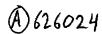
FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS [858] ired by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division



		AS	Kequin	eo by tr		·					resser code			200000000000000000000000000000000000000						
1. Ma	rufactured and o	erlified i	ру		C	ALHEX I	NDUST	RIES LTI	D. 9515 4	STH ST	REET S.E., C	ALGA	RY, A	LBERTA, C	ANAD	A T2C 2R1				
									•		address of Manu									
2. Ma	ufactured for			Husky Oil Operations Ltd. 707 – 8th Avenue S.W. Calgary, AB T2P 1H5																
M 1	(Name and address of Purchaser)																			
3. Loc	3. Location of Installation Husky Oil Ansell Gas Plant Edson, AB LSD# - 07-27-051-19-W5M (Name and address)																			
4 . Тур	e .	Ho	rizontal			Heat Exchanger 12-0779														
yp	•	(H	lorizontal,		sphere)			(Tank, s	separator, jkt.					(urer's serial n	umber)			
	V96	88.21				12-077	9-S Rev	. 0 & T I	Rev. 0				-		2012					
	······································	RN)		-	12-0779-S Rev. 0 & T Rev. 0 (Drawing No.)							(Nation	(Year Built)							
5. ASI	ME Code, Section	ív. 1	2010 & 2011						(Code Case Number) [Speci						cial Service per UG-120(d)]					
_					•	ition and Ad	•		haat ayahan		•==-		er vess	•	pecal o	avios per oro-	120(0)]			
				e waii ves			19259Y DB				chamber of mult		" – 8.7							
6. She	li (a) Number o	of course	(s): -			<u> </u>		- (D)	Overall length	i (at co ara.)			- 0.7							
	Course	e(s)			Material				ckness	Long, Joint (Cat.A)			Circu	ım. Joint (Cat.	A,B, & C)	B, & C) Heat Treatment				
	Diameter, ir	- T	gth (ft & in	\forall	Spac IG	ade or Type		Nom. Corr.		Туре	Full, Spot, None	Eff.	Type	pe Full,Spot,None		Temp.	Time			
No. 1	23"		- 8.750	- 	<u>-</u>	333-6		0.500"	0.0625"	S	None	0.85	7/1	Spot *	e Eff.		-			
1	23"	- ` `	- 0.750 B' - 0"			333-6		0.500"	0.0625"	s	None	0.85	7/1	Spot *	0.7	, -	-			
1	- 23	- - '		+				0.000		Ť			-7.		+	-				
	<u> </u>								<u> </u>	<u> </u>	, , , , , , , , , , , , , , , , , , ,			L			<u> </u>			
7. Hea	ds: (a)	.—		<i></i>			(b s)	## ##	- 9 down \		(b)		alerial s	nec number o	recie or fy	ne) (H.T tim	e & (emp.)			
			Thickness		(Material spec. number, grade or type					Mamia	phorioal	Flet Side to Pressure			grade or type) (H.T time & temp.) Category A					
	Location (Top, Bottom, Ends)	Mil			orr. Crown Knuc		Elliptical Conical Ratio Apex Angle		1	Hemispherical Radius		Diamet			Type F	Type Full, Spot, None. Eff.				
(a)	Dolloin, Ericay	i mail		GUIT.	AOWII Raic	Cnuckle Ratio Apex Ang			8 10000						<u> </u>					
(b)		 																		
	novable, bolts u	sed (des	cribe other	r fastenino		<u>'</u> _														
If bar, give dimensions If bar, give dimensions If bar, give dimensions If botted, describe or sketch, or s																				
11. Hydi	o.,pneu.,or com	b.test pr	essure	,			520 ps	i			Proof test									
Items 12 and 13 to be completed for tube sections.																				
12. Tubesheet: SA51					16-70N 2					1	5625"		0.125	<u> </u>		Welded				
•		[S	tationary (r	naterial sp	aterial spec. no)] [Diameter, (su				ess.)]	(Nomir	nai (hickness)	(Corr. Allow.)			(Attachment (welded or bolted))					
	•					-							-							
Į	Floating (materi	al spec.	no.)		(Diameter)				Nominal thickr			(Corr. Allow.)			(Attachment)					
13. Tubi	3. Tubes SA1			179 ** 0.7				'50"			16 BWG	_	440			Straight				
		(Ma	terial spec	. no., grad	e or type)		(0	.D.)		(Non	ninal thickness)		(Nu	mber)		[Type (st	raight or U)]			
tems 14	18 incl. to be c	omplete	d for inne	r chambe	rs of jacke	ted vessels	or chann	els of heat	exchangers	•				_						
14. Shel	; (a)No. of cou	rse(s)	_		2	?		(b) (Overall length	(ft & in.)):			2'	- 10"					
····	Course		T	Material				985		Long. Joint (Cat.A	()	Circa	ım. Joint (Cat.	A,B, & C)	& C) Heat Treatment					
								iom. Com.		Type Full,Spot,None		Eff. Typ		pe Full,Spot,None		f. Temp.	Time			
No. 2	Diameter Length 23" 1'-5"		+	Spec./Grade or Type SA333-6			500"	0.0625"		None	1.0	1/7	Spot *			 				
	23	•		+	J. 133.		┤┈			S					- -					
	<u> </u>					C A 2 E	.O.I E2 1	<u> </u>		!	<u> </u>		1	SA:	50-LF	2 CL.1				
15. Heads: (a) SA350-LF2 CL.1 (b) SA350-LF2 CL.1 (Material spec. number, grade or type) (H.T Time & Temp.) (Material spec. number, grade or type) (H.T Time & Temp.)										ime & Temp.)										
	Location (Y	no.	Thicks		· ·	dius				1	emispherical	Flat	T	e to Pressure	1	Catego				
	(1	<i>"</i>	·		Corr. Crown Kni		ĺ	Ratio Apex Angle		Radius		Diamet		vex Concave	Type I	uli,Spot,None	Eff.			
(a)	End			0.0625"				cabon catilities				36"								
	End		2.75"	0.0625"								36"								

If removable, botts used (describe other fastening).

(24) 1.50" x 9.250" Lg. SA193-B7 UNC Studs / (48) 1.50" SA194-2H UNC Nuts (Malerial spec. number, grade, size, number)

					FORM U-1 (Bac	<u>k)</u>							
16. MAWP	400	1	5 psiat	t max. temp. 158	158	°F M	n. design me	tal temp49) °Fat	4	<u>00_</u> Psi		
	(Interr	nal) (Exte	mai)	(Internal)	(External)	_							
17. Impact test		No. exe	empt UCS	-66(a)(c)(d)(g), Fig	. UCS-66 Note (c) 8	UCS-67(a	a)2.	at	test tem	erature	of°F.		
(Indicate yes or no and the component(s) impact tested)													
18. Hydro., pneu., or comb. lest press. 520 psi Proof test -													
19. Nozzles, inspection, and safety valve openings:													
Purpose Diameter Flange Material Nozzle Thickness Reinforcement Attachment Detail Location													
(Intet, Outlet, Drain, etc.) No.	or Size	Туре	Nozzie	Flange	Nom.	Corr.	Material	Nozzie	Flange	(Insp. Open.)		
Shellside Inlet	1	8" 300 CL	RFWN	SA333-6	SA350-LF2 CL.1	0.344"	0.0625"	SA516-70N	UW16.1c	BW	Shell Top		
Shellside Outlet	1	8" 300 CL	RFWN	SA333-6	SA350-LF2 CL.1	0.344"	0.0625"	SA516-70N	UW16.1c	BW	Shell Bottom		
Tubeside Inlet	1	8" 300 CL	RFWN	SA333-6	SA350-LF2 CL.1	0.344"	0.0625"	SA516-70N	UW16.1c	BW	Channel Bottom		
Tubeside Outlet	1	8" 300 CL	RFWN	\$A333-6	SA350-LF2 CL.1	0.344"	0.0625"	SA516-70N	UW16.1c	BW	Channel Top		
T.I.	4	1"	CPLG	SA350-LF2 CL.1	-	6000 CL	0.0625"		UW16.1a	· .	Inlets/Outlets		
P.I.	4	3/4"	CPLG	SA350-LF2 CL.1	-	6000 CL	0.0625"		UW16.1a	-	inlets/Outlets		
Vent	1	1"	CPLG	SA350-LF2 CL.1	-	6000 CL	0.0625"	-	UW16.1a	-	Channel Top		
Drain	1	1"	CPLG	SA350-LF2 CL.1	-	6000 CL	0.0625"		UW16.1a	-	Channel Bottom		
			,										
										<u> </u>			
20. Supports: Skirl No Lugs 4 Legs n/a Cither Saddles Attached Welded to Shell & Channel Covers													
(Yes/no) (Number) (Number) (Describe) (Where and how)													
21. Manufacturer's Partia	i Data	Reports property id	lentified and s	signed by Commissioned	inspeciors have been furn	ished for the t	ollowing item	s of the report:					
(list the name of part	item n	umber, Manufactur	er's name and	d identifying number):									
,							,						
22. Remarks:	/21 2	M" 300 CL REW	N Channel	Flanges - SA350-LF	2 Cl 1			-					
ZZ. Renars.	(2) 2	- 300 CE (4-V)	et Olleitliei	Liginges - Oxtoo-Ei	z vz. i	······							
SAFETY VALVES:		P.S.V. on	piping per	r UG-125 (g) to be	installed by owner	. cı	JBIC CAPAC	ту: 123. 0	14 cu. ft.				
					-								
SURFACE AREA:		4146.9 sq.						1444 444 14			-4		
SERVICE:	SERVICE: Inlet Gas Heat Exchanger * RT2 – Spot per UW-11(a)5(b). ** Tube Length – 48' – 0" Lg.												
ITEM#:	E-1	02B				Cons	structed t	o Drawing# '	12-077 9- 5	Rev. 1	& T Rev. 0.		
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 BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. U Certificate of Authorization Number. 33238 Expires April 22 20 14 Date DEC 1 4 2012 Name Cathex Industries Ltd. (Manufacturer)													
					ICATE OF SHOP IN	ISPECTIO	N.						
I the undersioned hold	n o a w	alid commission iss	and hu tha No		d Pressure Vessel Inspect			wince of ALBE	RTA				
and employed by	. NJ CI VI	and domination los	uou by and in	ABSA	0			B, CANADA			have inspected		
the pressure vessel des	xibed i	n this Manufacture	r's Data Repo			,20		that, to the best of	my knowledg	e and belie	ef, the		
Manufacturer has constr	ucted t	his pressure vesse	l in accordant	e with ASME BOILER A	ND PRESSURE VESSEL	CODE, Sectio	— n VIII, Divisio	n 1. By signing thi	s certificate ri	either the l	nspector nor his/her		
employer makes any wa	manty,	expressed or implic	ed, concernin	g the pressure vessel de	scribed in this Manufacture	er's Data Repo	oct. Furtherm	ore, neither the Ins	pector nor hi	s/her empk	yer shall be liable		
· · ·		•			om or connected with this i						ļ		
			٠	,,,	A			130 17	170	A 0	una I		
Date DEC	14	LUIL Signed		J Kha	<u> </u>		Commissions		618	<u> AR</u>	410		
					i Inspector)			[National Boar	d (incl.endors	ements),S	tete, Province, and number]		
			,		OF FIELD ASSEME				UE DO# == :	ND BESS	OUDE LANCOUR SECTION		
-	nents (on this report are co	prrect and tha	t the field assembly cons	truction of all parts of this	vessel confon	ns with the re	equirements of AS	ME BOILER	NU PRES	SURE VESSEL CODE,		
Section VIII, Division 1.					.		**						
U Certificate of Authoriz	ation N	lumber			Expires	•	, 20	_			İ		
Date		Name				Sign	ned .						
				(Assembl	er)				(Re	presentativ	e)		
CERTIFICATE OF FIELD ASSEMBLY INSPECTION 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 and employed by													
have compared the s	iateme	nts in this Manufac	turer's Data F	Report with the described	pressure vessel and state	that parts ref	erred to as d	ata items			.		
not included in the ce	rtificati	s of shop inspection	n, have been	inspected by me and to	he best of my knowledge a	and belief, the	Manufacture	r has constructed	and assemble	ed this pres	ssure vesse!		
in accordance with A	SME B	OILER AND PRES	SURE VESSE	El. CODE, Section VIII, D	ivision 1. The described ve	essel was ins	pected and su	bjected to a hydro	ostatic test of		psi. By		
signing this certificate neither the inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report.													
		•	•	•	for any personal injury or		-						
•			. •	•		•		·					
Date		Signed			Commis	sions							
			(Auth	orized Inspector)		-	Netional Boa	d (incl. endorsem	ents), State, F	rovince ar	id number.)		

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