



Sustainable Water Solutions for the Extractive Industries
Produced Water Society Annual Conference
Midland, TX
August 8th, 2019

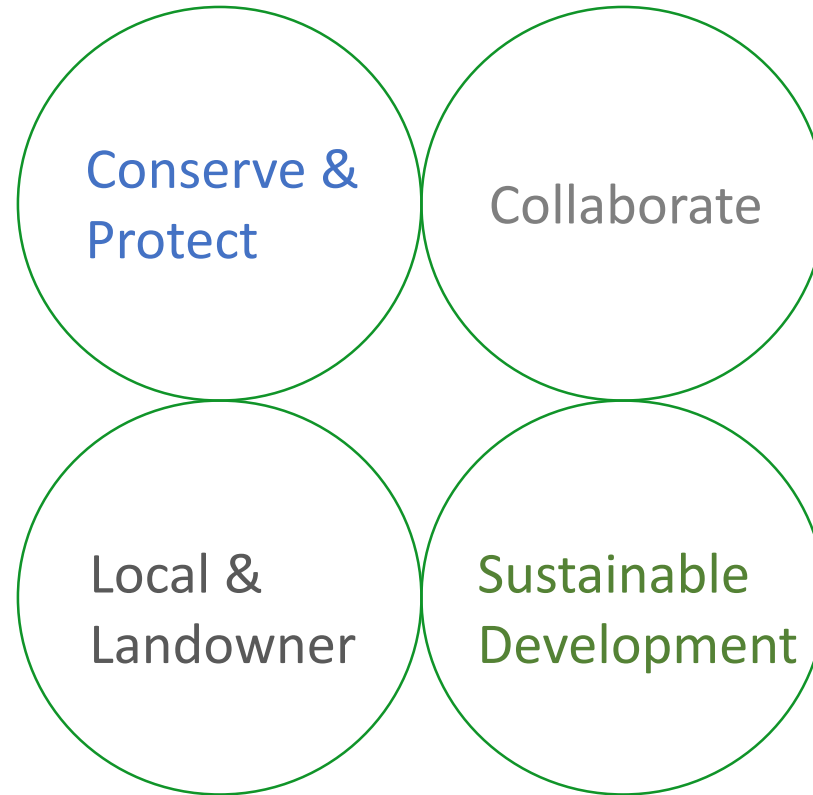
Markets & Valuation Outlook for Produced Water Management
Zachary Sadow, CFO

Disclaimer Statement

THIS DOCUMENT DOES NOT CONSTITUTE AN OFFER TO SELL, OR A SOLICITATION OF AN OFFER TO BUY ANY INTERESTS DESCRIBED HEREIN. All information presented in this presentation (the “Presentation”) with respect to estimates and projections as to future operations are based on material prepared by management of Antelope Management, LLC (“Antelope” or the “Company”). No representation or warranty is made as to the accuracy or completeness of such information. Antelope expressly disclaims any and all liability for information contained in, or for omissions from, this Presentation. Any estimates and projections contained herein involve significant elements of subjective judgment and analysis which may or may not be correct. This Presentation is for broad-based market education purposes only.

Antelope Values: Protect, Promote, Partner, & Grow

- Aim to follow ICCR and PRI guidelines on sustainable water resource management, including “protecting water resources and securing the human right to water”*
- Landowners and local stakeholders to participate in project economics
- Focus on reuse and recycling enables water to be protected for local population and future generations



- Academic research partnerships
- Cross-pollinate between projects
- Aim to partner with environmental community and government
- Energy Transition Strategy includes promoting best water practices in the development of low cost and low carbon oil and gas resources, as long as hydrocarbons remain critical part of energy mix
- Ensure sustainable water solutions for mining industry as electric vehicle and renewable energy buildout increases mineral production

*See PRI’s “Engaging with Oil & Gas Companies on Fracking”, and ICCR’s “Fueling Water Disclosure”

Markets and Valuation Outlook

Recent Decade of Capital Deployment in Water Management for Oil & Gas

Future

c. 2010-2014

SWDs on busy highways relying on trucked volume (high skim cuts)

Mom & Pop dominated industry

Capital primarily funded through local businesses and small oilfield service funds (few institutional or public market players)



Hybrid infrastructure and services approach that allows E&P operators to have more autonomy with completion schedules and development plans (more storage and reuse)

Prioritize communication over contracts

Flexible capital that meets project and E&P operator needs

Treat water as a currency, not a waste product



c. 2015-2019+

Institutional capital enters the space and begins underwriting 'midstream' infrastructure with long term contracts

Piped volume replaces large portion of trucked volume

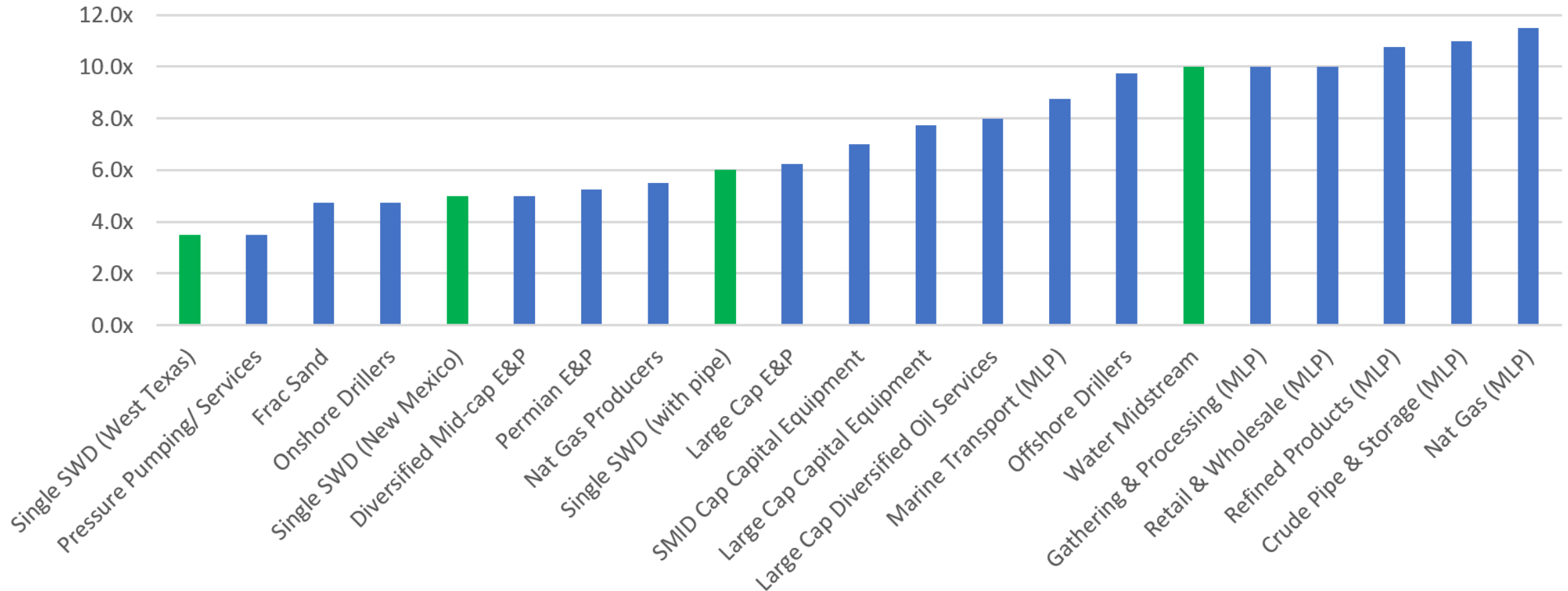
Over-institutionalization of the industry leaves water midstream sector trying to solve for PE mandate instead of producer concerns



Energy Sub-Sector Valuation Breakdown

Large Deviation in Water Asset and Enterprise Value

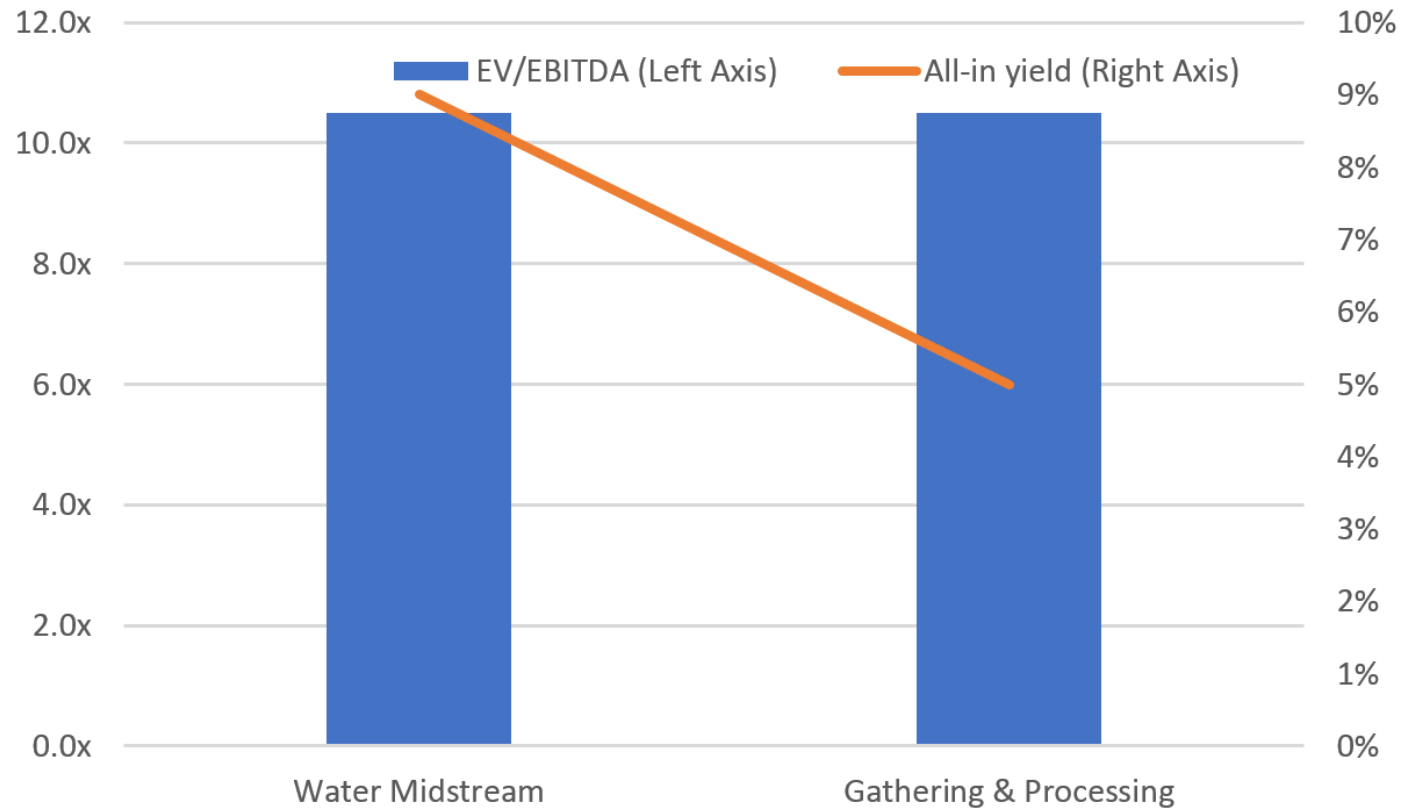
(Estimated Enterprise Value to Forward Year Cash Flow)



Equity and Credit Market Deviation

What are the markets saying (Tale of Two Markets)?

- Why are the Equity and Credit markets valuing water midstream differently?
- What does the cross-asset valuation deviation say about difference in?:
 - 1) Credit quality/ customer mix
 - 2) Growth outlook
 - 3) Business model



Challenging Energy Equity Issuance Landscape

Institutional investors on water midstream market:

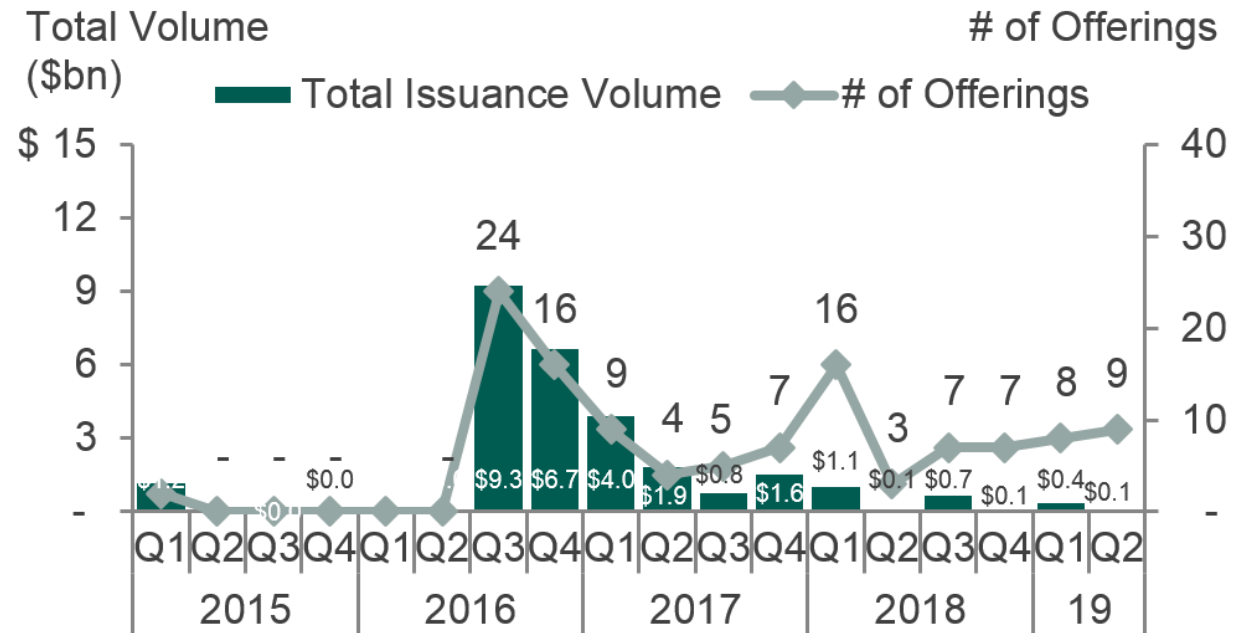
- *“(Water midstream) not the only game in town, but it’s the best one (for E&Ps)”*

- *“Need for creative sources of financing in E&P driving a lot of this (water midstream market)”*

What does this suggest for the cross-sector valuation divergence?:

- Customer and credit quality different from G&P due to E&Ps reason for acreage dedication

E&P Equity Issuance Overview – 1Q15 to Present



Growth Outlook for Water Midstream

Total Addressable Market to be dictated by Majors Preferred Model

The Majors are widely expected to drive consolidation and growth in the Permian

Verdict still out on how the Majors will approach large-scale water management, acreage dedications and recycling

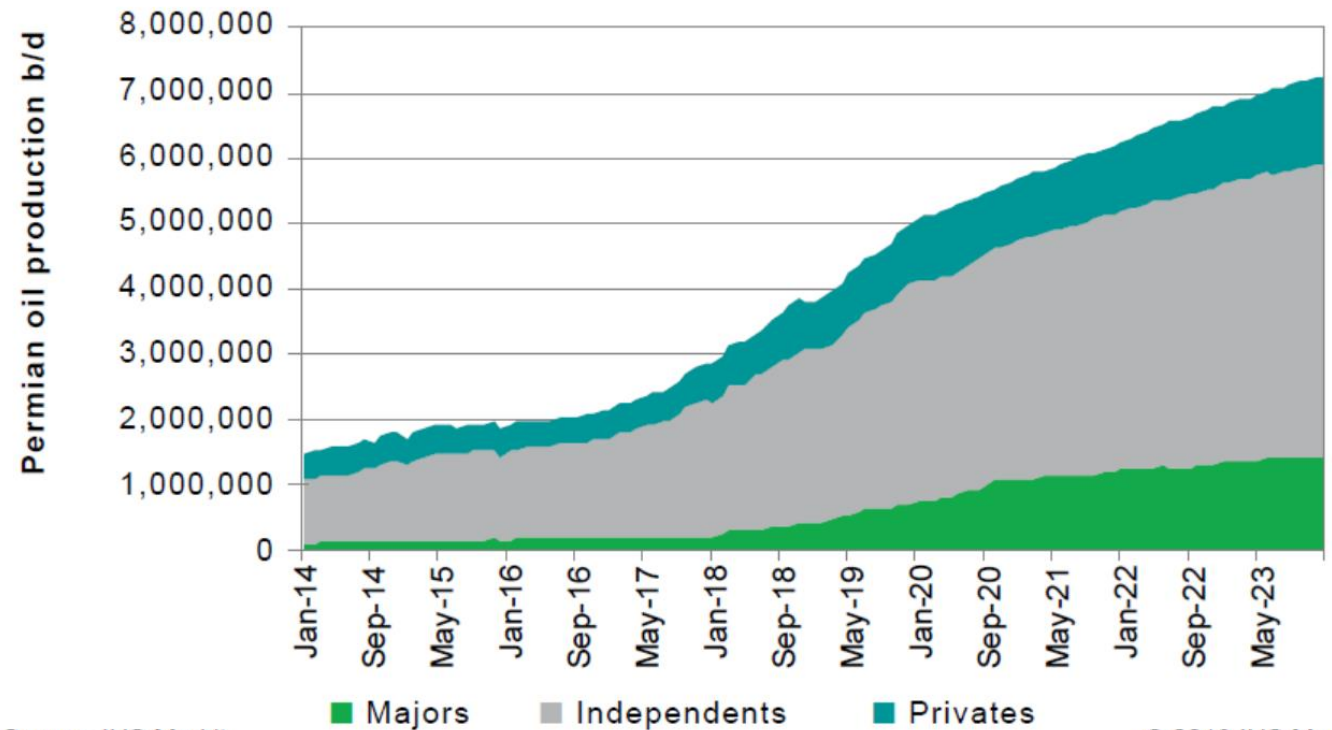
The Major's Rule of 1/3 :

Market indications that the Majors could broadly pursue a "Rule of 1/3" water management strategy:

- 1/3 of volumes managed in house
- 1/3 managed by third party (acreage dedications)
- 1/3 bid out in short-term market

Source: IHS Markit, Antelope Water Management

Permian Gross Oil Production by Operator Type



Source: IHS Markit.

© 2019 IHS Markit

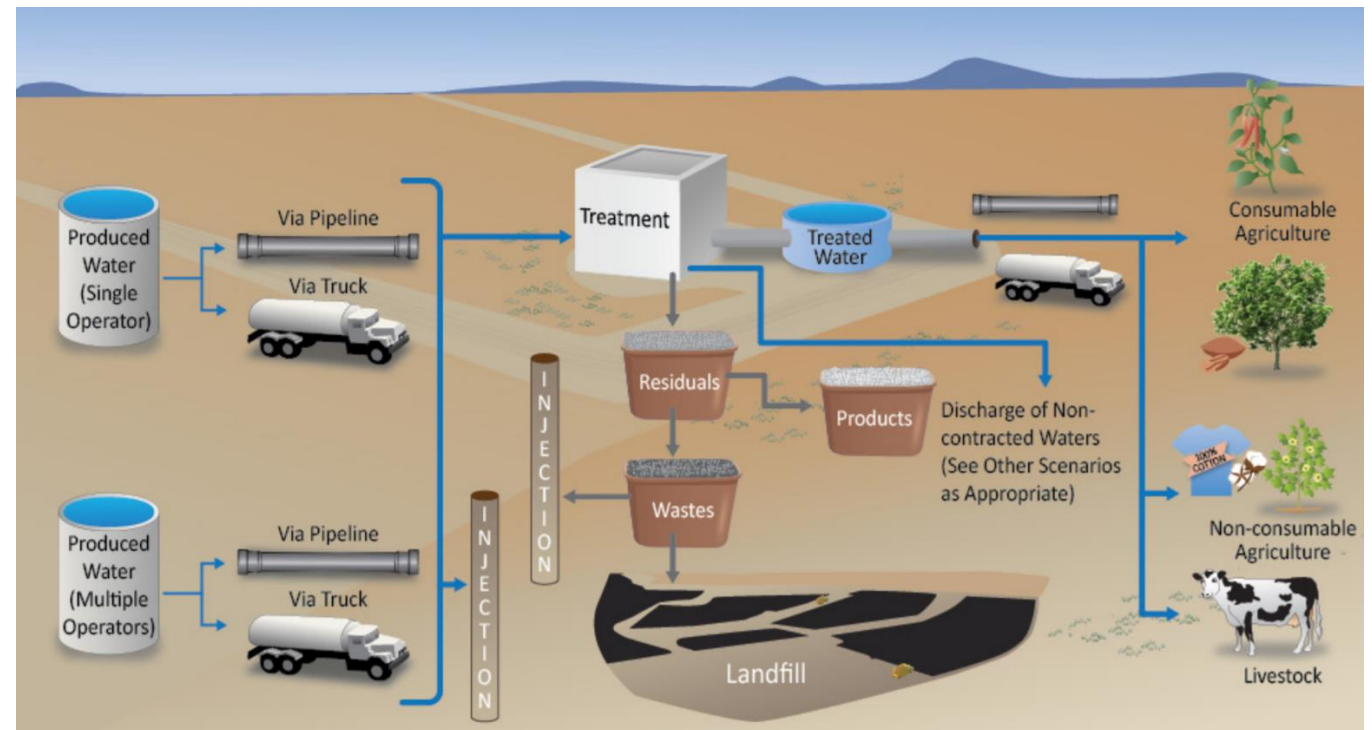
Beneficial Reuse and an Evolving Business Model

Reuse at Scale with More Outlets Coming

- Reuse competes with current water midstream business model
- Unclear how market will evolve

Beneficial Reuse Potential Opportunities

- Surface water discharge
- Industrial use, commercial sales outside oil & gas industry
- Agricultural uses
- Municipal uses
- Subsurface discharge for groundwater management
- Cross-sector infrastructure opportunities

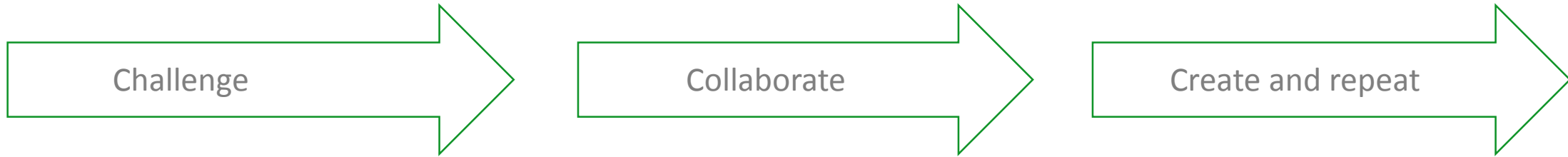


Case Studies and Conclusion

Case Study: Multi-Well Pad Development Opens Door for Reuse and Alternatives to Disposal

- *Deal overview*
 - *E&P operator with large acreage position executed offtake contract with private water midstream company (PWMC) to plan ahead for produced water volumes*
- *Challenge, why PWMC fell short*
 - *PWMC was unable to build out infrastructure at a pace that met E&P operator's needs*
 - *SWDs (Devonian wells) in the area are pressuring up shortly after coming online and underperforming based on projected volumes (e.g. injecting less than 50% of capacity due to pressure limits)*
 - *E&P operator is bottlenecked on offtake/flowback without any guarantee or timeline as to when SWD assets will be available*
 - *E&P is forced to truck excess volumes at their own expense*
- *Solution*
 - *A water management program that prioritizes communication over contracts and allows E&P operators to complete wells at a pace that works best for their multi-well pad development schedules*
 - *Centralized gathering, adequate storage capacity, and integrated recycling capabilities*

Collaborative Case Study: Pursuing Collaborative Research with Columbia Water Center at Columbia University



Despite the recent New Mexico-EPA white paper promoting eventual beneficial reuse, there is opposition by the environmental community until further scientific research is conducted*

Pursuing collaborative research with Columbia Water Center (CWC)

Research Fellow working with Antelope and CWC to better understand potential challenges of beneficial reuse

Positions Antelope at the forefront of scientific, policy, and process-control debate around reuse and recycling

Provides Columbia access to private sector fieldwork and opportunity to innovate

Furthers science for NGOs and government

*See EDF: “EPA-New Mexico wastewater report is a conversation starter, not the final word”, 12/20/18

Key Takeaways and 24 Month Outlook



Valuation

Water Midstream Credit and Equity market valuations should converge as clarity emerges on 1) contract quality, 2) growth outlook, and 3) business model

Water midstream and service Equity valuations should converge as hybrid model grows



Operating

As water midstream valuations decline, and reuse options improve, acreage dedications should slow

Model moves from water infrastructure to water management with more on-demand facilities and services available

Q&A

zachary.sadow@antelopewater.com
contact@antelopewater.com