



4th Annual Sustainable & Scalable

COST-EFFECTIVE WELL SITE FACILITIES ONSHORE 2017

September 26, 27 & 28, 2017 | Houston, TX



In advance of the **4th Annual Sustainable & Scalable Cost-Effective Well Site Facilities Onshore 2017**, Mark Bruchmann, *Facilities Manager, Apache Corporation* provides insight into his thoughts about the summit:

Mark, this year's Sustainable And Scalable Cost-Effective Well Site Facilities Onshore 2017, as the name suggests focuses on driving efficiencies and cutting costs as much as possible, whether operators are scaling up or looking to sustain operations at current levels.

With current market conditions, demanding equipment which is more efficient, cheaper and less capital and operational cost intensive. Everyone is talking about optimizing production and maintenance. What is Apache's outlook on this topic?

We are still in a fiscally constrained environment at current pricing levels as compared with pre-2014 downturn levels, so optimizing well performance and reducing operating costs are our key focus areas for both our producing properties and new wells. With regard to equipment selection, we attempt to use existing inventory and well site surplus equipment where possible before buying new. We may modify existing equipment to re-purpose if it makes economic sense. Due to the relatively steep decline curves in some plays, we design facilities in a modular fashion so equipment can be moved easily when its economic utility is completed. We are always looking at options to downsize equipment and look at cost effective alternative solutions for equipment selection.

Mark, it's great that we have you with us at the event, but in the run-up to the event, what are your views on one of the biggest hurdles that the operators are facing right now - and that is moving from strategic testing to development/execution mode? What are the biggest challenges?

There are many challenges moving from strategic testing to development and this is probably the biggest challenge for facility designers in the unconventional resource play/horizontal well environment. Some include:

- Well locations. The well surface locations are selected by the land group and G&G teams so facilities has very little input in this process, and they never seem to be in the optimum location for facilities. This can complicate and influence all facets of facilities design

including process design, equipment design and selection, and field development... CTBs, CPFs, compressor stations, flowlines, gathering systems, pipelines, etc.

- Equipment sizing & selection. During the development phase, operators typically don't have a good handle on optimum well spacing so flow back curves from reservoir/production that designers use to size equipment can be somewhat inaccurate. We typically don't design for the peak "expected" rates and leave room for expansion should it be required.
- Constantly changing environment. Whether you are dealing with significant contiguous acreage or scattered land positions (and most of us have both), the rig schedule is in a continual state of flux for many reasons even in development drilling. Changes in well locations and count will happen quickly, and this makes planning very difficult...we have to be adaptable.

On the question of designing facilities, people continue to wonder use some operators use certain philosophies and certain designs over others and get cost-effectiveness of it while achieving a smaller footprint. What are your views on this?

There is no design philosophy that fits all facility and company requirements, and there are different ways to achieve the same result. We always try to achieve the most cost effective design for a facility while designing with operations input. We've found standardized equipment designs in individual plays have many advantages. Cheaper costs up front aren't always better and may increase operations and maintenance costs.

One of the things that's becoming more and more prevalent is emission control for US Unconventional Resource plays. How is Apache strategizing to stay within emissions limits?

As part of the design phase for every facility, be it a single well one off pad, multi-well pad, CTB, CPF or compressor station, our facilities and HHSE groups make sure that all

aspects of the facility meet with both State and Federal guidelines. We provide process and regulatory support in-house. In many situations, we go beyond the Federally-mandated EPA requirements to meet our obligations as custodians of our environment.

Who are you most looking forward to hearing from you Mark at the conference?

I think it provides an opportunity for me to learn what our peers are doing in many aspects of facilities design and gain knowledge to apply to Apache's future development plans.

What in your opinion are top reasons for why the industry, should attend the 2017 conference in September, given the current climate and pace?

I think all of us can benefit from the E&P shared learnings at the conference as well as gather more information from the onsite vendors on product offerings, cost savings and advantages. It is also a great networking tool. It provides all of us with opportunities to optimize our designs, try new things and learn what works for others.

I don't know of any conference specifically related to detailed facility design and optimization with so many E&P company representatives present. It's rare that facility designers and engineers meet to share learnings as our counter parts in land, geoscience and petroleum engineering do on a regular basis... and about time!

At the 4th Annual Sustainable & Scalable Cost Effective Well Site Facilities Onshore 2017 in September, Mark will be part of our exclusive keynote to **Learn How Operators In The Permian, Appalachian And STACK Are Benchmarking Their Facilities' Performance To Provide Clarity On Cost-Effective Design Philosophies That Work.** For more information, Visit: www.facilities-design-onshore.com

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