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About this Report

U.S. Midstream Water for Hydraulic Fracturing: Market Trends, Opportunities, and Forecasts, 2025–2030

Released October 2025

Sections

- Defining the Landscape
- Water Use Trends & Challenges
- Market Size and Forecasts
- Basin and Shale Play Profiles
- Competitive Landscape
- Company Profiles
- Glossary of Terms
- Related Data Dashboard

Summary

BACKGROUND

Hydraulic fracturing has reshaped the U.S. energy landscape. By unlocking shale reserves from Pennsylvania to Texas, fracking has become central to global energy security. Today, the U.S. is the world's largest producer of oil and gas, accounting for nearly 40% of global oil and 37% of natural gas production. Midstream water management, from supply to recycling to disposal now sits at the core of this energy transformation. Horizontal well completions, now reaching lengths up to five miles long and requiring more than 12 million gallons of water, are driving record produced water volumes, placing additional stress on disposal facilities' capacity and fueling regulatory scrutiny, particularly in high-activity regions like the Permian Basin, shared by Texas and New Mexico.

Amidst this dynamic context, exploration companies and midstream water management firms are pursuing more integrated water solutions. Water supply and produced water pipelines have emerged as an alternative to trucks and produced water recycling is on track to supply over 75% of fracking water demand by 2030. These shifts, accompanied by consolidation by way of M&A partnerships across the water value chain, are reshaping the competitive landscape.

By 2030, produced water from hydraulic fracturing wellheads is projected to reach 50 million barrels per day

report SCOPE

Backed by a transparent research methodology, this Insight Report provides a comprehensive analysis of U.S. midstream water management, basin-level dynamics, and strategies of leading players positioned to shape the future of oilfield water.

This analysis includes macro-analysis of key drivers, trends, forecasts, and market size of water used for and produced by U.S. hydraulic fracturing activities across unconventional oil and natural gas production, represented by the seven major onshore shale basins.

report HIGHLIGHTS

- Drivers and opportunities shaping investment and spending decisions
- Analysis by commodity, geography, and value chain segment
- Budget segments with highest planned capital investment
- Pockets of opportunity for water solutions amid hydraulic fracturing momentum
- Market sizing and forecasts for the period 2025–2035
- Profiles of 26 companies

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Research Methodology and Data Sources

Scope

This Insight Report provides a macro-analysis of key drivers, trends, and market size of water used for and produced by U.S. hydraulic fracturing activities across unconventional oil and natural gas production, represented by the seven major onshore shale basins.

Key Assumptions And Methodology

- Collected information on seven major shale plays across 50 states, with varying degrees of reported data dependent on state disclosures.
- Estimated water use for hydraulic fracturing operations based on disclosed data of water use per well (variable by shale basin) and by state.
- To estimate oil and gas operator (energy services) spend on water management services (2024–2030), Bluefield utilized publicly disclosed and industry-verified prices for water services across the supply chain, source and produced water volumes rooted in oil and gas production trends, forecasted recycling vs. disposal rates for produced water, and forecasted pipeline vs. trucking rates to develop an annual spend value.
- To estimate water management services CAPEX (2024–2030), Bluefield utilized the existing asset base of water recycling/handling and disposal facilities, miles of water pipeline, saltwater disposal (SWD) wells, trucking fleets, storage tanks, historic growth rates of assets, value of new build and upgrade construction data, water management service companies' capital investment plans, and disclosed, new asset announcements.
- Market size, segmentation, and growth was discussed with industry players (water management and treatment tech service providers) for verification.

Companies Profiled

XRI, Pilot Water Solutions, Delek Logistics, RRIG Water Solutions, WaterBridge, Dresser Utility Solutions, DHI, Blackbuck Resources, Select, Western Midstream, Summit Midstream, Hess, Layne Water Midstream, NGL, Stonehill Infrastructure, Bosque Systems, LLC, Goodnight Midstream, aquaterra water management, Deep Blue, Tallgrass, TPL, whitewater, Freestone Midstream

Data Sources

- Company Financials (e.g., 10k, 10Q, Presentations, Press Releases)
- U.S. Energy Information Administration (EIA)
- U.S. Drought Monitor (USDM)
- U.S. Environmental Protection Agency (EPA)
- Industry sources (Baker Hughes, FracFocus)
- Industry interviews (water solution providers, infrastructure partners)
- St. Louis Federal Reserve, Dallas Federal Reserve

Insights

TAKEAWAYS

Oil and gas total market spend on midstream water management to total US$156 billion through 2030

Between 2025–2030, Bluefield projects U.S. oil and gas operators may spend an average of US$26.0 billion per year in managing water across the hydraulic fracturing value chain. Cumulative water management capital expenditures (CAPEX) are expected to total US$15.8 billion across critical water infrastructure and assets, representing a 6.2% CAGR.

- **Water-intensive fracking transforms U.S. into dominant global energy supplier**. The U.S. has achieved unprecedented energy dominance, capturing 40% of worldwide oil production and 37% of natural gas output in 2023 through hydraulic fracturing that consumes up to 16 million gallons of water per well. This growth has resulted in a 6.0% CAGR since 2012, outpacing other producing countries in the Middle East, Africa, Europe, and Asia and establishing the U.S. as the world's swing supplier.

- **Drilling technology innovation drives extreme water demand despite fewer rigs.** The industry achieved a record productivity levels with 75% fewer active rigs since 2014. Extreme-reach wellbores now require 200% more water than traditional designs, with average well lengths doubling from 7,300 to 15,200 feet.

- **Logistics and treatment are the cost battlegrounds.** Transportation (43%) remains the industry's largest expense, reflecting the scale of water hauling across shale basins. Pipeline build-outs are steadily reducing reliance on trucks, reshaping cost structures. Treatment (29%) is expanding as operators accelerate recycling and reuse to manage freshwater scarcity and disposal constraints—making these two categories the critical levers for margin improvement.

- **Reuse is emerging as the industry's defining growth engine.** By 2030, over 75% of fracking water demand could be met with recycled produced water. Nearly US$10 billion in CAPEX will be directed toward modular and medium-scale recycling facilities, with policy tailwinds in Texas, New Mexico, Appalachia, and the Rockies accelerating adoption. This shift positions reuse not just as a compliance measure, but as a competitive differentiator for operators seeking to lower costs and secure license to operate.

- **Water assets become critical energy infrastructure.** The convergence of energy and water has transformed midstream water management into strategic infrastructure. Durable pipelines, recycling systems, and treatment assets shift water from a cost center to an enabler of U.S. energy security. By anchoring water alongside oil, gas, and export logistics, companies capture outsized, resilient returns in a market driven by efficiency gains and predictable global demand growth.

Key Questions Addressed

How does hydraulic fracturing water usage and production vary by shale play and state?

What is the estimated amount and growth of water consumed vs. produced by U.S. hydraulic fracturing activities from 2025 to 2030?

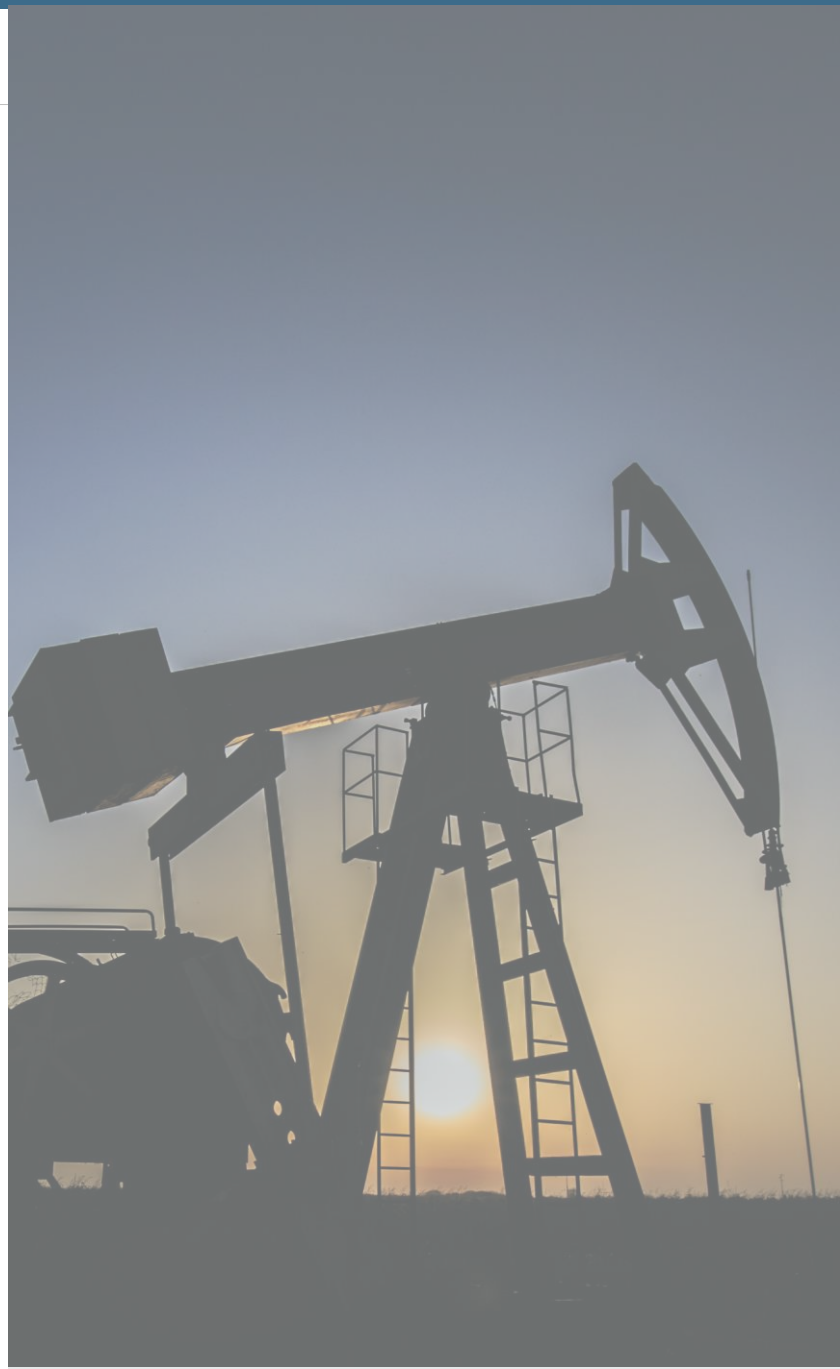
What is the projected total expenditure on water management by U.S. oil and gas operators between 2025 and 2030?

What is the projected total CAPEX for water management from 2025–2030?

How is U.S. midstream oil and gas water management spend expected to change through the end of the decade?

What are the key market drivers, considerations for growth, and impacts to water management ?

What is the current competitive landscape and how are merger and acquisition strategies impacting investment trends?



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Opportunities Emerge Across Midstream Water Management

As the midstream water management market continues to grow, new water opportunities arise for solution providers to capitalize on.

Market Drivers of Change

Energy Demand and Transition
The shift from coal to natural gas, coupled with surging AI-driven power demand, international exports will sustain high shale oil and gas output.

Financial Pressures
Price volatility, cost inflation, and shareholder demands are pushing operators to find structural efficiencies, including water and produced water management.

Climate and Environmental Risks
Drought severity and aquifer depletion are raising concerns about long-term availability.

Regulatory Action and Compliance
Shaped by state policies and heightened scrutiny from seismic activity linked to wastewater injection, regulations are tightening across major shale plays.

Drilling Technology Advancements
The shift to pad density and increased use of dual- and triple-frac operations, greater well depths, and longer well laterals (extreme reach wellbores) has enabled more cost-efficient drilling to lower operating expenses for E&P companies.

Water Impacts and Opportunities

Water Infrastructure for Natural Gas
Growing domestic and international demand and new LNG infrastructure will further drive water demand and recycling of produced water for natural gas production.

Increased Water Demand
The increasing standardization of extreme reach wellbores has pushed up water required per well while freshwater costs rise due to water stress and logistics, creating an opportunity for cost-efficient transfer of recycled water.

Expanded Produced Water Reuse Models
Produced water volumes across U.S. shale basins now exceed water demanded for well completion while policy limits disposal, creating an opportunity for expanded recycling capacity and beneficial reuse.

Hybrid Water Treatment Solutions
Centralized facilities face escalating technical and financial strain with highly variable supplies of produced water, opening opportunities for technology and midstream providers to cut operating expenses and scale efficiently.

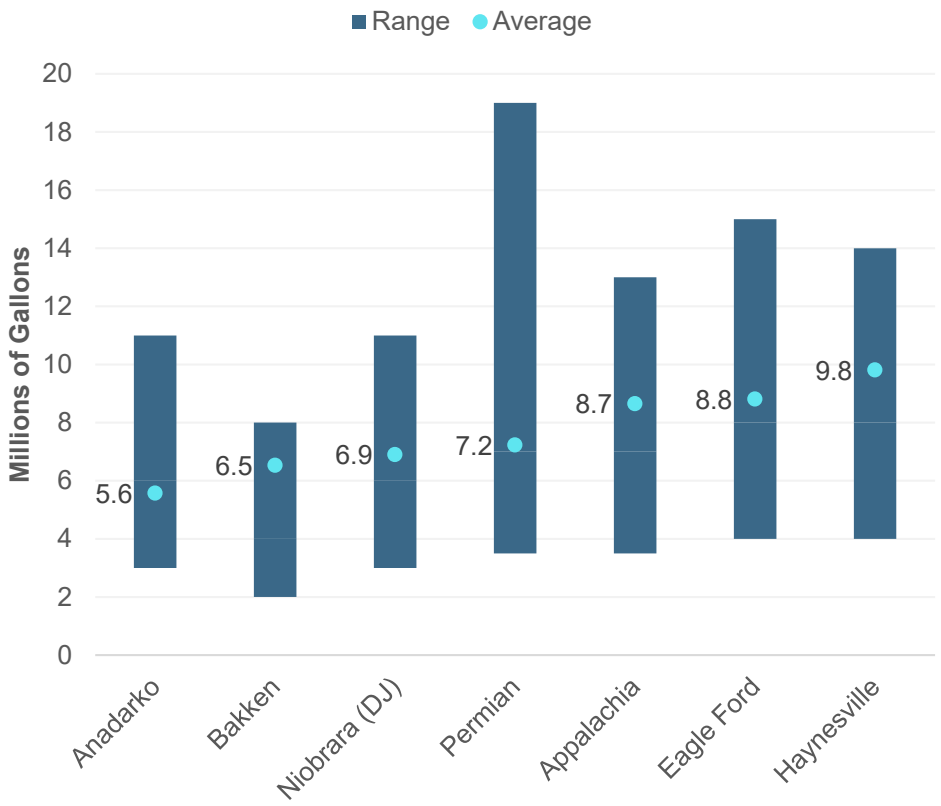
Scaled Up Pipeline Networks
Midstream water continues to shift away from trucking-based water hauling toward water transfer via pipeline to lower operating costs of handling larger volumes of water.

Source: Bluefield Research

Hydraulic Fracturing Water Use Per Well

Water demand per well continues to increase, driven by longer wellbore lateral lengths and drilling technique efficiencies during the well completion stage.

Water Demand Per Well by Basin, 2025



Note: One barrel is equivalent to 42 gallons
Source: Bluefield Research

Analysis

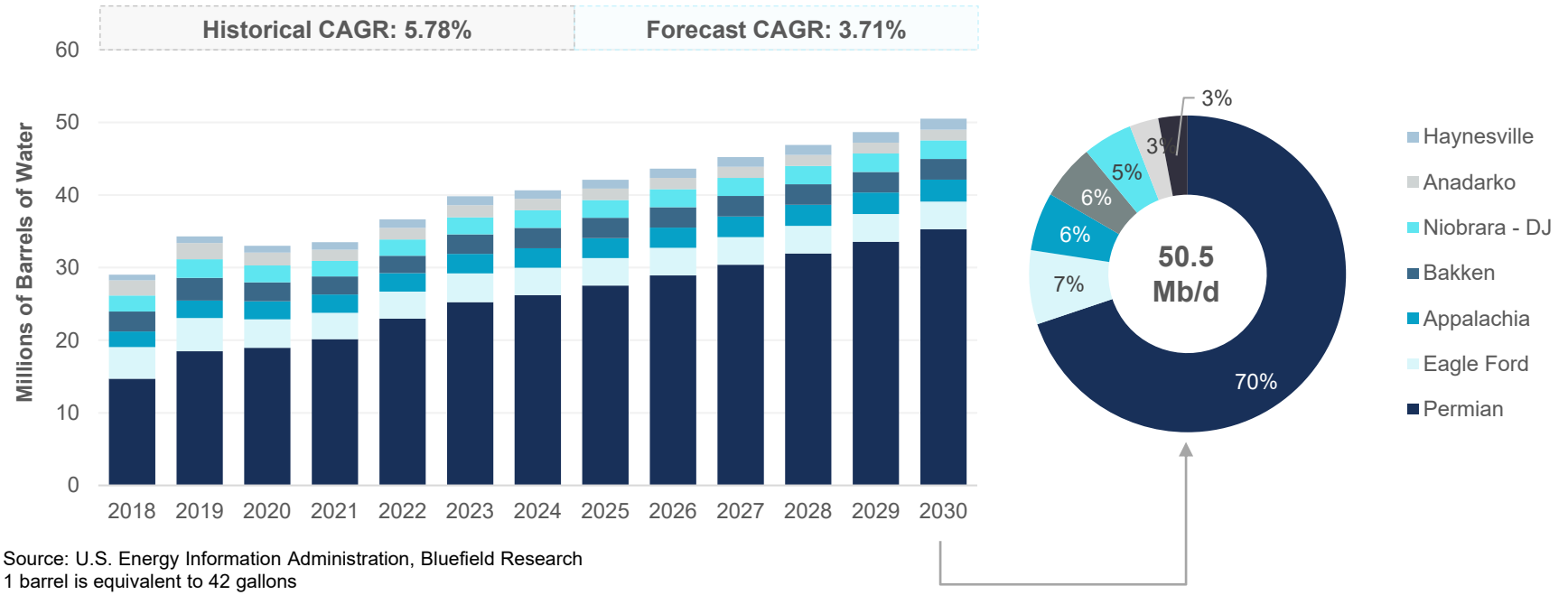
High-volume and water-intense basins like the Permian lock in elevated water demands through 2030.

- Bluefield projects the average wellbore length to reach nearly 20,000 feet (~4 miles) by 2030, a scale that can require nearly twice the water of today's completions.
- Water intensity is already high, and increasing–between 2018–2024, average water use per well grew at a 13% CAGR, led by Haynesville, Eagle Ford, and Appalachia, where geology, longer laterals, and completion designs are driving localized sourcing and midstream investment despite fewer projected well completions.
- While below the national average well demand (7.8 million gallons of water per well, equivalent to 185,654 barrels of water), water demand in the Permian can range from 2 million gallons to 16 million gallons.
- By 2030, Permian Basin water use per well is expected to reach 8.1 million gallons per well, assuming a 2% year-on-year increase in water intensity and a continued rise in lateral lengths shown by recent wells from supermajor oil and gas producers like ExxonMobil.

Produced Water Volumes Set to Increase Across U.S. Basins

Rising produced water volumes—dominated by the Permian—are reshaping midstream strategies, driving investment in infrastructure, treatment, and reuse across U.S. shale basins.

Produced Water Volumes Growth by Select Basin, 2018–2030



Source: U.S. Energy Information Administration, Bluefield Research
1 barrel is equivalent to 42 gallons

Analysis

Growing volumes of produced water create water management opportunities across U.S. shale basins.

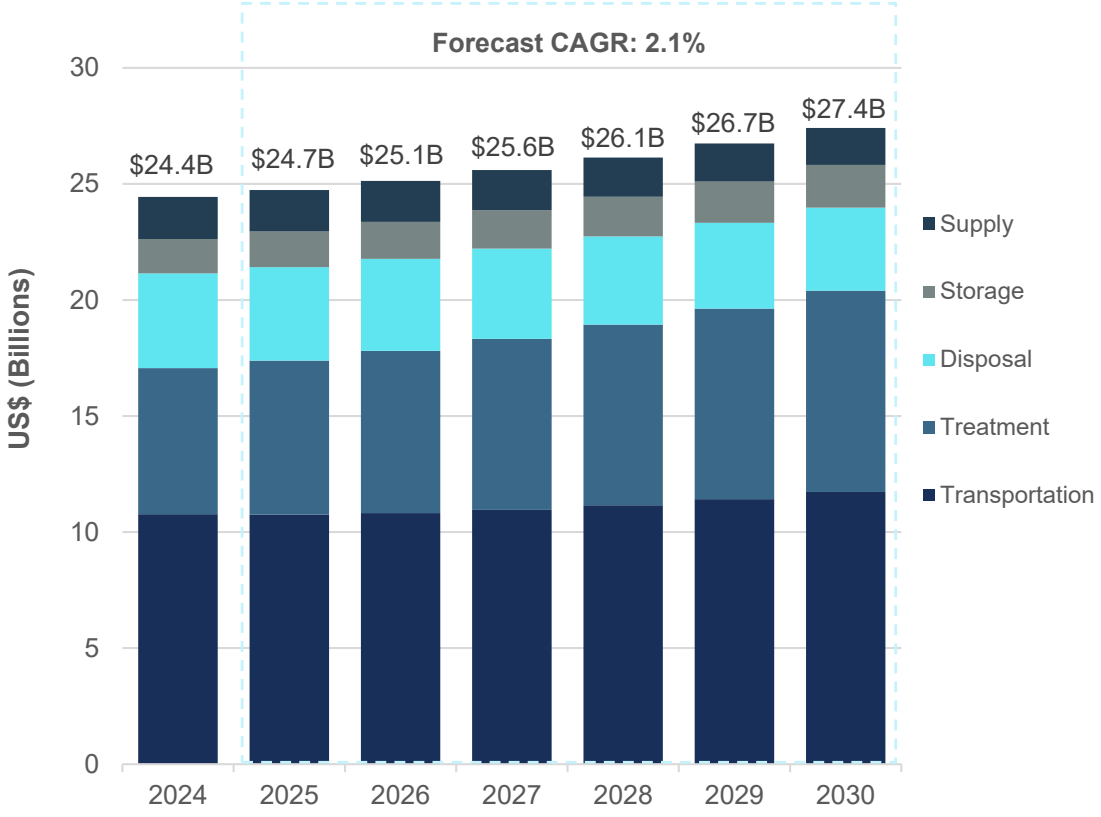
- Produced water volumes across U.S. shale basins are projected to rise from ~40.6 million barrels per day (Mb/d) in 2024 to ~50.5 million barrels per day in 2030, reflecting a forecast CAGR of 3.7%, down from 5.8% historically. This suggests slower—but still material—growth tied to longer laterals and rising water intensity.
- The Permian Basin remains the largest contributor, accounting for 67% of 2024-2030 volume growth, reinforcing the basin's role as the epicenter for midstream water infrastructure and treatment solutions. Secondary basins (Appalachia, Eagle Ford, Bakken, Haynesville) add incremental growth, highlighting the geographic spread of water management challenges and investment opportunities.

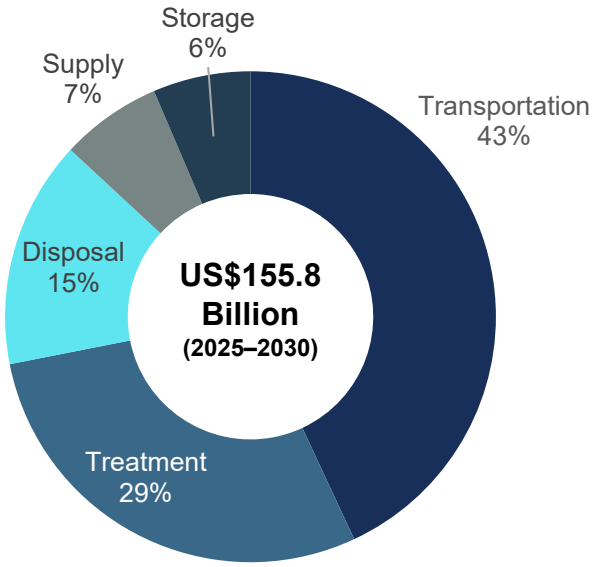
Oil & Gas Sector Spend by Water Management Category

Total Market Spend

Between 2025–2030, Bluefield projects U.S. oil and gas operators may spend an average of US$26.0 billion per year in managing water across the hydraulic fracturing value chain.

U.S. Oil & Gas Operator Water Management Spend by Category, 2024–2030





Source: Bluefield Research

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Sample Company Profile

Supply | Transport | Storage | Treatment | Disposal

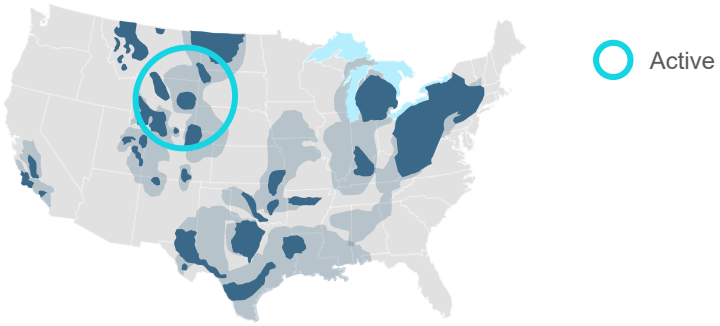
Company Overview

Parameter	Detail
Date Founded	2013
Headquarters	Houston, Texas
Ownership	Privately held (backed by Morgan Stanley Energy Partners, of Morgan Stanley Investment Management)
Business Model	Full-cycle water pure play services and infrastructure provider for midstream oil & gas
Assets	• 680 miles of pipeline • ~1.85 million barrels per day operational capacity and 1 million barrels per day produced and recycled • 33 water treatment plants • 10 SWD wells with multiple additional permits

Background

- XRI Water is a leading full-cycle water manager for midstream energy services operating primarily in across the Permian Basin's Midland and Delaware Basins.
- XRI focuses on ESG and sustainability positioning, particularly sustainable water sourcing (e.g., non-potable water), long-term produced water takeaway disposal agreements, and water recycling (with disposal a last resort, 90% of XRI's produced water volumes are recycled and reused) to shift away from potable water dependency toward a more environmentally and economically friendly model.
- XRI is also a capital and financing partner.
- XRI leverages scalability and infrastructure investment along with chemical innovations and automation to lower operational costs.
- XRI is considering expanding its business model into environmental remediation across midstream water through water treatment, a strategic entry to Canada and expansion into other regions of the U.S.

U.S. Hydraulic Fracturing Footprint



Source: Ecolab, Bluefield Research

Sample Company Profile

Supply | Transport | Storage | Treatment | Disposal

M&A Activity and Partnerships

- In 2023, XRI Holdings CEO Matt Gabriel marked the company's 10-year anniversary by announcing accelerated focus on water reuse services and plans for expansion in the Delaware Basin (where it manages 1.7 million barrels per day).
- In 2022, XRI commenced work on its Evolution Pipeline System, a Midland County water recycling and produced water infrastructure network that connects to the Reagan and Upton counties, adding 230 miles of pipeline
- In 2022, NGL Energy Partners LP (NYSE: NGL) launched a partnership with XRI to leverage XRI water recycling expertise for more sustainable use of produced water.
- In 2021, XRI announced the acquisition of oil producer Hibernia's Water Infrastructure Assets through Celtic Disposal, LLC, to strengthen presence in the Midland Basin and water recycling capacity in the Permian Basin to recycle more than 185 million barrels of water (projected annual output).
- In 2019, XRI acquired Fountain Qual to integrate its treatment and recycling division.

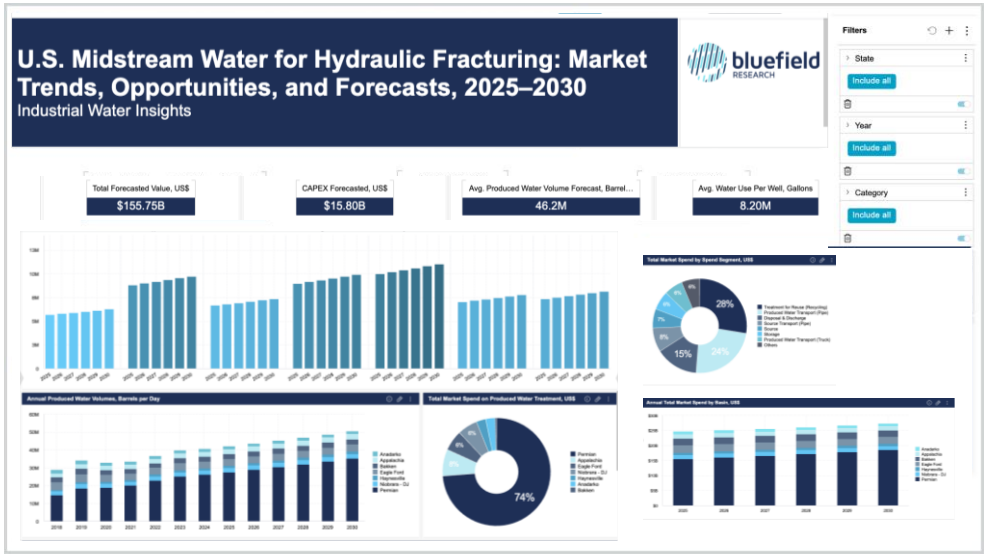
Strategic Positioning

Source: Ecolab, Bluefield Research

Data Navigator

Data underpins Bluefield's breadth of insight reports and analysis. This report is accompanied by a data dashboard that is available in Bluefield's flexible and interactive Data Navigator platform.

SAMPLE DATA DASHBOARD



Dashboard Widgets US$:

- Annual Total Market Spend by Basin
- Total Market Spend by Spend Segment
- Annual CAPEX by Basin
- CAPEX Forecast by Spend Segment
- CAPEX by Project Type
- Water Use per Well (gallons)
- Annual Produced Water Volumes (barrels per day)
- Total Market Spend on Produced Water Treatment

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Global companies across the midstream water value chain are developing strategies to capitalize on current and future opportunities − new business models, new technologies, and private investment. Bluefield Research supports a growing roster of companies across key energy segments and industry verticals addressing risks and opportunities in the new water landscape.

Companies are turning to Bluefield for in-depth, actionable intelligence into the water sector and the sector's impacts on key industries. The insights draw on primary research from the water, energy, power, mining, agriculture, financial sectors and their respective supply chains.

Bluefield works with key decision makers at utilities, project development companies, independent water and power providers, EPC companies, technology suppliers, manufacturers, and investment firms, giving them tools to define and execute strategies.

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