

661731
A#
4299-01
S/N#

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by **Coral Oilfield Services Inc., 15303-94st, Grande Prairie, Alberta, T8X 0L2, CANADA**

(Name and address of Manufacturer)

Manufactured for **Coral Oilfield Services Inc., 15303-94st, Grande Prairie, Alberta, T8X 0L2, Canada**

(Name and address of Purchaser)

3. Location of Installation **Not Known**

(Name and address)

4. Type **Horizontal** **4299-01** **V9366.21** **3968 Rev.3** **46** **2016**
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year built)

5. ASME Code, Section VIII, Division 1 **2015/ N/A** **N/A** **N/A**
(Edition and Addenda, if applicable (date)) (Code Case numbers) (Special service per UG-120(d))

6. Shell: **SA-516-70N** **0.5"** **0.125"** **108" (ID)** **30'**
(Material spec. number, grade) (Nominal thickness) (Corr. allow.) (Inner diameter) (Length (overall))

Body Flanges on Shells													
No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

7. Seams: **Type 1** **Full** **1** **1125 °F** **.75Hour** **Type 1** **Full** **1** **3**
(Long. (welded, dbl., sngl., lap, butt)) (R.T. (spot or full)) (Eff. %) (H.T. temp) (Time, hr) (Girth. (welded, dbl., sngl., lap, butt)) (R.T. (spot or full)) (Eff. %) (No. of courses)

8. Heads: (a) Material **SA-516-70N** (b) Material **SA-516-70N**
(Spec. no., grade) (Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	END	0.5"	0.125"	N/A	N/A	2:1	N/A	N/A	N/A	Concave
(b)	END	0.5"	0.125"	N/A	N/A	2:1	N/A	N/A	N/A	Concave

Body Flanges on Heads													
	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

MAWP **125 psi** at max. temp. **300 °F**
(Internal) (External) (Internal) (External)

Min. design metal temp. **-50 °F** at **125 psi** Hydro, pneu., or comb. test pressure **HYDRO 1 HOUR at 163 psi**

Proof test **N/A**

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Gas Inlet/Outlet	5	4"	RFWN	SA-106Gr.B	SA-105N	0.674"	0.125"	N/A	UW16.1(D)	Type 1	Shell
PSV, Water/Oil Outlet	4	3"	RFWN	SA-106Gr.B	SA-105N	0.600"	0.125"	N/A	UW16.1(D)	Type 1	Shell/Head
Sparge, Heater Coil	8	2"	RFWN	SA-106Gr.B	SA-105N	0.436"	0.125"	N/A	UW16.1(D)	Type 1	Head

Additional Nozzles - See Attached U-4...

11. Supports: Skirt **No** Lugs **2** Legs **No** Other **Saddles (2)** Attached **Shell, Welded**
(Yes or no) (Number) (Number) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors, have been furnished for the following items of the report:

N/A
(Name of part, item number, Manufacturer's name and identifying stamp)

- SA105N and SA106-B exempt as per UCS 66 (b) (1) (b)
- All other material are exempt per UCS-66a, UCS-67a(3) for the filler metal, and Fig UCS-66, Note C for stud and nuts
- Heater coil: MAWP 150PSI @ 350F, MAEWP 125PSI, MDMT -50F @ 150PSI, C.A 1/16, 2" 150 RFSO SA-105n Flange
- 2" NPS XH SA-106B Pipe
- Vessel Capacity 2122FT3 (60M3)
- Construction DWG NO. 3968-01 Rev.4
- 1 1/8" X 6 1/4" Studs c/w 2 Nuts Each SA194-2HM for both M1A M1B

Additional Remarks - See Attached U-4...

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number **45860** expires **September 17, 2019**


Date **09/19/2016** Co. name **Coral Oilfield Services Inc.** Signed  (Representative)
(Manufacturer)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by **Coral Oilfield Services Inc.** at **15303-94st, Grande Prairie, Alberta, T8X 0L2, CANADA**

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by **Alberta Boilers Safety Association (ABSA), of Edmonton, AB**

have inspected the component described in this Manufacturer's Data Report on **August 31, 2016**, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date **09/19/2016** Signed  Commissions **15266A, AB439-A**
(Authorized Inspector) [National Board (incl. endorsements)]

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FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Coral Oilfield Services Inc., 15303-94st, Grande Prairie, Alberta, T8X 0L2, CANADA
(Name and address of Manufacturer)

2. Manufactured for Coral Oilfield Services Inc., 15303-94st, Grande Prairie, Alberta, T8X 0L2, Canada
(Name and address of Purchaser)

3. Location of installation Not Known
(Name and address)

4. Type Horizontal N/A 4299-01
(Horizontal, vertical, or sphere) (Tank, separator, heat exch., etc.) (Manufacturer's serial number)

V9366.21 3968 Rev.3 46 2016
(CRN) (Drawing number) (National Board number) (Year built)

Data Report
Item Number _____ Remarks _____

Additional Remarks:

- 2 x 20" RF Blind SA-105N

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Sight Glasses, PI, Spare	12	1"	RFWN	SA-106Gr.B	SA-105N	0.358"	0.125"	N/A	UW16.1(D)	Type 1	Head
Manway	2	20"	RFWN	SA-106Gr.B	SA-105N	0.375"	0.125"	SA-516-70N	UW16.1(W)	Type 1	Shell

Certificate of Authorization: Type "U"

No. 45860

Expires September 17, 2019

Date 09/19/2016 Name

Coral Oilfield Services Inc.
(Manufacturer)

Signed


(Representative)

Date 09/19/2016 Name


(Authorized Inspector)

Commissions:

15266A, AB439-A
(National Board (incl. endorsements))



the pressure equipment safety authority

PRESSURE PIPING CONSTRUCTION AND TEST DATA REPORT

In accordance with the provisions of the PESR Section 31(1)

Shop Construction ; Field Construction
 Final Data Report ; Partial Data Report (from one ABSA- authorized Contractor to another ABSA- authorized Contractor).

Complete both sides of this Form

1. Constructed By: Coral Oilfield Services Inc. Owner's Job No: 4299-01
(Name of ABSA authorized primary contractor or subcontractor)
15303 94 St. Grande Prairie AB T8X 0L2

(Address)

Certificate of Authorization Permit No. AQP-1522 Expiry Date: September 6th 2019

2. Constructed For: _____
(Name of primary contractor if different from above)

(Address)

Certificate of Authorization Permit No. AQP-N/A Expiry Date: N/A

(Required when the primary contractor undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: Coral Oilfield Services Inc 15303 94 St. Grande Prairie AB T8X 0L2 .
(Name and address)

Portable

(Location of installation)

Certificate of Authorization Permit No. AQP-1522 Expiry Date: September 6th 2019

(Required when the owner undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP-N/A
(Required if aggregate piping volume is over 0.5m³)

5. Design Responsibility: Owner ; Contractor

6. WP No.: WP-3150.2 ; Company: Coral Oilfield Services Inc. Owner's WP No. (If used): WP-N/A
(Alberta Registration No.) (Alberta Registration No.)
 WPS No(s). used: COS-1 (Rev2) ; Owner's WPS No(s). (If used): N/A

7. Code: ASME B31.1 Non Boiler External Piping ; ASME B31.1 Boiler External Piping ;
 B31.5 ; B31.9 ; CSA Z662 Steam Pipelines ;
 ASME B31.3 - Service Category: Normal , D , M , High Pressure ; Severe Cyclic Condition
 High Purity

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. PSI	Des. Temp. °F (Max. & Min.)	Pressure Test PSI	Test Medium	Pipe Mat'l Spec. & Grade	C.A. Inches	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °F	NDE
Control Number 1	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80	A350-LF2 4"150	n/a /50	100% RT 100% MT 100% VT
Control Number 2	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80 3"SCH80	A350-LF2 4"150 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 3	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"&4" SCH80	A350-LF2 4"150 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 4	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	4" SCH80	A105 Fig 206 h/u	n/a/50	100% RT 100% MT 100% VT
Control Number 5	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH40	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 6	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 h/u	n/a/50	100% RT 100% MT 100% VT

Control Number 7	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A350 LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 8	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 h/u	n/a/50	100% RT 100% MT 100% VT
Control Number 9	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80 3"SCH80	A350-LF2 4"150 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 10	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 11	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 12	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 13	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 14	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 15	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 16	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"&4" SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 17	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"&4" SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 18	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"&4" SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 19	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 20	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 21	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80	A350 LF2 1/2" NPT	n/a/50	100% RT 100% MT 100% VT
Control Number 22	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 24	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 25	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 26	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 27	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 28	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 29	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 30	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 31	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT

Control Number 32	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 33	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 34	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 35	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 36	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 37	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 38	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 39	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 40	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 41	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 42	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 43	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 44	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 45	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 46	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 47	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 48	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 49	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 50	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 51	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 52	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 53	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 54	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 55	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT

Control Number 56	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 57	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	2"SCH80	A350-LF2 2"150	n/a/50	100% RT 100% MT 100% VT
Control Number 64	W.O.G	125	-50/300	188	Water	A420 WPL6	A420 WPL6 0.125"	2"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 65	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	2"SCH80	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 66	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80 3"SCH80	A350-LF2 4"150 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 67	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	4"SCH STD	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 68	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 69	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A350LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 70	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 71	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 72	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A105 Fig 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 73	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 74	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 84	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	3"&4" SCH80	A105 FIG 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 88	W.O.G	125	-50/300	188	Water	A420 WPL6	0.125"	4"SCH80	A105 FIG 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 89	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"&4" SCH80	A105 FIG 206 H/U	n/a/50	100% RT 100% MT 100% VT
Control Number 90	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH80	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 91	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 92	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 93	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	3"SCH80	A350-LF2 3"150	n/a/50	100% RT 100% MT 100% VT
Control Number 95	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT
Control Number 96	W.O.G	125	-50/300	188	Water	A333-GR6	0.125"	4"SCH160	A350-LF2 4"150	n/a/50	100% RT 100% MT 100% VT

Partial Data Reports certified by sub-contractors are listed below and attached to this Data Report

No.	Line No.	Spool No.	Dwg. No. (with Rev. No.)	Sub-contractor (Name)	AQP No. (if from Alberta)	Expiry (if from Alberta)

Remarks: For partial data report provide information about the code work that was not completed by the subcontractor (e.g., hydrostatic test, PWHT etc.). For final data report provide information about the code work that was not completed by subcontractors and subsequently completed by the primary contractor (e.g., hydrostatic test of entire assembly, PWHT etc.)

n/a

Endorse certificate 'A' or 'B'

A. CERTIFICATE OF COMPLIANCE

Signed by the subcontractor when supplying this certificate as a Partial Data Report

We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).

Date: _____
Contractor

Print Authorized Representative's Name Signature

This certificate is not valid unless it forms part of a Final Data Report signed by Primary Contractor

B. CERTIFICATE OF COMPLIANCE

Signed by the primary contractor when supplying this certificate as a Final Data Report

We certify that the statements in this Data Report are correct and that piping job no. 4299-01 described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).

Date: January 3 /17 Coral Oilfield Services Inc.
Contractor

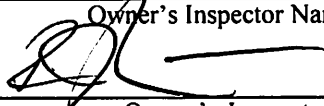
Ryan Otoole _____
Print Authorized Representative's Name Signature

CERTIFICATE OF INSPECTION

I, the undersigned, employed by Coral Oilfield Services Inc have verified that all required examination and testing has been completed, and inspected the piping described in this construction data report to the extent necessary to be satisfied that it conforms to all applicable examination requirements of the Code and of the engineering design, and state that, to the best of my knowledge and belief, the contractor has constructed this piping in accordance with the Alberta Safety Codes Act and Regulations. By signing this certificate neither the inspector nor his or her employer makes any warranty, expressed or implied, concerning the piping described in this construction data report. Furthermore, neither the inspector nor his or her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date: January 3/17 Date: _____

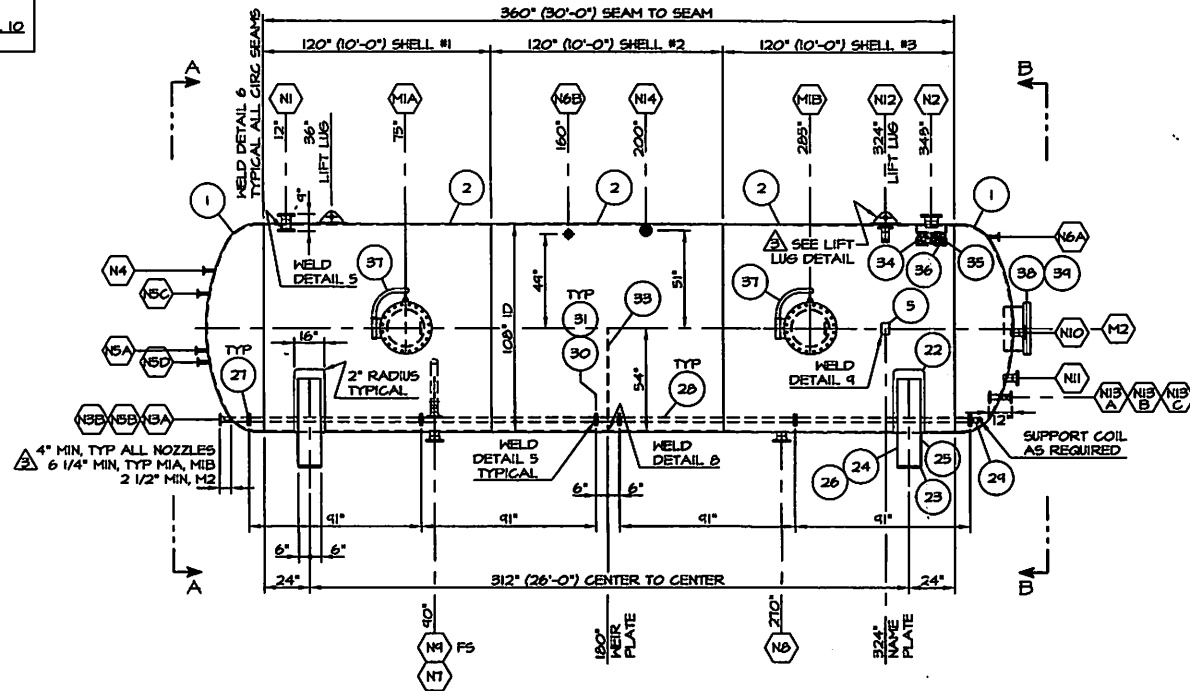
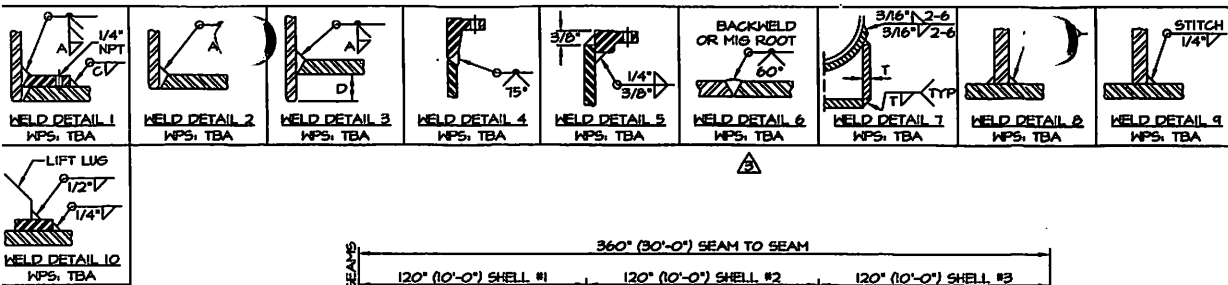
Riley Johnson
Owner's Inspector Name (please print)



Owner's Inspector Signature:

ABSA Safety Codes Officer (please print)
(BOILER EXTERNAL PIPING ONLY)

ABSA Safety Codes Officer's Signature



CONNECTION SCHEDULE										
MARK	SIZE	SCH	CLASS	TYPE	SERVICE	WELD	A	B	D	ITEM NO'S
N1	4"	XXH	150	RFWN	INLET	3, 4	3/8"	-	3/8"	9, 14, 10
N2	6"	160	150	RFWN	GAS OUTLET	3, 4	3/8"	-	1"	13, 14
N3AB	2"	XXH	150	RFWN	COIL	3, 4	1/2"	-	1/2"	7, 17
N4	1"	XXH	150	RFWN	PI	2, 4	3/8"	-	-	8, 16
N5AD	1"	XXH	150	RFWN	SOLIDS LG	2, 4	3/8"	-	-	6, 16
N6AB	1"	XXH	150	RFWN	LG / SPARE	2, 4	3/8"	-	-	6, 16
N7	4"	XXH	150	RFWN	SOLIDS DRAIN	2, 4	5/8"	-	-	9, 14
N8	4"	XXH	150	RFWN	LIQUIDS DRAIN	2, 4	5/8"	-	-	9, 14
N9	3"	XXH	150	RFWN	LIQUID OUTLET	2, 4	3/8"	-	-	8, 18, 21
N10	3"	XXH	150	RFWN	HC LG	2, 4	3/8"	-	-	8, 18
N11	3"	XXH	150	RFWN	WATER LG	2, 4	3/8"	-	-	8, 18
N12	3"	XXH	150	RFWN	PSV	2, 4	3/8"	-	-	8, 18
N13A-C	2"	XXH	150	RFWN	SPARE	3, 4	1/2"	-	1/2"	7, 17
N14	2"	XXH	150	RFWN	SPARE	2, 4	1/2"	-	-	7, 17
MIAB	20"	STD	150	RFWN	MANWAY	1, 4	3/8"	3/8"	-	3, 11, 12, 20
M2	20"	160"	150	RF HB	MANWAY	3	3/8"	-	1 1/8"	12, 15

COIL DESIGN NOTES

DESIGN & FABRICATE TO: ASME SECTION VIII, DIVISION I, 2010 EDITION, 2011 ADDENDA

MAXIMUM ALLOWABLE WORKING PRESSURE
INTERNAL MAWP: 150 PSIG
EXTERNAL MAWP: 125 PSIG

DESIGN TEMPERATURE: 350° F

MINIMUM DESIGN METAL TEMPERATURE (MDMT): -50° F AT 150 PSIG

IMPACT TESTS: EXEMPT PER UCS-66a, UCS-66b

RADIOGRAPHY: NONE PER UH-11c

PHWT PER UCS-56: NOT REQUIRED

HYDROSTATIC TEST PRESSURE: 145 PSIG MINIMUM

CORROSION ALLOWANCE (INTERNAL): 0"

CORROSION ALLOWANCE (EXTERNAL): 1/16"

SERVICE: EXPANSIBLE FLUID

GENERAL NOTES

1. QUALITY CONTROL PROGRAM NUMBER: AGP-1522
2. WELDING PROCEDURE REGISTRATION NUMBER: WP-3150.2
3. CAPACITY: 2122 FT3
4. SERVICE: HYDROCARBONS
5. EXPOSED INSIDE OR OUTSIDE EDGES OF NOZZLES OR OPENINGS SHALL HAVE AN 1/8" MINIMUM RADIUS.
6. SURFACE PREPARATION: HAND TOOL CLEAN (MIN) PRIME AND PAINT, AS PER CLIENT SPECIFICATIONS
7. ALL BOLT HOLES TO STRADDLE CENTERLINES.
8. ALL REPADS, OR SEGMENT IF MORE THAN ONE PIECE IS USED, TO HAVE A MAXIMUM 1/4" NPT KEEP HOLE ON THE SHELL, THE WELD IN A TWO-PIECE REPAD SHALL BE LOCATED IN THE CIRCUMFERENTIAL DIRECTION.
9. CLEAN AND COVER ALL OPENINGS FOR SHIPMENT.
10. USE WELDING PROCEDURE (TBA) FOR ALL TACK WELDS.
11. CRN DRAWINGS: 3468-1 REV 3, 3468-2 REV 3
12. CRN CALCULATIONS: 3468COR-R3, 3468COIL-R1

DESIGN NOTES

DESIGN & FABRICATE TO: ASME SECTION VIII, DIVISION I, 2010 EDITION, 2011 ADDENDA

MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP): 125 PSIG

DESIGN TEMPERATURE: 300° F

MINIMUM DESIGN METAL TEMPERATURE (MDMT): -50° F AT 125 PSIG

IMPACT TESTS: EXEMPT PER UCS-66a, UCS-66b

RADIOGRAPHY - LONG SEAMS: FULL PER UH-11a

RADIOGRAPHY - CIRC SEAMS: SPOT PER UH-11a (RT-2) (NOTE E)

PHWT PER UCS-56: NOT REQUIRED (NOTE F)

HYDROSTATIC TEST PRESSURE: 163 PSIG

CORROSION ALLOWANCE: 1/8"

WEIGHT EMPTY: 21,000 LBS

WEIGHT FULL OF WATER: 160,000 LBS

CRN: V9366.2

ALBERTA BOILERS SAFETY ASSOCIATION
PROVINCE OF ALBERTA
SAFETY CODES ACT

REQ. No. **V 9 3 6 6 . 2**

DWG. No. **3968 SHTS 1,2 REV 3** AS NOTED.

VESSEL INT	MAWP kPa	Design Temp, C
862	1437.46	

COIL INT/EXT: 103/862/177.46

ACCEPTED

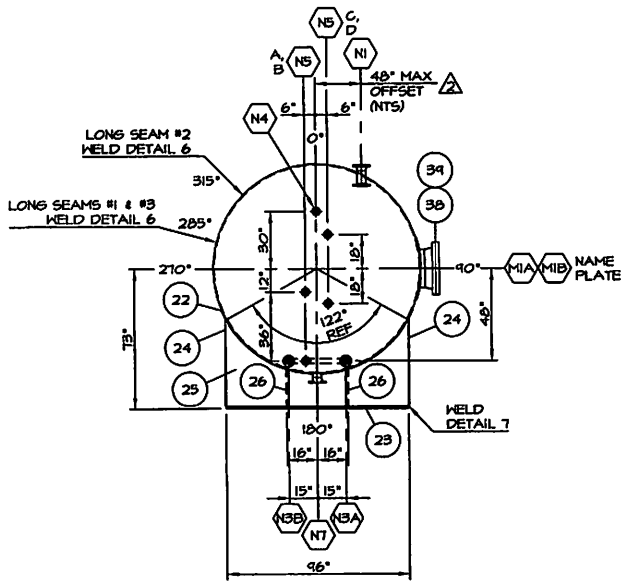
OCT 22 2012

Date Signed *[Signature]*
F. SCHERPENISSE

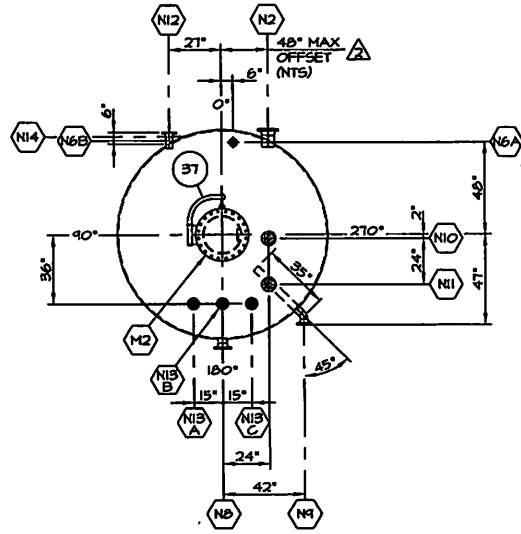
CANADIAN REGISTRATION NUMBER			
3	12-10-10	WD-6, NOTES, OUTSIDE PROJECTION	P.J.D... RJ
2	12-04-21	REVISE NOTE 12, COIL IMPACT TESTS	P.J.D... RJ
1	12-08-31	REVISED, ISSUED FOR REGISTRATION	P.J.D... RJ
0	12-08-21	ISSUED FOR APPROVAL	P.J.D... RJ
NO.	DATE	REVISION	BY APP

CLIENT: CORAL OILFIELD SERVICES INC.
BOX 21160, 15303 - 94 STREET
GRANDE PRAIRIE, AB T8X 0L2
TELEPHONE: (780) 882-4800 FAX: (780) 882-6868

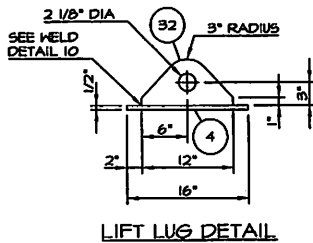
SEPARATOR	
DATE: 12-08-19	108" ID x 30'-0" S/S
BDD NO.: 3468	125 PSIG AT -50° / 300° F
JOB NO.:	
SCALE: NTS	
DRAWN BY: P.J.D...	
CHECKED BY: R.J.	DWG NO.: SHEET 1 OF 2
APP BY: P.J.D...	3968



ORIENTATION VIEW A-A



ORIENTATION VIEW B-B



LIFT LUG DETAIL

BILL OF MATERIALS			
ITEM	QTY	DESCRIPTION	MATERIAL
1	2	HEADS - 108" ID x 5/8" THK (300" MIN) 2:1 SE, 2" SF	SA-516-70N
2	3	PLATE - 108" ID x 1/2" THK x 10'-0" L6 SHELL #1, #2, #3	SA-516-70N
3	2	PLATE - 1/2" THK x 32" OD x 20 1/8" ID MIA, MIB REPAD, NOTE 4	SA-516-70N
4	2	PLATE - 1/2" THK x 10" x 16" L6 LIFT LUG PAD, NOTE 4	SA-516-70N
5	1	STANDARD NAME PLATE AND BRACKET	304 SS/SA-306
6	6	FLANGE - 1" CLASS 150 RFWN C/W SCH XXH BORE N4, N5AD, N6AB	SA-105N
7	6	FLANGE - 2" CLASS 150 RFWN C/W SCH XXH BORE N3AB, I3ABC, I4	SA-105N
8	4	FLANGE - 3" CLASS 150 RFWN C/W SCH XXH BORE N9, N10, N11, N12	SA-105N
9	3	FLANGE - 4" CLASS 150 RFWN C/W SCH XXH BORE N1, N7, N8	SA-105N
10	1	FLANGE - 4" CLASS 150 RFSO NI INTERNAL	SA-105N
11	2	FLANGE - 20" CLASS 150 RFWN C/W SCH STD BORE MIA, MIB	SA-105N
12	3	FLANGE - 20" CLASS 150 RF BLIND MIA, MIB, M2	SA-105N
13	1	FLANGE - 6" CLASS 150 RFWN C/W SCH 160 BORE N2	SA-105N
14	1	PIPE - 6" SCH 160 (118") x CUT TO SUIT N2	SA-106-B
15	1	FLANGE - 20" CLASS 150 RF HB x 12" L6 M2	SA-105N
16	6	PIPE - 1" SCH XXH (338") x CUT TO SUIT N4, N5AD, N6AB	SA-106-B
17	6	PIPE - 2" SCH XXH (.436") x CUT TO SUIT N3AB, N3ABC, N4	SA-106-B
18	4	PIPE - 3" SCH XXH (.600") x CUT TO SUIT N9, N10, N11, N12	SA-106-B
19	3	PIPE - 4" SCH XXH (.674") x CUT TO SUIT N1, N7, N8	SA-106-B
20	2	PIPE - 20" SCH STD (.375") x CUT TO SUIT MIA, MIB	SA-106-B
21	1	ELBOW - 3" SCH XXH (.600") LR 45° WELD N9	SA-234-WPB
22	2	PLATE - 3/8" THK x 16" x 128" L6 WEAR PL, ROLL-104" ID, NOTE 9	SA-516-70N
23	2	PLATE - 1" THK x 12" x 96" L6 BASE PLATE	SA-36
24	4	PLATE - 3/8" THK x 12" x 45 3/8" L6 SIDE PLATE	SA-36
25	2	PLATE - 3/8" THK x 45 3/8" x 96" L6 FACE PLATE, TRIM TO FIT	SA-36
26	4	PLATE - 3/8" THK x 12" x 14 1/2" L6 RIB PLATE	SA-36
27	27	FLANGE - 2" CLASS 150 RFSO COIL, N3ABC	SA-105N
28	1	PIPE - 2" SCH XH (.218") x CUT TO SUIT COIL	SA-53-B, ERW
29	2	ELBOW - 2" SCH XH (.218") LR 90° WELD COIL	SA-234-WPB
30	12	GASKET - 2" CLASS 150 SPIRAL WOUND x 1/8" THK COIL	304 SS
31	40	STUDS - 5/8" DIA x 3 1/4" L6 C/W 2 NUTS EACH (SA-194-2H) COIL	SA-193-B7
32	2	PLATE - 1" THK x 6" x 12" L6 SEE LIFT LUG DETAIL	SA-36
33	1	PLATE - 3/8" THK x 107 7/8" OD x 54" HIGH WIER PLATE	SA-36
34	1	PIPE - 16" SCH STD (.375") x 10" L6 MIST PAD HOUSING	SA-106-B
35	1	MIST PAD - 15 1/4" OD x 6" THK x 98/FT3 MIST PAD	316 SS
36	2	FLAT BAR - 1/2" SQUARE x 46 1/4" L6 MIST PAD, ROLL-15 1/8" OD	SA-36
37	3	STANDARD 20" CLASS 150 MANWAY DAVIT MIA, MIB, M2	SA-36
38	3	GASKET - 20" CLASS 150 SPIRAL WOUND x 1/8" THK MIA, MIB, M2	304 SS
39	60	STUDS - 1/8" DIA x 6 1/4" L6 C/W 2 NUTS EACH (SA-194-2H) MIA/B, M2	SA-193-B7

V 9 3 6 6 . 2

FABRICATION NOTES

- A. THE SHELL LENGTH MAY BE LESS THAN 30'-0", PROVIDED THE SPACING OF NOZZLES MEET CODE.
- B. MATERIAL SPECIFICATIONS MAY BE UPGRADED AS FOLLOWS:
PLATE: SA-36 TO SA-40, 21-44H TO SA-516-10 TO SA-516-70N
WELD FITTING (B16.4), SA-234-WPB TO SA-420-WPL6
PIPE (B36.10), SA-53-B, ERW TO SA-106-B TO SA-333-GR 6 FORGING (B16.5/B16.11), SA-105 TO SA-105N TO SA-350-LF2 CLASS 1
- C. ANY CONNECTION MAY BE DELETED EXCEPT A DRAIN (1" NPS MIN), LOCATED AT THE LOWEST POINT PRACTICABLE IN THE VESSEL PER UG-25F AND ONE INSPECTION MANWAY.
- D. MANWAYS MIA & MIB MAY ONLY BE LOCATED RADIALLY ON THE SHELL AND M2 MAY ONLY BE LOCATED ON THE CENTERLINE OF THE HEADS.
- E. RADIOGRAPHY ON THE CIRCUMFERENTIAL SEAMS MAY BE INCREASED TO FULL PER UW-11g.
- F. POST WELD HEAT TREATMENT MAY BE ADDED PROVIDED A PWHT WELDING PROCEDURE IS USED (TBA).
TEMPERATURE AND TIME: 1125° F ±25° F FOR 44 MINUTES (MINIMUM).

3	12-10-10	ADD NOTES E, F	PJD...	RJ
2	12-09-27	ADD N1, N2 SHELL OFFSET DISTANCE	PJD...	RJ
1	12-08-31	REVISED, ISSUED FOR REGISTRATION	PJD...	RJ
0	12-08-27	ISSUED FOR APPROVAL	PJD...	RJ
NO.	DATE	REVISION	BY	APP

CORAL OILFIELD SERVICES INC.
 BOX 21160, 15303 - 94 STREET
 GRANDE PRAIRIE, AB T8X 0L2
 TELEPHONE: (780) 882-4800 FAX: (780) 882-6868

REF DWG:		SEPARATOR	
DATE:	12-08-13	108" ID x 30'-0" S/S	
BDD NO.:	3968	BOM, END VIEWS, DETAILS	
JOB NO.:			
SCALE:	NTS		
DRAWN BY:	PJD...		
CHECKED BY:	RJ	DWG NO.:	SHEET 2 OF 2
APP BY:	PJD...		3968
		REV.	3

October 22, 2012

Attention: Riley Johnson
CORAL OILFIELD SERVICES INC
BOX 21160
GRANDE PRAIRIE, AB

The design submission, tracking number 2012-07082, originally received on October 15, 2012 was surveyed and accepted for registration as follows:

CRN : V9366.2

Accepted on: October 22, 2012

Reg Type: Revision To accepted Design

Drawing No. : 3968 SHTS 1, 2 Rev 3 As Noted

Design registered in the name of : CORAL OILFIELD SERVICES INC

Description	MAWP	Design Temperature	MDMT
Internal Pressure	862 kPa	149 ^o C	-46 ^o C
COIL MAWP	1034 kPa	177 ^o C	-46 ^o C
COIL EXTERNAL PRESS.	862 kPa	177 ^o C	-46 ^o C

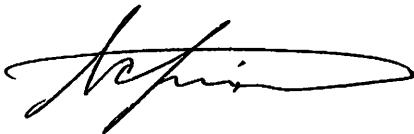
The registration is conditional on your compliance with the following notes:

WPS # to be indicated on the construction drawing for each applicable weld detail prior to start fabrication.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (403) 291-7071 ext 2219 or fax (403) 291-4545 or e-mail scherpenisse@absa.ca.

Sincerely,



SCHERPENISSE, FERNANDO

CORAL OILFIELD SERVICES INC.
BOX 21160
GRAND PRAIRIE AB T8V 6W7

Date: November 21, 2012

Account #: 52081

Journal #: 55964

Our File #: 5298193

Attn: RILEY JOHNSON

Re: Application for Design Registration

The design, as detailed in your, Ref: 4014, for a Pressure Vessel is accepted for registration as follows:

Registered To: CORAL OILFIELD SERVICES INC. CRN: V9366.21

MDMT: -50 deg F

MAWT: 300 deg F

MAWP: 125 psig

Drawing #: 3968 Shts 1, 2

Drawing Revision: 3

Conditions Of Registration:

1- Coil design condition: 150 psig (internal) & 125 psig (external) @ -50/+350 deg F.

	<u>Amount</u>	<u>HST</u>	<u>Total</u>
Fee for reviewing your design:	\$222.00	\$26.64	\$248.64
Total:	\$222.00	\$26.64	\$248.64
Less amount received with submission:			\$0.00
			\$248.64

An invoice for \$248.64 will follow.

Contact me if you have any questions.

ALIREZA BONAHDAR

(778) 396-2032

Alireza.Bonakdar@safetyauthority.ca

Design Engineer

cc:

WELDING PROCEDURE SPECIFICATION NO.: COS-1 (Rev. 2)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S):
COS-1-1, COS-1-2, COS-6-2,
COS-CVN-AW-1 (Rev. 0)

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): Std. Appl.: P1 to P1
(SA 36, SA 106 Gr. B, SA 105, SA 516 Gr. 70, etc.)
Notch Appl.: P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr. 6, SA 350 Gr. LF2, SA 420 WPL6, SA 516 Gr. 70, etc.)
CSA grades are restricted to Gr. 386 and lower, API grades
restricted to Gr. X56 and lower.

Process(es): SMAW
Weld Types: GROOVE & FILLET
Position: ALL POSITIONS
Diameter: ALL DIAMETERS
Filler Metal: Std. Appl.: E6010, E7018, E7018-1 Notch Appl.: E6010, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

STANDARD APPLICATIONS AS WELDED
BASE METAL THICKNESS RANGE 0.062 to 8.00 in. inclusive

NOTCH TOUGHNESS APPLICATIONS TO -50 °F AS WELDED
BASE METAL THICKNESS RANGE 0.125 to 8.00 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS
ASME B31.1 0.750 in. maximum
ASME B31.3 0.750 in. maximum
ASME SECTION VIII, DIVISION 1 1.50 in. maximum
CSA Z662 Clause 7.2.5 1.25 in. maximum

ABCA

**SAFETY CODES ACT - PROVINCE OF ALBERTA
WELDING PROCEDURE**

Reg. No. WP. 3150-2
Spec No. COS-1 (Rev. 2)
Weld Process SMAW
Matl. Gr. P No. 1 Gr 1+2 to P No. 1 Gr 1+2
Elect Gr. F No. 3+4 A No. 1
Th. Qual For 203mm P.W.H.T. NO
Min. TH Qual 3.2mm CW-46°C

Yr. 15 Mo. 3 Day 3 Signed JRH
JASON REINHART, PENG.
WELDING SPECIALIST

PROVINCIAL REGISTRATION

This WPS was prepared to the requirements of ASME IX 2013 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Canada Inc.

Prepared By: Timothy Colpitts
Signed: Timothy J. Colpitts
Date: February 9, 2015

Reviewed By: Darren McLean
Signed: [Signature]
Date: February 11/2015

(File C15-002)

WELDING PROCEDURE SPECIFICATION NO.: COS-2 (Rev. 2)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S): COS-2-1, COS-2-2, COS-7-2

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): Std. Appl.: P1 to P1
(SA 36, SA 106 Gr. B, SA 105, SA 516 Gr. 70, etc.)
Notch Appl.: P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr. 6, SA 350 Gr. LF2, SA 420 WPL6, SA 516 Gr. 70, etc.)
CSA grades are restricted to Gr. 386 and lower, API grades
restricted to Gr. X56 and lower.

Process(es): SMAW
Weld Types: GROOVE & FILLET
Position: ALL POSITIONS
Diameter: ALL DIAMETERS
Filler Metal: Std. Appl.: E6010, E7018, E7018-1 Notch Appl.: E6010, E7018-1

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

STANDARD APPLICATIONS WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.062 to 8.00 in. inclusive

NOTCH TOUGHNESS APPLICATIONS TO -50 °F WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.125 to 8.00 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS
ASME B31.1 8.00 in. maximum
ASME B31.3 8.00 in. maximum
ASME SECTION VIII, DIVISION 1 8.00 in. maximum
CSA Z662 Clause 7.2.5 8.00 in. maximum

ABCA	
SAFETY CODES ACT - PROVINCE OF ALBERTA	
WELDING PROCEDURE	
Reg. No. WP	<u>3150.2</u>
Spec No.	<u>COS-2 (Rev. 2)</u>
Weld Process	<u>SMAW</u>
Matl. Gr. P No.	<u>1Gr 1+2</u> to P No. <u>1Gr 1+2</u>
Elect Gr. F No.	<u>3+4</u> A No. <u>1</u>
Th. Qual For.	<u>203mm</u> P.W.H.T. <u>YES</u>
	<u>MIN TH QUAL 3.2mm CVD -46%</u>
Yr. 15 Mo. 3 Day 4	Signed: <u>JR</u>
	JASON REINHART, PENG. WELDING SPECIALIST
PROVINCIAL REGISTRATION	

This WPS was prepared to the requirements of ASME IX 2013 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Canada inc.	
Prepared By:	<u>Tyler Perrier</u>
Signed:	<u>[Signature]</u>
Date:	<u>February 25, 2015</u>
Reviewed By:	Darren McLean
Signed:	<u>[Signature]</u>
Date:	<u>Feb. 25/2015</u>
(File C15-131)	

WELDING PROCEDURE SPECIFICATION NO.: COS-9 (Rev. 1)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S):
COS-7-1, COS-7-2,
COS-CVN-PWHT-1 (Rev. 0)

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): Std. Appl.: P1 to P1
(SA 36, SA 106 Gr. B, SA 105, SA 516 Gr. 70, etc.)
Notch Appl.: P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr. 6, SA 350 Gr. LF2, SA 420 WPL6, SA 516 Gr. 70, etc.)
CSA grades are restricted to Gr. 386 and lower, API grades
restricted to Gr. X56 and lower.

Process(es): GMAW / FCAW

Weld Types: GROOVE & FILLET Position: ALL POSITIONS

Diameter: ALL DIAMETERS Filler Metal: ER70S-6, E71T-12M-J

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:
STANDARD APPLICATIONS WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.188 to 8.00 in. inclusive

NOTCH TOUGHNESS APPLICATIONS TO -50 °F WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.188 to 8.00 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS

ASME B31.1	<u>8.00 in. maximum</u>
ASME B31.3	<u>8.00 in. maximum</u>
ASME SECTION VIII, DIVISION 1	<u>8.00 in. maximum</u>
CSA Z662 Clause 7.2.5	<u>8.00 in. maximum</u>

ABCA	
SAFETY CODES ACT - PROVINCE OF ALBERTA	
WELDING PROCEDURE	
Reg. No. WP	<u>3150.2</u>
Spec No.	<u>COS-9 (Rev. 1)</u>
Weld Process	<u>GMAW / FCAW</u>
Matl. Gr. P No.	<u>Gr. 1+2</u> to P No. <u>Gr. 1+2</u>
Elect. Gr. F No.	<u>6</u> A No. <u>X+1</u>
Th. Qual For	<u>203mm</u> P.W.H.T. <u>YES</u>
	<u>MIN TH QUAL 4.8mm, CVN -46°C</u>
	<u>ER70S-6</u>
Yr. <u>15</u> Mo. <u>3</u> Day <u>2</u> Signed	<u>J. Reinhart</u>
	JASON REINHART, P.ENG. WELDING SPECIALIST
PROVINCIAL REGISTRATION	

This WPS was prepared to the requirements of ASME IX 2013 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Canada Inc.	
Prepared By:	Timothy Colpitts
Signed:	<u>Timothy S. Colpitts</u>
Date:	<u>February 11, 2015</u>
Reviewed By:	Darren McLean
Signed:	<u>[Signature]</u>
Date:	<u>FEBRUARY 11/2015</u>
(File C15-002)	

WELDING PROCEDURE SPECIFICATION NO.: COS-11 (Rev.1)

WELDING PROCEDURE QUALIFICATION RECORD NO.(S):
COS-2-2, COS-7-1,
COS-7-2, COS-11-1,
COS-CVN-PWHT-2 (Rev. 0)

QUALIFIED IN ACCORDANCE WITH ASME SECTION IX FOR

Base Metal (Typical): Std. Appl.: P1 to P1
(SA 36, SA 106 Gr. B, SA 105, SA 516 Gr. 70, etc.)
Notch Appl.: P1 Groups 1 & 2 to P1 Groups 1 & 2
(SA 333 Gr. 6, SA 350 Gr. LF2, SA 420 WPL6, SA 516 Gr. 70, etc.)
CSA grades are restricted to Gr. 386 and lower, API grades
restricted to Gr. X56 and lower.

Process(es): GMAW / SMAW / SAW

Weld Types: GROOVE & FILLET

Position: GMAW & SMAW: ALL SAW: FLAT & HORIZONTAL

Diameter: ALL DIAMETERS

Filler Metal: Std. Appl.: ER70S-6, E7018, E7018-1, F7PX-EM14K
Notch Appl.: ER70S-6, E7018-1, F7P6/8-EM14K

BASE METAL CONDITIONS & GROOVE THICKNESS RANGE QUALIFIED:

STANDARD APPLICATIONS WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.188 to 8.00 in. inclusive

NOTCH TOUGHNESS APPLICATIONS TO -50 °F WITH POSTWELD HEAT TREATMENT
BASE METAL THICKNESS RANGE 0.625 to 8.00 in. inclusive

COMBINED DEPOSITED WELD METAL THICKNESS

ASME B31.1	<u>8.00 in. maximum</u>
ASME B31.3	<u>8.00 in. maximum</u>
ASME SECT. VIII, DIV.1	<u>8.00 in. maximum</u>
CSA Z662 FABRICATION	<u>8.00 in. maximum</u>

ASCA	
SAFETY CODES ACT - PROVINCE OF ALBERTA	
WELDING PROCEDURE	
Reg. No. WP	<u>3150-2</u>
Spec No.	<u>COS-11 (Rev.1)</u>
Weld Process	<u>GMAW/SMAW/SAW</u>
Matl. Gr. P No.	<u>16r.1t.2</u> to P No. <u>16r.1t.2</u>
Elect Gr. F No.	<u>6t.4t.6</u> A No. <u>1</u>
Th. Qual For	<u>203mm</u> P.W.H.T. <u>YES</u>
<u>MIN TH QUAL 15.9mm CNV -46°C</u>	
Yr. <u>15</u> Mo. <u>3</u> Day <u>3</u>	Signed <u>[Signature]</u>
JASON REINHART, P.ENG. WELDING SPECIALIST	
PROVINCIAL REGISTRATION	

This WPS was prepared to the requirements of ASME IX 2013 and includes some of the additional requirements of the construction codes listed. The application of this WPS is outside the work scope of SGS Canada Inc.	
Prepared By:	<u>Tyler Perrier</u>
Signed:	<u>[Signature]</u>
Date:	<u>February 25, 2015</u>
Reviewed By:	<u>Darren McLean</u>
Signed:	<u>[Signature]</u>
Date:	<u>Feb. 25/2015</u>
(File C15-131)	