

Green Dome Success Story

Mangawhai Village Pump Station

Aug 2010



ARMATEC

ODOURS GONE

Six months after the Green Dome Odour Filter was installed, this is what neighbouring gift store attendant has to say; *"The odour was gone as soon as it was installed. There is no odour whatsoever, in comparison to how it was. It is just fantastic. It was a horrible smell. It made the working environment really hard to work in. Customers would always comment on it."*

GREEN DOME INSTALLED

Water Infrastructure Group constructed the Mangawhai wastewater system, and selected an ARMATEC Green Dome Odour Filter for the Mangawhai Village pump station, 100 metres to the north of Mangawhai Village on Molesworth Drive. Key requirements were that the odour filter had minimum maintenance, low operating costs and low visual impact. The Green Dome Odour Filter was installed in February, 2010.

MANGAWHAI VILLAGE PUMP STATION

The pump station handles inflows from both gravity sewers and pressure sewers, and pumps directly to the main Mangawhai wastewater pump station, near the wastewater treatment plant. The area is mainly a holiday destination, with its population increasing dramatically in summer months.

The pump station is constructed of concrete, with close fitting lids of galvanised steel and rubber strips (not totally sealed). Sewer odours were apparent when the pump station was first commissioned. The boundary of the nearest neighbour, a gift store, is 10 metres to the southwest of the pump station.

GREEN DOME DETAILS

The GD-24 Green Dome Odour Filter is connected directly to the pump station with an underground duct, treating the air as it is physically displaced from the pump station when the water level rises. It is constructed in corrosion resistant fibreglass. All parts are designed to have a very low pressure drop, ensuring as much air as possible exits the pump station via the carbon bed. It is installed partly underground, with the ducting from the pump station totally underground, minimising visual impact. A domed lid covering the top of the carbon bed is all that is visible.

H₂S (HYDROGEN SULPHIDE) MONITORING

Odialog instruments were used to monitor H₂S (the main odour constituent) concentrations in the air space above the water level in the pump station, and in the outlet of the Green Dome Odour Filter. Monitoring was done in June and July 2010, when wastewater flows were at a minimum, although storm water infiltration after a period of heavy rain in early June, had increased volumetric flows. A summary of H₂S results is given opposite. Full details with graphs of logged results are available from ARMATEC on request.



Mangawhai Village Green Dome Odour Filter alongside the pump station and control cabinet. The duct and part of the Green Dome are buried to minimise visual impact.

"There hasn't been a whiff since you installed it. You wouldn't even know the pump station was there", says the neighbour.

Summary of Results

Pump Station 2/4 June 2010:

Average H₂S = 14.3 ppm, Peak H₂S = 121.5 ppm

Green Dome 2/4 June 2010:

Average H₂S = 0.005 ppm, Peak H₂S = 0.2 ppm

Pump Station 19/21 July 2010:

Average H₂S = 30.3 ppm, Peak H₂S = 137.5 ppm

Green Dome 19/21 July 2010:

Average H₂S = 0.005 ppm, Peak H₂S = 0.2 ppm

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