

project factsheet

February 2010

Sugarloaf Pipeline – Support Fittings

The Sugarloaf Pipeline is designed using state-of-the-art engineering features. It has been designed to last 150 years and will require minimal maintenance. While the pipeline itself is almost entirely underground, there are some necessary support fittings at the surface and others just below the surface.

All these support pipeline fittings will be located within the final Melbourne Water easement, which has certain digging and building restrictions to protect the Sugarloaf Pipeline and its fittings.

This fact sheet provides information for landowners about the Sugarloaf Pipeline's support fittings and provides guidance about future operational and maintenance activities.

Scour valves

Scour valves are installed to drain water from the pipeline, typically, during maintenance.

There are 30 scour valves along the Sugarloaf Pipeline's route. Each scour valve is located at a low point (for drainage

purposes) near existing waterways or road culverts to ensure released water does not damage existing infrastructure or cause erosion.

All scour valves will be signposted with a galvanised bollard nearby. A marker plate on the bollard will provide details about the scour valve, location

of the Sugarloaf Pipeline and provide emergency contact details.

Air valves

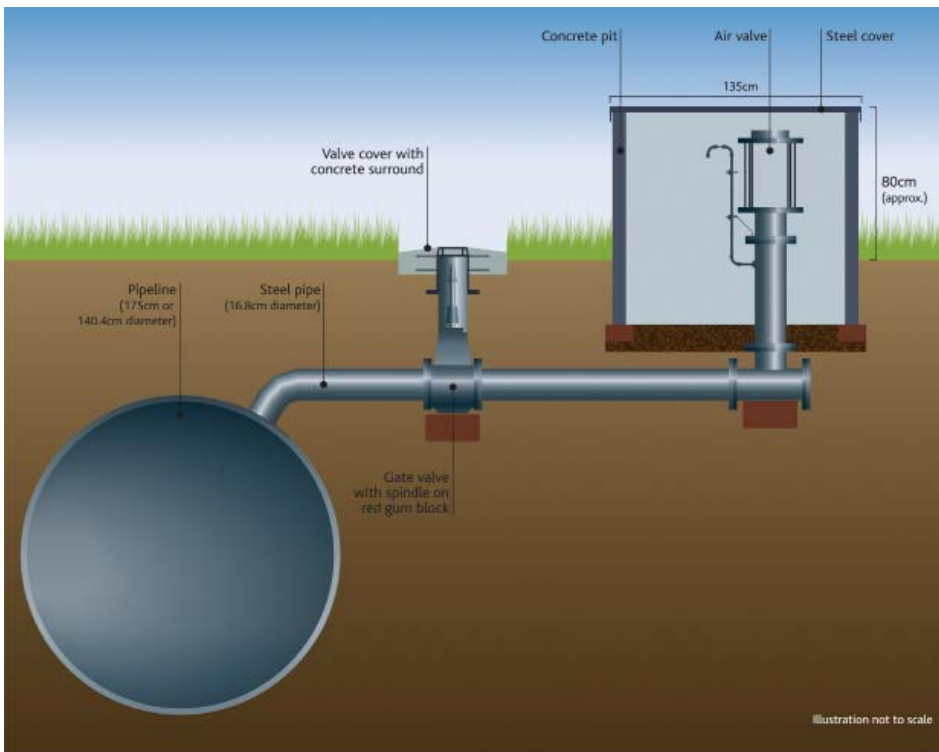
Air valves are essential for the safe operation of the pipeline and perform three functions:

- release air as the pipeline fills



A scour valve (with marker bollard) and cathodic protection marker post near Yarra Glen





- 'bleed' off air during normal operations
- allow air into the pipeline when it is being drained.

There are 144 air valves along the 70km Sugarloaf Pipeline. The air valves are generally positioned at local high points along the pipeline's route. A permanent circular concrete structure (generally, 135cm in diameter) will protect the air valves and allow access for maintenance.

All air valves feature a marker plate on the side of the concrete pit with details about the air valve and location of the Sugarloaf Pipeline.

Digging near an air valve

Generally, air valves are positioned several metres away from the pipeline but within the easement. The air valves are connected to the Sugarloaf Pipeline by pipe work buried at a depth that allows landowners to conduct normal pasture-improvement activities. However, digging on the easement is not permitted without prior approval – to prevent costly damage.

Cathodic protection

The Sugarloaf Pipeline uses a system called 'cathodic protection' to prevent corrosion and degradation of the pipeline.

The cathodic protection system uses a low-voltage electrical charge to control corrosion. This charge is less than one volt and roughly equivalent to two-thirds

of the power of a single AAA battery. It presents no danger to the public or livestock. Power supply for the cathodic protection system comes from the 'Sheoak' high-lift pump station, south of Yea, and the Sugarloaf Reservoir.

The cathodic protection system runs the entire length of the Sugarloaf Pipeline. There are around 70 test points spread out along the pipeline. Each is about the size of a small shoebox, buried underground and indicated by a marker post (generally, alongside an air or scour valve).

Fibre-optic cables

To monitor and control operations at the Sugarloaf Pipeline's major structures, a fibre-optic communication cable links several of the structures. The fibre-optic cable is buried in the easement alongside the Sugarloaf Pipeline in two areas: between the two pump stations and also between the control tank in the Toolangi State Forest and Sugarloaf Reservoir.

Earth beds

There are 15 earth beds along the Sugarloaf Pipeline. These provide an electrical earth (similar to the way household plumbing is earthed) for any stray current that may find its way into the pipeline.

The earthing system uses zinc ribbons ranging from 100m to 400m in length and are buried (beside the pipeline and

within the easement) about one metre below the surface. Each earth bed has a small cabinet (on a concrete plinth), generally located outside the property boundary, to make it accessible for ongoing testing and maintenance. Earth beds are indicated with a marker post.

High-voltage power cables

Power to the Sugarloaf Pipeline's two pump stations at Sheoak and Killingworth is supplied by an SP AusNet zone substation on the Goulburn Valley Highway about 2.5km east of Yea. The power lines to supply electricity are buried in the easement alongside the northern section of the Sugarloaf Pipeline, between the Goulburn River pump station at Killingworth and the high-lift pump station at Sheoak.

The exact location of the high-voltage power lines are indicated with prominent signs at the boundaries to each property. Signage includes emergency contact information.



Ongoing maintenance and operations

The Alliance constructed the Sugarloaf Pipeline, but Melbourne Water is now responsible for its operation and maintenance. In time, Melbourne Water will advise landowners about maintenance schedules for all aspects of the Sugarloaf Pipeline.