

# 40' PUMP STATION CONTAINER

## CYCLONE REGION CAPACITY ASSESSMENT

**CLIENT: PETRO INDUSTRIAL.**

**FACTORY 2, 106 POTASSIUM STREET,  
NARANGBA QLD 4504**

### Notes:

Rev	Date	Notes



**Austica (Pty Ltd)**  
CIVIL / STRUCTURAL ENGINEERS

PO Box 1007 Mount Ommaney QLD 4074

Mob: +61 0422 468 514 Email: peter.kairu@austica.com.au

**CLIENT:** Petro Industrial Pty Ltd

**PROJECT:** Various

**LOCATION:** Various

**ITEM:** 40 foot Pump Station Container- Cyclone Region Capacity

**DATE:** 26<sup>h</sup> Jan 2015

**COMMENTS:**

Petro Industrial Pty Ltd requested a Structural Capacity Assessment for 40 Foot Pump Station Container Structure for a Cyclone Region D, Terrain Category 1 Cyclonic Winds  $V_u = 85\text{m/s}$  Atmosphere as per AS 1170.2. The Client also requested a Capacity assessment a 3 Ton Gantry Beam Petro Industrial provided the associated Fabrication Drawings. The Main Materials Container Materials consisted of 150X100X4 mm RHS Bottom Beams, 122X45X4.0mm C floor joists, 10 No. 118 X120X10 mm SHS Struts, 100X50X6mm RHS Struts, 50X25X3mm RHS Struts, 50X25X3mm Girts, 100X100X4.0mm SHS Eves Beams, 100X60X6.0mm Roof Battens, 100X200 I Gantry Beam and 1.6mm Mild Steel wall cladding and roof covering profiles.

Austica Pty Ltd then undertook Structural Modelling and Analysis to check Structural Capacity compliance with AS 1170, AS 1170.2, AS 4100 and AS 1554.1, including Cyclone Wind Forces, Stability against topple, sway, slide and ground bearing..

The Analysis indicates that the 40' Container Structure meets the requirements of the above noted Australian Standards for Cyclone Region D, Terrain Category 1 (Provided that ground anchoring system is provided) . The Gantry Beam can be rated for 3.0t Capacity (SWL= 3.0t)

The Structure requires a foundation and hold down system rated for the Cyclone Region D, Terrain Category 1.

Petro Industrial Pty Ltd to forward the fabrication pictures in order to enable the structural soundness review.

Petro Industrial Pty Ltd to prepare associated Safe Working Method Statement highlighting among other items, to ensure that the 40 foot Pump Station Container Structure has Cyclone pressure and debris impact rated doors and windows including locking devices and shields. Periodic inspections to be undertaken to the Structure and identify any damage. The Structure to be only used when in structurally sound state.

Petro Industrial Pty Ltd to ensure the Structural Steel welding has been undertaken by a Registered Welder as per AS 1554.1 and that the materials indicated in the fabrication drawings have been utilised.

Sign:



Name: Peter Kairu RPEQ 10198 MIEAust CPEng Chartered Professional Engineer NPER

Att: Fabrication Drgs PDF

Base Reference: - AS 1170 , AS 1170.2  
- AS 4100 ,AS 1554.1

# PETRO INDUSTRIAL



[www.petroind.com](http://www.petroind.com)

## LTT TANKS CYCLONE DESIGN COMPLIANCE CERTIFICATE

- ✚ **SELF BUNDED TRANSPORTABLE FUEL STORAGE TANKS**
- ✚ **MODEL # LTT10, LTT12, LTT26, LTT62, LTT80, LTT110**

This is to certify that the LTT tank range named above have been designed, manufactured and tested in accordance with the following standards:

All LTT LiquiTainer Self Bunded Storage Tanks have been engineered to significantly exceed Region D Category 2 cyclone rating. Because of stacking requirements, our tanks have been designed to not only carry the load required by shipping CSC certification but negate all possible acceleration coefficients present during shipping. In accordance with AS 1170.2, wind load design parameters are as below;

- Wind region D (cyclonic).
- Terrain category 1 (88 m/sec ultimate wind speed).
- Annual probability of exceedence 1:500.
- Level of importance - 2

Signed:

**Mr. Bernard Dubois (M.Sc. E)**

**Engineering Director**