

Didsbury GDTF

Key features

- Gas liquids injection (up to 30l/min, and 4% mass)
- Manual sampling and lab analysis
- On-line gas analysis (up to C6+)
- Gravimetric weigh tank
- Choked nozzles (bank of 24)
- 8 inch piping and orifice meter
- 4500 – 6000 kPa pressure range
- Test item capability to 15 m length
- Instrumentation for pulsation, contaminants
- Instrumentation for swirl generation and flow profile measurement
- Compression (1300 hp Solar Saturn)
- Shock tube facility



Didsbury Gas Dynamic Test Facility (GDTF)



TC Energy's Gas Dynamic Testing Facility, or 'Didsbury' as it is called, is a multi-purpose R&D installation located at the Didsbury compressor Station site and was commissioned in 1985. It is the first of its kind in mimicking the actual operations of high-pressure gas flow in piping elements and full-scale compressor station to advance our understanding the intricacy of compressor operation and related equipment to ensure optimum efficiencies and improved performance and reliability. The Didsbury facility is currently used to execute research projects funded through the Technology Innovation Management Office (TIMO). This unique facility has provided over \$100MM value added benefits since its inception and is currently undergoing upgrades to improve it's testing capacity. Didsbury research has been a key factor in the development of TC Energy's industry-leading expertise in flow measurement, gas quality, and pulsation.

A unique facility noted for its flexibility

As one of the few high-pressure facilities in the world, Didsbury is notable for its versatility for a diversity of testing situations. Its configuration flexibility allows for a variety of pressures, flows, and piping arrangements. It is easily adaptable to testing products and components. Its use of actual pipeline specification gas that can be blended with other gas species and process fluids allows for a unique test environment that closely replicates a pipeline system.

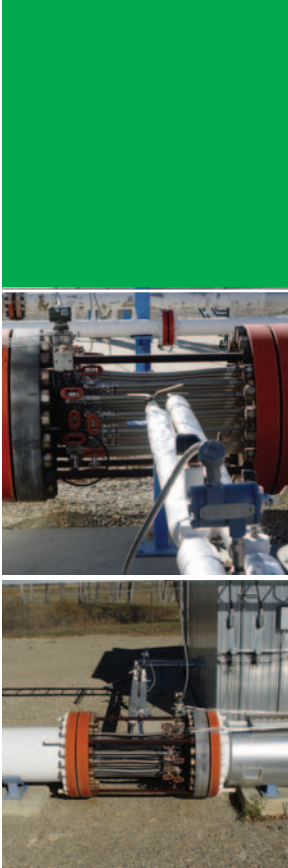


A well-controlled research environment

Didsbury has a proven record of enabling research findings to be developed into operational enhancements. The facility provides a controlled environment for the practical testing of equipment, which allows for problem solving prior to operational installation. This environment also enables advances on gas quality issues through capabilities such as the controlled injection of gas components and gas contaminants. As an example, an upcoming program will test to validate performance of different types of separators gas facilities are equipped with to filter out contaminants. This will improve gas quality, reduce the risk of pipeline operational and integrity issues, resulting in the prevention of revenue loss while saving millions in cost avoidance due to failed ILI inspections and unplanned maintenance at contaminated meter stations and improve service to our customers.

Long standing research collaboration with NCAR

NOVA Chemicals Center of Applied Research or NCAR is our service provider who executes the research projects and operates the test facility through a long standing contractual R&D agreement between TC Energy and NCAR. The arrangement gives TC Energy access to highly qualified and skilled group of technical experts with an intimate understanding of our operations, a familiarity that enables them to anticipate needs in a changing business environment and come up with potential resolutions. Numerous R&D projects and breakthroughs came out from this collaborative effort over the past 35 years. Over 800 R&D projects were carried out, and more than 300 technical papers and contributions to gas transmission Codes and Standards, not to mention several technical books, the majority of which came out from extensive testing programs at Didsbury.



A government-accredited meter testing facility

Didsbury is one of only several locations in North America for which gas meter test data is recognized by Measurement Canada for the purpose of calibration, meter verification and re-verification, and for metering dispute resolution.

Progressive evolution to accommodate an evolving industry

In 1985, inception of GDTF occurred when the Didsbury Compressor Station was selected as an ideal location to be retrofitted with special equipment and used for research into the resolution of pulsation issues on the Alberta Gas Trunk-line system. Through this research, suppression of pulsation has become a basic design philosophy which is now used around the world. Over the years, the potential of Didsbury was recognized and utilized for testing compressor station dynamics and recycle systems. Blow-down silencers were developed and tested utilizing Didsbury. In the years that followed the weight tank, and sonic nozzle bank were influential in creating AGA measurement standards for orifice, turbine and ultrasonic meters. As needs changed, the facility doubled its test loop in length, featuring a metering building and a gravimetric meter proving facility. Eventually, its scope increased to include gas measurement equipment certification and flow calculation testing. In recent years, its capabilities have grown further incorporating practical solutions to gas quality issues.

The facility's core use is to test equipment used for natural gas metering and flow conditioning; gas quality monitoring; procedure testing; and new liquid separation technology. One of the greatest challenges of the 21st century facing the our industry lies in the emerging energy transition and the drive towards a more sustainable energy future. Environmental issues like emissions reduction and net zero goals are significant drivers for new technology. Didsbury can support it by providing a testing ground for the development and evaluation of new emission reduction technologies prior to adoption. As emerging fuels like Hydrogen and RNG start making its way into the overall energy mix, they will bring a host of technology challenges that will require research and analysis. Didsbury GDTF will continue its tradition of evolving and adapting to facilitate solutions for these emerging technology issues.

