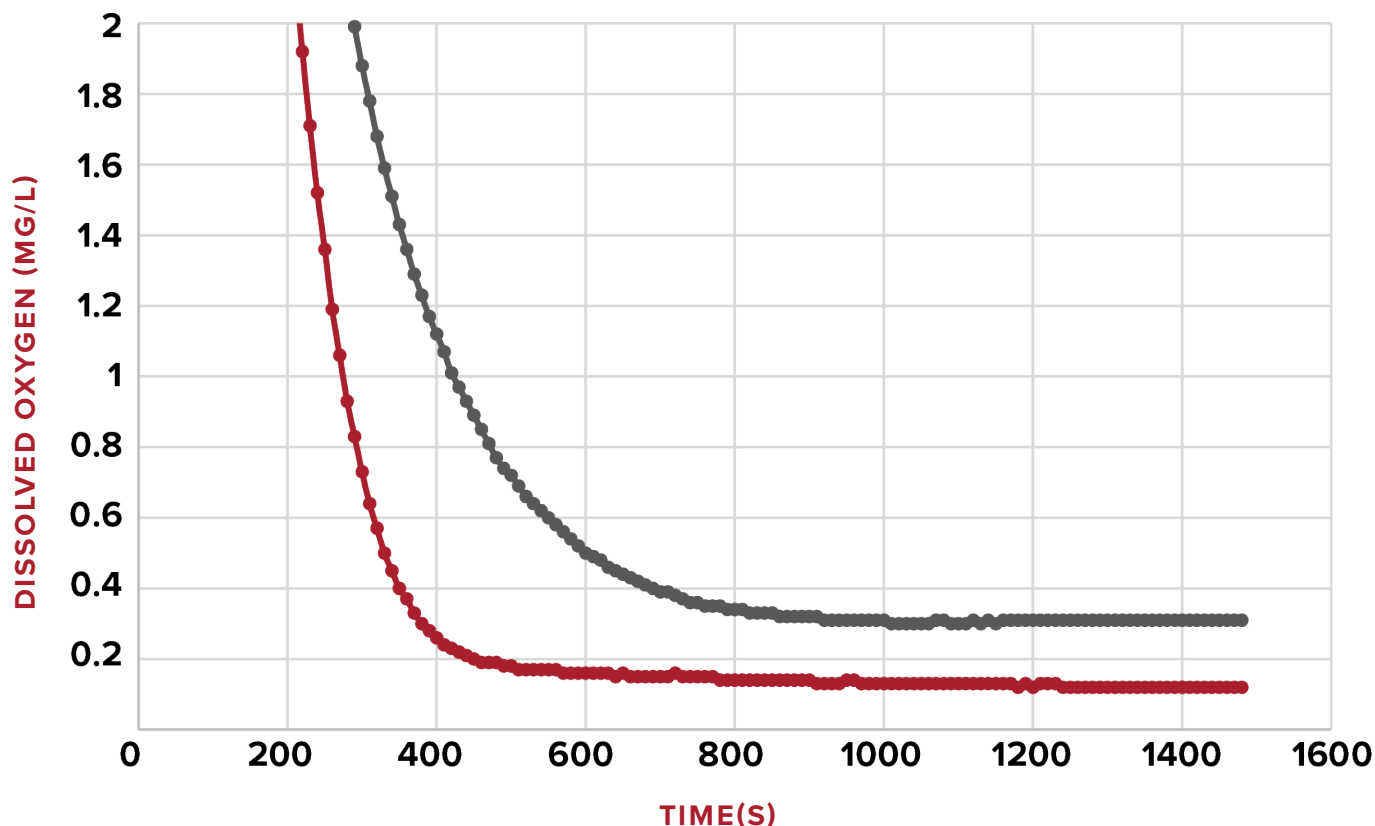
Oxygen Scavenger	Common Scavenger to Oxygen Treatment Ratios	Theoretical (Stoichiometry)
DEHA (EnerScav C)	2-3 to 1	1.2 to 1
Sodium Sulfite	8-10 to 1	7.9 to 1
Erythorbate	12 to 1	10.6 to 1

Source: Eastman Chemical Company

Treating for oxygen is an effective method to prevent corrosion related tool damages.

In lab testing EnerScav C has a proven ability to scavenge more oxygen and at faster rates than similar additions of other common inorganic oxygen scavengers.

EnerScav C Vs. Sodium Erythorbate 1250kg/m³ CaCl₂ Brine pH 10



CASE STUDY

Grande Prairie, AB - Montney

CHALLENGE

An Alberta Montney operator drilling with **EnerClear™ - solids-free Calcium Chloride brine** wanted to gain a deeper understanding of their oxygen scavenger chemical spend and determine if treatment rates were optimized.

SOLUTION

ClearViewer™ - a CES proprietary Real-Time brine monitoring system was implemented at the well-site, with a specific focus on oxygen levels.

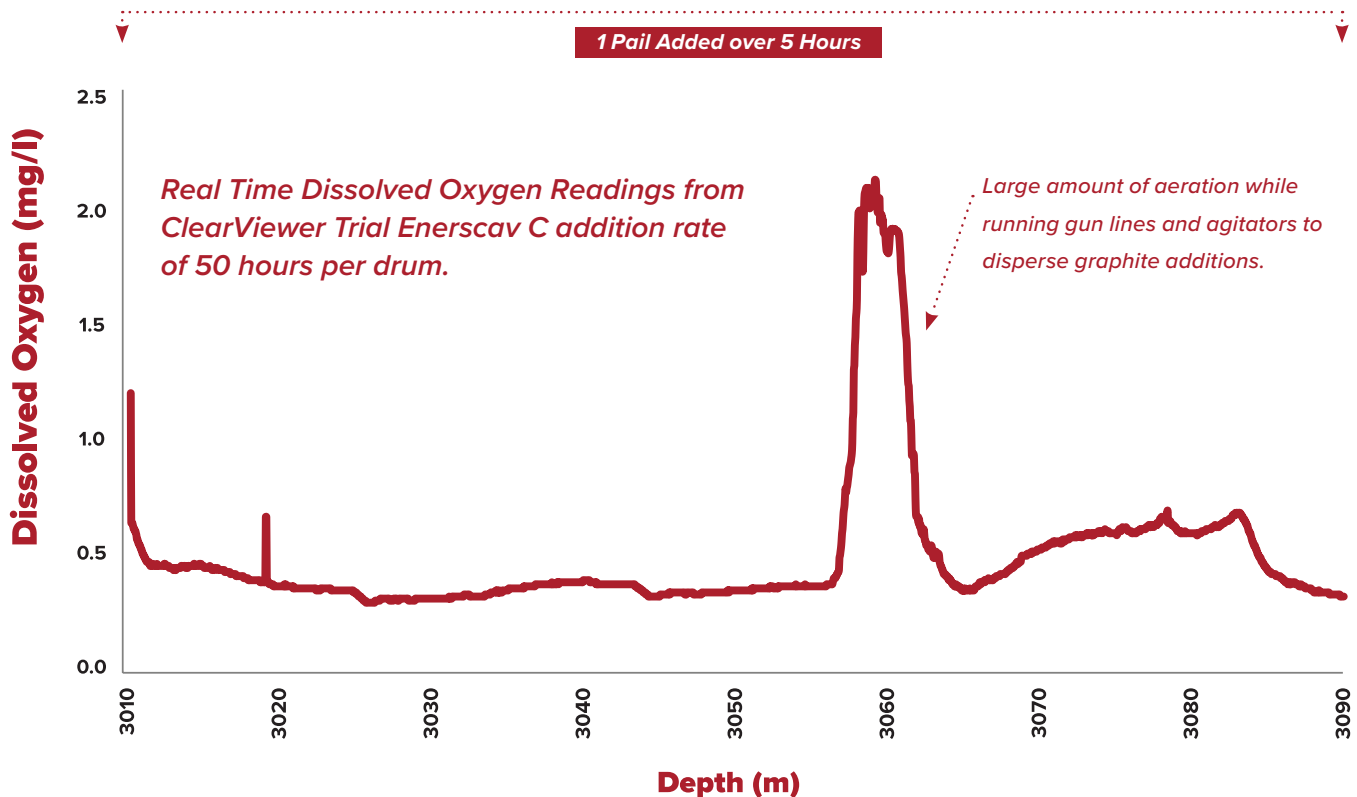
The system uses various sensors synergistically to more accurately measure brine properties, automatically adjusting for fluctuations in pH, salinity and temperature, which hand held probes cannot. These sensors continuously record per second fluid data, streamed live on Pason.

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.

Average oxygen scavenger spend was reduced by 18% while the corrosion rate improved 14% over the prior 4 well average.

Brine Fluid Properties	
Density (kg/m ³)	1,237
Solids%	0.11
pH	9.5 - 10.5
Calcium (mg/L)	108,000
Chlorides (mg/L)	198,000

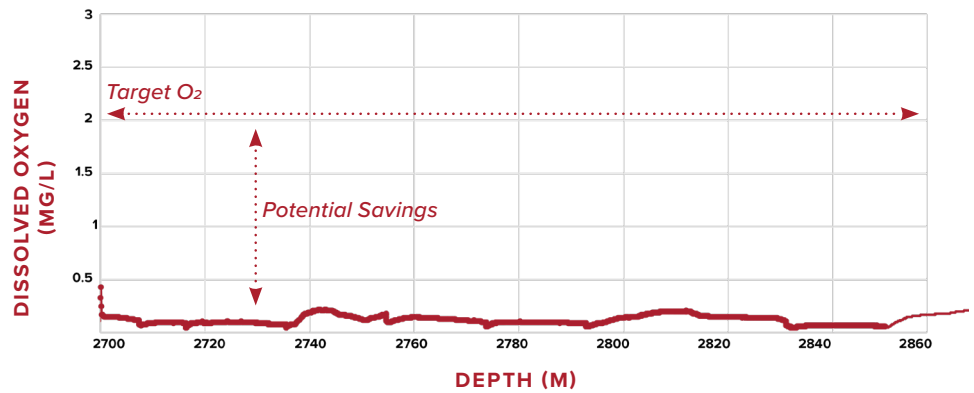


CASE STUDY

Grande Prairie, AB - Montney

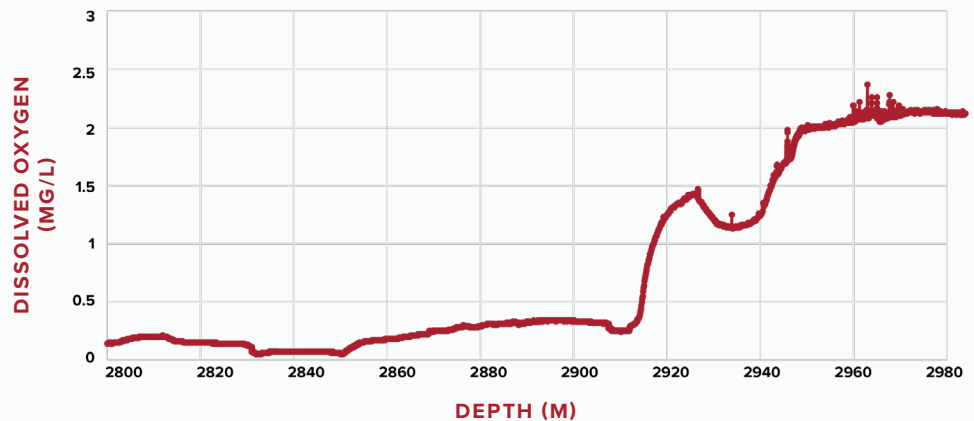
CHALLENGE: OVERTREATMENT

This allows you to identify overtreatment making smarter additions possible.



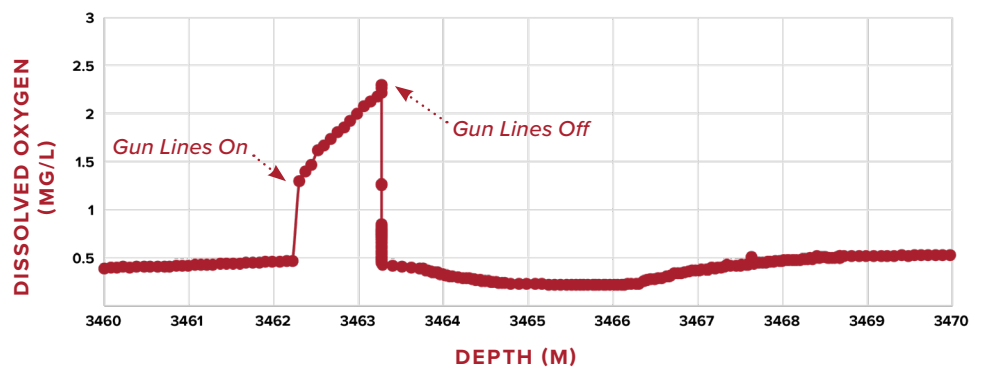
CHALLENGE: LOWER TANK VOLUMES

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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