



***Produced Water
Distillation & Evaporation Solutions***

March 2016

Market – Background

Produced Water – The O&G Tsunami

- All oil & gas wells generate produced water for life of well (20-30 yr)
 - expensive to transport
 - Reuse is not an option when fracking slows
 - Disposal & centralized treatment capacities are limited and expensive
- Energy market downturn provides immediate Window of Opportunity for Epiphany Water Solutions
- North America produced water market
 - \$5 B/yr (4.7% growth/yr)*;
 - \$9B/yr in 2020**
- Key Initial Markets - \$300M+
 - Marcellus Shale = >10,000
 - Fayetteville Shale = >6,000 wells
 - Utica Shale = >1,600 wells as of Jan 2016



* Global Water Intelligence
** Lux Research
*** PA DEP Oil & Gas Reporting

Market – Solutions/Competition

Produced water handling is the single largest cost of operating a well!

There are 3 produced water handling methods:

1. **Transport** for reuse to new fracking operations (~\$3-7/bbl)
 - Reuse is not an option during market downturn due to reduced fracking operations
2. **Transport** & disposal at deep well injection site (~\$6.50-20/bbl)
 - Disposal sites are at capacity due to reduced reuse rates
3. **Transport** & centralized treatment (\$10-15/bbl)
 - Centralized treatment plants are the least preferred option and have limited viability

Transportation is 60-80% of water handling costs.

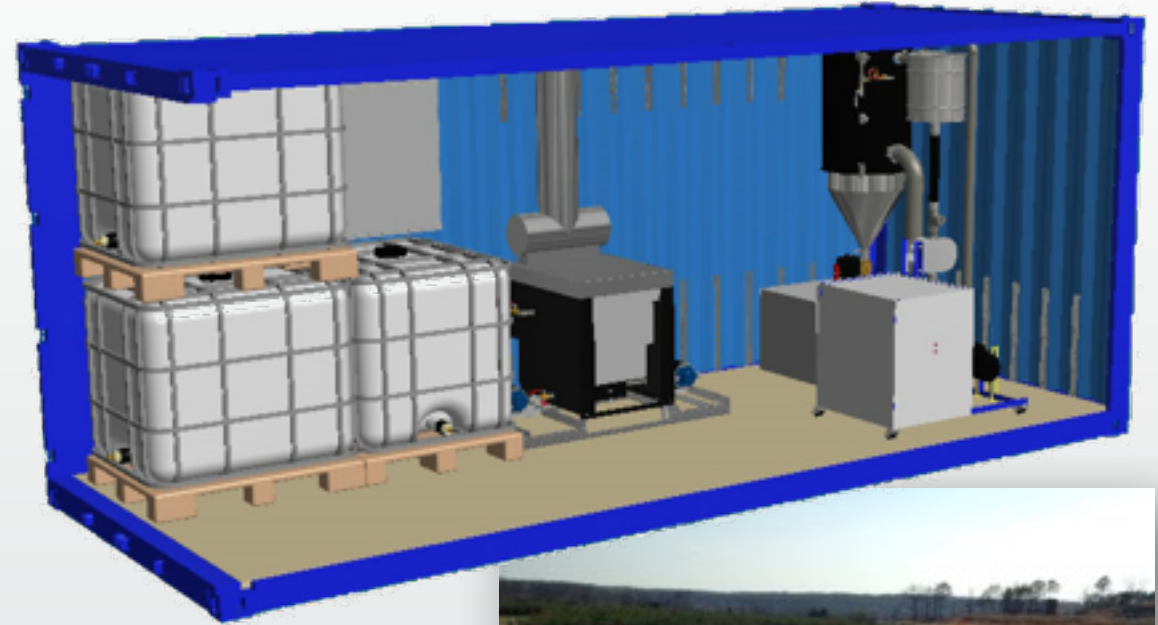
Typical trucking cost is \$1/bbl/hour of drivers time.

Trucks hold 4,000 (95 bbl) to 9,200 gallons (220 bbl).

Eliminating transportation is the key to savings!

Epiphany Solutions – Low Volume E5H – Well Pad Based Distillation Solution

- Treats 20 barrels per day in a 20' container on the well pad
- Proprietary/Patented process
 - MVR Crystallizer
 - Solids are dehydrated for disposal or beneficial reuse
- Transportation cost savings – 80–90%
- Lowest CapEx on the market
 - Mass production approach allows unprecedented economies of scale
- Lowest OpEx on the market
 - Fully autonomous operation with centralized remote monitoring
 - Highly efficient process requires minimal energy consumption
- Hybrid Power: Natural gas or propane; concentrated solar



Epiphany E5H – Marcellus Basin



Epiphany Solutions – High Volume E10X - Portable/Centralized Distillation Solution

- **Large pad or centralized produced water solution**
 - 250 barrel per day capacity
 - Can scale to 2000+ barrels per day
- **Efficient engineering design with lowest costs**
 - Standardized construction allows for low capital costs
 - Lowest per-barrel processing costs in the industry
- **Pretreatment – metal separation**
 - Pretreatment to drop out heavy metals
 - Creates three byproducts: distilled water, clean salt, heavy metal solution – all for beneficial reuse
- **Natural gas powered**
 - Energy efficient design less than 0.5 Mcf per barrel processed



Epiphany Solutions – Low to High Volume ERM3000 – Evaporation Unit



- Compliments E5H & E10X for evaporation of distilled water
- 3 barrels per hour per unit, can scale to 2000+ barrels per day
- Standalone solution for impoundments
- Automated operation, reducing truck traffic
- Evaporates directly on well pad or compressor stations
- RFD exemption for evaporating pure water

System Specifications	
Evaporation Rate	3.0 bbl/hr* (126 GPH)
Evaporation Efficiency	90-100%
Input Water Quality	DI, rain, <500 ppm TDS
Power Requirements	3.8kW Electric (230V – 1ph-17A)
Operational Expense	L 1.2m, W 1.2m, H 2.4m (L 4', W4; H8')
Dry Weight	70kg (150 lbs.)

Competitive Landscape

The only economically well pad based solution!

Cost	Epiphany E ₅ H	Epiphany E ₁₀ X	Central Treatment	Deep Well Injection	Recycle to Frack**
Transportation (\$/bbl)	\$0	\$0-5	\$5-7	\$3-15	\$1-3
OpEx (\$/bbl)	\$4-10	\$3-5	\$5-8	\$3.50-5	\$2-4
Total (\$/bbl)	\$4-10	\$3-10	\$10-15	\$6.50-20	\$3-7

* Based upon a lease model.

** When available; must have drill site where fracking is occurring.

Epiphany - Patent Overview

- Initial provisional filing in 2009
- 46 claims in initial patent filing
- Patent applications cover 48 countries
- Chinese patent issued - 2015
- US, EU and Israeli office actions received - 2015
 - Office actions challenged only minor claims
 - Patent issuance expected within 3-6 months
- Additional provisional filings in March 2015
- More to come in mid 2016

Epiphany Traction

- 7 E5H & ERM3000 field trials completed from 2012-2016
 - Southwestern Marcellus Shale
 - Northeastern Marcellus Shale
 - Fayetteville shale
- 7 Master Service Agreements signed with 7 Oil & Gas producers
 - 3 more expected by close of Q2
- E10X - ready for demonstration
- Lease financing secured with water focused Private Equity Firm
- Initial patents granted



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