

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Accumulators

with type designation(s)

Accumulator, Stainless Steel, Piston Type, Dwg. No. 9A60-80-SS-A-8340, Rev. 2

Issued to

**Tobul Accumulator
Bamberg, United States**

is found to comply with

DNVGL-OS-E101 – Drilling plant, Edition July 2015

and DNV GL AS' understanding of the implementation and interpretation of:

PSA's "Regulations relating to design and outfitting of the facilities etc. in the petroleum activities" (THE FACILITIES REGULATIONS), Last amended 16 December 2014, Ch.VIII

Application :

See Page 2

This Type Approval Certificate is 2 pages long and replaces D-4395, as issued 2012-02-27.

This Certificate is valid until **2019-11-01**.

Issued at **Houston** on **2015-11-02**

for **DNV GL**

DNV GL local station: **Approval CMC – Houston**

Approval Engineer: **M. Kevin Mandeville Jr.**

Christian Nilsen
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-012885-2**
Certificate No: **TAD0000067**

The following design codes and standards were used as reference:

ASME Boiler and Pressure Vessel Code, Section VIII, Division1, 2013 Edition

Product description

Accumulator, 10 Gallon capacity, Piston style, Steel Body

Application/Limitation

<u>Design Parameter</u>	<u>Value</u>	<u>Equivalent</u>
Max Internal Working Pressure	6,000 psi	413.7 bar
Max Internal Test Pressure	9,000 psi	620.5 bar
Max External Working Pressure	3,452 psi	238.0 bar
Min Design Temperature	-20°F	-29°C
Max Design Temperature	200 °F	93.3°C
Corrosion Allowance	0in	0mm

Type Approval documentation

Marking of product

For traceability, the following marking is to be carried out on each product:

1. Serial No.
2. Manufacturer's Name or Trademark
3. Additional marking at the manufacturer's discretion

Certificate Retention Survey

For retention of the Type Approval Certificate, DNV's surveyor shall perform a survey every second year in accordance with DNV's Standard for Certification No. 1.2.

Other conditions/comments

- Cylinder Castings are to be processed per ASME BPVC Section VIII, Division 1, appendix 7 and 8, for a quality factor of 90%.
- DNV Ref. Project No. PP124586-07

END OF CERTIFICATE