

1 Q. **Reference: Schedule 1, Page 14, lines 9-11. The Application states that "The existing fuel tanks**
2 **12C, 12E, and 12F will also be replaced with horizontal tanks in the size range of 60,000 -**
3 **80,000 litres."**

4 a) Please explain why Hydro chose not to replace the three horizontal tanks with one
5 horizontal or vertical tank with larger capacity rather than three smaller horizontal
6 tanks? Please include any analyses completed.

7 b) Please provide the most recent inspection reports for Tanks 12C, 12E, and 12F.

8

9

10 A. a) Newfoundland and Labrador Hydro ("Hydro") has developed a standard horizontal tank
11 design that has been used in recent years in several of the isolated rural communities it
12 serves, including Mary's Harbour, Charlottetown and Nain, as work in these locations often
13 requires additional design considerations. The chosen 60,000L horizontal tank is sized such
14 that it can be easily transported by road and coastal ferry. Transportation of tanks exceeding
15 this size can be costly and logistically challenging, potentially requiring special permits and
16 escorts for road travel and the use of a barge and tug boat.

17 As there is limited space available in the existing site, the new tanks will be strategically
18 placed to fit inside the fence line, with insufficient space to accommodate a larger horizontal
19 tank. A larger vertical tank was not considered as it must be placed inside the fuel dyke due
20 to environmental regulations,¹ and there is insufficient space in the existing dyke for an
21 additional tank. Additionally, multiple, smaller horizontal tanks can be relocated to several
22 other Hydro-owned diesel-generating plants, eliminating asset-stranding concerns. A larger
23 vertical tank could not be relocated due to its size and would have to remain on the current
24 site until decommissioning.

¹ CAN/ULC-S655-15, *Standard for Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids*.

- 1 **b)** Please refer to PUB-NLH-010, Attachment 1, Attachment 2, and Attachment 3 for the most
2 recent inspection reports for Tanks 12C, 12E, and 12F, respectively.²

² The inspection report for Tank 12F, as included in Attachment 3 to this response, has incorrectly cited "12E" as the tank being inspected in the "Tag Number" section. The content of the report for Attachment 3 is related to 12F. The report for Tank 12E is included as Attachment 2.



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In-Service Inspection Form
(Atmospheric and Low Pressure Storage Tanks)

Tag Number: Rigolet: 12C , L-GAP05-080101.03	PO#/Work Order #: NL1502	Date of Inspection: November 11, 2020
Equipment Type: Diesel Fuel Storage Tank	Tank Status (Applicable Highlighted): In Operation	Inspection Type: (Applicable Highlighted): External Only
Fabricator: Burse Manufacturing	Shell Material: Carbon Steel	Year Built: 1998
Max. Operating Pressure: 7kPa	Max. Operating Vacuum: 300Pa	Inspection Specification: ULC-S601 / API 653
Nominal Thickness: Head and Shell 5mm	Corrosion Allowance: Unknown	Report #: EXT-12031-NL2020-035

Checklist Details		Yes	No	N/A	Remarks	
H S & E	1. If this inspection requires a confined space entry (CSE) have all AS and Owner CSE procedures been reviewed by the inspection team?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	External inspection only	
	2. Has the tank been isolated utilizing blinds or blind flanges of the suitable pressure and temperature rating?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	3. Have all required lockout/tagouts on electrical and mechanical equipment been installed and verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	4. Has the installation of all positive blinding been verified in accordance with the blind list?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	5. Have all inspection operatives reviewed the JSA/SJA and completed a Tool Box talk at the work site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	6. If applicable, is all job specific safety equipment and PPE identified in the JSA/SJA available to all inspection operatives?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	7. If the tank assessment requires CSE prior to the tank being properly cleaned have all special precautions identified in A706-Q23 and API Publication 2217A been implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
P R E P A R A T I O N	Checklist Details		Yes	No	N/A	Remarks
	1. After discussions with operations and maintenance personnel have any abnormal operating conditions been identified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	2. Are all tank components sufficiently cleaned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	3. Has the equipment inspection history been reviewed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2014 External inspection and UT reports were reviewed.	
	4. Does the inspection history identify any previous integrity threats?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	5. If an inspection pack specific to the equipment being examined has been generated, has it been reviewed prior to work commencement?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	6. If applicable, has all specialized inspection equipment and tools identified in the inspection pack available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7. Has the jurisdiction been notified in a timely manner of the equipment inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			



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		Checklist Details	Yes	No	N/A	Remarks
EXTERNAL	ACCESS	1. Perform an initial inspection of ladders, stairways, platforms and walkways from ground level. Does this initial show any obvious signs of damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. Does the initial assessment of ladders, stairways, platforms and walkways warrant fall arrest to proceed with the inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		3. Do ladders, stairways, platforms and walkways show signs of buckling, deflection, missing ladder rings, excessively worn stair treads or other structural damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		4. Do ladders, stairways, platforms and walkways show signs of coating deterioration, significant corrosion, cracking at welds?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor coating failure noted with light surface corrosion on exposed metal.
		Checklist Details	Yes	No	N/A	Remarks
EXTERNAL	SUPPORTS	1. For steel support structures, are there any signs of corrosion, distortion or cracking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access to saddle support. Tank sits in a steel containment basin. The basin sits on top of pressure treated dunnage.
		2. Are there any signs of coating deterioration or associated corrosion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access inside basin at the time of inspection. CSE is required.
		3. Is there any evidence of mechanical shock or freezing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		4. Are anchor bolts securely fastened? Does the area of contact show any evidence of corrosion or distortion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Couldn't check presence or condition of saddle anchor bolts due to their location inside the basin.
		5. Is there any evidence of corrosion on ground lugs and is good electrical contact maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No ground connection found.
	STRUCTURE	1. Is there any evidence of settling of the tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. If settling is evident are there signs of distortion or cracking in areas adjacent the nozzles and associated welds?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		3. Are there any signs of leaks at flanged connections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No fuel was noted inside the basin.
		4. Is all bolting tight and extending fully through the nut?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		5. Do any external surfaces including welds show signs of corrosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Corrosion noted where coating had failed.
		6. If there are areas of external corrosion have the areas been quantified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		7. Is there any evidence of fatigue type defects at welds?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		8. Are there any signs of damage to coatings, insulation or fire proofing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor coating failure noted.
		9. Are there any signs of corrosion or mechanical damage to insulation fastening components?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tank is not insulated.
		10. If applicable, are there signs of water ingress, corrosion under insulation, coatings or fireproofing?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	ATTACHMENTS	1. Do any tank attachments such as valves, level gauges, etc. show signs of corrosion or mechanical damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. Do any nozzles associated with tank attachments show any signs of damage associated with the attachment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		3. Is there a relief device(s) associated with this tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open to atmosphere
		4. If VRD's are attached is the service date current?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Inspection Details

- The horizontal tank was constructed to ULC-S601, is single walled, and sits inside a steel containment basin.
- The tank was last inspected (externally) in 2014, including UT thickness readings. No previous internal inspection history was provided.
- The basin was not entered (it is considered a confined space), but it did have an access hatch on the West end of the tank. There was a limited view of the basin sump, and the West head of the tank.
- Scattered coating failure noted on the basin, tank, ladder, and nozzles. Light surface corrosion was found on exposed metal.
- No ground connection to the tank or basin was found.
- Nameplate was securely attached and mostly legible. Paint partially obscured the edges.
- The lid to the refuelling box is corroded through along the West side.
- UT thickness readings taken on all sides and top and compared to the 2014 UT data. No issues were identified. Refer to report UT-12031-NL2020-013.
- Tank is in serviceable condition.

Recommendations/Disposition;

- Repair or replace corroded refuelling box lid.
- Monitor coating on top of tank and repair as needed.
- Install proper ground connection.
- During the next internal inspection, get UT completed on the bottom of the shell. While doing that inspection use the confined space monitor to complete a visual inspection of the tank inside the basin. Perform external and internal inspections at the next required interval.

Inspection Photos

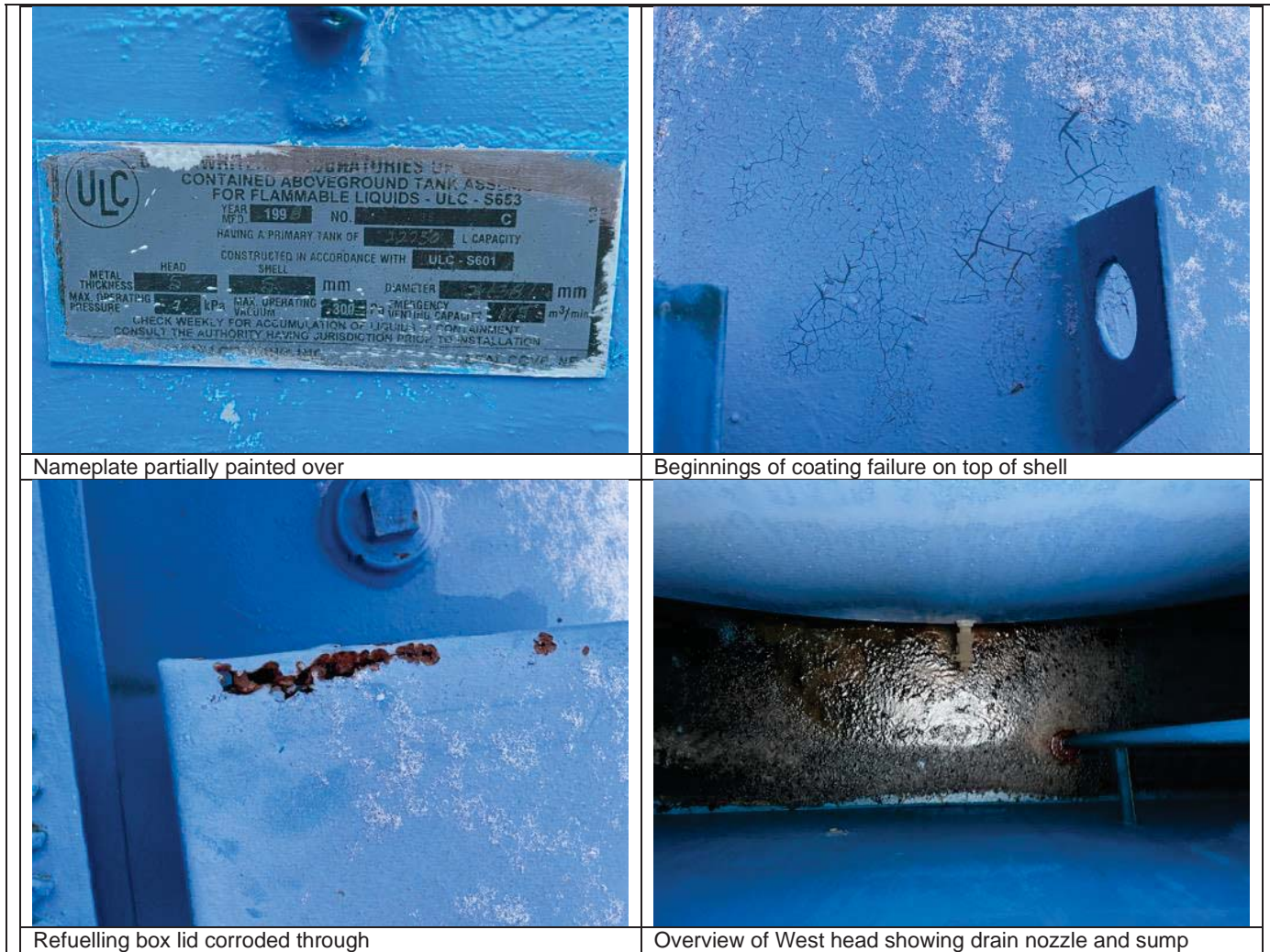


12C overview



Nalcor tag

Preferred partner



Nameplate partially painted over

Beginnings of coating failure on top of shell

Refuelling box lid corroded through

Overview of West head showing drain nozzle and sump

Final Sign Off	In-Service Inspector	Reviewed	Owner Representative
Name	Ian Fong	Brian Pretty	
Sign			
Date	December 13, 2020	December 15, 2020	
Copied To:			



Preferred partner

In-Service Inspection Form
(Atmospheric and Low Pressure Storage Tanks)

Tag Number: Rigolet: 12E , L-GAP05-080101.05	PO#/Work Order #: NL1502	Date of Inspection: November 11, 2020
Equipment Type: Diesel Fuel Storage Tank	Tank Status (Applicable Highlighted): In Operation	Inspection Type: (Applicable Highlighted): External Only
Fabricator: Avalon Welding	Shell Material: Carbon Steel	Year Built: 1997
Max. Operating Pressure: 7kPa	Max. Operating Vacuum: 300Pa	Inspection Specification: ULC-S601 / API 653
Nominal Thickness: Head and Shell 6mm	Corrosion Allowance: Unknown	Report #: EXT-12031-NL2020-036

Checklist Details		Yes	No	N/A	Remarks	
H S & E	1. If this inspection requires a confined space entry (CSE) have all AS and Owner CSE procedures been reviewed by the inspection team?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	External inspection only	
	2. Has the tank been isolated utilizing blinds or blind flanges of the suitable pressure and temperature rating?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	3. Have all required lockout/tagouts on electrical and mechanical equipment been installed and verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	4. Has the installation of all positive blinding been verified in accordance with the blind list?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	5. Have all inspection operatives reviewed the JSA/SJA and completed a Tool Box talk at the work site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	6. If applicable, is all job specific safety equipment and PPE identified in the JSA/SJA available to all inspection operatives?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	7. If the tank assessment requires CSE prior to the tank being properly cleaned have all special precautions identified in A706-Q23 and API Publication 2217A been implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
P R E P A R A T I O N	Checklist Details		Yes	No	N/A	Remarks
	1. After discussions with operations and maintenance personnel have any abnormal operating conditions been identified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	2. Are all tank components sufficiently cleaned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	3. Has the equipment inspection history been reviewed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2014 External inspection and UT reports were reviewed.	
	4. Does the inspection history identify any previous integrity threats?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	5. If an inspection pack specific to the equipment being examined has been generated, has it been reviewed prior to work commencement?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	6. If applicable, has all specialized inspection equipment and tools identified in the inspection pack available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7. Has the jurisdiction been notified in a timely manner of the equipment inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			



Preferred partner

		Checklist Details	Yes	No	N/A	Remarks
EXTERNAL	ACCESS	1. Perform an initial inspection of ladders, stairways, platforms and walkways from ground level. Does this initial show any obvious signs of damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. Does the initial assessment of ladders, stairways, platforms and walkways warrant fall arrest to proceed with the inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		3. Do ladders, stairways, platforms and walkways show signs of buckling, deflection, missing ladder rings, excessively worn stair treads or other structural damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		4. Do ladders, stairways, platforms and walkways show signs of coating deterioration, significant corrosion, cracking at welds?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Coating failure noted with light surface corrosion on exposed metal.
		Checklist Details	Yes	No	N/A	Remarks
EXTERNAL	SUPPORTS	1. For steel support structures, are there any signs of corrosion, distortion or cracking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access to saddle support. Tank sits in a steel containment basin. The basin sits on top of pressure treated dunnage.
		2. Are there any signs of coating deterioration or associated corrosion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access inside basin at the time of inspection. CSE is required.
		3. Is there any evidence of mechanical shock or freezing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		4. Are anchor bolts securely fastened? Does the area of contact show any evidence of corrosion or distortion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Couldn't check presence or condition of saddle anchor bolts due to their location inside the basin.
		5. Is there any evidence of corrosion on ground lugs and is good electrical contact maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No ground connection found.
	STRUCTURE	1. Is there any evidence of settling of the tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. If settling is evident are there signs of distortion or cracking in areas adjacent the nozzles and associated welds?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		3. Are there any signs of leaks at flanged connections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No fuel was noted inside the basin.
		4. Is all bolting tight and extending fully through the nut?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		5. Do any external surfaces including welds show signs of corrosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Corrosion noted where coating had failed.
		6. If there are areas of external corrosion have the areas been quantified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		7. Is there any evidence of fatigue type defects at welds?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		8. Are there any signs of damage to coatings, insulation or fire proofing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor coating failure noted.
		9. Are there any signs of corrosion or mechanical damage to insulation fastening components?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tank is not insulated.
		10. If applicable, are there signs of water ingress, corrosion under insulation, coatings or fireproofing?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	ATTACHMENTS	1. Do any tank attachments such as valves, level gauges, etc. show signs of corrosion or mechanical damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. Do any nozzles associated with tank attachments show any signs of damage associated with the attachment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		3. Is there a relief device(s) associated with this tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open to atmosphere
		4. If VRD's are attached is the service date current?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Inspection Details

- The horizontal tank was constructed to ULC-S601, is single walled, and sits inside a steel containment basin.
- The tank was last inspected (externally) in 2014, including UT thickness readings. No previous internal inspection history was provided.
- The basin was not entered (it is considered a confined space), but it did have an access hatch on the North end of the tank. There was a limited view of the basin sump, and the North head of the tank, including nozzles.
- Scattered coating failure noted on the basin, tank, ladder, and nozzles. Light surface corrosion was found on exposed metal. More extensive coating failure noted on inside surfaces of the basin, especially the floor and near the floor.
- No ground connection to the tank or basin was found.
- Nameplate was securely attached and mostly legible, with paint obscuring some parts. A refurbishment plate from 2007 was attached to the North head above the nameplate.
- The lid on the North end of the basin is buckled. It may have been damaged during original shipping. The damage has not affected the tank nor the functioning of the basin.
- UT thickness readings taken on all sides and top and compared to the 2014 UT data. No issues were identified. Refer to report UT-12031-NL2020-013.
- Tank is in serviceable condition.

Recommendations/Disposition;

- Monitor coating on tank shell and repair as needed.
- Install proper ground connection.
- During the next internal inspection, get UT completed on the bottom of the shell. While doing that inspection use the confined space monitor to complete a visual inspection of the tank inside the basin. Perform external and internal inspections at the next required interval.

Inspection Photos

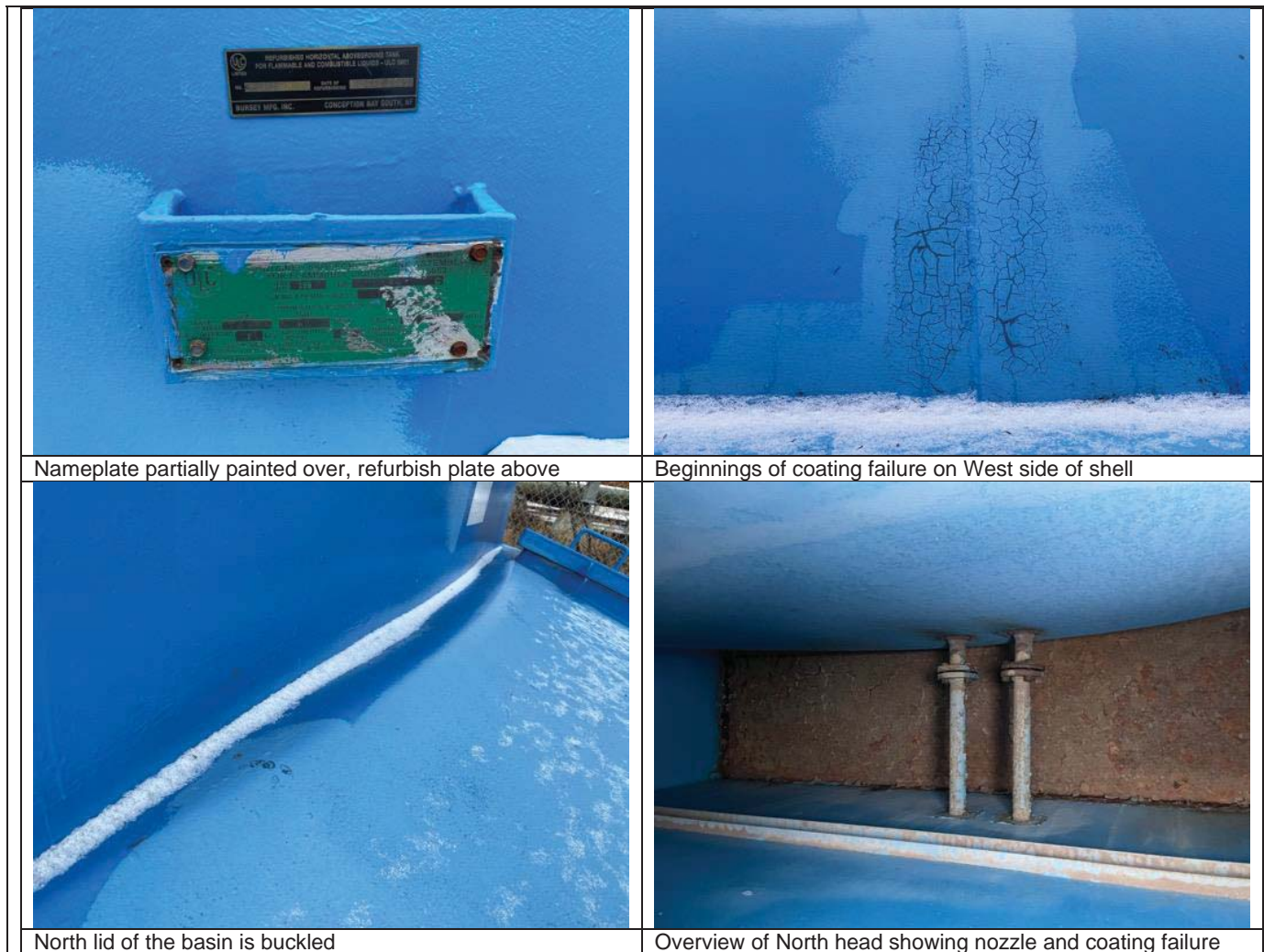




12E overview



Nalcor tag

Preferred partner



Final Sign Off	In-Service Inspector	Reviewed	Owner Representative
Name	Ian Fong	Brian Pretty	
Sign			
Date	December 13, 2020	December 15, 2020	
Copied To:			



Preferred partner

In-Service Inspection Form
(Atmospheric and Low Pressure Storage Tanks)

Tag Number: Rigolet: 12E , L-GAP05-080101.06	PO#/Work Order #: NL1502	Date of Inspection: November 11, 2020
Equipment Type: Diesel Fuel Storage Tank	Tank Status (Applicable Highlighted): In Operation	Inspection Type: (Applicable Highlighted): External Only
Fabricator: Avalon Welding	Shell Material: Carbon Steel	Year Built: 1997
Max. Operating Pressure: 7kPa	Max. Operating Vacuum: 300Pa	Inspection Specification: ULC-S601 / API 653
Nominal Thickness: Head and Shell 6mm	Corrosion Allowance: Unknown	Report #: EXT-12031-NL2020-037

Checklist Details		Yes	No	N/A	Remarks	
H S & E	1. If this inspection requires a confined space entry (CSE) have all TE and Owner CSE procedures been reviewed by the inspection team?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	External inspection only	
	2. Has the tank been isolated utilizing blinds or blind flanges of the suitable pressure and temperature rating?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	3. Have all required lockout/tagouts on electrical and mechanical equipment been installed and verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	4. Has the installation of all positive blinding been verified in accordance with the blind list?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	5. Have all inspection operatives reviewed the JSA/SJA and completed a Tool Box talk at the work site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	6. If applicable, is all job specific safety equipment and PPE identified in the JSA/SJA available to all inspection operatives?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	7. If the tank assessment requires CSE prior to the tank being properly cleaned have all special precautions identified in A706-Q23 and API Publication 2217A been implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
P R E P A R A T I O N	Checklist Details		Yes	No	N/A	Remarks
	1. After discussions with operations and maintenance personnel have any abnormal operating conditions been identified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	2. Are all tank components sufficiently cleaned?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	3. Has the equipment inspection history been reviewed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2014 External inspection and UT reports were reviewed.	
	4. Does the inspection history identify any previous integrity threats?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	5. If an inspection pack specific to the equipment being examined has been generated, has it been reviewed prior to work commencement?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	6. If applicable, has all specialized inspection equipment and tools identified in the inspection pack available?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7. Has the jurisdiction been notified in a timely manner of the equipment inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			



Preferred partner

		Checklist Details	Yes	No	N/A	Remarks
EXTERNAL	ACCESS	1. Perform an initial inspection of ladders, stairways, platforms and walkways from ground level. Does this initial show any obvious signs of damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. Does the initial assessment of ladders, stairways, platforms and walkways warrant fall arrest to proceed with the inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		3. Do ladders, stairways, platforms and walkways show signs of buckling, deflection, missing ladder rings, excessively worn stair treads or other structural damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		4. Do ladders, stairways, platforms and walkways show signs of coating deterioration, significant corrosion, cracking at welds?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Coating failure noted with light surface corrosion on exposed metal.
		Checklist Details	Yes	No	N/A	Remarks
EXTERNAL	SUPPORTS	1. For steel support structures, are there any signs of corrosion, distortion or cracking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access to saddle support. Tank sits in a steel containment basin. The basin sits on top of pressure treated dunnage.
		2. Are there any signs of coating deterioration or associated corrosion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access inside basin at the time of inspection. CSE is required.
		3. Is there any evidence of mechanical shock or freezing?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		4. Are anchor bolts securely fastened? Does the area of contact show any evidence of corrosion or distortion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Couldn't check presence or condition of saddle anchor bolts due to their location inside the basin.
		5. Is there any evidence of corrosion on ground lugs and is good electrical contact maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No ground connection found.
	STRUCTURE	1. Is there any evidence of settling of the tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. If settling is evident are there signs of distortion or cracking in areas adjacent the nozzles and associated welds?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		3. Are there any signs of leaks at flanged connections?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No fuel was noted inside the basin.
		4. Is all bolting tight and extending fully through the nut?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Bolt missing from manway flange.
		5. Do any external surfaces including welds show signs of corrosion?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Corrosion noted where coating had failed.
		6. If there are areas of external corrosion have the areas been quantified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		7. Is there any evidence of fatigue type defects at welds?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		8. Are there any signs of damage to coatings, insulation or fire proofing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor coating failure noted.
		9. Are there any signs of corrosion or mechanical damage to insulation fastening components?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tank is not insulated.
		10. If applicable, are there signs of water ingress, corrosion under insulation, coatings or fireproofing?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	ATTACHMENTS	1. Do any tank attachments such as valves, level gauges, etc. show signs of corrosion or mechanical damage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		2. Do any nozzles associated with tank attachments show any signs of damage associated with the attachment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
		3. Is there a relief device(s) associated with this tank?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Open to atmosphere
		4. If VRD's are attached is the service date current?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Inspection Details

- The horizontal tank was constructed to ULC-S601, is single walled, and sits inside a steel containment basin.
- The tank was last inspected (externally) in 2014, including UT thickness readings. No previous internal inspection history was provided.
- The basin was not entered (it is considered a confined space), but it did have an access hatch on the North end of the tank. There was a limited view of the basin sump, and the North head of the tank, including nozzles.
- Scattered coating failure noted on the basin, tank, ladder, and nozzles. Light surface corrosion was found on exposed metal. More extensive coating failure noted on inside surfaces of the basin, especially the floor and near the floor.
- No ground connection to the tank or basin was found.
- Nameplate was securely attached and mostly legible, with paint obscuring some parts. A refurbishment plate from 2007 was attached to the North head below the nameplate.
- The manway flange was missing 1 bolt.
- UT thickness readings taken on all sides and top and compared to the 2014 UT data. No issues were identified. Refer to report UT-12031-NL2020-013.
- Tank is in serviceable condition.

Recommendations/Disposition;

- Monitor coating on tank shell and repair as needed.
- Install proper ground connection.
- Replace missing bolt in manway flange.
- During the next internal inspection, get UT completed on the bottom of the shell. While doing that inspection use the confined space monitor to complete a visual inspection of the tank inside the basin. Perform external and internal inspections at the next required interval.

Inspection Photos



12F overview



Nalcor tag

Preferred partner



Nameplate partially painted over, refurbish plate above

Refurbishment plate



Bolt missing from manway/cover flanged connection

Overview of North head showing nozzle and coating failure

Final Sign Off	In-Service Inspector	Reviewed	Owner Representative
Name	Ian Fong	Brian Pretty	
Sign			
Date	December 13, 2020	15 December, 2020	
Copied To:			