

**Canadian Natural Resources Limited
GENERAL PRESSURE VESSEL INFORMATION**

Job # 10.112837

| | |
|--------------------------------------|----------|
| District: Fort St. John North | Skid No. |
|--------------------------------------|----------|

| | |
|---|---------------------------------------|
| Facility: Chowade Compressor Station | Location (LSD): c-29-L/94-B-09 |
|---|---------------------------------------|

Tank Name / Equipment Number: **400 bbl Produced Water Storage Tank**

Orientation: **Vertical**

| | |
|---------------------------|------------------------------|
| Status: In Service | Regulatory Inspection |
|---------------------------|------------------------------|

PRESSURE VESSEL NAMEPLATE DATA

| | |
|---|-------------|
| “A” or “G” or “S” (Sask.) or BC Registration Number. RAE 3637 | CRN Number: |
|---|-------------|

| | |
|-------------------------------|-----------------------|
| Tank serial number: 40325-900 | Size: 12 ft. x 20 ft. |
|-------------------------------|-----------------------|

| | |
|-------------------------|---------------------|
| Shell thickness: 4.8 mm | Shell material: A36 |
|-------------------------|---------------------|

| | |
|--------------------------|----------------------|
| Bottom thickness: 6.4 mm | Bottom material: A36 |
|--------------------------|----------------------|

| | |
|-----------------|----------------|
| Deck thickness: | Deck material: |
|-----------------|----------------|

| | |
|----------------|--------------|
| Tube diameter: | Tube length: |
|----------------|--------------|

| | |
|--------------------|-------------------|
| Channel thickness: | Channel material: |
|--------------------|-------------------|

| | | | |
|-----------------|--------------|--------------------|--------|
| Design pressure | Shell: 8 oz. | Operating pressure | Shell: |
| | Tubes: | | Tubes: |

| | | | |
|--------------|--------|-----------------------|--------|
| Design Temp. | Shell: | Operating temperature | Shell: |
| | Tubes: | | Tubes: |

| | |
|-----------|--------------------|
| X-ray: No | Heat treatment: No |
|-----------|--------------------|

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|--------------------------|-------------|
| Code parameters: API 12F | Coated: N/S |
|--------------------------|-------------|

| | |
|---------------------|------------------|
| Manufacturer: NUSCO | Year built: 1994 |
|---------------------|------------------|

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|--------------------------|-------------|
| Corrosion allowance: N/S | Manway: Yes |
|--------------------------|-------------|

PRESSURE SAFETY VALVE NAMEPLATE DATA

| PSV Tag # | Manufacture | Model # | Serial # | Set Pressure (kPa) | Capacity (scfm) | Service Date |
|-----------|-------------|---------|----------|-----------------------|--------------------|-----------------|
| | | | | | | |

| CRN # | Service By | Block Valve | Location | Size | Code Stamp |
|-------|------------|-------------|----------|------|------------|
| | | | | | |

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

| | | | | |
|-------|--------|------------|-----|---------|
| Sweet | Sour X | Oil | Gas | Water X |
| Amine | LPG | Condensate | 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. All information 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 | | | | Cladding in good overall condition – isolated area of torn cladding – no exposed metal – no egress of moisture |
| External Condition Assess paint condition, areas peeling, record any corrosion, damage, etc (record location, size and depth of corrosion or damage) | X | | | | Tanks insulated to 100% including bottom |
| Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc. | X | | | | No leaks observed |
| Base Assess condition of paint, fire protection, concrete. Look for corrosion, buckling, dents, etc. Is tank mounted above ground water level – on pilings? Ground wire attached? | X | | | | Tanks sits above ground on pilings – support steel in good condition – no buckling or dents – no corrosion – ground wire attached to pilings |
| Anchor Bolts Hammer tap to ensure secure. Look for cracking in treads or signs of deformation. Is tank resting on deck – welded to supports? | X | | | | Tank is securely welded to pilings – no deformation |
| Concrete foundation There may be a concrete ring under the tank. Check for cracks, spalling, etc. | | | | X | None |
| Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards. | X | | | | Ladder in good overall condition – secured directly to tank – no loose or missing sections |
| Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted? | X | | | | Paint in good condition – no leaks – stud threads fully engaged – no damage or deflection – nozzles are not gusseted |
| Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp. Remember some tanks require fuel gas or other positive protection so a pressure gauge may be installed. | X | | | | Gauges are clean and functional – within range for service |
| External Piping Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, insulation condition, any wet insulation, any external corrosion? | X | | | | Piping is well supported – all clamps in place – no evidence of structural overload – no deflection – paint in good condition – no open or torn insulation cladding |
| Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary. | X | | | | Valves properly supported – no evidence of leaks |
| PSV Ensure PSV is set at pressure at or below that of vessel. | X | | | | No PSV – thief hatch located on top of tank |
| NDE methods Was UT/ MPI done on vessel (MI coordinator to review results) | X | | | | Ultrasonic corrosion survey carried out, no metal thickness detected below nominal. |
| Secondary Containment This may be a double wall tank with a pressure gauge or level gauge indicator. Also a concrete or steel dike with vinyl liner – describe. | X | | | | Secondary containment is steel dike with vinyl liner – good overall condition – no apparent tears or damage |
| 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: No recommendations at this time. Summary: Tank is in overall good condition, visual external inspection and ultrasonic corrosion survey performed—no metal thickness detected below nominal. Tank is fit for service | | | | | |

Inspected By: Andrew NEis / D. Wiedman

Date: March 1, 2013

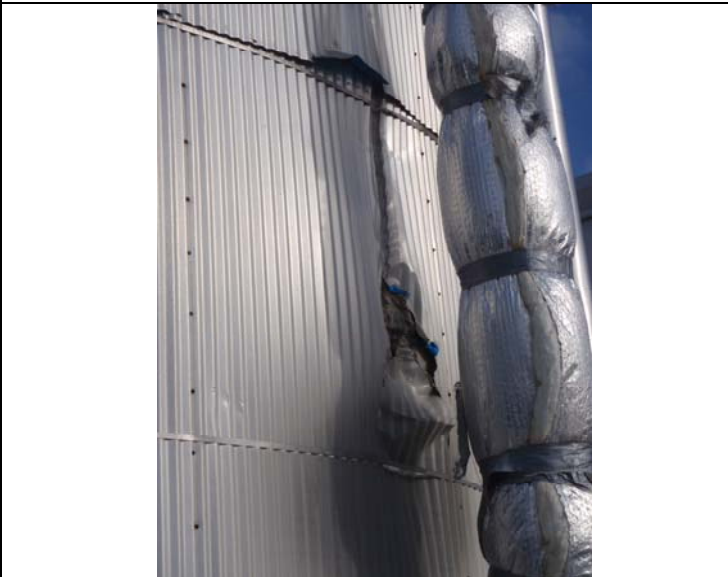
Photo Table



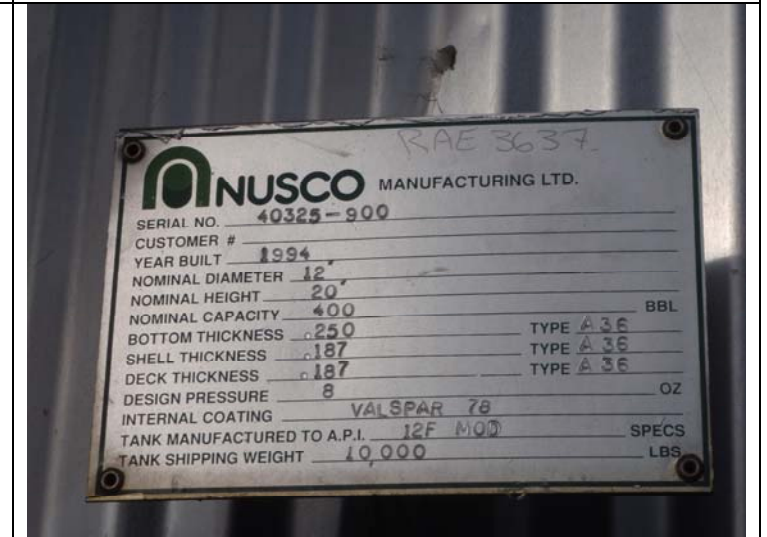
LSD



Overview



Torn Cladding



Data Plate