



A0161747_Name Plate(1)_06Jun07





VESSEL INSPECTION SUMMARY

Report #: **127020-WF-06**
Inspect Date: 06/07/2007
Page: 1 of 2
IRISNDT #: 127020

Client: CNRL District: Medicine Hat - West Field: 09-17-11-16W4
Facility: Taber Unit: _____ LSD: 09-17-11-16W4
Jurisdiction #: A0161747 Equip Tag #: _____ Serial #: L-8-143
CRN #: B-5946.2 Nat'l Bd #: _____ Year Built: 1980
Manufacturer: Natco Equipment Description: Horizontal Group Treater
Status: Out Of Service Date Removed From Service: _____ Service: Sour
MAWP Shell 345 kPa @ 93 °C Height/Length: 9144 mm Code Stamp: ☒ Y ☐ N
MAWP Tube _____ Select @ _____ Pick Size/Diameter: 2438 mm I.D. Insulated: ☒ Y ☐ N
Support Type: Saddle RT: 2 Volume: _____ ft³ / m³ PWHT: ☐ Y ☒ N
C.A. _____ Coated ☒ Y ☐ N Clad: ☒ Y ☐ N Manway: ☒ Y ☐ N

Component	Material	Nominal	Minimum
Shell	SA-285	7.9 mm	
Head	SA-516-70	12.7 mm	

Component	Material	Nominal	Minimum

PSV Static Data

PSV -1 Tag #: _____ Serial #: _____ CRN: _____
Model #: _____ Capacity: _____ SCFM Set Pressure: _____ Select
Manufacturer: _____ Service Company: _____
Shell/Tube Side: Shell / Tube Service Date: _____
Size In: 4" Size Out: 6" Connection Type: Flanged
Carseal Intact: Yes / No Number of PSV's _____ Location: No Access Scaff. Req.

PSV -2 Tag #: _____ Serial #: _____ CRN: _____
Model #: _____ Capacity: _____ SCFM Set Pressure: _____ Select
Manufacturer: _____ Service Company: _____
Shell/Tube Shell / Tube Service Date: _____
Size In: _____ Size Out: _____ Connection Type: _____
Carseal Intact: Yes / No Number of PSV's _____ Location: _____

External Inspection Results - VE ☒

Last Report #:

Last Report Date:

Summary Report #:

Item	Y	N	N/A	Acc	Comment
Foundation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Grounding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Insulation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Partial
Piping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Supports	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Anchor Bolting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
TMLs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Item	Y	N	N/A	Acc	Comment
Paint	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Peeling
Cathodic Protection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fireproofing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Ladders/Platforms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Berms	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Davit Arm	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pressure Gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Temp. Gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Internal Inspection Results - VI ☒

Item	Y	N	N/A	Acc	Comment
Shell	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Heads	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Manway	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Gasket Surfaces	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Welds	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Refractory	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Heating Coils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fire Tube
Refractory	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Item	Y	N	N/A	Acc	Comment
Demister	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vane Pack	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Baffles	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Trays	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Filter	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Internal Coating	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Tubesheet	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Tube Bundle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

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High Level (780) 841-0470
Lloydminster (780) 875-6455

Cold Lake (780) 594-1114
Red Deer (403) 347-1742
Tulsa, OK (918) 446-8773
Houston, TX (281) 476-4444

Mailing Address
5311 - 86 Street
Edmonton, Alberta
T6E 5T8



VESSEL INSPECTION SUMMARY

Report #: **127020-WF-06**
Report Date: 06/07/2007
Page: 2 of 2
IRISNDT #: 127020

Client: CNRL LSD: 09-17-11-16W4 Jurisdiction #: A0161747

Attached to Vessel Inspection Report # **127020-WF-06**

Additional Attachments ☒ # of pages **15** Specify **Photos and sketch**
NDE Performed UT ☒ MT ☒ PT ☐ ET ☐ RT ☐ OTHER ☐
NDE Report # **127020-MT-WF-04**
NCR Raised ☐ Operational Action Item Raised ☒ Repair Action Item Raised ☐ Deferred Action Item Raised ☐

Inspection Comments:

An internal/external visual inspection was carried out on Group Treater and the findings are as follows:

EXTERNAL

- Vessel has partial insulation on the sections outside of the building. Insulation was in good condition.
- The vessel was painted on all areas without insulation. The paint was lifting and peeling on an isolated area of the upper mid shell. The building wall is not sealed properly to the vessel to prevent water ingress. Light surface corrosion is present on the areas missing coating.
- The sight glasses, temperature and pressure gauges were in good condition.
- An external UT survey was performed with no significant wall loss noted.
- No access to PSV scaffold required.

INTERNAL

- The coating was intact on the shell, weir plates and baffles. There were isolated coating breaks on the bottom of the north and south manways. These areas were recoated.
- There were small coating breaks on the I-beams for the rail system to install and remove the fire tubes. These areas were recoated.
- There was pitting on the bottom shell of the cold side up to 0.100" deep. The coating was intact on all of the pitted areas.
- The 2 drain nozzles on the fire side were pitted, however all of the coating on the internal surfaces of the nozzles was intact. The neck and the elbow of both nozzles were scanned with UT. The lowest thickness found was 0.245".

FIRE TUBE

- The first 9 inches of the external/internal surface of the pipe is corroded and pitted on the product side of the tube sheet to a depth of 0.100".
- The tube sheet on the product side is corroded and pitted up to a 0.110" deep.
- There was light pitting found on the rest of the external piping up to a depth of 0.020".
- One of the slip-on flange fillet welds was holed through for seven inches around the circumference. The original fillet weld on the OD of the flange is of very poor quality with little to no fusion or reinforcement in many areas.
- The slip-on flange opposite of the one mentioned above did not have a fillet weld on the OD of the flange from original fabrication.
- Random UT thickness measurements were taken on the piping. The average thickness of pipe on the first 8 inches of the piping from the tube sheet was 0.550 inches. The rest of the piping displayed an average of 0.360 inches.
- MT was carried out on all accessible welds with no indications noted.
- A spare fire tube previously repaired and inspected was selected to replace the fire tube described above.
- The fire tube is to be sent to East End Iron for repairs.

Recommendations:

- The building wall is to be properly sealed to the vessel shell to prevent environmental deterioration.
- The external surface of the shell is to be repainted as required.
- The fillet welds of the slip-on flanges for the fire tube are to be repaired.
- The deeply pitted sections of pipe for the fire tube are to be replaced.
- The pitted area of the tube sheet is to be ground smooth to assist surface condition and is to be considered for weld overlay.

Unit # 228 Kilometers: _____
In _____ Out _____ Hrs _____
In _____ Out _____ Hrs _____
Personnel: _____

Consumables:

Inspector:

Wes Farquhar PESL: _____
(Print)

(Signature) API: 29669

I am in full agreement with report contents:

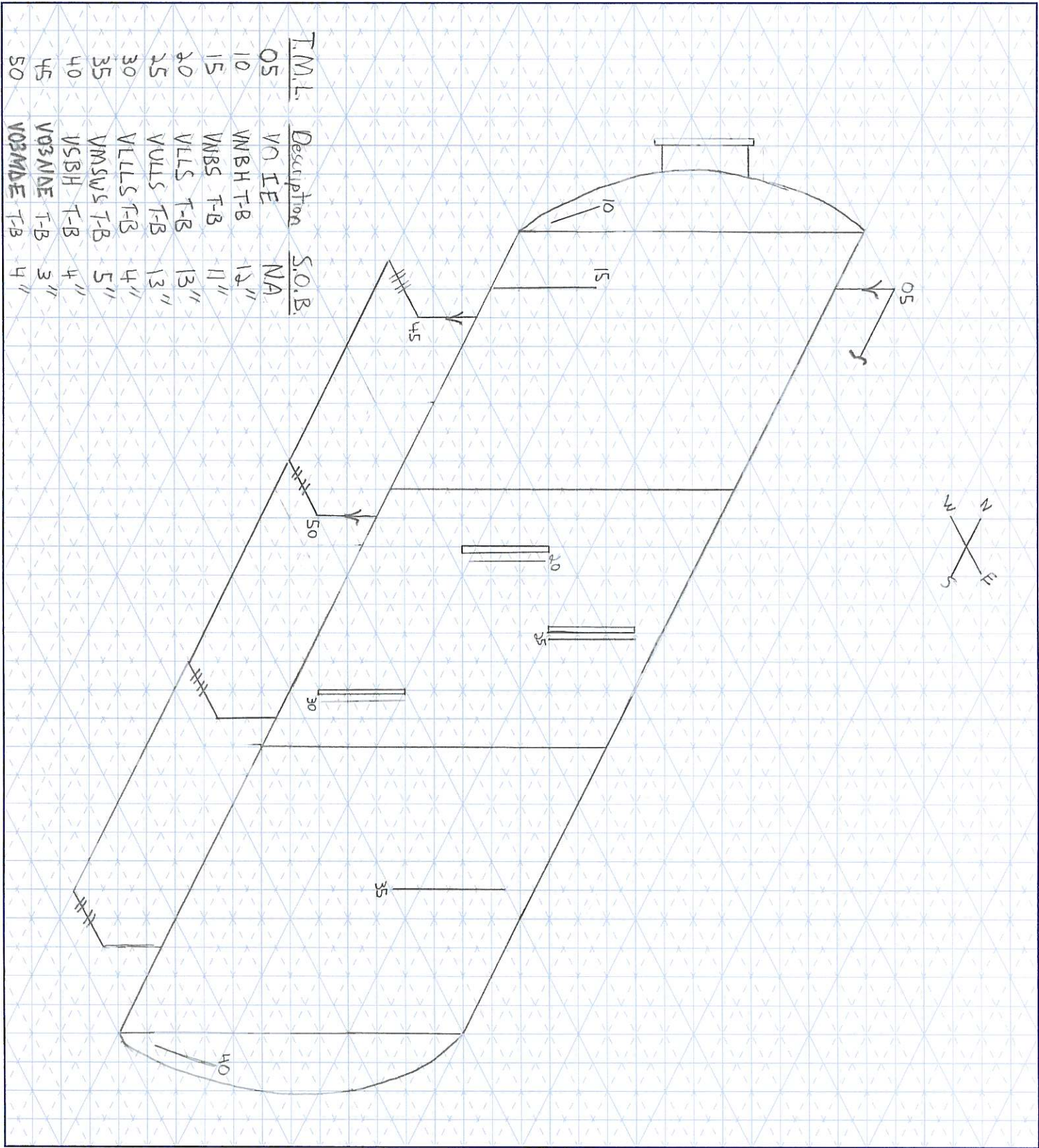
Client Representative _____

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CUSTOMER: CNRL FACILITY: Taber LSD: 09-17-11-16W4

P & ID: _____ DRAWN BY: Ken Schmidt DATE: 06/06/07 DRAWING NO. _____

VESSEL INFORMATION:

Equip. No. _____ Pro.Reg.No (A) A161747 C.R.N. B-5946.2 Serial No L-8-143 Yr. Inst. _____

Code/Div. I Size: 2438 ID / OD X 9144 Manufacturer: GE Natco Ltd. Yr. Blt. 1980

C. Stamp W Service: SOUR PWHT: No J.E.: _____ Radiography: RT-2-3 Insulated: Yes

HEAD:

Top Mat'l SA-516 Top Nom 12.7mm Top C.A. _____

Btm Mat'l _____ Btm Nom. _____ Btm C.A. _____

SHELL:

Material SA-285-C Nominal 7.9mm C.A. _____

BOOT:

Head Mat'l _____ Head Nom _____ Head C.A. _____

Shell Mat'l _____ Shell Nom. _____ Shell C.A. _____

CHANNEL:

Top Mat'l _____ Top Nom. _____ Top C.A. _____

Btm Mat'l _____ Btm Nom. _____ Btm C.A. _____

MAWP Shell side: 345 KPA @ Temp. 93°C MAWP Tube Side: _____ @ Temp. _____

PIPING INFORMATION:

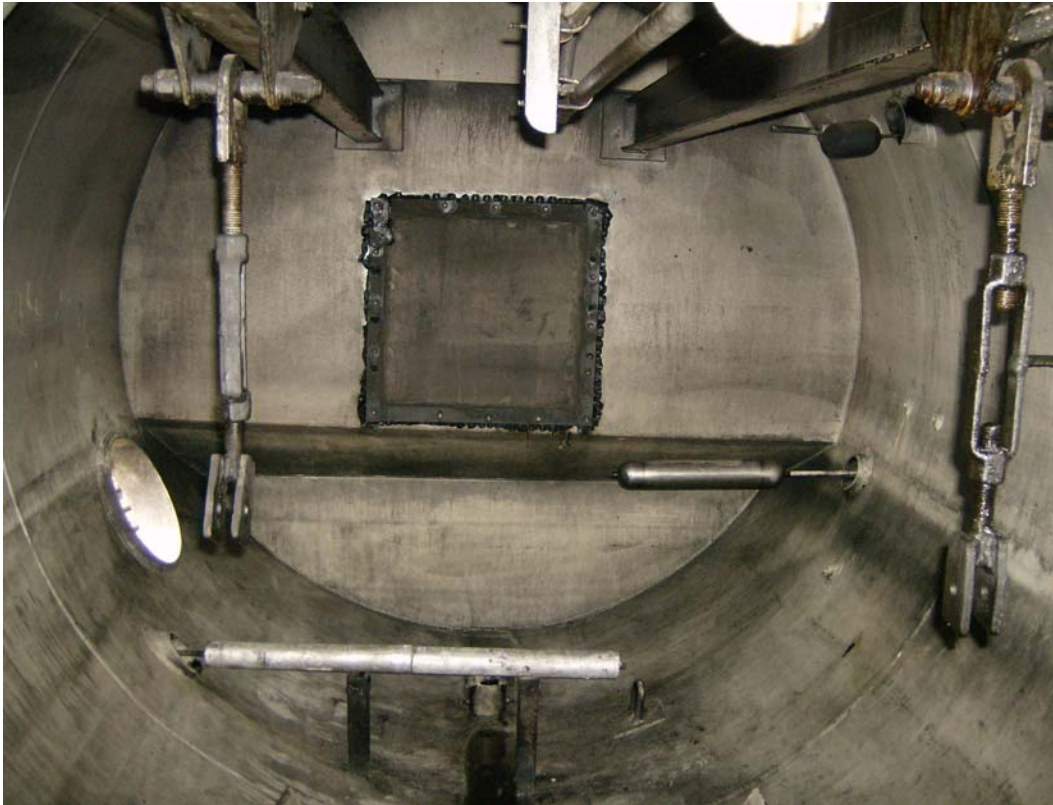
Circuit. No. _____ Line No. (s) (PLEASE PUT LINE NUMBERS ON APPLICABLE LINES ON THE DRAWING)

Piping Class _____ Service: _____ Yr. Blt. _____

MAWP: _____ @ Temp. _____ Size & Schedule of Piping (PLEASE PUT APPROPRIATE SIZES AND SCHEDULES OF PIPING ON DRAWING)



A0161747_Group Treater_06Jun07



A0161747_Internal North View_06Jun07



A0161747_Internal View South Side_06Jun07



A0161747_Paint Peeling External West Shell_06Jun07



A0161747_Pitting on Btm Drain Nozz_05Jun07



A0161747_Water Ingress From Building Wall_06Jun07



A0161747_Group Treater Fire Tube_06Jun07



A0161747_External Fillet Weld-Minimal Fusion&Reinforcement_06Jun07



A0161747_No External Fillet Weld_06Jun07



A0161747_Pitting External Pipe_06Jun07



A0161747_Pitting Tube Sheet_06Jun07



A0161747_Thru Wall Corr.-Fillet Weld_06Jun07