



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **92242-CS-64**  
 Inspect Date: 06/23/2010  
 Page: 1 of 15  
 Insp. Co. Job #: 92242

**Criticality Designation:**



**Yellow**

Insp. Comp: Matrix\_Inspection District: Slave Lake Field: South Brintnell  
 Location: 12-09-081-22W4M Unit / Skid #: \_\_\_\_\_ LSD: 12-09-081-22W4M  
 Jurisdiction #: A0210398 Equip Tag #: \_\_\_\_\_ Serial #: L-40-191  
 CRN #: E8139.2 Nat'l Bd #: \_\_\_\_\_ Year Built: 1983  
 Manufacturer: CE Natco Equipment Description: Other: Treater  
 Status: In Service - Equip. Type: Vessel: Treater Service: Sweet  
 MAWP Shell: 75 Psi @ 219 °F Volume: \_\_\_\_\_ Code Stamp:  Y  N  
 MAWP Tube: \_\_\_\_\_ @ \_\_\_\_\_ Height/Length: \_\_\_\_\_ Insulated:  Y  N  
 MDMT: \_\_\_\_\_ RT: RT-3 Size/Diameter.: \_\_\_\_\_ PWHT:  Y  N  
 Support \_\_\_\_\_ Vessel on Original CNRL Inventory List:  Y  N Manway:  Y  N  
 C.A.: 0.125 in. Coated: \_\_\_\_\_ Clad: \_\_\_\_\_ J.E.: \_\_\_\_\_ Remote Access:  - \_\_\_\_\_

Component	Material	Nominal Thk	Diameter	OD/ID	Tube Side	Shell Side
1 Main - Shell	SA-516-70	0.500 in.			<input type="checkbox"/>	<input type="checkbox"/>
2 - Head	SA-516-70	0.625 in.			<input type="checkbox"/>	<input type="checkbox"/>
3 - Head					<input type="checkbox"/>	<input type="checkbox"/>
4 -					<input type="checkbox"/>	<input type="checkbox"/>
5 -					<input type="checkbox"/>	<input type="checkbox"/>

Static Data: Confirmed  Changed (See Comments)

Comments:

-Data plate is secure, legible and contains sufficient static data.

**PSV Static Data**

PSV -1 Tag #: N/A Serial #: N/A CRN: N/A  
 Model #: N/A Capacity: N/A Set Pressure: N/A  
 Manufacturer: N/A Service Company: N/A  
 Inlet Size & Type: 0.00 - Last Service Date: N/A  
 Outlet Size & Type: 0.00 - Block Valve: N/A -  
 Carseal Intact: N/A Code Stamp: \_\_\_\_\_  
 Shell Side / Tube Side: \_\_\_\_\_ Out for Service During Insp.: --- Location of PSV: \_\_\_\_\_

PSV -2 Tag #: N/A Serial #: N/A CRN: N/A  
 Model #: N/A Capacity: N/A Set Pressure: N/A  
 Manufacturer: N/A Service Company: N/A  
 Inlet Size & Type: 0.00 - Last Service Date: N/A  
 Outlet Size & Type: 0.00 - Block Valve: N/A -  
 Carseal Intact: N/A Code Stamp: \_\_\_\_\_  
 Shell Side / Tube Side: \_\_\_\_\_ Out for Service During Insp.: --- Location of PSV: \_\_\_\_\_

**PSV Comments**

- PSV was not accessible at the time of the inspection. It is located on the top middle shell of the vessel outside of the building and is wrapped with insulation.

- Maintenance of the PSV may be required at the next scheduled outage. Operations shall check to ensure whether or not this PSV requires maintenance in order to maintain the 5 year maintenance interval as per the CNRL Maxittrak database.



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**External Inspection Results – VE External Inspection Performed**

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Nameplate	<input type="checkbox"/>	Accept	Data plate is secure, legible and contains su	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation and Supports	<input type="checkbox"/>	Accept	Saddle support in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anchor Bolts	<input type="checkbox"/>	Accept	Properly fastened	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grounding	<input type="checkbox"/>	Accept	Adequately grounded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation Condition	<input type="checkbox"/>	Accept	Some damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSV	<input type="checkbox"/>	Accept	Not Accessible at the time of the inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shell Heads & Nozzles	<input type="checkbox"/>	Accept	Some surface corrosion on heads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal Surfaces (Paint)	<input type="checkbox"/>	Accept	Some mild surface corrosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aux Equipment	<input type="checkbox"/>	Accept	In good working order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cathodic Protection	<input checked="" type="checkbox"/>		Not Applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alignment	<input type="checkbox"/>	Accept	Good alignment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange Connections	<input type="checkbox"/>	Accept	Properly aligned and connectec	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure Gauge	<input type="checkbox"/>	Accept	In good working order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature Gauge	<input type="checkbox"/>	Accept	in good working order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sight Glass	<input type="checkbox"/>	Accept	Clean, clear and visible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladder / Platform	<input type="checkbox"/>	Accept	In good working condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaks	<input type="checkbox"/>	Yes	Several leaks noted at threaded connections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Piping from Vessel	<input type="checkbox"/>	Reject	Leaks found at attached piping threaded connections			
Previous UT Survey	<input checked="" type="checkbox"/>		Not Applicable	UT Company: Not Applicable		

**External Visual Observations**

Two (2) leaks were found at the connection of threaded piping, see attached photos.  
 PSV was not accessible at the time of the inspection.

Nameplate secure and legible.  
 Paint on shell in good condition. No corrosion visible.  
 Insulation has visible damage.  
 Pressure and temperature gauges in good condition with no damage.  
 Sight glass clean, clear and visible.  
 Vessel anchored to building floor. All anchor bolts in place and intact.  
 Vessel is adequately grounded.  
 No misalignment noted.

Associated piping in good condition. No corrosion visible.

UT thickness readings were done with GE DMS 2 IRIS NDT #31098.  
 No low UT readings found.

**Recommendations:**

- Properly fasten threaded piping and attached equipment to stop present leakage.
- Have someone confirm the PSV static data and ensure that has been serviced within the last 5 years.
- Continue with current inspection and PSV maintenance intervals to maintain the vessels integrity.



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**Internal Inspection Results – VI N/A (Not Applicable)**

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Shell	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heads	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manway	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gasket Surfaces	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Welds	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refractory	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heating Coils	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demister Pad	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vane Pack	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baffles	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trays	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal Coating	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tubesheet	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tube Bundle	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Internal Visual Observations**

No Internal Inspection Carried Out

**Recommendations:**

No Internal Inspection Carried Out



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**Firetube Static Data N/A (Not Applicable)**

Diameter: Not Applicable      Nom Thickness: Not Applicable      Bend: Not Applicable  
 Length: Not Applicable      Firetube Description: Not Applicable

Firetube NDE Performed:    UT  Report#: Not Applicable      ET  Report#: Not Applicable  
    MT  Report#: Not Applicable      RT  Report#: Not Applicable  
    PT  Report#: Not Applicable      Other  Report#: Not Applicable

**Firetube Inspection Results**

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Burner	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stack	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange (Throat)	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tube Sheet	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot Side	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Miter	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Return Bend	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supports	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Butt Welds	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fillet Welds	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Firetube Visual Observations**

No Firetube Inspection Carried Out

**Recommendations:**

No Firetube Inspection Carried Out



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**Vessel NDE and Final Summary:**

NDE Performed: UT  Report#: \_\_\_\_\_ ET  Report#: \_\_\_\_\_  
MT  Report#: \_\_\_\_\_ RT  Report#: \_\_\_\_\_  
PT  Report#: \_\_\_\_\_ Other  Report#: \_\_\_\_\_

**Maxi-Trak Observations Summary (Summarize inspection results Max 255 Characters):**

Two (2) leaks were found at the connection of threaded piping, see attached photos. PSV was not accessible at the time of the inspection.

**Maxi-Trak Recommendations Summary (Summarize Recommendations Max 255 Characters):**

- Properly fasten threaded piping and attached equipment to stop present leakage.
- Have someone confirm the PSV static data and ensure that has been serviced within the last 5 years.
- Continue with current inspection and PSV maintenance intervals to main

**Actions Corrected at Time of Inspection: (If actions were corrected at the time of Inspection – note the corrected actions here.)**

Not Applicable

**Additional Visual Observations**

Not Applicable

**Any other safety concerns or observations from associated equipment: (for example associated piping, buildings, pumps etc...)**

None



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**Thickness and Remaining Life Evaluation “ Must be Completed”**

**MUST BE COMPLETED AND RESOLVED WITH CNRL IMMEDIATELY UPON DISCOVERY OF LOW WALL THICKNESS AREAS**

Step 1: Was any thickness measurement location found to be less than (Nominal WT – Corrosion Allowance)?: **No**

If YES, proceed to Step 2; if NO, proceed to “Crack Evaluation” and “CNRL Criticality Designation”.

Step 2: Which component(s) were found below (Nominal WT – Corrosion Allowance)?

Components found below Nom - CA:

Components
N/A - N/A
N/A - N/A
N/A - N/A
N/A - N/A
N/A - N/A

Perform Steps 3 – 8 for each component with actual thickness less than (Nominal WT – Corrosion Allowance).

Step 3: Describe Location and Extent of Corrosion:

Components	Location and Extent of Corrosion
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection

Notes:  
Not Applicable for this Inspection

Step 4:

- For shells and nozzles, calculate minimum required thickness (T-min) as per ASME Section VIII UG-27.
- For heads, calculate minimum required thickness (T-min) as per ASME Section VIII UG-32.

Components	T-Min
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A



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**Thickness and Remaining Life Evaluation (Continued)**

Step 5: Is any measured thickness less than calculated minimum required thickness (T-min)? **N/A**

*If YES, complete Step 6  
If NO, proceed to Step 7..*

Step 6: Is nature and extent of pitting acceptable as per API 510? **N/A**

Step 7: Calculate Remaining Life as per API 510. How? (Find last reading; use nominal thickness if nothing available). Short Term Corrosion Rates and Long Term Corrosion Rates.

Components	Remaining Life (Yrs)
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A

Step 8: Contact CNRL Integrity Coordinator to discuss above results.

- Name of CNRL contact: Not Applicable for this Inspection
- Date and time of conversation: Not Applicable for this Inspection

Summary/results of conversation:  
Not Applicable for this Inspection

**Crack Evaluation by Magnetic Particle or Alternative Inspection “Must be Completed”**

**MUST BE COMPLETED AND RESOLVED WITH CNRL IMMEDIATELY UPON DISCOVERY OF CRACK-LIKE INDICATIONS**

Were any indications found to suggest the vessel contained cracks? **N/A**

If NO, proceed to “CNRL Criticality Designation”.

If YES, Contact CNRL Integrity Coordinator to discuss results.

- Name of CNRL contact: Not Applicable for this Inspection
- Date and time of conversation: Not Applicable for this Inspection

Summary/results of conversation:  
Not Applicable for this Inspection



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CNRL Criticality Evaluation - MUST BE COMPLETED

The CNRL In-Service Pressure Vessel Inspector MUST answer all the following questions

- 1. Is the vessel fit-for-service? : Yes
2. Was the measured thickness less than the calculated minimum required thickness (T-min) for any component?: No
3. Were MT indications found?: N/A
4. Was the remaining life less than 6 years for sour service vessels or less than 10 years for sweet service vessels?: No
5. Were NCR's or Action Items generated as a result of the inspection? : Yes
6. Were UT readings below (Nominal WT - Corrosion Allowance) found? : No

Information on CNRL Owner User Program - Criticality Designation and Required Review

RED - Vessel Inspection Results are deemed RED if one of the following occurred:

- The measured thickness was less than the calculated minimum required thickness (T-min) for any component.
MT indications were found.
The remaining life was calculated to be less than 6 years for sour-service vessels or less than 10 years for sweet-service vessels.

RED inspection reports must be signed off by the CNRL Chief Inspector.

YELLOW - Vessel Inspection Results are deemed YELLOW if one or more of the following occurred:

- The vessel was declared NOT fit-for-service by the 3rd Party In-Service PV Inspector.
NCR's or Action Items were generated as a result of the inspection.
UT readings below (Nominal WT - Corrosion Allowance) were found.

YELLOW inspection reports must be signed off by the CNRL Pressure Equipment Integrity Coordinator.

GREEN - Vessel Inspection Results are deemed GREEN if all of the following are true:

- The vessel was declared fit-for-service by the 3rd Party In-Service PV Inspector.
UT readings below (Nominal WT - Corrosion Allowance) were NOT found.
MT indications were NOT found.
NCR's or Action Items were NOT generated as a result of the VE inspection.

GREEN inspection reports must be signed off by the 3rd Party In-Service Pressure Vessel Inspector.

Criticality Designation

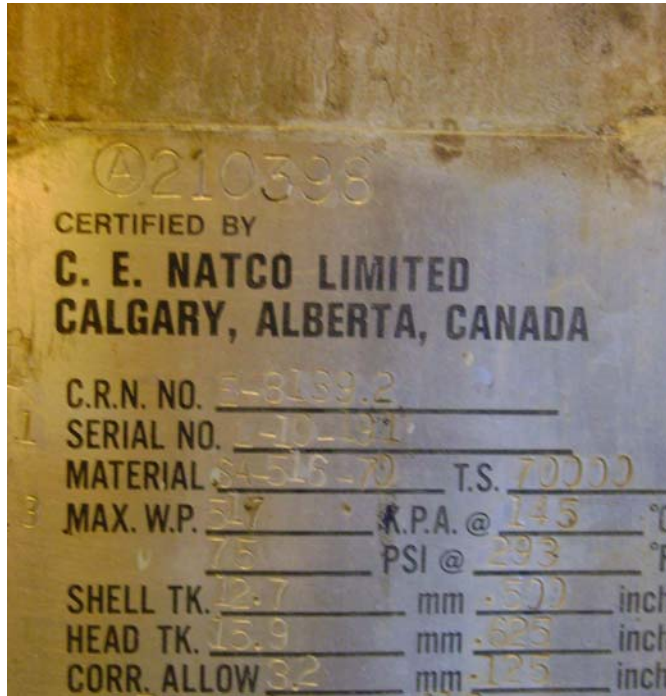


Vehicle #: Kms:
Time In: 00:00 Time Out: 00:00 Hrs
Time In: 00:00 Time Out: 00:00 Hrs
Personnel: Curtis Sinclair Noble Aggrey
Billing Info:

Inspector (Name): Curtis Sinclair PESL:
Inspector (Signature): API: 35229
CNRL Coordinator (Name): Dean Carnes
CNRL Coordinator (Signature):
CNRL Chief Inspector (Signature): (I am in full agreement with report contents)



Equipment Photographs:



001\_A0210398\_Nameplate



002\_A0210398\_Overview



003\_A0210398\_Overview(2)



004\_A0210398\_Overview(3)



005\_A0210398\_Outside view



006\_A0210398\_Outside View(2)



007\_A0210398\_Outside View(3)



008\_A0210398\_Leak



009\_A0210398\_Inside view



010\_A0210398\_Outside View(4)



011\_A0210398\_Outside View(5)



012\_A0210398\_Inside view(2)



013\_A0210398\_Inside View(3)