CLARIANT OIL SERVICES

Nanoemulsion-based demulsifier improves oil-water separation and lowers chemical usage

CASE HISTORY | PHASETREAT NAN 19037

OPERATOR BACKGROUND

Clariant Oil Services provided support for a Colombian energy company with on-shore operations in the middle Magdelena Basin, to optimize their demulsification process. This producer was using a traditional solvent-based demulsifier for a field with medium crude oil (~API over 25) and high separation temperatures (over 200°F). Multiple flowlines comingled together in a hub, were treated, and then sent forward to gun barrel storage. Though the incumbent demulsifier did meet all KPIs, the customer was receptive to alternatives for additional process improvements.

Clariant developed an innovative demulsifier, PHASETREAT NAN 19037, formulated with a proprietary blend of environmentally-preferable solvents in place of the traditional aromatic solvent system. This product allowed the customer to reduce dosage, and led to improved water quality, allowing them to more consistently meet and exceed their oil quality KPI (< 0.5% BSW).

FIELD TRIAL EVALUATIONS

Validation for the new product consisted of:

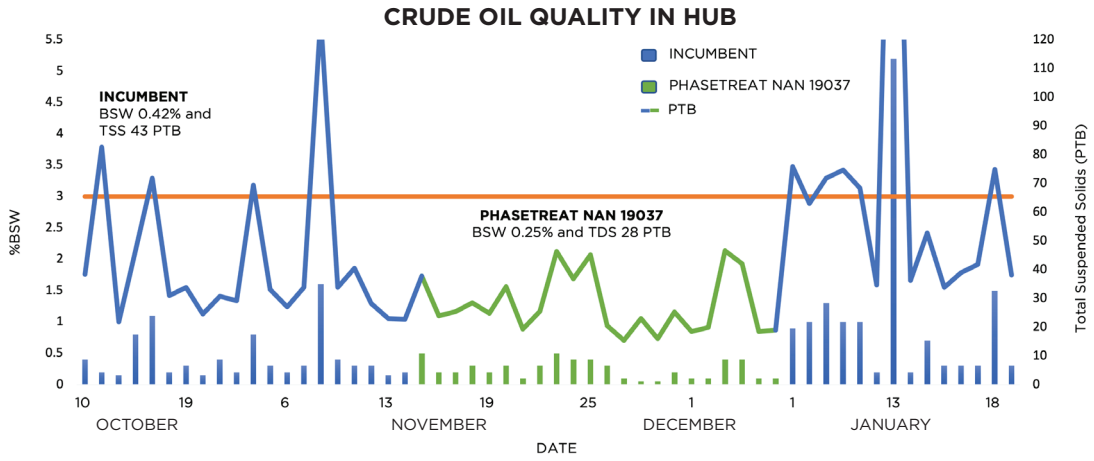
- Crude oil quality KPI = BSW <0.5%
- Water quality in the separator and skimming tanks = amount of oil in water
- Measurement of Total Suspended Solids (TSS)

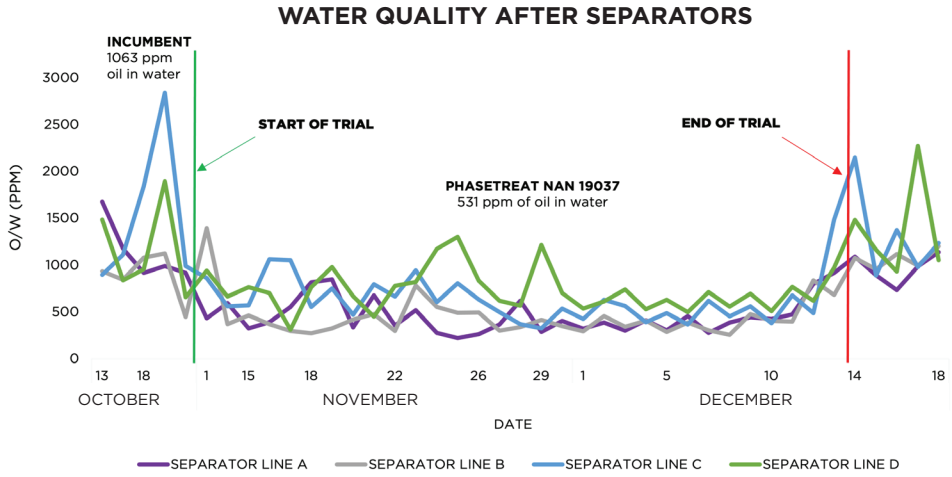
BENEFITS OF PHASETREAT NAN 19037

- Proprietary nanoemulsion utilizing environmentally-preferable solvent package
- Reduced dosages needed to achieve performance of traditional solvent based demulsifiers meaning savings to the operator
- Lower carbon emissions due to removal of aromatic solvents and reduced volumes

FIELD TRIAL MONITORING

As illustrated in the charts below, implementing PHASETREAT NAN 19037 yielded improvements compared to the incumbent product. Dose rate was reduced by 10%, water quality was improved with a 50% reduction of oil in water in the separators and skimming tanks and a 47% reduction in TSS. PHASETREAT NAN 19037 also showed better consistency in achieving or exceeding BS&W. An additional benefit to the customer was the reduction in frequency and time needed for third party servicing for tank cleanouts and an observed reduction of the residual in the tanks.





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