

## IMPACT TECHNOLOGY SYSTEMS

## **Highlights**

- ► ITS technology improves oil recovery in waterflood fields.
- Equipment generates short-duration transient pressure fronts mobilizing trapped oil.
- Low cost, surface deployed, containerbased equipment.
- Encouraging field test results demonstrate increased oil cut and improved oil rates.
- Global applicability for onshore and offshore settings.
- Potential to improve unconventional oilfield recoveries.
- ▶ Reduced Scope 1 emissions (CO₂ per bbl)
- Seeking partnerships to conduct additional research, refine the equipment design, and conduct a field pilot test of the technology in Canada.

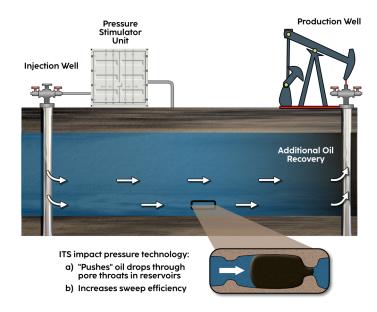
## **Value Proposition**

Impact Technology Systems (ITS) has developed modular, low cost, surface-based equipment to create significant value for waterflood schemes based on impact dynamics. It will deliver increased oil production, improved oil recovery, reduced capital and operating costs per barrel and reduced Scope 1 emissions (CO<sub>2</sub> per barrel). The equipment is container based and easily deployed. Global average oil field recovery rates are between 30 and 40 percent under waterflood. ITS believes it can significantly improve both recoveries and near-term production rates.

## Concept and Results To Date

Oil field reservoirs are generally heterogeneous, with varying degrees of porosity and permeability. This means that the better parts of the reservoir are preferentially swept during field production leaving behind oil trapped in poorer quality reservoirs. The equipment is linked at the surface to the water injector well generating repeated, short-duration (< 6ms), high amplitude, transient pressure fronts which are transmitted down the wellbore and into the reservoir. Transient pressure fronts displace trapped oil droplets contained in poorer reservoir into higher quality reservoir where they are swept by the waterflood into an adjacent producing well.

### **Improved Waterflood Sweep**







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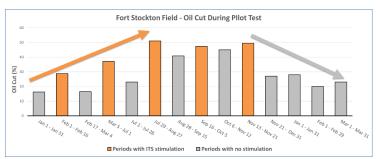


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Laboratory and field pilot tests to date are very encouraging but more work is required to establish full commerciality.

Field testing of the prototype equipment on a mature oil field in Texas led to a **three-fold increase in the produced oil cut**. ITS will engage research partners to develop a theoretical understanding of the reservoir processes, allowing tuning of the equipment operating parameters to maximize field performance.



Oil cut increases from 16 to approximately 50 percent under ITS stimulation. Oil cut falls to original levels on conclusion of test.

## Vision

ITS strives to become a global partner of choice delivering a low-cost solution to improve oil field recovery. In the short term, ITS plans to conduct additional field pilots and tests to establish oil field incremental recoveries with commercialization by 2025.

# Impact Technology Systems and the Road to Commercialization

Impact Technology Systems is a Norwegian based company that has developed, patented, laboratory and field-tested prototype equipment to significantly improve oil field recovery. ITS is looking for partnerships to conduct additional research, refine the tool design, and establish field pilots. Creative partnership arrangements would provide an interested third-party an early mover advantage to share in the upside. The successful deployment of the ITS equipment has the potential to substantially increase cash flow on new and old waterflood assets onshore and, with further tool development, offshore.

