

# **Existing Equipment Integrity Assessment Report**

Date July 2023

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	Client: Yoho	Resources		Inga, BC		10-19-087-23W6					
Facility:		Client Re			RM Ref # P004						
Equipment #: MFR: EFX Compression			Stage Scrubber 094-01 Mfr		A0545026	CRN: R3442.213	•				
MFR: EFX Compression		Mir S/N: U5	J94-01 Mitr	Date: 2005	Status: C	perating					
Fit for Service: Yes Online PSV Inspection has b	Suitable for een complete		PSV meets Co Yes	ode: Yes	PSV set at o	r below MAWP:	Yes				
PSV Capacity Verified:	N/A										
Repair / Alteration / PSV Cal		ired	No								
	Current Inspection Results										
2023-07 VE UT completed by RJC Integrity   2023-09 MPI completed by Altec Inspections VE   Cat D nozzles have not had magnetic particle completed on them. UT   Caution on band 30 PSV   No issues noted MPI   All the areas inspected did not exibit any relevant indications of defects/discontinuities at the time of inspection  Assessment completed by Aaron Bischoff   TML 30 UT Minimal wall loss past Mil Tolerance, other UT readings above Nom-C.A and MIL tolerance Tmin (12.5%),. No issues on concerns noted. 5 year / 60 month acceptable. AJB MPI on Category D welds completed and areas inspected did not exhibit any relevant defects or indications at time of inspection. AJB VE reviewed; no major concerns noted. AJB.  Past PSV Servicing Results  SN 1101-1707-091526 serviced 2020-09 by Unified Valve. PSV Service report reviewed using PSV assessment calculator. PSV serviced by Unified Valve Fort St John. No issues or concerns at time of servicing, suggested interval of 5 years / 60 months. AJB											
		Past Inspection	n History Re	sults							
No historical inspections		·	•								
		NEXT NDE & Ir	spection Me	thods							
	□ VI		□ UT	2028	⊠ BW	/ 2028					
☐ WF	☐ LF		☐ ET		□ ніс						
☐ CREEP	☐ BHN		☐ CDR		☐ MF	L					
Other:											
Previous Inspection Plan											
No historical ITP											
		Next Ins	pection Plan								
Expected damage mechanisms and locations: General Erosion / Corrosion. Localized pitting possible.  Primary Areas of degradation: Bottom head and piping elbows.  NDE examinations (type & extent): VE on 5-year Interval – due July 2028; UT on 5-year DUE July 2028; MPI on 5 year DUE September 2028  Preparation for next inspection: None  PSV: Last service September 2020, report reviewed. Next PSV service due September 2025											

Qualified

Inspector: Aaron Bischoff Qual: IBPV #644 Signature:

(looking)

Report date: 17-Nov-2023 status:

FINAL



Report No.:

Client	Yoho	Reso	urces					Inspec	tor	Rya	n Cad	ieux					Date	Ju	ly 27,	2023
District	Ing	a, BC		Sı	ırface	LSD	10-1	19-087-2	3W6				Do	wnh	nole	LSD		•		
				u.			L.	Vessel	Data								ı			
Vessel D	escrip	tion	BPV-0	66726	– 1 <sup>st</sup> S	tage S	crubb	er	R <sup>-</sup>	Г :	1	PV	۷H	Γ⊠	] Y	es [	□ No	Pa	rtial [	
A# / NB	# A	05450	<b>)26</b>		Seri	al#	0509	4-01	•			CR	N ‡	‡	R34	442.21	.3			
Manufa	cturer	EF	X Compi	ression	1							Ma	anv	vay[		Yes	⊠No	Siz		
Owner 1	Гад	N/S			Skid	Co	omp 9	Skid #05	0903			OD	1	24"			Leng	th	6'	•
MAWP:	1 🗵	Shell	ell Tube 285 psi kPa MAWT C 120 F MDMT C -20 F								F									
MAWP 2	2 🗆	Shell	□Tube		psi		kPa	MAV	VΤ		С			F	М	DMT		С		F
Operatii	ng Pre	ssure		psi			kPa	Oper	ating	Temp	)		С			F Fla	nge Ra	ting	# :	300
Process	Condi	tions:	⊠ Swe	et 🗆	Sour						Inte	rnal	Coa	atin	g:	N/S				
Product	: ⊠G	as $\square$	Water	☐ Air	· 🗆 E	Effluen	t 🗆 (	Other:												
PSV #1 Data																				
Owner ID/Tag 10 Yoho PSV Location Piping																				
Manufacturer Crosby Model # 1.5F2JOS-#15J																				
Serial # 1101-1707-091526 Mfg Date 01/17																				
CRN # 0G15494.5CL Code UV/NB																				
Set Pressure   285   ⊠psi   □kPa   Service Company   Unified																				
Capacity			scfm	<u> </u>	gpı	•		Other	Serv	ice D		-	/20				e Tag #		40777	
Inlet Siz		.5"	NPS			łD⊠FL		150		et Siz		2.0"	_	NPS			□THD			150
Inlet Bloc		e 🗆	Yes ⊠No	Lo		ealed [					ck Val			s ⊠I	No	Locke	ed/Seale			
Seal Inta					$\boxtimes$			No	Prop	erly :	Suppo	rted					$\boxtimes$	Yes		No
			d, missing			isfacto	_													
			i.e. flare lii						e											
PSV Ger	nerai (	onait	ion/Com	iments	5: N	lo issue	es no	tea.												
								PSV #2	Data	1										
Owner I	D/Tag							130 112		Locat	tion	I								
Manufa									Mod											
Serial #										Date										
CRN # Code																				
Set Pressure □psi □kPa Service Company																				
Capacity	/		scfm		gpı	i		Other		ice D		Ť				Servic	e Tag #	‡		
Inlet Siz	e		NPS	Тур		ID 🗆 FL	G #		Outl	et Siz	e e			NPS	5	Туре	□THD	☐ FL	.G #	
Inlet Bloc	ck Valv	e 🗆	Yes □No	Lo	cked/S	ealed [	□ Yes	□ No	Outle	et Blo	ck Valv	/e □	Ye	s 🗆 I	No	Locke	ed/Seale	ed 🗆	Yes [	□No
Seal Inta	act:					Yes		No	Prop	erly :	Suppo	rted						Yes		No
Drainag	<b>e</b> (i.e. p	ockete	d, missing	tailpipe)	:															
Discharge Piped to (i.e. flare line, pop tank, FKO, atmosphere):																				
PSV Ger	PSV General Condition/Comments:																			

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Report No.:

External Inspection	Good	Fair*	Poor*	N/A	External Inspection	Good	Fair*	Poor*	N/A
Skid Foundation/Supports	X				Ladder(s)/Platforms				X
Insulation/Cladding				X	Gauges				X
Vessel Nameplate	X				Valves	X			
Vessel Saddle/Skirt/Supports/Bolts	X				Piping	X			
Vessel Paint/Coating	X				Flanges/Bolting (per Code)	X			
Vessel Shell	X				Piping Support	X			
Vessel Head	X				Catadyne Heaters (zip ties)	X			
Nozzles	X				Surface Staining of Ground	X			
Pig Traps (ie evidence of hammering)				X	Signage (i.e. stand alone)				X
Regulators Vented	⊠ Yes	s 🗆	No		Vessel/Skid Grounded	⊠ Yes		No	

<sup>\*</sup> Fair and Poor selections require comments

Comments:								
1. Cat D nozzles have not had magnetic particle completed on them.								
☑In Service ☐Idle ☐Blinded/Disconnected	Signature	Ryan Cadisux	Date	July 27, 2023				

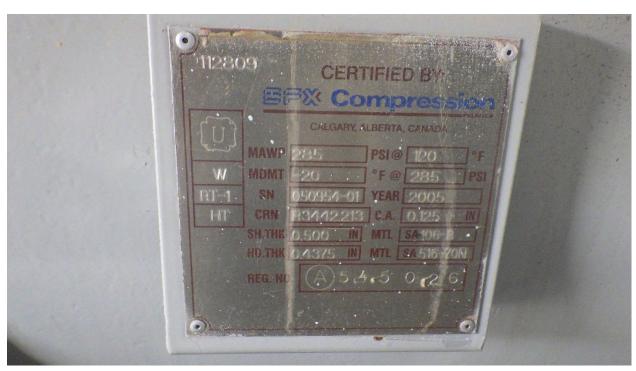
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# Vessel External Inspection PHOTOS

Report No.:





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Report No.:





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Report No.:



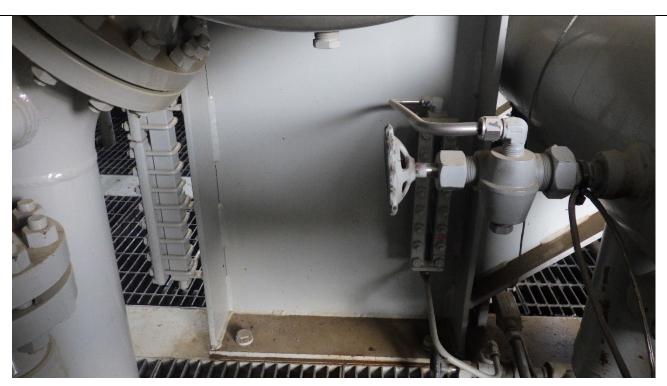


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Report No.:



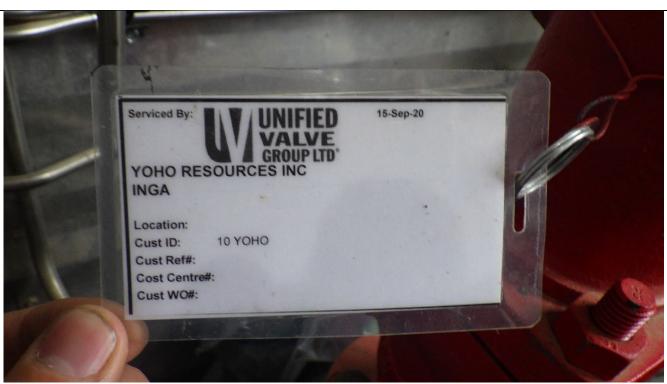


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Report No.:



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sion Survey Report

(780) 242-2204 RyanC@RJCIntegrity.com www.RJCIntegrity.com



Client: Yoho Resources	
	A0545026 - UT - 001 - RC
Date: Thursday, July 27, 2023	

Work Location: Inga, BC Scanning Surface: O.D. Job No.: 2023-0033

Examination Standard:ASME V Article 4 - 2021Material:Carbon SteelP.O. No.:Acceptance Standard:Client's Spec.Surface Condition:PaintedW.O. No.:RJC Procedure:RJCI-UT-001 Rev.0Temperature:AmbientOther:

Instrument: Olympus Couplant: UTX

Model: Epoch 600 Calibration Block: C.S. Step Wedge Serial No. 3886-20

Serial No.: 140708306 Calibration Block:

Cal Due Date: Monday, January 15, 2024 Scanning Limitation: See comments below

Probe	Ser. No.	Angle	MHz	Crystal Size / Type	Primary Ref. Reflector / Amp. / Distance / dB	Scan Sens.	<b>Calibrated Range</b>
V-110	180002	0°	5 MHz	0.500" / Single	1st Back wall	As required	0.100" - 1.000"

Purpose: To perform an ultrasonic thickness survey.

Results: Refer to attached pages for recorded data.

#### Notes:

- 1. Thickness readings do NOT include paint thickness.
- 2. \* = Assumed nominal thickness
- 3. Piping wall loss between 12.6% 30% = Caution
- 4. Piping wall loss greater then 30% = Urgent

VESSEL DATA										
Vessel Description: 1st Stage Suction Scrubber										
A No.:	0545026	Vessel ID:	N/S	Manufacturer:	EFX Compression					
CRN No.:	R3442.213	Year Built:	2005	District:	Inga, BC					
Serial No.:	050954-01	C.A.:	0.125"	LSD:	10-19-087-23W6					

Interpretation is in accordance with the above mentioned standards, to the best of my professional ability.											
Print:	Ryan Cadieux	CGSB/SNT Level:   /	Reg. No.:	18219	Sign:	Ryan Cadisup					
Client Represent	ative:										
Dutus		Data			<b>C:</b>						
Print:		Date:			Sign:						

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Band ID	Location	Direction	Material	Nominal (in)	CA (in)		Baseline (in)	Previous (in)	Current (in)	% Wall Loss	Tmin (in)	STCR (mpy)	LTCR (mpy)	Years Remaining	
000	West Head	T - B	SA516 - 70N	0.438	0.125	Year: Min: Avg:	2005 0.438		2023 0.509 0.519	0.00%	0.313	0.00	0.00	20	Acceptable
	Comments:					ı									Acc
005	Mid Shell	T - B	SA106 - B	0.500	0.125	Year: Min: Avg:	2005 0.500		2023 0.513 0.520	0.00%	0.375	0.00	0.00	20	Acceptable
	Comments:														Acc
010	Top Shell	E - W	SA106 - B	0.500	0.125	Year: Min: Avg:	2005 0.500		2023 0.546 0.549	0.00%	0.375	0.00	0.00	20	Acceptable
	Comments:					ı									Acc
015	Btm Shell	E - W	SA106 - B	0.500	0.125	Year: Min: Avg:	2005 0.500		2023 0.525 0.528	0.00%	0.375	0.00	0.00	20	Acceptable
	Comments:														Acc
020	Mid Shell / Opp. Inlet	T - B	SA106 - B	0.500	0.125	Year: Min: Avg:	2005 0.500		2023 0.537 0.540	0.00%	0.375	0.00	0.00	20	Acceptable
	Comments:														Acc
025	East Head	T - B	SA516 - 70N	0.438	0.125	Year: Min: Avg:	2005 0.438		2023 0.508 0.532	0.00%	0.313	0.00	0.00	20	Acceptable
	Comments:		1	1		1	1	1			•	1			Acc

### **Piping and Nozzle UT Data**

Band ID	Location	Direction	Material	Nominal (in)	CA (in)		Baseline (in)	Previous (in)	Current (in)	% Wall Loss	Tmin (in)	STCR (mpy)	LTCR (mpy)		
030	6.0" STD 90° Inlet Elbow	Extrados Scrub	Carbon Steel	0.280	0.035	Year: Min: Avg:	2005 0.280		2023 0.239 0.257	14.64%	0.245	0.00	2.28		Caution
	Comments:	12.5% used fo	or C.A												
035	2" XS 90° Bypass Elbow	Extrados Scrub	Carbon Steel	0.218	0.027	Year: Min: Avg:	2005 0.218		2023 0.202 0.212	7.34%	0.191	0.00	0.89		Acceptable
	Comments:	12.5% used fo	or C.A.												Ac
040	6" XS 45° Outlet Elbow	Extrados Scrub	Carbon Steel	0.432	0.054	Year: Min: Avg:	2005 0.432		2023 0.449 0.452	0.00%	0.378	0.00	0.00		Acceptable
	Comments:	12.5% used fo	or C.A.												Acc
						Year: Min: Avg:				#DIV/0!	0.000	#DIV/0!	#DIV/0!		#DIV/0!
	Comments:														#
						Year: Min: Avg:				#DIV/0!	0.000	#DIV/0!	#DIV/0!		#DIV/0!
	Comments:										<u> </u>				]#
						Year: Min: Avg:				#DIV/0!	0.000	#DIV/0!	#DIV/0!		#DIV/0!
Comments:									#						

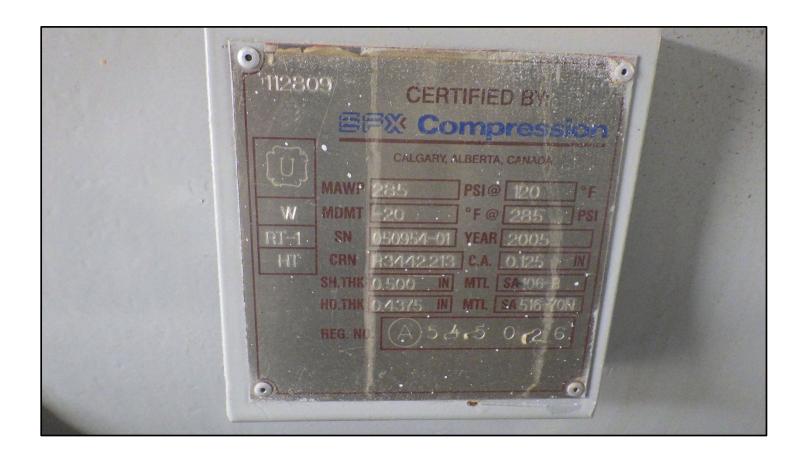


### **Vessel Overview**

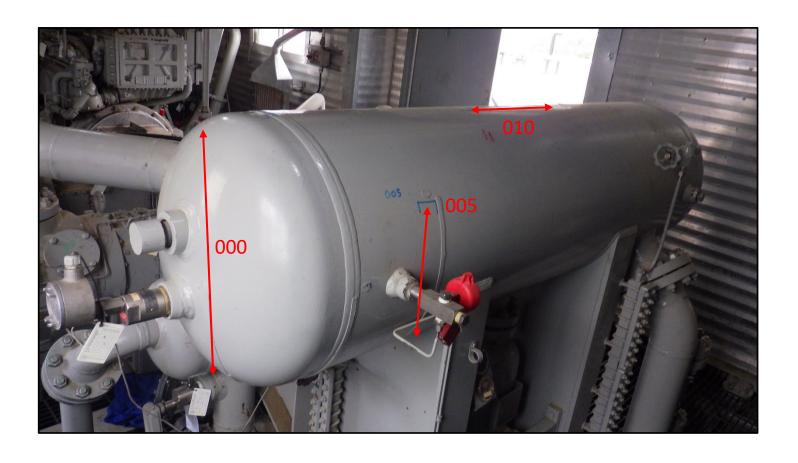




### Nameplate











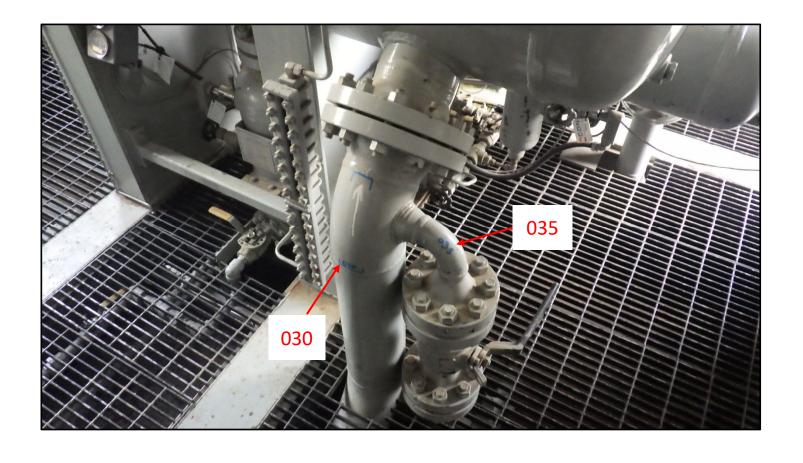












MPI on Category D welds completed and areas inspected did not exhibit any relevant defects or indications at time of inspection.AJB



WET VISIBLE BLACK ON WHITE MAGNETIC PARTICLE INSPECTION OF "D" CATEGORY WELDS

ASSOCIATED WITH COMPRESSOR C-100, C-200 & C-300 BOTLLES AT THE INGA LAKE 10-19-87-23

W6 SITE

September 20th, 2023

ALTEC INSPECTION LTD. FORT ST. JOHN, B.C.

Client:	Yoho Resources	Report Date:	September 27 <sup>th</sup> , 2023
Attn:	Jack Tarnowsky	Inspection Date:	September 20 <sup>th</sup> , 2023
CC:	-	Client P.O. No.	AFE # 2207007-9330
		Job No.	230965
		Report No.	NN200923-1

Subject: MPI on D category welds associated with C-100, C-200 & C-300 compressors.

#### Introduction:

An inspection was completed on September 20<sup>th</sup>, 2023 at the Inga Lake 10-19-87-23 W6 site. The subject of inspection were D category welds associated with compressors C-100, C-200 & C-300. Some other areas of interest were also inspected.

#### **Equipment:**

Reese Permanent Magnets, SN# R0365A-R0365B, 50lb lift test September 20<sup>th</sup>, 2023 Magnavis (Magnaflux) WCP-2 White Contrast Paint Magnavis (Magnaflux) 7HF Prepared Bath

**Items Inspected:** D category welds associated with C-100, C-200 & C-300 compressor bottles and gusset welds associated with the pressure release device.

#### Compressor C-100:





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#### Items Inspected Cont'd:







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#### Items Inspected Cont'd:



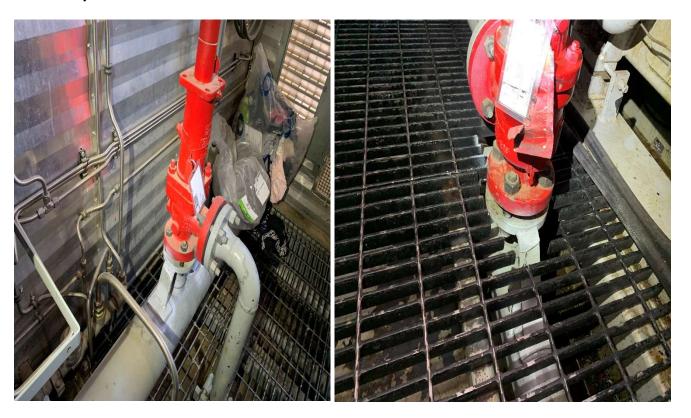






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#### Items Inspected Cont'd:

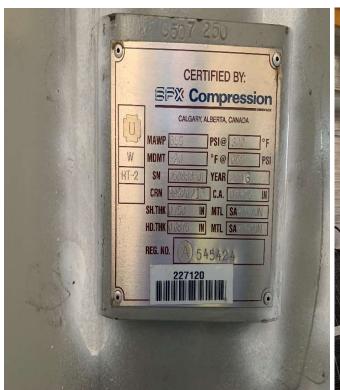


#### Compressor C-200:



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#### Items Inspected Cont'd:









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#### Items Inspected Cont'd:









#### Items Inspected Cont'd:

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#### Items Inspected Cont'd:





#### Compressor C-300:

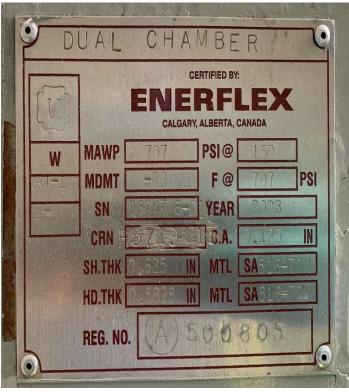




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#### Items Inspected Cont'd:









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#### Items Inspected Cont'd:





#### **Inspection Procedure:**

A wet visible black on white magnetic particle inspection with permanent magnets was used for the inspection.

#### **Inspection Results:**

All the areas inspected did not exhibit any relevant indications of defects/discontinuities at the time of inspection.

Yours Sincerely,



Nirmal Neupane, CGSB MTII (CGSB Reg. # 24478)

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PSV Service report reviewed using PSV assessment calculator. PSV serviced by Unified Valve Fort St John. No issues or concerns at time of servicing, suggested interval of 5 years / 60 months. AJB

#### **PRV INSPECTION AND TEST REPORT**

BRANCH: Fort St John **UVL ID#:** 40777F W16001404 Work Order: Customer PO#: Date: 09/03/2020 YOHO RESOURCES INC Customer **INGA** LSD: Facility: **PSV Location:** Cust Id: 10 YOHO Vessel SN: A#: Valve PO: Cust. Ref.: PO LINE#: Cust. WO#: Cost Centre#: Cust AFE#: **VALVE DATA CROSBY** Model: 1.5F2JOS-E15J Serial: 1101-1707-091526 Seat: HARD Man.: Flanged Inlet: 1.5" 150 Orifice:F Conn. Outlet: 2" 150 Vacuum: Set Press. 285 PSI Back Press.: N/A PSI CDTP: N/A PSI Cap: 1,807 SCFM Temp: N/A F Lift Lever Cap Assembly: Closed RFID: Code Symbol: UV CRN#: 0G15494.5CL **CUSTOMER INSTRUCTIONS** Full Service  $\square$ Instructions: **Pretest Required?** Reset Required? **CONDITION AS RECEIVED** Fair Visual Condition: **Data Plate Condition:** Date of last service: Seal Condition: Intact Bottom: Intact Top: Insignia: Fittings Attached: Inlet: Outlet: Inlet: Inlet Plugged: Outlet: Outlet Plugged: ☐ Initial Insp. Signoff: K-anna Jobson PRETEST 1 FSJ9/10 Simmer: 291 PSI Set Press: 222 PSI Leakage: 10 BPM Test Gauge: 294 PSI Reseat: Tested By: Chance Pomeroy **Pretest Comments: PRETEST 2** FSJ9/10 Set Press: Test Gauge: Simmer: Reseat: Leakage: Tested By: **Pretest Comments: COMPONENTS INSPECTION** (0 Like New / 1 Minor /2 Medium / 3 Major) CORRODED GROOVED PITTED CLEAN DENTED SCALE COMMENTS ITEM DISC  $\square$  $\square$  $\square$ NOZZLE П  $\overline{\mathbf{V}}$  $\checkmark$  $\sqrt{\phantom{a}}$ CAP-LEVER ASSY П П COMP SCREW and LC 1 AS FOUND: AS LEFT SPRING and BUTTONS SPINDLE / STEM 1 STEM RETAINER DISC HOLDER 1 GUIDE / UPPER RING LOWER RING 1 RING PIN(S) **BELLOWS** 20027S GASKET / SEALS  $\square$ П CONNECTION ENDS 1 OTHER П П П .370 .360 4.013 4.059 NOZZLE: MIN/MAX SPRING NUMBER: DISC: Min: ACT -ACT -Patrick Burton Patrick Burton Sean Moore Disassembly: Inspection: Reassembly: **FINAL TEST** Air **Test Medium** Simmer: 283 PSI Set Pressure: 285 PSI Reseat: 179 PSI B.P. Test: 60 PSI Vacuum: N/A ADJ. RING SETTING (NOTCHES): Upper: N/A Lower: Test Gauge: FSJ9/10 Set Press Def POP Dale Welsh Tested by: 09/16/2020 Date Final Tested: **FINAL INSPECTION:** Top: 🔽 Bottom: 🔽 End Protectors Installed: Ship Container:  $\overline{\mathbf{Q}}$ Flex Gaskets Supplied: SEAL: Randy Rowsell Final Inspection: **Customer Inspection:** Comments: