

TOKATA OIL RECOVERY, INC.™

The Tokata Oil Recovery System™ (TORS™)

December, 2017

Tokata's Oil Recovery System™ (TORS™) recovers oil from waterlogged wells in commercial quantities while bringing negligible amounts of formation water to the surface. It deploys quickly and economically to begin recovering oil from wells with high water cuts. As a TORS™ pulls up nil amounts of water; producers vastly lower costly oil/water separation and expensive on-site remediation for produced water.

The Driving Passions:

We produce oil in a green manner. We set up chemical draws rather than brute physics. That oleophilic, hydrophobic drive also demands that we address down hole and formation challenges with green solutions. Non-pressured production reduces the possibility of surface spills to a minimum.

Our aims are green, sustainable production, remediation of the surface, and of course, profits.

Resulting from our approach, our lifting costs, energy needs, and carbon footprint are a fraction of other Artificial Lift Technologies.

The US Market

The U.S. Department of Energy's National Energy Technology Laboratory (NETL) reports some 218 billion bbl. still lie in formations after primary and secondary recovery processes.

- They cite over 2M abandoned "stripper" wells.
- As we produce at deeper depths, more of those wells make prime candidates for TORS™.
- 40% of American oil reserves lie in water-logged fields.

How many of those wells are candidates for your process?

These criteria insure better successes for us.

- ✓ We seek oil formations less than 1,800 ft. deep, while ramping up to produce down to 4,000+ ft.
- ✓ We hunt sandy, porous, more permeable formations with good water drives.
- ✓ We seek wells with proven reserves, high water cuts, and a high bottom-hole pressure.
- ✓ We will work in fields where operators already have active water drives in place.
- ✓ Our non-pressured drive won't cone out and lasts years.

The Technology:

Not a pressure-based pump lifting water, oil, silts, and solutes, the TORS™ is a chemically attractational system lifting only oil from the formation perfs for *sustainable* production.



Henry P. Jacobson and Mark G. Rockley (Ph.D.) hold United States Patent Number 6,868,911 B1; March 22, 2005. Their *Methods and apparatus for subterranean fluid separation and removal* covers both the intellectual property and mechanical process to recover oil from a water-logged hole. The TORS™ passes a continuous loop of hydrophobic material down to the perfs then to the surface, separating oil from water in a non-pressured production. The attraction reaches 400 feet into the formation. The TORS™ replaces a jack pump or other artificial lift system and scrubber with a device producing nil (>2%) formation water.

A TORS's™ nominal unit costs, combined with low deployment, maintenance and lifting costs result in an above-industry-average *Energy Return On Investment*.

THE NUMBERS: Tokata's Oil Recovery System™

Power:	The ¾ Horse Electric Motor's output of 1750 rpm is geared down 60:1 to drive the six Drive Wheels in the Tokata Oil Recovery System™ reducing the electrical draw at 800 feet to the electricity needed to power five 150 watt incandescent bulbs.
Depth:	With current materials and TORS™ configuration 1,800 ft. With next gen materials: 3,000 feet. Our next patent will cover production past 5,000 ft.
Flow:	From six to forty eight barrels per day.
Temperature Range:	Downhole, our current materials have a stretch temperature of 330 degrees.
Maintenance:	Compared to other Artificial Lifting Technologies: Hydraulic Pumping Systems (reciprocating pump, jet pump, hydraulically driven downhole pump), Electric Submersible Pumps, Gas Lift, Progressive Cavity Pumps, Rod Pumps (jack pumps or nodding donkeys) — if in a caustic environment calling for the replacement of ropes (six months) and all pulleys (two to three years) in the Oil Recovery System™ <i>every three months</i> — is still less than other options!

MANAGEMENT TEAM & KEY PERSONNEL

Tom Westbrook, Ph.D., Co-Founder / CIO – Visiting Executive in Entrepreneurship at OK State. Tom worked first with the inventors of the TORS™ (f/n/a) *OtisPump*®. Recent O&G experience includes R&D of unique lifting technologies.

Patrick S. O'Malley, Co-Founder / President – Co-Founder and President - launched successful sales organizations via the Home Shopping Network. Pat was a co-founder and Executive Vice President of American Dermatological Corporation.

Henry (Hank) Jacobson, Co-Inventor of Otis® Pump – a consummate inventor, Hank's step-father headed Sinclair Oil's R&D. Early on, he focused on older wells' remaining reserves when shut-in due to being waterlogged. His life's work, in collaboration with Dr. Mark Rockley, is our *Tokata Oil Recovery System*.

Dr. Mark Rockley, Co-Inventor of Otis® Pump Platform / R&D – Dr. Rockley (Ph.D. Chemistry) holds 9 patents and has published more than 60 articles in professional journals. His work in photophysics of aromatics has led to diverse advances in chemical detection: from the oil industry to vapor sensing to detect landmines.

STRATEGIC RELATIONSHIPS

Chesapeake Energy, Brian Ellithorp (Well Optimization, Alternative Lift Strategies). They have given us two challenges to the design and an invitation to demonstrate the Oil Recovery System at deeper recovery levels.

Heritage Petroleum Inc, Mike Smith, whose work in nodal pressures in formations helps squeeze 25% more production out of a field. His father, **Marvin Smith, Ph.D.** Engineering Professor of Hydro Dynamics, Oklahoma State University, ret. completes the engineering side of the equation for Tokata. (Primary pressure depletion formations, nodal pressures, hydrostatic pressure physics).

*Tokata™ is inventing, acquiring and leveraging
sustainable, green technologies to become the leader in
Tertiary Oil Recovery.*
