

Husky Energy

PRESSURE VESSEL INSPECTION REPORT

N# 6023053 CT

66048089

FACILITY Ansell Gas Plant Field	DATE AUGUST 19, 2003	REPORT # 030819DD-FF
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VESSEL STATIC DATA

Prov. Insp. # 2896926 ✓	CRN H 9132.2	Equip Tag #
Equipment Location (LSD) 03-13-51-19W5	Serial # 1693-3	
Equipment Description SEPARATOR	Vessel Class	
Manufacturer MOSS FABRICATION LTD.	Year Built 1994	
MAWP 1440 KPag (psig) @ 100 °C (°F)	MDMT -20 °C (°F)	
CODE: UM <input type="checkbox"/> U <input checked="" type="checkbox"/> U2 <input type="checkbox"/>	RT: 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>	PWHT: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
Diameter Mm/in Length (T/T) Mm/in OAL Mm/in	Vertical <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/>	
Shell Mat'l -	Thickness - Mm/in	Corr Allowance - Mm/in
Head Mat'l -	Thickness - Mm/in	Corr Allowance 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"/>	Capacity m ³
Manway: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	Inspection Port: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Skirt <input checked="" type="checkbox"/> Legs <input type="checkbox"/> Saddle <input type="checkbox"/>
Nozzle Rating lb ANSI	Painted: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	Insulated: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>

PROCESS DATA

Product Description SOLUTION GAS	Sweet <input checked="" type="checkbox"/> Sour <input type="checkbox"/> PPM:
Operating Pressure 330 KPag (psig)	Operating Temperature °C / °F

PSV STATIC DATA

Tag / Serial No.	Location	Size Inlet	Size Outlet	Set Pressure	Capacity (SCFM) / (Lbs/Hr) / (GPM)	Manufacturer	Model / Type	Service Date
7624-65	VESSEL	1"	1"	1436	1535	BAIRD		2002

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. # 6023523
Inspection Task List #	Inspection Type VE, UT	Inspection Reason INTEGRITY
Inspection Techniques Required	Next Inspection Type VE, UT	Due Date 2008
Outstanding Repairs		

INSPECTION SUMMARY

VISUAL AND UT INSPECTIONS DID NOT REVEAL ANY DEFECTS AT TIME OF INSPECTION.

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
<input type="checkbox"/> Future Repairs Required	<input type="checkbox"/> Idle	<input type="checkbox"/> Surplus
Inventory Status <input checked="" type="checkbox"/> In service Fully Utilized	<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"/>

FACILITY Ansell Gas Plant Field	DATE AUGUST 19, 2003	REPORT # 030819DD-FP
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INSPECTION OBSERVATIONS
NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED

EXTERNAL VISUAL INSPECTION

VESSEL IS BOLTED TO THE SKID
 PAINTED SURFACES ARE ACCEPTABLE. STAIN ON VESSEL FROM PREVIOUS OPENING.
 PIPING IS SECURE AND PROPERLY SUPPORTED
 SIGHT GLASSES ARE IN GOOD WORKING CONDITION.

EXTERNAL NDE EXAMINATION

UT CARRIED OUT BY ALLIANCE ENGINEERING. NO SIGNIFICANT FINDINGS.

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 DOUG DAVEY	Inspector's Signature
Inspection Company ALLIANCE ENG + INSP.	Date NOV 10/03

LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION

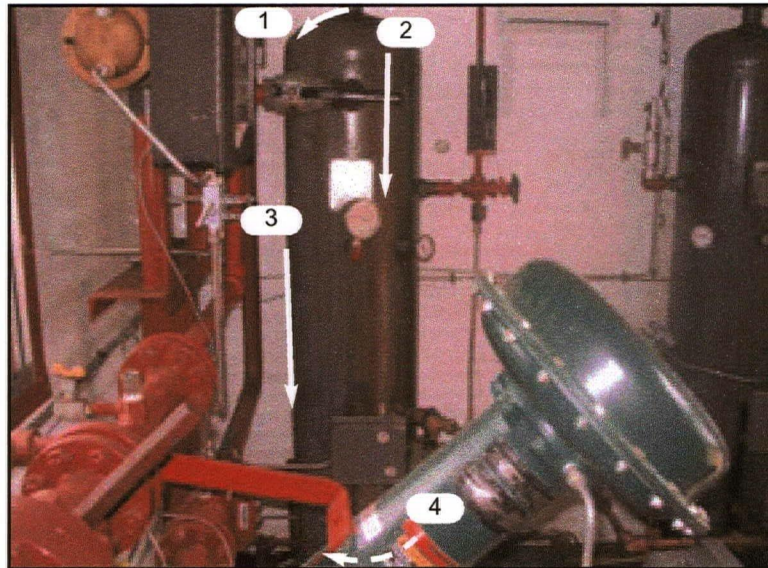
Lead Inspector	Signature	Date
Vessel Inspection Interval 5	Leave "as-is" <input type="checkbox"/>	Change to
PSV Inspection Interval 5	Leave "as-is" <input type="checkbox"/>	Change to

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

66048085



VESSEL UT LOCATIONS



Name: Vertical Separator
A: 2896926
S/N: 1693-3
CRN: H9132.2
LSD: 03-13-51-19 W5M
Location: Ansel Field
Corr. Allow.: 0.063"
Size: 16"OD x 7'

MAWP: 1440psi
Des. Temp.: 100°F
Head Material: SA-516-70
Head Thick: 0.855"
Shell Material: SA-106-B
Shell Thick: 1.031"
Date Built: 1994
Manufacturer: Moss Fabrication Ltd.

Note:

Corrosion Monitoring E :c ID Analysis Report

Report For: Husky Energy
 Presented By: Alliance Engineering & Inspection Ltd.
 Address: 333-50 Avenue SE, Calgary, AB T2G 2B3
 Telephone: (403) 255-5100 Fax: (403) 255-5171 Web www.aeiltd.com

Report Date: 11/11/2003

(Report in Inches, Corrosion Rates in MPY)
 Analysis: Statistical/Straight Line

Unit: HUSKY
 Eq/Circ ID: 2896926
 Eq Type:
 Class:
 RBI:
 Design Code: S8/D1

Flange Rating: 0 lb/in²
 Design Pressure: 1440 lb/in²
 Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
 TAG # N/A

Summary: Group Name: Group Description:
 Insp. Due Date = 09/10/2008 RCR = 0.1 MPY
 Pred. Ret. Date = 12/28/2040 Rem. Life (from last survey 09/11/2003) = 37.3 yrs
 0 C.A. Status: No
 Total Caution TMLs = 0

TML No	Location Description	Ctn TML	First Survey Thick Nt	First Date	Previous Survey Thick Nt	Previous Date	Last Survey Thick Nt	Last Date	Shrt Term Rate	Long Term Rate	Best Rate	Max Hist CR	Retirement Thickness	Rep TML CR	TML Retirement Date	TML Inspection Date
1.01	TOP HEAD	N *	0.855 NM	04/19/1994		N/A	0.858	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	03/12/2041	09/10/2008
1.02	TOP HEAD	N *	0.855 NM	04/19/1994		N/A	0.856	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	03/12/2040	09/10/2008
1.03	TOP HEAD	N *	0.855 NM	04/19/1994		N/A	0.859	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	09/10/2041	09/10/2008
1.04	TOP HEAD	N *	0.855 NM	04/19/1994		N/A	0.866	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	03/12/2045	09/10/2008
1.05	TOP HEAD	N *	0.855 NM	04/19/1994		N/A	0.868	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	03/12/2046	09/10/2008
2.01	SHELL	N	1.031 NM	04/19/1994		N/A	1.019	09/11/2003	N/A	1.3	N/A	1.3	0.840 U	2.0	03/12/2093	09/10/2008
2.02	SHELL	N	1.031 NM	04/19/1994		N/A	1.044	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/12/2105	09/10/2008
2.03	SHELL	N	1.031 NM	04/19/1994		N/A	1.023	09/11/2003	N/A	0.9	N/A	0.9	0.840 U	2.0	03/12/2095	09/10/2008
2.04	SHELL	N	1.031 NM	04/19/1994		N/A	1.016	09/11/2003	N/A	1.6	N/A	1.6	0.840 U	2.0	09/11/2091	09/10/2008
2.05	SHELL	N	1.031 NM	04/19/1994		N/A	1.021	09/11/2003	N/A	1.1	N/A	1.1	0.840 U	2.0	03/12/2094	09/10/2008
2.06	SHELL	N	1.031 NM	04/19/1994		N/A	1.035	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2101	09/10/2008
2.07	SHELL	N	1.031 NM	04/19/1994		N/A	1.039	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2103	09/10/2008
2.08	SHELL	N	1.031 NM	04/19/1994		N/A	1.036	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/12/2101	09/10/2008
2.09	SHELL	N	1.031 NM	04/19/1994		N/A	1.036	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/12/2101	09/10/2008
2.10	SHELL	N	1.031 NM	04/19/1994		N/A	1.027	09/11/2003	N/A	0.4	N/A	0.4	0.840 U	2.0	03/12/2097	09/10/2008
2.11	SHELL	N	1.031 NM	04/19/1994		N/A	1.035	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2101	09/10/2008
2.12	SHELL	N	1.031 NM	04/19/1994		N/A	1.042	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/11/2104	09/10/2008
3.01	SHELL	N	1.031 NM	04/19/1994		N/A	1.069	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2118	09/10/2008
3.02	SHELL	N	1.031 NM	04/19/1994		N/A	1.094	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/12/2130	09/10/2008
3.03	SHELL	N	1.031 NM	04/19/1994		N/A	1.064	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/12/2115	09/10/2008

Corrosion Monitoring E rc ID Analysis Report

Report For: Husky Energy
Presented By: Alliance Engineering & Inspection Ltd.
Address: 333-50 Avenue SE, Calgary, AB T2G 2B3
Telephone: (403) 255-5100 Fax: (403) 255-5171 Web www.aeiltd.com

Report Date: 11/11/2003

(Report in Inches, Corrosion Rates in MPY)
 Analysis: Statistical/Straight Line

Unit: HUSKY
 Eq/Circ ID: 2896926
 Eq Type:
 Class:
 RBI:
 Design Code: S8/D1

Flange Rating: 0 lb/in²
 Design Pressure: 1440 lb/in²
 Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
 TAG # N/A

Summary: Group Name:
 Insp. Due Date = 09/10/2008
 Pred. Ret. Date = 12/28/2040

Group Description:
 RCR = 0.1 MPY
 Rem. Life (from last survey 09/11/2003) = 37.3 yrs

0 C.A. Status: No
 Total Caution TMLs = 0

TML No	Location Description	Ctn TML	First Survey Thick Nt	First Date	Previous Survey Thick Nt	Previous Date	Last Survey Thick Nt	Last Date	Shrt Term Rate	Long Term Rate	Best Rate	Max Hist CR	Retirement Thickness	Rep TML CR	TML Retirement Date	TML Inspection Date
3.04	SHELL	N	1.031 NM	04/19/1994		N/A	1.070	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/12/2118	09/10/2008
3.05	SHELL	N	1.031 NM	04/19/1994		N/A	1.069	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2118	09/10/2008
3.06	SHELL	N	1.031 NM	04/19/1994		N/A	1.074	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/11/2120	09/10/2008
3.07	SHELL	N	1.031 NM	04/19/1994		N/A	1.074	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	09/11/2120	09/10/2008
3.08	SHELL	N	1.031 NM	04/19/1994		N/A	1.073	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2120	09/10/2008
3.09	SHELL	N	1.031 NM	04/19/1994		N/A	1.079	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2123	09/10/2008
3.10	SHELL	N	1.031 NM	04/19/1994		N/A	1.075	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2121	09/10/2008
3.11	SHELL	N	1.031 NM	04/19/1994		N/A	1.071	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2119	09/10/2008
3.12	SHELL	N	1.031 NM	04/19/1994		N/A	1.067	09/11/2003	N/A	0	N/A	0	0.840 U	2.0	03/13/2117	09/10/2008
4.01	BOTTOM HEAD	N	0.855 NM	04/19/1994		N/A	0.926	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	03/12/2075	09/10/2008
4.02	BOTTOM HEAD	N *	0.855 NM	04/19/1994		N/A	0.869	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	09/11/2046	09/10/2008
4.03	BOTTOM HEAD	N *	0.855 NM	04/19/1994		N/A	0.834	09/11/2003	N/A	2.2	N/A	2.2	0.783 U	2.2	11/16/2026	09/10/2008
4.04	BOTTOM HEAD	N *	0.855 NM	04/19/1994		N/A	0.840	09/11/2003	N/A	1.6	N/A	1.6	0.783 U	2.0	03/12/2032	09/10/2008
4.05	BOTTOM HEAD	N *	0.855 NM	04/19/1994		N/A	0.873	09/11/2003	N/A	0	N/A	0	0.783 U	2.0	09/10/2048	09/10/2008

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Report Date: 11/11/2003

(Report in Inches, Corrosion Rates in MPY)
 Analysis: Statistical/Straight Line

Unit: HUSKY
 Eq/Circ ID: 2896926
 Design Code: S8/D1
 Eq Type:
 Class:
 RBI:

Flange Rating: 0 lb/in²
 Design Pressure: 1440 lb/in²
 Design Temperature: 100 °F

Description: VERTICAL SEPARATOR
 TAG # N/A

TML Corrosion Rates are each the Maximum of:

(A) -- Calculated Corrosion Rates x 1.00	:	Varies
(B) -- Default Corrosion Rate	:	2.0 MPY

Representative Corrosion Rate is the Maximum of:

(A) -- Average Corrosion Rate x 1.10	:	Not Used.
(B) -- Average Max 25.0% of TMLs, Min of 2	:	Not Used.
(C) -- Formula Corrosion Rate (Sigma = 1.28)	:	Not Used.
(D) -- Default Corrosion Rate	:	0.1 MPY

Representative Corrosion Rate = 0.1 MPY

TML thickness readings have not been compensated for high Temperatures.
 TML thickness readings have not been compensated for growths.

TML Life calculations are based on the maximum of the Rep. TML CR and the RCR using Short Term and Long Term Corrosion Rates.

Nominal thickness is used for TML corrosion rate calculations with less than 3 surveys.

Minimum time between inspections required for corrosion rate calculation is 6 months.

TML Inspection Interval is:

(A) -- Minimum(TML Life / 2.00, 5.0 years)

Eq/Circ ID Last Survey Date is based on the LAST of the last 0% of TML survey dates (Min 1).

Eq/Circ ID Estimated life = 37.3 years from the most recent survey date.
 (Estimated Life based on the ave of the earliest 25% (Min 1) TML retirement dates.)

Predicted Eq/Circ ID Retirement date is 12/28/2040

Recommended Eq/Circ Internal Inspection Date is 09/10/2008
 Internal Inspection Interval is the minimum(Remaining life / 2.0, 5.0 years).

Caution TML Logic: TML Corrosion Rate > 15.0 MPY .OR. TML Remaining Life < 1.00 Years.
 There are 0 Caution TMLs in this Eq/Circ ID.

1646

(A) 2896926

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

1. Manufactured and certified by MOSS FABRICATION LTD., #1, 6613 - 44 ST., S.E., CALGARY, ALBERTA T2C 2C9
(Name and address of manufacturer)

2. Manufactured for PINNACLE RESOURCES LTD., 1100 - 801 6TH AVE., CALGARY, ALTA. T2C 2C9
(Name and address of purchaser)

3. Location of installation LSD-10-20-61-1-WEM
(Name and address)

4. Type VERTICAL 1693-3 H 9132.2 1135 REV. 2 N/A 1994
(Style or var., tank) (Mfg's serial No.) (ICINI) (Drawing No.) (Net P. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1992
Year

to 1992 N/A N/A
Addenda (Date) Code Case Nos. Special Section (e.g. UG 120(d))

6. Shell: SA 106B 1.031 .0625" (1.6) 10" OD (406) 7'0"
Matl. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: SMLS N/A 100 N/A N/A SINGLE BUTT FULL PEN W/1/2 Sbl
Lang. Welded, Dbl., Engr., Lap, Butt R.T. (Spot or Full) Eff. (%) H.T. Temp. (°F) Time (hr) Diam. (Welded, Dbl., Engr., Lap, Butt) R.T. (Spot, Partial, or Full) No. of Courses

8. Heads: (a) Matl. SA 516-70 (Spec. No., Grade) (b) Matl. SA 516-70 (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)	TOP	0.855"	.0625"			2:1				CONCAVE
(b)	BOTTOM	0.831"	1.6mm			2:1				CONCAVE

If removable, bolts used (describe other fastenings) N/A
(Matl., Spec. No., Tr., Size, No.)

9. MAWP (9928 KPA) 1440 psi or max. temp. (380C) 100 °F
Min. design metal temp. (-299C) -20 °F at 1440 psi. Hydro., pneum., or comb. test pressure (14893 KPA) 2160 psi

10. Nozzles, inspection and safety valve openings: (9928 KPA)

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
IN/OUT	2	2"	RFWN	SA-106B	3/4"	N/A	WELD	SHELL/HEAD
TC	1	2"	TOL	SA-105	3000#	N/A	WELD	SHELL
PSV/OUT	2	1"	TOL	SA-105	3000#	N/A	WELD	SHELL
INSP.	2	1 1/2"	TOL	SA-105	3000#	N/A	WELD	SHELL

11. Supports: Skirt YES Lugs N/A Legs N/A Other N/A Attached WELD TO HEAD
(Yes or no) (No.) (No.) (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 this report: N/A
(Name of part, item number, Mfg's name and identifying stamp)
VOLUME = 6.1 CU. FT. (0.17 M³) WELD UNDER DWG 1624-4 REV. 1
IMPACT TESTS NOT REQ'D PER UG 20(F)
WELL HEAD SEPARATORS

CERTIFICATE OF SHOP 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 Code for Pressure Vessels, Section VIII, Division 1, "U" Certificate of Authorization No. 24723 expires APRIL 2, 1995.
Date APR 19/94 Co. name MOSS FABRICATIONS LTD. Signed Ken W. Friesen
(Manufacturer) (Inspector)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by MOSS FABRICATION LTD. CALGARY, ALBERTA
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of ALBERTA and employed by THE ALBERTA LABOUR, BOILER AND PRESSURE VESSEL SAFETY
have inspected the component described in this Manufacturer's Data Report on April 19, 19 94, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the inspector nor his 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 94/4/19 Signed [Signature] ALBERTA (LOR)
(Authorized Inspector) (Net Board) (Inspector's State, Prov., and No.)