

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

(Alternative Form for Single Chamber, Completely Shop- or Field Fabricated Vessels Only)
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by KW International, LLC.
 200 Texas Avenue Columbus, Texas 78934
(Name and address of Manufacturer)

2. Manufactured for Next Era
(Name and address of Purchaser)

3. Location of installation Unknown
(Name and address)

4. Type: Horizontal 109042 --- SEPHZ0240, Rev. 1 5289 2023
(Horizontal or vertical, tank) (Manufacturer's serial number) (CRN) (Drawing number) (National Board number) (Year Built)

5. ASME Code, Section VIII, Division 1 2021 --- ---
[Edition and Addenda, if applicable (date)] (Code Case numbers) [Special service per UG-120(d)]

6. Shell *SA-516-70N .75" .125" 48" OD 10'-0"
(Material spec. number, grade) (Nominal thickness) (Corr. Allow.) (Inner diameter) (Length overall)

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	

7. Seams Type 1 Full 100% --- --- Type 1 Full 100% 1
[Long (welded, dbl, sngl, lap, butt)] [R.T. (spot or full)] (Eff., %) (H.T. temp.) (Time, hr) [Girth (welded, dbl, sngl, lap, butt)] [R.T. (spot or full)] (Eff., %) (No. of courses)]

8. Heads: (a) SA-516-70N (b) SA-516-70N
(Material spec. number, grade or type) (H.T.-time and temp) (Material spec. number, grade or type) (H.T.-time and temp)

Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
	Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a) Left Head	.950"	.125"	---	---	2:1	---	---	---	X	S	None	100%	
(b) Right Head	.950"	.125"	---	---	2:1	---	---	---	X	S	None	100%	

Body Flanges on Heads

Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Num & Size	Bolting Material	Bolting		
										Washer (OD, ID, thk)	Washer Material	
(a)												
(b)												

9. MAWP 500 --- 200 --- °F
(Internal) (External) (Internal) (External)

Min. design metal temp. -20 °F at 500 PSI. Hydro., pneu. or comb. test pressure 650 PSI

Proof Test ---

10. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Service	1	18"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	1	6"	RFLWN	SA-105N	---	600#	.125"	---	Welded	---	Left Hd
Service	1	6"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	4	4"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	3	2"	RFLWN	SA-105N	---	300#	.125"	---	Welded	---	Shell
Service	6	2"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell
Service	1	1"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell
Service	5	3/4"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell
Service	1	1/2"	CPLG	SA-105	---	6000#	.125"	---	Welded	---	Shell

11. Supports: Skirt No --- --- --- --- --- --- --- --- --- --- ---
(Yes or No) (Number) (Number) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: *Shell S/N: 14509-1-1, Absolute Metal Products, LLC., Cert. No. 52,928.
(Name of part, item number, Manufacturer's name and identifying stamp)

Impact Testing Exempt per UCS-66.
 PAUT C2-Full



NB

5289

CERTIFIED BY



Setting the New STANDARD

KW INTERNATIONAL
www.kwintl.com

FOR SERVICE AND PARTS:
1-844-594-8324

U

RT1

M.A.W.P.

500

PSI

AT

200

°F

M.D.M.T.

-20

°F

AT

500

PSI

TEST PRESSURE

650

PSI

YEAR BUILT

2023

ORDER NO.

16992

TAG NO.

SERIAL NO.

109042

DWG. NO.

SEPH702-0

REV.

1

48" O.D. X 10'-0" HZ. 3PH. SEPARATOR

C.A. 1/8"

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM)
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Absolute Metal Products, LLC

7208 Gessner Road, Houston, Texas 77040 USA

2. Manufactured for KW International, 200 Texas Ave., Columbus, TX 79834 USA

3. Location of installation Unknown

4. Type Shell 14509-1.1 thru 14509-1-9

5. ASME Code, Section VIII, Div 1 2021 2023

6. Shell (a) Number of course(s) 1 (b) Overall length 120"

Course(s) No.	Diameter	Length	Material Spec./Grade or Type	Thickness		Long Joint (Cat A)			Circum. Joint (Cat A, B & C)			Heat Treatment	
				Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	48"OD	120"	SAS 16-70AR	3/4"		T	Full						

No.	Type*	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting				
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	

7. Heads: (a) (b)

Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemis. Radius	Flat Diameter	Side to Pressure		Category A		
	Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)													
(b)													

Location	Type	ID	OD	Flange thk	Min Hub Thk	Material	How Attached	Bolting				
								Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material	
(a)												
(b)												

8. MAWP at max. temp. Min design metal temp. at

9. Impact Test NO at test temperature of

10. Hydro., pneu., or comb. Test pressure NONE Proof test

11. Nozzles, inspection, and safety valve openings.

Purpose (Inlet, Outlet, Drain, Etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (inspe. Open)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	

12. Identification of Part(s)

Name of Part	Quantity	Line No.	MIR's Identification No.	MIR's Drawing No.	CRN	National Board No.	Year Built

13. Supports: Skirt No Lugs Legs Other Attached

14. Remarks:
 No design functions performed by Absolute Metal Products LLC.

FORM U-2A

Manufactured by Absolute Metal Products, LLC

Manufacturer's Serial No. 14509-1.1 thru 14509-1.9 CRN _____ National Board No. _____

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U or PRT Certificate of Authorization No. 52,928 Expires 4/1/2025

Date 01 March 2023 Name Absolute Metal Products, LLC Signed [Signature]
(Manufacturer) (Inspector)

CERTIFICATE OF SHOP/FIELD INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by Authorized Inspection Associates, LLC of Houston, TX

have inspected the pressure vessel part described in this Manufacturer's Data Report on 3/7/2023 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part 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 part 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 3/7/2023 Signed James Hurlston Commissions NB15475BR
(Inspector) (Inspector's Commission Number)

MAILING ADDRESS
 P.O. Box 1690
 Gray, LA 70359
 Locations Nationwide
 please visit
 www.nvindt.com



Done Right!

DAILY RADIOGRAPHY WORK REPORT

2449 West Park Ave. Gray,
 Louisiana 70359
 Office (985)876-5559
 Fax (985)876-9355
 Report No: RG-292-6471
 Page 1 of 1

Client: ABSOLUTE METAL PRODUCTS, LLC		Job Location: Houston, TX		Inspection Date: Mar 01, 2023									
Billing Address: 7708 GESSNER ROAD HOUSTON TX 77040		NVI Project #: 002714		Ref: N/A									
		AFSA or P.O. AMP700JF		Project: KWI									
		NVI Procedure: NVI-ASME-RT-01 Rev. 5 (Film Radiography RT-ASME Sec VI)		Acceptance Code: ASME Sec. VIII Div.1									
		Customer Job No. 14569											
Discontinuities found: None													
Please indicate repair with client required nomenclature or with "Repair" in Remarks ✓ = Accept X = Reject													
Report Description: Gamma Radiography of 75" x 48" OD x 120" Cylinder (Long Seam)													
Weld No.	Area	Pipe Size	Recommendations				Weld No.	Area	Pipe Size	Recommendations			
			✓	✗	WS	Remarks				✓	✗	WS	Remarks
1	1-1	75" x 48" OD x 120"	✓		7	26							
2		0-1-2	✓			22							
3		2-3-4	✓			28							
4		4-5-6	✓			29							
5		6-7-8	✓			30							
6		8-9-10	✓			31							
7		10-11-12	✓			32							
8		12-13-14	✓			33							
9		14-15-16	✓			34							
10		16-17-18	✓			35							
11		18-19-20	✓			36							
12						37							
13						38							
14						39							
15						40							
16						41							
17						42							
18						43							
19						44							
20						45							
21						46							
22						47							
23						48							
24						49							
25						50							
Technique: DWE/SWV		DWE/DWV:		SWE/SWV ✓		Panoramic:		SOD: 19,125		OFD: 875			
Exposure Method: IR-197		Curies: 89.0		Ug: 0G6		Focal Size: 125		Welds Inspected: 1		Exposures per weld: 10			
Estimated Cost: 0.00		Paint Sticks: 0.0		Chemical Change: No		Rig Number: 620		Camera Number: D11374					
Film Delivered To: Client		Films in Cassette: 1.0		Film Storage Box: 0.0									
Manufacturer: AGFA		Film Quantity: 10.0		Film Type: DS		Film Size: 4.5 X 17							
Penetrometer Type: ASTM (SE) E-747 B PACK		Required Wire: B8 .016		Achieved Wire: B8 .015									
Level II Technician: Chase Jones		Assistant: Daniel Moreno		Assistant:		Assistant:							
Hours Worked: 0.0		Travel Time: 0.0		Mileage: 0.0		Per Diem: No		ATV: No					
Generator: No		Darkroom: Yes		Tires:									
Comments: 10 Shots @ 4.5" x 17"													
Client Representative: Johnny Fortenberry QC Manager		Client Email: jfortenberry@absolutemetallusa.com		Client Phone Number: 2818986471									
Client Signature:													

@07.10.23

Checked by QC Dept
 3-14-23
 AHK



JSW Steel (USA) INC.
5200 East McKinney Road,
BAYTOWN, TX 77523

METALLURGICAL TEST REPORT

Document MET - 04 Rev No.: 4 Rev Date: 08/18/22
MTR Rev. 0 2/14/2023

Bulletin	Order Item	Heat	PO No.	Shipping Mode	Slab Origin	TC No.
T132501	USW2: 964-02	S32159	15832	TRUCK	0.75x120.5x450	T132501-2159-1

Plates Certified for the Following grades		Specifications		Marking Instructions	
ASME SAS 16.70 2021 EDITION AR				Stencil in 2 locations: X Loc. 18 Y Loc. 30 CUST. MADE IN US - PN PO, DIM GRADE, FREIGHT ORDER, EM PLATED SHIPWEEK SLAB, TRANS MODE Stamp in 2 locations: X Loc. 18 Y Loc. 12; Slab ID: Slab ID: Slab ID	
Hot Rolled Carbon Steel Plates					
Plates Manufactured in the USA					
Sole for: ABSOLUTE METAL PRODUCTS LLC 7200 GESSNER ROAD HOUSTON, TX 77040					
Slab ID: ABSOLUTE METAL PRODUCTS LLC 7200 GESSNER ROAD HOUSTON, TX 77040					

Test	C	Mn	P	S	Si	Cu	Ni	Co	Mo	Sn	A	N	V	B	Ti	Nb	Op	CE	
CABLE	0.19	0.12	0.014	0.008	0.19	0.020	0.010	0.020	0.000	0.002	0.030	0.0050	0.004	0.0003	0.002	0.002	0.0000	0.0000	0.32

Plate	Smpl. Loc.	Slab Identity	Gauge Tested	Test Cond	AR	T	Yield Point (KSI)	Ten. Stgth. (KSI)	Elong in 2" Ratio	YS/UTS Ratio	Yield Strength Determined At
1284836	A	03A	0.7500	AR	T	44	78	34.0%	0.57	0.2%	

Plate	Loc.	Hardness Scale	Test1	Test2	Test3	Avg	Batch	Hardness Spec.
284838	A	ROCKWELL C	5	4	6	5	NACE MR0175	

Material	Thick (IN)	Width (IN)	Len (IN)	Wgt (LB)	Material	Thick (IN)	Width (IN)	Len (IN)	Wgt (LB)
1284836A	0.7500	120.500	450.00	11533.559					

Formed in accordance with UG-79, UG 80, UCS-79. No heat treat

Checked by QC Dept. 3-14-23 MK

S32159-03A April W

DIN: EN 10204 3.1 This is to certify that the product described herein was manufactured, sampled, and tested in accordance with the specifications and requirements in such specifications. Fine Grain, Si-Al Fully Killed Steel. We certify that delivery of this product with the requirement of the specification and purchase order received from customer. DRC Conflict Free. No intentional addition of Pb, Se, S, Hg or B. JSW Steel USA, Inc is an ISO 9001:2015 certified facility.



KW INTERNATIONAL LLC
PO BOX 19829
HOUSTON, TX 77224

Reference Customer P/O: PO31405 TAG: HDELP0531
Trinity Sales Order: 859645

GENTLEMEN:

Attached are copies of mill test reports for the following material provided on referenced purchase order. We certify the following:

22-SA516-70 ELLIP-2:1 HEAD 48.00 OD 1.00 NOM 0.950 MIN WITH 2.0" SF.

CODE	QTY	THICKNESS	PRODUCER	MELT	SLAB	GRADE
TABK	3	1.00	JSW STEEL	S28400	08C1	SA516-70
TABI	1	1.00	JSW STEEL	S27993	01A	SA516-70
TABL	1	1.00	JSW STEEL	S27992	09B	SA516-70
TCCG	1	1.00	CLEVELAND CLIFFS	821X04120	X067373	SA516-70
TCCH	4	1.00	CLEVELAND CLIFFS	821X04120	X067374	SA516-70
TCCA	3	1.00	CLEVELAND CLIFFS	821X00720	X067363	SA516-70
TCDA	3	1.00	CLEVELAND CLIFFS	821X00740	X067316	SA516-70
TCCB	3	1.00	CLEVELAND CLIFFS	821X00720	X067364	SA516-70
TCEC	2	1.00	CLEVELAND CLIFFS	821X05220	X068690	SA516-70
TBAR	1	1.00	JSW STEEL	S30770	03A	SA516-70

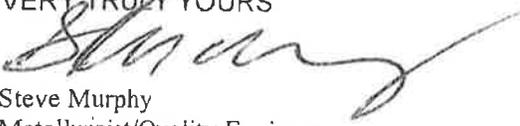
TRINITY HEADS, INC certifies that heads manufactured from material represented by this report were normalized during forming at 1650F (+/-25F) for 30 minutes and air cooled.

The items listed above were formed in strict accordance with all applicable requirements of the ASME Boiler and Pressure Vessel Code Section VIII, Div. 1. All heads comply with UG-79 and UG-81.

Attached mill test reports are in compliance to ASME Code Section II current edition.

If you have further questions, please contact your customer service representative in Navasota, TX at 1-800-392-3594.

VERY TRULY YOURS


Steve Murphy
Metallurgist/Quality Engineer

Checked by QC Dept.

APR 20 2023

ad



QUALITY ASSURANCE
REPORT OF TEST AND ANALYSIS

TRINITY IND INC
11765 HWY 6
PO BOX
NAVASOTA TX 77868

TRINITY IND INC
11765 HWY 6 S
NAVASOTA TX 77868

SERIAL NUMBER	PAT NO	HEAT NUMBER	NO PCS	SIZE AND QUANTITY				YIELD POINT	TENSILE STRENGTH	AF FRAC ELONG	RED
				THICKNESS	WIDTH OR DIA	LENGTH	WEIGHT				

				INCHES	INCHES	INCHES	POUNDS	PSI	PSI	IN	%
QUALITY STEEL MELTED & MANUFACTURED IN THE U. S. A.											
PLATES - ASME SA516 21ED Grade 70; PVQ											
Killed Fine Grain Practice; MOD C											
0.20 Max, C U 0.25 Max, SN 0.025											
Max; Plate: AS-ROLLED; Test: NORM											
1625/1675F FOR 30MIN /IN											
30MINS/MIN; FIRST TST AS											
ROLLED-ADD'L TENSION PER TST PC											
HEAT TREATMENT											
NO WELD REPAIR WAS PERFORMED ON BELOW PLATE(S)											
CO# 404872 GH 822-1608C											
X067372		821X04120	2	1	122.5	245	17024	48500	76400	8	29
								50600	74600	8	27
X067373		821X04120	2	1	122.5	245	17024	47700	75900	8	27
								50700	75200	8	29
X067374		821X04120	2	1	122.5	245	17024	51100	76700	8	30
								50700	74900	8	29

Q-QUENCH TEMPERATURE T-TEMPER TEMPERATURE N-NORMALIZE TEMPERATURE

HEAT NUMBER IS USED AS CERTIFICATE NUMBER; ORIGIN/EXPORT COUNTRY IS USA.
PLEASE DIRECT IMPORT QUESTIONS TO NICOLE.MINOR@CLEVELANDCLIFFS.COM,
14661 ROTUNDA DRIVE, DEARBORN MI 48120; TEL +1(313)317-0946

SERIAL NUMBER	PAT NO	HEAT NUMBER	HARD BHN	BEND	THICKNESS INCHES	TYPE	SIZE	DIR	TEST TEMP F	CHARPY IMPACT								
										ENERGY FT LBS			SHEAR(%)			IAT EXP MIL		

HT.# 821X04120
MTR APPROVED
DATE 5/13/22
ISP
QUALITY CONTROL DEPT.

HEAT NUMBER	CHEMICAL ANALYSIS														MQUAID GRAIN SIZE	
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	B	Cb		N
821X04120	.18	1.16	.013	.004	.343	.038	.02	.13	.042	.002	.002	.038	.0002	.002	.006	.002

CUSTOMER: Trinity/Nextera DATE: 6/19/23

S/O #: 16992 S/N #: 109042

DESCRIPTION OF VESSEL: 48" OD x 10' H 3 Ph Sep'r. RT-1 Internal Coating

NOZZLE	HEAT	WELD	WELDER
Shell	S32159	Sn. 14509-1-1	AMP
Ref. Hd.	TCCH	RS#1	51,F
Left Hd.	TCCA	RS#2	24,F
N1 6" 600# RFLWN	DA9-KD		E
N2 6" 300# RFLWN	43329A		E
N3 4" 300# RFLWN	WW044		N
N4 4" 300# RFLWN	21115A		N
N5A,B,C 2" 300# RFLWN	32711A		N
N6A,B 4" 300# RFLWN	21115A		24
C1 2" 6M CPLG	D628		E
C2 2" 6M CPLG	D628		E
C3 2" 6M CPLG	D628		E
C4A,B 2" 6M CPLG	4T9P		E
C5 2" 6M CPLG	D628		E
C6 1" 6M CPLG	41K		E
C7A,B .75" 6M CPLG	A4M		E
C8A,B .75" 6M CPLG	A4M		E
C9 .75" 6M CPLG	A4M		E
C10 .5" 6M CPLG	D561		E
M1 18" 300# RFLWN	GG341		E
M1 18" 300# RF Bid.	83717/1		-----

KW INTERNATIONAL, 00012939 PO BOX 19829 Houston, TX 77224	PO: PO30397	Sales Order: 191202	Line: 2
	Item Code: LWN060600090A002A1		Qty Shipped: 10
	Item Desc: 6 X 600 X 9 LWN RF SA105N		
	Mill Heat: C210479		
Spec: ASTM A105/A105M-(21)/ASME SA 105/SA 105M-(21) Section II Part A - Normalized			

Element	(%wt)	Ladle	Product	EPCRA	CAS#	Element	(%wt)	Ladle	Product	EPCRA	CAS#
C	Carbon	0.19				V	Vanadium	0.03			
Mn	Manganese	1.15		Y	7439-96-5	Cb	Columbium	0.001			
P	Phosphorous	0.011				B	Boron	0.0004			
S	Sulphur	0.006				Ti	Titanium	0.001		Y	7440-02-0
Si	Silicon	0.25				Al	Aluminum	0.025			
Cu	Copper	0.14		Y	7440-50-8	Ca	Calcium	0.0009			
Ni	Nickel	0.04		Y	7440-02-0	C.E.		0.42			
Cr	Chromium	0.09		Y	7440-47-3	CuNiCrMoV		0.313			
Mo	Molybdenum	0.01				CrMo		0.1			

Mechanical Testing				Heat Treat			
Test Lab	Goolsby Testing Inc 22-3779			Norm. Temp. (F)	1675		
Test Bar Size	5.50X5.50X12"			Norm. (Hrs)	4		
HBW	149 - 149			Norm. Cooling Type	AIR		
Elg (%)	38.6						
RA (%)	69						
Tensile Specimen Size (in)	.505			Vacuum Degassed	YES		
Tensile (ksi)	73			Gr. Sz	13.0		
Yield (ksi)	47.7						
Gauge Length (in)	2						

1/6/23
R

The recording of false, fictitious, or fraudulent statement or entries on this document may be punishable as a felony under federal statute.

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated with a checkmark in the "EPCRA" column and a Chemical Abstract Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 1620369
 Certification Date: 1/4/2023
 Issued By: Michelle Gutierrez

Material Test Report

Heat Code: DA9-KD

Forged Vessel Connections (FVC)

13770 Industrial Rd. Houston, TX 77015

ISO 9001:2015 Certified

Sales: (713) 393-4200

KW INTERNATIONAL, 00012939 PO BOX 19829 Houston, TX 77224	PO: PO30397	Sales Order: 191202	Line: 2
	Item Code: LWN060600090A002A1	Qty Shipped: 10	
	Item Desc: 6 X 600 X 9 LWN RF SA105N		
	Mill Heat: C210479		
Spec: ASTM A105/A105M-(21)/ASME SA 105/SA 105M-(21) Section II Part A - Normalized			

We hereby certify that the material represented by this document has been tested and is in conformance with the Purchase Order and Specification Requirements.

Material is Fully Killed; Fine Grain Practice in accordance with SA-29 Paragraph 5.1 / SA-20 Paragraph 8.3

Product compliant with NACE MR0175/ISO 15156-2:2015, Annex A (A.2.1.2, A2.1.3).

Product compliant with NACE MR0103/ISO 17945:2015, Section 13.1.1 and 13.1.3.

- * No Weld repair performed.
- * Ladle Chemical Analysis results are reported from the raw material suppliers MTR.
- * Tensile taken from a round specimen. Measurement of elongation after fracture.
- * Yield strength was determined using the .2% offset method, unless specified.
- * All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment was used in manufacturing, fabrication or testing.
- * When reported on MTR: Tensile Testing Per ASTM E8; Brinell Hardness Per ASTM E10; Charpy Testing Per ASTM E23
- * AFGlobal manufactures materials according to a certified Quality Management System conforming to ISO 9001:2015 and PED certified to 2014/68/EU, Annex 1, Section 4.3. Unless otherwise noted on PO, Dimensions of all standard pipe flanges and flange fittings (NPS 1/2 to NPS 24) per ASME B16.5-2020, large diameter steel flanges (NPS 26 to 60) per ASME B16.47-2020, Orifice flanges per ASME B16.36-2020.
- * AFGlobal uses the latest edition of ASTM E29 (Standard practice for using significant digits in test data to determine conformance with specifications), to claim conformance or nonconformance to a specification. When a accept/reject determination is required AFGlobal uses a test uncertainty ratio (TUR) of 1:1 or higher as acceptable.
- * DNV PED Certificate No 10000425664-PA-ACCREDIA-USA Valid thru December 03, 2023.

The recording of false, fictitious, or fraudulent statement or entries on this document may be punishable as a felony under federal statute.

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated with a checkmark in the "EPCRA" column and a Chemical Abstract Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 1620369
Certification Date: 1/4/2023
Issued By: Michelle Gutierrez



Dusty Bannon - Quality Analyst

This report is issued in compliance with the requirements of EN10204 3.1 / ISO 10474 3.1.b



REVISIONS
 REVISION NO. 01-06-2022
 REVISION DESCRIPTION
 REVISION DATE
 REVISION BY

SOLD / SHIPPED TO: WINNSUPPLY

Item	Quantity	Description
1	11	6" X 300 X 12" LG RF LWN

Heat Number: 43329A
 Material Type: SA105N/SA350LF2CL1

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C .18
 Mn 1.28
 P .013
 S .004
 Si .24
 Cr .03
 Mo .01
 V .00
 Cu .02
 Ni .01
 Cb(Nb) .00

Yield PSI 48,900
 Tensile PSI 75,600
 Elongation % 33.0
 Reduction of Area % 68.7
 Hardness 156/156 HBW
 CVN -50 °F FT LBS 68/72/69
 % Shear 50/50/50
 MLE .061/.066/.062

Sn
 As
 Sb
 Ti .00
 Al .03
 B .0003
 C E 0.40

MADE TO FINE GRAIN PRACTICE

Heat Treatment **NORMALIZED**
 Temperature 1706 °F
 Time at Temperature 3 HRS
 Cooling Media AIR

Flange dimensions and bolt hole patterns comply with ASME B16.5, B16.47, MSS SP-44. Hub profile for reinforcing nozzles per ASME Section VIII Div. 1 Appendix 2 (Figure 2-4). NO MERCURY, OR RADIOACTIVE SUBSTANCES CAME IN CONTACT WITH THIS MATERIAL DURING MANUFACTURING. NO WELDING PERFORMED. We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by: 
 Name: Cynthia Madrid Title: QA Representative

Checked by QC Dept.

MAY 24 2023




ORDER NUMBER: 19409
 SOLD/SHIPPED TO: WINNSUPPLY

Item	Quantity	Description
18	17	4" X 300 X 12" LG RF LWN

Heat Number: WW044

Material Type: SA105N/SA350LF2CL1

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C	.19
Mn	1.03
P	.007
S	.005
Si	.22
Cr	.13
Mo	.04
V	.02
Cu	.20
Ni	.10
Cb(Nb)	.00
N	.009
Sn	.009
As	.004
Sb	.003
Ti	.00
Al	.02
B	.0002
C E	0.42

Yield PSI	53,500
Tensile PSI	73,500
Elongation %	34.1
Reduction of Area %	71.1
Hardness	153/153 HBW
CVN -50 °F	FT LBS 57/190/59
	% Shear 50/100/50
	MLE 052/.079/.054

MADE TO FINE GRAIN PRACTICE

Heat Treatment **NORMALIZED**
 Temperature **1650 °F**
 Time at Temperature **4-1/2 HRS**
 Cooling Media **AIR**

Flange dimensions and bolt hole patterns comply with ASME B16.5, B16.47, MSS SP-44. Hub profile for reinforcing nozzles per ASME Section VIII Div. 1 Appendix 2 (Figure 2-4). NO MERCURY, OR RADIOACTIVE SUBSTANCES CAME IN CONTACT WITH THIS MATERIAL DURING MANUFACTURING. NO WELDING PERFORMED. We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by: 

Name: Cynthia Madrid Title: QA Representative

Checked by: QC Dept.


 4/25/2023



The Best Value -
Price, Quality, Service
All The Time.

CERTIFIED MILL TEST REPORT

KWI# FITNP0167

LOG NO. F00000000175755 Page 1 of 8

BONNEY FORGE CORPORATION
P.O. BOX 330 • 14496 CROGHAN PIKE • MOUNT UNION, PA 17066-0330
(814) 542-2545 • (800) 345-7546 • FAX (814) 542-4906
www.bonneyforge.com

CUSTOMER: WIN SUPPLY EAST HOUSTON #312

DATE 11/07/2022

CUSTOMER

BONNEY ORDER NO. B000317625

ORDER NO.: 00312-067578

SHIP TO: WIN SUPPLY EAST HOUSTON #312
1357 SHEFFIELD BLVD
HOUSTON TX 77015
United States

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO. CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
1	100	D628	2 6M A105 COUP TOE 6" LG SA/A105 Al 0.032 C 0.190 Cb 0.004 Co 0.006 Cr 0.110 Cu 0.190 Mn 1.050 Mo 0.040 Ni 0.070 P 0.005 S 0.018 Si 0.230 V 0.035 CE(Long Formula) = 0.42 T/S(PSI) 81,600 Y/S(PSI) 55,680 EL(%) 29.70 RA(%) 63.00 Brinell Hardness 169 BHN 164 BHN
2	700	D577	2 3000 A105 COUP T SA/A105 Al 0.022 C 0.200 Co 0.003 Cr 0.130 Cu 0.040 Mn 1.040 Mo 0.003 Nb 0.012 Ni 0.020 P 0.006 S 0.018 Si 0.230 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 74,400 Y/S(PSI) 42,900 EL(%) 33.00 RA(%) 59.60 Brinell Hardness 143 BHN 142 BHN
3	250	D579	1 6000 A105 COUP T SA/A105 Al 0.018 C 0.200 Co 0.002 Cr 0.110 Cu 0.030 Mn 1.030 Mo 0.010 Nb 0.011 Ni 0.010 P 0.004 S 0.016 Si 0.210 V 0.003 CE(Long Formula) = 0.40 T/S(PSI) 76,300 Y/S(PSI) 46,500 EL(%) 33.00 RA(%) 61.60 Brinell Hardness 144 BHN 147 BHN
4	500	D464	1/4 3M/6M A105 HXPL T SA/A105 C 0.150 Cr 0.070 Cu 0.100 Mn 0.650 Mo 0.010 Ni 0.040 P 0.005 S 0.008 Si 0.210 V 0.001 CE(Long Formula) = 0.28 T/S(PSI) 0 Y/S(PSI) 0 EL(%) 0.00 RA(%) 0.00 Brinell Hardness 150 BHN 162 BHN

Checked by QC Dept.
Date 4-13-23
By MK

We certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Paige Smith
Paige Smith
Quality Assurance Representative



400 McMunn St.
South Lyon, MI 48178

TEST REPORT



Date : 07/23/2022

Page : 1

Job : MJ00010548

Order : MS00015235

Truck# : MT07604

Heat : A222984

Pick# : 62541

Ship# : *A4M*

Ship To :		Sold To :	
<i>1 3/4" x .425 SA105, SA105N, LF2</i>		<i>8/3/22</i>	
P.O. No : 12102	Cust Item :	Shape : Round Round	Wt/ft : 6.014
OD Size : 1.750 IN	ID Size :	Wall Size : 0.425 IN (Average)	Grade : 7400-2
Surface : OIL		Anneal : Normalized	

Specifications : ASME-SA105-21-000, ASME-SA350-21-LF2 (Class 1), ASTM-A105-18, ASTM-A519--17, EN-EN 10204 3.1-2004, NACE-MR0103-2015, NACE-MR0175-2015

OIL. PRODUCE TO ASTM A105 & ASTM A519. CHEMISTRY & PHYSICALS TO SA-350/LF2, ASTM A105 & ASME SA-105/SA-105N. CERT TO NACE MR0-175, MR0-103 & EN10204 3.1.B. REPORT CE = %C + (%MN)/6 + (%CU + %ND)/15 + (%CR + %V + %MO)/5 < .45 AIM 0.020 MAX S. MARK W/MST, SIZE, GRADE, CUST NAME, PO#, SPEC & HEAT#. T/R TO INCLUDE COMPLETE CHEMISTRY, PHYSICALS, ROA, HBW, GRAIN SIZE & MFG IN USA. CHARPY @ -50 DEG-F. ROUTING-CALL TERRY DE PRIEST @ 918-836-3585 W/ READY.

Heat	Furnace	Melted Source	Feet	Weight (lbs)
A222984	EAF	USA, SDI - PITTSBORO, IN	4275	25710

Chemistry Analysis - L (Ladle), P1/P2 (Product Analysis) - %																			ppm				
C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	V	Sn	Nb	SB	As	Ti	Zr	N	Ca	CO	W	B	H2	CE
L	0.18	1.08	0.009	0.003	0.200	0.280	0.07	00.14	0.02	0.026	0.004	0.008	0.000	0.003	0.004	0.000	0.000	0.013	0.001	0.005	0.000	0.00	0.42

Grain Size: 8 CASTING METHOD: Bloom

Tensile Properties - PSI							Hardness	
Tensile	Yield	%Elong		ROA %		HBw Mid		
84593	73119	2"	39.0	71.9		149.0	163.0	

Tensile: 5/8" strip longitudinal

Charpy									
Temp	Size	Impact Longitudinal	Avg -L	Lat Exp	% Shear	Impact Transverse	Avg-T	Lat Exp	% Shear
-50 F	7.500	96 FP	102						
	MM	115 FP							
		96 FP							

Additional Testing						
Hydro (Tested 100% Length)	Ultrasonic %	Eddy Current	Flatten	Flare	Bend	Expansion
PASS						

Heat Cycle							
Normalized		Temper		Final Anneal		Stress Relieved	
Temperature	Time	Temperature	Time	Temperature	Time	Temperature	Time
1700 F	20.00 Min						

FITNP 0143

Checked by QC D

11-14-22

M-K



TEST REPORT



400 McMunn St.
South Lyon, MI 48178

Date : 07/23/2022

Page : 2

Truck# : MT07604

Heat : A222984

Job : MJ00010548

Pick# : - 62541

Ship# :

Order : MS00015235

Lot Details

Bundle	Footage	Pcs	Length
ms0001523501001	600	40	Cut 15' -
ms0001523501002	720	48	Cut 15' -
ms0001523501003	720	48	Cut 15' -
ms0001523501004	720	48	Cut 15' -
ms0001523501005	720	48	Cut 15' -
ms0001523501006	795	53	Cut 15' -

- Material has not been exposed to metallic mercury, lead or asbestos so as to cause contamination. Material is free from radioactive contamination. Cold Drawn Seamless. No weld repair. 100% Manufactured USA.
- Michigan Seamless Tube LLC, South Lyon MI is a division of Specialty Steel Works, Inc.
- Certificate of Conformance Statement: This certificate asserts that the tubing listed above has been manufactured, inspected and approved in accordance with all specifications, requirements and the customer's purchase order.

Jacob Gorkowski
Quality Assurance Manager

CUSTOMER _____
P.O.# _____
ITEM _____
HEAT CODE A4M

FITN P0143

Checked by QC
11-14-22
[Signature]

CERTIFIED MILL TEST REPORT

LOG NO. F06000000182893

Page 1 of 2

DONNEY FORGE CORPORATION

11725 Job - 11725 - 11725 - 11725 - 11725 - 11725
 27000 Highway 1000, Houston, TX 77058
 www.donneymfg.com

CUSTOMER: WIN SUPPLY EAST HOUSTON #312

DATE 04/03/2023

CUSTOMER

BONNEY ORDER NO. B000324318

ORDER NO.: 00312-073127

SHIP TO: WIN SUPPLY EAST HOUSTON #312
 1357 SHEFFIELD BLVD
 HOUSTON TX 77015
 United States

ITEM	QUANTITY	LOT NO.	GRADE OR SPECIFICATION NO.	CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS:
1	64	D561	1/2 6M A105 COUP TOE 4" LG	SA/A105 C 0.200 Cb 0.002 Co 0.010 Cr 0.130 Cu 0.120 Mn 1.000 Mo 0.010 Ni 0.050 P 0.008 S 0.022 Si 0.200 V 0.002 CE(Long Formula) = 0.41 T/S(PSI) 73,800 Y/S(PSI) 45,600 EL(%) 31.00 RA(%) 62.00 Brinell Hardness 149 BHN 144 BHN
2	13	D634	3/4 3000 A105 COUP TOE 3" LG	SA/A105 Al 0.021 C 0.200 Co 0.003 Cr 0.110 Cu 0.040 Mn 1.060 Mo 0.004 Nb 0.009 Ni 0.010 P 0.006 S 0.020 Si 0.210 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 78,600 Y/S(PSI) 46,500 EL(%) 33.00 RA(%) 57.50 Brinell Hardness 154 BHN 155 BHN
3	205	D611	1/2 3000 A105 BOSS W/LIP T	SA/A105 C 0.200 Co 0.010 Cr 0.130 Cu 0.120 Mn 1.000 Mo 0.010 Nb 0.002 Ni 0.050 P 0.008 S 0.022 Si 0.200 V 0.002 CE(Long Formula) = 0.41 T/S(PSI) 75,000 Y/S(PSI) 48,900 EL(%) 32.00 RA(%) 68.00 Brinell Hardness 144 BHN 149 BHN
4	45	6048	2 3000 A105 BOSS W/LIP T	SA/A105 Al 0.019 C 0.200 Co 0.003 Cr 0.040 Cu 0.070 Mn 1.100 Mo 0.010 N 0.004 Nb 0.016 Ni 0.020 P 0.007 S 0.020 Si 0.190 V 0.004 CE(Long Formula) = 0.40 T/S(PSI) 80,800 Y/S(PSI) 47,200 EL(%) 25.00 RA(%) 38.60 Brinell Hardness 179 BHN 179 BHN

Checked by QC Dept.
 Date 4-13-23
 By MK

certify that the data on this sheet is a true copy taken from our records of material furnished us by the production mill, or as obtained by additional laboratory checks.

by Billie Jo Clemens

Billie Jo Clemens
 Quality Assurance Representative

CUSTOMER ORDER # PO30842
SOLD / SHIPPED TO: KW INTERNATIONAL

Item Quantity Description

3 6 18" X 300 X 17" LG RF LWN

TAG: PO30842
TAG: FLGRF3226
PART HBW: 149

Heat Number: GG341
Material Type: SA105N

Steel Origin (melt): ITALY

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C .17
Mn 1.18
P .008
S .003
Si .25
Cr .07
Mo .02
V .00
Cu .20
Ni .09
Cb(Nb) .00
N .007
Sn .009

Yield PSI 43,396
Tensile PSI 71,988
Elongation % 37.4
Reduction of Area % 72
Hardness 1478/151 HBW

Ti .00
Al .03
B .0004
C E 0.40

MADE TO FINE GRAIN PRACTICE

Heat Treatment **NORMALIZED**
Temperature 1650 °F
Time at Temperature 2.5 HRS
Cooling Media AIR

Flange dimensions and bolt hole patterns comply with ASME B16.5, B16.47, MSS SP-44. Hub profile for reinforcing nozzles per ASME Section VIII Div. 1 Appendix 2 (Figure 2-4). NO MERCURY, OR RADIOACTIVE SUBSTANCES CAME IN CONTACT WITH THIS MATERIAL DURING MANUFACTURING. NO WELDING PERFORMED. We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by: 

Name: Cynthia Madrid

Title: QA Representative

Checked by QC Dept.

MAY 18 2023



TEXAS PMW, LLC
315 NORTH WAYSIDE DRIVE HOUSTON, TX 77020
(713) 679-7800 - FAX (713) 679-7820



PENNSYLVANIA MACHINE WORKS, LLC
201 BETHEL AVENUE ASTON, PA 19014
(610) 497-3300 - FAX (610) 497-5325



US DROP FORGE CO.
P.O. BOX 131 - ROUTE 551
1386 ALBURN ROAD WOOLWICH TOWNSHIP, NJ 08095
(609) 467-0500 - FAX (609) 467-4598

CERTIFIED MATERIAL TEST REPORT

MSI SUPPLY, INC.
PO BOX 7463
HOUSTON, TX 77018

P.O. 00312075885
ORDER # 03 431242
5/25/23

2X8LG 6MTD HFCP A105 QTY: 14

HEAT CODE: **4T9P** MATERIAL: **A105**
ASTM SPEC: **A105** SPEC. YEAR: **21** SPEC. REV:
UNS NUMBER: **K03504**

CHEMICAL ANALYSIS (%)

C	MN	P	S	SI	NI	CR	MO	CU	TI	AL
.190	1.080	.007	.010	.220	.020	.120	.006	.050	.002	.035
N	PB	CO	SB	V	CB	SN	B	AS	CA	
.002	<.001	.003	<.001	.004	.010	.002	<.001	.002	.001	

PHYSICAL ANALYSIS

YS (PSI)	TS (PSI)	%EL 4D	%RA	HARDNESS (HB)	HARDNES2 (HB)	C.E=
43700	76500	35.000	62.900	153	154	.40

HARDNESS 1 NACE MR0103 & MR0175

Country of Origin: Canada. Country of Origin is Country of Melt.
Manufactured to: ASME B16.11 - 2016

ASTM A105-05
ASME SECTION II SA105 2021 EDITION
MATERIAL IS CAPABLE OF PASSING A HYDROSTATIC TEST COMPATIBLE WITH THE RATING OF THE FINISHED FITTING
CERTIFICATE I/A/W EN 10204:2004 TYPE 3.1 AND ISO10474:2013 TYPE 3.1
ANSI/NACE MR0103/ISO17945:2015 SECTION 5.2
ANSI/NACE MR0-175/ISO15156-2:2015 SECTIONS A.2.1.2 AND A.2.1.3
ASME SECTION II SA105 2019 ED
MATERIAL IS FULLY KILLED
DURING MANUFACTURE AND PROCESSING, THIS PRODUCT DID NOT COME IN DIRECT CONTACT WITH POLYCHLORINATED BIPHENYLS (PCB'S), MERCURY OR ANY OF ITS COMPOUNDS NOR WITH ANY MERCURY CONTAINING DEVICE THAT EMPLOYED A SINGLE BOUNDARY OF CONTAINMENT. NO WELD REPAIRED MATERIAL - MADE IN THE U.S.A.
AS OF THE ORIGINAL MTR PRINT DATE, ARTICLES AS SUPPLIED BY PENN MACHINE HAVE NO INTENDED SUBSTANCE RELEASE, NOR CONTAIN ANY SIGNIFICANT AMOUNT (DO NOT EXCEED 0.1 WT%) OF CHEMICAL COMPOUNDS ON THE EU CANDIDATE LIST OF SVHC (ARTICLE 59(10)) PER ECHA GUIDELINE RIP 3.8, AND THUS THERE IS NO OBLIGATION TO REGISTER THEM UNDER REACH.
THE PRODUCTS SUPPLIED ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER, AND IN WHICH PMW SUPPLIES TEST RESULTS.

WE HEREBY CERTIFY THAT THE REPORTED FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.

Michael Barron
(ELECTRONIC SIGNATURE)
MICHAEL BARRON
QA Manager

MANUFACTURERS OF QUALITY **Penn FORGED** PIPE FITTINGS
SERVICE • PARTNERSHIP
www.pennusa.com

Checked by QC Dept.
6-2-23
MIE

12Jul12 8: 6

TEST CERTIFICATE

No: 1 106969

KREHER STEEL COMPANY, LLC.
1550 NORTH 25TH AVENUE
MELROSE PARK, IL 60160
Tel: 708-345-8180 Fax: 708-345-8293

P/O No 2726
Rel
S/O No 1 235478-001
B/L No 1 191952-002 Shp 12Jul12
Inv No Inv

12-30-14

Sold To: (7811)
PRODUCTION MANUFACTURING CO., INC.
5909 EAST 13TH STREET
TULSA OK 74112

Ship To: (1)
PRODUCTION MANUFACTURING CO., INC.
5909 EAST 13TH STREET
TULSA OK 74112

Tel: 918-836-3585 Fax: 918-835-9681

CERTIFICATE of ANALYSIS and TESTS

Cert. No: 1 106969
12Jul12

Part No
TURN & POLISH ROUNDS A105
2.2500 X 16'R/L

0

ASTM A105-05
ASME SA105
HEAT NUMBER 121546
Cu .15 , V .035 AND Cb/Nb .003
LOT NUMBER 50267 WEIGHT 6504
TENSILE 80300
YIELD 52800
ELONGATION 24 %
REDUCTION OF AREA 47 %
HARDNESS 156 -156 AT SURFACE
MADE IN THE USA

2 1/4" Ø SA105
41K

Heat Number 121546 *** Chemical Analysis ***
C=0.2000 Mn=0.8800 P=0.0050 S=0.0290 Si=0.2400 Cu=0.1500
Ni=0.0600 Cr=0.1030 Mo=0.0210 Al=0.0020 Cb=0.0030 V=0.0350
Sn=<.009> B=<.0004> Ti=<.0004> N=<.0089> Ca=<.0007>

I hereby certify that this data is correct as contained in the records of this company.
I hereby certify that no mercury came in contact with or no weld repair was done to this product while in our possession.

[Signature]

PRODUCTION MFG, TULSA, OKLA.
CUSTOMER IPS
P.O. # HP286260X
ITEM 1" 6000# X 3" ToE Coupling
HEAT CODE 41K

Checked by QC Dept.

JAN 15 2018

[Signature]

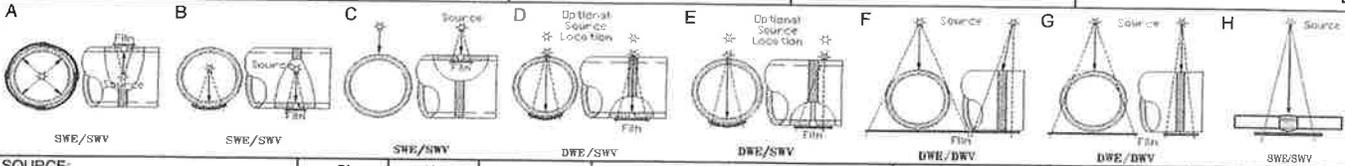


RADIOGRAPHIC EXAMINATION REPORT

CUSTOMER: KW INTERNATIONAL		407_J072596	DATE: 06/20/2023
LOCATION/ADDRESS: COLUMBUS, TX		CUSTOMER CONTACT: JOHN DELACERDA	
PART # / DRAWING #: 109042		CUSTOMER PO #: N/A	CUSTOMER WO #: N/A
ITEM DESCRIPTION: 48" X .75 VESSEL		STAGE OF MANUFACTURE: Final	SURFACE CONDITION: As Welded

NDE PROCEDURE	REV.	SPECIFICATION/CODE	REV./EDITION	ACCEPTANCE PROCEDURE / STANDARD:	PARTS INSPECTED:	ACCEPTED:	REJECTED:
RT-1	38	ASME Sec. III Div. 1.	2020	SECTION VIII / UW-51	1	1	0

Material and Thickness:	Carbon Steel .750 in.	A	B	Steel	C	D
Diameter: (inches)	48"	A	B		C	D
Rein. Thickness: (inches)	.125	A	B		C	D
Distance: (inches)	SOD: 23.25 OFD: 0.875	A	SOD: OFD: B	SOD: OFD: C	SOD: OFD: D	
Exposure Time (H:M:S)	00:25	A	B		C	D
IQI Amount / Type / Material:	1 B Wire Mat: S/S	A	Mat: B	Mat: C	Mat: D	
IQI Size / Location:	Size: .010 Film	A	Size: B	Size: C	Size: D	
Shim Thickness & Material:	N/A	A	B		C	D
Number of Exposures:	1	A	B		C	D
Markers: Number or Spacing:	1-2 THROUGH 12-1	A	B		C	D
Focal Spot µg	0.115 in. 0.0043 µg	A	in. µg B	in. µg C	in. µg D	
Screens: (inches)	Front: .010 Rear: .010	A	Front: Rear: B	Front: Rear: C	Front: Rear: D	
Film Loading / Brand / Type:	Single AGFA D5	A	B		C	D
Film Process: Choose..	Time: 3:30 Temp: 72 °F	A	Time: Temp: B	Time: Temp: C	Time: Temp: D	
Shot Configuration:	A - SWE/SWV	A	B		C	D



SOURCE:	Ir <input checked="" type="checkbox"/> Co <input type="checkbox"/> Se <input type="checkbox"/> X-Ray <input type="checkbox"/>	Ci 50	kV	ma	DENSITOMETER MODEL #:	DENSITOMETER SERIAL #:	CAL. DUE DATE:
					X RITE 301	028682	06/22/2022

C - Crack CP - Cluster Porosity IP - Insufficient Penetration EU - External Undercut S - Surface IFD - IF Due to Cold Lap
 SL - Slag P - Porosity/Gas Pocket IF - Insufficient Fusion IU - Internal Undercut IPD - IP Due to High/Low FA - Film Artifact
 T - Tungsten HB - Hollow Bead EP - Excessive Penetration IC - Internal Concavity BT - Burn Through

Weld/Component	View	Technique	Density		Accept	Reject	List Indications	Welder ID - Other ID Remarks
			IQI/Base	Weld				
RS1	1-2	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		T/F
	2-3	A	2.8	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	3-4	A	2.7	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	4-5	A	2.7	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	5-6	A	2.8	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	6-7	A	2.9	2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	7-8	A	3.0	2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	8-9	A	3.0	2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	9-10	A	3.1	2.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	10-11	A	3.1	2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	11-12	A	2.9	2.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
	12-1	A	2.9	2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

<input checked="" type="checkbox"/> Additional Pages	Comments:	Per Diem YES	Assistant Tech Name (Print): RANDY A. LUJAN
# of Film & Size: (12) 04.5" X 17 AGFA D5	Total # of Welds: 1	No. on Job: 2	Travel if Applicable: Hours: Miles Total:
CLIENT REPRESENTATIVE JOHN DELACERDA	06/20/2023	Randy Lujan/ <i>[Signature]</i>	06/20/2023 II

The Client Representative who receives this report is responsible for verifying that the acceptance standard listed in the report is correct, confirming that all radiographs listed in the report have been received by Client and promptly notifying of any issues with this report and/or the work summarized herein. The owner is responsible for the permanent custody of all radiographs and the final disposition of all items inspected.

This document and all services and/or products provided in connection with this document and all future sales are subject to and shall be governed by the 'Standard Service Terms' in effect when the services and/or products are ordered. THOSE TERMS ARE AVAILABLE AT, ARE EXPRESSLY INCORPORATED BY REFERENCE INTO THIS DOCUMENT AND SHALL SUPERSEDE ANY CONFLICTING TERMS IN ANY OTHER DOCUMENT (EXCEPT WHERE EXPRESSLY AGREED OTHERWISE IN THAT OTHER DOCUMENT).



Phased Array Inspection Report

Service #: SC-I072555
 Location: Houston
 P.O.#: NA
 Job Lead: Brandon Suttle

KWI @ Fabrication Shop

Customer / Site KWI Fabrication Shop Columbus, Tx	Inspection Date	6/20/2023	Work Procedure	AUT-07 (Phased Array)
	Project Name	N/A	Acceptance Criteria	ASME Sect VIII Div 2
	Work Order	NA		
	Job Number	Job 109042		

Work Description

Phased Array inspection was performed on 100% of RS2.

Examination Parameters (See focal law details on next page for additional information)

Testing Instrument		Probe 1	Probe 2	Probe 3	Probe 4					
Manufacturer	Olympus	Make	Olympus	Olympus						
Model	OmniScan X3	Model	5L16-A10	5L16-A10						
S/N	QC-0082203	Frequency	5 MHz	5 MHz						
Cal. Date	05/04/23	Cable Type	Fixed	Fixed						
Module Model	32/128PR	Cable Length	2.5 M	2.5 M						
Module S/N	QC-0082203	S/N	U1035	T2698						
Cal. Due Date	05/04/24	Wedge Material	Rexolite	Rexolite						
Software Version	MXU 5.12.1	Wedge Model	SA10-N55S	SA10-N55S						
Encoder Information		Wedge Diameter	0.5"	0.5"						
		Reference Db	31.1	30.5						
Calibration (steps/in)		Scanning Db	34.1	33.5						
Scan Resolution (in)		Sweep Angles	40-70	40-70						
Scan Speed (in/sec)		Cal In time	7:00 AM	7:00 AM						
Last Cal. Date		Cal Out time	2:00 PM	2:00 PM						
Calibration verified		Calibration Blocks Used								
Time Verified		Type	O.D.	W.T.	Material	Reflector	Size	Depth	Serial Number	
Scanners Used	NAVSHIP	NA	3"		Carbon Steel	SDH	.047"	Various	53141	
Manual	Custom	NA	1.5		Carbon Steel	SDH	0.125	Various	S356-2	
	Custom	NA	0.75		Carbon Steel	SDH	0.09	Various	S356-1	
Lamination Scan performed							√			
Transverse Scan performed							√	45°	60°	70°
Examination Results		Part information			Associated Scan Plans					
Total welds scanned	1	Material	Carbon Steel							
Total welds accepted	1	Configuration(s)	Vessel Girth Seam							
Total welds rejected	0									
Total inches scanned	152.00"									

Technician (Print)	Brandon Suttle	Level	<input checked="" type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III	Level III Review	Customer Approval
	Technician (Signature)	<i>Brandon Suttle</i>		(Print)	(Print)
	Other Qualifications	<input type="checkbox"/> QUTE <input checked="" type="checkbox"/> QUPA <input type="checkbox"/> QUSE <input type="checkbox"/> PCN <input type="checkbox"/> Other: _____		(Sign)	(Sign)
				Date: _____	Date: _____

This report is not to be construed as a guaranty or warranty of the condition of the materials tested. Versa Integrity Group, Inc., is not liable for any misinterpretation of results or conditions, or for any claims or losses attributable to performance of a test. These services are rendered without any warranty. Any liability is limited to the amount paid for the services at issue. All orders are subject to Versa Integrity Group, Inc. Standard Terms and Conditions of Sale, which are available upon request. By signing above you agree with the interpretation of the test results and the manner at which it was performed.

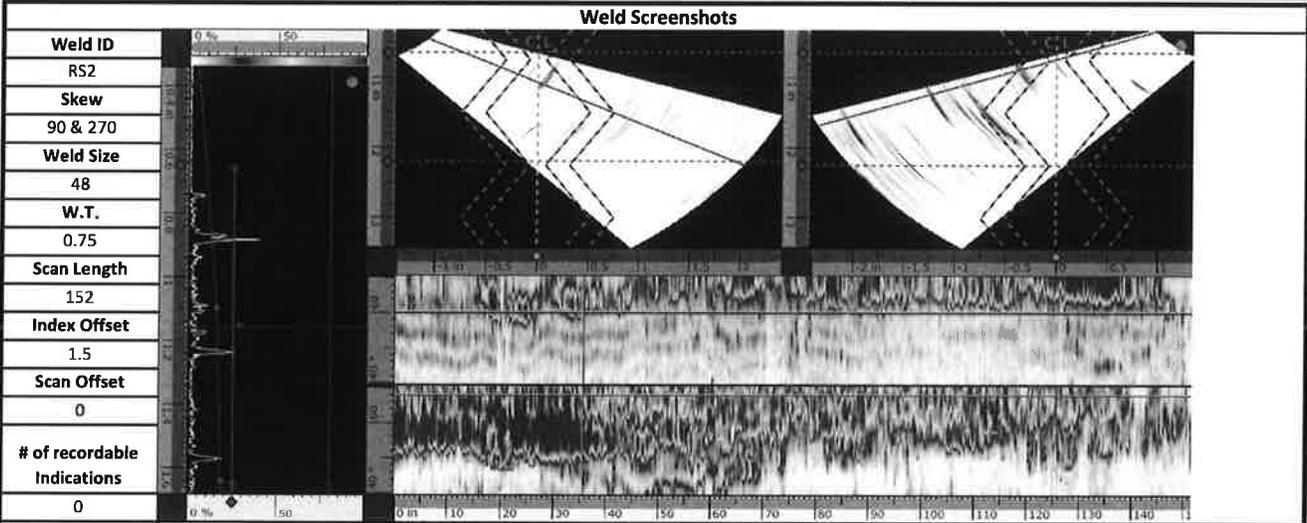


Weld Screenshots

Service #:	SC-J072555
Location:	Houston
P.O.#	NA
Job Lead:	Brandon Suttle

KWI @ Fabrication Shop

Customer / Site KWI Fabrication Shop Columbus, Tx	Inspection Date 6/20/2023 Project Name N/A Work Order NA Job Number Job 109042	Work Procedure AUT-07 (Phased Array) Acceptance Criteria ASME Sect VIII Div 2
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Comments

Weld ID	
Skew	
90 & 270	
Weld Size	
48	
W.T.	
0.75	
Scan Length	
152.00	
Index Offset	
1.5	
Scan Offset	0
0	
# of recordable Indications	0

Comments

This report is not to be construed as a guaranty or warranty of the condition of the materials tested. Versa Integrity Group, Inc. is not liable for any misinterpretation of results or conditions, or for any claims or losses attributable to performance of a test. These services are rendered without any warranty. Any liability is limited to the amount paid for the services at issue. All orders are subject to Versa Integrity Group, Inc. Standard Terms and Conditions of Sale, which are available upon request. By signing above you agree with the interpretation of the test results and the manner at which it was performed.

 Setting the New STANDARD	DOCUMENT TITLE: HYDROSTATIC PRESURE TEST RECORD	Document No.: KWI-FM-009 Original Issue Date: 29-JUL-14 Form Revision: 0 Form Rev. Date: 29-JUL-14 Form App'd: AVD Page 1 of 1
	DOCUMENT TYPE: QUALITY RECORD	

PROJECT INFORMATION	
SALES ORDER NUMBER: 16992	CUSTOMER: Nat. EPA Energy
JOB/SERIAL NUMBER: 109042	CODE/SPECIFICATION: ASME SEC. VIII; ASME B31.3
NB NUMBER (IF APPLICABLE): 5289	PROCEDURE/REV.: KWI-PR-001, REV.0
MATERIAL DESCRIPTION: PRESSURE VESSEL PIPE, ETC.	DRAWING NUMBER: SEPH20240

EQUIPMENT		
PRESSURE GAUGE		
MANUFACTURER: Stewart USA	MODEL NUMBER: Stewart USA 1500	SERIAL NUMBER: 1500-2
CALIBRATION DATE: 11-4-23	NOTES: N/A	
CHART RECORDER		
MANUFACTURER: Crystal	MODEL NUMBER: 15KPSIX(B)	SERIAL NUMBER: 924556
CALIBRATION DATE: 1-6-24	NOTES: N/A	

TEST DATA	
TEST PRESSURE: 1666#	TESTING MEDIUM: MUNICIPAL WATER
TEST DURATION: 1 hour	CORROSION INHIBITOR: NONE

INSPECTION RESULTS		
PIECE NUMBER/SERIAL NO.	ACCEPT/REJECT	COMMENTS
RPO 109042	✓	

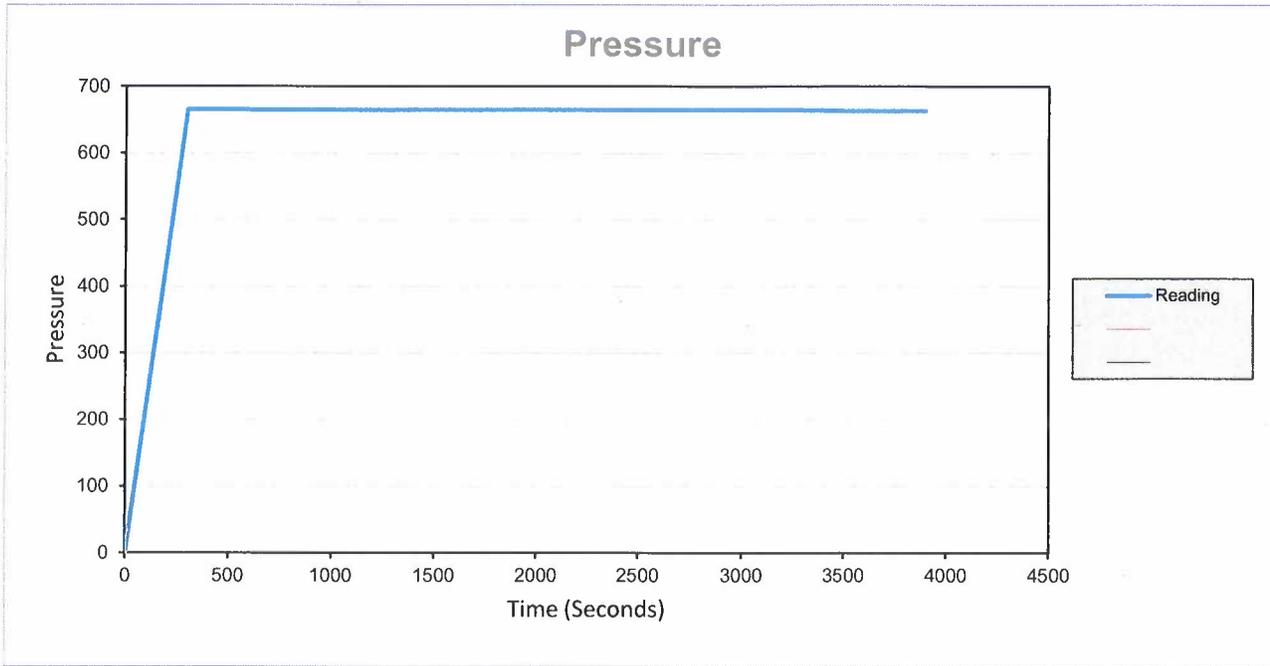
 KWI TEST TECHNICIAN SIGNATURE	6/22/23 DATE OF TEST
 WITNESS SIGNATURE	6-22-23 DATE OF TEST

Data Collection Report

109042 NB#5289 48 OD 500# HZ. 3-PH SEPARATOR

Gauge Information	
Serial Number	924556
Model	15KPSIXP2I
Message Store	-----
Units	PSI

Run Info	
Start Time	6/22/23 8:06:32 AM
Stop Time	6/22/23 9:15:39 AM
Logging Interval	300



	QUALITY FORM		SECTION NO.	
	<h1>FABRICATION TRAVELER</h1>		KWI-FM-212	
			REVISION	2
			DATE	AUG 2022
			PAGE	1 of 3

PROJECT INFORMATION			
DATE: 4/20/2023	SALES ORDER: 16992	CUSTOMER: NEXT ERA ENERGY RESOURCES LLC	
JOB/SERIAL NUMBER(S): 109042	DRAWING NO: SEPHZ0240 Rev. 0	NB #: 5784	
PROJECT DESCRIPTION: 48" OD x 10'-0" 500# HZ. 3-PHASE SEPARATOR			RT-1

DESIGN REQUIREMENTS		
DESIGN PRESS. INT: 500	EXT:	DESIGN TEMP: 200
CALCULATIONS, WPS & PQR REVIEWED BY:	AI: <i>[Signature]</i>	DATE: 28 APR 23
	QC: <i>[Signature]</i>	DATE: 4-15-22

OUTSIDE APPROVAL INSPECTIONS	
ITP REQUIRED: YES <input type="checkbox"/> NO <input type="checkbox"/>	IF YES, CLIENT INSPECTION REIRED? YES <input type="checkbox"/> NO <input type="checkbox"/>
NDE REQUIRED: YES <input type="checkbox"/> NO <input type="checkbox"/>	IF YES, NDE IS A HOLD POINT

FABRICATION							
	SHOP	DATE	QC	DATE	AI		
					HOLD	CHK	DATE
MATERIAL INSPECTION / PROFILER							
a. Check Thickness and Surface	ML	5-24					
b. Examine MTR's and Compare to Heat No.							<i>[Signature]</i> 6/27
c. Record Mill Stamp and Transfers	ML	5-24					
FABRICATION INSPECTION							
a. Verify Nozzle Thick and Flange Ratings							
b. Shell Layout	# ML	5-24	+				
c. Head Layout	# LL	6-7-23	+	JG	6-7		
d. Nozzle Fit up Shell <i>ML IG 6-7</i>	# LL	6-2-23	+	JL	6-2-23		
e. Nozzle Fit up Head	# LL	6-8-23	+	JL	6-8-23		
f. Check Internals	# LL	6-9-23	+	JL	6-9-23	*	<i>[Signature]</i> 6/23
CUTTING, FITTING, AND ALIGNMENT							
a. Girths Seams	# LL	6-9-23	+				
b. Head Seams	# LL	6-9-23	+	KB	6-9-23		
NONDESTRUCTIVE EXAMINATIONS & TESTING							
a. Radiography.							
a. Long Seams.							

	QUALITY FORM		SECTION NO.	
	FABRICATION TRAVELER		KWI-FM-212	
			REVISION	2
			DATE	AUG 2022
			PAGE	2 of 3

b. Round Seams.	FULL			ACUREN 6-20-22		Am 6/27
c. Nozzles.						
b. Ultrasonic Test.	e2			Acuren 6-20		Am 6/27
c. Penetrant Test.						
d. Oil Bucket / Weir Test.				+		
FINAL INSPECTION						*
a. Final Dimension	#	L.L. 6-19-23	+	JG 6-19		
b. Check Fillet Weld Sizes.	#		+			
c. Out of Roundness.	#		+			
d. Weld Appearance and Reinforcement.	#		+			Am 6/23
e. Name Plate Attached.	#		+			
f. Check Stamping on Nameplate.						

QUALITY TESTING AND CHECKS							
	SHOP	DATE	QC	DATE	AI		
					HOLD	CHK	DATE
POST WELD HEAT TREATMENT							
a. Chart reviewed			+				
HYDROSTATIC TESTING							
a. Pressure Test Report				JG 6-23-23	*		Am 6/23/23
b. Gauge S/N: 1500-7				↓			
c. Code Stamp.			+	↓			Am 6/27/23
DATA REPORT SIGNED							
a. Verified				JG 6-23-23	*		
SANDBLAST							
a. Inspection			+				
PAINT							
a. Inspection			+				

QC FINAL APPROVAL:	DATE:
---------------------------	--------------

QC Final Approval Required before Shipping or moving to Assembly

#-KWI Shop Hold Point

+ - KWI QC Hold Point

*-AI Hold Point

www.kwintl.com	Telephone: 844.594.4626	KW International, LLC
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Setting the New STANDARD

KW International, LLC
SHOP REPORT

CUSTOMER: NEXT ERA/TRINITY SHOP ORDER: 16922

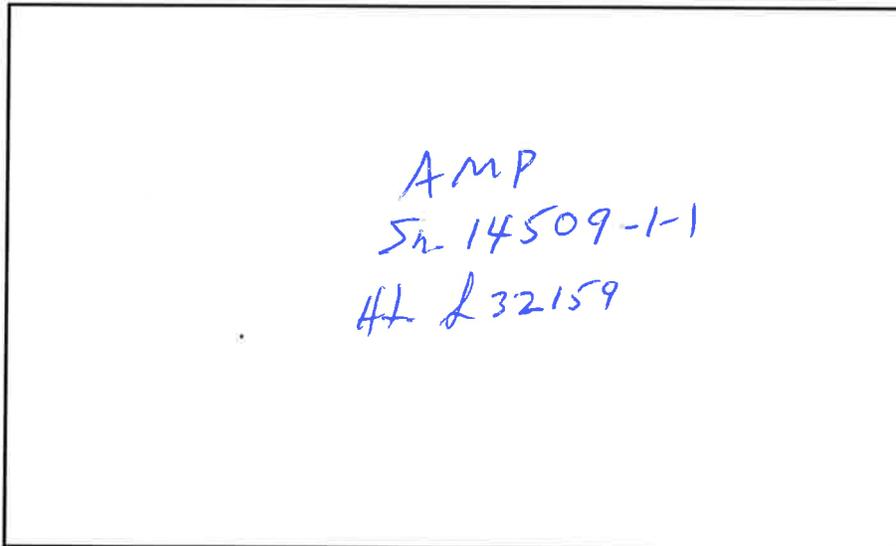
SERIAL NO.: 109042 NATIONAL BOARD NO.: 5280

DESCRIPTION: 48" OD X 10'- 0" 500# HZ. 3-PHASE SEPARATOR.

DRAWING NO.: SEPHZ0240, REV.0 VESSEL: 1 OF 1

TYPE OF TEST: HYDROSTATIC TEST PRESSURE: 650

REF END



TCCA

TcCH

SIGNED: 

TITLE: QUALITY CONTROL

COMPANY: KW International LLC

DATE TESTED: 6-23-22

GAUGE: 1500-2