



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **155741-MD-24**  
 Inspect Date: 02/17/2012  
 Page: 1 of 11  
 Insp. Co. Job #: 155741

**Criticality Designation:**



**Yellow**

Insp. Comp: Matrix\_Inspection District: Grande Prairie - North Field: South Hamburg  
 Location: 12-29-096-11W6 Unit / Skid #: 7714 LSD: 12-29-096-11W6  
 Jurisdiction #: A3061910 Equip Tag #: V-2202 Serial #: 200355  
 CRN #: M8324.2 Nat'l Bd #: \_\_\_\_\_ Year Built: 1995  
 Manufacturer: LOCK PROCESS Systems Equipment Description: Other: OIL SEPARATOR  
 Status: In Service - Equip. Type: Vessel: Separator Service: Sweet  
 MAWP Shell: 245 Psi @ 250 °F Volume: \_\_\_\_\_ Code Stamp:  Y  N  
 MAWP Tube: \_\_\_\_\_ @ \_\_\_\_\_ Height/Length: 120 in. Insulated:  Y  N  
 MDMT: -20 °F RT: RT-2 Size/Diameter.: 30 in. O.D. PWHT:  Y  N  
 Support Saddle Vessel on Original CNRL Inventory List:  Y  N Manway:  Y  N  
 C.A.: 0.063 in. Coated: No Clad: No J.E.: 0.90 Remote Access:  - \_\_\_\_\_

Component	Material	Nominal Thk	Diameter	OD/ID	Tube Side	Shell Side
1 Main - Shell		in.	30.000 in.	OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2 West - Head	SA-516-70	0.500 in.	30.000 in.	OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 East - Head	SA-516-70	0.500 in.	30.000 in.	OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4 -		in.	in.	OD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5 -					<input type="checkbox"/>	<input type="checkbox"/>

Static Data: Confirmed  Changed (See Comments)

Comments:

Static data updated  
 Head info. stamped on heads.

**PSV Static Data**

PSV -1 Tag #: 77 Serial #: CE-42803 -1-A11 CRN: OG2369.5C  
 Model #: 26JB10-120 Capacity: 6381 SCFM Set Pressure: 245 psi  
 Manufacturer: Farris Service Company: Tyco  
 Inlet Size & Type: 2.00 in. - Flanged Last Service Date: 06/13/2007  
 Outlet Size & Type: 3.00 in. - Flanged Block Valve: N/A - -  
 Carseal Intact: Yes Code Stamp: Yes  
 Shell Side / Tube Side: Shell Side Out for Service During Insp.: N Location of PSV: On Vessel

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

**PSV Comments**

PSV is due for service



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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	Firmly affixed and legible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation and Supports	<input type="checkbox"/>	Accept	Acceptable condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anchor Bolts	<input type="checkbox"/>	Accept	Secure & tight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grounding	<input type="checkbox"/>	Accept	Grounded by compressor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation Condition	<input checked="" type="checkbox"/>		No insulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSV	<input type="checkbox"/>	Reject	Due for service	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Shell Heads & Nozzles	<input type="checkbox"/>	Accept	Dirt, dust and staining from compressor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal Surfaces (Paint)	<input type="checkbox"/>	Accept	Approximately 2% coating deterioration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Aux Equipment	<input type="checkbox"/>	Reject	Broken electrical equipment on East head	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cathodic Protection	<input checked="" type="checkbox"/>		No external anode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alignment	<input type="checkbox"/>	Accept	Level with skid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange Connections	<input type="checkbox"/>	Accept	Acceptable thread engagement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure Gauge	<input type="checkbox"/>	Accept	0-300 psi: acceptable range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature Gauge	<input type="checkbox"/>	Accept	0-250° F: adequate range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sight Glass	<input type="checkbox"/>	Accept	Visible liquid sight glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladder / Platform	<input checked="" type="checkbox"/>		No ladders or platforms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaks	<input type="checkbox"/>	Yes	Pre-lube Oil Pump P -2200 threaded pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Piping from Vessel	<input type="checkbox"/>	Accept	Adequately supported			
Previous UT Survey	<input type="checkbox"/>	Yes	Locations marked, no history provided	UT Company: N/A		

**External Visual Observations**

There is evidence of a bubbling, weeping leak from Pre-lube Oil Pump P-2200 inlet threaded connection.

There is dirt, dust and staining noted on the vessel and oil staining on the vessel from the overhead compressor.

There is broken electrical equipment on the East head flanged connection. It should be noted the the conduit end is mareded and electrical taped for safety.

The vessel is on a small compressor skid that is well anchored to the building skid.

There is very minor coating deterioration (approximately 2%) noted on the shell and heads that has exposed the base metal to minor surface corrosion with no evidence of pitting.

Minor vibration noted inside the building.

The PSV is due for service

A UT corrosion survey was performed with no significant wall loss recorded at the time of inspection

**Recommendations:**

Isolate the weeping leak from the Pre-lube pump  
 Remove broken electrical equipment  
 Clean and touch up the coating to aid in the protection against corrosion  
 Service the PSV

**T A Recommendation:**

Open West manway and clean for internal inspection at TA



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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 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):**

Leak from Lube-oil pump  
PSV due for service  
Chipped coating exposing base metal to minor surface corrosion  
Broken electrical equipment

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

Isolate the weeping leak from the Pre-lube pump  
Remove broken electrical equipment  
Clean and touch up the coating to aid in the protection against corrosion  
Service the PSV

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

Some absorbant pads were laid down on the floor near the pump

**Additional Visual Observations**

Minor cyclic vibrations noted from pump

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

Adequate hearing protection required



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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 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**



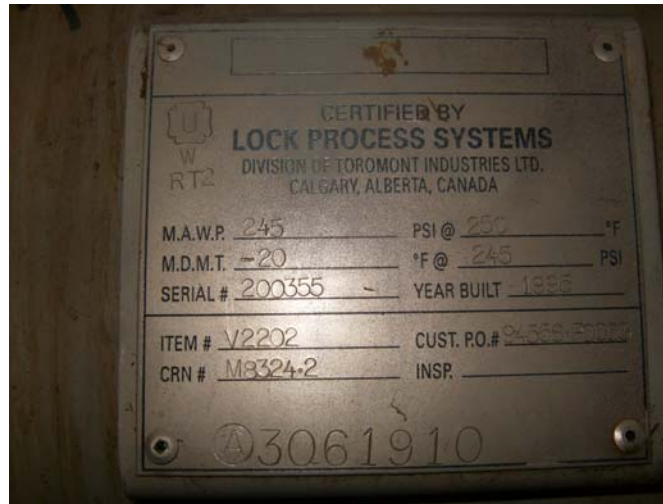
*Yellow*

Vehicle #: 501 Kms: \_\_\_\_\_  
 Time In: 00:00 Time Out: 00:00 Hrs \_\_\_\_\_  
 Time In: 00:00 Time Out: 00:00 Hrs \_\_\_\_\_  
 Personnel: BI, LP  
 Billing Info: AFE :

Inspector (Name): Matthew B Dickinson PESL: 601  
 Inspector (Signature): \_\_\_\_\_ API: 39483  
 CNRL Coordinator (Name): \_\_\_\_\_  
 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:



01 nameplate



02 overview



03 chipped coating



04 broken instrumentation



05 leak on pump



06 PSV overview