



Kingscoast Estate – Hydraulic Placement of Sand

Principal: Intrapac Properties

Location: Kingscliff, New South Wales

Scope of Work

Neumann Dredging was engaged to hydraulically place 370,000 m³ of sand to raise the current surface level of the Kingscoast Estate by 3 metres.

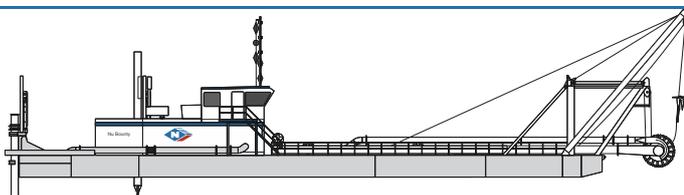
The sand was dredged from an adjacent sand quarry by Neumann Dredging, designed and built 450mm bucketwheel cutter suction dredge the 'Nu-Bounty'. In combination with a 500mm, 2,000 hp booster pump, the slurry was pumped distances up to 2,000m through a 560mm OD poly slurry delivery line. The delivery line was run beneath the separating road through pipe sleeves installed to prevent any disruption to local traffic.

Due to the proximity of live roads on either side of the fill area, the control of the hydraulically placed sand was critical. The sand placement was achieved by the use of dozers and excavators working continually in the discharge head.

The secondary role of the construction equipment was to direct the run-off water to a collection sump from where it was returned to the quarry pond via a 450mm tail-water pump and 500mm return water line.

A system of temporary sand weirs and steel weir boxes was utilised to prevent sand from running to the return water pump and enable the fill height to be achieved close to the property boundary.

The project was finished on time and budget, and despite the proximity of the fill limits to the site boundaries and a fill height of 3 metres above road height, there were no adverse impacts on residents or road users.



Nu Bounty Cutter Suction Dredge

Length (short/long):	33.4/41.30m
Nominal Production Rate:.....	650m ³ /hr
Total Power/Power at Pump:	1,454/1,044kW (1,950/1400 hp)
Pipeline Diameter:.....	450 mm
Maximum Digging Depth (short/long):	15/22 metres
Gross Weight (short/long):.....	220/240 Tonnes