NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-01/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	19 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J1	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J2	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J3	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II	Client Representative:	
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	Name:	
Date:	20 April 2018	Date:	

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D) NDT Division

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-01/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J4	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	Uc	Accept	
J5	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J6	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J7	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J8	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J9	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J10	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-02/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 100(class II)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	20 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J1	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J2	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J3	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	Name:
Date:	21 April 2018		Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
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Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J4	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	Uc	Accept	
J5	6.9	3	60.3	3.9	X	Con	Accept	
WN-P3					Y	NRI	Accept	
J6	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J7	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J8	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J10	6.9	3	60.3	3.9	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. NDT Division (187753-D)

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-03/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	20 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J9	6.9	3	60.3	3.9	X	AR		Reshoot
WN-P3					Y	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. NDT Division (187753-D)	Name:
Date:	21 April 2018		Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-04/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 100(class II)
		Density :	2.0 - 4.0
Material:	SA 333 GR 6	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(33.4)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	17 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J1	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J2	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J3	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II	Client Representative:	
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	Name:	
Date:	18 April 2018	Date:	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
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Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J4 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J5 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J6 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J7 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J8 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J9 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J10 WN-P3	6.38	3	33.4	3.38	X	Por	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Continue Next Page

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-04/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J11 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J12 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J13 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J14 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J15 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	Por	Accept	
J16 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J17 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

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NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result
J516048 Ammonia Distribution Header							
J18 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept
					Y	NSD	Accept
					Z	NSD	Accept
J19 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept
					Y	NSD	Accept
					Z	NSD	Accept
J20 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept
					Y	NSD	Accept
					Z	NSD	Accept
J21 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept
					Y	NSD	Accept
					Z	NSD	Accept
J22 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept
					Y	NSD	Accept
					Z	NSD	Accept
J23 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept
					Y	NSD	Accept
					Z	NSD	Accept

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-05/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd
Project :	Sublimator 8191C1 (Saminc 3)
Material:	SA 333 GR 6
Welding Process :	GTAW
Examination Code :	ASME V
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.
Examination Date:	17 April 2018

Procedure No:	NT/RT/ASME Rev 7.0
IQI type :	ASTM 1A
Film Manufacturer/Type :	FUJI 50(class I)
Density :	2.0 - 4.0
Sensitivity:	0.20mm(2 wires visible)
Source to Object Distance :	400mm
Source Side of Object to Film Distance:	(33.4)mm
No of Radiograph(exposure) :	Single Exposure
No. of Film Each Cassette :	1 Film
Radiographic Technique :	DWDI
Film Viewing Technique :	Double Wall Viewing
Source Type/Size :	Iridium192 (3.2mm)
Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J24 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J25 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J26 WN-P3	6.38	3	33.4	3.38	X	Por	Accept	
					Y	Por	Accept	
					Z	NSD	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion *NRI : No Relevant Indication* *Uc : Undercut* *Por : Porosity* *WT : Weld Thickness*
SI : Slag Inclusion *LP : Lack of Penetration* *Con : Concavity* *BT : Burn Through* *RT : Reinforcement Thickness*
LF : Lack of Fusion *EP : Excess Penetration* *AR : Artifact* *Sur : Surface*

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: M.Nazib - ASNT Level II

Date: 18 April 2018

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D) NDT Division

Client Representative:

Name:
Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J27 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J28 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J29 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	
J30 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J31 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J32 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J33 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
J34 WN-P3	6.38	3	33.4	3.38	X	NSD	Accept	
					Y	NSD	Accept	
					Z	NSD	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Continue Next Page

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-05/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J35	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J36	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J37	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J38	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J39	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
					Z	NSD	Accept	
J40	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J41	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J42	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J43	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J44	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J45	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
J46	6.38	3	33.4	3.38	X	NSD	Accept	
WN-P3					Y	NSD	Accept	
					Z	NSD	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D) NDT Division

End of Report

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NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-06/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd
Project :	Sublimator 8191C1 (Saminc 3)
Material:	SA 333 GR 6
Welding Process :	GTAW
Examination Code :	ASME V
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.
Examination Date:	17 April 2018

Procedure No:	NT/RT/ASME Rev 7.0
IQI type :	ASTM 1A
Film Manufacturer/Type :	FUJI 50(class I)
Density :	2.0 - 4.0
Sensitivity:	0.20mm(2 wires visible)
Source to Object Distance :	400mm
Source Side of Object to Film Distance:	(33.4)mm
No of Radiograph(exposure) :	Single Exposure
No. of Film Each Cassette :	1 Film
Radiographic Technique :	DWDI
Film Viewing Technique :	Double Wall Viewing
Source Type/Size :	Iridium192 (3.2mm)
Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J20 WN-P3	6.38	3	33.4	3.38	X	Por	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J22 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: M.Nazib - ASNT Level II

Date: 18 April 2018

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Client Representative:

Name:

Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-06/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J23 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	Por	Accept	
					Z	NRI	Accept	
J24 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J25 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J26 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J27 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J28 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J29 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-08/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(33.4)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	19 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J21	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
					Z	Inc	Reject	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. NDT Division (187753-D)	Name:
Date:	20 April 2018		Date:

NUSATEK

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-07/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(33.4)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	19 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J30	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J31	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J32	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	Name:
Date:	20 April 2018		Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J33 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J34 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J35 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J36 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J37 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J38 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J39 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J40 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J41 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Continue Next Page

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-07/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result
J516048 Ammonia Distribution Header							
J42 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
J43 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
J44 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	Por	Accept
J45 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
J46 WN-P3	6.38	3	33.4	3.38	X	Por	Accept
					Y	NRI	Accept
					Z	NRI	Accept

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. NDT Division

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-19/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1B
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.33mm(5 wires visible)
Material:	SA 333 GR 6 / SA 312 TP 304L To SA 333 GR 6	Source to Object Distance :	88.9mm
		Source Side of Object to Film Distance:	(7.62+3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
Examination Date:	19 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Inlet Header								
J1 WN-P3	10.62	3	88.9	7.62	0 - 1	Por	Accept	
					1 - 2	Por	Accept	
					2 - 0	NRI	Accept	
J2 WN-P3	10.62	3	88.9	7.62	0 - 1	NRI	Accept	
					1 - 2	NRI	Accept	
					2 - 0	Por	Accept	
J3 WN-P3	10.62	3	88.9	7.62	0 - 1	NRI	Accept	
					1 - 2	NRI	Accept	
					2 - 0	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II	Client Representative:	
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	Name:	
Date:	20 April 2018	Date:	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-20/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1B
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 333 GR 6 / SA 312 TP 304L To SA 333 GR 6	Sensitivity:	0.33mm(5 wires visible)
		Source to Object Distance :	88.9mm
		Source Side of Object to Film Distance:	(7.62+3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWSI
		Film Viewing Technique :	Single Wall Viewing
Examination Date:	20 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048								
Ammonia Inlet Header								
J1	10.62	3	88.9	7.62	0 - 1	Por	Accept	
WN-P3					1 - 2	Por	Accept	
					2 - 0	NRI	Accept	
J2	10.62	3	88.9	7.62	0 - 1	NRI	Accept	
WN-P3					1 - 2	NRI	Accept	
					2 - 0	Por	Accept	
J3	10.62	3	88.9	7.62	0 - 1	NRI	Accept	
WN-P3					1 - 2	NRI	Accept	
					2 - 0	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	
Date:	21 April 2018		Name:
			Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-09/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(33.4)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	20 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J1	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J2	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
J3	6.38	3	33.4	3.38	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	Name:
Date:	21 April 2018		Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J4 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J5 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J6 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J7 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
J8 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J9 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J10 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J11 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	
J12 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	NRI	Accept	
					Z	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Continue Next Page

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result
J516048 Ammonia Distribution Header							
J13 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
					Z	NRI	Accept
J14 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
					Z	NRI	Accept
J16 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
					Z	Uc	Accept
J17 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
					Z	NRI	Accept
J18 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	NRI	Accept
					Z	NRI	Accept
J19 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept
					Y	Por	Accept
					Z	NRI	Accept

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

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NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-10/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
		IQI type :	ASTM 1A
Project :	Sublimator 8191C1 (Saminc 3)	Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
		Sensitivity:	0.20mm(2 wires visible)
Material:	SA 333 GR 6	Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(33.4)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	20 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Distribution Header								
J15 WN-P3	6.38	3	33.4	3.38	X	NRI	Accept	
					Y	Por	Reject	
					Z	Por	Reject	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: M.Nazib - ASNT Level II

Date: 21 April 2018

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D) NDT Division

Client Representative:

Name:

Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-15/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	28 March 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ1 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ2 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ3 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	
Date:	29 March 2018		Name: Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-15/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ4	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ5	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ6	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ7	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ8	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ9	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ10	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ11	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ12	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ13	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ14	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-16/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	28 March 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ15	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ17	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ18	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. NDT Division (187753-D)	
Date:	29 March 2018		Name: Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-16/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ19	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ20	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ21	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ22	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ24	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ25	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ26	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ27	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	Por	Accept	
CJ28	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ29	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ30	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	
CJ31	5	3	60.3	2	X	NRI	Accept	
WN-P3					Y	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-17/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	28 March 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ23 WN-P3	5	3	60.3	2	X	AR		Reshoot
					Y	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	
Date:	29 March 2018		Name:
			Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-18/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	28 March 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ16 WN-P3	5	3	60.3	2	X	Por	Reject	
					Y	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	
Date:	29 March 2018		Name:
			Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-11/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
Welding Process :	GTAW	Source Side of Object to Film Distance:	(60.3)mm
Examination Code :	ASME V	No of Radiograph(exposure) :	Single Exposure
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	No. of Film Each Cassette :	1 Film
		Radiographic Technique :	DWDI
Examination Date:	20 April 2018	Film Viewing Technique :	Double Wall Viewing
		Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ1 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ2 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ3 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. NDT Division * (187753-D) *	
Date:	21 April 2018		Name: Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ4 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ5 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ6 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ7 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ8 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ9 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ10 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ11 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	
CJ12 WN-P3	5	3	60.3	2	X Y	NRI NRI	Accept Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Continue Next Page

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-11/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ13 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ14 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ15 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ17 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ18 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ19 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	AR
CJ20 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ21 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ22 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-12/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	28 March 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ24 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ25 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ26 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	

Continue Next Page

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Su : Surface	

Personnel Particulars

Radiographer : Emirsham - NDT Lev. II

Interpreted & Evaluated By: M.Nazib - ASNT Level II

Date: 29 March 2018

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Client Representative:

Name:

Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-12/18

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ27 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	Por	Accept	
CJ28 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ29 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ30 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	
CJ31 WN-P3	5	3	60.3	2	X	NRI	Accept	
					Y	NRI	Accept	

End of Report

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D) NDT Division

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
Tel: 03-5122 9766/7/8 Fax: 03-5122 8766/7 E-mail: info@nusatek.com

Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-13/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc 3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 312 TP 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(60.3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	DWDI
		Film Viewing Technique :	Double Wall Viewing
Examination Date:	28 March 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ16 WN-P3	5	3	60.3	2	X	Por	Reject	
					Y	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II	Client Representative:	
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	Name:	
Date:	29 March 2018	Date:	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-14/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd
Project :	Sublimator 8191C1 (Saminc 3)
Material:	SA 312 TP 304L
Welding Process :	GTAW
Examination Code :	ASME V
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.
Examination Date:	28 March 2018

Procedure No:	NT/RT/ASME Rev 7.0
IQI type :	ASTM 1A
Film Manufacturer/Type :	FUJI 50(class I)
Density :	2.0 - 4.0
Sensitivity:	0.20mm(2 wires visible)
Source to Object Distance :	400mm
Source Side of Object to Film Distance:	(60.3)mm
No of Radiograph(exposure) :	Single Exposure
No. of Film Each Cassette :	1 Film
Radiographic Technique :	DWDI
Film Viewing Technique :	Double Wall Viewing
Source Type/Size :	Iridium192 (3.2mm)
Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Tube To End Cap								
CJ23 WN-P3	5	3	60.3	2	X	AR		Reshoot
					Y	NRI	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II
Interpreted & Evaluated By:	M.Nazib - ASNT Level II
Date:	29 March 2018

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

Client Representative:

Name:
Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-22/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc3)	IQI type :	ASTM 1B
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 516 GR 70	Sensitivity:	0.33mm(5 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(16+3)mm
Welding Process :	GTAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	SWSI
		Film Viewing Technique :	Single Wall Viewing
Examination Date:	12 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Shell								
LS1	19	3	–	16	0 - 1	Por	Accept	
WN-P2					1 - 2	Por	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	NRI : No Relevant Indication	Uc : Undercut	Por : Porosity	WT : Weld Thickness
SI : Slag Inclusion	LP : Lack of Penetration	Con : Concavity	BT : Burn Through	RT : Reinforcement Thickness
LF : Lack of Fusion	EP : Excess Penetration	AR : Artifact	Sur : Surface	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II	Client Representative:	
Interpreted & Evaluated By:	M.Nazib - ASNT Level II		
Date:	13 April 2018	Name:	
		Date:	

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division

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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-23/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd	Procedure No:	NT/RT/ASME Rev 7.0
Project :	Sublimator 8191C1 (Saminc3)	IQI type :	ASTM 1A
		Film Manufacturer/Type :	FUJI 50(class I)
		Density :	2.0 - 4.0
Material:	SA 240 GR 304L	Sensitivity:	0.20mm(2 wires visible)
		Source to Object Distance :	400mm
		Source Side of Object to Film Distance:	(6+3)mm
Welding Process :	SMAW	No of Radiograph(exposure) :	Single Exposure
Examination Code :	ASME V	No. of Film Each Cassette :	1 Film
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.	Radiographic Technique :	SWSI
		Film Viewing Technique :	Single Wall Viewing
Examination Date:	12 April 2018	Source Type/Size :	Iridium192 (3.2mm)
		Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Diameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Shell LS2 WN-P31	9	3	--	6	0 - 1	NRI	Accept	
LS3 WN-P31	9	3	--	6	0 - 1	NRI	Accept	
LS4 WN-P31	9	3	--	6	0 - 1	NRI	Accept	
LS5 WN-P31	9	3	--	6	0 - 1	NRI	Accept	
LS6 WN-P31	9	3	--	6	0 - 1	Por	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II		Client Representative:
Interpreted & Evaluated By:	M.Nazib - ASNT Level II	NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) * NDT Division	Name:
Date:	13 April 2018		Date:

NUSANTARA TECHNOLOGIES SDN. BHD. (187753-D)
No. 5, Jalan Anggerik Mokara 31/45, Seksyen 31, Kota Kemuning, 40460 Shah Alam, Selangor Darul Ehsan, Malaysia.
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Our Ref. : NT/103730/18-23

Report No: NDT/RT/180592-21/18

RADIOGRAPHIC EXAMINATION REPORT

Client and Testing Particulars

Client :	Innovative Inspection & Services Sdn Bhd
Project :	822QE 1 (MNA 1)
Material:	SA 516 GR 70
Welding Process :	SMAW
Examination Code :	ASME V
Acceptance Code:	ASME Sect VIII Div.1 ; 2017 Ed.
Examination Date:	18 April 2018

Procedure No:	NT/RT/ASME Rev 7.0
IQI type :	ASTM 1B
Film Manufacturer/Type :	FUJI 50(class I)
Density :	2.0 - 4.0
Sensitivity:	0.33mm(5 wires visible)
Source to Object Distance :	400mm
Source Side of Object to Film Distance:	(12.7+3)mm
No of Radiograph(exposure) :	Single Exposure
No. of Film Each Cassette :	1 Film
Radiographic Technique :	DWSI
Film Viewing Technique :	Single Wall Viewing
Source Type/Size :	Iridium192 (3.2mm)
Location Markers :	Film Side

Radiographic Examination Result

Weld Reference (Welder No)	WT (mm)	RT (mm)	Pipe Djameter (mm)	Material Thickness (mm)	Film Position	Film Interpretation	Result	Remarks
J516048 Ammonia Outlet								
CS08 Plus LS08 WN-P2	15.7	3	–	12.7	0 - 1	NRI	Accept	
					1 - 2	NRI	Accept	
					2 - 3	NRI	Accept	AR
					3 - 4	NRI	Accept	
					4 - 5	Por	Accept	
					5 - 0	Por	Accept	

End of Report

Legend:

TI : Tungsten Inclusion	*NRI : No Relevant Indication*	*Uc : Undercut*	*Por : Porosity*	*WT : Weld Thickness*
SI : Slag Inclusion	*LP : Lack of Penetration*	*Con : Concavity*	*BT : Burn Through*	*RT : Reinforcement Thickness*
LF : Lack of Fusion	*EP : Excess Penetration*	*AR : Artifact*	*Sur : Surface*	

Personnel Particulars

Radiographer :	Emirsham - NDT Lev. II
Interpreted & Evaluated By:	M.Nazib - ASNT Level II
Date:	19 April 2018

NUSANTARA TECHNOLOGIES SDN. BHD. * (187753-D) NDT Division

Client Representative:

Name:
Date: