



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **141168-SS-116**  
 Inspect Date: 04/21/2010  
 Page: 1 of 10  
 Insp. Co. Job #: 141168

**Criticality Designation:**



**Yellow**

Insp. Comp: Matrix\_Inspection District: Medicine Hat - West Field: Taber  
 Location: 10-17-011-16W4 Unit / Skid #: N/A LSD: 09-17-011-16W4  
 Jurisdiction #: A0426433 Equip Tag #: N/A Serial #: 66759  
 CRN #: M5100.23 Nat'l Bd #: N/A Year Built: 1997  
 Manufacturer: Bromley Mechanical Equipment Description: Other: Separator  
 Status: In Service - Equip. Type: Vessel: Separator Service: Sour  
 MAWP Shell: 4964 kPa @ 38 °C Volume: N/A Code Stamp:  Y  N  
 MAWP Tube: N/A @ N/A Height/Length: N/A Insulated:  Y  N  
 MDMT: -20 °F RT: RT-1 Size/Diameter.: N/A PWHT:  Y  N  
 Support: Skirt Vessel on Original CNRL Inventory List:  Y  N Manway:  Y  N  
 C.A.: \_\_\_\_\_ Coated: No Clad: No J.E.: \_\_\_\_\_ Remote Access:  - \_\_\_\_\_

Component	Material	Nominal Thk	Diameter	OD/ID	Tube Side	Shell Side
1 Main - Shell	SA-516-70N	1.000		OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2 - Head	SA-516-70N	1.000		OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 - Head	SA-516-70N	1.000		OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4 -	N/A			OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5 -	N/A			OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Static Data: Confirmed  Changed (See Comments)

Comments:

Nameplate secure & legible.

**PSV Static Data**

PSV -1 Tag #: 373 Serial #: 1998C-SG CRN: OG0449.2  
 Model #: B99129-9-2 Capacity: 9210 SCFM Set Pressure: 720 psi  
 Manufacturer: Consolidated Service Company: N/A  
 Inlet Size & Type: 2.00 in. - Threaded Last Service Date: N/A  
 Outlet Size & Type: 2.00 in. - Threaded Block Valve: --- - -  
 Carseal Intact: Yes Code Stamp: Yes  
 Shell Side / Tube Side: Shell Side Out for Service During Insp.: --- Location of PSV: Downstream

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: - Last Service Date: N/A  
 Outlet Size & Type: - Block Valve: --- - -  
 Carseal Intact: N/A Code Stamp: \_\_\_\_\_  
 Shell Side / Tube Side: \_\_\_\_\_ Out for Service During Insp.: --- Location of PSV: \_\_\_\_\_

**PSV Comments**

No service tag found.



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 Inspect Date: 04/21/2010  
 Page: 2 of 10  
 Insp. Co. Job #: 141168

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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	Secure & legible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation and Supports	<input type="checkbox"/>	Accept	Skirt in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anchor Bolts	<input type="checkbox"/>	Accept	Welded to building floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grounding	<input type="checkbox"/>	Accept	Ground through bldg on SW corner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation Condition	<input type="checkbox"/>	Accept	No damage noted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSV	<input type="checkbox"/>	Reject	No service tag found.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shell Heads & Nozzles	<input type="checkbox"/>	Accept	In good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal Surfaces (Paint)	<input type="checkbox"/>	Accept	Minor paint loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aux Equipment	<input type="checkbox"/>	Accept	No concerns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cathodic Protection	<input checked="" type="checkbox"/>		N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alignment	<input type="checkbox"/>	Accept	No misalignment noted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange Connections	<input type="checkbox"/>	Accept	No concerns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure Gauge	<input type="checkbox"/>	Accept	140 psi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature Gauge	<input checked="" type="checkbox"/>		N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sight Glass	<input type="checkbox"/>	Accept	In good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladder / Platform	<input checked="" type="checkbox"/>		N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaks	<input type="checkbox"/>	No	No leaks at time of inspection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Piping from Vessel	<input type="checkbox"/>	Accept	Slightly low UT reading on drain piping			
Previous UT Survey	<input type="checkbox"/>	No	N/A			UT Company: N/A

**External Visual Observations**

Vessel not in service at time of inspection due to a power failure.  
 Separator is uninsulated and painted.  
 Nameplate secure & legible.  
 Shell, skirt and both heads in good condition with minor paint chips and scratches. Negligible corrosion at exposed areas.  
 Skirt welded to building floor. All stitch welds have no visible defects.  
 Vessel is ground through building on SW corner. Ground wire is securely attached with no damage visible.  
 Pressure gauge has no damage or defects visible. Reading 140 psi.  
 Sight glass also in good condition with no damage or defects visible.  
 No misalignment noted.  
 No leaks noted at time of inspection.  
 No service date found on PSV.

Associated piping is unpainted with less than 0.005" corrosion at exposed areas.

UT was carried out with GE DMS2 IRISNDT #31080.  
 Slightly low UT found at TML 50 drain elbow. Nominal thickness is 0.344", lowest reading found is 0.296".

Refer to the attached photos, UT data and drawing for details.

**Recommendations:**

Verify that PSV has been serviced in the last 3 years or send PSV for servicing.

Monitor TML 50 at next scheduled inspection to determine a corrosion rate.



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 Inspect Date: 04/21/2010  
 Page: 3 of 10  
 Insp. Co. Job #: 141168

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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



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **141168-SS-116**  
 Inspect Date: 04/21/2010  
 Page: 4 of 10  
 Insp. Co. Job #: 141168

Insp. Company: Matrix\_Inspection LSD: 09-17-011-16W4 Jurisdiction #: A0426433

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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VISUAL INSPECTION  
REPORT

Report #: **141168-SS-116**  
Inspect Date: 04/21/2010  
Page: 5 of 10  
Insp. Co. Job #: 141168

Insp. Company: Matrix\_Inspection LSD: 09-17-011-16W4 Jurisdiction #: A0426433

**Vessel NDE and Final Summary:**

UT	<input checked="" type="checkbox"/>	Report#: <u>N/A</u>	ET	<input type="checkbox"/>	Report#: <u>N/A</u>
NDE Performed: MT	<input type="checkbox"/>	Report#: <u>N/A</u>	RT	<input type="checkbox"/>	Report#: <u>N/A</u>
PT	<input type="checkbox"/>	Report#: <u>N/A</u>	Other	<input type="checkbox"/>	Report#: <u>N/A</u>

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

Vessel external has minor paint chips. Negligible corrosion. Drain piping has slightly low UT reading at TML 50. PSV has no service date present. No other concerns with this vessel.

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

Verify that PSV has been serviced in the last 3 years or send PSV for servicing.  
  
Monitor TML 50 at next scheduled inspection to determine a corrosion rate.

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

N/A

**Additional Visual Observations**

N/A

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

N/A



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Inspect Date: 04/21/2010  
Page: 6 of 10  
Insp. Co. Job #: 141168

Insp. Company: Matrix\_Inspection LSD: 09-17-011-16W4 Jurisdiction #: A0426433

**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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Inspect Date: 04/21/2010  
Page: 7 of 10  
Insp. Co. Job #: 141168

Insp. Company: Matrix\_Inspection LSD: 09-17-011-16W4 Jurisdiction #: A0426433

**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? **No**

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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 Inspect Date: 04/21/2010  
 Page: 8 of 10  
 Insp. Co. Job #: 141168

Insp. Company: Matrix\_Inspection LSD: 09-17-011-16W4 Jurisdiction #: A0426433

**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?: **No**
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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Party In-Service Pressure Vessel Inspector.*

**Criticality Designation**



*Yellow*

Vehicle #: \_\_\_\_\_ Kms: \_\_\_\_\_  
 Time In: 00:00 Time Out: 00:00 Hrs \_\_\_\_\_  
 \_\_\_\_\_  
 Time In: 00:00 Time Out: 00:00 Hrs \_\_\_\_\_  
 Personnel: \_\_\_\_\_  
 Billing Info: \_\_\_\_\_ : \_\_\_\_\_

Inspector (Name): Stephanie Simm PESL: \_\_\_\_\_  
 Inspector (Signature): \_\_\_\_\_ API: 30892  
 \_\_\_\_\_  
 CNRL Coordinator (Name): Mark Woynarowich  
 CNRL Coordinator (Signature): \_\_\_\_\_  
 CNRL Chief Inspector (Signature): \_\_\_\_\_ (I am in full agreement with report contents)  
 \_\_\_\_\_ (I am in full agreement with report contents)



Equipment Photographs:

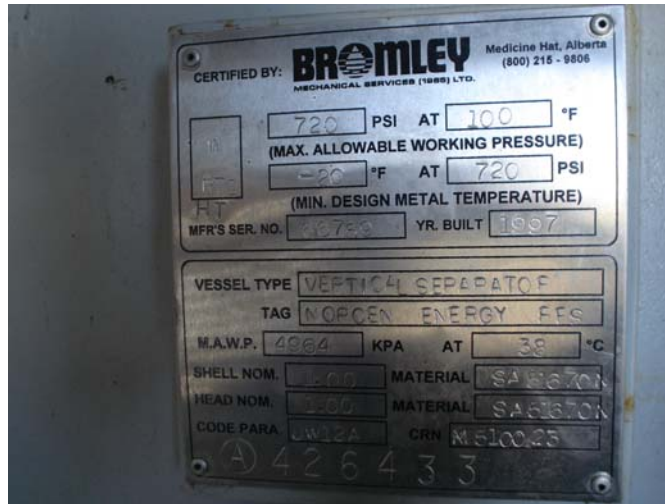


Figure 1\_Nameplate\_21April2010



Figure 2\_Sideview\_21April2010



Figure 3\_Top Section\_21April2010