



66166835

Originally @ 5-03-78-25 -

STORAGE TANK INSPECTION REPORT

Date: 27-Jun-17 Equipment ID: N/S
 Report #: IR170627SAFc Bar Code #: N/S
 Facility: Fawcett River

Plant	Fawcett River	Op Unit	16-11-078-25W4M	System	Emulsion	
Asset #	N/S	Equipment ID	N/S	Asset Type	Tank	
Description	1000 BBL Production Tank		Serial #	021198-1	Year Built	2011
Manufacturer	Corlac Industries					
Code	API 650 Mod	Fluid Service	Emulsion	Sweet	MDMT	N/S °C
Internal Access	Yes	Insulated	Yes		Internal Coating	No

PSV / VACCUUM BREAKER DATA

PSV ID #	Location	Size		Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model	Last Service
		Inlet	Outlet					
No PSV								

INSPECTION SUMMARY

External:

- Tank was out of service and sitting in boneyard.
- Tank sitting on wooden planks. Tank is fully insulated; insulation is well intact and in good condition.
- Ladder well supported and in good condition. Manway has no signs of distortion or any other visible issues.
- Truck loading piping and vault box in good condition.
- No safe access to roof due to rain.

Internal:

- Floor has no signs of corrosion, pitting or any other service related issues.
- Shell consist of four (4) courses, only lower shell course is adequately clean and accessible for 100% coverage and has no signs of corrosion or pitting.
- Floor and lower shell course welds well intact and has no signs of visible defects.
- No access to evaluate roof integrity due to height.
- Vault box has no signs of corrosion or any other concerns.
- There is no firetube associated to tank at time of inspection.
- Ma way in good condition.
- Internal piping well supported with no signs of corrosion or issues.

RECOMMENDATIONS

- No concerns or issues based on this inspection.
- Operation to ensure tank has no issues prior to putting back in service.

NONCONFORMANCES / INSPECTION DEFICIENCIES

- Nothing at this time.

INSPECTION PLANNING

Inspection Strategy	Availability	Inspection Interval	5 years
Inspection Date	2017/Jun/27	Date of Last Inspect	
		Date of Next Inspect	

REPORT CERTIFICATION

The signatures below certify that inspections/tests have been completed in accordance with the identified inspection strategy and that the specified equipment is considered fit for service until the date of next inspection.

Inspected by	Sultan Afsar		Date	27-Jun-17
Reviewed and Approved by			Date	
Criticality Assessment Rerun		Inspection Planning Rerun		
Assessed Next Inspection Date				

STORAGE TANK INSPECTION REPORT

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DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
T1	General Other (Please Explain)	Good			No signs of any visible issues
T2	General Corrosion	N/A			Tank fully insulated
T3	General Leaks	N/A			
T4	Vibration	N/A			
T5	Dissimilar Flange Rating	N/A			Piping is not connected
T6	Ladder/Stairway	Good			Ladder look to be well secure
T7	Platform	Good			
T8	Electrical Ground	N/A			
T9	Cathodic Protection	N/A			
T10	Painted Inactive Corrosion	N/A			Fully Insulated, no access
T11	Coating/Painting	N/A			
T12	Level Gauge	N/A			
T13	Bottom	No Access			Tank sitting on wooden planks
T14	Secondary Containment	N/A			
T15	Shell	No Access			Insulated
T16	Roof	No Access			No safe access due to rain and height
T17	Agitator/Mixer	N/A			
T18	Jacket	N/A			
T31	Support Other (Please explain)	N/A			
T32	Foundation	Good			No signs of any issues
T33	Anchor Bolts	N/A			
T34	Windgirders	N/A			
T41	Connections Other (Please explain)	N/A			
T42	Small Branches	N/A			
T43	Nozzles	N/A			Insulated, no access to inspect
T44	Swing Lines	N/A			
T45	Manways/Hatches	Good			No signs of damage
T46	Reinforcing Pads	N/A			
T47	Inadequate Thread Engagement	N/A			
T48	Bolting	N/A			
T50	Flanges	Good			No signs of issues
T51	Leak Clamps	N/A			
T61	Insulation Other (Please explain)	Good			No signs of damage or any other issues
T62	Damage	N/A			
T63	Penetrations	N/A			
T64	Insulation Jacket	N/A			
T65	Banding	N/A			
T66	Seals/Joints	N/A			Fully insulated
T71	Relief Devices Other (Please explain)	N/A			
T72	Relief Devices Corrosion	N/A			
T73	Relief Devices Leaks	N/A			
T74	Restricted Inlet/Outlet	N/A			

STORAGE TANK INSPECTION REPORT

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 Facility: Fawcett River

DETAILED INSPECTION VISUAL INTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Good			No signs of any visible issues
V2	Corrosion	Good			No signs of corrosion
V3	Erosion	None			
V4	Distortion	None			
V5	Blisters	N/A			
V6	Deposits	Poor			Only floor and lower shell course is well clean
V7	Welds	Good			No visible defects
V8	Nozzles	Good			No visible issues
V9	Shell	Good			Lower shell course, upper courses not well clean and accessible for full inspection
V10	Roof	No Access			No access to evaluate integrity
V21	Internals Other (Please explain)	Good			Piping well supported
V22	Annual Ring	N/A			
V23	Sump	N/A			
V24	Roof Support	N/A			
V25	Thermowells	N/A			
V26	Metallic Linings	N/A			
V27	Nonmetallic Linings	N/A			
V28	Internal Steam Coil or other piping	N/A			No steam coil
V29	Level Gauge	Good	Level Gauge		Float in good condition
V30	Other Welded Attachments	Good			Firetube supports
T11	Floor	Good			No signs of corrosion

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	Comments
1	Floor /Lower Shell Course	UT Measurements	For Client Review		See UT report (UT-1-3754-03-SA) for further details
2					
3					
4					
5					
6					
7					
8					
9					
10					

DETAILED INSPECTION UT THICKNESS

CML	Nom. Thk	Current Reading	Short Term Corr Rate	Long Term Corr Rate	Remaining Life	Comments
See UT report for further details						No signs of noticeable thinning

STORAGE TANK INSPECTION REPORT

Date: 27-Jun-17 Equipment ID: N/S
 Report #: IR170627SAFc Bar Code #: N/S
 Facility: Fawcett River

PHOTOS



LSD Sign



Nameplate



Overview



Overview (2)



Overview (3)



Overview (4)

STORAGE TANK INSPECTION REPORT

Date: 27-Jun-17 Equipment ID: N/S
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Facility: Fawcett River



Overview (5)



External Manway Overview



Roof Overview



Shell



Shell (2)



Shell (3)

STORAGE TANK INSPECTION REPORT

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STORAGE TANK INSPECTION REPORT

Date: 27-Jun-17 Equipment ID: N/S
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Facility: Fawcett River



Vault Overview



Deflector Box Overview



Piping Support



Piping Overview



Piping Overview (2)



Piping Overview (3)

STORAGE TANK INSPECTION REPORT

Date: 27-Jun-17 Equipment ID: N/S
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Facility: Fawcett River



Firetube Flange Overview



Internal Manway Overview

ULTRASONIC EXAMINATION REPORT (Tank)

REPORT No.: **UT - 1-3754 - 03 - SA**

Page: **1** of **5**

Client: **Husky Energy**
District: **Slave Lake** LSD: **16-11-078-25W4M**
Facility: **Fawcett River**
Item(s) Examined: **1000 BBL Production Tank (SN 021198-1)**
Tank Floor and Lower Shell
Acceptance Criteria: **For Client Review** Rev. / Date: **N/A**
Procedure No.: **ITS-UT01** Rev. / Date: **Rev.3 / Aug.2014**
Technique No.: **N/A** Rev. / Date: **N/A**

ITS Job No.: **1-3754**
Date: **June 27, 2017**
Time: **1:30**
W.O. No.: **N/A**
P.O. No.: **N/A**
Cost Code: **N/A**
AFE: **N/A**
Other: **N/A**

Equipment Data:

PRN: **A** **N/A** Serial No.: **021198-1** Equip. No.: **N/S** CRN: **N/A**
Material: **Carbon Steel** Thickness: **Roof:4.8mm/Shell:6.4-4.8mm/Floor:6.4mm** Other: **N/A**

Surface Condition:

Base Metal Machined Shot Blasted Wire Wheeled As Ground As Welded Painted Coated Other: _____
 < 0°C (32°F) 0°C (32°F) to 54°C (130°F) 55°C (131°F) to 100°C (212°F) > 100°C (212°F)

Ultrasonic Equipment:

Instrument: **Epoch** Model: **600** Serial No.: **140688804** Cal. Due Date: **19-Sep-17**
Cal. Block: **Metric Stepwedge: 2.5mm to 12.5mm** Serial No.: **11-1203** Couplant: **UTX**
Cal. Block: **N/A** Serial No.: **N/A**
Transducer Cable(s): Type: **Coaxial** Length: **2m**

Transducer:

Serial No.:	Angle (X°):	Frequency (MHz):	Size (mm):	Type		Primary Reference (db) (%FSH):	Scanning Sensitivity (db):	Transfer Value (db):	Range (mm):
				Single	Dual				
025LN5	0	5	6.35	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5.0mm- 53.0dB@80%FSH	+6dB	N/A	0 - 50
				<input type="checkbox"/>	<input type="checkbox"/>				
				<input type="checkbox"/>	<input type="checkbox"/>				
				<input type="checkbox"/>	<input type="checkbox"/>				

Examination Details:

Reference MFL REPORT No.: **MFL - -**

SCOPE: To perform Ultrasonic Thickness examination in the 12" X 12" specified location on 1000 BBL Production Tank (SN# 021198-1) floor and lower shell to determine floor soil side and shell CUI corrosion.

Ultrasonic Thickness location shown on page 3.

RESULTS: Minimum recorded reading for floor is 6.3mm (multiple locations) and for shell is 6.1mm (CML#75).
Refer to page 4 for Ultrasonic thickness results.

CONCLUSION: Results for client to review and determine if any action is required.

Client Representative: _____ Sign: *[Signature]* Date: *[Date]*

Technician(s):

Sign: *[Signature]* *[Signature]*
Print: **Sultan Aisar** **Phil Switzer** Report Review: *[Signature]*
1st Technician 2nd Technician / Assistant
Level: CGSB SNT ACCP/ASNT CGSB SNT ACCP/ASNT
Certification No.: **13854** _____

Scope of Services: The agreement of Integrity Testing Services Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested inspection of specific equipment provided for in writing and the preparation of reports or similar documents reflecting the inspection data obtained or the opinion formulated on the basis of such inspection. It is expressly understood that all representations, omissions and expressions of opinion reflect the opinion or observations of the examinee and are not intended nor can they be construed as representations or warranties as to the actual circumstances. ITS is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, repair and use decisions as a result of the inspection data or other information provided by ITS. In no event shall ITS's liability in respect of the services referred to herein exceed the amount paid for such services.
Standard of Care: In performing the services provided, Integrity Testing Services Inc. uses the degree of care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by ITS.

CONTINUATION EXAMINATION REPORT (Tank)

REPORT No.: **UT - 1-3754 - 03 - SA**

Page: **2** of **5**

Client: **Husky Energy**

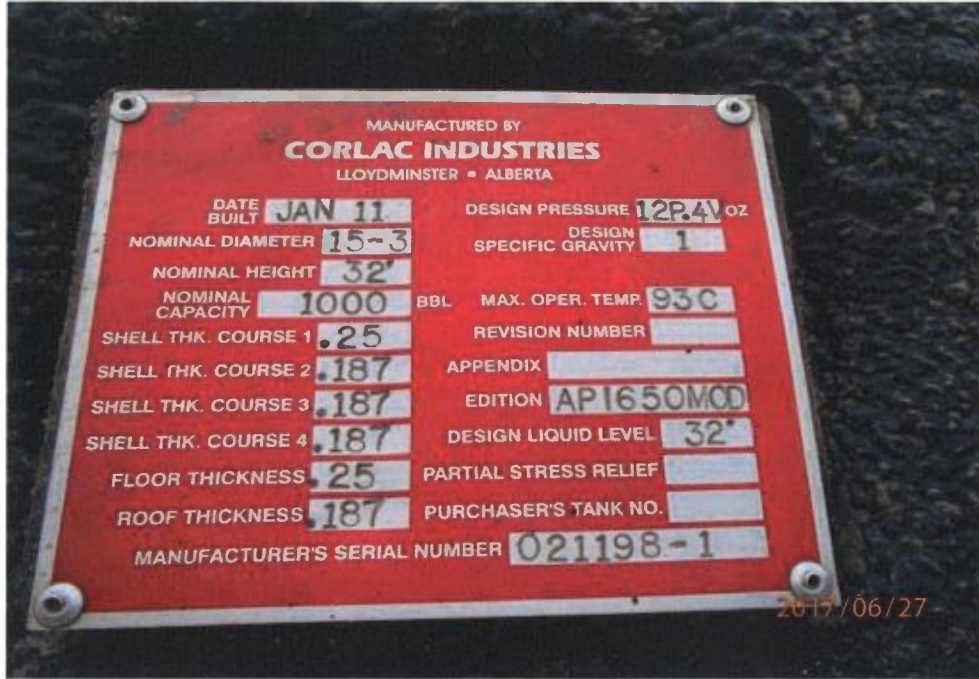
ITS Job No.: **1-3754**

Item(s) Examined: **1000 BBL Production Tank (SN 021198-1)**

Date: **June 27, 2017**

Tank Floor and Lower Shell

PHOTOS



NAMEPLATE



OVERALL VIEW

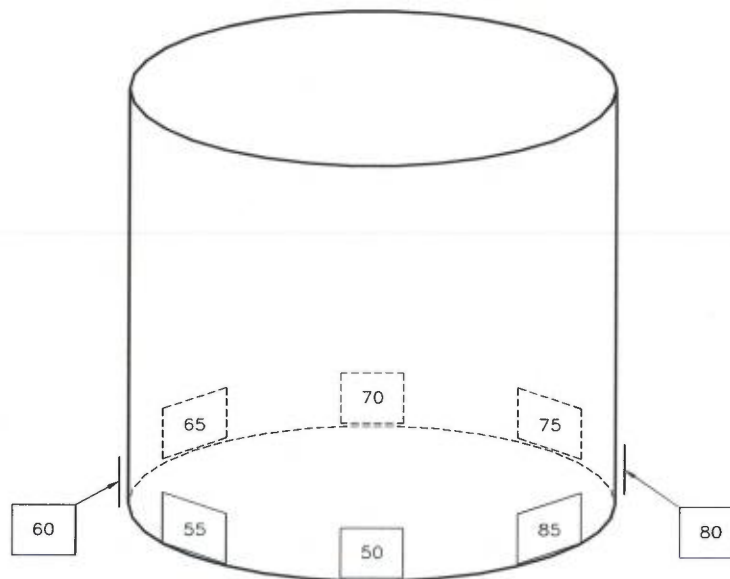
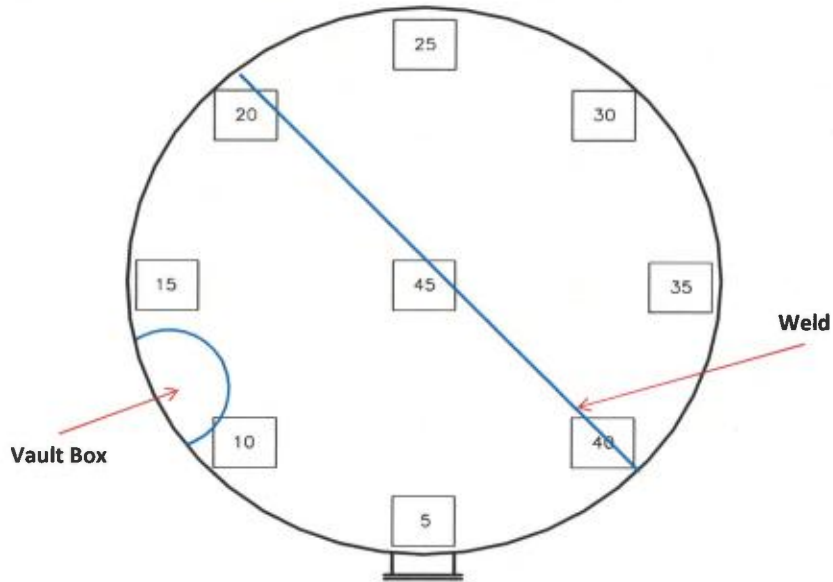
CONTINUATION EXAMINATION REPORT (Tank)

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Client: Husky Energy
Item(s) Examined: 1000 BBL Production Tank (SN 021198-1)
Tank Floor and Lower Shell

ITS Job No.: 1-3754
Date: June 27, 2017



Note: Indicate floor welds, number of shell courses, Manway location(s), Nozzle locations and Internal components. Indicate concern areas and provide measurements to said areas.

TANK DATA

Equip. No.:	<u>N/S</u>	Serial No.:	<u>021198-1</u>	Year Built:	<u>2011</u>	Corr. Allow:	<u>N/S</u>	Insulated:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Height:	<u>32'</u>	Diameter:	<u>15'-3"</u>	Floor Thick.:	<u>6.4mm</u>	Roof Thick.:	<u>4.8mm</u>	Manway:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Capacity:	<u>1000 BBL</u>	No. of Courses:	<u>4</u>	Shell Thick.:	<u>4.8mm - 6.4mm</u>	Internal Coating:	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Internal Lining:	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Tank Mat'l:	<u>Carbon Steel</u>	Foundation Type:	<u>Wooden Planks</u>						

CONTINUATION EXAMINATION REPORT (Tank)

REPORT No.: **UT - 1-3754 - 03 - SA**

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Client: **Husky Energy**

ITS Job No.: **1-3754**

Item(s) Examined: **1000 BBL Production Tank (SN 021198-1)**

Date: **June 27, 2017**

Tank Floor and Lower Shell

UT DATA

FLOOR

Floor Location	5	10	15	20	25	30	35	40
Minimum	6.3mm	6.3mm	6.7mm	5.8mm	6.3mm	6.3mm	6.3mm	6.3mm
Average	6.4mm	6.5mm	6.9mm	6.1mm	6.4mm	6.4mm	6.4mm	6.4mm

Floor Location	45							
Minimum	6.3mm							
Average	6.4mm							

Floor Comments: **Nominal Floor thickness is 6.4mm.**

SHELL

Shell Course Location	50	55	60	65	70	75	80	85
Minimum	Manway	6.3mm	6.2mm	6.2mm	6.2mm	6.1mm	6.2mm	6.2mm
Average	Manway	6.5mm	6.4mm	6.3mm	6.4mm	6.3mm	6.3mm	6.4mm

Shell Course Location								
Minimum								
Average								

Shell Comments: **Nominal Shell thickness is 6.4mm.**

ROOF

Roof Location								
Minimum								
Average								

Roof Location								
Minimum								
Average								

Roof Comments:

NOZZLES

TML Number								
TML Description								
Direction:								
Flange Rating:								
Pipe Schedule:								
Nominal Thickness:								
Corr. Allowance:								
Minimum Thickness:								
Readings	1)							
	2)							
	3)							
	4)							

Nozzle Comments:

CONTINUATION EXAMINATION REPORT (Tank)

REPORT No.: **UT - 1-3754 - 03 - SA**

Page: **5** of **5**

Client: **Husky Energy**

ITS Job No.: **1-3754**

Item(s) Examined: **1000 BBL Production Tank (SN 021198-1)**

Date: **June 27, 2017**

Tank Floor and Lower Shell



Manway Overview



Floor Overview



Shell Overview



Firetube Nozzle Flange