

PRODUCED WATER & BRINE GATHERING

Your Gathering System Just Became a Revenue Asset. Protect It.

Produced water has crossed a tipping point. Between Direct Lithium Extraction (DLE), beneficial-reuse programs, and tightening regulation across prolific basins like the Permian, Williston, Marcellus, and Smackover, what used to be a disposal cost is becoming a monetized feedstock. That shift raises the stakes on every mile of gathering pipe: uptime, integrity, and early leak detection are no longer nice-to-haves — they are what keep DLE plants, reuse facilities, and production wells running at full capacity.

FLOWSTATE LEAK DETECTION

19

Produced Water
Segments In Service

300+

Combined Field
Withdrawal Tests

7,000+

Combined Miles
Monitored (all product)

~2 Months

Typical Time to
Deploy

WHY PRODUCED WATER IS DIFFERENT

1- Corrosive by nature

High TDS, chlorides, heavy metals, and residual hydrocarbons drive internal corrosion that leads to pinhole leaks — often long before they show up on a maintenance schedule.

2- Highly dynamic systems

Changing flow rates, pump schedules, batching, and constant operator adjustments make simple volume balance thresholds unreliable — too tight and you drown in false alarms, too loose and you miss real loss.

3- Outsized consequences

Brine impacts soil and vegetation quickly. Even a modest release can mean remediation costs, regulatory scrutiny, insurance impact, and damaged landowner trust.

MEETING CHALLENGES OF LEAK DETECTION

Produced water systems present a difficult leak detection environment. These systems often operate with frequent starts and stops, changing flow paths, multiple injection points, variable pump schedules, and periods of little or no flow. Configurations may also change as new wells come online or temporary operations are added.

Instrumentation can create another layer of complexity. These conditions can make conventional line-balance or hydraulic approaches difficult to apply without generating nuisance alarms or requiring significant infrastructure upgrades.

Flowstate uses multiple leak detection methods so that monitoring can be matched to each system's operating conditions, instrumentation, and performance goals. Their approach has been developed through direct work on produced water gathering systems, not simply adapted from idealized transmission-pipeline conditions

As of May 2026, Flowstate was monitoring 18 produced water systems representing more than 600 miles of pipeline, over 400 inputs, and more than 60 saltwater disposal facilities.

Produced Water Gathering Case Study

Field withdrawal testing on a live ND operating system

SYSTEM CORE METRICS:

5 INPUTS	1 OUTPUT	~2.3 mi TOTAL PIPE	750 - 8000 BPD FLOW RATES
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LEAK DETECTION SUMMARY:

Data Polling Rate:	10 sec	Method:	Statistical Volume Balance
Minium Leak Rate:	400 BPD		(flow rates only)

FIELD WITHDRAWAL TEST RESULTS

Test	Leak Rate	Leak Rate	Detection Time	Spill Volume at Alarm
Mock Rupture	6745 BPD	76%	6 min	23 bbls
Small Leak	330-1280 BPD	4-15%	73 min	19 bbls

REDUCING OPERATIONAL RISK

A produced water release isn't just an operational footnote - it can mean significant remediation costs, regulatory scrutiny, insurance hikes, and damaged landowner trust. Flowstate helps reduce that risk in ways that matter to engineering, control room, and ESG teams alike:

- Earlier detection limits spill volume and cleanup cost
- Faster response protects private property and agricultural land
- Fewer nuisance alarms build controller trust and confidence

WHAT'S NEEDED TO GET STARTED

- Flow rate at all inputs and outputs
- Line pressure (optional – improves diagnosing alarms)
- Pump status, set point, control valve % open (optional – improves performance)
- 3+ weeks of operational data to build the model

INTEGRATE INTO YOUR OPERATIONS

- Utilize as stand-alone application or through your existing SCADA (including 3rd Party Control Centers)
- Receive alarms direct to operations teams via Text, Voice, or Email
- Features built to segregate alarms, monitor for data issues, and more to integrate into your procedures.

"We believe this release would have been much worse without our use of Flowstate which facilitated our shut down of the system within 8 hours. ... The Flowstate leak detection system was an investment by our company in safety and environmental responsibility and has proven to be a valuable tool for our operations."

CUSTOMER QUOTE | PRODUCED WATER SYSTEM