

PRESSURE VESSEL & COLUMN INSPECTION REPORT

			LSD: 03-	<mark>14-050-</mark> 1	19W5	Date: 2	014-03-25	SAP Equip	ment ID	66195892	
					VESSEL ST	ATIC DAT	A				
lant:	MIN	IEHEAD		o	P Unit:				System:		
rov. Insp . #	:			С	RN:	F6388.23	l	ı	Equip Tag#:	66	195892
quipment De	scription:	FUEL G	AS SCRUBBER						Serial #:	127	747
anufacturer	: RJ\	/ Gas Field Se	ervices					,	Vessel Class:	ves	ssel
nternal Acces	ss: No			D	escription:			١,	Year Built:	20	12
AWP:	103	34	kpa	A	t Temp	38	С		MDMT:		-29 C
ode:			-	R	T: Non	e		1	PWHT:	No	
iameter: 2	19 mr	n Length	1: 762	mm (1	Γ/Τ): mm	OAL:	mm	- 1	Orientation:	Ver	tical
SHE	ill I	Mat'l: SA-:	106 B	Т	hickness:	8.08	mm	<u> </u>	Corr Allowan	ce:	3.18 mm
HE	AD I	Mat'l: SA-2	234 WPB	Т	hickness:	7.14	mm	- 1	Corr Allowan	ce:	3.18 mm
	Nozzle M	lat'l:		1	hickness:				Corr Allowan	ce:	
nternal Coati				-	nternal Clad:	No	<u> </u>		Capacity:		m3
nternal Coati anway:	ng: No				nspection Port:	No			Skirt X	Legs	Saddle
ozzle Rating			lb ANSI		ainted:	Ye			Insulated:	No	
					PROCES			1			
roduction De	scription:			1 9	Sweet	Sour:					
perating Pre			kpa		perating Temp:		(2			
			<u> </u>		· · ·	IC DATA					
			PSV STATIC DATA Capacity					l e	<u> </u>		
Tag #	Serial No.	Location	tion Size((mm)	Set Press	Imperial	· · · Manufacturor		Model	Last	Service
	ochai itoi	Location	Inlet	Out	let (kPa)	(SCFM)				Service	Company
	021192-21	Piping	25.40	25.4	1034	582	TAYLOR		82E435131	2013/03/14	WIZARD.
	0				PSV DE	TATIC			1		
		- /	1/=1		1				G:	· (T /)	
		Type(TI	hread/Flange	:)	Ai	NSI Rating				e(In/mm)	
PRD Inle	et	Threade	ed		N	N/A			25	5.40	
PRD Out	et	Threade	ed		N	N/A			25	.40	
				NI	DE Equipmen	t Records					
Proced	ure #	Descri	otion		nufacturer	1	odel#		Serial#		Due Date
				··iai		<u> </u>					
**** See As	sociated NDI	Report									
					INCRECT	ON SUMM	IADV				
					INSPECT	LON SUMM	IAKI				
JT SURVEY I	PERFORMED	- NO NOTA	ABLE CORRC	SION							
					RECOM	IMENDATI	ONS				
/F00F1 12 F	IT FOR 255	" 0"									
/ESSEL IS F	IT FOR SER\	/ICE.									
							CTION DEFIC				



Assessed Next Inspection Date

PRESSURE VESSEL & COLUMN INSPECTION REPORT

		INSPECTION PLANT	IING			
Inspection Strategy	-	Availability	Inspection	ı Interval		
Inspection Date	2014/03/25	Date of Last Inspect	Date of Ne	ext Insp	2019/03/25	
		REPORT CERTIFICAT	ΓΙΟΝ			
_	rtify that inspections/tests have bee onsidered fit for service until the date	n completed in accordance with the ide e of next inspection.	ntified inspection strategy and t	that the		
Inspected by	Duncan Kendrid	k Oman kant	Cert #	Date	2014/03/25	
Reviewed and Approved	by	_		Date		
Criticality Assessment Re	run	Inspection Planning Rerun				



PRESSURE VESSEL & COLUMN INSPECTION REPORT

DETAILED INSPECTION VISUAL EXTERNAL

Description						
Variation	ID	Description	Condition	Location	NCR	Comments
Variation	V1	General Other (Please Explain)	Accept			NEW CONDITION.
Vibration	V2	General Corrosion	Accept			NO CORROSION.
V5 Dissimilar Flange Rating N/A V6 Ladder/Sainway N/A V7 Hodds Accept GDOD CONDITION. V8 Guy Wree N/A SODD CONDITION. V9 Electrical Ground Accept SODD CONDITION. V10 Painted Tractive Curosion N/A SODD CONDITION. V11 Coding/Painting Accept GODD CONDITION. V12 Expension Joint or Bellows N/A GODD CONDITION. V14 Shell Accept GODD CONDITION. V13 Jacket N/A WILLIES SIGNE. V14 Shell Accept GODD CONDITION. V13 Jacket N/A WILLIES SIGNE. V14 Shell of Store N/A WILLIES SIGNE. V12 Accept of Store GODD CONDITION. V22 Accept of Store GODD CONDITION. V23 Accept of Store GODD CONDITION. V24 Setale/Store Accept GODD CONDITION. V25	V3	General Leaks	Accept			NO LEAKS.
Variety	V4	Vibration	N/A			
V7 Heads	V5	Dissimilar Flange Rating	N/A			
Vision	V6	Ladder/Stairway	N/A			
V9 Electrical Ground	V7	Heads	Accept			GOOD CONDITION.
VII	V8	Guy Wires	N/A			
V11 Coating/Painting Accept 6000 CONDITION. V12 Expansion Joint or Bellows N/A 6000 CONDITION. V13 Gauge/Site Glass Accept 6000 CONDITION. V14 Shell Accept 6000 CONDITION. V15 Jacket N/A WELDED SECURE. V15 Support Other (Mease explain) Accept 6000 CONDITION. V22 Foundation Accept 6000 CONDITION. V23 Anchor Bolts N/A 6000 CONDITION. V24 Saddle/Skit Accept 6000 CONDITION. V25 Davit N/A 6000 CONDITION. V26 Fiverproofing N/A 7000 CONDITION. V27 Shall Branches N/A 7000 CONDITION. V33 Roczept 6000 CONDITION.THREADED. 7000 CONDITION.THREADED. V34 Manways N/A 7000 CONDITION.THREADED. V35 Reinforcing Pads N/A 7000 CONDITION.THREADED. V36 Inadequate Thread Engagement N/A <	V9	Electrical Ground	Accept			GOOD CONDITION.
V12 Expansion Joint or Bellows N/A V13 Gauge/Site Glass Accept GOOD CONDITION. V14 Shell Accept GOOD CONDITION. V15 Jacket N/A MELDED SEQUEE. V21 Support Other (Please explain) Accept GOOD CONDITION. V22 Foundation Accept GOOD CONDITION. V23 Anchor Boits N/A COOD CONDITION. V24 Saddid/Skirt Accept GOOD CONDITION. V25 Davit N/A COOD CONDITION. V25 Davit N/A COOD CONDITION. V31 Connections Other (Please explain) N/A COOD CONDITION. V32 Small Branches N/A COOD CONDITION. V33 Nozzles Accept GOOD CONDITION.THERADED. V34 Manways N/A N/A V35 Reinforcing Pads N/A N/A V36 Inadequite Thread Engagement N/A N/A V37 Boiting	V10	Painted Inactive Corrosion	N/A			
V13 Gauge/Site Glass	V11	Coating/Painting	Accept			GOOD CONDITION.
V14 Shell Accept GOOD CONDITION. V15 Jacket N/A WELDED SECURE. V21 Support Other (Please explain) Accept GOOD CONDITION. V22 Foundation Accept GOOD CONDITION. V23 Anchor Bolts N/A GOOD CONDITION. V24 Saddle/Skirt Accept GOOD CONDITION. V25 Davit N/A Image: N/A V26 Fireproofing N/A Image: N/A V31 Connections Other (Please explain) N/A Image: N/A V32 Small Branches N/A Image: N/A V33 Nozzies Accept GOOD CONDITION.THREADED. V34 Manways N/A Image: N/A V33 Reinforcing Pads N/A Image: N/A V37 Bolting N/A Image: N/A V33 Flanges N/A Image: N/A V41 Insulation Other (Please explain) N/A Image: N/A V41 Insulation Dick	V12	Expansion Joint or Bellows	N/A			
No.	V13	Gauge/Site Glass	Accept			GOOD CONDITION.
V21 Support Other (Please explain) Accept WELDED SECURE. V22 Foundation Accept GOOD CONDITION. V23 Anchor Boits N/A GOOD CONDITION. V24 Saddle/Skirt Accept GOOD CONDITION. V25 Davit N/A Image: Connection of the Control of Contr	V14	Shell	Accept			GOOD CONDITION.
V22 Foundation Accept GOOD CONDITION. V23 Anchor Bolts N/A GOOD CONDITION. V24 Saddle/Skirt Accept GOOD CONDITION. V25 Davit N/A Image: Connections of Control	V15	Jacket	N/A			
V23 Anchor Bolts N/A GOOD CONDITION. V24 Saddle/Skirt Accept GOOD CONDITION. V25 Davit N/A V26 Fireproofing N/A V31 Connections Other (Please explain) N/A V32 Small Branches N/A V33 Nozzles Accept GOOD CONDITION.THREADED. V34 Manways N/A V35 Reinforcing Pads N/A V36 Inadequate Thread Engagement N/A V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding <td>V21</td> <td>Support Other (Please explain)</td> <td>Accept</td> <td></td> <td></td> <td>WELDED SECURE.</td>	V21	Support Other (Please explain)	Accept			WELDED SECURE.
V24 Saddle/Skirt Accept GOOD CONDITION. V25 Davit N/A V26 Fireproofing N/A V31 Connections Other (Please explain) N/A V32 Small Branches N/A V33 Nozzles Accept GOOD CONDITION.THREADED. V33 Nozzles Accept GOOD CONDITION.THREADED. V33 Nozzles Accept GOOD CONDITION.THREADED. V34 Manways N/A V35 Reinforcing Pads N/A V36 Inadequate Thread Engagement N/A V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 <	V22	Foundation	Accept			GOOD CONDITION.
V25 Davit N/A V26 Fireproofing N/A V31 Connections Other (Please explain) N/A V32 Small Branches N/A V33 Nozzles Accept V34 Manways N/A V35 Reinforcing Pads N/A V36 Inadequate Thread Engagement N/A V37 Boilting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept NO CORROSION. No Leaks No Leaks	V23	Anchor Bolts	N/A			
V26 Fireproofing N/A V31 Connections Other (Please explain) N/A V32 Small Branches N/A V33 Nozzles Accept V34 Manways N/A V35 Reinforcing Pads N/A V36 Inadequate Thread Engagement N/A V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V44 Banding N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept NO CORROSION. NO LEAKS.	V24	Saddle/Skirt	Accept			GOOD CONDITION.
V31 Connections Other (Please explain) N/A V32 Small Branches N/A V33 Nozzles Accept GOOD CONDITION.THREADED. V34 Manways N/A Senforcing Pads N/A V35 Reinforcing Pads N/A Senforcing Pads N/A V36 Inadequate Thread Engagement N/A Senforcing Pads N/A V37 Bolting N/A Senforcing Pads N/A V37 Bolting N/A Senforcing Pads N/A V38 Flanges N/A Senforcing Pads N/A V39 Leak Clamps N/A Senforcing Pads N/A V41 Insulation Other (Please explain) N/A N/A V42 Damage N/A Senforcing Pads N/A V44 Insulation Other (Please explain) N/A Senforcing Pads N/A V44 Insulation Jacket N/A Senforcing Pads Senforcing Pads Senforcing Pads Senforcing Pads Senforcing Pads	V25	Davit	N/A			
V32 Small Branches N/A GOOD CONDITION.THREADED. V33 Nozzles Accept GOOD CONDITION.THREADED. V34 Manways N/A Image (Control of the Control of the Con	V26	Fireproofing	N/A			
V33 Nozzles Accept GOOD CONDITION.THREADED. V34 Manways N/A COOD CONDITION.THREADED. V35 Reinforcing Pads N/A COOD CONDITION.THREADED. V36 Inadequate Thread Engagement N/A COOD CONDITION.THREADED. V37 Bolting N/A COOD CONDITION.THREADED. V38 Flanges N/A COOD CONDITION.THREADED. V39 Leak Clamps N/A COOD CONDITION.THREADED. V41 Insulation Guest Clamps N/A COOD CONDITION.THREADED. V41 Inadequate Thread Engagement N/A COOD CONDITION.THREADED. V43 Flanges N/A COOD CONDITION.THREADED. V41 Inadequate Thread Engagement N/A <td>V31</td> <td>Connections Other (Please explain)</td> <td>N/A</td> <td></td> <td></td> <td></td>	V31	Connections Other (Please explain)	N/A			
V34 Manways N/A V35 Reinforcing Pads N/A V36 Inadequate Thread Engagement N/A V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept NO CORROSION. V52 Corrosion Accept NO LEAKS.	V32	Small Branches	N/A			
V35 Reinforcing Pads N/A V36 Inadequate Thread Engagement N/A V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V33	Nozzles	Accept			GOOD CONDITION.THREADED.
V36 Inadequate Thread Engagement N/A V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V34	Manways	N/A			
V37 Bolting N/A V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept NO LEAKS.	V35	Reinforcing Pads	N/A			
V38 Flanges N/A V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept GOOD CONDITION.SERVICE SEAL INTACT. LAST SERVICED 2013. V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V36	Inadequate Thread Engagement	N/A			
V39 Leak Clamps N/A V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept GOOD CONDITION.SERVICE SEAL INTACT.LAST SERVICED 2013. V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V37	Bolting	N/A			
V41 Insulation Other (Please explain) N/A V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept V53 Leaks Accept NO LEAKS.	V38	Flanges	N/A			
V42 Damage N/A V43 Penetrations N/A V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V39	Leak Clamps	N/A			
V43 Penetrations N/A	V41	Insulation Other (Please explain)	N/A			
V44 Insulation Jacket N/A V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept V53 Leaks Accept NO LEAKS.	V42	Damage	N/A			
V45 Banding N/A V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept V53 Leaks Accept NO LEAKS.	V43	Penetrations	N/A			
V46 Seals/Joints N/A V51 Relief Devices Other (Please explain) Accept V52 Corrosion Accept V53 Leaks NO LEAKS. NO LEAKS.	V44	Insulation Jacket	N/A			
V51 Relief Devices Other (Please explain) Accept GOOD CONDITION.SERVICE SEAL INTACT.LAST SERVICED 2013. V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V45	Banding	N/A			
V52 Corrosion Accept NO CORROSION. V53 Leaks Accept NO LEAKS.	V46	Seals/Joints	N/A			
V53 Leaks Accept NO LEAKS.	V51	Relief Devices Other (Please explain)	Accept			GOOD CONDITION.SERVICE SEAL INTACT.LAST SERVICED 2013.
	V52	Corrosion	Accept			NO CORROSION.
V54 Restricted Inlet/Outlet N/A	V53	Leaks	Accept			NO LEAKS.
<u> </u>	V54	Restricted Inlet/Outlet	N/A			



PRESSURE VESSEL & COLUMN INSPECTION REPORT

		LSD:	03-14-05	0-19W5	Date:	2014-03-2	SAP Equipmen	t ID 66195892	
V5.	Manual Operation Lever		N/A						

DETAILED INSPECTION OTHER TECHNIQUES

ID	Location	Observation/Measurement	Acceptance Criteria	NCR	Comments

DETAILED INSPECTION UT THICKNESS

	CML	Nom. Thickness (mm)	CURRENT READINGS (mm)	short term corr rate (mm/y)	long term corr rate (mm/y)	remaining life (year)	Survey Date	Comments
05	(SHELL)	8.08	8.53	0.0000	0.0000	198.0	2014/03/25	
10	(SHELL)	8.08	9.02	0.0000	0.0000	198.0	2014/03/25	
15	(HEAD)	7.14	9.14	0.0000	0.0000	198.0	2014/03/25	

Inspected By	Signature	CGSB Level	CGSB No.	Survey Date	UT Equip	Due Date OF Calibration	NDE Procedure No.
Gordon Derewianko	lone	1	13896	03/25/2014	101_91637903_EPOCH4+	06/27/2014	WQS UT-001

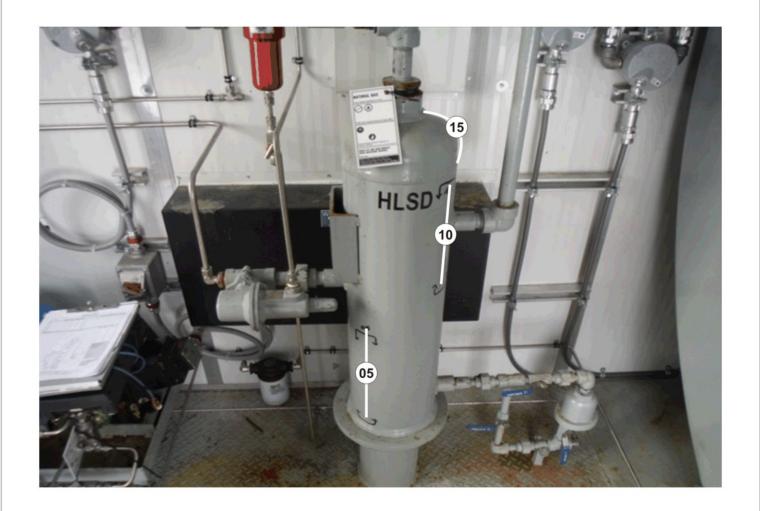


Client:

HUSKY ENERGY

EXAMINATION ILLUSTRATION

DISTRICT:	FH ANSELL	FACILITY:	MINEHEAD	LOCATION/LSD:	03-14-050-19W5
EQUIP NAME:	FUEL GAS SCRUBBER	PROV REG No.:			
SERIAL No.:	12747	National Board No.:			



notes:		

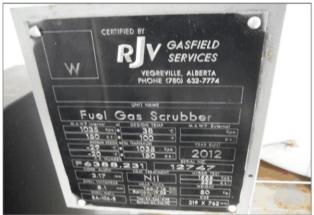


Client:

HUSKY ENERGY

PHOTOGRAPHS

EQUIP NAME:	FUEL GAS SCRUBBER			PROV REG No.:	
SERIAL No.:	12747	Equip No.:	66195892	National Board No.:	



NAMEPLATE



OVERALL



LSD







