

**Field Inspection Report**

Vessel # 228209

|                |                                 |                  |                 |                 |              |    |    |
|----------------|---------------------------------|------------------|-----------------|-----------------|--------------|----|----|
| Client         | Canadian Natural Resources Ltd. |                  | Inspection Date | 2003-06-23      |              |    |    |
| Prov. Reg.#    | 228209                          |                  | Insp. Type      | VENIUT          |              |    |    |
| Equipment      | Treater                         |                  | Location        | East Watts      |              |    |    |
| Tag/Equip. #   |                                 |                  | LSD             | 4-9-31-16W4     |              |    |    |
| Vessel Status  | In Service                      |                  | Comp./Unit      |                 |              |    |    |
| Manufacturer   | Nalco                           | Serial #         | L8227           | MAWP/Temp       | 345 kPa 93 C |    |    |
| CRN #          | F5837.2                         | Shell Material   | SA-516-70       | Shell Thick.    | 7.900 mm     |    |    |
| Corrosion All. | mm                              | Head Material    | SA-516-70       | Head Thick.     | 9.500 mm     |    |    |
| Manway         | Yes                             | Head Material 2  |                 | Head Thick. 2   | mm           |    |    |
| Coating        | No                              | Channel Material |                 | Channel Thick.  | mm           |    |    |
| Diameter       | 2438 mm                         | Length           | 7625mm          | Height          | mm           | RT | HT |
| Year Built     | 1985                            | Next Inspection  | 2005            | Next Insp. Type | NA           |    |    |
| Service        | Sweet                           |                  |                 | Job #           | 03-268       |    |    |

|                 |            |              |                        |              |           |
|-----------------|------------|--------------|------------------------|--------------|-----------|
| PSV #.          | 29995A10   |              |                        |              |           |
| Mfg.            | Farris     | Serial #     | 29995A10               | Set Pressure | 345 kPa   |
| Type/Model      |            | Capacity     | 44 M <sup>3</sup> /Min | Size         | 76.200 mm |
| Date of Service | 2003-06-01 | Next Service | 2007                   | Service Co.  |           |

**Observations:**

External

Coating still in serviceable condition. No active external corrosion. All valves, level glasses, gauges and controllers appear to be in good working order. Vessel inside - mounted on rail. The external part is fully insulated. The insulation is in good serviceable condition. PSV discharge is sufficient.

AB-40 to be attached

**RAE Engineering and Inspection Ltd.**

Date Printed 2003/06/30

#111,4808 - 87 Street, Edmonton, Alberta T6E 5W3

Phone: (780) 469-2401 Fax (780) 468-2422

**Field Inspection Report**

Vessel # 228209

**Internal**

West Side (firtubes). The interior was steam cleaned. Previous patch repairs on bottom of vessel still intact, no blisters or cracking evident. All internals intact and in good condition. Weir was found to be in good condition. No cracking on welds. The anodes were 30% consumed and replaced.

East Side - Delaminating and blistering of patch repairs evident. No open surface on metal. The internal was found to be in good condition - free of any active corrosion. All flanges in good condition.

Firtubes - UT wall thickness readings were taken and no significant metal loss could be detected. MPI was done on circular welds. No cracking evident. Slight isolated pit marks noted on both firtubes, less than 0.6 mm deep. The firtubes were found to be fit for service.

**UT**

Measurements in mm

Shell - 8.6 - 8.7

Head - 9.9 - 10.2

**Recommendations:**

1. Touch paint up on external piping.
2. Monitor patch repairs on internal coating yearly.
3. Fit for service.

Inspector: Hannes Roberts



Reviewed by:



AB-40 to be attached

**RAE Inspection Service (1979) Ltd.**

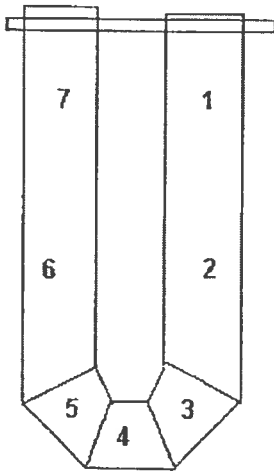
#111, 4808 - 87 Street, Edmonton, Alberta T6E 5W3

Phone: (780) 469-2401 Fax: (780) 468-2422

**Vessel Drawing  
(not to scale)**

|                      |         |                       |                 |                        |        |
|----------------------|---------|-----------------------|-----------------|------------------------|--------|
| <b>Client</b>        | CNRL    |                       | <b>Location</b> |                        |        |
| <b>Prov. Reg.#</b>   | 228209  |                       | <b>LSD</b>      | 4-9-31-16W4            |        |
| <b>Equipment</b>     | Treater |                       |                 |                        |        |
| <b>Diameter</b>      |         | <b>Shell Material</b> | SA-516-70       | <b>Shell Thickness</b> | 7.9 mm |
| <b>Length/Height</b> |         | <b>Head Material</b>  | SA-516-70       | <b>Head Thickness</b>  | 9.5 mm |

**FIRETUBE**



|    | LEFT       | RIGHT      |
|----|------------|------------|
| 1. | 9.3 TO 9.6 | 9.4 TO 9.6 |
| 2. | 9.4 TO 9.5 | 9.3 TO 9.7 |
| 3. | 9.3 TO 9.7 | 9.7 TO 9.8 |
| 4. | 9.2 TO 9.4 | 9.7 TO 9.9 |
| 5. | 9.4 TO 9.6 | 9.6 TO 9.4 |
| 6. | 9.4 TO 9.7 | 9.6 TO 9.7 |
| 7. | 9.5 TO 9.7 | 9.3 TO 9.5 |