Optimal water management strategies for hydraulic fracturing in unconventional oil & gas plays

**Water management challenge**

- Freshwater
  - Identify best water sources, optimize transport and storage options
- Saline water
  - Evaluate opportunity to re-use produced waters, recycle, and third party disposal

- **Alternative water sources**
  - Early identification and assessment of all available water sources

- **Project sites**
  - Evaluate opportunity for re-use and third party disposal

- **Storage Options**
  - Identify optimal water sources and storage options

**The opportunity**

The drilling, fracturing and completion of wells in unconventional plays require large volumes of water. The drilling, fracturing and completion of wells in unconventional plays require large volumes of water. The drilling, fracturing and completion of wells in unconventional plays require large volumes of water.

**Water strategy risks**

- **Availability**
  - High quality water needed for optimal performance
- **Regulatory**
  - Different water requirements for on-site and off-site applications
- **Environmental and social**
  - Local and regional environmental and social concerns
  - Impacts of third party disposal

**Hydropti™ Benefits**

- Identify solutions featuring up to 30% lower OpEx
- Evaluate opportunities to increase water reuse and recycling
- Minimize water use and recycle an effective water management plan
- Quantify the GHG emissions due to selected water transport options
- Determine the most cost-effective water transport option

**Value proposition**

- Identify optimal water sourcing, transport, storage and disposal options, including surface and groundwater of various qualities.
- Evaluate the implications of potential adverse technical and economic qualities.
- Evaluate the implications of potential adverse social and environmental concerns.
- Identify fresh water sources, and alternative water sources including surface and groundwater.
- Determine the lowest cost disposal options.
- Maximize water reuse and recycling as strategies can be identified.
- Minimize cost lifecycle analysis.
- Present your results and decision process with clear charts and interactive maps.
- Enjoy the Hydropti user experience with high quality graphics and intuitive procedures.

**Workflow**

- **Understanding the Water Use**
  - Water use
  - Emissions
  - Cost
  - Distance
  - Availability
- **Optimal Water Allocation**
  - Optimal water allocation
- **Alternative options**
  - Evaluate opportunity for re-use and third party disposal
- **Modelling cost effective solutions**
  - Modelling cost effective solutions
- **Contingency planning**
  - Contingency planning
  - Identify risks and opportunities for future operations

**Partners**

Sustainable Water Management: An innovative and efficient decision support software tool to identify minimum cost strategies