7- contactor V-601 (C-322).

7-a: WA.

National Board Number:	NIA	
Mfr. Representative:	Date:	
Authorized Inspector	Date	

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

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1. N	lanu	ıfacture	d and	d ceri	tified by	Spectr	um Proc	ess S	System	s Inc.	285175	Kleysen	Way	, Roc	ky Vie	w , Alber	ta. T1	X 0K	1 Cana	ıda
2. N	lanı	ıfacture	d for	Hu	sky En	ergy. 70	7-8th A	venu	e SW.	Box 6	525, Sta	tion "D"	Calg	ary,	Alberta	a T2P 3G7	7			
3. L	ocat	tion of ir	nstall	lation	LSD	: 02-20-0	050-18 V	W5M	I		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(Name and a		2.0M						
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		436 .21		(Horizo	ontal, verti	cal, or spher	e)	V-14	I-05110	(Tan) 0-31-0	c, separator, 01 R.3	jkt. vessel, he N/A		., etc.)		(Manu	facturers	2015	imber)	
5 A	SMI	= Code	Sact	(CRN)	/III Div	2013	Ed.		Drawii	ng numbe	er	(Nationa N/A	al Board	d numbe	эг)		N/A	(Year bui	lt)	
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13. 1	ube	N/A		t	rioating (r	material spec	. 110.33		Diameter)		N/A	(Nominal thic	MIESS)	, 	N		2W)	N/A	(Attachi A	nent)
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15. Heads: (a) N/A				_				T		Body Flan	ges on S	nells						Во	ltina				
15. Heads: (a) N/A (Material spec. number, grade or type) (H.T time and temp.) (b) N/A (Material spec. number, grade or type) (H.T time and temp.) (b) N/A (Material spec. number grade or type) (H.T time and temp.) (c) Coown Cook Coown Coow	No.	Туре	ID		□D	Flange Thk	Min Hub Ti	ık	Material	How A	ttached	Loc	ation	Ne	ım & Si	ze B	oiling M	aterial	(0)	Washer	k \	Vasher	Material
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16. MAWP1415 PSIG (Internal) External See Remarks 17. Impact test Indicate yes or no and the component(s) impact tested 18. Hydro., pneu., or-comb. test pressure 1840 PSI Proof test 19. Nozzles, inspection, and safety valve openings: Purpose (Inlet, Outlet, Drain, etc.] No. Or Size Type Nozzle Flange Nom. Corr. Material Nozzle Flange Insp. Open.) Gas Inlet/Gas Outlet 2 6" CL600 RFLWN * - 1.375" .0625" Integral UW16.1(c) - Shell/Head Liq Dump/LG/PSV/spare. 4 2" CL900 RFWN SA-106B SA-105N .344" .0625" Integral UW16.1(c) Type Shell Coil in/out 2 1" CL900 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell Insp./Drain/Equalizer 2 2" CL600 RFWN SA-333-6 SA-105N .344" .0625" Integral UW16.1(c) Type Shell .0625" .0625" Integral UW16.1(c) Type Shell .0625" .0625" .0625" .0625" .0625"	(a)	11 <u>11</u> 2	-	Ĵ	<u> </u>	= 7	72		-		•		8		Ę								=
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(Number) (Number) (Describe) (Where and how) 21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report (list the name of part, item number, Manufacturer's name, and identifying number):	J			-		2 CL000	10.171	+			7.		.002.	\dashv	megi	<u> </u>	-	, vv 10.	1(0)		- 15	nicii	
(Number) (Number) (Describe) (Where and how) 21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report (list the name of part, item number, Manufacturer's name, and identifying number):				\dashv				+				- 15		7					-		\dashv		
(Number) (Number) (Describe) (Where and how) 21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report (list the name of part, item number, Manufacturer's name, and identifying number):	20 0	norte: CI	irt Y	es		3	1	N/	/A	O#==	N/A			!	A an	in ob a -l	Weld	led to	o He	ad	!_		
the report (list the name of part, item number, Manufacturer's name, and identifying number):			7	Yes or	HO)	Comme						(De							()	Where an		(#)	
N/A	the	report (lis					All the state of t			37700						ave be	een fu	rnishe	ed fo	r the f	ollov	ving it	ems of
22. Remarks Production Impact exempt per UG-20(f)(1-5) & UCS -66(a). Tag # V-601 Volume: 172.58 Cu.ft (4.9 Cu.M). * SA-350LF2CL1	22. Ren	narks Pro								& UCS	-66(a). Tag	g#V-	601	7								

4"&2" Blind Mat. SA-105N Studs: SA-193-B7M & Nuts:SA-194-2HM Thread UNC. Size:(7/8*5 3/4")(5/8*4 1/4").

Const. DWG. NO: V-14-05110-31-001 R.3 PSV Installed by other as per UG-125.

Volume: 172.58 Cu.ft (4.9 Cu.M). * SA-350LF2CL1

National Board Number:		
Mfr. Representative:	Date:	
Authorized Inspector	Date	

FORM U-1 (Cont'd)

A	6	4	8	3	6	4	
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CERTIFICATE OF SHOP COMPLIANCE
We certify that the statements 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 21,356 Expires July 21,2016
Date January 12, 2015 Name Spectrum Process Systems Inc. (Manufacturer) Signed (Representative)
CERTIFICATE OF SHOP INSPECTION
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by ABSA Alberta
have inspected the pressure vessel described in this Manufacturer's Data Report on JAN 13 2015 , and
state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND
PRESSURE VESSEL CODE, Section VIII, Division 1. 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. Furthermore, neither the Inspector nor his/her employer shall
be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
Date JAN 13 2015 Signed National Board (incl. endorsements)] AB 242 NB 12860 A, B [National Board (incl. endorsements)]
CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE
STANDON TO A STANDARD SOLD CONTROL OF STANDARD ST
We certify that the statements in this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. U Certificate of Authorization Number Expires
Date Name Signed (Representative)
A CONTROL OF THE PROPERTY OF T
CERTIFICATE OF FIELD ASSEMBLY INSPECTION
1, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by
of, have compared the statements in this Manufacturer's Data Report with the described pressure vessel
and state that parts referred to as data items, not included in the certificate of shop inspection, have been
inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance
with the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. The described vessel was inspected and subjected to a hydr-
static test of By Rig Ring 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. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.
Date Signed Commissions National Board (incl. endorsements)]
(Authorized Inspector) National Board (incl. endorsements)]

(04/14)

7-b: N/p+cRN.

PEGIRATE NY: SPECTRUM PROCE WP: 1246 WP: 1246 WP: 1246 WP: 126 WP: 126 WP: 126 WF. WF. WEASG.2	SS SYSTEMS CALGARY, ALBERTA, CAN. FALL NSO.	ET 20165 LT 20165 V-601 200	TEO 9F
RTIFIED BY: SPECTRUN umprocess.ca MANAEWAR 14416 MANAEWAR 144-05110-8 SERIAL# 14-05110-8 GEN W648621 GOIL#MANEWR 14 GOIL#MANEWR 14 GOIL#MANEWAR 14 GOIL#MANEWAR 17	PROCESS S) CALGAI PROMENT		116 PSSLAT
NTIFIED BY INDICESS.CB INTOINED BY INDICESS.CB INTOINED BY INDICESS.CB INTOINED BY INTOINE	AGKING Y: SPECTRUM VIP. TANG	ANTE -20 AL# 12-05/10-3 WG4362-1	# WATEWAR 14
CEI W.spectr	CERTIFIED B www.spectrumprocess.ca	W GRN	PROV. REG.



9410 - 20 Ave N.W.

Edmonton, Alberta, Canada T6N 0A4

Tel: (780) 437-9100 / Fax: (780) 437-7787

January 12, 2015

Attention: Joe Laing

SPECTRUM PROCESS SYSTEMS INC

285175 KLEYSEN WAY SE ROCKYVIEW COUNTY, AB

The design submission, tracking number 2015-00137, originally received on January 12, 2015 was surveyed and accepted for registration as follows:

CRN:

W6436.2

Accepted on: January 12, 2015

Reg Type:

Revision To accepted Design

Drawing No.: V-14-05110-31-001 Rev 3 As Noted

Description	MAWP	Design Temperature	MDMT
Internal Pressure	9756kPa	66 °C	-29 °C
Coil Internal Pressure	9756kPa	93 °C	-29 °C

The registration is conditional on your compliance with the following notes:

Coil revised to 1" sch XXH.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 or fax (780) 437-7787 or e-mail Chomin@absa.ca.

Sincerely,

CHOMIN, DWIGHT, P. Eng.



505 - 6th Street, Suite 200 New Westminster, BC V3L 0E1

> Toll Free: 1-866-566-SAFE Fax: (778) 396 - 2064 www.safetyauthority.ca

SPECTRUM PROCESS SYSTEMS INC 285175 KLEYSEN WAY ROCKY VIEW AB T1X 0K1 Date:

January 13, 2015

Account #: 15078 Journal #: 60681 Our File #: 5524740

Attn: JOE LAING

Re: Application for Design Registration

The design, as detailed in your, Dwg: V-14-05110-31-001 R.3, for a Pressure Vessel is accepted for registration

as follows:

Registered To: SPECTRUM PROCESS SYSTEMS CRN: W6436.21

INC

MDMT: -20 deg F

MAWT: 150 deg F

MAWP: 1415 psig

Drawing #: V-14-05110-31-001

Drawing Revision: 3 (as noted by ABSA)

Conditions Of Registration:

Registration rev'n to 30" ID Glycol Dehy Pkg as per ABSA's registration conditions "Coil revised to 1" shc XXH This design was registered based on a technical review performed by the province of initial registration in accordance with the Association of Chief Inspectors policy on reciprocal recognition of design review.

Reviewer's Notes:

Ext'l Press: MAWP: 9756kPa, MAWT: 93 Deg C, MDMT: -29 Deg C.

Contact me if you have any questions. The invoice for registration will be forwarded under separate cover.

SHARON PETERS

boiler.designregistration@safetyauthority.ca Design Administration

CC:

7-C: Travel sheet vessel.

L2+L4Internal		TRAVEL SHEET								
except N3 + 015	A.I. REVIEW L. Bodard	REVIEW DATE	Ξ. Α.,	gust	14.	2014				
Reme)	VES. TYPE: DEHY	SERIAL # 14-05110-31	JOB#:	Just	Final Ds	- 1				
Sepz4/14	DESCRIPTION	The state of the s	CRN				LETION DA	DATES		
	30" ID x34'-0" S/S X 1 1/4" WT	CRN DWG#V-14-05110-31-001 R.0					TORS INIT			
LI long seam only	ITEM	TAG#: V-601	Q.C.I.	DATE				DATE		
Hun	1) Calclations in file		1	Aug13,14	MAJAN				R	
Han 1 Jus Sep. 24/14	2) Release of approved Constuction Dwgs		rad	Aug13,14	LOB	Any 14/14	AYI	3 Jan B	R	
L3 Internal	3) Weld /Mat'l Impact Test	Exempt to -20F	MI)	b				0		
5ep30/14 /2000	4) Heat Numbers recorded	Exempt to 201	(IIII)	Jan	10	1	NSDI	star 16		
L3 Internal Sepsoliu 16000 Sus Sep. 30/4	on Travel Sheet (backside)	Mary President	pul din	3/114	151.	15/17	ATT.	1010113	y o	
	5) M.T.R.'s checked		M	5	MJAN	1 3 20	15/17	Blank	K	
N12 and Down	6) Weld Procedures Checked		My)	1		Aug 14/14	My h	lan 15	12	
internal	7) Shell and Head		1	9	40	1 -9 1119	NXI	0	-	
oct 1/14	Thicknesses Measured	etusmunele ivis	()	100	BI	15/17.	9571	5 pulls	17	
oct 1/14	8) Nozzles and Fittings				1	11/1	NO			
Jus 00-1/14	Fitted 9) Nozzle orientation						Z			
BOT Section internal	Checked						APP	+		
OIL.	10) Noz/Flg/TOL/CPLG						- 19			
Oct 3/14 Hour	rating checked									
Jes Oct. 3/14	11) Noz/Flg/TOL/CPLG									
	Mat'l Spec./Grade checked			6						
manual exercises	Material Inspection		bd.			,			1	
13.1) Internals- Final or Progress	13) Final Internal Inspection		UM) oct	des	Od-7/	AY	7 Jars	h	
Top Head	14) Shell and Head Fitted			/ 114.	BR.	15 17	KAI	n mil		
Top Sec	15) Weld size checked		b	. 6	101.	15 117	47	Charlo		
Top Sec	16) Welder I.D.& Welder		lu	1			ALD	MARK		
Mid-Top Sec	Qualification checked	1	Me	6			W7 1	Shulls	R	
Mid-Mid Sec	17)ATTACHMENTS	Nplate Brkt	1				RY	Men	K	
Mid-Btm Sec	18) Attachments I.D.		l b	n			AY	n. key	1	
Btm Sec	19) Radiography	RT-1 (100%)	N	50m/4	331AA	1 3 20	5 AY	13/9/18	n	
Btm Head	20) Other NDT		per	4					,	
Dun nead	21) Serial # Hard Stamped	- T.	1 1	1			END	2 muls	-	
	by NP Brkt.		an	5			717	> land	u	
	22)Full Dia. Break Flgs.		/				AJ I	Mr. W		
	Stamped as per UG-116(L) 23)Btm Head H1# trans,						NI	of ours		
	to Straight Flg.		Me	6			6.45			
	CONTRACTOR	7-4 T-1	1	Jan.		1	Au	1 7 1	/	
	Prior to EWHT NYDRO	PWHT - no	(Mu	7/19	BP.	15/17	AY	fant-1	dr	
	25) Stress Chart checked			/			As il	21 16	/	
	26)Final External with the Hydro	-	In	h	131-	15/1/8	#17.0	Jan 13	U	
	27)HYDROTESTING/ VESSEL	12686 kPa 1840 psi Ga# 42/19	44	JAN	130.	15/1/8	AY	glan 15	1.1	
	Water temp. min. 40^F	120001D- 1040-1-0-1-0-1	1	8/15	101		M	M		
	Coil hydro	12686 kPa 1840 psi Ga# -73/53	HIM	00 6/A		Oct-6/14	DIE ON II	MON 14	1	
	28) Nameplate Stamped	10.5	fles !	16	33 JA		h13 41 A	15 jours	1	
	29) Jurisdiction Accepted CRN drawing		pm)	4	11 JA	N 132	1015 AY	Man S	R	
	30) Manuf. Data Report		Mu	6	19 A	N 13	1015 PY	12 my	h	

31) Partial Data Reports 32) Nameplate Installed

QC SPECIFIC FILE/TRAVEL SHEET 2007 L4: 1,201/L3: 1,24/L2:1,26/L1:124 Page 1

³³⁾ NCR Cleared

^{*} DENOTES AN A.I. INSPECTION POINT

** DENOTES AN A.I. HOLD POINT

AUTHORIZED INSPECTOR SHALL BE GIVEN TRAVEL SHEET PRIOR TO CONSTRUCTION SO THAT HE CAN DESIGNATE INSP. AND HOLD POINTS

DES	CRIB	TION		П	THICK	SHEL		D						MEL	n evi	IDOL S	2007	EGOR	v		T	
	ITEM	,	LOC	DIAMETER	t/L	MEAS	DWG	MATE		HEAT	NUM	BER		VVEL	JOTIV		CAI	EGUR	1			TYPE I JOINT
				OIAN	NOM	HDS MIN	HDS MIN	SP	EC					500	A	FIT UP	В	٠.	HEAT	#S		YPE 1
	HELL			30"	1.25"	1.26			6-70N	7464T3	RI	154	BD		Alz	V			TOLS	CPLGS		de
	HELL;	100		30" 30"	1.25"	(-269 (-27			6-70N		1-96	942	002		AZ	-		.5"				ec
	HELL	March 1990	and a	30"	1.25"	1.29			6-70N 6-70N	387344 387344	000	004	03		A/Z A/W	1	133	.75" 1"				KK
34.00	HELL		14.3 25	30	1,40	1 -1		DITT	0 7011	361374	DAL	207	כט		111 W		23	1.5"			,	
	HELL		T.	11.195													/	1.75"				
	EAD #			_	1.25"	1.31	1.1875" 1.1875"		6-70N	78499	100	23		c1 c2	1	ے ک	2	2"	TEL A 193 . 19			Me
BOO				30	1,23	(0)	1.18/5"	5A-31	0-70IN	3/10/3	lod1	80 (21_	c3	V	CI	/	La company	HEAT#			M
	T HEA								-					c4		02	/	112001	113.11			M
DEPTH STATE OF THE PARTY OF THE	* 1 a - a 11 alan - a 11	NECK												c5		CA			-3	4		M
BRK. BRK.				_														POISC	N PAD	S		
DIVIX.	LO.	(DTIVI)																SADD	LE WE	AR PADS	3	
																		.,,,,,,,,,,				-
<u>L</u>		1	DINE															SKIRT	8a-	495		
			PIPE COD		MAT	ERIAL		H.						CIP CIP		LANGE		FILLE	T WEL	D SIZES	INT. PROJ	
NOZ#		W.T.	Е		S	PEC			HEA	AT#	В	С	D	FIT		TITING HT#		W41	W42	W43	Н	WPS #
N1	6"			-	350LF2C	-F-1-01							0	1	176		V	3/8"	-	BW	SF	6
N2 N3	2"	341	LWN C		350LF2C	0.0000		5-	7490	6		E 3	4	1	172	38	1	3/8"	#.	BW	SF AS	6
N4	2"	.336		Call Control	05N/10		7-6	721	770	1	-y		C	V		1087		3/8"	-	BW	SF	6
N5	2"			SA-1	105N/10	6B)		720	770		Y	Ŋ.	A	VV	1339	087	826	3/8"	-	BW	SF	6
N6 N7	2"		C C		105N/100	_	-		776		7	٠.	C	V		087		3/8"~	/-	BW	SF	6
N8	4"		1	-	105N/100 350LF2C	17			00 B	NU	V		2	1		908		3/8"		BW	SF 3/8"	6
N9	4"				350LF2C			C91	00 B	N -			C	1		023		3/8",	/-	BW	3/8"	6
N10	2"	.337	С	ESTATOLICA .	105N/106	1000			0776		Y	-, -	0	1	133	208		3/8"	į	BW	SF	6
N11A N11B	2"				05N/106			720	777	0 /	1		<u>د</u>	/	1339		10	3/8",	-	BW	SF	6
N12	2"		3.77	posterior and the	105N/106	America		720		V	V	-	2	/	1334	1087	70	3/8" [-	BW BW	SF SF	6
N13A	2"	-364			05N/106		3-3		289	V	C		4	/	47	34	76	3/8"	- 4	BW	SF	6
N13B	2"			_	05N/106		2		//	70	C		J	1	472	34	76	3/8"	/-	BW	SF	6
N14A-I N14M	2"	.339			05N/106				2077		Y		THE	3/	133	908 908	<i>7</i> ⁴	3/8"	-	BW	SF SF	6
N15	2"	5	_	Total Control	05N/106		,		0772		Ý		0	1		108		3/8"		BW	SF	- 6
N16	4"		LWN	SA-3	50LF2C	L1		<u> </u>	900 G	IN -	/		C	1	Joá	2/02	31	3/8"	1 = "	BW	3/8"	6
N17	4"		-		50LF2C		1		200 B				C	1		899		3/8"	<u> </u>	BW	3/8"	6
N18 N19	2"		_		50LF2C				1961				L	1	799	BN 285	10	3/8" L	7	BW	SF SF	6
N20	2"	38	View and		50LF2C				1/	~			7	/		185		3/8"	1.	BW	SF	
		- Opt	e e	12	44																	
		- 31	1 (VI/	A 1																	
=			- Yi	112																		
REPAD #	Req. WT	Act. WT	O.D.	7.02	MA	T'L SPI	EC	1	ŒAT N	UMBER				EIT UP	•			SERIAL#: 14-05110-31				
API	1.	13	1-R	7	- (3		7.	· - j													

page 2

7-d: Hydro verrel.

HYDROSTATIC/PNEUMATIC TEST REPORT

TEST CONDUCTED BY: SPECTRUM P	ROCESS SYSTEM	AS INC.		
JOB NUMBER: 14-05110-31	SKID OR UNIT	#:		
CUSTOMER: HIMSKY				
QUALITY CONTROL: M. Harra	>			
THIRD PARTY INSPECTOR:				8
HOLDING TIME AT TEST PRESSURE:		TTTM/	WATED TEMBED	ATTIBE AND MINI
		LUIVI.	WAICK IDMICH	ALUMD, 40 I MILITY.
RESULTS/COMMENTS: Accepte	C/			
				J
LINE DISC./VESS. S.N./ETC.	TEST PRESSURE		DATE OF TEST	WITNESSED BY
V-601 14-05110-31 Verra	1840 P5,	142/1-19	Ja 8/15	pun)
V-601 VESSEL COIL	1840	F73/1+65	646114	pen
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2.44	1		16	