

A2710237_Name plate_10Oct2012



Field Inspection Report

| | | | | | | | | | |
|---------------------|---|------------------|--|------------------|----------------|------------|------|----|--|
| Client | CNRL | | Date of Inspection | October 10, 2012 | | | | | |
| Prov. Reg.# | A2710237 | | Inspection Type | VI, VE, UT, MT | | | | | |
| Equipment | Group Treater & Firetube | | Location | Ralston Battery | | | | | |
| Tag/Equip. # | | | LSD | 05-14-018-10W4M | | | | | |
| Vessel Status | In Service | | Comp./Unit # | | | | | | |
| Manufacturer | Natco Canada | | MAWP / Temp | 75 PSIG @ 200 F | | | | | |
| Serial # | L-8-325 | CRN # | H 0995.2 | MDMT@ Pressure | -5 F @ 75 PSIG | | | | |
| Corrosion Allowance | 0.0625" | Shell Material | SA516-70 | Shell Thickness | 0.975" | | | | |
| Year Built | 1991 | Head Material | SA516-70 | Head Thickness | 0.598"/0.667" | | | | |
| Diameter | 8' OD | Length | | Height | | RT | RT-4 | HT | |
| Service | Sour | Next Inspection | | Next Insp. Type | | | | | |
| ASME Stamp | Yes | Next Inspection | | Next Insp. Type | | | | | |
| PSV Tag # | | CRN# | 01832.52 | Set Pressure | 75 PSIG | | | | |
| Manufacturer | Consolidated | | | NB# | | ASME Stamp | | | |
| Type/Model | | Serial | 90C3880 | Inlet Size | 2" | | | | |
| Capacity | 16295 SCFM | Service Company | Tarpon | Outlet Size | 3" | | | | |
| Service Date | October 2010 | | Next Service Date | | | | | | |
| Valve Location | <input type="checkbox"/> On Vessel <input type="checkbox"/> On Piping <input type="checkbox"/> Vents to Flare <input type="checkbox"/> Vents to Atmosphere | Valve Connection | <input type="checkbox"/> Threaded <input type="checkbox"/> Flanged <input type="checkbox"/> Welded | ABSA CODE TYPE | | | | | |
| | | | | Plant | | Process | | | |
| | | | | Vessel | | Special | | | |
| PSV Tag # | | CRN# | | Set Pressure | | | | | |
| Manufacturer | | NB# | | NB# | | ASME Stamp | | | |
| Type/Model | | Serial # | | Inlet Size | | | | | |
| Capacity | | Service Company | | Outlet Size | | | | | |
| Service Date | | | Next Service Date | | | | | | |
| Valve Location | <input type="checkbox"/> On Vessel <input type="checkbox"/> On Piping <input type="checkbox"/> Vents to Flare <input type="checkbox"/> Vents to Atmosphere | Valve Connection | <input type="checkbox"/> Threaded <input type="checkbox"/> Flanged <input type="checkbox"/> Welded | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Manway: Yes.

Background:

PSV: Yes, Service date and set pressure were acceptable, no restriction between the valve and the vessel.



Field Inspection Report

Ladders, Stairs, Platforms & Walkways

Corroded or Broken Parts-
Condition of Coating-
Wear of Ladder Rungs & Stair Treads-
Handrails Secure-
Condition of Flooring on Walkways-
Check Tightness of Bolts-
Check for Corrosion-
Additional comments:

Concrete Supports and Foundations

Steel Supports (Skirts, Bracing)
Check for Corrosion-
Check for Buckling & deflection-
Check Vessel Supports for Tightness-
Check Insulation for Deterioration-
Additional Comments:

Nozzles

Check for Distortion-
If Found; Check Surrounding Shell and Seams for cracks-
Check Condition of Connected Piping and Supports-
Check Condition of Weep Holes in re-pads-
Additional comments:

Electrical, Instrumentation & Grounding Equipment

Sept./06 Check General Condition of Associated Electrical Equipment-
Check General Condition of Associated Instrumentation-
Check Grounding Connections-
Additional comments:

Auxiliary Equipment

Check Gauges and Sensor connections for Defects, Damage, Cracks & Vibration-
Check Sight Glasses for defects, Damage, Cracks & Vibration-
Check Condition and Operation of Associated Valves-
Additional comments:

Metal Surfaces

Check for Corroded Areas-
Check for Cracks at Weld Seams and Nozzles-
Check for Blistering at and below liquid Level-

Internals

Inspection conducted -
Check bubble or step trays for condition
Check vane packing for plugging or mechanical damage
Check down-comers, overflow lines.
Check weirs, baffles, mist pads and coils-
Additional Comments:



Field Inspection Report

Protective: Coatings / Insulation / Cathodic

Check for External Coating Failure-

Check for internal coating –

General Comment's: Group Treater was found to be in good general condition.

External Inspection:

- Name plate was attached and readable.
- External paint was in good condition.
- External insulation needs to be replaced on the South East Middle section.
- Vessel is supported on saddles, shell to saddle welds were in good shape.
- Saddles were bolted securely to the floor.
- All external nozzles were in good condition, no leaking flanges, gaskets, or threaded connections.
- All bolting hardware was intact and secure.
- Associated piping was in good shape.
- Temperature gauge was intact and in good working order.
- Liquid level sight glass was in good shape with no cracks or leaks.
- Shell to wall interface has no seal and no signs of leakage.
- No deflection or deformation of the shell, heads or nozzles.
- Vessel is grounded to the building and ground cable was in good shape.
- PSV was located without restrictions, service date and set pressure acceptable.
- UT survey found no areas of concern, see attached UT Report.
- Burner and burner tip were in good working order.
- Visual inspection on stack identified a 10" long crack that will require welding repairs. Also a smaller crack on the saddle weld that also needs welding repairs.

Internal inspection: Cold End

- Manway davit arm was in good working order.
- Manway nozzle, cover and gasket surfaces were in good shape.
- Head and shell coating was in good shape with no pitting.
- No internal corrosion or erosion found.
- Oil collection box was in good shape, all bolting in place and secure.
- Internal nozzles were in good shape.
- Minor coating repair on manway which was carried out at the time of inspection.
- Level float gauge was intact and the nozzles in good shape.
- Chevron wafer supports were intact and secure. Screens were clean.
- 3" Outlet water dump has severe corrosion at the vik clamp.

Internal inspection: Middle

- Manway nozzle, cover and gasket surfaces were in good shape.
- Davit arm was in good working order.
- Coating repair required on the weir plate.
- Inlet diverter plate was intact and secure.
- Level gauge was intact and secure and the nozzle in good shape.



Field Inspection Report

Internal inspection: Hot End

- East Firetube manway was in good shape
- Manway nozzle, cover and gasket surfaces were in good shape.
- Blind flange manway has coating holidays with corrosion present 0.050" on manway nozzle NE section 6" X 6" in size.
- Firetube supports were intact and in good condition.
- Anode rollers were in good shape. Anode supports in good condition and hangers had all bolting in place.
- Anodes were replaced at the time of inspection.
- Internal nozzles were in good shape with no corrosion present.
- Chevron wafer supports were intact and secure.
- Horse shoe diffuser was secure and all bolting hardware intact.
- Thermocouple was intact and secure.
- South East manway cover in good condition.

Internal Firetube:

- 18" Internal firetube was pulled and inspected by VI, VE, UT and MT
- 100% MPI revealed no areas of concern; see attached MPI Report.
- No internal/external pitting noted.
- UT inspection found no areas of concern; see attached UT Report.

Recommendations:

Repair/Replace damaged section of insulation.

Carry out all required coating repairs.

Carry out welding repairs to the stack.

Continue to carry out visual inspections, UT Corrosion surveys and MPI at the required inspection frequency.

Group Treater is fit for continued service.

X

Blair Verge
Verge's Inspection Services Ltd.

Inspector(s) Blair Verge API 510 Certification #24212

Field Inspection Report



A2710237_Name plate_10Oct2012



A2710237_South East side view_10Oct2012



A2710237_Damaged insulation_10Oct2012



A2710237_North shell_10Oct2012

Field Inspection Report



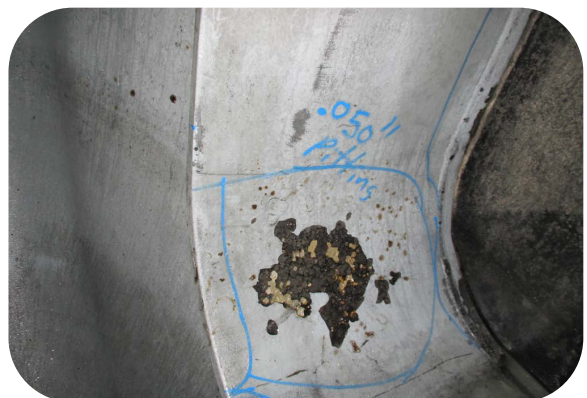
A2710237_Firetube manway_10Oct2012



A2710237_Manway nozzle in good shape_10Oct2012



A2710237_Sealed manway nozzle pitting_10Oct2012

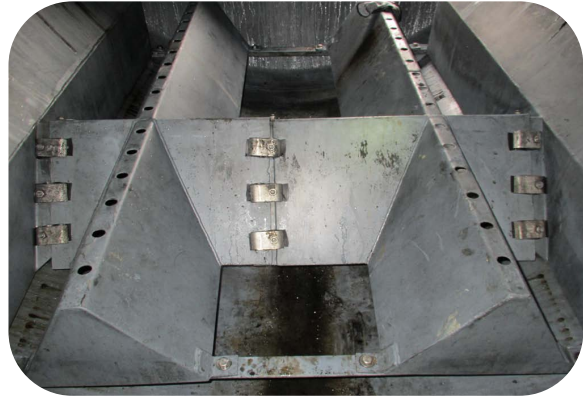


A2710237_Pitting 0.050" deep_10Oct2012

Field Inspection Report



A2710237_Close up of the nozzle pitting_10Oct2012



A2710237_Firetube supports_10Oct2012



A2710237_Supports intact and secure_10Oct2012

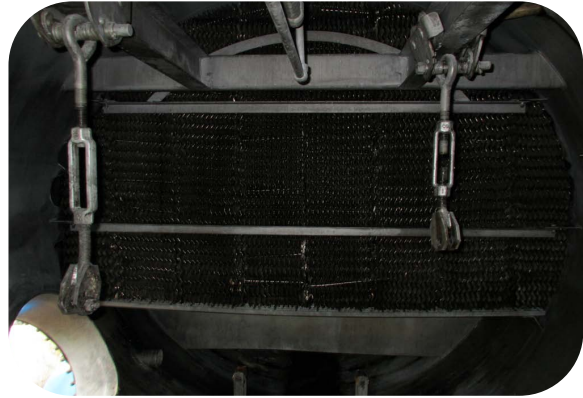


A2710237_Horse shoe diffuser_10Oct2012

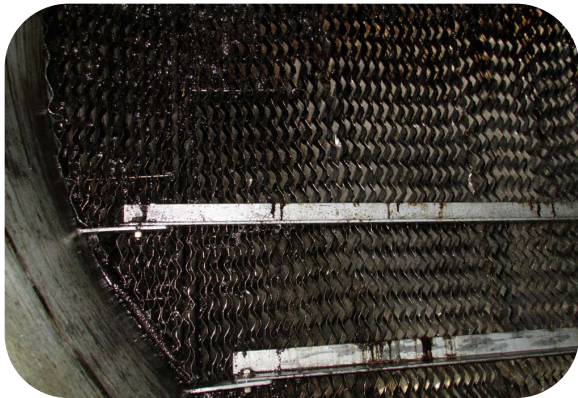
Field Inspection Report



A2710237_Horse shoe diffuser_10Oct2012



A2710237_Internals intact_10Oct2012



A2710237_Chevron Waffle Plate_10Oct2012



A2710237_South East manway and cover_10Oct2012

Field Inspection Report



A2710237_South east manway_10Oct2012



A2710237_Lower shell in good shape_10Oct2012



A2710237_Level float gauge_10Oct2012



A2710237_Inlet deflector_10Oct2012

Field Inspection Report



A2710237_Chevron waffer plate_10Oct2012



A2710237_South West manway_10Oct2012



A2710237_Manway cover
internal_10Oct2012



A2710237_3" Water dump_10Oct2012

Field Inspection Report



A2710237_Severe corrosion of the vic clamp_10Oct2012



A2710237_West head and Davit arm_10Oct2012



A2710237_Manway gasket_10Oct2012



A2710237_Manway cover internal_10Oct2012

Field Inspection Report



A2710237_Coating repairs on the manway nozzle_10Oct2012



A2710237_Internals intact_10Oct2012



A2710237_Coating repair on weir plate_10Oct2012



A2710237_Oil collection box_10Oct2012

Field Inspection Report



A2710237_Stack_10Oct2012



A2710237_10" Crack identified_10Oct2012



A2710237_Burner_10Oct2012



A2710237_Burner tip_10Oct2012

Field Inspection Report



A2710237_Burner assembly_10Oct2012



A2710237_18" Internal firetube_10Oct2012



A2710237_UT and MPI
inspections_10Oct2012



A2710237_MPI of the miter
joints_10Oct2012

Field Inspection Report



A2710237_MPI of the tube sheet
flanges_10Oct2012



A2710237_Tube to tube sheet
MPI_10Oct2012



A2710237_No indications found_10Oct2012