

# Heating Oil in a Vertical Heater Treater without a Fire Tube

Wayne King<sup>1</sup> (presented by Andy Craven)

## *Abstract*

*Currently, vertical heater treaters are used to facilitate the separation of gas, oil, and water using the application of heat in the light oil industry. This heat is typically introduced to the process through the utilization of a fire tube – a simple and inefficient device that fails on a regular basis. In recent history, fire tubes being used to heat vertical heater treaters in North Dakota have been running at a lower temperature than in the past - and the addition of chemicals has allowed for the required separation to continue.*

*However, as of April 1, 2015, new regulations require that the temperature of the crude reach a high enough threshold to reduce the Reid Vapor Pressure. This is in response to train transport concerns. As a result of this new regulation, operations will once again be turning the temperature of fire tubes back up – and once again facing the challenge of fire tube failures.*

*Grit Industries Inc. proposed that the use of the CWT Indirect Heater system, currently in use in light oil tanks in Saskatchewan, could replace the fire tubes in vertical heater treaters. This heating system transfers energy through the use of steam, and keeps all ignition sources well away from the process fluid. It would provide a safer and more reliable heat source that could achieve the necessary temperatures for the reduction of the Reid Vapor Pressure. The CWT heater is a very efficient and controllable heat source that would ensure the processes meets the new standards for transporting crude by rail.*

*In an effort to prove that this technology would excel in this application, Grit Industries Inc. has partnered with QEP Resources. The first pilot project was just completed, with an installation near Watford City, ND.*

*Early data indicates that new application of the CWT heater is a tremendous success, with the unit already achieving higher temperature increases in the production fluid than expected.*

<sup>1</sup>Grit Industries Inc., Lloydminster, Alberta

**Wayne King** has been an inventor and entrepreneur in the oil and gas industry for 30 years, although he has worked in the industry most of his life. He founded his first company, Grithog Sand Control Systems, in 1985, and has since then created Grit Industries Inc. with its product lines: CWT Heaters, A-Fire Burners, G-55 Secondary Containment, and most recently Grit SCADA. Mr. King and his company is based out of Lloydminster, Alberta, with a 91,000 sq. ft. manufacturing facility in North Battleford, Saskatchewan. Mr. King was a finalist for 2014 Ernst and Young Entrepreneur of the Year program, and Grit has previously won Saskatchewan's prestigious ABEX Award.