

Report No: KM008863

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4

Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

Client	Tara Energy Services	Inspection Date	Mar 14, 2024									
Prov. Reg. #	AB 0543257	Inspection Type	VE / VI / PSV / UT									
Equipment Type	Horizontal Separator	Location	Portable, Clairmont Yard									
Tag/Equip.		LSD	AB									
Status	In Service	Downhole LSD										
Manufacturer	Dynacorp Fabricators Inc	Area	Grande Prairie									
Serial Number	2J50594	Year Built	2005									
CRN#	T2246.213	Service	Sour									
Comp/Unit Id	SS-287	Manway	Yes									
Nat.Board #		Coating										
Interim Insp'n		Interim Type										
Next Thorough Insp	2027	Next Insp Type	VE / VI / PSV / UT									
Length		Height										
Volume	658 ft³	Client Reference										
Owner	Tara Energy Services	RT	1 HT YES									
Foreman	Jeff Warr	RAE Job No.	PR0002839									
ABSA	Plant: H Vessel: P Process: W	Special: W	ASME Sec. VIII div. 1									
History Log	AB-25 - entered March 10, 2021 PSV Service Report - dated February 25, 2021 - entered March 10, 2021 Vessel previously owned by Lyon's Production - bought by Tara as per Oct.2023 ESR - entered November 30, 2023 Inspection Report Complete - Inspection Date: 2024-March-14 Inspection Type: VE/VI/PSV/UT											

Component	Shell						
MAWP	28	5.0 PSI @ 100 °F		MDMT	-49 °F @ 285.0 PSI		
Material	SA-516-70	N	Material Th	ickness	0.625 in		
Diameter		78 in	Length		216 in		
Corrosion Allowance		0.062 in					

Date Printed: Apr 19, 2024



Report No: KM008863

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4 Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

Valve Tag No	24710-2	Relief Type	Pressure Relief Valve
Manufacturer	Taylor	Set Pressure	285.000 PSI
Serial Number	24710-2	Capacity	6958 SCFM
Model	83J7811341-60-60-0	Last Service	Feb 26, 2021
CRN	0G1316.2C	Next Service	2024
Service Co.	Unified	Service Interval	36 Months
Service Co. Tag	32656G	Inlet Size	3 in
ASME Stamp	UV	Outlet Size	3 in
NB Stamp	YES	Connection	Flanged
Relief Dest.	To Flare	Valve Loc.	On Vessel
Comments		Client Reference	

Component	Heads	Heads									
Material	SA-516-70	N	Material Thickness	0.688 in							
Corrosion A	llowance	0.062 in									

### **Comments**

The following RAE Procedure(s) was/were used in inspecting this vessel:

INS-645B PRV Inspection Procedure INS-670B Separator Inspection Procedure

NDE-701B UT-1 Ultrasonic Thickness Measurement Procedure

Date Printed: Apr 19, 2024

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4

Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

Report No: KM008863





**Unit Overview** 

### **Building Observations**

Number of Access Doors:1 Building Supported by: Skid

Gas test port: No
Fire eye: No
Lighting: Good

Gas Detection: No
Catalytic Heater: Yes
Floors: Checker plate steel

Drainage/Condition: Acceptable Equipment placed ergonomically: Yes

The building is generally in good condition and well supported. The floor was clean and was steel plate. The building is well lit, the windows were in good condition and the doors function well. There were no combustibles in the building. There was generally good access to the equipment in the building.

Figure: 2



Building

Date Printed: Apr 19, 2024 Page: 3 of 9

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4

Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

Report No: KM008863

### **Piping Observations**

General condition: Acceptable

Mechanical connections acceptable for service?: Acceptable

Clad: No Painted: Yes Insulated: No

Are there any dead legs: No

Support type: U-Bolt Supported adequately: Yes

There is no damage, distortion or stress evident on piping. The piping is painted. There was no significant surface corrosion on the piping. The piping is well supported and anchored.

Figure: 6

Figure: 3



Inlet Piping



Drain Piping 1





Drain Piping 2



Meter Run Piping

Date Printed: Apr 19, 2024

Source: REMS

Page: 4 of 9



Report No: KM008863

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4 Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

### **PSV Observations**

Drainage : Acceptable
Bolting : Acceptable
Gasket : Acceptable
CRN : Acceptable
Supports : Acceptable
Seal wire : Acceptable
Service tag : Acceptable
Set pressure : Acceptable

Installation vertical: YesRequired Capacity: Value not available

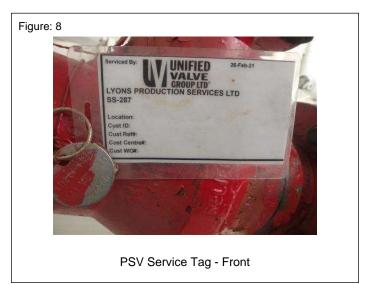
PSV block valves: No

PSV service report available: No

The PSV was in good condition, and was mounted in the vertical position. The vent size was adequate and vent lines were positioned safely. The outlet piping provided positive drainage for the PSV. The PSV is due for service therefore the PSV needs to be serviced and service report needs to be sent to RAE Engineering and Inspection Ltd. for data entry.



**PSV** 





Date Printed: Apr 19, 2024



Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4

Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

Report No: KM008863

### **External Observations**

Installation : Partial Support Structure : Saddles Grounded : Yes Securement Type : N/A

Drains :Manual Securement Condition : Acceptable Attachments : No Ladders/Platforms : N/A CUI checked : N/A External Covering : Coated

Vessel Orientation : Horizontal

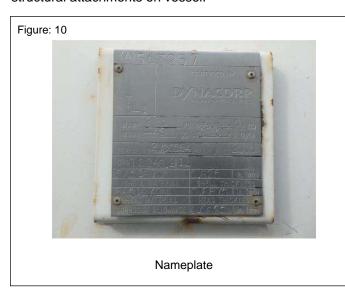
Manway : Yes Manway davit arms:

Free to move : Yes Lubricated : Yes

Carry bolt with washer and double Nutted: Yes

Certificate of inspection permit: No Nameplate attached and legible: Yes

The vessel is partially located inside a building. The nameplate was legible and securely mounted to the vessel. The head and shell appeared to be in serviceable condition. The vessel is not insulated. The vessel was fully painted and the paint was in serviceable condition. There was scattered corrosion visible on the vessel surfaces. There was no damage, distortion, or stress evident on piping connections. The vessel was adequately supported. There are no structural attachments on vessel.





Vessel Overview 1

Date Printed: Apr 19, 2024

Source: REMS

Page: 6 of 9



Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4

Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

Report No: KM008863





### **Internal Observations**

Access for Inspection

The vessel was accessed via the shell mounted man way. Access for thorough internal inspection was not limited.

#### Cleanliness

There was some product scaling; however, was easily scraped away to reveal only minor surface corrosion..

### Components Inspected

- Heads
- Shell
- Nozzle attachments and sparger
- Inlet nozzle
- Weir
- Heat Coil
- Demister
- Man way/Davit Arm/Cover

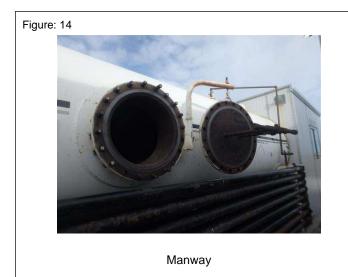
### Inspection Observations

The components inspected appeared to be in serviceable condition with no relevant indications of corrosion/erosion or mechanical defects and exhibited no areas of fabrication defects, distortion, or evidence of overheating.

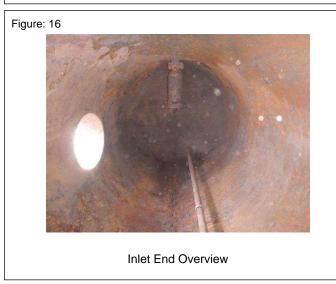
Date Printed: Apr 19, 2024

Report No: KM008863

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4
Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

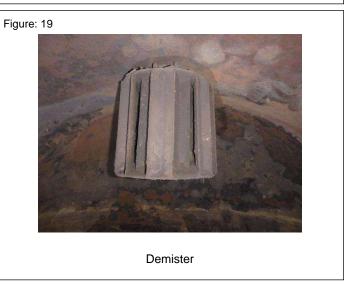












Date Printed: Apr 19, 2024



Report No: KM008863

Head Office: 4810 - 93 Street NW, Edmonton, Alberta, Canada T6E 5M4
Tel: 780-469-2401 Fax: 780-468-2422 www.raeengineering.ca

### **UT1 Observations**

See attached appendices for ultrasonic testing (UT) report.

At the time of inspection multiple TML noted to be below minimum nominal thickness, but above corrosion allowance, therefore no concern.

At the time of inspection TML210 noted to be below minimum nominal thickness and below corrosion allowance by 0.4mm, therefore this needs to be addressed.

### Recommendations

- 1. At the time of inspection TML210 noted to be below minimum nominal thickness and below corrosion allowance by 0.4mm, therefore this needs to address. Option are to have the bottom section of vessel coated as soon as possible.
- 2. The PSV is due for service therefore the PSV needs to be serviced and service report needs to be sent to RAE Engineering and Inspection Ltd. for data entry.

Based on the scope and results of this inspection the vessel appears suitable for continued service.

Ken McNeil

Alberta IBPV #A-75085 API 510 #39628, API 570 #66961 API 653 #47993, CWB Level III #483 Marnes du Plessis

Alberta IBPV #A-74773 TSASK Pressure Equipment Class I #250 CWB Level II #8117

Inspector: Ken McNeil Reviewed By: Marnes du Plessis

Date Printed: Apr 19, 2024

Source: REMS

Page: 9 of 9

		RAE Engin	Inspection Date:		22-Mar-24		Ultrasonic Thickness						
(RAE)								Examination					
	ph:	: 780-469		Page:	1 o		6						
Client:			nergy Service L AVE, Clairm		T0\/0142	Report Number: 24-PR0002839-EE-UT-01							
Facility:	Location/LSD: Grande Prairie												
Equipment Numb	Client Representative: NA Client Contact: NA												
Equipment Descr	iption:	ПОПІДОП	ital Separato	I	JOB DES	Client Contact:			INA				
Procedure:		NDE Tec	chnical Manu	ual Rev.	2 (NDE-701B)	Surface		Coated		Bare St	eel	✓ Paint	ed
Acceptance Code	<u>:</u>		ec. VIII Div. 1			Condition:		Ground		Blasted	-	Buffe	
Material:		Carbon		- / /		Surface Temp:	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		0 - 120		120 - 260		260 °C
				QUIPN	MENT, TECHNI								
Instrument 1 Mfr	: Wayg	ate	Model:		DSMGO+	S/N: GOPLS	2112	0043		Cal. D	ue:	5-Dec-24	
Instrument 2 Mfr	:		Model:			S/N:				Cal. D	ue:		
Cal Block 1 S/N:	09-14	75	1 or 2 Poi		1 2	Calibrated Rang			"-1.000"	Coupl		UTX	
Cal Block 2 S/N:	15-10		1 or 2 Poi		1 🗸 2	Calibrated Rang	ge:		"-4.000"	Coupl		UTX	
Probe Model	Freq	Δngle I	ia. Probe		Manufacturer	Serial #		Cable	Vel.	Ref	Scan	Rang	ge (in)
4 51125	MHz	(1)	in) Single	Dual	Charactel	225047/14/		Length	(m/sec)		dB+BU17:	U5	
1 FH2E 2	5.0	0° 0.	.25	<b>✓</b>	Stresstel	22F01YMK		4'	5850	62	As Neede	:a	5
Scope:	signs	of wall th	hinning du	ie to c	rasonic testing orrosion, erosio	on, laminations	s, or	inclusio	ons.				any
Results: The measurements obtained from the inspection locations show the thickness of all the components inspected to be at or around nominal with the exceptions of CML 210, 215, 216, 217, 220, 235, 240, N1 & N2 which were found to be lower than nominal minus ASME tolerance. (Refer to flag summary page)  Please see the following pages for the pictures of the nameplate and the overall view, the isometric drawings, and the thickness measurements.  ASME Corrosion Nominal Tolerance Allowance  1) Black - Within ASME Tolerance 2) Blue - S Nominal minus ASME Tolerance													
<del></del>	<del></del>	Efe Erhi	4) Orar		ominal minus ASME Tole minal Not Specified (N/		NOMI	ıaı minus A	CGSB#:	27134		SB Level:	1
1 <sup>ST</sup> Technician						CICNIATURE							
		PRII Stuart A				SIGNATURE	_		SNT#: CGSB#:	710B-05 18886		T Level: SB Level:	2
2 <sup>ND</sup> Technician		PRII				SIGNATURE			SNT#:	10000		T Level:	<del>                                     </del>
											J. 1		48



Inspection Date: 22-Mar-24 Report Date: 8-Apr-24 Page:

**Ultrasonic Thickness Examination** 

1		7 00 100 2 101 1911 7 00 100 2 122	. 486.	0f 6
	Client:	TARA Energy Services	Report Number:	24-PR0002839-EE-UT-01
	Facility:	9526 81 AVE, Clairmont, AB T8X0M2	Location/LSD:	Grande Prairie
	Equipment Number:	A0543257 / SS-287	Client Representative:	NA
	Equipment Description:	Horizontal Separator	Client Contact:	NA

### **FLAGGED CMLs**

CML#	CML Description	Nom.	Mil.	CA	Ave.	Min.
CIVIL #	CIVIL DESCRIPTION	[ mm ]				
210	Lower Shell	15.90	0.25	1.60	14.37	13.69
215	Lower Shell	15.90	0.25	1.60	15.93	15.34
216	Lower Shell	15.90	0.25	1.60	14.97	14.61
217	Lower Shell	15.90	0.25	1.60	15.63	15.14
220	Lower Shell	15.90	0.25	1.60	15.24	14.76
235	Upper Shell	15,9	0.25	1.60	15.94	15.75
240	Upper Shell	15.90	0.25	1.60	15.67	15.44
N1	4 XXH Nozzle	17.12	2.14	1.58	15.33	14.94
N2	4 XXH Nozzle	17.12	2.14	1.60	15.68	14.96

- 1) Black Within ASME Tolerance
- 2) Blue ≤ Nominal minus ASME Tolerance
  3) Red ≤ Nominal minus ASME Tolerance minus CA or ≤ Nominal minus ASME Tolerance (if CA = N/S)
- 4) Orange Nominal Not Specified (N/S)

	AE Engineering and Inspection Ltd	Inspection Date: 22-M		/lar-24	Ultrasonic Thickness					
<b>(RAE)</b> 4810	0 - 93 Street Edmonton, AB, T6E 5M4	Report Date:	8-Apr-24							
ph:	780-469-2401 fx: 780-468-2422	Page:	3 (	of 6	Examination					
Client:	TARA Energy Services	Report Number:		24-PR	0002839-EE-UT-01					
Facility:	9526 81 AVE, Clairmont, AB T8X0M2	Location/LSD:		Grand	e Prairie					
Equipment Number:	A0543257 / SS-287	Client Representative	e:	NA						
Equipment Description:	Horizontal Separator	Client Contact:								
PHOTOGRAPHS										





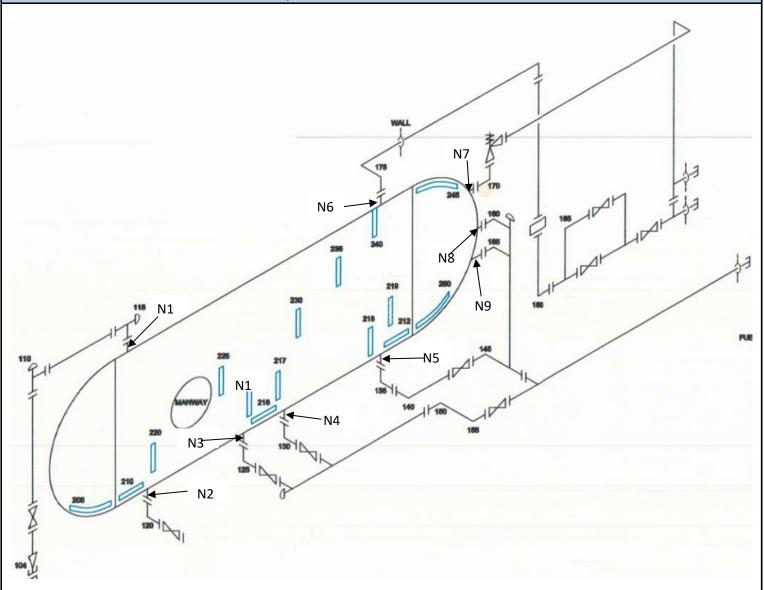
## View of Nameplate & Unit Number







### **EQUIPMENT CML ISO DRAWING**



RAE Engineering and Inspection Ltd Inspection Date: 22-Mar-24 **Ultrasonic Thickness** 4810 - 93 Street Edmonton, AB, T6E 5M4 Report Date: 8-Apr-24 **Examination** ph: 780-469-2401 fx: 780-468-2422 Page: Client: **TARA Energy Services** Report Number: 24-PR0002839-EE-UT-01 9526 81 AVE, Clairmont, AB T8X0M2 Facility: Location/LSD: **Grande Prairie Equipment Number:** A0543257 / SS-287 Client Representative: NA Horizontal Separator Client Contact: NA **Equipment Description: CML DATA** Units: millimeters 07 CML Description 01 02 03 Ω4 05 06 በጸ 09 10 11 12 **UpperInlet Head** Min. = 17.8 Ave. = 18.2 200 17.5 Mil: 0.3 18.7 18.2 18.3 17.8 Nom: CA: 1.6 18.4 18.3 18.1 18.1 18.0 18.2 18.2 18.1 **Lower Inlet Head** Min. = 18.0 Ave. = 18.3 205 17.5 CA: 18.3 Nom: Mil: 0.3 1.6 18.3 18.3 18.3 18.6 18.3 18.1 18.0 18.3 18.5 18.4 18.7 Lower Shell 13.7 14.4 Min. = Ave. = 210 14.5 14.4 14.5 14.2 14.4 15.9 0.3 CA: 14.8 14.9 14.4 14.4 14.0 14.3 Nom: Mil: 1.6 13.7 Lower Shell 17.8 Min. = Ave. = 18.4 212 Nom: 15.9 Mil: 0.3 CA: 18.6 18.4 18.0 18.8 18.7 18.8 19.0 19.7 17.8 17.9 17.8 17.9 1.6 Lower Shell 15.3 Min. = Ave. = 15.9 215 15.9 0.3 CA: 1.6 16.3 16.3 16.3 16.2 16.0 15.3 15.4 15.4 15.4 Nom: Mil: 16.2 16.1 16.1 Lower Shell Min. = 14.6 Ave. = 15.0 216 15.1 14.7 15.0 14.9 15.0 15.1 15.0 15.9 0.3 CA: 15.1 15.0 15.0 14.6 15.1 Nom: Mil: 1.6 Lower Shell Min. = 15.1 Ave. = 15.6 217 15.3 15.4 Nom: 15.9 Mil: 0.3 CA: 1.6 16.2 16.2 16.2 16.0 15.1 15.6 15.4 15.5 15.3 15.4 Lower Shell Min. = 15.7 Ave. = 16.0 218 16.0 Nom: 15.9 Mil: 0.3 CA: 1.6 16.1 16.0 16.0 16.2 16.1 16.0 16.1 15.7 16.0 16.0 16.1 15.9 Upper Shell Min. = Ave. = 16.1 219 16.0 15.9 Mil: 0.3 CA: 1.6 16.0 16.1 16.1 16.1 16.1 16.1 16.1 16.2 16.2 16.2 15.9 Nom: Lower Shell Min. = 14.8 Ave. = 15.2 220 Nom: 15.9 Mil: 0.3 CA: 1.6 15.6 15.5 15.3 15.4 15.1 15.3 15.2 14.8 15.1 15.1 15.1 15.3 15.9 Mid Shell Min. = 15.8 Ave. = 225 0.3 Nom: 15.9 Mil: CA: 1.6 15.8 16.0 15.9 15.9 15.9 15.9 15.9 15.9 15.9 15.8 16.0 16.0 **Upper Shell** Min. = 15.7 Ave. = 15.9 230 16.0 Nom: 15.9 Mil: CA: 1.6 15.7 15.9 15.9 16.2 16.0 16.1 16.0 15.9 15.9 15.9 15.8 **Upper Shell** Min. = 15.7 Ave. = 15.9 235 Nom: 15,9 Mil: CA: 1.6 15.8 15.7 15.9 15.9 16.0 16.1 16.1 16.0 16.0 15.9 16.0 16.0 **Upper Shell** Min. = 15.4 Ave = 15.7 240 15.7 15.5 15.5 15.4 15.5 15.7 15.8 Nom: 15.9 Mil: 0.3 CA: 1.6 15.7 15.7 15.8 15.8 15.8 Upper Head Min. = 18.5 Ave. = 18.6 245 17.5 Mil: 18.8 0.3 CA: 1.6 18.6 18.6 18.6 18.6 18.6 18.7 18.8 18.6 18.5 18.5 18.7 Nom: Lower Head Min. = 18.6 Ave. = 18.7 250 17.5 0.3 CA: 18.7 18.7 18.6 18.8 18.8 18.9 18.6 18.7 18.9 18.8 18.6 Nom: Mil: 1.6 18.6 NPS = Nominal Pipe Size | Sch = Schedule | Rating = Flange Pressure Rating | Nom = Nominal | CA = Corrosion Allowance | Ave = Average | Min = Minimum

Mil = Manufacturer's Undertolerance = Piping - 12.5% - ASME IIA-2, SA-530 OR Plate - 0.01in/0.25mm or 6% - ASME VIII Div. 1, UG-16

RAE Engineering and Inspection Ltd 4810 - 93 Street Edmonton, AB, T6E 5M4		Inspe	Inspection Date:			ar-24	Ultrasonic Thickness											
									Repo				8-Apr-24					
ph: 780-469							80-468-	2422	Page: 6				Examination					
Client:	<del>-</del>						•					02839-EE-UT-01						
Facility								AB T8X0N	12	_	tion/LSD			Grande F	Prairie			
	nent Ni					/ SS-28					t Repres		:	NA				
Equipr	nent De	escription	on:	Hori	zontal	Separa	ator				t Contac	t:		NA				
									CML	DATA	١							
Units:	mill	imeters	5															
CML			Descrip	otion			01	02	03	04	05	06	07	08	09	10	11	12
	4	ххн		Na	zzle									ļ	Min. =	14.9	Ave. =	15.3
N1					Г				1				1		IVIIII. –	14.5	Ave	15.5
	Nom:	17.1	Mil:	2.1	CA:	1.6	14.9	15.5	15.1	15.7								
	4	XXH		No	zzle										Min. =	15.0	Ave. =	15.7
N2	Nom:	17.1	Mil:	2.1	CA:	1.6	16.4	16.0	15.4	15.0								
	3	ХХН		Na	zzle				<u> </u>					ļ	Min. =	13.5	Ave. =	14.1
N3								ı	1						IVIIII. –	15.5	Ave. –	14.1
	Nom:	15.2	Mil:	1.9	CA:	1.6	14.5	14.7	13.5	13.8								
	3	XXH		No	zzle										Min. =	14.1	Ave. =	14.6
N4	Nom:	15.2	Mil:	1.9	CA:	1.6	14.1	14.7	15.2	14.6								
								<u> </u>							Nain	146	Δνα -	14.0
N5	3	XXH			ozzle				1 .				I		Min. =	14.6	Ave. =	14.9
	Nom:	15.2	Mil:	1.9	CA:	1.6	15.6	14.8	14.6	14.6								
N6	3	XXH		No	zzle		No A	ccess							Min. =		Ave. =	
INO	Nom:	15.2	Mil:	1.9	CA:	1.6												
	3	ХХН		No	zzle								<u> </u>	<u> </u>	Min. =	13.9	Ave. =	14.3
N7			n a:1			4.6	110	44.5	447	42.0			1		1711111	13.3	7.000.	11.5
	Nom:	15.2	Mil:	1.9	CA:	1.6	14.0	14.5	14.7	13.9								
N8	3	XXH		No	zzle										Min. =	13.7	Ave. =	14.4
140	Nom:	15.2	Mil:	1.9	CA:	1.6	13.7	14.6	14.4	14.9								
	3	ххн		No	zzle	·								•	Min. =	13.6	Ave. =	14.4
N9	Nom:	15.2	Mil:	1.9	CA:	1.6	15.6	14.8	13.6	13.7								
		20.2			O,	2.0	13.0	11.0	13.0	13.7								
							ı	1	1		_							
					<u> </u>			<u>I</u>	<u> </u>			<u> </u>	1					
													I					
															1			
							1	T										
				_														
								-	-				-	<del>-</del>				
								1	1		-		ı					
									•					•				
								1	1		-		ı					
	•		18:	1									<u> </u>		بسبا			
	NPS	= Nomina		·			_	_						ance   <b>Ave</b> 6% - <u>ASME V</u>			nımum	