

| | | |
|-------------------------------------|--------------------------------|-------------------------------|
| Facility: MARIE LAKE BOOSTER | Date: September 3, 2008 | Report #: IR080903GENa |
|-------------------------------------|--------------------------------|-------------------------------|

| | |
|--------------------------------------|----------------------------|
| Area Supervisor: ROGER BUREAU | W.O. / C.C.#: 70975 |
|--------------------------------------|----------------------------|

| STATIC DATA | | | |
|---------------------|------------------------------|--------------------|-----------------------|
| Alberta Reg. #: | 411708 | CRN: | L-7077.2 |
| Equipment Number: | 66043804 | Notification #: | 6068790 |
| Manufacturer: | ROSEDALE PRODUCTS INC | Classification: | - |
| Equip. Description: | INLET GAS FILTER | Serial Number: | RD-5292 |
| Equipment Tag #: | - | Location (LSD): | 15-15-065-02W4 |
| Year Built: | 1999 | Company I.D.#: | BC-034760 |
| Province Installed: | ALBERTA | Skid / Building #: | - |
| Registration #: | - | U1A Available: | YES |
| Nameplate Attached: | YES | Legible: | YES |

| | | | | | | | | | | |
|-----------|------|-----|-----------------|------|-----|----------------|---------------|-------------|-----------|----------|
| MAWP: | 1034 | Kpa | Diameter: O.D. | 457 | mm | Radiography: | NO | Efficiency: | - | |
| MAWT: | 204 | °C | Diameter: I.D. | 445 | mm | Stress Relief: | NO | Code Stamp: | U | |
| MDMT: | -29 | °C | Length: | s/s | 991 | mm | Ext. Coating: | YES | Position: | VERTICAL |
| Capacity: | - | m3 | Overall Length: | 2362 | mm | Insulated: | YES | Support: | LEGS | |

| | | | | | | | | | | | |
|--------------------|------------|-------|------------|------------|----------|----|----------------|-----------------|-------|----------|-----|
| Internal Coating: | NO | Type: | - | Thickness: | - | mm | Manway: | NO | Size: | - | mm |
| Internal Cladding: | NO | Type: | - | Thickness: | - | mm | Test Pressure: | - | | | kpa |
| Inspection Port: | YES | Size: | 457 | mm | - | mm | Location: #1 | TOP HEAD | #2 | - | |

| | Type | Material | Thickness | Corrosion Allowance |
|-------------|-------------------|------------------|----------------|---------------------|
| SHELL | - | SA-53B | 6.35 mm | - mm |
| TOP HEAD | ELLIPTICAL | SA-516-70 | 6.35 mm | - mm |
| BOTTOM HEAD | ELLIPTICAL | SA-516-70 | 6.35 mm | - mm |

| Nozzle Description | I.D. # | NPS | Flange Rating | Type | Material | Thickness | Length |
|--------------------|----------|---------------|---------------|-------------|------------------|---------------|---------------|
| Inlet | - | 203 mm | 150 # | RFWN | SA-234WPB | 8.2 mm | 152 mm |
| Outlet | - | 203 mm | 150 # | RFWN | SA-234WPB | 8.2 mm | 813 mm |

| PROCESS DATA | | | |
|----------------------|--------------------|------------------------|----------------|
| Product Description: | NATURAL GAS | Service: | SWEET - |
| Operating Pressure: | - Kpa | Operating Temperature: | - °C |

| PSV STATIC DATA | | | |
|------------------|-------------------------------|-----------------|----------------------|
| Tag Number: | - | Manufacturer: | TAYLOR |
| Company I.D. #: | - | Model # / Type: | T-7900-2 |
| Serial Number: | 72205-45 | CRN: | OG1316.2341YT |
| Inlet Size: | 25 mm | Rating: | - # |
| Set Pressure: | 1034 Kpa | Back Pressure: | - Kpa |
| Outlet Size: | 25 mm | Rating: | - # |
| Capacity: | 667 SCFM | Service Date: | 09/2006 |
| Location of PSV: | ON FILTER INLET PIPING | | |

| INSPECTION DETAILS | | | | | | | | | |
|-----------------------|------------------------|-----------------------|-----------|---------------|-----------|----------|----------|----------|--|
| Inspection Reason: | CODE INSPECTION | Inspections Required: | VE | UT | | | | | |
| Inspection Test Plan: | - | Inspection Type Used: | VE | UT | | | | | |
| Last Inspection Date: | - | Next Inspection Type: | VE | VI | UT | | | | |
| Next Inspection Due: | 2013 | Outstanding Repairs: | NO | RBI Category: | A | B | C | D | |

| VESSEL STATUS | | | |
|---|---------------------------------------|-------------------|--|
| Integrity Status: | SUITABLE FOR CONTINUED SERVICE | Inventory Status: | ISF |
| This IR completes a thorough inspection; reschedule as indicated. | | YES | Partial inspection; do not reschedule. |

INSPECTION SUMMARY

A thorough inspection to verify the equipments integrity was done by VE and UT.
 There were no rejectable defects observed at this time; the vessel can be recommended fit for service.
 There were no repairs performed that were related to this inspection.
 No NCR's were issued at this time.
 No IDR's were issued at this time.
 There was no internal inspection performed at this time.
 There was no internal NDE performed during this inspection.

WO# **6071550**

EQ # **66043804**

NO # **6068790**

Copied ☒

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Entered **SB**

HDMS Linked

RECOMMENDATIONS

The missing anchor bolts should be installed and the loose one should be tightened.

REPAIRS COMPLETED

Facility: **MARIE LAKE BOOSTER** Date: **September 3, 2008** Report #: **IR080903GENa**

INSPECTION OBSERVATIONS

NON COMPLIANCES ISSUED

INSPECTION DEFICIENCIES ISSUED

EXTERNAL VISUAL INSPECTION

The nameplate is in tact and legible.
The pressure retaining welds are in tact with no evidence of deterioration or visible cracking.
The vessel support is in good condition with no evidence of mechanical deterioration.
An anchor bolts are loose, and one is missing.
The vessel's ground connection is through the skid's ground rod.
The vessel is protected by a PSV that is in fair condition.
The vessel is painted with some chips and scratches.
The piping and piping attachments are in fair condition with no detectable leaks.
The piping bolt up grading is B7 and 2H.
The attached piping is painted with no notable defects.

EXTERNAL NDE

NDE inspections were performed by Silvertip Inspection Services Ltd.
Some of the UT values recorded on the vessel are slightly below nominal.
See the attached NDE reports for more detailed information.

INTERNAL VISUAL INSPECTION

INTERNAL NDE

PRESSURE TESTS

Test Completed: - Test Pressure: - Kpa Test Acceptable: - Test Report #: -

INSPECTOR CERTIFICATION AND ACCEPTANCE

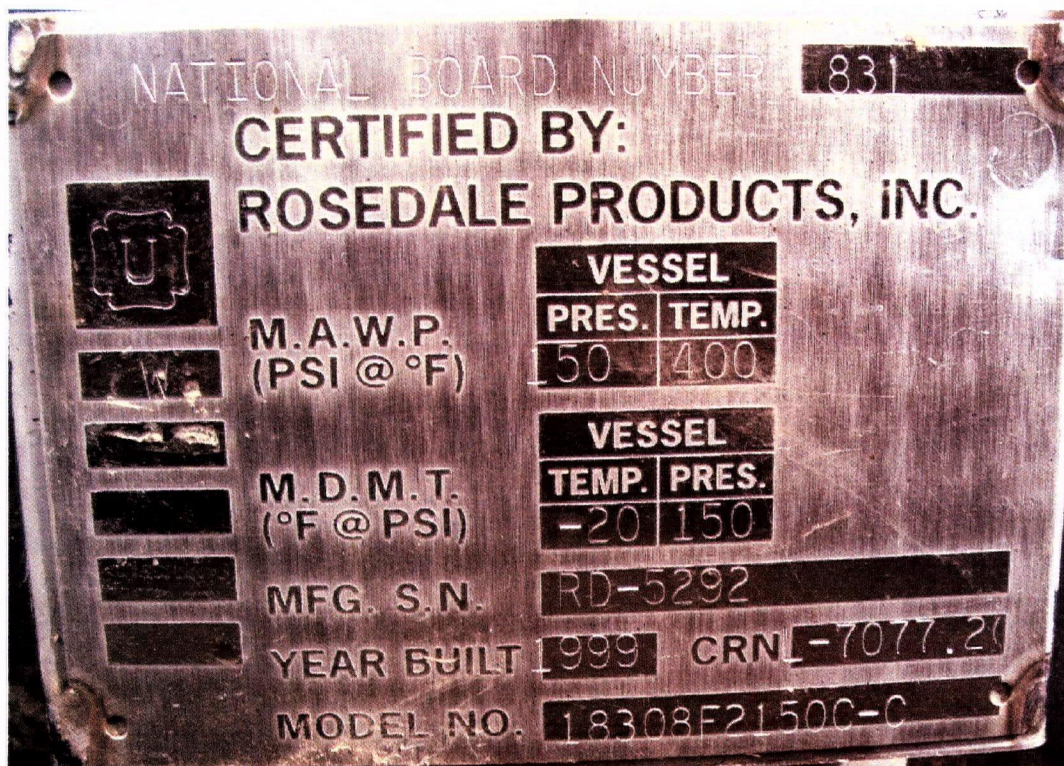
I, the undersigned, certify that the equipment stated above has been inspected in accordance with the assigned task list and that the statements within this report are correct and represent my inspection findings.

| | | | |
|----------------------------|--------------------------------------|------------------------|--------------------------|
| External Inspector's Name: | Inspector's Certification: | Inspector's Signature: | Date: |
| GUY NORMAND C.E.T. | API 510, 653, ABSA PESL, NACE | | SEPTEMBER 3, 2008 |
| Internal Inspector's Name: | Inspector's Certification: | Inspector's Signature: | Date: |
| - | - | - | - |

CHIEF OR LEAD INSPECTOR'S ACCEPTANCE AND SCHEDULE CONFIRMATION

| | | | | | |
|-----------------------------|----------------------------|------------------------|--------------------------|----------------|------------|
| Inspector's Name: | Inspector's Certification: | Inspector's Signature: | Date: | | |
| JIM RICE | | | sept 29 08 | | |
| Vessel Inspection Interval: | Leave "As Is": | Change to: | PSV Inspection Interval: | Leave "As Is": | Change to: |
| 5 Years | | Years | 5 Years | | Years |

Office Use Only: Report Entered to SEQA Database by: _____ Date: _____
Static Data Verified by: _____ Date: _____



NAMEPLATE



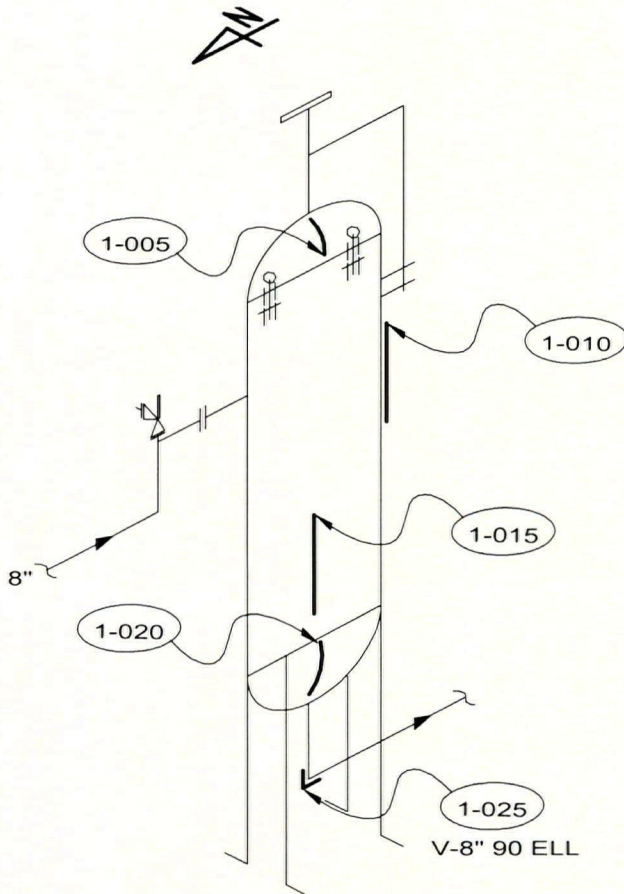
OVERALL VIEW



LOOSE AND MISSING ANCHOR BOLT

VESSEL UT REPORT

| | | | | | | | | | | | |
|--------------------------------------|--|-------------------------|-------------------------|--------------------------|-----------|--------------------------------|--|------------------------|--|--------|--|
| FACILITY: MARIE LAKE BOOSTER | | | | DATE: SEPTEMBER 03, 2008 | | | | REPORT #: IR080903GENa | | | |
| AREA SUPERVISOR: ROGER BUREAU | | | | | | | | W.O. / C.C.# 70975 | | | |
| STATIC DATA | | | | | | | | | | | |
| Alberta Reg. #: 411708 | | | CRN: L-7077.2 | | | National Board #: 831 | | | | | |
| Equipment Number: 66043804 | | | Notification #: 6068790 | | | Vessel Class: | | | | | |
| Manufacturer: ROSEDALE PRODUCTS INC | | | | | | Serial Number: RD-5292 | | | | | |
| Equip. Description: INLET GAS FILTER | | | | | | Location (LSD): 15-15-065-02W4 | | | | | |
| Equipment Tag #: - | | | Year Built: 1999 | | | Company I.D #: BC-034760 | | | | | |
| Province Installed: ALBERTA | | | Registration #: - | | | Skid / Building #: - | | | | | |
| MAWP: 1034.2136 Kpa | | Diameter: O.D. 457.2 mm | | Radiography: NO | | Nozzle Rating: - # | | Position: VERTICAL | | | |
| MAWT: 204.44444 °C | | Diameter: I.D. 444.5 mm | | Stress Relief: NO | | Code Stamp: U | | Support: LEGS | | | |
| MDMT: -28.88889 °C | | Length: S/S 990.6 mm | | External Coating: YES | | Capacity: m3 | | Insulated: YES | | | |
| Internal Coating: NO | | Thickness: mm | | Internal Cladding: NO | | Type: - | | Thickness: mm | | | |
| | | Material | | | Thickness | | | Corrosion Allowance | | | |
| Shell | | SA-53B | | | 6.35 mm | | | 0.00 mm | | | |
| Top Head | | SA-516-70 | | | 6.35 mm | | | 0.00 mm | | | |
| Bottom Head | | SA-516-70 | | | 6.35 mm | | | 0.00 mm | | | |
| Nozzle Descrippton | | I.D. # | NPS | Flange Rating | Type | Material | | Thickness | | Length | |
| Inlet | | - | 203 mm | 150 # | RFWN | SA-105N | | 8.2 mm | | 152 mm | |
| Outlet | | - | 203 mm | 150 # | RFSO | SA-105N | | 8.2 mm | | 813 mm | |
| PROCESS DATA | | | | | | | | | | | |
| Product Description: | | | | NATURAL GAS | | | | Service: SWEET | | | |
| Operating Pressure: | | | | Kpa | | Operating Temperature: | | | | °C | |



NOTES:
ALL VALUES ARE IN METRIC UNITS
FOR FITTINGS THE CORROSION ALLOWANCE IS
EQUAL TO 12.5% MILL TOLERANCE

S.O.B. = START OF BAND
E.O.B. = END OF BAND
LOW POINT= LOWEST READING IN THE BAND

| TML | TML LOCATION | | THICKNESSES | | | UT READINGS - POINTS | | | | | | LOW RDG @ POINT | BELOW NOMINAL | BELOW MINIMUM |
|------|------------------|-------|-------------|-----|------|----------------------|-----|-----|-----|-----|-----|--------------------|------------------|------------------|
| | ITEM | DESC. | NOM. | C.A | MIN. | 1 | 2 | 3 | 4 | 5 | 6 | | | |
| 1-15 | BOTTOM OF SHELL | T-B | 6.4 | 0 | - | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 1 | 0.1 | - |
| 1-10 | TOP SHELL | T-B | 6.4 | 0 | - | 6.3 | 6.4 | 6.3 | 6.3 | 6.3 | 6.4 | 5 | 0.1 | - |
| 1-20 | BOTTOM HEAD | T-B | 6.4 | 0 | - | 6.5 | 6.1 | 6.1 | 6.1 | 6.0 | - | 5 | 0.3 | - |
| 1-25 | V-8" O/L 90° ELL | T-B | 8.2 | 1.0 | 7.2 | 8.6 | 8.6 | 8.7 | 8.7 | 8.3 | 8.3 | 5 | - | - |
| 1-05 | TOP HEAD | B-T | 6.4 | 0 | - | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | - | 2 | 0.2 | - |

Husky Energy

PRESSURE VESSEL INSPECTION REPORT

PAGE : 1 of 2

| | | | | | |
|----------|-------------------|------|-----------------|----------|-------------------|
| FACILITY | Jackfish Creek CS | DATE | August 22, 2002 | REPORT # | IR_020822_MKY- 10 |
|----------|-------------------|------|-----------------|----------|-------------------|

| VESSEL STATIC DATA | | | | | |
|--|---|--------------|--|---|---|
| Prov. Insp. # | A 0411708 | | CRN | L-7077.2 | |
| Equipment Location (LSD) | 15-15-65-02 W4M "Marie Lake South" Booster | | | Equip Tag # | N.B # 831 |
| Equipment Description | Sand Filter/ Separator (S. side of comp. Skid) | | | Serial # | RD-5292 |
| Manufacturer | Rosedale Products Inc. | | | Year Built | 1999 |
| MAWP | 150 | psig | @ | 400 | °F |
| CODE : UM <input type="checkbox"/> U <input checked="" type="checkbox"/> U2 <input type="checkbox"/> | ASME Sect VIII, Div 1 | | RT : 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> | PWHT : | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> |
| Diameter | 16" | Length (T/T) | 42" | (OAL) | 58" |
| Shell Mat'l | unknown | Thickness | unknown | Mm/ in | Corr Allowance unknown Mm/ in |
| Head Mat'l | unknown | Thickness | unknown | Mm/ in | Corr Allowance unknown Mm/ in |
| Nozzle Mat'l | | Thickness | | Mm/ in | Corr Allowance Mm/ in |
| Internal Coating : | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | | Internal Clad : | YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> | |
| Manway : | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> | | Inspection Port : | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> | |
| Nozzle Rating | 150 | lb ANSI | Painted : | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> | |

| PROCESS DATA | |
|-----------------------|--------|
| Product Description | Gas |
| Operating Pressure | 6 psig |
| Operating Temperature | 48 °F |

| PSV STATIC DATA | | | | | | | |
|------------------|-----------------|------------|-------------|--------------|----------|--------------|--------------|
| Tag / Serial No. | Location | Inlet Size | Outlet Size | Set Pressure | Capacity | Manufacturer | Model / Type |
| 77205-45 | On inlet piping | 2" | 2" | 150 psi | 687 scfm | Taylor | T-7900-2 |
| | | | | | | | new |

| INSPECTION HISTORY | | | | | | | | | |
|--------------------------------|---|----|----|----------------------|----|----|---|---------------------|--|
| RBI Category | A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> | | | Last Inspection Date | | | W.O. # 6016610 | | |
| Inspection Task List # | | | | Inspection Type | | | Inspection Reason No inspection history | | |
| Inspection Techniques Required | | | | Next Inspection Type | | | Due Date | | |
| VE | VI | RT | UT | MT | PT | PT | TT | Outstanding Repairs | |
| X | | | X | | | | | | |

| INSPECTION SUMMARY |
|---|
| Vessel has very good external appearance. |
| No significant findings. |
| Vessel is suitable for continued service. |

| RECOMMENDATIONS |
|-----------------|
| |

| REPAIRS COMPLETED | | | |
|-------------------|-------|--------|-----------------|
| Object Name | Cause | Damage | Repair Activity |
| | | | |

| VESSEL STATUS | | | |
|--|--|---|---|
| Integrity Status | <input checked="" type="checkbox"/> Suitable for Continued Service | <input type="checkbox"/> Immediate Repairs Required | <input type="checkbox"/> Replace |
| Inventory Status | <input checked="" type="checkbox"/> Inservice Fully Utilized | <input type="checkbox"/> Future Repairs Required | <input type="checkbox"/> Scrap |
| This IR completes a thorough inspection. Reschedule as indicated | | <input checked="" type="checkbox"/> | Partial IR only. Do not reschedule <input type="checkbox"/> |

PRESSURE VESSEL INSPECTION REPORT

PAGE : 2 of 2

| | | | | | |
|-----------------|--------------------------|-------------|------------------------|-----------------|--------------------------|
| FACILITY | Jackfish Creek CS | DATE | August 22, 2002 | REPORT # | IR_020822_MKY- 10 |
|-----------------|--------------------------|-------------|------------------------|-----------------|--------------------------|

INSPECTION OBSERVATIONS**NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED****EXTERNAL VISUAL INSPECTION**

The vessel has very good external appearance. Some minor rust staining.

Foundation and legs are in good condition.

Piping and nozzles are in good alignment and are well supported. Bolts are secure.

Fasteners and davit arm support for removable top are in good condition.

No signs of leakage.

Note – Provincial registration number is die stamped on edge of inlet flange.

EXTERNAL NDE EXAMINATION

Ultrasonic wall thickness measurements were performed at random locations.

No significant findings, current wall thickness is acceptable. See calculations for minimum allowable thickness (low grade steel and low joint efficiency used).

INTERNAL VISUAL INSPECTION**INTERNAL NDE EXAMINATION****PRESSURE TEST**

Test Completed ☐ Yes ☐ No Test Acceptable ☐ Yes ☐ No Test Report #

INSPECTOR CERTIFICATION

I, the undersigned certify that the above equipment has been inspected in accordance with the assigned task list and that statements within this report are correct and represent inspection findings

Inspectors Name **Manley Yuen**

Inspector's Signature *Manley Yuen*

Inspection Company **Ramtech Consulting Inc.**

Date **August 22, 2002**

LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION

Lead Inspector **Greg Murray**

Signature *Greg Murray*

Date *Oct 21/02*

Vessel Inspection Interval **5 years**

Leave "as-is" ☐

Change to

PSV Inspection Interval **5 years**

Leave "as-is" ☐

Change to

Office Use Only Report Entered to SEQA Database
by
Static Data Verified by

Date

Date

PRESSURE CALCULATIONS

| | | | |
|---------------------|----------------------------|-------------|-------------------|
| Vessel Description: | Sand Filter/ Separator | Entered by: | Manley Yuen |
| Manufacturer: | Rosedale Products Inc. | Date: | September 9, 2002 |
| Service: | Sweet Gas | | |
| Vessel PRN | A 0411708 | Diameter | 16 inches |
| CRN | L-7077.2 | Length | 42 inches |
| Serial number | RD-5292 | MAWP | 150 psi |
| Location : | 15-15-65-03 W4M | MDMT | 400/ -20 ° F |
| | Jackfish Creek CS | | |
| | "Marie Lake South" Booster | | |
| SHELL) | Thickness: | HEAD) | Thickness: |
| | Material: | | Material: |
| | unknown | | unknown |
| | unknown | | unknown |

Cylindrical Shell

$$t_{\text{MIN}} = PR / SE - 0.6 P$$

$$P = SE t / R + 0.6 t$$

0.258 t = actual wall thickness, inches min from UT survey

150 P = design pressure (MAWP), psi

13800 S = stress value of material, psi SA-285-C arbitrary

0.6 E = joint efficiency, Table UW-12 no radiography

7.75 R = inside radius, inches APROX.

0 CA = corrosion allowance, inches

$$t_{\text{MIN}} = 0.142 \text{ inches}$$

(MINIMUM ALLOWABLE W.T.)

$$P = 270.2 \text{ psi}$$

(PRESSURE RATING AT CURRENT W.T.)

2:1 Ellipsoidal Heads

$$t_{\text{MIN}} = PD / 2 SE - 0.2 P$$

$$P = 2 SE t / D + 0.2 t$$

0.249 t = actual wall thickness, inches min from UT survey

150 P = design pressure (MAWP), psi

13800 S = stress value of material, psi SA-285-C arbitrary

0.6 E = joint efficiency, Table UW-12 no radiography

15.5 D = inside diameter, inches APROX.

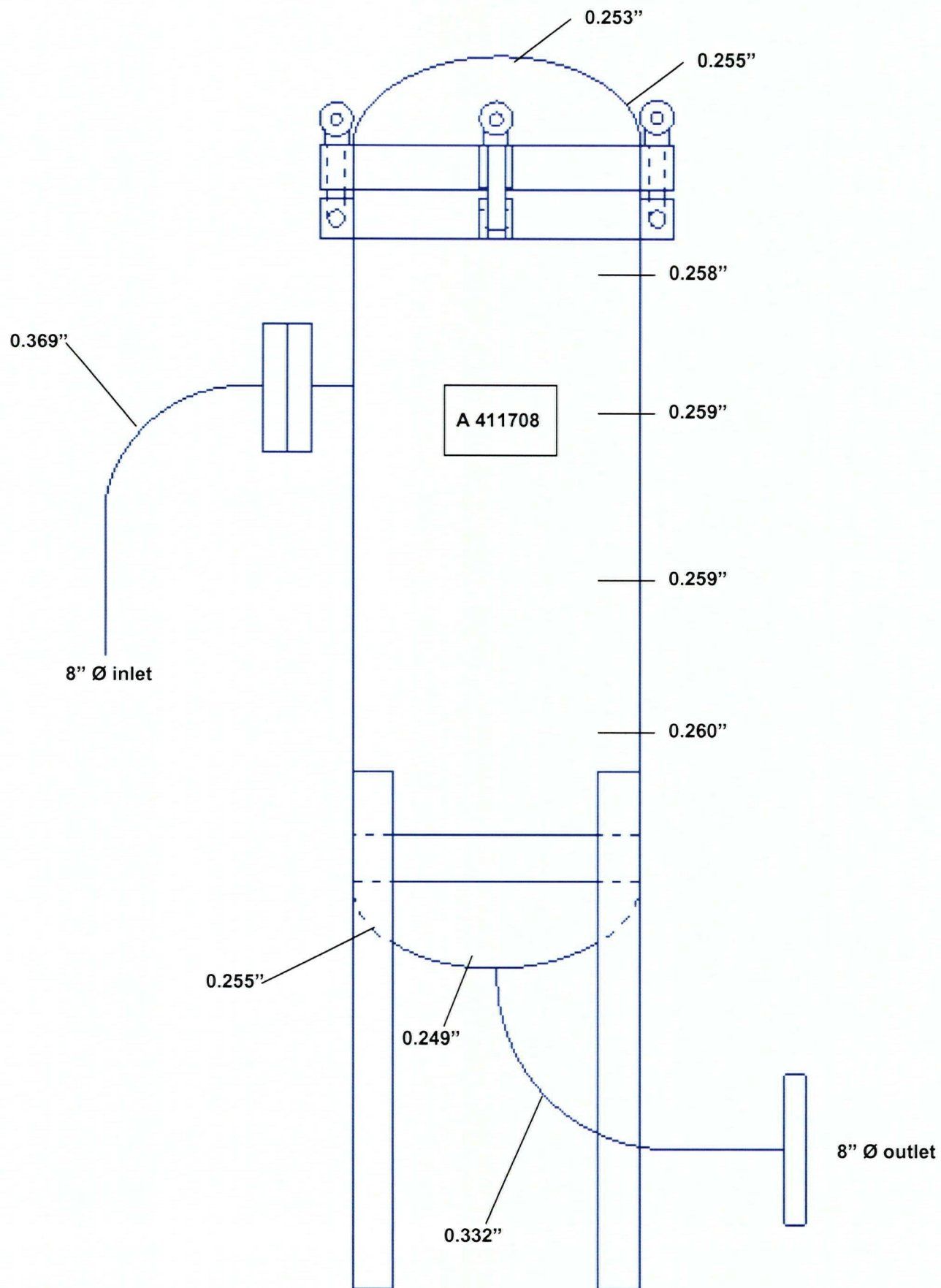
0 CA = corrosion allowance, inches

$$t_{\text{MIN}} = 0.141 \text{ inches}$$

(MINIMUM ALLOWABLE W.T.)

$$P = 265.2 \text{ psi}$$

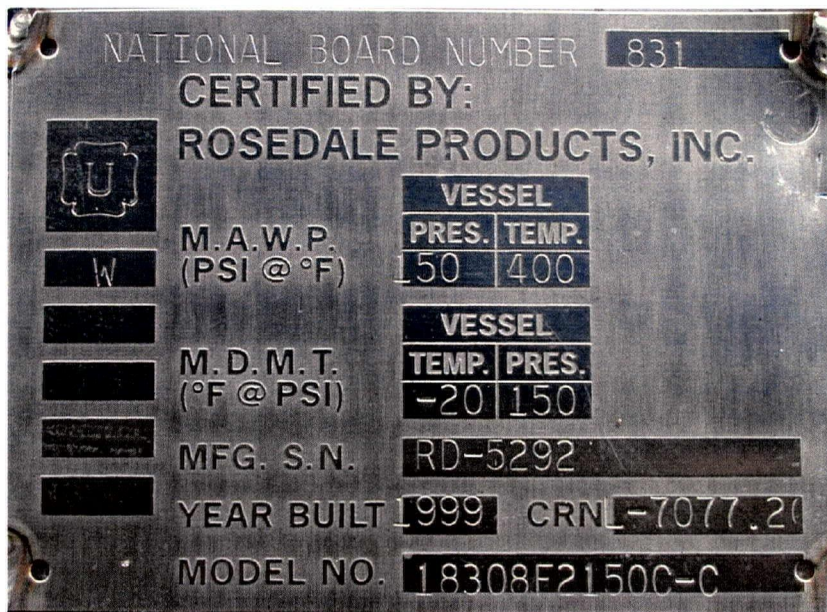
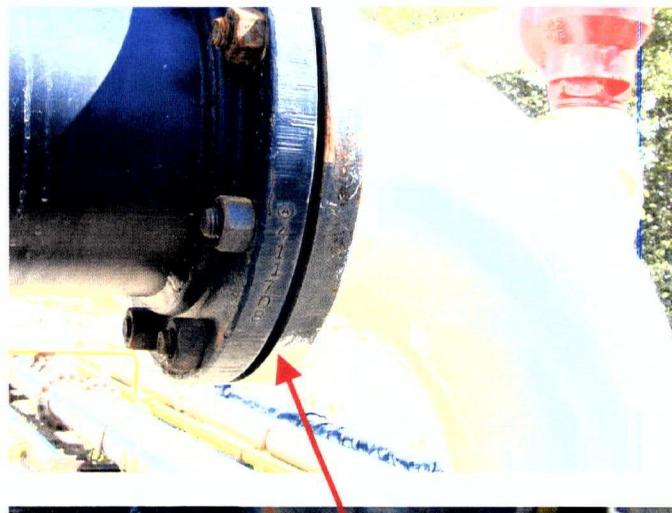
(PRESSURE RATING AT CURRENT W.T.)



Jackfish Creek CS "Marie Lake South" Booster
100/ 15-15-65-02 W4M



Sand separator A 0411708





Renaissance Energy Ltd.

VESSEL / TANK INSPECTION REPORT - Exhibit #300, Page 1 of 2

Facility JACKFISH CREEK FIELD
LSD 100/4-36-66-4 W4
Inspector MANLEY YUEN

AFE # _____
Date Nov 28, 2000

Date of Last
Inspection _____

Equipment Details

☒ Vessel☐ Tank

Type SAND FILTER
Manufacturer ROSEDALE
Year Built 1999

VERTICAL 2 16"Ø x 5'-0"
Service SWEET
MAWP 150 PSI
Serial # RD-5292

A # 0411708
at Design Temp 400°F
Corr. Allowance _____

Coating Integrity

Coating Type _____

Average Thickness _____

Date Coated _____

Blistering: ☐ Yes ☐ No
Holidays: ☐ Yes ☐ No
Mech. Dam: ☐ Yes ☐ No
Coupons: ☐ Yes ☐ No

Location(s) _____
Location(s) _____
Location(s) _____
Comments _____

Comments _____

Internal Equipment Assessment

Head/Shell ☐ Visual ☐ UT ☐ MPI ☐ Dye Pen
Firetubes ☐ Visual ☐ UT ☐ MPI ☐ Dye Pen
Pitting ☐ Yes ☐ No Pit Depth _____
Anodes: Material _____

Comments _____
Comments _____
Comments _____
Date Installed _____ % Consumed _____

Comments _____

External Equipment Assessment

Ladders / Stairs / Platforms ☒ Inspection Performed Comments OK
Foundations / Skirts ☒ Inspection Performed Comments OK
Elect./ Instrum./ Grounding ☐ Inspection Performed Comments N/A
Pressure / Temp Gauges ☐ Inspection Performed Comments N/A
External Insulation ☐ Inspection Performed Comments N/A

A # 0411708

PSV Data

Serial #

PSV IS INTACT

6116390

PSV Tag #

CRN #

Manufacturer

TAYLOR

Set Pressure

125 PSI

Capacity

648 SCFM

Last Service Date

OCT. 15/99

Service Comp.

H E R VALVE LTD.

Picture ID

Picture 1

Picture 2

Picture 3

Picture 4

Picture 5

Picture 6

Picture 7

Picture 8

General Comments and Recommendations

Vessel is in good condition
No sign of external corrosion

Equipment Status

Suitable for Further Service

☒ Yes☐ No

Repairs Required

☐ Yes☒ No

Repairs Completed

☐ Yes☐ No

Repairs Completed By:

Repair Company AQP#

Repair Date

Facility Inspector

Marilyn J. [Signature]

Date

Nov. 28, 2000

QA Coordinator

Date