

Award winning developer chooses Humegard™ for new enviro-sensitive estate

Principal
Heritage Pacific

Location
Rivers Edge Estate,
Eatons Hills QLD

Consulting engineer
Hyder Consulting

Contractor
Gary Deane
Constructions

Date
May 2007

Catchment area
10.70ha

Hydraulic system
capacity
6134 l/s

Treatment flow rate
2110 l/s

Volumetric pollutant
storage capacity
52m³

Headloss coefficient:
0.2

Expected HGL afflux at
peak hydraulic capacity
46 mm

Average maximum
flow velocity through
collection chamber
0.18m/s

Gross pollutant removal
efficiency at treatment
flow rate
95-100%

Sediment capture
efficiency at treatment
flow rate
95-100%

The Rivers Edge residential development is one of the most anticipated house and land releases in the prestige Pine Rivers Shire suburb of Eatons Hill. The developers, Heritage Pacific have created a residential community based on the balanced integration of innovative ideas, community enrichment and environmental excellence. This commitment to excellence has been widely acknowledged, with Heritage Pacific developments already distinguished by 12 prestigious awards – including the 2004 National UDIA President's Award for the best urban development in Australia. At Rivers Edge the dedication to eco-sensitivity combines with design quality and environmentally responsible landscaping.

A component of this environmental sensitivity included the installation of a high performing and quality Gross Pollutant trap, to ensure that the high visual amenity surrounding the development was maintained. The design guidelines for Pine Rivers Shire Council require that quality Gross Pollutant Traps (GPTs) be installed on all developments greater than 5 ha. More specifically, the following requirements must be met by these devices:

- Sized to treat the 1 year ARI flow rate
- Retain 70% of solids greater than 0.04 mm
- Provide sufficient storage capacity to deliver a maintenance frequency of at least 6 months
- Maximum average operational velocity within the unit at the 1 year ARI storm event must be less than 0.3 m/s

Hyder Consulting liaised with Humes Water Solutions to select a **Humegard™** Gross Pollutant Trap that would meet the above performance requirements. The selected **Humegard™** unit was designed to accept the following input parameters:

- Pipe diameter = 1650mm
- Pipe grade = 0.40%
- 1 Year ARI Discharge = 2,110 l/s

To ensure the environmental integrity of the development, a **Humegard™** HG55 Gross Pollutant Trap was installed to protect the water quality in the development's 10.7 ha catchment area. The **Humegard™** GPT is expected to remove a range of gross pollutants defined by Engineers Australia as anthropogenic material greater than 5 mm in size. This includes plastic, aluminium, packaging, containers, cigarette butts, syringes, polystyrene, paper and general refuse. The **Humegard™** unit is designed to remove 95% of this material which would otherwise be exported from the development to have negative impacts on the surrounding environs. In addition, the unit is likely to remove a majority of the sediment load exported from residential areas, and therefore provide protection to downstream water quality.

The installed unit has a total sump storage capacity of 52.0 m³, which ensures an annualised maintenance program for the Council. The main body of the unit was designed in three sections to optimise the handling requirements during construction on site.

