Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 9/1/1

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

VDS Model 13000 Vehicle Tank for Effluent

submitted by Transpacific Industries Pty Ltd
Lot 11 Kyle Street
Rutherford NSW 2320

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval has been granted with reference to document NMI General Certificate of Approval No 9/1/0A, *Vehicle Tanks of Capacities 5 to 35 kilolitres for Effluent*, dated April 1994.

This approval becomes subject to review on **1/4/16**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	16/03/01
1	Pattern & variant 1 approved – certificate issued	21/05/01
2	Pattern & variant 1 reviewed – notification of change issued	16/06/08
3	Pattern & variant 1 reviewed & updated – certificate issued	24/05/12

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number ‘NMI (or NSC) 9/1/1’ and only by persons authorised by the submittor.

It is the submittor’s responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the *National Measurement Regulations 1999*.

TECHNICAL SCHEDULE No 9/1/1

1. Description of Pattern approved on 16/03/01

A VDS model 13000 non-pressurised tank of 13 000 L nominal maximum capacity fitted to or forming part of the vehicle, and approved for the measurement of effluent.

1.1 Details of a Typical Configuration

(i) The tank (Figures 1 and 2) is a horizontal, circular cross-section, parallel barrel vessel constructed of aluminium, mild steel or stainless steel.

(ii) The tank is constructed and supported in such a way that it is rigid and of such construction so as to prevent distortion under normal conditions of transfer and use.

(iii) The tank has a single compartment and incorporates two sight-gauges for the measurement of the volume of the effluent contained in the tank.

(iv) The sight-gauges are mounted vertically from the bottom to the top of the tank and show the liquid level over the whole vertical axis of the tank. The sight-gauges are mounted at each end of the tank and may be up to 420 mm off the tank centre-line provided they are situated diagonally opposite each other.

(v) Each sight-gauge comprises a transparent plastic sight-tube, having an internal diameter of not less than 15 mm and not more than 20 mm, supported by a flat aluminum strip mounted on steel brackets. The sight-tubes are removable for cleaning.

(vi) Each sight-tube is mounted in front of a graduated brass scale of not less than 3 mm thick and not less than 75 mm wide. The scales are graduated from zero, or the first discernible 100 L graduation, to full capacity of the tank. Scale marks extend so as to be visible on both sides of the sight-tube. The scale is graduated in 100 L intervals and numbered every 500 L.

(vii) Each graduated scale has provision for sealing and is marked with the serial number of the tank.

(viii) The volume of effluent collected or discharged shall be the difference of the volume contained in the tank before and after the collection or discharge. To obtain the volume of effluent in the tank at any time, the average reading of the two sight-gauges shall be taken.

1.2 Verification Provision

Provision is made for the application of a verification mark.

1.3 Sealing Provision

Provision is made for each graduated scale to be sealed.

1.4 Descriptive Markings and Notices

(i) The following is marked on a nameplate permanently attached to the instrument in a location clearly visible to a person standing on the ground:

Manufacturer's mark, or name written in full	.....
Model number	.....
Serial number of the instrument	.....
Pattern approval mark for the instrument	NMI (or NSC) No 9/1/1

In addition, each graduated scale is marked with the serial number of the tank.

(ii) Every vehicle tank shall have the following notice, or similar wording:

WARNING

REPAIRS OR ALTERATIONS TO THE TANK, PIPING

OR VALVES MUST NOT BE MADE WITHOUT PRIOR

OBLITERATION OF VERIFICATION MARKS

The notice shall have letters not less than 4 mm high and be securely fixed adjacent to the outlet valve and clearly visible to a person attending the valve.

(iii) Every vehicle tank shall bear the following additional notice in letters not less than 10mm high in a permanent position adjacent to each sight-gauge and clearly visible to a person standing on the ground:

TO OBTAIN VOLUME OF LIQUID IN TANK AVERAGE THE
READINGS OF BOTH FRONT AND REAR SIGHT-GAUGES

2. Description of Variant 1 **approved on 16/03/01**

Certain other models and capacities as listed below:

Model Number	**Maximum Capacity**
VDS 12500	12 500 L
VDS 15000	15 000 L
VDS 24000	24 000 L

TEST PROCEDURE No 9/1/1

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

The maximum permissible error at verification/certification for vehicle tanks incorporating sight-gauges for measurement of effluent is ±0.5 scale interval for each scale mark on the graduated scales.

Tests

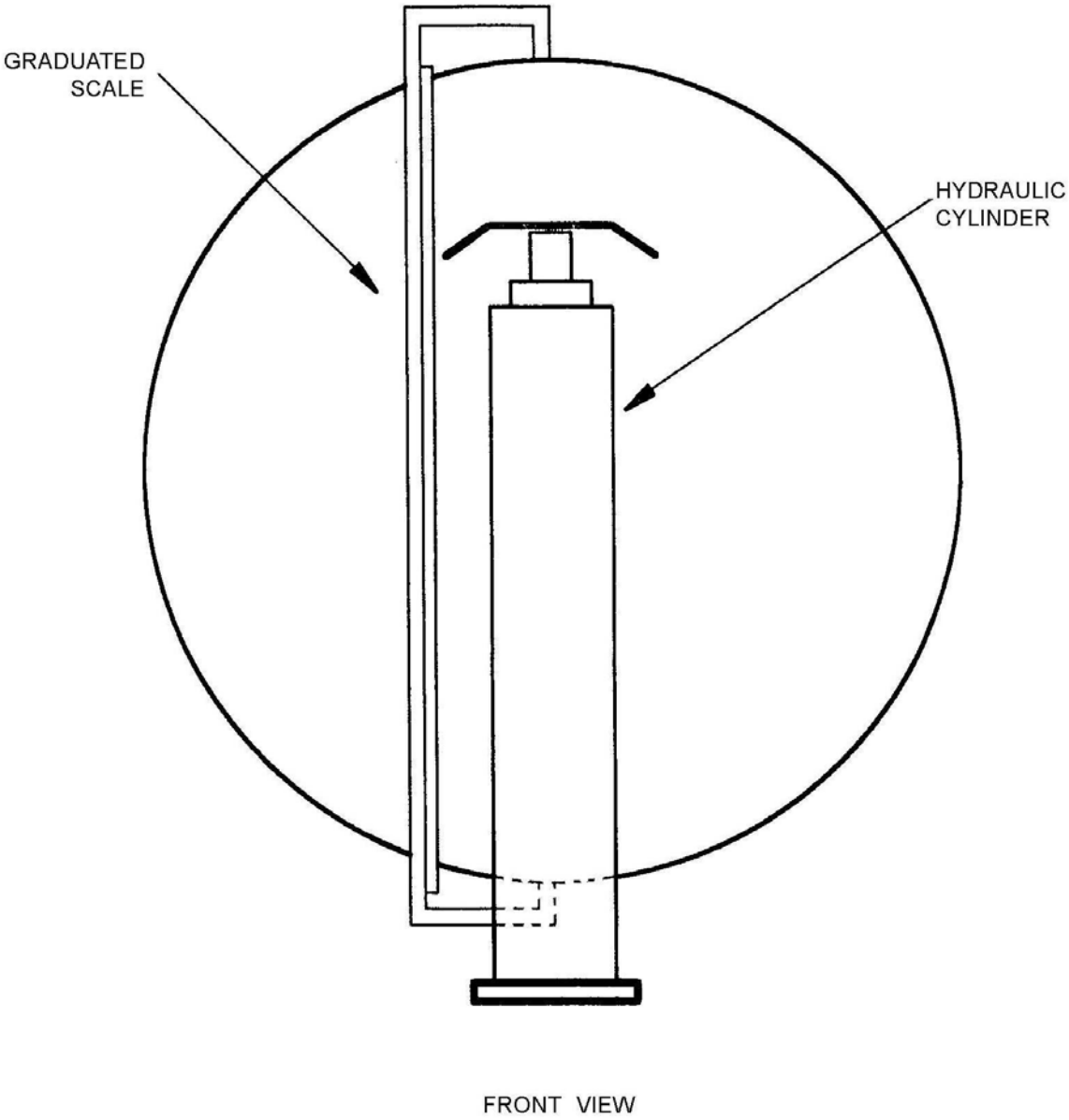
During verification, the vehicle on which the tank is mounted shall be on a level surface and the two sight-gauge readings shall be correct within the maximum permissible error and shall not differ by more than the absolute value of the maximum permissible error.

The method for the measurement of the volume of effluent contained in the tank is as follows:

1. Ensure that the tank is in its prescribed position with the hydraulic cylinder (where fitted, #) in a non-elevated position.
2. Ensure that the vehicle is stationary, and on a level surface.
3. Check the level of effluent in one of the sight-tubes by observing the bottom of the meniscus and reading the associated value on the graduated scale.
4. Repeat step 3 for the other sight-gauge at the opposite end of the tank.
5. The mean value of the two readings is the correct volume of effluent in the tank.

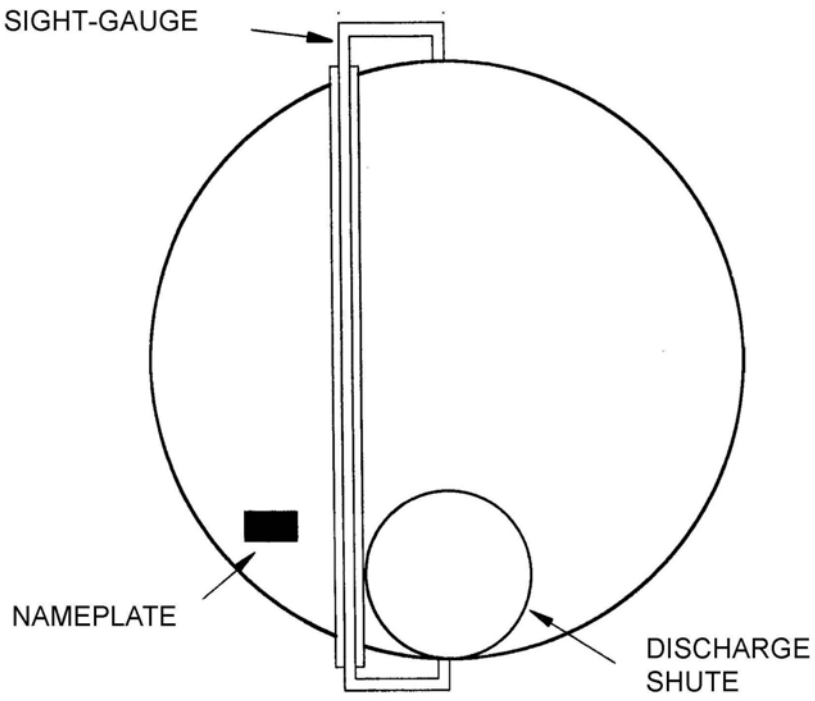
(#) If the vehicle includes an hydraulic cylinder at the front of the tank (which is used to elevate the tank for easier discharge of effluent), then it must be left in the non-elevated position before taking a measurement.

FIGURE 9/1/1 – 1

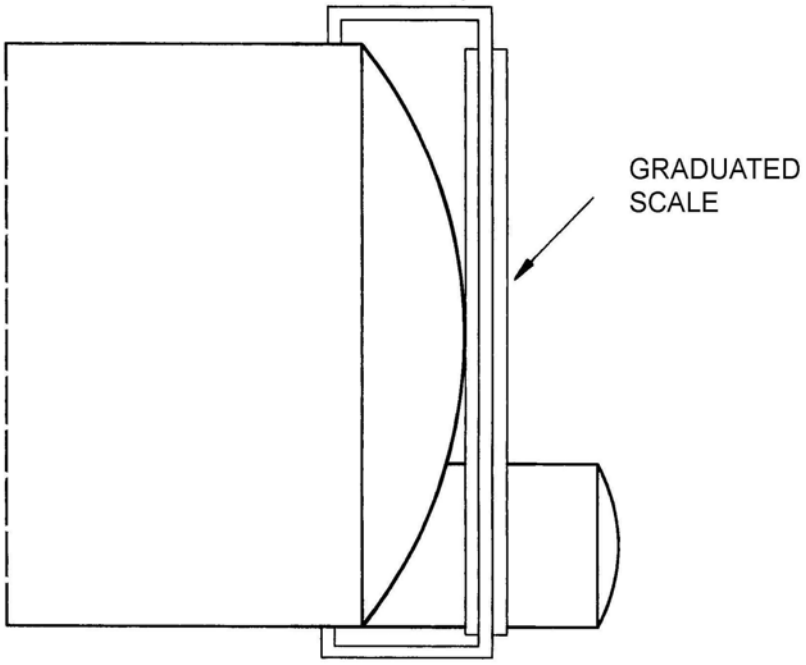


Typical VDS Vehicle Tank for Effluent

FIGURE 9/1/1 – 2



REAR VIEW



SIDE VIEW

Typical VDS Vehicle Tank for Effluent

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