

# Husky Energy

## PRESSURE VESSEL INSPECTION REPORT

E966117460

Nº 6079419

CV

0# 6082659

PAGE : 1 of 3

FACILITY	Ansell Field	DATE	May 5, 2008	REPORT #	IR080505JNP
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### VESSEL STATIC DATA

Prov. Insp. #	A 0558725	CRN	P7217.2	Equip Tag #	
Equipment Location (LSD)	03-33-051-19 W5M	Serial #	10754		
Equipment Description	Vertical 3 phase Separator	Vessel Class	-		
Manufacturer	RJV Gas Field Services	Year Built	2006		
MAWP	1480 psi	KPag / psig	@ 100°F	MDMT	-20°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	16"	Length	(S/S) 2285mm	OAL	mm/in
Shell	Mat'l SA106-B	Thickness	21.44mm	mm	Corr Allowance .0625"
Head	Mat'l SA516-70	Thickness	20.63mm	mm	Corr Allowance .0625"
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	N/A m <sup>3</sup>
Manway	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	Inspection Port	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	Skirt	<input checked="" type="checkbox"/> Legs <input type="checkbox"/> Saddle <input type="checkbox"/>
Nozzle Rating	600 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	Sweet Gas	Sweet	<input checked="" type="checkbox"/> Sour <input type="checkbox"/> PPM:	
Operating Pressure	640 psi	KPag / psig	Operating Temperature	50°F

### PSV STATIC DATA

Tag / Serial No.	Location	Inlet	Outlet	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date
28451-513	Vessel	1"	1"	1440 psi	5180 SCFM	Taylor	82E8 351311	05/06

### 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. #
Inspection Task List #		Inspection Type	Inspection Reason Integrity Inspection <b>IM</b>
Inspection Techniques Required		Next Inspection Type	Due Date
VE VI RT UT MT PT TT		Outstanding Repairs	

### INSPECTION SUMMARY

An external inspection was performed to verify the vessels integrity.  
No concerns were found and the vessel is considered acceptable for continued service.

The vessel was noted on the ABSA list at 07-33-050-19w5m.

### RECOMMENDATIONS

-Re-paint the vessel and under the skirting.

### REPAIRS COMPLETED

Object Name	Cause	Damage	Repair Activity
None			
<b>SEIM</b> - X-Ray - RT2 nor RT1 ✓ Stress Relief - No not yes ✓ Orientation - Vertical not horizontal ✓ Location - 03-33-051-19 W5			

### 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"/> In service 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 3

FACILITY	Ansell Field	DATE	May 5, 2008	REPORT #	IR080505JNP
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**INSPECTION OBSERVATIONS****NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED**

-None at time of inspection.

**EXTERNAL VISUAL INSPECTION**

The vessel is painted with numerous blisters and flaking. The overall condition of the paint is fair. There was no corrosion present in areas where paint had flaked off.

The nameplate, piping, bolting and external attachments are in good condition.

The vessel is protected with a PSV that is attached and in good condition.

The gauges are clear and in good condition.

The vessel appears to be secure and level.

The overall condition of this vessel is good.

**EXTERNAL NDE EXAMINATION**

-An external ultrasonic corrosion survey was completed. No relevant indications were noted at the time of inspection. For more details see formal UT report by Hunt Inspection - Project C2780

**INTERNAL VISUAL INSPECTION**

-There was no internal Visual at time of inspection.

**INTERNAL NDE EXAMINATION**

-There was no internal NDE at time of inspection.

**PRESSURE TEST**

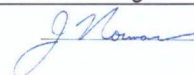
Test Completed ☐ Yes ☐ No    Test Acceptable ☐ Yes ☐ No    Test Report #

**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    Joel Norman

Inspector's Signature



Inspection Company    Hunt Inspection Ltd.

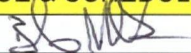
Date

May 05, 2008

**LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION**

Lead Inspector    Bob Marchak

Signature



Date 10-10-2008

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

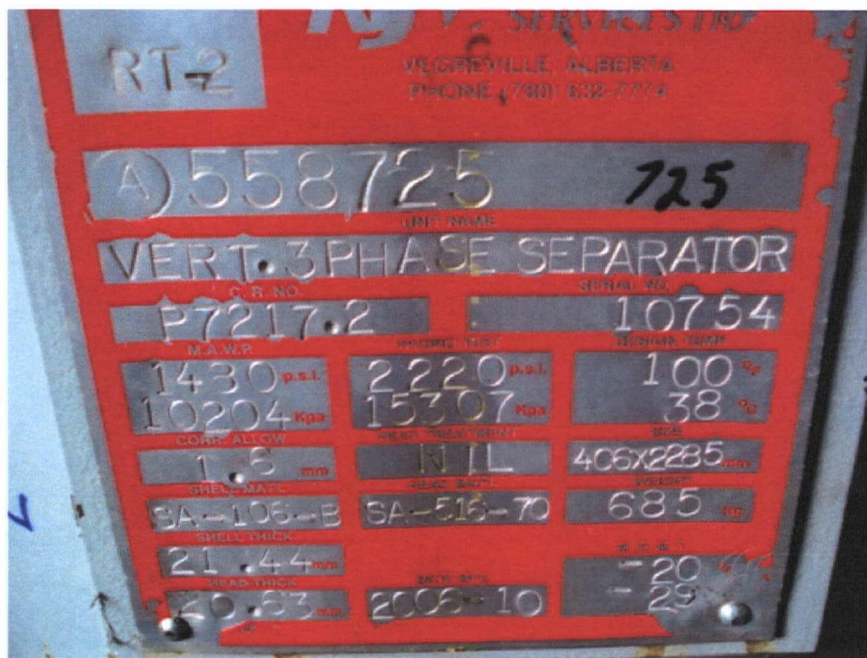
Date  
Date

**Husky Energy**  
**PRESSURE VESSEL INSPECTION REPORT**

PAGE : 3 of 3

FACILITY	Ansell Field	DATE	May 5, 2008	REPORT #	IR080505JNP
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Data Plate Photo

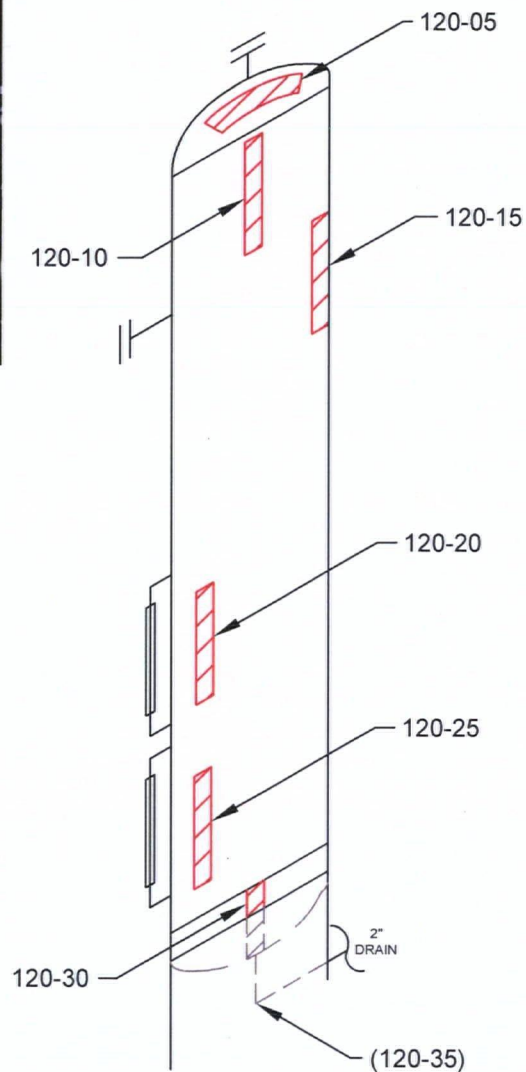
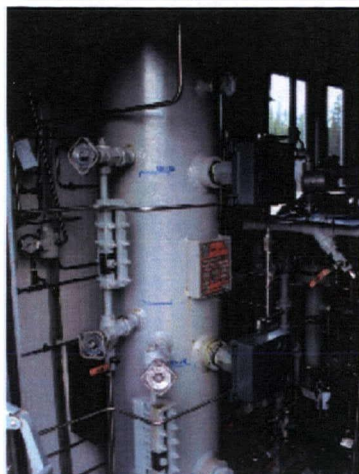




ITEM:

**VERTICAL SEPARATOR**

A 0558725



STETTLER, AB (403) 742-4868  
 LACOMBE, AB (403) 782-7855  
 BROOKS, AB (403) 501-8029  
 GRANDE PRAIRIE, AB (866) 422-9732

TECHNICIAN:

JOEL NORMAN  
 SNT LEVEL III  
 CGSB 48.9712  
 LEVEL III # 6951

DATE: **05/05/08**DWG # **120**CLIENT: **HUSKY ENERGY**LSD: **03-33-051-19-W5M**

INSPECTOR: BOB MARCHAK

LOCATION: ANSELL FIELD

DISTRICT UNIT: FH-FW

BLDG/SKID: -

PROCESS: SWEET

CODE: ASME SEC VIII DIV 1

SPECIFICATION: AS PER ASME SE 797

TECHNIQUE: UT-1-1, REV. 1

METHOD: UT CONTINUOUS / A SCAN

SURFACE COND: PAINTED

SURFACE TEMP: AMBIENT

**VESSEL INFORMATION**VESSEL #: **A 0558725**

CRN #: P7217.2

SERIAL #: 20754

MANUFACTURER: RJV

DATE BUILT: 2006

CLIENT ID / TAG: -

M.A.W.P.: 1480 PSI

M.A.W.T.: 100 °F

JOINT EFFICIENCY/RT: RT 2

STRESS RELIEVED: NO

INSULATED: NO

MANWAY: NO

**VESSEL SPECIFICATIONS**

	OD	NOMINAL	MATERIAL	CA
VESSEL HEAD	16"	.812"	SA-516-70	.0625"
VESSEL SHELL	16"	.844"	SA-106-B	.0625"
BOOT HEAD	-	-	-	-
BOOT SHELL	-	-	-	-

COMMENTS:

PROJECT:

**C2780**



## ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD: 03-33-051-19W5 Dwg: 120 Vessel Number: A0558725  
District Unit: FH-FW Vessel Name: VERTICAL SEPARATOR  
Location: ANSELL FIELD Year Built: 2006  
Skid: - Tag Number: -  
CRN: P7217.2

Survey Date: 5/05/08  
Inspector: BOB MARCHAK  
Process: SWEET  
Project #: C2780  
Shell MAWP PSI: 1480 MAWT F: 100  
Tube MAWP PSI: 0 MAWT F: 0  
Vessel CA: 0.0625

Band	Description			Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
				1	2	3	4	5	6								
120-05	Top	Head	Baseline	0.858	0.863	0.862	0.861	0.859	0.852	2008	0.859	0.852	0.8120	0.0625	0.5359	2009	2028
Shape	Ellipsoidal	Shell Side	Previous										Comments-->				
OD	16		Current	0.858	0.863	0.862	0.861	0.859	0.852	2008	0.859	0.852					
Spec.	VIII Div 1								ST Loss MPY				OK				
Material	SA 516 - 70								LT Loss MPY		0.000						
120-10	Upper	Shell	Baseline	0.836	0.853	0.861	0.867	0.872	0.879	2008	0.861	0.836	0.8440	0.0625	0.6533	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.836	0.853	0.861	0.867	0.872	0.879	2008	0.861	0.836					
Spec.	VIII Div 1								ST Loss MPY				OK				
Material	SA 106 - B								LT Loss MPY		0.000						
120-15	Upper	Shell	Baseline	0.785	0.784	0.783	0.789	0.789	0.800	2008	0.788	0.783	0.8440	0.0625	0.6533	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.785	0.784	0.783	0.789	0.789	0.800	2008	0.788	0.783					
Spec.	VIII Div 1								ST Loss MPY				OK				
Material	SA 106 - B								LT Loss MPY		0.000						
120-20	Mid	Shell	Baseline	0.873	0.857	0.837	0.833	0.832	0.811	2008	0.841	0.811	0.8440	0.0625	0.6533	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	16		Current	0.873	0.857	0.837	0.833	0.832	0.811	2008	0.841	0.811					
Spec.	VIII Div 1								ST Loss MPY				OK				
Material	SA 106 - B								LT Loss MPY		0.000						





## ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD: 03-33-051-19W5 Dwg: 120 Vessel Number: A0558725

Manufacturer: RJV

Survey Date: 5/05/08

District Unit: FH-FW

Vessel Name: VERTICAL SEPARATOR

Serial Number: 20754

Inspector: BOB MARCHAK

Location: ANSELL FIELD

Year Built: 2006

Shell MAWP PSI: 1480 MAWT F: 100

Process: SWEET

Skid: -

Tag Number: -

Tube MAWP PSI: 0 MAWT F: 0

Project #: C2780

CRN: P7217.2

Vessel CA: 0.0625

Band	Description			Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
				1	2	3	4	5	6								
120-25	Lower	Shell	Baseline	0.819	0.811	0.799	0.793	0.792	0.803	2008	0.803	0.792	0.8440	0.0625	0.6533	2009	2028
Shape	Cylindrical	Shell Side	Previous	Comments-->													
OD	16		Current	0.819	0.811	0.799	0.793	0.792	0.803	2008	0.803	0.792					
Spec.	VIII Div 1			ST Loss MPY						OK							
Material	SA 106 - B			LT Loss MPY						0.000							
120-30	Bottom	Head	Baseline	0.862	0.854	0.852	0.854	0.853	0.858	2008	0.856	0.852	0.8120	0.0625	0.5359	2009	2028
Shape	Ellipsoidal	Shell Side	Previous	Comments-->													
OD	16		Current	0.862	0.854	0.852	0.854	0.853	0.858	2008	0.856	0.852					
Spec.	VIII Div 1			ST Loss MPY						OK							
Material	SA 516 - 70			LT Loss MPY						0.000							
120-35	Drain	Nozzle	Baseline	0.326	0.325	0.322	0.316	0.314	0.309	2008	0.319	0.309	0.3430	0.0625	0.0771	2009	2028
Shape	90° Elbow	Shell Side	Previous	Comments-->													
OD	2.375		Current	0.326	0.325	0.322	0.316	0.314	0.309	2008	0.319	0.309					
Spec.	VIII Div 1			ST Loss MPY						OK							
Material	SA 234 - WPB			LT Loss MPY						0.000							
120-40		Piping	Baseline	0.208	0.210	0.212	0.212	0.210	0.210	2008	0.210	0.208	0.2160	0.0270	0.1249	2009	2028
Shape	90° Elbow	Shell Side	Previous	Comments-->													
OD	3.5		Current	0.208	0.210	0.212	0.212	0.210	0.210	2008	0.210	0.208					
Spec.	B31.3			ST Loss MPY						OK							
Material	A 234 - WPB			LT Loss MPY						0.000							



## ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD: 03-33-051-19W5 Dwg: 120 Vessel Number: A0558725

Manufacturer: RJV

Survey Date: 5/05/08

District Unit: FH-FW

Vessel Name: VERTICAL SEPARATOR

Serial Number: 20754

Inspector: BOB MARCHAK

Location: ANSELL FIELD

Year Built: 2006

Shell MAWP PSI: 1480 MAWT F: 100

Process: SWEET

Skid: -

Tag Number: -

Tube MAWP PSI: 0 MAWT F: 0

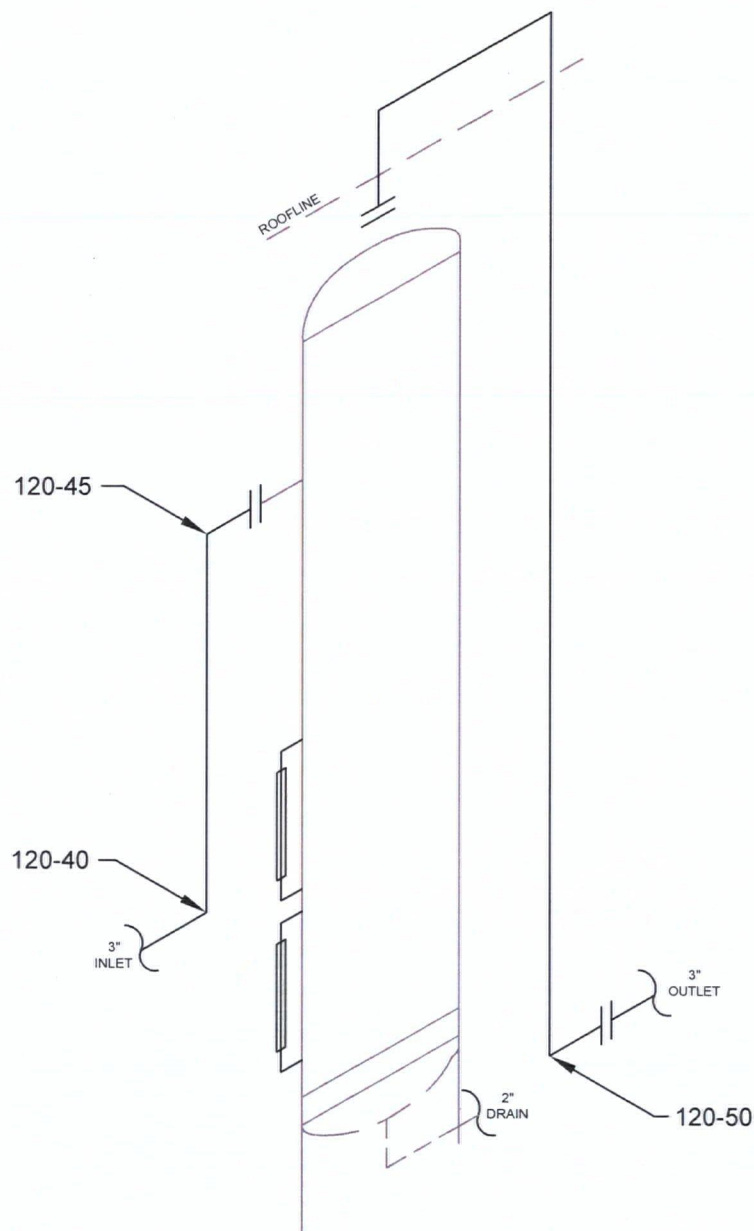
Project #: C2780

CRN: P7217.2

Vessel CA: 0.0625

				Readings												Recommended Retirement Date					
Band	Description			1	2	3	4	5	6	Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection					
120-45		Piping	Baseline	0.212	0.211	0.211	0.213	0.213	0.213	2008	0.212	0.211	0.2160	0.0270	0.1249	2009	2028				
Shape	90° Elbow	Shell Side	Previous											Comments-->							
OD	3.5		Current	0.212	0.211	0.211	0.213	0.213	0.213	2008	0.212	0.211									
Spec.	B31.3													ST Loss MPY		OK					
Material	A 234 - WPB													LT Loss MPY		0.000					
120-50		Piping	Baseline	0.290	0.292	0.292	0.293	0.290	0.288	2008	0.291	0.288	0.3000	0.0375	0.1249	2009	2028				
Shape	90° Elbow	Shell Side	Previous											Comments-->							
OD	3.5		Current	0.290	0.292	0.292	0.293	0.290	0.288	2008	0.291	0.288									
Spec.	B31.3													ST Loss MPY		OK					
Material	A 234 - WPB													LT Loss MPY		0.000					

**A 0558725**



STETTLER, AB (403) 742-4868  
LACOMBE, AB (403) 782-7855  
BROOKS, AB (403) 501-8029  
GRANDE PRAIRIE, AB (866) 422-9732

JOEL NORMAN  
SNT LEVEL III  
CGSB 48.9712  
LEVEL III # 6951

DWG # 120A

**CLIENT: HUSKY ENERGY**

**LSD:** 03-33-051-19-W5M

INSPECTOR : BOB MARCHAK

<b>LOCATION :</b>	ANSELL FIELD
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DISTRICT UNIT : FH-FW

BLDG/SKID: -

<b>PROCESS:</b>	SWEET
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<b>CODE:</b>	ASME B31.3
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<b>SPECIFICATION:</b>	AS PER ASME SE 797
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<b>TECHNIQUE:</b>	UT-1-1, REV. 1
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**METHOD:** UT CONTINUOUS / A SCAN

<b>SURFACE COND:</b>	PAINTED
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**SURFACE TEMP:** AMBIENT

## PIPING INFORMATION

[illegible]

**C2780**



**Husky Energy**

E0#66148157

N° 6079419



CV

**PRESSURE VESSEL INSPECTION REPORT**

PAGE : 1 of 3

<b>FACILITY</b>	<b>Ansell Field</b>	<b>DATE</b>	<b>May 5, 2008</b>	<b>REPORT #</b>	<b>IR080505JNO</b>
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**VESSEL STATIC DATA**

<b>Prov. Insp. #</b>	<b>CRN F6388.2</b>			<b>Equip Tag #</b>	
<b>Equipment Location (LSD)</b>	<b>03-33-051-19 W5M</b>			<b>Serial #</b>	<b>10864</b>
<b>Equipment Description</b>	<b>Fuel Gas Scrubber</b>			<b>Vessel Class</b>	-
<b>Manufacturer</b>	<b>RJV Gasfield Services</b>			<b>Year Built</b>	<b>2006</b>
<b>MAWP 150 psi</b>	<b>KPag / psig</b>	<b>@ 100°F</b>	<b>°C / °F</b>	<b>MDMT -20°F</b>	<b>°C / °F</b>
<b>CODE : UM</b> <input type="checkbox"/> <b>U</b> <input type="checkbox"/> <b>U2</b> <input type="checkbox"/>	<b>RT : 1</b> <input type="checkbox"/> <b>2</b> <input type="checkbox"/> <b>3</b> <input type="checkbox"/> <b>4</b> <input type="checkbox"/>			<b>PWHT : YES</b> <input type="checkbox"/> <b>NO</b> <input checked="" type="checkbox"/>	
<b>Diameter 8"</b>	<b>Length</b>	<b>(S/S) 760mm</b>	<b>OAL mm/in</b>	<b>Vertical</b> <input checked="" type="checkbox"/> <b>Horizontal</b> <input type="checkbox"/>	
<b>Shell Mat'l SA106-B</b>	<b>Thickness 8.1mm</b>	<b>mm</b>	<b>Corr Allowance 3.17mm</b>	<b>mm/in</b>	
<b>Head Mat'l SA516-70</b>	<b>Thickness 7.16mm</b>	<b>mm</b>	<b>Corr Allowance 3.17mm</b>	<b>mm/in</b>	
<b>Nozzle Mat'l</b>	<b>Thickness mm/in</b>		<b>Corr Allowance mm/in</b>		
<b>Internal Coating : YES</b> <input type="checkbox"/> <b>NO</b> <input checked="" type="checkbox"/>	<b>Internal Clad : YES</b> <input type="checkbox"/> <b>NO</b> <input checked="" type="checkbox"/>	<b>Capacity N/A m³</b>			
<b>Manway : YES</b> <input type="checkbox"/> <b>NO</b> <input checked="" type="checkbox"/>	<b>Inspection Port : YES</b> <input type="checkbox"/> <b>NO</b> <input checked="" type="checkbox"/>	<b>Skirt</b> <input type="checkbox"/> <b>Legs</b> <input type="checkbox"/> <b>Saddle</b> <input type="checkbox"/>			
<b>Nozzle Rating</b>	<b>lb ANSI</b>	<b>Painted : YES</b> <input checked="" type="checkbox"/> <b>NO</b> <input type="checkbox"/>	<b>Insulated : YES</b> <input type="checkbox"/> <b>NO</b> <input checked="" type="checkbox"/>		

**PROCESS DATA**

<b>Product Description</b>	<b>Sweet Gas</b>	<b>Sweet</b> <input checked="" type="checkbox"/> <b>Sour</b> <input type="checkbox"/> <b>PPM:</b>
<b>Operating Pressure 100 psi</b>	<b>KPag / psig</b>	<b>Operating Temperature °C / °F</b>

**PSV STATIC DATA**

Tag / Serial No.	Location	Inlet Size	Outlet Size	Set Pressure	Capacity SCFM / Lbs/Hr / GPM	Manufacturer	Model / Type	Service Date
<b>31138-69</b>	<b>Vessel</b>	<b>1"</b>	<b>1"</b>	<b>150 psi</b>	<b>502 SCFM</b>	<b>Taylor</b>	<b>82E4 351311</b>	<b>10/06</b>

**INSPECTION HISTORY**

<b>RBI Category</b> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	<b>Last Inspection Date</b>	<b>W.O. #</b>
<b>Inspection Task List #</b>	<b>Inspection Type</b>	<b>Inspection Reason Integrity Inspection</b> <b>SK</b>
<b>Inspection Techniques Required</b>	<b>Next Inspection Type</b>	<b>Due Date</b>
<b>VE</b> <input type="checkbox"/> <b>VI</b> <input type="checkbox"/> <b>RT</b> <input type="checkbox"/> <b>UT</b> <input type="checkbox"/> <b>MT</b> <input type="checkbox"/> <b>PT</b> <input type="checkbox"/> <b>TT</b> <input type="checkbox"/>	<b>Outstanding Repairs</b>	

**INSPECTION SUMMARY**

An external inspection was performed to verify the vessels integrity.  
No concerns were found and the vessel is considered acceptable for continued service.

**RECOMMENDATIONS**

-None

**REPAIRS COMPLETED**

Object Name	Cause	Damage	Repair Activity
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None

\* Include w/report for 66117460. FGS doesn't require A#. It is exempt as per Alberta Regulation 56/2006 due to volume < 42.5L. SM

**VESSEL STATUS**

<b>Integrity Status</b> <input checked="" type="checkbox"/> <b>Suitable for Continued Service</b>	<input type="checkbox"/> <b>Immediate Repairs Required</b>	<input type="checkbox"/> <b>Replace</b>
<b>Inventory Status</b> <input checked="" type="checkbox"/> <b>In service Fully Utilized</b>	<input type="checkbox"/> <b>Future Repairs Required</b>	<input type="checkbox"/> <b>Scrap</b>
<input type="checkbox"/> <b>Idle</b>	<input type="checkbox"/> <b>Surplus</b>	
<b>This IR completes a thorough inspection. Reschedule as indicated</b> <input checked="" type="checkbox"/> <b>Partial IR only. Do not reschedule</b> <input type="checkbox"/>		



**Husky Energy**  
**PRESSURE VESSEL INSPECTION REPORT**

PAGE : 2 of 3

FACILITY	Ansell Field	DATE	May 5, 2008	REPORT #	IR080505JNO
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**INSPECTION OBSERVATIONS**

**NONCOMPLIANCES OR INSPECTION DEFICIENCIES ISSUED**

-None at time of inspection.

**EXTERNAL VISUAL INSPECTION**

The vessel is painted and is in good condition with no notable corrosion being found.  
The nameplate, piping and external attachments are in good condition.  
The vessel is protected with a PSV that is attached and in good condition.  
The gauges are clear and in good condition.  
The vessel appears to be secure and level.  
The overall condition of this vessel is good.

**EXTERNAL NDE EXAMINATION**

-An external ultrasonic corrosion survey was completed. No relevant indications were noted at the time of inspection. For more details see formal UT report by Hunt Inspection - Project C2780

**INTERNAL VISUAL INSPECTION**

-There was no internal Visual at time of inspection.

**INTERNAL NDE EXAMINATION**

-There was no internal NDE at time of inspection.

**PRESSURE TEST**

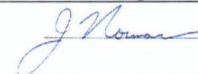
Test Completed ☐ Yes ☐ No      Test Acceptable ☐ Yes ☐ No      Test Report #

**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    Joel Norman

Inspector's Signature



Inspection Company    Hunt Inspection Ltd.

Date

May 05, 2008

**LEAD INSPECTOR'S ACCEPTANCE & SCHEDULE CONFIRMATION**

Lead Inspector    Bob Marchak

Signature



Date 10.10.2008

Vessel Inspection Interval    5 Years

Leave "as-is" ☐

Change to

PSV Inspection Interval    5 Years

Leave "as-is" ☐

Change to

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Date

Date



**Husky Energy**  
**PRESSURE VESSEL INSPECTION REPORT**

PAGE : 3 of 3

FACILITY	Ansell Field	DATE	May 5, 2008	REPORT #	IR080505JNO
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Data Plate Photo

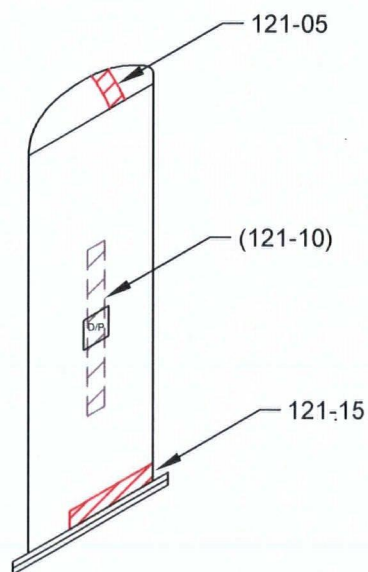
**CERTIFIED BY**  
**RJV GAS FIELD SERVICES LTD**  
 VEGREVILLE, ALBERTA  
 PHONE (780) 632-4074

**W**

**Fuel Gas Scrubber**

C.R. NO.	F6388.2		SERIAL NO.	10564	
M.A.W.P.	150 P.S.I.	1035 Kpa	HYDRO TEST	225 P.S.I.	1555 Kpa
DESIGN TEMP.	100 °F		38 °C		
CORR. ALLOW.	3.17 mm		HEAT TREATMENT		
DRILL MAT'L	SA-106-B		HEAD MAT'L	Top-SA-234-WPB Bottom-SA-516-70	
THICKNESS	8.1 mm		WEIGHT	50 kg	
Top - 7.16 mm Bottom - 19.05 mm			DESIGN TEMP.	-20 °F -28 °C	

ITEM:

**FUEL GAS SCRUBBER**

STETTLER, AB (403) 742-4868  
 LACOMBE, AB (403) 782-7855  
 BROOKS, AB (403) 501-8029  
 GRANDE PRAIRIE, AB (866) 422-9732

TECHNICIAN:

JOEL NORMAN  
 SNT LEVEL III  
 CGSB 48.9712  
 LEVEL III # 6951

DATE: **05/05/08**DWG # **121**CLIENT: **HUSKY ENERGY**LSD: **03-33-051-19-W5M**

INSPECTOR: BOB MARCHAK

LOCATION: ANSELL FIELD

DISTRICT UNIT: FH-FW

BLDG/SKID: -

PROCESS: SWEET

CODE: ASME SEC VIII DIV 1

SPECIFICATION: AS PER ASME SE 797

TECHNIQUE: UT-1-1, REV. 1

METHOD: UT CONTINUOUS / A SCAN

SURFACE COND: PAINTED

SURFACE TEMP: AMBIENT

**VESSEL INFORMATION**

VESSEL #: -  
 CRN #: F6388.2  
 SERIAL #: 10864  
 MANUFACTURER: RJV  
 DATE BUILT: 2006  
 CLIENT ID / TAG: -  
 M.A.W.P.: 150 PSI  
 M.A.W.T.: 100 °F  
 JOINT EFFICIENCY/RT: N/A  
 STRESS RELIEVED: NO  
 INSULATED: NO  
 MANWAY: NO

**VESSEL SPECIFICATIONS**

	OD	NOMINAL	MATERIAL	CA
VESSEL HEAD	8.625"	.281"	SA-234-WPB	.125"
VESSEL SHELL	8.625"	.322"	SA-106-B	.125"
BOOT HEAD	-	-	-	-
BOOT SHELL	-	-	-	-

COMMENTS:

PROJECT:

**C2780**





## ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

LSD:	03-33-051-19W5	Dwg: 121	Vessel Number: -	Manufacturer: RJV	Survey Date: 5/05/08
District Unit:	FH-FW		Vessel Name: FUEL GAS SCRUBBER	Serial Number: 10864	Inspector: BOB MARCHAK
Location:	ANSELL FIELD		Year Built: 2006	Shell MAWP PSI: 150	Process: SWEET
Skid:	-		Tag Number: -	MAWT F: 100	Project #: C2780
			CRN: F6388.2	Tube MAWP PSI: 0	MAWT F: 0
				Vessel CA: 0.1250	

Band	Description			Readings						Year	Avg Inches	Min Inches	Nominal	CA	TMIN	Recommended Next Inspection	Recommended Retirement Date
				1	2	3	4	5	6								
121-05	Top	Head	Baseline	0.296	0.304	0.303	0.298	0.302	0.300	2008	0.301	0.296	0.2810	0.1250	0.0354	2009	2028
Shape	Ellipsoidal	Shell Side	Previous										Comments-->				
OD	8.625		Current	0.296	0.304	0.303	0.298	0.302	0.300	2008	0.301	0.296					
Spec.	VIII Div 1												ST Loss MPY		OK		
Material	SA 234 - WPB												LT Loss MPY	0.000			
121-10	Mid	Shell	Baseline	0.326	0.323	0.328	0.326	0.325	0.327	2008	0.326	0.323	0.3220	0.1250	0.0352	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	8.625		Current	0.326	0.323	0.328	0.326	0.325	0.327	2008	0.326	0.323					
Spec.	VIII Div 1												ST Loss MPY		OK		
Material	SA 106 - B												LT Loss MPY	0.000			
121-15	Lower	Shell	Baseline	0.323	0.327	0.327	0.335	0.330	0.327	2008	0.328	0.323	0.3220	0.1250	0.0352	2009	2028
Shape	Cylindrical	Shell Side	Previous										Comments-->				
OD	8.625		Current	0.323	0.327	0.327	0.335	0.330	0.327	2008	0.328	0.323					
Spec.	VIII Div 1												ST Loss MPY		OK		
Material	SA 106 - B												LT Loss MPY	0.000			

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## SEPARATOR INSPECTION REPORT

### Inspection Report

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Notification Number 6064674 ✓ Work Order 6067294 ✓  
Notification Desc SEPARATOR, 16" 600# Maintenance Plan QPSEPAR6433  
Tasklist Operation ( 5Y Inspection Interval ) 5Y Code Inspection Separator - Sweet Se

### Equipment Static Data

Equipment Number 66117460 Equipment Description SEPARATOR, 16" 600#  
Class SEPARATOR Tag Number  
Serial Number 10754 Year Built 2006  
Manufacturer R.J.V. GASFIELD SERVICES  
Location FH-FW-013-00001-0153 Location Description 100/07-33-050-19W5/00  
Provincial Number 0558725 PM Activity Code  
Status Codes NOPR ORAS Equipment Status In Service - Fully Utilized

CRN Number P7217.23 Code Stamp U Fluid Description NATURAL GAS  
Fluid Service SWEET Internal Coating Exists N Length 7.50 FOOT  
MDMT - Min. Design Metal Temp Shell MAWP 1440 PSI Stress Relief PHT  
Vessel Diameter 16.0 " Volume X-Ray RT1

### PRD Static Data

Equip ID	Location	Size		Set Pressure	Capacity	Manufacturer	Serial Number	Model Number	Next Service Date
		Inlet	Outlet						

### Process Data

Product Description SWEET GAS Fluid Service ☒ Sweet ☐ Sour PPM  
Operating Pressure 2400 KPA Operating Temperature -10 °C

### Pressure Test

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

### PSV Data

Tag/Serial No.	Location	Size		Set Pressure	Capacity	Model / Type	Service Date
		Inlet	Outlet				
28451-513	SEPARATOR	1"	1"	1440 PSI	5180 SCFM	TAYLOR	05/2006

### Inspection History

Inspected By MARCHAK, BOB Inspection Date 2007.11.28

### Inspection Summary

An external inspection consisting of a visual and UT was carried out to determine the integrity of the 3 Phase Separator.  
PSV last serviced 05/2006.  
No concerns were noted.  
The Separator is considered acceptable for continued service.

### Recommendations

None.

### Repairs Completed

### Equipment Status

Integrity Status ☒ Suitable for Continued Service ☐ Immediate Repairs Required ☐ Replace  
☐ Future Repairs Required  
Inventory Status ☒ In Service - Fully Utilized ☐ Idle ☐ Surplus ☐ Scrap

### QA Activities

☒ Leave As-Is ☐ Weld Overlayed ☐ Part / Component Replaced  
☐ Equipment Replaced ☐ Grind Dressed ☐ Patch Installed  
☐ MAWP Derated ☐ Coating - Cleaned & Patched ☐ Coating - Removed & Replaced  
☐ Defect Removed & Rewelded ☐ Part Cleaned ☐ Lapped & Dressed  
☐ Epoxy Patched



**Noncompliances or Inspection Deficiencies Issued****External Visual Inspection**

Nameplate on the Separator was attached and legible.  
The paint was in good condition with no chips noted.  
The Separator skirt was welded to the floor and was secure.  
PSV was last serviced 05/2006.  
No leaks were noted.  
The Separator is considered acceptable for continued service.

The Fuel Gas Scrubber was fabricated by RJV in 2006. CRN# F6388.2,  
Serial# 10864. MAWP: 150 psi at 100F. Diameter 219mm x 760 mm L.  
The paint was in as new condition with no chips noted.  
No leaks were noted.  
No concerns noted on the scrubber.  
Scrubber PSV info:  
Located: off Scrubber  
Serial Number: 31138-69  
Size: 1"x 1"  
Set Pressure: 150 psi  
Capacity: 582 scfm  
Service Date: 10/2006  
The Fuel Gas Scrubber is considered acceptable for continued service.

**External NDE Examination**

UT carried out by Bob Marchak.  
Separator: Nominal Shell: 0.844", Head: 0.812", Drain Nozzle: 0.343"  
Drain Nozzle: 0.320" to 0.329"  
Top Head: 0.836" to 0.851"  
Top Shell: 0.848" to 0.857"  
Bottom Shell: 0.820" to 0.851"  
Calculated t.min. on drain nozzle = 0.078"  
Remaining life on drain nozzle = 10.5 years

Fuel Gas Scrubber:  
Nominal Shell: 0.319", Head: 0.282"  
Top Head: 0.313" to 0.323"  
Top Shell: 0.326" to 0.331"  
No issue with UT readings.

**Internal Visual Inspection****Internal NDE Examination****Data Integrity**

The following changes are required in SEIM:

X-Ray: RT2 not RT1

Stress Relief: No

MAWP: 1480 psi not 1440 psi

Orientation: Vertical not Horizontal

CRN: P7217.2 not P7217.23

*Should be P7217-23 - 5 c/c Regis. Approval to issue*

**Inspection Interval**

Keep Separator on a 5 year inspection interval.  
Set PSV service interval at 5 years.

**Damages****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.

Inspector Name MARCHAK, BOB

Inspector Signature

Inspection Company HUSKY ENERGY

Date

*13-DEC-2007*

**Lead Inspector's Acceptance & Schedule Confirmation**

Lead Inspector

*DALE MARTIN*

Signature

*[Signature]*

Date

*DEC 17, 07*

Vessel Inspection Interval

☒

Leave as-is / Change to:

PSV Inspection Interval

☒

Leave as-is / Change to:

Top



# PHOTOS OF A558725 SEPARATOR AND FUEL GAS SCRUBBER

FH-FW-013-00001-0143	✓100/08-06-051-18W5/00	
FH-FW-013-00001-0145	✓100/03-02-051-19W5/00	
FH-FW-013-00001-0146	✓100/04-01-051-19W5/00	
FH-FW-013-00001-0147	✓100/10-02-051-19W5/00	10-2
FH-FW-013-00001-0149	✓100/12-34-050-19W5/00	10-5
FH-FW-013-00001-0150	✓100/13-34-050-19W5/00	10-23
FH-FW-013-00001-0151	✓100/10-33-050-19W5/00	10-23
	✓100/07-33-050-19W5/00	10-23
	✓100/03-33-050-19W5/00	100/03-33-05
FH-FW-013-00001-0155	✓100/09-23-050-20W5/00	
	✓100/02-13-051-19W5/00	
	✓100/08-13-051-19W5/00	10-13
	✓100/08-13-051-19W5/00	10-13
	✓100/15-13-051-19W5/00	10-13
	✓100/15-13-051-19W5/00	10-13

W  
RT-2

CERTIFIED BY  
**RJV** GAS FIELD SERVICES LTD  
VEGREVILLE, ALBERTA  
PHONE (780) 632-7774

**(A) 558725** **725**  
UNIT NAME

**VERT. 3 PHASE SEPARATOR**

C.R. NO. **P7217.2** SERIAL NO. **10754**

MAWP <b>1480</b> p.s.i. <b>10204</b> Kpa	HYDRO TEST <b>2220</b> p.s.i. <b>15307</b> Kpa	DESIGN TEMP <b>100</b> °F <b>38</b> °C
CORR. ALLOW <b>1.6</b> mm	HEAT TREATMENT <b>NIL</b>	SIZE <b>406X2285</b> mm
SHELL MTL <b>SA-106-B</b>	HEAD MTL <b>SA-516-70</b>	WEIGHT <b>685</b> kg
THICKNESS <b>21.44</b>	WEIGHT <b>2006-10</b>	MOIST <b>-20</b> <b>-29</b>

POOR QUALITY



# PHOTOS OF A558725 SEPARATOR AND FUEL GAS SCRUBBER





# PHOTOS OF A558725 SEPARATOR AND FUEL GAS SCRUBBER

