



MaXfield Inc

1026 Western Dr. Crossfield, AB

A#485884

NDT SUMMARY REPORT FOR FERUS INC.

Date: July 26/2010
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Ferus Unit # 6003

CO2 Queen Mobile Storage Trailer

As requested by Ferus Inc., WFMPI, UT, and Visual inspections were performed by MaXfield Inc. on the CO2 Queen mobile storage trailer located at the MaXfield Inc. Main plant shop in Crossfield, Alberta. The following summary details the examinations performed.

WFMPI

Wet Fluorescent Magnetic Particle Inspection (WFMPI) was performed as per the Ferus inspection procedure CO2PSIP Rev. 0 on all internal welds, nozzles, and internal supports welded to the vessel.

Prior to the WFMPI the portable yoke was verified that it could lift a 10 lbs weight (10 lbs block certified by Western Inspection) and the black light intensity of 1000 lux minimum was verified with a calibrated radiometer/photometer system with a UV-A sensor.

The CGSB Level II technician found no relevant indications at the period of this inspection.

Refer to MaxField Inc. WFMPI report # 993727.

Weld #	Description	Findings
C1	Front head-to-shell joint	Porosity in shell beside front head to shell circ –indication noted and left as surface porosity WFMPI ok
Tee 1	Shell tee joint at front head	WFMPI ok
Tee 2	Shell tee joint	WFMPI ok
Tee 3	Shell tee joint	WFMPI ok
Tee 4	Shell tee joint	WFMPI ok
Tee 5	Shell tee joint	WFMPI ok
Tee 6	Shell tee joint	WFMPI ok
Tee 7	Shell tee joint	WFMPI ok
Tee 8	Shell tee joint	WFMPI ok
Tee 9	Shell tee joint	WFMPI ok
Tee 10	Shell tee joint	WFMPI ok
Tee 11	Shell tee joint	WFMPI ok
Tee 12	Shell tee joint at rear head	WFMPI ok
N1	2" fitting front head (level)	WFMPI ok
N2	2" riser shell #2 bottom middle	WFMPI ok
N3	4" nozzle with vortex breaker shell #3 bottom middle	WFMPI ok
N4	6" nozzle with vortex breaker shell #3 bottom middle	WFMPI ok
N5	6" nozzle with vortex breaker shell #5 bottom middle	WFMPI ok
N6	3" nozzle rear head + 3 support clips welded to the shell	WFMPI ok
N7	16" manway rear head	1 linear indication in haz – indication blended out lightly 1 linear indication on edge of weld - indication blended out lightly WFMPI ok
C6	Rear head-to-shell joint	WFMPI ok



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UT SURVEY

A UT survey was performed on each shell can and head as per the Ferus inspection procedure CO2PSIP Rev. 0. The nominal thickness of the shell was 0.750" and the minimum recorded thickness on any shell was 0.753 inch. The nominal thickness of the heads was 0.742 inch and the minimum recorded thickness on either head was 0.863 inch. No indications of thinning or corrosion were observed with UT. No access to the nozzles due to insulation. Refer to MaXfield Inc. UT Thickness Vessel Inspection Report # 993728.

VISUAL INSPECTION:

The visual examination of the external and internal was performed in accordance with the Ferus inspection procedure CO2PSIP Rev. 0.

No relevant indications were noted on the internal or external at the period of this inspection.

PITTING EVALUATION:

The Internal visual showed random isolated pits ranging from 0.010 inch to 0.055 inch in depth were noted on the internal vessel shell walls; these did not appear to be active corrosion but the remains from the mill process. All sharp edged pitting was lightly sanded.

Shell #1		
Pit ID.	Location	Depth
1	1 o'clock	0.010" – 0.020" (1/4"-3/16" Dia. – rounded cluster)
2	1 o'clock	0.030" (5/8" Dia. – rounded)
3	1 o'clock	0.025" (1" Dia. – rounded)
4	1 o'clock	0.020" (1/2" Dia. – rounded)
5	5 o'clock	0.015" (1/8" Dia. – rounded)
6	5 o'clock	0.025" (1/4" Dia. – rounded)
7	8 o'clock	0.030" (1/4" Dia. – rounded)
8	10 o'clock	0.015" (1/4" Dia. – rounded)
9	10 o'clock	0.025" (3/4" Dia. – rounded)
10	10 o'clock	0.020" (1/4" Dia. – rounded)
Shell #2		
Pit ID.	Location	Depth
1	9 o'clock	0.035" (1/4" Dia. – rounded)
2	9 o'clock	0.030" (3/4" Dia. – rounded)
3	11 o'clock	0.040" (1/4" Dia. – rounded)
4	11 o'clock	0.055" (1 1/8" Dia. – rounded)
5	11 o'clock	0.030" (1/2" Dia. – rounded)
Shell #3		
Pit ID.	Location	Depth
1	2 o'clock	0.025" (1/8"-1/2" Dia. – rounded cluster)
2	2 o'clock	0.020" – 0.030" (3/16" - 1/4" Dia. – rounded cluster)
3	10 o'clock	0.010" (1/8" Dia. – rounded)
4	10 o'clock	0.030" (1" Dia. – rounded)



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Shell #4		
Pit ID.	Location	Depth
1	3 o'clock	0.010" (1/8" Dia. - rounded)
2	9 o'clock	0.045" (5/8" Dia. - rounded)
Shell #5		
Pit ID.	Location	Depth
1	3 o'clock	0.010" (1/4" Dia. - rounded)
2	10 o'clock	0.020" (1/4" Dia. - rounded)
3	10 o'clock	0.015" (1/8" Dia. - rounded)