**Canadian Natural Resources Ltd.**
**GENERAL PRESSURE VESSEL INFORMATION** **Job# 105.00390**

| | |
|---|---|
| **District: Fort St John, BC** | Skid No. |
| **Facility: Ladyfern Compressor** | **Location (LSD): b-17-I/94-H-01** |
| **Vessel Name Equipment Number: Inlet Separator ( B )** | |
| **Orientation: Horizontal** | |
| **Status: In Service** | **Regulatory Inspection** |

**PRESSURE VESSEL NAMEPLATE DATA**

| | | | |
|---|---|---|---|
| "A" or "G" or "S" (Sask.) or BC Registration Number. **RAE# 5234** | | CRN Number: **P-2191.21** | |
| Vessel serial number: **01150-101** | | Size: **66" X 314"** | |
| Shell thickness: **88.9mm** | | Shell material: **SA-516-70N** | |
| Head thickness: **82.6mm** | | Head material: **SA-516-70N** | |
| Tube wall thickness: | | Tube material: | |
| Tube diameter: | | Tube length: | |
| Channel thickness: | | Channel material: | |
| Design pressure | Shell: **13790 Kpa** | Operating pressure | Shell: **7000 Kpa** |
| | Tubes: | | Tubes: |
| Design Temp. | Shell: **118 deg C** | Operating temperature | Shell: **20 deg C** |
| | Tubes: | | Tubes: |
| X-ray: **RT-1** | | Heat treatment: **Yes** | |
| Code parameters: **ASME Sec VIII** | | Coated: **No** | |
| Manufacturer: **Propak Systems Ltd.** | | Year built: **2001** | |
| Corrosion allowance: **N/S** | | Manway: **Yes** | |

**PRESSURE SAFETY VALVE NAMEPLATE DATA**

| PSV Tag # | Manufacture | Model # | Serial # | Set Pressure (PSI) | Capacity (scfm) | Service Date |
|---|---|---|---|---|---|---|
| **None** | **Mercer** | **95-73.1M1107NSS** | **96366** | **13790** | **144284** | **2004** |
| CRN # | Service By | Block Valve | Location | Size | Code Stamp | |
| **0G2606.5C** | **N/S** | **Yes – Both Locked open** | **Inlet piping** | **4" X 6"** | **UV/NB** | |

**SERVICE CONDITIONS-INDICATE ALL THAT APPLY**

| | | | | |
|---|---|---|---|---|
| Sweet **X** | Sour | Oil | Gas **X** | Water **X** |
| Amine | LPG | Condensate **X** | Air | Glycol |
| Other (Describe): | | | | |

**Inspection Interval** _____ **PSV Service Interval**_____

(Determined by MIC in conjunction with Chief Inspector following guidelines of CNRL's Owner-User Inspection Program)

Reports reviewed and accepted by:

**Mechanical Integrity Coordinator**_____ **Date**_____

**Fill out all forms as completely as possible. <u>All information</u> is important! Use back of sheets to record additional information or sketch if required.**
**Copy of report to be filed by MIC at site, and copy sent to Chief Inspector**

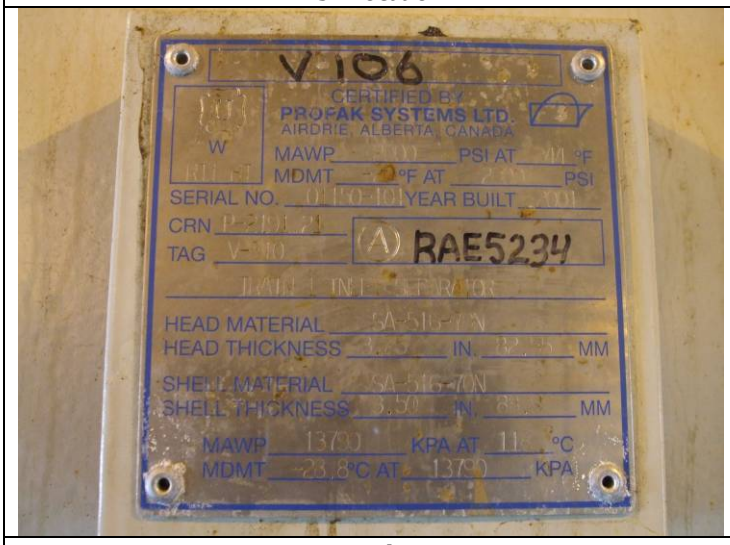
| External Inspection Items | G | F | P | N/A | Comments |
|---|---|---|---|---|---|
| **Insulation** Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture. | | | | X | **Vessel is not insulated.** |
| **External Condition** Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage) | X | | | | **Paint is in good overall condition – No chipped or exposed metal - no previous corrosion.** |
| **Leakage** Record any leakage at flanges, threaded joints, weep holes on repads, etc. | X | | | | **No leaking detected.** |
| **Saddle** Assess condition of paint, fire protection, and concrete. Look for corrosion, buckling, dents, etc. Look at vessel surface area near supports. Verify no signs of leakage at attachment to vessel and attachment welds are acceptable. Ground wire attached? | X | | | | **No distortion to saddles – no leaks at saddle to shell welds.**<br>**No exposed metal – no corrosion.**<br>**Ground cable attached to skid unit & pilings.** |
| **Anchor Bolts** Hammer tap to ensure secure. Look for cracking in treads or signs of deformation. | X | | | | **Separator is firmly bolted to skid floor.**<br>**No signs of deformation.** |
| **Concrete foundation** Check for cracks, spalling, etc. | | | | X | **None.** |
| **Ladder / Platform** Describe general condition, ensure support is secure to vessel, and describe any hazards. | | | | X | **None.** |
| **Nozzle** Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted? | X | | | | **All threads connections fully engaged.**<br>**No deflection – no leaks.**<br>**No gussets.** |
| **Gauges** Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp. | X | | | | **Gauges are visible, appears to be functional, no leaks and suitable for range of MAWP/Temp.**<br>**Pressure gauge: 0-20000 Kpa @ 7000 Kpa.**<br>**Temperature gauge: 0-150 deg C @ 20 deg C.** |
| **External Piping** Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, external corrosion? | X | | | | **Well supported – no deflection – all clamps and shoes in place.**<br>**Piping is painted and in good condition – no exposed metal or surface corrosion found.** |
| **Valving** Ensure no leaks are visible. Valves are properly supported and chained if necessary. | X | | | | **Well supported – no leaks.** |
| **PSV** Ensure PSV is set at pressure at or below that of vessel. | X | | | | **Located on inlet piping - set at the Inlet Separator's MAWP.**<br>**Discharge piping is larger than the inlet to PSV.**<br>**Block valve locked open.**<br>**Seal is intact. PSV vents to flare.** |
| **NDE methods** Was UT/ MPI done on vessel (MI coordinator to review results) | X | | | | **Ultrasonic thickness survey carried out – 3 inch 90 degree nozzle (UT point 455) metal thickness detected below nominal. Nominal 15.2 mm / min thickness 14.6 mm / T min thickness 5.6 mm.** |

**Recommendations or corrective actions : Vessel is Fit for Service or describe corrective actions required)**
**(**MIC to review corrective actions with Operations, discuss with Chief Inspector where necessary, and get remedial action implemented)
**Recommendations: 1. This PSV has not been serviced since 2004 – Servicing is recommended ASAP.**
**Summary:** This vessel is in good over all condition, visual external and ultrasonic thickness survey carried out-3 inch 90 degree nozzle (UT point 455) metal thickness detected below nominal. Nominal 15.2 mm / min thickness 14.5 mm / T min thickness 5.6 mm.
**Vessel is fit for service.**

**Inspected By: Joe Holdstock** **Date: June-02-2010.**


LSD location

Site overview

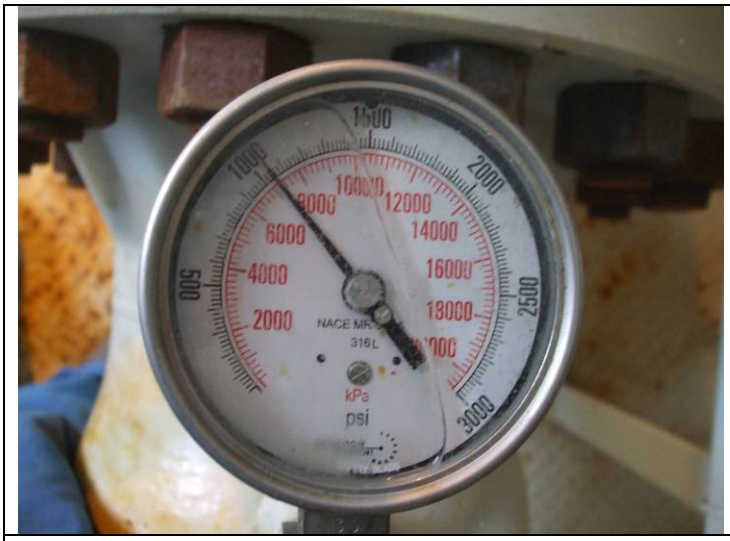
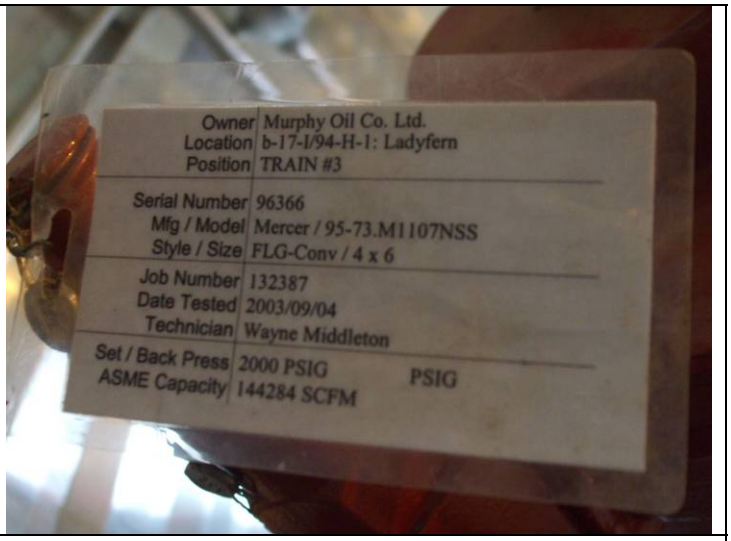
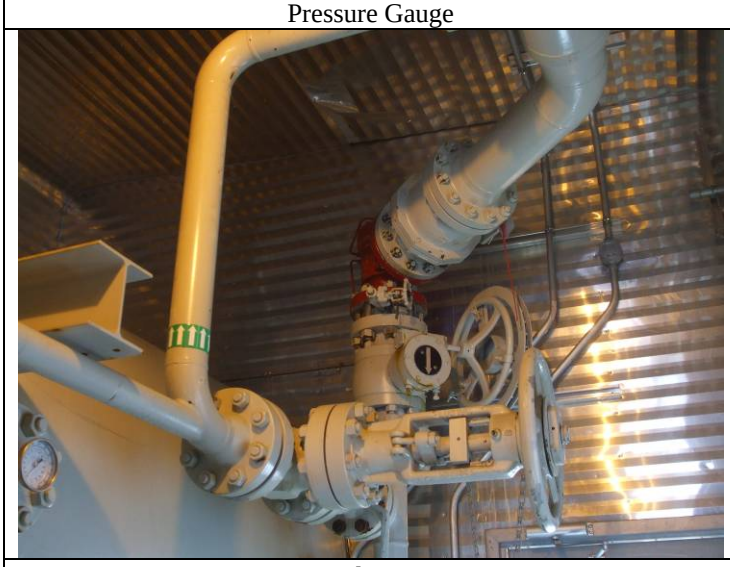



Data plate

Overview

Overview

Temperature gauge

| | |
|---|---|
|  |  |
| Pressure Gauge | PSV data plate – last service 07-2001 |
|  | |
| PSV location | |