

PRO LIFT LITE™



CES
COMPLETION
SERVICES

**APHRONS
UNLEASHED**

ProLift Lite™ POWERED BY APHRONS

LOW DENSITY POLYMER MICROBUBBLE SYSTEM

ProLift Lite utilizes ahrns to provide a low density, microbubble fluid designed for completions operations. It optimizes wellbore cleaning, manages hydrostatic pressure, and reduces operational costs. ProLift Lite offers an effective alternative to traditional nitrified fluids without the hazards or high expenses associated with nitrogen.

MICROBUBBLE TECHNOLOGY

A non-hazardous material, low density polymer surfactant package that creates stable multilayered microbubbles.

ONSITE BLENDING AND PLUMBING

Blend 70 m³ in 2 hours and pumped as a gasified liquid the any high pressure pump.

LOW DENSITY CONTROL

Density can be adjusted to fit wellbore requirements on the fly, as low as 600 kg/m³. Wells requiring lower densities can achieve circulation with additional fluid loss agents and tailored diverter blends.

SMALL ONSITE FOOTPRINT

The mobile mixing plant requires minimal space and easily integrates with onsite equipment.

HOW IT WORKS

ProLift Lite utilizes low shear rate viscosity (LSRV) properties to reduce pressure while improving solids carrying capacity. Its chemical composition is tailored to achieve specific density and stability targets for a variety of well conditions.

In addition, ProLift Lite reduces fluid friction by up to 50% compared to water, and performance can be further enhanced with the use of compatible lubricants.

ADDITIONAL SYSTEM BENEFITS

- 01 FLUID LOSS REDUCTION**
 Microbubbles act as a barrier to minimize fluid invasion into formation pores.
- 02 OPERATIONAL COMPATIBILITY**
 Effective with both stick pipe and coiled tubing equipment.
- 03 SIMPLIFIED FLOWBACK**
 Easily broken with standard oxidizers or acids after treatment.
- 04 REUSABLE SYSTEM**
 Can be reconditioned and reused with minimal fluid treatment.
- 05 COST SAVINGS**
 Delivers significant cost reductions compared to nitrogen based operations.

PROLIFT LITE VS TRADITIONAL NITROGEN SYSTEMS

PERFORMANCE PARAMETER	PROLIFT LITE	NITROGEN SYSTEMS
Hydrostatic Reduction	50%	75%
Fluid Loss Reduction	Yes	No
Solids Transport Capabilities	High	Low
Fluid Friction	Low	High
Turbulent Flow Required	No	Yes
BHA Performance	Slight Impact	Significant Negative Impact
Reuseable	Yes	No
Cost	30-60% Reduction	High

ULTRA-LOW DENSITY SAND CLEANOUTS IN THE MONTNEY

An operator in Montney formation required sand cleanouts for 5 wells on 3 separate pads. The wells had been on production from 1–5 years and were unable to circulate fresh water due to depletion.

Seeking a lower cost alternative to nitrogen, the ProLift Lite system was deployed. The system utilized stabilized aphrons and other chemistries to achieve significantly lower apparent density when pumped downhole for optimized wellbore cleaning and pressure management.

The initial ProLift Lite system build of 233 m³ was re-circulated and reused across all 5 wells through coiled tubing. During the 7 day campaign, the system was re-circulated ~13 times (3000+ m³) with only 3.2% losses. This resulted in massively decreasing the overall project costs while successfully cleaning the wells to the toe and getting them back on production significantly faster than previous methods.

WELL PARAMETERS

WELL NO.	FLUID DENSITY REQUIRED (kg/m ³)	PUMP RATE (l/min)	BHP (MPA)	PRESSURE GRADIENT (KPA/M)	TVD (M)	MD (M)
Well 1	852	350-450	18.4	8.4	2189	4590
Well 2	617	350	13.1	6.1	2147	3931
Well 3	666	400-600	16.4	6.5	2525	6292
Well 4	399	400-450	9.4	3.9	2402	4660
Well 5	545	400-700	12.9	5.3	2432	4746

KEY TAKEAWAYS

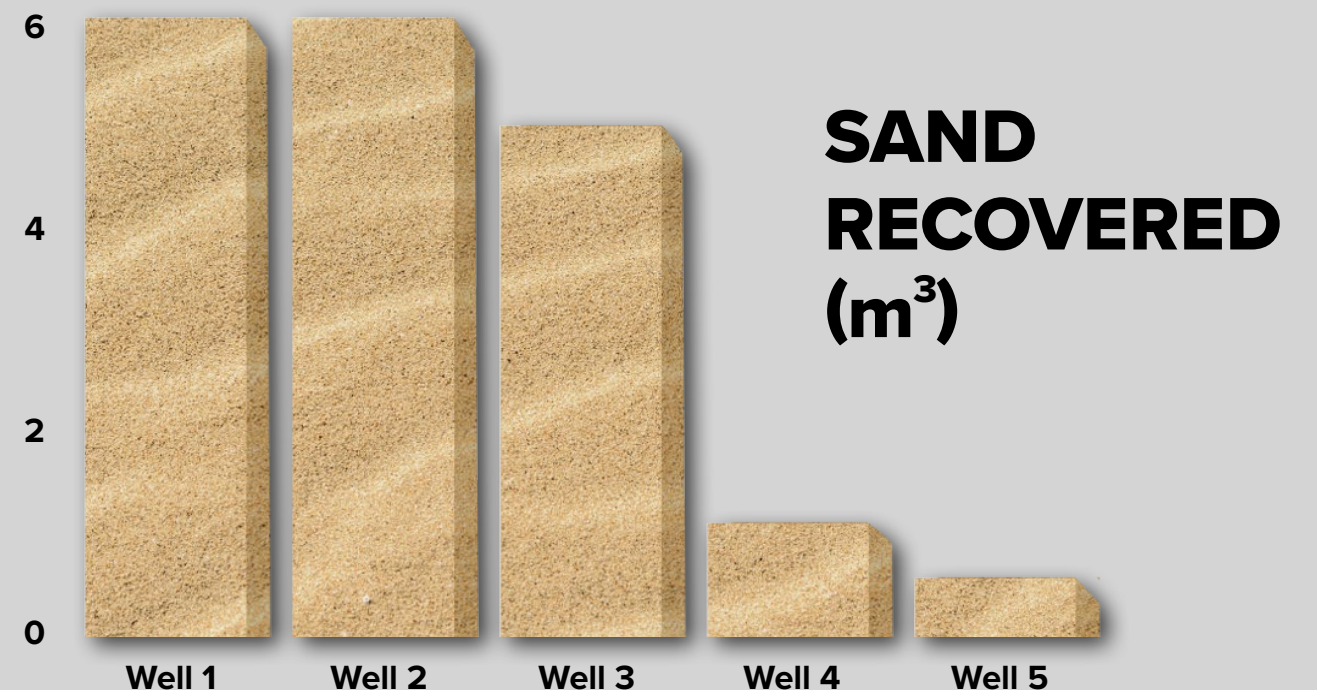
Significant sand removed.

Solids control brought sand from a high of 6.0% to 0.1%.

No nitrogen required to lower fluid density.

Barrel-in: barrel-out circulation efficiency.

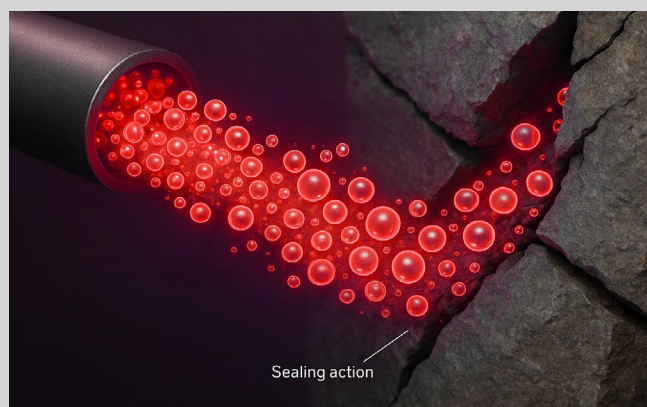
Reusing the system dramatically reduced project costs.



CASING DEFORMATION AND LOW-BHP CHALLENGES IN PLUG-AND-PERF COMPLETIONS

During plug-and-perf completions in Northeast British Columbia, an operator experienced severe casing deformation that left two sets of plugs and perforation guns stuck downhole. This exposed two unfractured, permeable zones with low bottom-hole pressure, unable to sustain a column of water, creating a significant operational hurdle: how to maintain wellbore stability and circulation for remediation involving milling, fishing, and perform venturi runs without resorting to costly and inefficient nitrogen pumping systems?

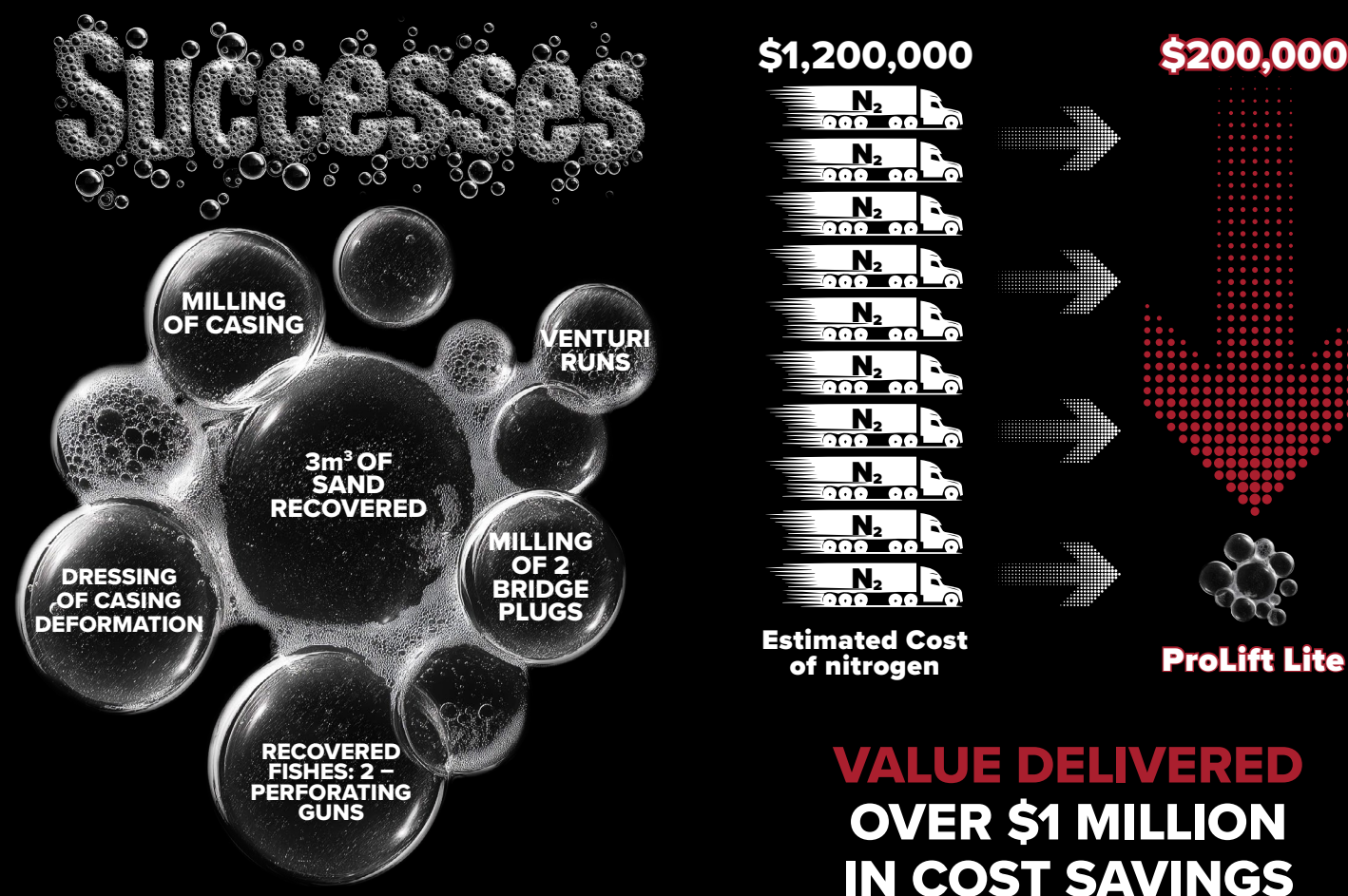
DEFORMABLE GASEOUS BUBBLES WITH STABILIZING POLYMER SHELL



The operator deployed ProLift Lite in collaboration with CES Completion Services' technical expertise. The tight filter cake formed by the ProLift Lite system reduced losses and the ultra-lightweight properties of the system effectively reduced water density to 600 kg/m³. This allowed the system to maintain circulation and effectively clean the well while completing all remediation activities.

During the 15 days, the snubbing unit performed multiple tapered milling runs to dress casing, venturi runs, fishing runs, and plug milling runs with nearly 100% fluid returns.

The client estimated the cost of nitrogen to be approximately \$80,000 per day, resulting in over \$1,000,000 in cost savings.





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