

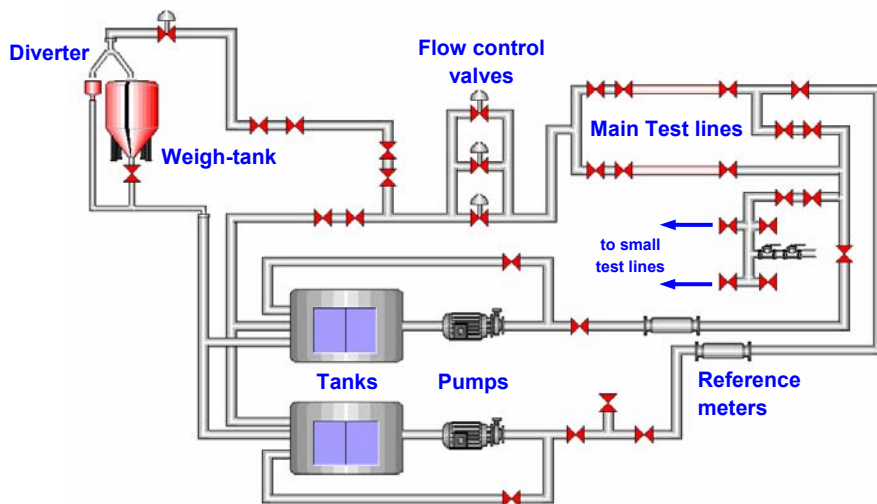


WATER FLOW TEST FACILITY

NEL is recognised as a world renowned authority on flow measurement technology, R & D and calibrations. This reputation has been built up through decades of research and testing in NEL's flow facilities, combined with an active role in the development of many national and international flow measurement standards.

NEL's water flow measurement facility is a modern purpose built flowmeter calibration and evaluation facility. The facility has four separate flow lines, covering a wide range of flowrates in different line sizes. The test sections can be constructed to offer long straight lengths upstream or, if necessary, specific configurations designed to replicate actual installations.

NEL operates the UK primary standard water flow standard, which is independently accredited by UKAS (United Kingdom Accreditation Service), an independent 3rd party body. The facility is operated by multi-skilled teams supported by technical experts. The facilities are all housed in a state of the art testing building, providing a comfortable and safe working environment.



Water Flow Measurement Applications

Accurate water flow measurement is a key requirement in many industries. In the water industry, the increasing value of potable water around the world requires more accurate measurements and leakage detection.

In the process industry, use of water in manufacturing and production is coming under increasing efficiency pressures with an associated requirement for accurate measurement.



In the oil and gas industry, many mature oil fields are producing large amounts of water along with the target oil, most of which is discharged back to the sea following treatment to reduce the oil content. A recent estimate put this volume at 1.3 million cubic meters per day in the North Sea alone. Legislation is currently being introduced to reduce these discharges, however these can only be effective if the volumes can be measured reliably.

Testing Services

- UKAS accredited water meter calibrations
- Water flowmeter performance evaluation
- Evaluation of temperature effects
- Installation effects testing
- Water flowmeter development testing
- Flow conditioner compliance testing
- Evaluation of Δp through meter / components
- Flow control valve characterisation
- Valve Cv evaluation



Facility Services



In addition to the instrumentation and equipment available in the facility, NEL also offers:

- Handling of dangerous goods
- Handling and storage of radioactive sources
- Overhead crane (5 tonnes)
- Power supplies (110VAC, 240 VAC, DC)
- Mains air supply @ 7 bar (100 psi)

Subject to availability, the facilities can be hired on a day rate or per meter basis for short, medium or long term testing. Full details of facility rates are available on request.

Water Flow Test Facilities Specifications

Fluids/flowrates

Water (clean treated) 0.05 l/s to 400 l/s (approx. 0.2 m³/hr to 1400 m³/hr)

Operating conditions

Line pressure: 0 to 5 bar (72 psi) up to 400 l/s
0 to 10 bar (145 psi) up to 200 l/s

Line temperature 10 to 40°C (controlled to < 1°C)

Line sizes 1-inch to 10-inch

Horizontal line length 25m

Vertical line height 5m

Reference

Primary gravimetric standard:	12t, 1.5t, 300kg weighbridges (to 200 l/s)	Uncertainty 0.08%
Secondary standard:	Reference turbine meters (to 400 l/s)	0.15%

Test Instrumentation

Temperature, pressure, Δp
High speed Δp / pressure
Velocity profiling Pitot traverse system

Offline Instrumentation

Density measurement
Viscosity measurement

Note: 1) Test sections can be constructed with bends, valves etc to replicate specific installations.
2) Gas injection into water flow test sections is also possible to assess gas breakout or cavitation effects.

For all enquiries, please contact:
NEL, East Kilbride, GLASGOW, G75 0QU, UK
Tel: +44 1355 220222 Fax: +44 1355 272999
Email: sales@tuvnel.com www.tuvnel.com