



CERTIFICATE OF TESTING
ALBERTA TUBULAR PRODUCTS LTD

Diameter: **219.1 mm**

Gage: **6.400 mm**

Grade: **GR.359-2SG**

Ref. No: **25 - 020431 01**

Certificate ID: **191015**

Mill Order No: **25-020431-01**

Friday, July 27, 2018, 12:23:46

Customer PO: **4078**

Specification: **CSA Z245.1-18 GRADE 359 CAT II SS**

All of the information in the '.... Report' sections is locked for editing and cannot be modified.

And the '.... Data' sections are added as modifiable information and have NO direct link to the report sections.

11 JTS 198.5m Lot 180935-1

EVRAZ Red Deer Plant		EVRAZ Red Deer CERTIFICATE OF TESTING Tensile & Chemistry		Customer: ALBERTA TUBULAR PRODUCTS LTD		Diameter: 219.1 mm																Wall Thickness: 6.400 mm																Grade: GR.355-25G															
						Specification: CSA Z46.1-18 GRADE 355 C45 T55																																															
Supplier - Heat		Product ID		Test Type		C		Mn		P		S		Si		Cu		Ni		Cr		Mo		Sn		Al		UTS (MPa)		Elong% (50mm)		Cb		N2		Ti		B		Y/T		Ceq		Ca		Ce		Scal					
RD-H148		GN641 17148-T		MILL CONTROL		0.04		0.86		0.008		0.001		0.18		0.23		0.10		0.09		0.038		0.009		0.040		0.003		0.024		0.011		0.02		0.0002		0.15		0.0016		0.002		0.0015		0.0015		0.0015		0.0015			
RD-H148		GN641 17148-T		PIPE TWA		0.04		0.86		0.009		0.001		0.19		0.23		0.10		0.09		0.037		0.009		0.042		0.002		0.023		0.011		0.02		0.0001		0.15		0.0020		0.001		0.0015		0.0015		0.0015		0.0015			
RD-H148		A0043		Heat:		0.04		0.86		0.009		0.001		0.19		0.23		0.10		0.09		0.037		0.009		0.042		0.002		0.023		0.011		0.02		0.0001		0.15		0.0020		0.001		0.0015		0.0015		0.0015		0.0015			
RD-H148		A0044		Product:		0.04		0.87		0.009		0.001		0.19		0.23		0.10		0.09		0.037		0.009		0.042		0.002		0.023		0.011		0.02		0.0001		0.15		0.0020		0.001		0.0015		0.0015		0.0015		0.0015			
RD-H148		GN637 17082-N		MILL CONTROL		0.04		0.87		0.009		0.001		0.20		0.20		0.06		0.058		0.009		0.040		0.003		0.024		0.010		0.02		0.0002		0.15		0.0023		0.002		0.0015		0.0020		0.0015		0.0020					
RD-H148		GN637 17082-N		PIPE TWA		0.04		0.87		0.007		0.001		0.20		0.20		0.06		0.056		0.009		0.048		0.003		0.024		0.010		0.02		0.0002		0.15		0.0023		0.002		0.0015		0.0020		0.0015		0.0020					
RD-H148		A0053		Heat:		0.04		0.88		0.007		0.001		0.20		0.20		0.06		0.058		0.009		0.048		0.003		0.024		0.010		0.02		0.0002		0.15		0.0023		0.002		0.0015		0.0020		0.0015		0.0020					
RD-H148		A0055		Product:		0.04		0.88		0.007		0.001		0.20		0.20		0.06		0.058		0.009		0.048		0.003		0.024		0.010		0.02		0.0001		0.14		0.0028		0.001		0.0015		0.0020		0.0015		0.0020					
RD-H148		GN633 17003-L		MILL CONTROL		0.04		0.85		0.010		0.002		0.20		0.32		0.10		0.06		0.051		0.010		0.031		0.003		0.022		0.010		0.02		0.0003		0.15		0.0021		0.002		0.0015		0.0020		0.0015		0.0020			
RD-H148		GN633 17003-L		PIPE TWA		0.04		0.85		0.009		0.002		0.20		0.32		0.11		0.06		0.053		0.011		0.033		0.002		0.021		0.010		0.02		0.0002		0.15		0.0020		0.001		0.0020		0.0015		0.0020					
RD-H148		A0007		Heat:		0.04		0.86		0.009		0.002		0.20		0.32		0.10		0.06		0.051		0.010		0.031		0.003		0.022		0.010		0.02		0.0003		0.15		0.0021		0.002		0.0015		0.0020		0.0015		0.0020			
RD-H148		A0009		Product:		0.04		0.87		0.009		0.002		0.20		0.32		0.11		0.06		0.053		0.011		0.033		0.002		0.021		0.010		0.02		0.0001		0.15		0.0023		0.001		0.0020		0.0015		0.0020					
RD-H148		GN643 17188-N		MILL CONTROL		0.04		0.85		0.008		0.003		0.19		0.33		0.12		0.08		0.064		0.012		0.045		0.002		0.023		0.010		0.02		0.0002		0.15		0.0023		0.001		0.0020		0.0015		0.0020					
RD-H148		GN643 17188-N		PIPE TWA		0.04		0.85		0.008		0.003		0.19		0.33		0.12		0.08		0.064		0.012		0.045		0.002		0.023		0.010		0.02		0.0002		0.15		0.0023		0.001		0.0020		0.0015		0.0020					
RD-H148		A0017		Heat:		0.04		0.85		0.008		0.003		0.19		0.33		0.12		0.08		0.065		0.012		0.043		0.003		0.023		0.011		0.02		0.0002		0.15		0.0026		0.002		0.0015		0.0020		0.0015		0.0020			
RD-H148		A0018		Product:		0.04		0.85		0.008		0.003		0.19		0.33		0.12		0.08		0.064		0.012		0.045		0.002		0.023		0.010		0.02		0.0002		0.15		0.0023		0.001		0.0020		0.0015		0.0020					
RD-H148		GN649 17306-F		MILL CONTROL		0.05		0.83		0.008		0.003		0.20		0.18		0.09		0.06		0.043		0.027		0.044		0.003		0.022		0.010		0.02		0.0001		0.14		0.0022		0.000		0.000		0.000		0.000					
RD-H148		GN649 17306-F		PIPE TWA		0.05		0.84		0.008		0.003		0.20		0.18		0.09		0.06		0.043		0.027		0.044		0.003		0.022		0.010		0.02		0.0001		0.14		0.0022		0.000		0.000		0.000		0.000					
RD-H148		A0027		Heat:		0.05		0.84		0.009		0.002		0.22		0.27		0.10		0.07		0.051		0.011		0.029		0.004		0.023		0.009		0.02		0.0003		0.15		0.0021		0.002		0.002		0.002							
RD-H148		A0029		Product:		0.04		0.84		0.009		0.002		0.22		0.27		0.10		0.07		0.053		0.012		0.031		0.003		0.023		0.009		0.02		0.0002		0.16		0.0028		0.001		0.001		0.001		0.001					
RD-H148		GN701 18138-L		MILL CONTROL		0.04		0.84		0.009		0.004		0.18		0.29		0.11		0.08		0.066		0.013		0.044		0.003		0.022		0.010		0.02		0.0002		0.14		0.0034		0.000		0.000		0.000		0.000					
RD-H148		GN701 18138-L		PIPE TWA		0.04		0.85		0.007		0.004		0.18		0.29		0.11		0.08		0.066		0.013		0.044		0.003		0.022		0.010		0.02		0.0002		0.14		0.0034		0.000		0.000		0.000		0.000					
RD-H148		GN731 18701-V		MILL CONTROL		0.04		0.85		0.007		0.004		0.20		0.32		0.12		0.10		0.058		0.011		0.043		0.003		0.023		0.009		0.02		0.0003		0.16		0.0018		0.002		0.001		0.001		0.001					
RD-H148		GN731 18701-V		PIPE TWA		0.04		0.85		0.007		0.004		0.20		0.32		0.12		0.10		0.058		0.011		0.043		0.003		0.023		0.009		0.02		0.0002		0.16		0.0018		0.002		0.001		0.001		0.001					
RD-H148		A0049		Heat:		0.04		0.84		0.005		0.003		0.19		0.18		0.08		0.06		0.041		0.025		0.042		0.003		0.022		0.010		0.02		0.0002		0.14		0.0021		0.003		0.001		0.001		0.001					
RD-H148		A0050		Product:		0.04		0.85		0.007		0.002		0.20		0.18		0.09		0.06		0.043		0.027		0.044		0.003		0.022		0.010		0.02		0.0002		0.14		0.0034		0.000		0.000		0.000		0.000					
RD-H148		GN703 18157-F		MILL CONTROL		0.04		0.85		0.007		0.002		0.20		0.18		0.09		0.06		0.043		0.027		0.044		0.003		0.022		0.010		0.02		0.0001		0.14		0.0022		0.000		0.000		0.000		0.000					
RD-H148		GN703 18157-F		PIPE TWA		0.04		0.85		0.009		0.002		0.22		0.27		0.10		0.07		0.051		0.011		0.029		0.004		0.023		0.009		0.02		0.0003		0.15		0.0021		0.002		0.002		0.002							
RD-H148		A0003		Heat:		0.04		0.84		0.009		0.002		0.22		0.27		0.10		0.07		0.053		0.012		0.031		0.003		0.023		0.009		0.02		0.0002		0.14		0.0020		0.002		0.002		0.002							
RD-H148		A0004		Product:		0.04		0.84		0.009		0.002		0.22		0.27		0.10		0.07		0.052		0.012		0.032		0.003		0.023		0.008		0.02		0.0002		0.14		0.0020		0.002		0.002		0.002							
RD-H148		GN657 17465-J		MILL CONTROL		0.05		0.83		0.010		0.004		0.18		0.30		0.11		0.08		0.066		0.012		0.042		0.003		0.023		0.009		0.02		0.0003		0.16		0.0027		0.002		0.002		0.002							
RD-H148		GN657 17465-J		PIPE TWA		0.05		0.84		0.010		0.004		0.18		0.30		0.11		0.08		0.066		0.013																													



Red Deer Plant

EVRAZ Red Deer
CERTIFICATE OF TESTING

Charpy

Friday, July 27, 2018, 12:23:46

Certificate ID: 191015-1

Customer PO: 4078

Customer: ALBERTA TUBULAR PRODUCTS LTD

Diameter: 219.1 mm

Wall Thickness: 6.400 mm

Grade: GR.359-25G

Specification: CSA Z245.3-18 GRADE 359 CAT II SS

Mill Order No: 25-020431-01

Ref. No: 25 - 020431.01

Supplier - Heat	Product ID		Test Type	Orientation	Temp C	Energy (Joules)				Percent Shear				Test Position	Size	Flat	
						#1	#2	#3	Avg	#1	#2	#3	Avg				
EVRAZ Regina - 409534	RD-H14B	GN641 17149-T	MILL CONTROL	PIPE TPA	-45	100	103	111	105	100	100	100	100	90	1/2	T	
	RD-H14B	GN641 17149-T	MILL CONTROL	PIPE TWA	-45	96	80	51	76	100	74	60	78	WMZ	1/2	T	
EVRAZ Regina - 409535	RD-H14B	GN637 17082-N	MILL CONTROL	PIPE TPA	-45	119	118	120	119	100	100	100	100	90	1/2	T	
	RD-H14B	GN637 17082-N	MILL CONTROL	PIPE TWA	-45	103	104	98	102	100	100	100	100	WMZ	1/2	T	
EVRAZ Regina - 409538	RD-H14B	GN633 17003-L	MILL CONTROL	PIPE TPA	-45	118	118	150	129	100	100	100	100	90	1/2	T	
	RD-H14B	GN633 17003-L	MILL CONTROL	PIPE TWA	-45	136	110	160	135	100	100	100	100	WMZ	1/2	T	
EVRAZ Regina - 409539	RD-H14B	GN643 17188-M	MILL CONTROL	PIPE TPA	-45	119	121	128	123	100	100	100	100	90	1/2	T	
	RD-H14B	GN643 17188-M	MILL CONTROL	PIPE TWA	-45	96	84	73	84	100	79	74	84	WMZ	1/2	T	
EVRAZ Regina - 409540	RD-H14B	GN649 17308-F	MILL CONTROL	PIPE TPA	-45	120	137	130	129	100	100	100	100	90	1/2	T	
	RD-H14B	GN649 17308-F	MILL CONTROL	PIPE TWA	-45	101	110	118	110	100	100	100	100	WMZ	1/2	T	
EVRAZ Regina - 528738	RD-H14B	GN701 18118-L	MILL CONTROL	PIPE TPA	-45	128	142	137	136	100	100	100	100	90	1/2	T	
	RD-H14B	GN701 18118-L	MILL CONTROL	PIPE TWA	-45	115	113	112	113	100	100	100	100	WMZ	1/2	T	
	RD-H14B	GN731 18701-V	MILL CONTROL	PIPE TPA	-45	120	130	130	127	100	100	100	100	90	1/2	T	
	RD-H14B	GN731 18701-V	MILL CONTROL	PIPE TWA	-45	154	157	135	149	100	100	100	100	WMZ	1/2	T	
EVRAZ Regina - 528742	RD-H14B	GN703 18157-F	MILL CONTROL	PIPE TPA	-45	180	170	135	162	100	100	100	100	90	1/2	T	
	RD-H14B	GN703 18157-F	MILL CONTROL	PIPE TWA	-45	146	140	155	147	100	100	100	100	WMZ	1/2	T	
EVRAZ Regina - 528743	RD-H14B	GN657 17465-J	MILL CONTROL	PIPE TPA	-45	120	139	119	126	100	100	100	100	90	1/2	T	
	RD-H14B	GN657 17465-J	MILL CONTROL	PIPE TWA	-45	114	109	99	107	100	100	100	100	WMZ	1/2	T	
EVRAZ Regina - 528744	RD-H14B	GN719 18468-H	MILL CONTROL	PIPE TPA	-45	108	99	118	108	100	100	100	100	90	1/2	T	
	RD-H14B	GN719 18468-H	MILL CONTROL	PIPE TWA	-45	135	120	129	128	100	100	100	100	WMZ	1/2	T	
United States Steel - 786783	RD-H14C	GN668 19523-T	MILL CONTROL	PIPE TPA	-45	91	91	85	89	100	100	100	100	90	1/2	T	
	RD-H14C	GN668 19523-T	MILL CONTROL	PIPE TWA	-45	98	99	103	100	100	100	100	100	WMZ	1/2	T	
United States Steel - 786784	RD-H14C	GN667 19503-N	MILL CONTROL	PIPE TPA	-45	88	85	83	85	100	100	100	100	90	1/2	T	
	RD-H14C	GN667 19503-N	MILL CONTROL	PIPE TWA	-45	103	77	117	99	100	90	100	97	WMZ	1/2	T	
United States Steel - 831620	RD-H14C	GN669 19541-J	MILL CONTROL	PIPE TPA	-45	90	94	93	92	100	100	100	100	90	1/2	T	
	RD-H14C	GN669 19541-J	MILL CONTROL	PIPE TWA	-45	98	92	92	94	100	100	100	100	WMZ	1/2	T	

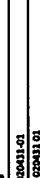
TPA - Transverse Pipe Axis
LPA - Longitudinal Pipe Axis
TWA - Transverse Weld Axis
FST - Full Section Testing
FBN - Full Body Normalized
Q&T - Quenched and Tempered
SR - Stress Relieve
AQ - As Quenched
FS - Full Size
HAZ - Heat Affected Zone
WMZ - Weld Metal Zone
FLZ - Fusion Line Zone

Flattening Test Acceptable
Ultrasonic Weld Line Inspection Acceptable
High Frequency Electric Welded
Decaridization Practice: Aluminum Fully Killed
UT Cal. to 1/8" Drilled Hole and/or N10 ISO/OD Notches
Root Guided Bend Test Acceptable
FLV - Full length Visual
Yield Strength: 0.5% ELU
15700 MPa for 5 uses
Minimum Weld Seam Heat Treatment Temperature: 950 (C)

FSE Acceptance Criteria: Body: 27 WMZ: 27 FLZ: 0 HAZ: 0

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

form crtr3004XL

 Red Deer Plant		EVRAZ Red Deer CERTIFICATE OF TESTING		Friday, July 27, 2018, 12:23:46 Certificate ID: 191015-2 Customer PO: 4078	
Macro Hardness		Diameter: 210.3 mm Specification: CAN 214.15.12 GRADE 390 C47.5 B		Grade: GL-359-25G Wall Thickness: 6.400 mm	
Customer: ALBERTA TUBULAR PRODUCTS LTD		MS		Scale	
Supplier - Heat		Product ID		Test Type	
RD-H148		GNE41 17146-T		MILL CONTROL	
RD-H148		GNE41 17146-T		MILL CONTROL	
RD-H148		GNE37 17082-H		MILL CONTROL	
RD-H148		GNE37 17082-H		MILL CONTROL	
RD-H148		GNE33 17003-L		MILL CONTROL	
RD-H148		GNE33 17003-L		MILL CONTROL	
RD-H148		GNE43 17185-H		MILL CONTROL	
RD-H148		GNE43 17185-H		MILL CONTROL	
RD-H148		GNE49 17305-F		MILL CONTROL	
RD-H148		GNE49 17305-F		MILL CONTROL	
RD-H148		GN701 18118-L		MILL CONTROL	
RD-H148		GN701 18118-L		MILL CONTROL	
RD-H148		GN703 18157-F		MILL CONTROL	
RD-H148		GN703 18157-F		MILL CONTROL	
RD-H148		GNE57 17465-J		MILL CONTROL	
RD-H148		GNE57 17465-J		MILL CONTROL	
RD-H148		GN719 18468-H		MILL CONTROL	
RD-H148		GN719 18468-H		MILL CONTROL	
RD-H14C		GNE68 19523-T		MILL CONTROL	
RD-H14C		GNE68 19523-T		MILL CONTROL	
RD-H14C		GNE67 19503-N		MILL CONTROL	
RD-H14C		GNE67 19503-N		MILL CONTROL	
RD-H14C		GNE69 19541-J		MILL CONTROL	
RD-H14C		GNE69 19541-J		MILL CONTROL	
RD-H14C		GNE69 19541-J		MILL CONTROL	
MSC - Micro Structure HAZ - Heat Affected Zone SAK - Charmed and Tempered SK - Stress Relieve AQ - As Quenched		Reheating 650°C 20min Uniform Heat Treat Temperature Acceptable High Frequency Electric Welded Decarburization Preceder: Aluminum Eddy Cited UT Call to 10" United Hole and/or H10 4X100 Inches 100% UT Call to 10" United Hole and/or H10 4X100 Inches FWT - Full Length Weld Yield Strength: 0.5% ELI 117000 MPa for 5 sets Minimum Weld Seam Heat Treatment Temperature: 950°C		We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.	

form cfr3006xl



Red Deer Plant

EVRAZ Red Deer
CERTIFICATE OF TESTING
Micro Hardness

Friday, July 27, 2018, 12:23:46

Certificate ID: 191015-3

Customer PO: 4078

MIL Order No: 25-020431-01

Ref. No: 25 - 020431 01

Customer: ALBERTA TUBULAR PRODUCTS LTD

Diameter: 219.1 mm

Wall Thickness: 6.400 mm

Grade: GR.359-25G

Specification: CSA 2245.1-18 GRADE 359 CAT B SS

Supplier - Heat	Product ID	Test Type	Scale	MS	Location	PM			HAZ			WMZ			HAZ			PM			AVERAGES				
																						PM	HAZ	WMZ	
EVRAZ Regina - 409534	RD-H14B	GN641 17149-T	MILL CONTROL	Vickers HV 500g	OK	OD	184	0	0	203	0	0	197	0	0	0	195	0	0	186	0	0	185	199	197
	RD-H14B	GN641 17149-T	MILL CONTROL	Vickers HV 500g	OK	MID_ID	192	0	0	198	0	0	194	0	0	0	175	0	0	199	0	0	195.5	188.5	194
	RD-H14B	GN641 17149-T	MILL CONTROL	Vickers HV 500g	OK	ID	187	0	0	185	0	0	184	0	0	0	175	0	0	190	0	0	188.5	180	184
EVRAZ Regina - 409535	RD-H14B	GN637 17082-N	MILL CONTROL	Vickers HV 500g	OK	OD	170	0	0	184	0	0	199	0	0	0	179	0	0	180	0	0	175	181.5	199
	RD-H14B	GN637 17082-N	MILL CONTROL	Vickers HV 500g	OK	MID_ID	170	0	0	194	0	0	202	0	0	0	190	0	0	199	0	0	184.5	192	202
	RD-H14B	GN637 17082-N	MILL CONTROL	Vickers HV 500g	OK	ID	186	0	0	177	0	0	191	0	0	0	172	0	0	191	0	0	188.5	174.5	191
EVRAZ Regina - 409538	RD-H14B	GN633 17003-L	MILL CONTROL	Vickers HV 500g	OK	OD	191	0	0	208	0	0	198	0	0	0	191	0	0	187	0	0	189	199.5	198
	RD-H14B	GN633 17003-L	MILL CONTROL	Vickers HV 500g	OK	MID_ID	197	0	0	184	0	0	192	0	0	0	182	0	0	196	0	0	196.5	183	192
	RD-H14B	GN633 17003-L	MILL CONTROL	Vickers HV 500g	OK	ID	194	0	0	183	0	0	206	0	0	0	194	0	0	203	0	0	198.5	188.5	206
EVRAZ Regina - 409539	RD-H14B	GN643 17188-M	MILL CONTROL	Vickers HV 500g	OK	OD	183	0	0	212	0	0	209	0	0	0	201	0	0	190	0	0	186.5	206.5	209
	RD-H14B	GN643 17188-M	MILL CONTROL	Vickers HV 500g	OK	MID_ID	188	0	0	199	0	0	198	0	0	0	188	0	0	188	0	0	188	193.5	198
	RD-H14B	GN643 17188-M	MILL CONTROL	Vickers HV 500g	OK	ID	196	0	0	201	0	0	187	0	0	0	178	0	0	181	0	0	182.5	189.5	187
EVRAZ Regina - 409540	RD-H14B	GN649 17308-F	MILL CONTROL	Vickers HV 500g	OK	OD	177	0	0	203	0	0	212	0	0	0	199	0	0	182	0	0	179.5	201	212
	RD-H14B	GN649 17308-F	MILL CONTROL	Vickers HV 500g	OK	MID_ID	186	0	0	204	0	0	202	0	0	0	194	0	0	196	0	0	191	199	202
	RD-H14B	GN649 17308-F	MILL CONTROL	Vickers HV 500g	OK	ID	184	0	0	186	0	0	198	0	0	0	177	0	0	178	0	0	181	181.5	198
EVRAZ Regina - 528738	RD-H14B	GN701 18118-L	MILL CONTROL	Vickers HV 500g	OK	OD	184	0	0	196	0	0	216	0	0	0	198	0	0	189	0	0	186.5	197	216
	RD-H14B	GN701 18118-L	MILL CONTROL	Vickers HV 500g	OK	MID_ID	188	0	0	196	0	0	196	0	0	0	192	0	0	202	0	0	195	194	196
	RD-H14B	GN701 18118-L	MILL CONTROL	Vickers HV 500g	OK	ID	191	0	0	196	0	0	190	0	0	0	189	0	0	195	0	0	193	192.5	190
EVRAZ Regina - 528742	RD-H14B	GN703 18157-F	MILL CONTROL	Vickers HV 500g	OK	OD	192	0	0	200	0	0	212	0	0	0	200	0	0	187	0	0	189.5	200	212
	RD-H14B	GN703 18157-F	MILL CONTROL	Vickers HV 500g	OK	MID_ID	195	0	0	210	0	0	205	0	0	0	195	0	0	191	0	0	193	202.5	205
	RD-H14B	GN703 18157-F	MILL CONTROL	Vickers HV 500g	OK	ID	202	0	0	208	0	0	210	0	0	0	192	0	0	190	0	0	196	200	210
EVRAZ Regina - 528743	RD-H14B	GN657 17465-J	MILL CONTROL	Vickers HV 500g	OK	OD	189	0	0	204	0	0	218	0	0	0	204	0	0	196	0	0	192.5	204	218
	RD-H14B	GN657 17465-J	MILL CONTROL	Vickers HV 500g	OK	MID_ID	190	0	0	181	0	0	207	0	0	0	204	0	0	190	0	0	190	192.5	207
	RD-H14B	GN657 17465-J	MILL CONTROL	Vickers HV 500g	OK	ID	202	0	0	182	0	0	199	0	0	0	178	0	0	199	0	0	200.5	180	199
EVRAZ Regina - 528744	RD-H14B	GN719 18468-H	MILL CONTROL	Vickers HV 500g	OK	OD	204	0	0	227	0	0	225	0	0	0	214	0	0	198	0	0	201	220.5	225
	RD-H14B	GN719 18468-H	MILL CONTROL	Vickers HV 500g	OK	MID_ID	210	0	0	214	0	0	200	0	0	0	217	0	0	204	0	0	207	215.5	200
	RD-H14B	GN719 18468-H	MILL CONTROL	Vickers HV 500g	OK	ID	205	0	0	202	0	0	209	0	0	0	189	0	0	189	0	0	197	195.5	209
United States Steel - 786783	RD-H14C	GN668 19523-T	MILL CONTROL	Vickers HV 500g	OK	OD	191	0	0	184	0	0	212	0	0	0	215	0	0	208	0	0	199.5	199.5	212
	RD-H14C	GN668 19523-T	MILL CONTROL	Vickers HV 500g	OK	MID_ID	200	0	0	191	0	0	217	0	0	0	203	0	0	216	0	0	208	197	217
	RD-H14C	GN668 19523-T	MILL CONTROL	Vickers HV 500g	OK	ID	189	0	0	178	0	0	205	0	0	0	187	0	0	217	0	0	203	182.5	205
United States Steel - 786784	RD-H14C	GN667 19503-N	MILL CONTROL	Vickers HV 500g	OK	OD	197	0	0	208	0	0	203	0	0	0	217	0	0	211	0	0	204	212.5	203
	RD-H14C	GN667 19503-N	MILL CONTROL	Vickers HV 500g	OK	MID_ID	178	0	0	206	0	0	199	0	0	0	208	0	0	213	0	0	195.5	207	199
	RD-H14C	GN667 19503-N	MILL CONTROL	Vickers HV 500g	OK	ID	200	0	0	194	0	0	199	0	0	0	192	0	0	210	0	0	205	193	199
United States Steel - 831620	RD-H14C	GN669 19541-J	MILL CONTROL	Vickers HV 500g	OK	OD	189	0	0	193	0	0	218	0	0	0	205	0	0	213	0	0	201	199	218
	RD-H14C	GN669 19541-J	MILL CONTROL	Vickers HV 500g	OK	MID_ID	205	0	0	198	0	0	211	0	0	0	200	0	0	172	0	0	188.5	199	211
	RD-H14C	GN669 19541-J	MILL CONTROL	Vickers HV 500g	OK	ID	214	0	0	180	0	0	189	0	0	0	186	0	0	209	0	0	211.5	183	189

MS - Micro Structure
FBN - Full Body Normalized
Q&T - Quenched and Tempered
SR - Stress Relief
AQ - As Quenched

Flattening Test Acceptable
Ultrasonic Weld Line Inspection Acceptable
High Frequency Electric Welded
Decarburization Practice: Aluminum Fully Etched
UT Cal. to 1/8" Drilled Hole and/or M10 IQ/OO Notches
Root Guided Bend Test Acceptable
FLVN - Full length Visual
Yield Strength: 0.5% ELU
15700 KPA for 5 sec
Minimum Weld Seam Heat Treatment Temperature: 950 (K)

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

form crtr3006XL

Supplier - Heat	Chng	Prod ID	Type	C	Mn	P	S	SI	Cu	Ni	Cr	Mo	Sn	Al	V	Cb	N2	Ti	B	CEQ	Ca	Ce	SoAl
EVRAZ Regina - 409534			Heat:	0.04	0.86	0.008	0.001	0.18	0.23	0.1	0.09	0.038	0.009	0.04	0.003	0.024	0.011	0.02	0.0002	0.15	0.0016	0.002	0.039
EVRAZ Regina - 409534	RD-H14B	A0043	Product:	0.04	0.86	0.009	0.001	0.19	0.23	0.1	0.09	0.037	0.009	0.042	0.002	0.023	0.011	0.02	0.0001	0.15	0.002	0.001	0.04
EVRAZ Regina - 409534	RD-H14B	A0044	Product:	0.04	0.87	0.009	0.001	0.19	0.23	0.1	0.08	0.037	0.009	0.042	0.002	0.023	0.011	0.02	0.0001	0.15	0.0015	0.001	0.04
EVRAZ Regina - 409535			Heat:	0.04	0.87	0.007	0.001	0.2	0.21	0.12	0.06	0.056	0.009	0.048	0.003	0.024	0.01	0.02	0.0002	0.15	0.0023	0.002	0.047
EVRAZ Regina - 409535	RD-H14B	A0053	Product:	0.04	0.88	0.007	0.001	0.2	0.2	0.12	0.06	0.058	0.009	0.052	0.003	0.025	0.011	0.02	0.0002	0.14	0.0035	0.001	0.05
EVRAZ Regina - 409535	RD-H14B	A0055	Product:	0.04	0.88	0.007	0.001	0.2	0.2	0.12	0.06	0.058	0.008	0.052	0.003	0.023	0.01	0.02	0.0001	0.14	0.0028	0.001	0.05
EVRAZ Regina - 409538			Heat:	0.04	0.86	0.01	0.002	0.2	0.32	0.1	0.06	0.051	0.01	0.031	0.003	0.022	0.01	0.02	0.0003	0.15	0.0021	0.002	0.029
EVRAZ Regina - 409538	RD-H14B	A0007	Product:	0.04	0.87	0.009	0.002	0.21	0.31	0.11	0.06	0.053	0.011	0.032	0.002	0.022	0.01	0.02	0.0002	0.15	0.002	0.001	0.03
EVRAZ Regina - 409538	RD-H14B	A0009	Product:	0.04	0.87	0.009	0.002	0.2	0.32	0.11	0.06	0.053	0.011	0.033	0.002	0.021	0.01	0.02	0.0001	0.15	0.0023	0.001	0.031
EVRAZ Regina - 409539			Heat:	0.04	0.85	0.008	0.003	0.19	0.33	0.12	0.08	0.065	0.012	0.043	0.003	0.023	0.011	0.02	0.0002	0.15	0.0026	0.002	0.041
EVRAZ Regina - 409539	RD-H14B	A0017	Product:	0.04	0.85	0.008	0.003	0.19	0.33	0.12	0.08	0.063	0.012	0.045	0.002	0.022	0.01	0.02	0.0002	0.15	0.0025	0.001	0.043
EVRAZ Regina - 409539	RD-H14B	A0018	Product:	0.04	0.85	0.008	0.003	0.19	0.33	0.12	0.08	0.064	0.012	0.045	0.002	0.023	0.01	0.02	0.0002	0.15	0.0023	0.002	0.043
EVRAZ Regina - 409540			Heat:	0.05	0.83	0.008	0.003	0.21	0.33	0.12	0.1	0.058	0.011	0.043	0.003	0.023	0.009	0.02	0.0003	0.16	0.0018	0.002	0.042
EVRAZ Regina - 409540	RD-H14B	A0027	Product:	0.05	0.84	0.008	0.003	0.21	0.32	0.12	0.1	0.06	0.012	0.045	0.003	0.023	0.009	0.02	0.0002	0.16	0.0028	0.001	0.043
EVRAZ Regina - 409540	RD-H14B	A0029	Product:	0.05	0.84	0.008	0.003	0.21	0.32	0.12	0.1	0.061	0.012	0.045	0.002	0.022	0.009	0.02	0.0002	0.17	0.003	0.001	0.043
EVRAZ Regina - 528738			Heat:	0.04	0.84	0.006	0.003	0.19	0.18	0.08	0.06	0.041	0.025	0.042	0.003	0.022	0.01	0.02	0.0002	0.14	0.0021	0.003	0.041
EVRAZ Regina - 528738	RD-H14B	A0049	Product:	0.04	0.85	0.007	0.002	0.2	0.18	0.09	0.06	0.043	0.027	0.044	0.003	0.022	0.01	0.02	0.0002	0.14	0.0034	0	0.042
EVRAZ Regina - 528738	RD-H14B	A0050	Product:	0.04	0.85	0.007	0.002	0.2	0.18	0.09	0.06	0.043	0.027	0.044	0.003	0.022	0.01	0.02	0.0001	0.14	0.0022	0	0.042
EVRAZ Regina - 528742			Heat:	0.04	0.84	0.009	0.002	0.22	0.28	0.1	0.07	0.051	0.011	0.029	0.004	0.023	0.009	0.02	0.0003	0.15	0.0021	0.002	0.027
EVRAZ Regina - 528742	RD-H14B	A0003	Product:	0.04	0.84	0.009	0.002	0.22	0.27	0.1	0.07	0.053	0.012	0.031	0.003	0.023	0.009	0.02	0.0002	0.14	0.002	0.002	0.029
EVRAZ Regina - 528742	RD-H14B	A0004	Product:	0.04	0.84	0.009	0.002	0.22	0.27	0.1	0.07	0.052	0.012	0.032	0.003	0.023	0.008	0.02	0.0002	0.14	0.0027	0.002	0.03
EVRAZ Regina - 528743			Heat:	0.05	0.83	0.01	0.004	0.18	0.3	0.11	0.08	0.066	0.012	0.042	0.003	0.023	0.009	0.02	0.0003	0.16	0.0027	0.002	0.04
EVRAZ Regina - 528743	RD-H14B	A0012	Product:	0.04	0.84	0.009	0.004	0.19	0.29	0.11	0.08	0.066	0.013	0.045	0.003	0.023	0.009	0.02	0.0002	0.16	0.0025	0.002	0.043
EVRAZ Regina - 528743	RD-H14B	A0013	Product:	0.05	0.84	0.01	0.004	0.18	0.29	0.12	0.08	0.066	0.013	0.044	0.003	0.022	0.01	0.02	0.0002	0.16	0.0023	0.001	0.042
EVRAZ Regina - 528744			Heat:	0.05	0.87	0.012	0.004	0.2	0.36	0.11	0.09	0.049	0.014	0.048	0.004	0.024	0.008	0.02	0.0003	0.16	0.0026	0.002	0.047
EVRAZ Regina - 528744	RD-H14B	A0022	Product:	0.05	0.87	0.012	0.004	0.2	0.35	0.12	0.09	0.05	0.014	0.05	0.003	0.023	0.008	0.02	0.0003	0.16	0.004	0.001	0.048
EVRAZ Regina - 528744	RD-H14B	A0023	Product:	0.05	0.87	0.011	0.004	0.2	0.35	0.12	0.09	0.05	0.015	0.049	0.003	0.023	0.008	0.02	0.0003	0.16	0.0033	0.001	0.047
United States Steel - 786783			Heat:	0.06	0.88	0.009	0.003	0.16	0.04	0.01	0.04	0.005	0.002	0.035	0.002	0.038	0.005	0	0.0002	0.15	0.003	0	0
United States Steel - 786783	RD-H14C	GN668	Product:	0.06	0.87	0.009	0.003	0.16	0.04	0.01	0.04	0.005	0.002	0.034	0.002	0.037	0.005	0	0.0002	0.16	0.0032	0.001	0.032
United States Steel - 786783	RD-H14C	GN672	Product:	0.07	0.87	0.008	0.003	0.16	0.04	0.01	0.04	0.005	0.002	0.034	0.002	0.037	0.004	0	0.0003	0.16	0.0031	0.002	0.032
United States Steel - 786784			Heat:	0.06	0.88	0.008	0.003	0.16	0.04	0.01	0.04	0.003	0.002	0.039	0.002	0.036	0.005	0	0.0002	0.15	0.003	0	0
United States Steel - 786784	RD-H14C	GN667	Product:	0.06	0.86	0.008	0.003	0.16	0.04	0.01	0.04	0.003	0.002	0.036	0.002	0.035	0.005	0	0.0003	0.16	0.0038	0.002	0.034
United States Steel - 786784	RD-H14C	GN671	Product:	0.06	0.87	0.008	0.003	0.16	0.04	0.01	0.04	0.003	0.002	0.038	0.002	0.035	0.005	0	0.0003	0.16	0.0008	0.036	0
United States Steel - 831620			Heat:	0.06	0.89	0.009	0.003	0.15	0.04	0.01	0.04	0.003	0.002	0.036	0.002	0.036	0.005	0	0.0002	0.15	0.003	0	0
United States Steel - 831620	RD-H14C	GN669	Product:	0.07	0.89	0.009	0.003	0.14	0.04	0.01	0.04	0.003	0.002	0.034	0.002	0.034	0.005	0	0.0003	0.16	0.0032	0.002	0.032
United States Steel - 831620	RD-H14C	GN670	Product:	0.07	0.88	0.009	0.003	0.14	0.04	0.01	0.04	0.003	0.002	0.034	0.002	0.034	0.005	0	0.0002	0.16	0.0031	0.002	0.031

Supplier - Heat		Chng	Prod ID	Test Type	Orientation	Width (mm)	YS (MPa)	UTS (MPa)	Elong% (50mm)	Y/T	Temperin
EVRAZ Regina - 409534 EVRAZ Regina - 409534 EVRAZ Regina - 409535 EVRAZ Regina - 409535 EVRAZ Regina - 409538 EVRAZ Regina - 409538 EVRAZ Regina - 409539 EVRAZ Regina - 409539 EVRAZ Regina - 409540 EVRAZ Regina - 409540 EVRAZ Regina - 528738 EVRAZ Regina - 528738 EVRAZ Regina - 528738 EVRAZ Regina - 528738 EVRAZ Regina - 528742 EVRAZ Regina - 528742 EVRAZ Regina - 528743 EVRAZ Regina - 528743 EVRAZ Regina - 528744 EVRAZ Regina - 528744	RD-H14B	GN641 17:	MILL CONTROL	PIPE TPA	38.171	407	478	43	0.85	-18	
	RD-H14B	GN641 17:	MILL CONTROL	PIPE TWA	38.151	0	515	0	0	-18	
	RD-H14B	GN637 17:	MILL CONTROL	PIPE TPA	38.141	409	476	39	0.86	-18	
	RD-H14B	GN637 17:	MILL CONTROL	PIPE TWA	38.141	0	500	0	0	-18	
	RD-H14B	GN633 17:	MILL CONTROL	PIPE TPA	38.141	412	485	42	0.85	-18	
	RD-H14B	GN633 17:	MILL CONTROL	PIPE TWA	38.1	0	505	0	0	-18	
	RD-H14B	GN643 17:	MILL CONTROL	PIPE TPA	38.141	419	479	40	0.88	-18	
	RD-H14B	GN643 17:	MILL CONTROL	PIPE TWA	38.161	0	501	0	0	-18	
	RD-H14B	GN649 17:	MILL CONTROL	PIPE TPA	38.161	421	500	39	0.84	-18	
	RD-H14B	GN649 17:	MILL CONTROL	PIPE TWA	38.179	0	508	0	0	-18	
	RD-H14B	GN701 18:	MILL CONTROL	PIPE TPA	38.09	391	461	43	0.85	-18	
	RD-H14B	GN701 18:	MILL CONTROL	PIPE TWA	38.059	0	516	0	0	-18	
	RD-H14B	GN731 18:	MILL CONTROL	PIPE TPA	38.209	385	458	42	0.84	-18	
	RD-H14B	GN731 18:	MILL CONTROL	PIPE TWA	38.199	0	515	0	0	-18	
	RD-H14B	GN703 18:	MILL CONTROL	PIPE TPA	38.11	404	472	43	0.86	-18	
	RD-H14B	GN703 18:	MILL CONTROL	PIPE TWA	38.1	0	529	0	0	-18	
	RD-H14B	GN657 17:	MILL CONTROL	PIPE TPA	38.189	400	478	42	0.84	-18	
	RD-H14B	GN657 17:	MILL CONTROL	PIPE TWA	38.219	0	527	0	0	-18	
	RD-H14B	GN719 18:	MILL CONTROL	PIPE TPA	38.189	425	503	37	0.84	-18	
	RD-H14B	GN719 18:	MILL CONTROL	PIPE TWA	38.171	0	549	0	0	-18	
United States Steel - 786783 United States Steel - 786783 United States Steel - 786784 United States Steel - 786784 United States Steel - 831620 United States Steel - 831620	RD-H14C	GN668 19:	MILL CONTROL	PIPE TPA	38.39	462	547	37	0.84	-18	
	RD-H14C	GN668 19:	MILL CONTROL	PIPE TWA	38.41	0	575	0	0	-18	
	RD-H14C	GN667 19:	MILL CONTROL	PIPE TPA	38.209	460	552	37	0.83	-18	
	RD-H14C	GN667 19:	MILL CONTROL	PIPE TWA	38.23	0	584	0	0	-18	
	RD-H14C	GN669 19:	MILL CONTROL	PIPE TPA	38.25	483	558	36	0.87	-18	
	RD-H14C	GN669 19:	MILL CONTROL	PIPE TWA	38.28	0	586	0	0	-18	

Supplier - Heat

Supplier - Heat	Chng	Prod ID	Test Type	Orientation	Temp C	Energy (Joules)				Percent Shear				Test Positi Size		Flat
						#1	#2	#3	Avg	#1	#2	#3	Avg			
EVRAZ Regina - 409534	RD-H14B	GN641 17	MILL CONTROL	PIPE TPA	-45	100	103	111	105	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 409534	RD-H14B	GN641 17	MILL CONTROL	PIPE TWA	-45	96	80	51	76	100	74	60	78	WMZ	1/2	T
EVRAZ Regina - 409535	RD-H14B	GN637 17	MILL CONTROL	PIPE TPA	-45	119	118	120	119	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 409535	RD-H14B	GN637 17	MILL CONTROL	PIPE TWA	-45	103	104	98	102	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 409538	RD-H14B	GN633 17	MILL CONTROL	PIPE TPA	-45	118	118	150	129	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 409538	RD-H14B	GN633 17	MILL CONTROL	PIPE TWA	-45	136	110	160	135	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 409539	RD-H14B	GN643 17	MILL CONTROL	PIPE TPA	-45	119	121	128	123	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 409539	RD-H14B	GN643 17	MILL CONTROL	PIPE TWA	-45	96	84	73	84	100	79	74	84	WMZ	1/2	T
EVRAZ Regina - 409540	RD-H14B	GN649 17	MILL CONTROL	PIPE TPA	-45	120	137	130	129	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 409540	RD-H14B	GN649 17	MILL CONTROL	PIPE TWA	-45	101	110	118	110	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 528738	RD-H14B	GN701 18	MILL CONTROL	PIPE TPA	-45	128	142	137	136	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 528738	RD-H14B	GN701 18	MILL CONTROL	PIPE TWA	-45	115	113	112	113	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 528738	RD-H14B	GN731 18	MILL CONTROL	PIPE TPA	-45	120	130	130	127	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 528738	RD-H14B	GN731 18	MILL CONTROL	PIPE TWA	-45	154	157	135	149	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 528742	RD-H14B	GN703 18	MILL CONTROL	PIPE TPA	-45	180	170	135	162	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 528742	RD-H14B	GN703 18	MILL CONTROL	PIPE TWA	-45	146	140	155	147	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 528743	RD-H14B	GN657 17	MILL CONTROL	PIPE TPA	-45	120	139	119	126	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 528743	RD-H14B	GN657 17	MILL CONTROL	PIPE TWA	-45	114	109	99	107	100	100	100	100	WMZ	1/2	T
EVRAZ Regina - 528744	RD-H14B	GN719 18	MILL CONTROL	PIPE TPA	-45	108	99	118	108	100	100	100	100	100	90 1/2	T
EVRAZ Regina - 528744	RD-H14B	GN719 18	MILL CONTROL	PIPE TWA	-45	135	120	129	128	100	100	100	100	WMZ	1/2	T
United States Steel - 786783	RD-H14C	GN668 19	MILL CONTROL	PIPE TPA	-45	91	91	85	89	100	100	100	100	100	90 1/2	T
United States Steel - 786783	RD-H14C	GN668 19	MILL CONTROL	PIPE TWA	-45	98	99	103	100	100	100	100	100	WMZ	1/2	T
United States Steel - 786784	RD-H14C	GN667 19	MILL CONTROL	PIPE TPA	-45	88	85	83	85	100	100	100	100	100	90 1/2	T
United States Steel - 786784	RD-H14C	GN667 19	MILL CONTROL	PIPE TWA	-45	103	77	117	99	100	90	100	97	WMZ	1/2	T
United States Steel - 831620	RD-H14C	GN669 19	MILL CONTROL	PIPE TPA	-45	90	94	93	92	100	100	100	100	100	90 1/2	T
United States Steel - 831620	RD-H14C	GN669 19	MILL CONTROL	PIPE TWA	-45	98	92	92	94	100	100	100	100	WMZ	1/2	T

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Chng	Prod ID	Test Type	Scale	MS	Location	PM	HAZ				WMZ				HAZ				PM	PMA' HAZA			
RD-H14B	GN641 17	MILL CONTROL	Rockwell B	OK	OD	79.7	0	0	84	0	0	87.1	0	0	0	85.6	0	0	85.9	0	0	82.8	84.8
RD-H14B	GN641 17	MILL CONTROL	Rockwell B	OK	ID	84.4	0	0	81.5	0	0	83.4	0	0	0	78.9	0	0	84.9	0	0	84.7	80.2
RD-H14B	GN637 17	MILL CONTROL	Rockwell B	OK	OD	78.3	0	0	83.8	0	0	86.9	0	0	0	84.5	0	0	83.5	0	0	80.9	84.2
RD-H14B	GN637 17	MILL CONTROL	Rockwell B	OK	ID	78.4	0	0	82	0	0	84.7	0	0	0	81.9	0	0	82	0	0	80.2	82
RD-H14B	GN633 17	MILL CONTROL	Rockwell B	OK	OD	80.4	0	0	85.7	0	0	87.4	0	0	0	83.7	0	0	83.8	0	0	82.1	84.7
RD-H14B	GN633 17	MILL CONTROL	Rockwell B	OK	ID	79.6	0	0	82.2	0	0	83.8	0	0	0	85.7	0	0	88.9	0	0	84.3	84
RD-H14B	GN643 17	MILL CONTROL	Rockwell B	OK	OD	80.5	0	0	86.8	0	0	88.4	0	0	0	85.2	0	0	82.6	0	0	81.6	86
RD-H14B	GN643 17	MILL CONTROL	Rockwell B	OK	ID	84.9	0	0	85.3	0	0	85.4	0	0	0	83.2	0	0	85.9	0	0	85.4	84.3
RD-H14B	GN649 17	MILL CONTROL	Rockwell B	OK	OD	78.9	0	0	89.1	0	0	90.2	0	0	0	87.1	0	0	87	0	0	83	88.1
RD-H14B	GN649 17	MILL CONTROL	Rockwell B	OK	ID	87.3	0	0	88.4	0	0	88.5	0	0	0	93.5	0	0	86.7	0	0	87	91
RD-H14B	GN701 18	MILL CONTROL	Rockwell B	OK	OD	82	0	0	86.3	0	0	89.1	0	0	0	85.9	0	0	86.1	0	0	84.1	86.1
RD-H14B	GN701 18	MILL CONTROL	Rockwell B	OK	ID	85.3	0	0	83.6	0	0	86.1	0	0	0	83.6	0	0	88.4	0	0	86.9	83.6
RD-H14B	GN703 18	MILL CONTROL	Rockwell B	OK	OD	84	0	0	88.5	0	0	89.9	0	0	0	88.2	0	0	87.6	0	0	85.8	88.4
RD-H14B	GN703 18	MILL CONTROL	Rockwell B	OK	ID	86.6	0	0	86.6	0	0	86.7	0	0	0	84.9	0	0	88.3	0	0	87.5	85.8
RD-H14B	GN657 17	MILL CONTROL	Rockwell B	OK	OD	84.7	0	0	87.8	0	0	90.6	0	0	0	87.4	0	0	86.8	0	0	85.8	87.6
RD-H14B	GN657 17	MILL CONTROL	Rockwell B	OK	ID	85.5	0	0	79.6	0	0	88.4	0	0	0	74.6	0	0	84.6	0	0	85.1	77.1
RD-H14B	GN719 18	MILL CONTROL	Rockwell B	OK	OD	84.3	0	0	88.2	0	0	91	0	0	0	88.1	0	0	86.2	0	0	85.3	88.2
RD-H14B	GN719 18	MILL CONTROL	Rockwell B	OK	ID	85.9	0	0	81.7	0	0	83.8	0	0	0	84	0	0	88.5	0	0	87.2	82.9
RD-H14C	GN668 19	MILL CONTROL	Rockwell B	OK	OD	87.5	0	0	88	0	0	90.3	0	0	0	87.1	0	0	88.6	0	0	88.1	87.6
RD-H14C	GN668 19	MILL CONTROL	Rockwell B	OK	ID	89.5	0	0	80.7	0	0	84.6	0	0	0	81.3	0	0	89.2	0	0	89.4	81
RD-H14C	GN667 19	MILL CONTROL	Rockwell B	OK	OD	87.4	0	0	88.6	0	0	90.8	0	0	0	87.1	0	0	89.7	0	0	88.6	87.9
RD-H14C	GN667 19	MILL CONTROL	Rockwell B	OK	ID	90	0	0	86.7	0	0	85.7	0	0	0	82.6	0	0	90.2	0	0	90.1	84.7
RD-H14C	GN669 19	MILL CONTROL	Rockwell B	OK	OD	77.4	0	0	84	0	0	88.3	0	0	0	84.3	0	0	85.2	0	0	81.3	84.2
RD-H14C	GN669 19	MILL CONTROL	Rockwell B	OK	ID	84.6	0	0	82.3	0	0	84.2	0	0	0	81.4	0	0	87.7	0	0	86.2	81.9

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Chng	Prod ID	Test Type	Scale	MS	Location	PM	HAZ	WMZ	HAZ	PM	PMA' HAZA
RD-H14B	GN641 17:	MILL CONTROL	Vickers HV 500i OK	OD	184	0	0 203	0 0 197	0 0 195	0 0 186	0 0 185 199
RD-H14B	GN641 17:	MILL CONTROL	Vickers HV 500i OK	MID_ID	192	0	0 198	0 0 194	0 0 175	0 0 199	0 0 196 187
RD-H14B	GN641 17:	MILL CONTROL	Vickers HV 500i OK	ID	187	0	0 185	0 0 184	0 0 175	0 0 190	0 0 189 180
RD-H14B	GN637 17i	MILL CONTROL	Vickers HV 500i OK	OD	170	0	0 184	0 0 199	0 0 179	0 0 180	0 0 175 182
RD-H14B	GN637 17i	MILL CONTROL	Vickers HV 500i OK	MID_ID	170	0	0 194	0 0 202	0 0 190	0 0 199	0 0 185 192
RD-H14B	GN637 17i	MILL CONTROL	Vickers HV 500i OK	ID	186	0	0 177	0 0 191	0 0 172	0 0 191	0 0 189 175
RD-H14B	GN633 17i	MILL CONTROL	Vickers HV 500i OK	OD	191	0	0 208	0 0 198	0 0 191	0 0 187	0 0 189 200
RD-H14B	GN633 17i	MILL CONTROL	Vickers HV 500i OK	MID_ID	197	0	0 184	0 0 192	0 0 182	0 0 196	0 0 197 183
RD-H14B	GN633 17i	MILL CONTROL	Vickers HV 500i OK	ID	194	0	0 183	0 0 206	0 0 194	0 0 203	0 0 199 189
RD-H14B	GN643 17:	MILL CONTROL	Vickers HV 500i OK	OD	183	0	0 212	0 0 209	0 0 201	0 0 190	0 0 187 207
RD-H14B	GN643 17:	MILL CONTROL	Vickers HV 500i OK	MID_ID	188	0	0 199	0 0 198	0 0 188	0 0 188	0 0 188 194
RD-H14B	GN643 17:	MILL CONTROL	Vickers HV 500i OK	ID	196	0	0 201	0 0 187	0 0 178	0 0 181	0 0 189 190
RD-H14B	GN649 17:	MILL CONTROL	Vickers HV 500i OK	OD	177	0	0 203	0 0 212	0 0 199	0 0 182	0 0 180 201
RD-H14B	GN649 17:	MILL CONTROL	Vickers HV 500i OK	MID_ID	186	0	0 204	0 0 202	0 0 194	0 0 196	0 0 191 199
RD-H14B	GN649 17:	MILL CONTROL	Vickers HV 500i OK	ID	184	0	0 186	0 0 198	0 0 177	0 0 178	0 0 181 182
RD-H14B	GN701 18:	MILL CONTROL	Vickers HV 500i OK	OD	184	0	0 196	0 0 216	0 0 198	0 0 189	0 0 187 197
RD-H14B	GN701 18:	MILL CONTROL	Vickers HV 500i OK	MID_ID	188	0	0 196	0 0 196	0 0 192	0 0 202	0 0 195 194
RD-H14B	GN701 18:	MILL CONTROL	Vickers HV 500i OK	ID	191	0	0 196	0 0 190	0 0 189	0 0 195	0 0 193 193
RD-H14B	GN703 18:	MILL CONTROL	Vickers HV 500i OK	OD	192	0	0 200	0 0 212	0 0 200	0 0 187	0 0 190 200
RD-H14B	GN703 18:	MILL CONTROL	Vickers HV 500i OK	MID_ID	195	0	0 210	0 0 205	0 0 195	0 0 191	0 0 193 203
RD-H14B	GN703 18:	MILL CONTROL	Vickers HV 500i OK	ID	202	0	0 208	0 0 210	0 0 192	0 0 190	0 0 196 200
RD-H14B	GN657 17:	MILL CONTROL	Vickers HV 500i OK	OD	189	0	0 204	0 0 218	0 0 204	0 0 196	0 0 193 204
RD-H14B	GN657 17:	MILL CONTROL	Vickers HV 500i OK	MID_ID	190	0	0 181	0 0 207	0 0 204	0 0 190	0 0 190 193
RD-H14B	GN657 17:	MILL CONTROL	Vickers HV 500i OK	ID	202	0	0 182	0 0 199	0 0 178	0 0 199	0 0 201 180
RD-H14B	GN719 18:	MILL CONTROL	Vickers HV 500i OK	OD	204	0	0 227	0 0 225	0 0 214	0 0 198	0 0 201 221
RD-H14B	GN719 18:	MILL CONTROL	Vickers HV 500i OK	MID_ID	210	0	0 214	0 0 200	0 0 217	0 0 204	0 0 207 216
RD-H14B	GN719 18:	MILL CONTROL	Vickers HV 500i OK	ID	205	0	0 202	0 0 209	0 0 189	0 0 189	0 0 197 196
RD-H14C	GN668 19:	MILL CONTROL	Vickers HV 500i OK	OD	191	0	0 184	0 0 212	0 0 215	0 0 208	0 0 200 200
RD-H14C	GN668 19:	MILL CONTROL	Vickers HV 500i OK	MID_ID	200	0	0 191	0 0 217	0 0 203	0 0 216	0 0 208 197
RD-H14C	GN668 19:	MILL CONTROL	Vickers HV 500i OK	ID	189	0	0 178	0 0 205	0 0 187	0 0 217	0 0 203 183
RD-H14C	GN667 19:	MILL CONTROL	Vickers HV 500i OK	OD	197	0	0 208	0 0 203	0 0 217	0 0 211	0 0 204 213
RD-H14C	GN667 19:	MILL CONTROL	Vickers HV 500i OK	MID_ID	178	0	0 206	0 0 199	0 0 208	0 0 213	0 0 196 207
RD-H14C	GN667 19:	MILL CONTROL	Vickers HV 500i OK	ID	200	0	0 194	0 0 199	0 0 192	0 0 210	0 0 205 193
RD-H14C	GN669 19:	MILL CONTROL	Vickers HV 500i OK	OD	189	0	0 193	0 0 218	0 0 205	0 0 213	0 0 201 199
RD-H14C	GN669 19:	MILL CONTROL	Vickers HV 500i OK	MID_ID	205	0	0 198	0 0 211	0 0 200	0 0 172	0 0 189 199
RD-H14C	GN669 19:	MILL CONTROL	Vickers HV 500i OK	ID	214	0	0 180	0 0 189	0 0 186	0 0 209	0 0 212 183