

ReLease ReUse Performance Stimulation Fluid Systems

For produced water

KEANE



Keane specializes in produced water solutions, offering a comprehensive range of options that enable operators to run produced water at any hardness, pH, mineralogy, temperature, or salinity levels. Every system begins with an analysis of source water and cuttings from the well. Then a custom solution is recommended for the most effective operations and production.

The ReLease ReUse™ family of produced water fluid systems is effective in all water scenarios, including 100% produced or flowback water. In areas where fresh water is an economical limitation, ReLease ReUse enables operators to continue operations with reduced cost and logistics associated with treating, hauling, or reinjecting produced or flowback water.

Testing is conducted on all water sources prior to the field application of ReLease ReUse fluid systems to ensure proper fluid characteristics for the well environment.

Our custom chemistry is developed at the Keane Engineering & Technology Center in The Woodlands, Texas, by a staff of specialists with decades of combined industry experience.

Our network of district labs extends this expertise to the heart of every major basin to address local formation challenges before operations begin.



ReLease ReUse Speed Fluid Systems

ReLease ReUse Speed is a full line of slickwater systems with friction reducers (FR). To enhance operational performance, ReLease ReUse Speed is customized using a cationic or anionic FR for any reservoir or water conditions—even salinity exceeding 300,000 mg/L. ReLease ReUse Speed incorporates proprietary FRs, handling produced and flowback water of all major shale formations since 2012.

Fluid System	Polymer	Breaker	Optimal Performance
ReLease ReUse Speed	Anionic/cationic polyacrylamide (FR)	Breakers are not recommended for slickwater systems with produced water	<ul style="list-style-type: none">• Any water salinity, even >300,000 mg/L• Water hardness >50,000 mg/L• pH >4.5 when using anionic FR• No pH limits when using cationic FR

ReRelease ReUse Dry

ReRelease ReUse Dry offers a cost-effective, dry FR alternative to emulsion systems. Similarly to ReRelease ReUse Speed, this dry product incorporates proprietary FRs and has a proven history of handling produced and flowback water of all major shale formations.

Fluid System	Polymer	Breaker	Optimal Performance
ReRelease ReUse Dry	Anionic/cationic polyacrylamide (FR)	Breakers are not recommended for slickwater systems with produced water	<ul style="list-style-type: none">• Any water salinity, even >300,000 mg/L• Water hardness >50,000 mg/L• No pH limitation

ReRelease Reuse Linear Fluid Systems

ReRelease ReUse Linear fluid systems are natural or modified-natural polymers used without cross-linkers. Our custom designs take into consideration the unique environment of each well to ensure reservoir compatibility for maximum production. ReRelease ReUse Linear provides an economic fluid option without compromising viscosity characteristics. The gelling agents used are available in dry or slurry form. Polymers used include guar (G) and carboxymethyl hydroxypropyl guar (CMHPG).

Fluid System	Polymer Product	Polymer Type	Breakers	Optimal Performance
ReRelease Reuse Linear-G	KWG-111 L or D	Guar	KWBO-2	Any water condition within a pH range of 6.5–8.5
ReRelease Reuse Linear-CMH	KWG-33 L or D	CMHPG	KWBO-2	<ul style="list-style-type: none">• Any water salinity, even >300,000 mg/L• Water hardness >50,000 mg/L• No pH limitation



ReRelease Reuse Crosslinked Systems

Crosslinked systems ReRelease ReUse XB and ReRelease ReUse XZ with proprietary gel stabilizers have been implemented and pumped since 2013—mainly in the Permian and the Bakken, providing the highest proppant suspension with fully crosslinked systems for all reclaimed water.

ReRelease ReUse XB

This system is used in water up to 2,500 mg/L hardness and 100 mg/L in boron—with or without boron scavengers. ReRelease ReUse XB has been widely used in the Permian.

ReRelease ReUse XZ

This system is applicable in any water condition—even the worst produced water. ReRelease ReUse XZ is formulated with crosslinked CMHPG. It was first introduced in the Bakken.

ReRelease ReUse XZG

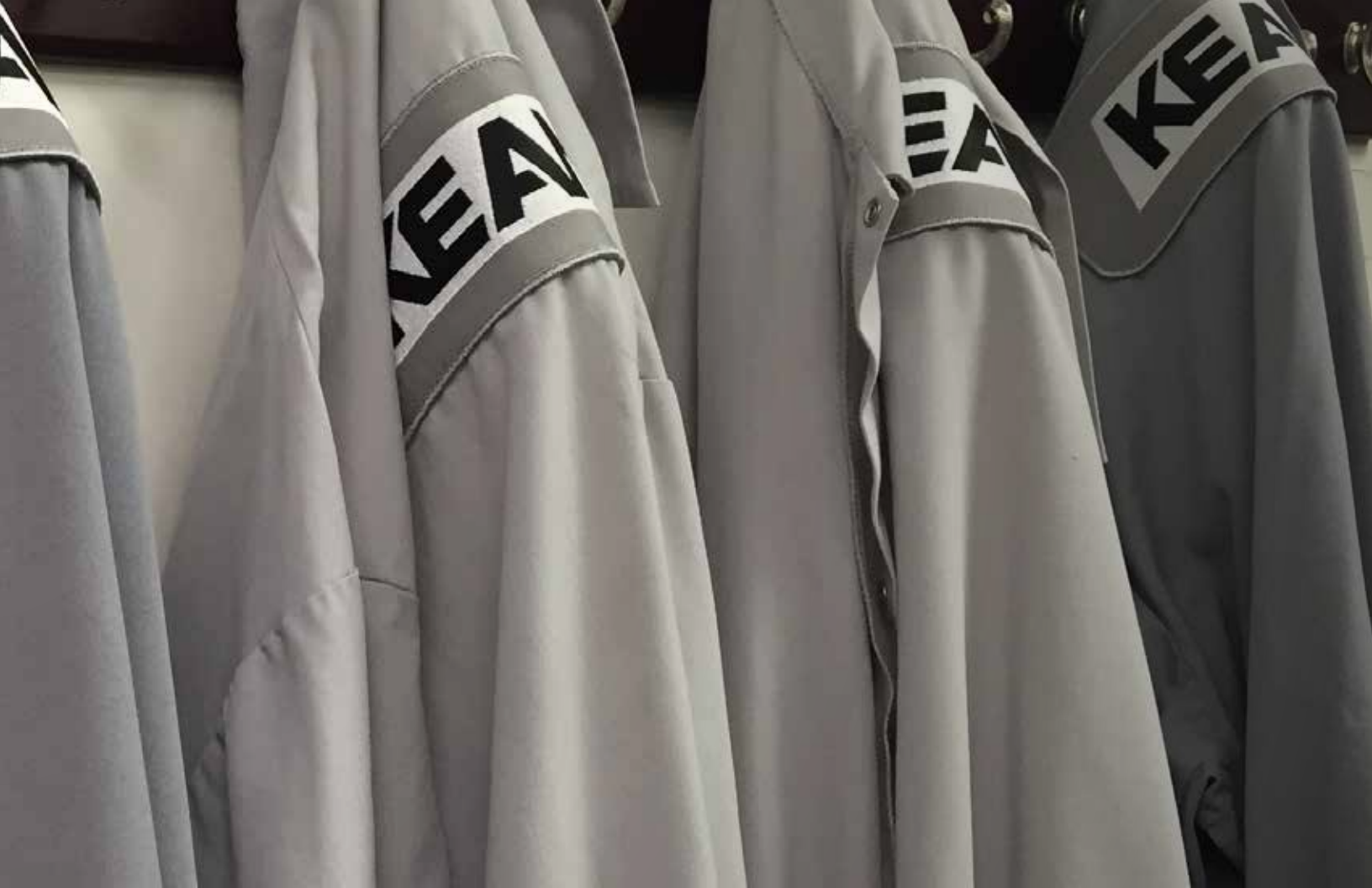
This produced water system uses crosslinked guar. It is applicable in water of any condition at temperatures up to 200°F.

Fluid System	Polymer Crosslinker	Buffer/pH Additive	Breakers	Differentiator	Target Basins
ReRelease ReUse XB	<ul style="list-style-type: none"> • KWXB-14 • KWXB-20 • KWXB-19 • KWXB-22 	<ul style="list-style-type: none"> • KPH-14L • KPH-15 • KPH-16 	<ul style="list-style-type: none"> • KWBO-2 • KWBO-13 	<ul style="list-style-type: none"> • Water hardness up to 2,500 mg/L • Boron up to 100 mg/L • Temperatures up to 250°F 	<ul style="list-style-type: none"> • West Texas • South Texas • Mid-Con (SCOOP, STACK)
ReRelease ReUse XZ	<ul style="list-style-type: none"> • KWXZ-4 • KWXZ-5 • KWXZ-6 	<ul style="list-style-type: none"> • KPH-2 • KPH-4 	<ul style="list-style-type: none"> • KWBO-13 • KWBO-8 	<ul style="list-style-type: none"> • Extreme salinity • Temperatures up to 280°F 	<ul style="list-style-type: none"> • Bakken • West Texas
ReRelease ReUse XZG	<ul style="list-style-type: none"> • KWXZ-4 • KWXZ-5 • KWXZ-6 	<ul style="list-style-type: none"> • KPH-2 • KPH-4 	<ul style="list-style-type: none"> • KWBO-2 • Encap-LP • KWBO-13 	<ul style="list-style-type: none"> • All produced water • Low temperatures <200°F 	<ul style="list-style-type: none"> • West Texas • Bakken • Mid-Con (SCOOP, STACK)



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ReLease ReUse

Performance Stimulation Fluid Systems for Produced Water



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