

# Ice Pigging™ : A Winner at Wembley

## Case Study – Wembley District Heating Network with Eneteq

**Pre-commissioning clean of large diameter district heating network.**

### The issue

As part of the ongoing redevelopment at Wembley Park, Eneteq Services have installed over 4,000m of district heating transmission pipes. They have installed the underground heating mains for the entire Wembley Park redevelopment, in several phases between 2018 and 2021.

These pipes transfer heat from the purpose-built Combined Heat & Power (CHP) plant to each of the 17 residential blocks, for use in domestic and water heating. This District Heating (DH) network represents a huge saving of carbon when compared to the traditional model of each residential unit producing its own heat and hot water.

Before the transmission pipes can be used, they must be carefully cleaned to remove any particulate matter such as swarf or construction residues which could damage the heat exchangers or shorten the life of the pipework.

The traditional method for cleaning these systems is dynamic flushing with side stream filtration, which requires pumping water and chemicals through the network at high velocity for up to two weeks.

### The solution

With Ice Pigging™ it is possible to carry out a pre-commissioning clean on a large area of DH pipework in a single day. It can easily be applied using existing fill and drain vents on the network and requires no harmful chemicals.

Eneteq were an early adopter of Ice Pigging™ in the DH sector, with SUEZ providing Ice Pigging™ services for commissioning projects since 2017. Given the high status of the Wembley project and the time constraints associated with such a large-scale redevelopment, Eneteq approached SUEZ to clean the entire underground transmission network.

### The results

Each of the phases was cleaned successfully using SUEZ' self-contained Ice Pigging™ equipment. Along with the associated time savings of Ice Pigging™, it eliminated the need to hire in large expensive pumps that would otherwise be required to flush pipes of this diameter.



**DN250 MAIN  
CLEANED AT 12 l/sec**  
**60 l/sec LOWER than BSRIA**

### Results table

Phase	Date	Pipework Ice Pigged	Total Time on Site	Max flow Ice Pigging (Required BSRIA flow)
1	Dec 2018	1,370m DN200 to DN65	12 hours	10 l/sec (44 l/sec)
2	Sep 2019	620m DN110 to DN65	5 hours	3 l/sec (10 l/sec)
3	Nov 2019	1,850m DN250 to DN25	8 hours (over 2 shifts)	12 l/sec (72 l/sec)
4	Aug 2021	200m to DN65	2-3 hours	2 l/sec (3.5 l/sec)



# Ice Pigging™: A Winner at Wembley

## Case Study – Wembley District Heating Network with Eneteq



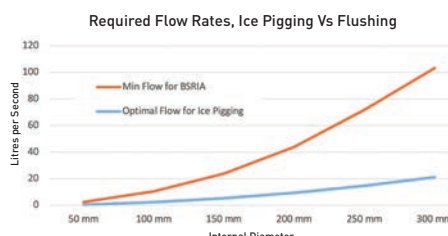
## How it works

The area of DH network to be cleaned is broken into several distinct Ice Pigging™ runs, with each taking between 15 and 60 minutes to clean. A semi solid 'pig' of ice slurry is inserted into the pipework via a fill and drain vent, it is then pushed through the network using water from the energy centre or water tankers. As the pig passes through the network it collects dirt and residues from the pipe walls, this is then discharged from the network via another vent at the end of the section. All contaminants are concentrated in the effluent ice, which is removed from site for treatment.

## Differentiating factors

Ice Pigging™ produces much higher friction at the pipe wall than water flushing, therefore it requires a fraction of the flow rate to achieve equal or better results. Even large diameter pipework can be effectively cleaned with Ice Pigging™ at moderate flow rates without hiring in specialist pumping equipment.

Ice Pigging™ can clean each section of pipe in a single pass, so the process is much faster than dynamic flushing and most networks can be cleaned in a single day.



## Implementation

Early in the planning stage SUEZ divided the network into individual runs based on construction drawings. Working closely with Eneteq, these runs were refined to ensure smooth integration with other site activities and constraints. The Ice Pigging™ on each phase was undertaken after Eneteq had carried out the hydrostatic pressure test. Follow up work was undertaken by a water treatment company to manage the water chemistry prior to the network going live.

## The future

Ice Pigging™ is now considered to be a highly effective service to clean DH networks due to its adaptability to the pipe networks and the speed of clean, relative to other processes.

### About Eneteq

Eneteq are a market leading district heating design, install and commissioning contractor. The business is based upon core values of collaboration, service and quality, delivering efficiencies through market leading best practice.

### About SUEZ

A world leader in water and waste management for 160 years. SUEZ operates on five continents, on which SUEZ harnesses all its desire for innovation to achieve a smart and sustainable management of resources throughout the world. SUEZ works with its customers to restore and conserve the planet's fundamental elements: water, air and soil. SUEZ Smart & Environmental Solutions Business Unit aims to accelerate the development and deployment of smart environmental solutions on a global scale.

### For more information

Please contact: Phil Pettit, Business Development Manager, SUEZ  
Email: Phil.Pettit@suez.com  
Mobile: +44 (0) 7980 616590

**“ We have used and specified Ice Pigging on all of our larger diameter installations, as the dynamic flushing on these pipes can be incredibly difficult due to the flow rates required. Ice Pigging has proved to be a much simpler method for the dynamic flushing element of the works and it has allowed us to reduce the overall timeline of the commissioning process. ”**

– Tim Coles, Operations Manager at Eneteq Services Ltd



**SUEZ Smart & Environmental Solutions** Severnside Energy  
Recovery Centre, Severn Road, Hallen, Bristol, BS10 7SP

Phone: +44 (0) 1454 804040

[www.suez.co.uk](http://www.suez.co.uk)