

Company

Reviewed and Approved by

Form: QR-19.7a Rev: 0, Date 12/13

PRESSURE VESSEL & COLUMN INSPECTION REPORT

VESSEL STATIC DATA

LSD: 06-23-050-19w5 Date: May 6, 2015 SAP Equipment ID: 66074154

	II / Minenead Fie						System					
Prov. Insp. #	A0449856	CRN	P7	7217.2		Equi	Equip Tag # n/a					
Equipment D	escription Sep	parator				Seria	l# 7141					
Manufacture	r RJV Gasfield	Services				Vess	el Class					
Internal Acce	ss: Descripti	on: none				Year	Built 20	02				
MAWP 10	204	kPa	@ :	38	°C	MDM	T -29)	°C			
CODE :		RT:	2			PWH	T : No					
Diameter 40	O6mm Le	ngth (S/S) 2	285 mm	OAI	L mm		Verti	cal				
Shell Mat		Thick		21.44	mm	Corr	Allowance	1.6	mm			
Head Mat	'I SA-516-70	Thick	ness	20.63	mm	Corr	Allowance	1.6	mm			
Nozzle Mat	.1	Thick	ness		mm / iı	n Corr	Allowance		mm			
Internal Coat	ing:	Intern	al Clad	l:		Сара	city		m3			
Manway:	NO	Inspe	ction P	ort : NO	ı	Skirt						
Nozzle Rating	g 600	b ANSI Painte		YE	 S	Insul	ated NC)				
	<u> </u>			CESS DA		1						
Product Description Gas, condensate, water Sweet												
Operating Pressure 0 PSI Operating Temperature 40 °F												
			PSV S	STATIC DA	TA							
Serial No. Location Set Pressure Pressure SCFM Manufacturer Model / Type Company Company												
84335-344	shell	1440psi	,	5181	Taylor	82E	8351311	Wizard 26-Sep-				
			PS	V DETAILS	S	•		•				
		rread/Flange)			ANSI Rating			ze (inche	es)			
PRD Inlet	Threaded						1"					
PRD Outlet	Threaded						1"					
Dress de me#	Description			uipment Re		C.	!al#	D.,	a Data			
Procedure#	Description	Manufactu	irei	IVIC	odel#	36	erial#	Du	e Date			
			INCREA	TION SUMI	AA DV							
supported and se	e blinded, and gas ou cure. Paint in accept and legible. PSV ser	ıtlet line valve close able condition with r	d, but all properties	piping fully co ant deteriorat	nnected. Vessel ion noted. Piping	g through ro	of seal failure	. Skirt is fu	II of water.			
			RECOI	MMENDATIO	ONS							
Drain out / suck o	Confirm with operations if site will be put back into service, if not blind outlet piping or fully disconnect vessel to consider it Out of Service. Drain out / suck out water from skirt. Repair roof seal failures.											
	NONCONFORMANCES / INSPECTION DEFICIENCIES											
None noted												
			INCOLO	TION DI AN	INING							
Inonestica Start				TION PLAN			-40 m ra!					
Inspection Strate		Availability				nspection li						
Inspection Date	May 6, 2015	Date of Las	st inspec		D	ate of Next	inspect					
		F	REPORT	CERTIFICA	ATION							
the specified eq	pelow certify that ins uipment is considere	spections/tests haved fit for service un	e been o	ompleted in	accordance wit	h the identi	fied inspecti					
Inspected by		Ed Tymen	sen		5-45		Date	e <u>May</u>	6, 2015			

Streamline Inspection Ltd

PESL#

000711

API#

Date

27479



PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 06-23-050-19w5	Date: May 6, 2015	SAP Equipment ID:	66074154	
		PESL#	API #	
Criticality Assessment Rerun	In	spection Planning Rerun		
Assessed Next Inspection Date				



PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 06-23-050-19w5 Date: May 6, 2015 SAP Equipment ID: 66074154

DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition	Location	NCR	Comments
V1	General Other (Please Explain)	Good			Overall no significant concerns observed
V2	General Corrosion	N/A			No corrosion concerns noted
V3	General Leaks	N/A			No active leaks present
V4	Vibration	N/A			
V5	Dissimilar Flange Rating	N/A			None noted
V6	Ladder/Stairway	N/A			
V7	Heads	Good			No concerns noted
V8	Guy Wires	N/A			
V9	Electrical Ground	Good			Securely grounded
V10	Painted Inactive Corrosion	N/A			
V11	Coating/Painting	Good			No significant failures observed
V12	Expansion Joint or Bellows	N/A			
V13	Gauge/Site Glass	Good	pressure, temp, level		clear and legible
V14	Shell	Good			No concerns noted
V15	Jacket	N/A			
V21	Support Other (Please explain)	Good	piping		well supported
V22	Foundation	Good			No concerns noted steel skid on steel piles
V23	Anchor Bolts	N/A			
V24	Saddle/Skirt	Fair	skirt		Securely in place Welded to floor, inspection port present and accessible. Skirt is full of water
V25	Davit	N/A			
V26	Fireproofing	N/A			
V31	Connections Other (Please explain)	Good			All threaded connections appear secure
V32	Small Branches	Good	tubing		No significant sign of strain or concerns
V33	Nozzles	Good			No stresses, corrosion or misalignment
V34	Manways	N/A			
V35	Reinforcing Pads	N/A			
V36	Inadequate Thread Engagement	Good			No concerns noted
V37	Bolting	Good			Intact with no missing bolts or short bolting
V38	Flanges	Good			No active leaks no significant corrosion noted
V39	Leak Clamps	N/A			
V41	Insulation Other (Please explain)	Good	piping outside building		insulated and clad
V42	Damage	N/A	piping outside building		None noted
V43	Penetrations	N/A			
V44	Insulation Jacket	Good	piping outside building		tin clad
V45	Banding	Good	piping outside building		No concerns
V46	Seals/Joints	Poor	piping through roof		seal failure
V51	Relief Devices Other (Please explain)	Good			Serviced and seal intact
V52	Corrosion	N/A			
V53	Leaks	N/A			
V54	Restricted Inlet/Outlet	N/A			
V55	Manual Operation Lever	N/A			



PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 06-23-050-19w5 Date: Mar

Date: May 6, 2015

SAP Equipment ID: 66074154

PHOTOS





LSD SIGN DATAPLATE





VESSEL OVERVIEW

INLET LINE TO SEPARATOR BLINDED





PSV SERVICE TAG



PRESSURE VESSEL & COLUMN INSPECTION REPORT

LSD: 06-23-050-19w5 Date: May 6, 2015 SAP Equipment ID: 66074154





PSV DATAPLATE

PSV OVERVIEW





GAS OUTLET THROUGH ROOF SEAL FAILURE

SKIRT IS FULL OF WATER

Husky Energy

Location Name:	ANSEL		LSD:	06-23-050-19W5		
A#:	A0449856		Equipment/Tag No.			
Equipment Description:	SEPARATOR					
Manufacturer:	RJV GASFIELD SERVICES					
Serial Number:	7141		CRN:	P7217.2		
Shell MAWP:	1480	PSI	Shell Design Temp:	100	°F	
Tube MAWP:		PSI	Tube Design Temp:		°F	
Shell Material:	SA-106-B		Head Material:	SA-516-70		
Shell Thickness:	21.44	mm	Head Thickness:	20.63	mm	
Corrosion Allowance:	1.6000	mm	Date Built:	2002		
Size:	406	mm	Pipe / Rolled Plate:	PIPE		
RT:	2		-			

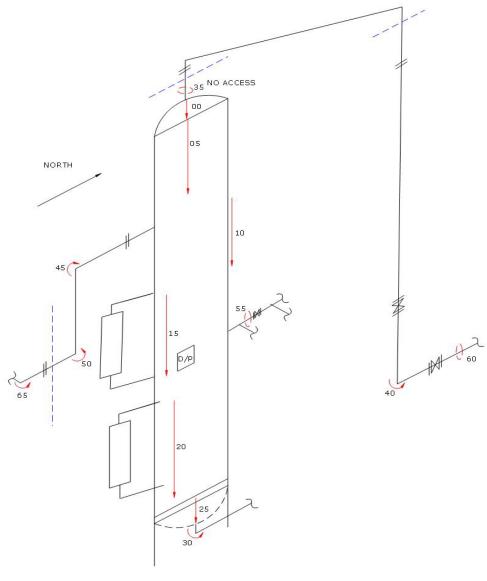




SAP66074154

NOTES:

















*All values are in millimeters unless otherwise stated.

Ultrasonic Corrosion Survey

Survey Name: Husky Energy Date: May 8, 2015

Inspector: D. Skeard

										mspector. D. 3kg	saru
LSD: A #: CRN: RT:	06-23-050-19W5 A0449856 P7217.2 2	Area: Tag Number: Year Built: Vessel CA: Shell MAWP:	ANSEL 2002 1.600 1480 PSI	mm MAWTF :	100 °F		Location: Vessel Name: Serial Number: Manufacturer: Tube MAWP:		OR ELD SERVIO MAWTF:	CES °F	Pipe/Plate PIPE
TML De	escription		Baseline						Material:	SA-516-70	
00	HEAD		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Ellipsoidal	Min	21.16			19.030	1.600	20.630		0.000	0.000
OD:	406.4	Avg	21.49							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:								Retirement Date:	
TML De	escription		Baseline						Material:	SA-106-B	
05	SHELL		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	21.06			19.840	1.600	21.440		0.000	0.029
OD:	406.4	Avg	21.36							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:								Retirement Date:	
TML De	escription		Baseline						Material:	SA-106-B	
10	SHELL		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	21.79			19.840	1.600	21.440		0.000	0.000
OD:	406.4	Avg	22.25							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:								Retirement Date:	
TML De	escription		Baseline						Material:	SA-106-B	
15	SHELL		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	21.74			19.840	1.600	21.440		0.000	0.000
OD:	406.4	Avg	21.87							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:								Retirement Date:	



*All values are in millimeters unless otherwise stated.

Ultrasonic Corrosion Survey

Survey Name: Husky Energy Date: May 8, 2015

Inspector: D. Skeard

										inspector. D. 3kg	earu
LSD: A #: CRN: RT:	06-23-050-19W5 A0449856 P7217.2 2	Area: Tag Number: Year Built: Vessel CA: Shell MAWP:	2002 1.600	mm MAWTF:	100 °F		Location: Vessel Name: Serial Number: Manufacturer: Tube MAWP:	FIELD SEPARATO 7141 RJV GASFI PSI		CES °F	Pipe/Plate PIPE
TML De	escription		Baseline						Material:	SA-106-B	
20	SHELL		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Cylindrical	Min	21.62			19.840	1.600	21.440		0.000	0.000
OD:	406.4	Avg	21.87							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:								Retirement Date:	
TML De	escription		Baseline						Material:	SA-516-70	
25	HEAD		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	Ellipsoidal	Min	21.11			19.030	1.600	20.630		0.000	0.000
OD:	406.4	Avg	21.49							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:								Retirement Date:	
TML De	escription		Baseline						Material:	A-234-WPB	
30	NOZZLE		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	8.28			7.623	1.089	8.712		0.000	0.033
OD:	60.325	Avg	8.61							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:	NOMINA	L ASSUM	D					Retirement Date:	
TML De	escription		Baseline						Material:	SA-106-B	
35	NOZZLE		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	OBSTR			#N/A	#N/A	#N/A		#VALUE!	#N/A
OD:	88.9	Avg	OBSTR							Remaining Life:	
Spec:	ASME VIII Div.1	Comments:	NO ACCE	ESS						Retirement Date:	



*All values are in millimeters unless otherwise stated.

Ultrasonic Corrosion Survey

Survey Name: Husky Energy Date: May 8, 2015

Inspector: D. Skeard

										inspector. D. 3kg	saru
LSD: A #: CRN: RT:	06-23-050-19W5 A0449856 P7217.2 2	Area: Tag Number: Year Built: Vessel CA: Shell MAWP:	2002 1.600	mm MAWTF:	100 °F		Location: Vessel Name: Serial Number: Manufacturer: Tube MAWP:	FIELD SEPARATO 7141 RJV GASFI PSI		CES °F	Pipe/Plate PIPE
TML D	escription		Baseline						Material:	A-234-WPB	
40	PIPING		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	4.39			4.801	0.686	5.486	3.200	0.000	0.084
OD:	88.9	Avg	5.13							Remaining Life:	14.49 Yrs
Spec:	ASME B31.3	Comments:	NOMINA	AL ASSUMI	ED, ER	OSION	NOTED			Retirement Date:	11/1/2029
TML D	escription		Baseline						Material:	A-234-WPB	
45	PIPING		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	6.86			6.668	0.953	7.620		0.000	0.059
OD:	88.9	Avg	7.16							Remaining Life:	
Spec:	ASME B31.3	Comments:	NOMINA	AL ASSUM	ED, LO	W REA	DING			Retirement Date:	
TML D	escription		Baseline						Material:	A-234-WPB	
50	PIPING		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	90° Elbow	Min	7.01			6.668	0.953	7.620		0.000	0.047
OD:	88.9	Avg	7.32							Remaining Life:	
Spec:	ASME B31.3	Comments:	LOW RE	ADING						Retirement Date:	
TML D	escription		Baseline						Material:	SA-106-B	
55	PIPING		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	9.68			7.957	1.137	9.093		0.000	0.000
OD:	33.401	Avg	10.13							Remaining Life:	
Spec:	ASME B31.3	Comments:								Retirement Date:	



Spec: ASME B31.3

*All values are in millimeters unless otherwise stated.

Comments: LOW READING

Ultrasonic Corrosion Survey

Survey Name: Husky Energy Date: May 8, 2015

Inspector: D. Skeard

Retirement Date: 11/21/2030

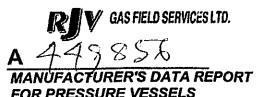
										•	
LSD:	06-23-050-19W5	Area:	ANSEL				Location:	FIELD			
A #:	A0449856	Tag Number:					Vessel Name:	SEPARATO)R		
CRN:	P7217.2	Year Built:	2002				Serial Number:	7141			
RT:	2	Vessel CA:	1.600	mm			Manufacturer:	RJV GASFI	ELD SERVIO	CES	
		Shell MAWP:	1480	MAWTF:	100		Tube MAWP:		MAWTF:		Pipe/Plate
			PSI		°F			PSI		°F	PIPE
TML De	escription		Baseline						Material:	SA-106-B	
60	PIPING		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	360° Circ	Min	5.54			4.801	0.686	5.486		0.000	0.000
OD:	88.9	Avg	5.79							Remaining Life:	
Spec:	ASME B31.3	Comments:	NOMINA	AL ASSUME	D					Retirement Date:	, •
TML De	escription		Baseline						Material:	A-234-WPB	
65	PIPING		2015			Flag	CA	Nominal	T Min	STCR mm/yr	LTCR mm/yr
Shape:	45° Elbow	Min	4.98			6.134	0.876	7.010	2.616	0.000	0.156
OD:	73.025	Avg	5.33							Remaining Life:	15.54 Yrs

ALBERTA BOILERS SAFETY ASSOCIATION

Suite #200, 4208 - 97 Street

Edmonton, Alberta T6E 5Z9

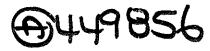




Partial	MANUFAC FOR PRES		

								run	/ /\L	JJU/1	E VESS	LLU		
Upon shipment o											he province	of		
installation in ac	cordance will	h the regulati	ions under ti	ne Act, gove	ming the c	onstruction an	d installation	on ot pre	ssure v	esseis.				
Manufactured	Bv		R.J.V. Ga	s Field Se	rvices Lt	d.			-					
Name & address	-	urer		1901 - 47th Street Vegreville, Alberta T9C 1C3										
Manufactured				R.J.V. Gas Fleid Services Ltd.										
Name & Address		r/Consigne				Alberta T9	C 1C3							
Ultimate Own					<u> </u>									
Name & Address	3		STOCK											
Location Of It	stailation													
Address			STOCK		, <u> </u>					A				
Pressure Ve	ssel													
Туре:			·	Serial Num	ber:	1111	Year Built				Overall Len	gth:		
Vertical 3-Pha	se Separato	ж				141		2002			2285 mm s	eam/sea	m _	
Provincial Registration No C.R.N.:				National Bo	ard No.:		Drawing N	Vo.:			Diameter:			
P7217.2 N/A				N/A			<u> </u>	V01-38	31		406 mm O	D.		
		•	,											
The chemical a	nd physical	properties (of all parts r	neet the rec	<i>quirement</i> :	s of material :	specificati	ons of	the A.S.	M.E. coo	le.			
The design, con:	struction and	workmanshi	p conform to	CSA B51.		ASME	Division:		Adden	da:		Code Cas	e No.:	
						2001 Edition	ļ							
Manufacturers						Section VIII						N/A		
of the report, as Names of parts:				Item No.:		Manufacture	rs Name:				Identifying :	Stamp:		
													. ,,	
Shell				<u> </u>										
			Corrosion	<u> </u>	Overali	Number Of	Girth Je	oints	Lon	gitudinal	Joints	P.W.	Н.Т	
Description	Material	Thickness	Allowance	Diameter_	Length	Courses_	Туре	R.T.	Туре	R.T.	Efficiency	Temp.	T:- ,	
Shelf	SA-106-B	21.44 mm	1.6	406 mm	2285 mm	1	1	RT-2		SML'S	100%			
				L								L	<u> </u>	
Heads							-				····		·····	
	1	Minimum	Corrosion	Crown	Knuckie	Ellipse	Conical		Hemis	oh.	Flat	Side To		
Description	Material	Thickness	1		Radius	Ratio	Apex Ang	le	Radius		Diameter	Pressure		
Гор	SA-516-70	20.63mm	1.6			2:1						Concave		
3ottom	SA-616-70	20.63mm	1.6			2:1			T			Concave	ı	
Removable boits			tenings):		Material S	Spec.:	<u> </u>	Grade:			Size/Dimen	sion:		
			·····											
Pressure - T	emperatu	re												
			structed for I	Maximum Al	lowable	At Maxin	num	Minim	um Tem	perature	Test Pres	sure (Hydn	/	
Pressure Vesse	Part:	1	Pressure:			Temperature:		(when less than 29° C)						
Vessel			10,204 Kp	a		38°	С		-29° C		15,307 Kpa			

FORM NO. CB-118



Purpose	Number	Dimension	Туре	Material	Nominal	Reinforcement	How	Location	
					Thickness	Material	Attached		:
Inlet	N1	88.9 mm	RFWN	SA-106-B / SA-105	Sch.XXS	N/A	UW 16.1(c)	Shell	
Outlet	N2	88.9 mm	RFWN	SA-106-B / SA-105	Sch.XXS	N/A	UW 16.1(c)	Top Head	
Level Controller (Water)	C1	60.3 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c)	Shell	
Sight Glass (Water)	C2a&b	26.7 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c)	Shell	
Liquid-Out (Water)	C3	33.4 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c)	Sheil	
Press. Ind.	C4	21.4 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c)	Shell	
Temp. Ind.	C5	26.7 mm	Соц.	SA-105	6,000#	N/A	UW 16.1(c)	Shell	
Drain	C6	30.3 mm	Coupling	SA-106-B / SA-105	Sch.160	N/A	ÚW 16.1(c)	Bottom Hea	1
P.S.V.	C7	33.4 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c)	Shell	-
Level Controller (Inspection)	C8	60.3 mm	Coupling	SA-105	6,000#	N/A	UW 16. i(c)	Shell	:
Sight Glass (Oil)	C9 a&b	26.7 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c)	Sheli	
Liquid Out (Oil)	C10	33.4 mm	Coupling	SA-105	6,000#	N/A	UW 16.1(c	Sheil	
					 			ļ	<u>:</u>
					┪				-
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	-						 	 	-

Supports				
Skirt	Lugs / No.	Legs / No.	Other (Description)	Attached (Where And How)
Yes X No _	N/A	N/A	N/A	Welded To Bottom Head

Remarks / Observations (Cubical Capacity/Volume)

Volume= (.262 cubic meters), Vertical S-Phase Separator

Exempt from impact test requirements as per UG 20(F)

Hydrostatically Tested in the Vertical Position

Nozzle to Shell Weld is Full Penetration

Ve certify that the statements made in this	data report are correct and
nat the said vessel has been constructed	in accordance with the Provicial
egistored design below and the requirem	ents of standard CSA B51.
Provincial Registered Design:	CRN P7217.2
Manufacturer: R.J.V. GAS Fl	ELD SERVICES LTD.
Gignature	Date
	JAN 2, 3 2002

Cartificate (Of Snop Inspe	e <u>tion</u>	
i, the undersigned, employed by	•	pilor and Precome Vesses ers Safety Associ	
have inspected the	above wessel and s	tate that to the best of m	y knowledge
and belief, the mar	rufacturer has constr	ucted the vessel in accor	dance with
the Provincial Reg	istration CRN	P7217.2	
and the requiremen	nts of standard CSA	B51.	
Inspector's Nan	10: Kim	nd R D	etter.
Signature) -	$\overline{}$	Date	- 1
Almah.	2	JAN 2 3 2002	
TA	13-134	L	