

## AFTER 34 YEARS ROADTRAIN® PROVIDES RELIABLE TREATMENT FOR OK TEDI MINING TOWNS

### CASE STUDY



The Hydroflux Epco adaptable design methodology allows clients such as Ok Tedi Mining to increase infrastructure as population demand increases over time.

The adaptable design methodology can be seen through the integration of rectangular bolted Roadtrain® package plants and circular bolted Roadtrain® high capacity plants at the Ok Tedi mining towns of Tabubil and Kiunga in the Western Province region of Papua New Guinea. Multiple projects were conducted throughout the 1980's to provide for:

1982, Kiunga river port process plant and load terminal rectangular bolted Roadtrain® 220m<sup>3</sup> /day.

1982, Tabubil construction camp rectangular bolted Roadtrain® 150m<sup>3</sup>/day.

1982 to 1988, Tabubil township population augmentation 4 x high capacity circular bolted Roadtrain® package plants of 900m<sup>3</sup> /day each.

The Roadtrain® treatment system included:

- Flow balancing
- Aeration
- Clarification
- Chlorine detention

In both the rectangular and circular plant's the process is based on the intermittent aeration treatment process.

The incoming sewage is balanced over a 24 hour period in the balance tank and controlled via forward flow pumps into the aeration tank. During the aeration phase the bacteria enter an

aerobic state to oxidise the carbonaceous pollutants. When the blowers cycle off the tank enters into the anaerobic state and bacteria convert nitrites to nitrates.

For the sludge train, suspended solids settle out of solution into the bottom of the hopper to be airlifted back into the aeration tank. Once per week sludge is decanted out of the base of the hopper for disposal. Scum is also skimmed off the top of the clarifier and returned to the aeration tank for further treatment.

For the effluent train, effluent is decanted off, behind a scum baffle, via the effluent weir trough and discharged into the chlorine detention tank where chlorine is dosed and mixed with the effluent for discharge into the local aquatic environment.

In the mining environment, population demands change over time and Hydroflux provided planning and development guidance as well as designing future development capability into the construction of the plant sites. In the case of Ok Tedi, standard capacity rectangular bolted Roadtrain's were used to provide immediate quick response during the construction phase of the mine facilities across two towns, over time developing the Tabubil mining town site to cater for increasing demand with larger facilities using the same robust process and construction method integrating high capacity circular bolted construction.

The image above was taken of the Tabubil township site in 2016, all plants we observed to still be in full operation thirty four years after installation.