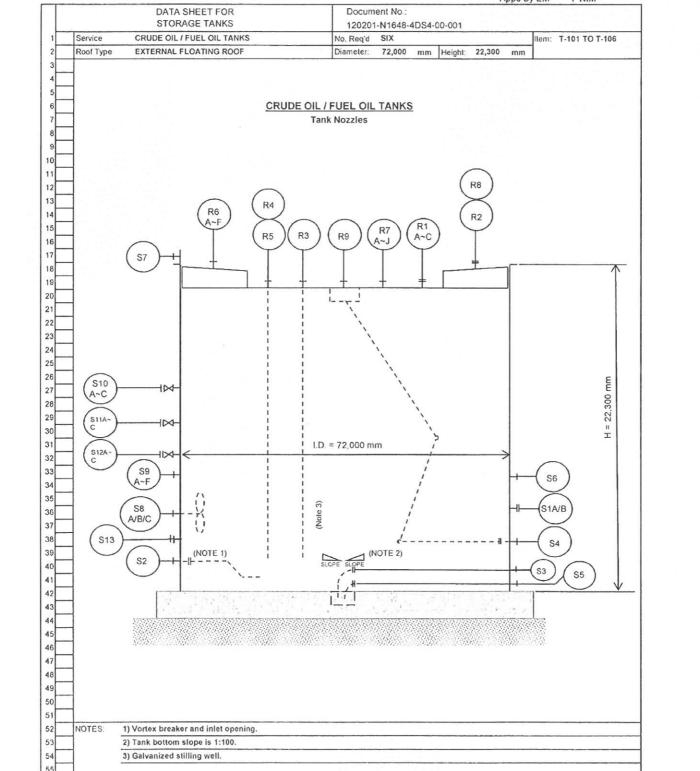
			1010 1001		SHEET FO		100	ocument		DC4	1 00 004		ppo by c	
۱.		Service	CF		/ FUEL OIL			20201-N1 Reg'd SI		D54	1-00-001		lo.	lem: T-101 TO T-106
	_						No. F				1	00.000		lem: 1-101 10 1-106
3	-	Roof Type	EX	TERNAL	FLOATING F		Diam	CESS DAT	000,	mm	Height	22,300	mm	
4		Fluid	39991190	CR	UDE OIL / F	UEL OIL (CLASS VIII)		1				Tempe	rature	Pressure
5			Heavy	Crude Oil		980 kg/m³		1	COND	IOITIO	NS	0(		mbar(g)
6		Density		Crude Oil		870/880 kg/m³	1/			Shel	11	AN		ATM
7			Fuel C	Dil		980 kg/m³		Opera	sting	Heat	ting Device	N.	Α.	N.A
8			Heavy	Crude Oil	1	<37 °C		<b> </b>						int. ATM
9		Flash Point	Light (	Crude Oil		<0 °C		Desi	gn	Shel	li	0(MDN	11190	ext. N.A.
10			Fuel C	H		>60 °C		1		Heal	ting Device	N.	Α.	N.A
11		Design Spec	ific Gra	evily		1								× · · · · · · · · · · · · · · · · · · ·
12		Design Live I	Load			1.2 kpa		1						
13		Design Rainf	all (De	sign Maxir	num Intensity	) 7 mm/hr & 70 mm/d	ay	]						
14		Snow Load				N.A. km/hr	1							
15		Design Wind	Basic	De	sign Gust 16	2 km/hr over 3 secs. Wind d	eslgn	pressure	as per	BS	6399.			
16		Earthquake		Но	rizontal Acc	eleration = 0.15g Vertical Acc	celera	tion = 0.0	75 whe	re g	= 9.81 m/s <sup>2</sup> ;	Zone 2A pe	r UBC.	
17							OME	TRICAL D	ATA					
18		Geometric C	apacity	r:		91,283 m <sup>3</sup>		Max. Filli	ng Heig	ght @	100%			20,800 m
19		Named Capa	city:			90,000 m³		Independ	ent LS	HHH	leight			20.677 m
20		Net Working	Capac	aity:		83,600 m <sup>3</sup>				-	HH (second A			20.554 m
21		Filling Rate				4,000 m³/ħr		Level Ga	uge Ala	arm H	H (first Alarm)			20.473 m
22		Emptying Ra				4,000 m³/hr		Low Leve	el, LL					1.870 m
23		Filling Rate (				5,000 m³/hr		Design L		_				21.300 m
24		Emptying Ra	le (For	venting)		5,000 m³/hr	- -	Hydrotes	ting Le	vel				20.800 m
25	느						`							
26							N	OZZLES		_				
27 28		ltem	No.	Size in	Rat, & Fac.	Service	121112	Item	N	lo.	Size	Rat. & Fac.	1	Service
29		S1A/B	2	24	API 650	Shell Manhole (With hinge & davit)	Š.	R1A/B/	IC	3	30	API 650	Deck M	lanhole (With cover)
30		S2	1	36	150 WNRF	Filling / Suction Nozzle (Wit vortex breaker & Inlet openi		R2	5	51	20	API 650	Compa cover)	rtment Manhole (With
31		\$3	1	16	150 WNRF	Low Suction Nozzle (With internal pipe)		R3		1	10	150 WNRF	Level T Stilling	ransmitter (With galv. well)
32		\$4	1	4	150 WNRF	Roof Drain Nozzle (With inte pipe & swing joint)		R4		1	2	150 WNRF	Temper stilling	rature Element (With well)
33		S5	1	2	150 WNRF	Water Draw Off Nozzle (With internal pipe)	h	R5		1	8	150 WNFF	& Cove	
34		\$6	1	2	150 WNRF	Thermal Relief Nozzle		R6A-		6	12	150 WNFF	Rimroo valve)	om PV Vent (With PV
35		S7	10	3	150 WNFF	Foam Inlet Nozzle		R7A~.		0	8	N.A.		atic Bleeder Vent
36		SBA/B/C	3	30	150 WNRF	Mixer Nozzle		R8		1	4	150 WNRF		larm Switch Nozzle
37		S9A~F	6	1	3000 NPT	Sampling Nozzle		R9		1	4	150 WNFF	Deck D	rain Nozzle (With 50" ump)
38		S10A-C	3	2	150 WNRF	Temperature Sensor Nozzie valve & blind flange)		1						
39		S11A~C	3	4	150 WNRF	Heating Coil Inlet Nozzle (w valve & blind flange)								
40		S12A~C	3	4	150 WNRF	Heating Coil Outlet Nozzle ( valve & blind flange)	with							
41		S13	1	914 x 1219mm	API 650	Cleanout Fitting								
42														's
43														*
44		NOTES:	1) Tar	nk design	shall be acc	ording to API 650 11th editio	n, Ju	ne 2007 A	ddend	um 3	August 201	1		
45			2) Sh	ell design	method - "V	ariable-Design-Point Method	1"						VI. 22.2.1	
46														

1							No. Req'd SIX										
2																	
3	CON							ONSTRUCTION DATA									
4	MATERIALS C.A. mm PAINTING/COATING										$\neg$						
5	Establish (chear read)																
6	Floating Roof ASTM A283 Gr.C 0 Floater (Top / Boltom) Paint / No																
7	Floating Ro	of	A:				0 Floater (Top / Bottom)				Paint / No						
8	Bottom		ASTM A573	ASTM A573 Gr.70/ASTM A283 Gr. C				Insulation		yes			no 📗				
9	Deck Plate ASTM A283 Gr.C Heat Conservation Type cold hot Nozzle Pipe Internal ASTM A106 Gr.B Steam Tracing yes no																
0	Nozzle Pipe Internal ASTM A106 Gr.B Steam Tracing								yes		no						
1		External		ASTM	A106 Gr.B												
2	Bolt & Nuts	Internal			ir.B7 / A194 Gr												
3		External	AS		ir.B7 / A194 Gr	.2H											
4	Gasket				asbestos												
5	Flanges				M A105		-										
6	Platform/Sta	irs/Ladder	ASTM A36														
7_		Handrail ASTM A36/Eqv.															
8	Structures			TM A36													
9	Fittings ASTM A234 Gr.WPB / ASTM A105																
0	0				10.555.00												
21 Postweld Heal Treatment (for process) AS PER CODE  22 Fire Protection Type      Personnel Protect. Type													_				
-	Fire Protection Type  Personnel Protect. Type																
4	Personnel Protect. Type ACCESSORIES								-								
5	Foam Cham	h					ACCI										
6				yes		no	井	Mixer Heating Coil			yes			no	님		
7						no	ዙ	Anchor Bolt Chair			yes	_=		no			
8	Water Spray Ring yes Spiral Stainvay yes				100 100	no	H	Name Plate			yes	British		no			
9	Top Platforn			yes		no	H	Center Platform			yes	-		no			
	Maintenance			yes		no	-	Rolling Ladder			yes	_=		no			
1	Wind Girder			yes		no	믐	Earthing Lug			yes	F177		no	뮈		
2	Intermediate			yes		no	+	Settling Level Mark			yes			no	뮈		
3			Stilling wells,			no	+	Cable Conduit Support			yes	-		no	님		
4	1		,,	0.0 ,00				out out out out			,,,,	1000		110	ᆜ		
5															-		
6																	
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	on Carolina and St.			DATA	SHEET FO	PR	Document No	).:								
					RAGE TANK		120201-N1648-4DS4-00-002									
1	Serv	Service CRUDE OIL / FUEL OIL TANKS						No. Reg'd FOUR								
2	Roof	Туре	E)	KTERNAL	FLOATING F	ROOF	iameter: 26,00	0 mi	m Heigh	20,000	mm					
3						PF	ROCESS DATA									
4	Fluid			CF	RUDE OIL / F	UEL OIL (CLASS I/III)	0.0		0110	Temper	ature	Pressure				
5			Heav	y Crude O	ı	980 kg/m³		NDITH	ONS	°c		mbar(g)				
6	Density   Light Crude Oil   870/880 kg/m²						0	Sh	nell	AMI	В	ATM				
7	7	Heavy Crude Oil <37 °C					Operating	He	eating Device	N.A		N.A.				
8			Heav	y Crude O	1	<37 °C		-	- 11	A/MDM	int.	ATM				
9	Flash	Point	Light	Crude Oil		<0 °C	Design	12u	nell	0(MDM	ext	N.A.				
0			Fuel (	Oil		>60 °C		He		N.A.						
1	Desig	n Spec	ific Gr	avity		1										
2	Desig	n Live	Load			1.2 kpa										
3	Desig	n Rain	fall (De	esign Maxi	mum Intensity	) 7 mm/hr & 70 mm/day										
4	Snov	Load				N.A. km/hr										
5	Desig	gn Wind	Basic	De	sign Gust 16	2 km/hr over 3 secs. Wind des	ign pressure as	per BS	S 6399.							
6	Earth	quake		Ho	rizontal Acc	eleration = 0.15g Vertical Accel	leration = 0.075 v	where	g = 9.81 m/s <sup>2</sup>	; Zone 2A per	UBC.					
7						GEO	METRICAL DATA	A								
8	Geor	netric C	apacit	y:		10,642 m³	Max. Filling I	Height	@ 100%			18.500 m				
9	Nam	ed Capa	acity:			10,000 m <sup>3</sup>	Independent	LSHH	Height			18.029 m				
0	Net V	Vorking	Capa	city:		9,100 m³	Level Gauge Alarm HH (second Alarm) 17.558 m									
1	Filling	Rate				2,000 m³/hr	Level Gauge Alarm H (first Alarm) 17.244 m									
2	Empl	ying Ra	ite			2,000 m³/hr	Low Level, L	Low Level, LL 1.971 m								
3	Filling Rate (For venting) 3,000 m³/hr Design Liquid Level 19.000 m									19.000 m						
4	Empl	ying Ra	r venting)		3,000 m³/hr	Hydrotesting Level 18.500 m										
5	4															
6							NOZZLES									
7		em	No.	Size	Rat. & Fac.	Service	Item	No.	Size	Rat. & Fac.		Service				
8	]"	em	140.	in	#	Service	iterii	140.	in	#		Service				
9	,S1	IA/B	2	24	API 650	Shell Manhole (With hinge & davit)	R1A/B	2	30	API 650	Deck Manho	le (With cover)				
10		S2	1	24	150 WNRF	Filling / Suction Nozzle (With vortex breaker & inlet opening	R2	20	20	API 650	Compartment cover)	nt Manhole (With				
1		S3	1	12	150 WNRF	Low Suction Nozzle (With internal pipe)	R3	1	10	150 WNRF	Stilling well)					
2	1	S4	1	3	150 WNRF	Roof Drain Nozzle (With Intern	1al R4	1	2	150 WNRF	stilling well)					
3	1	S5	1	2	150 WNRF	Water Draw Off Nozzle (With Internal pipe)	R5	1	8	150 WNFF	Cover)	(With stilling well &				
4		S6	1	2		Thermal Relief Nozzle	R6A-C	3	12	150 WNFF	valve)					
5		S7	4	2		Foam Inlet Nozzle	R7A~D	4	8	N.A.	Automatic B					
6	-	S8	1	30	150 WNRF	Mixer Nozzle	R8	1	4	150 WNRF		Switch Nozzle				
7	SS	A~F	6	1	77.77.23.307.2384.34	Sampling Nozzle Temperature Sensor Nozzle (v	R9	1	3	150 WNFF	deck Sump)	Nozzle (With 28"				
8	S10	DA~C	3	2	150 WNRF	valve & blind flange)  Heating Coll Inlet Nozzle (with										
-	8	511	1	3	150 WNRF	valve & blind flange) Heating Coll Outlet Nozzle (with										
9	+					LIVERHILL DON DURET HOTTIE [M]	***		ı	E	l .					
-	+-	512 513	1	3 914 x	150 WNRF API 650	valve & blind flange) Cleanout Fitting	-									

2) Shell design method - "One-foot Method"

			TA SHEET FOR	Document No.:												
$\vdash$	STORAGE TANKS						120201-N1648-4DS4-00-002									
1		Service CRUDE OIL / FUEL OIL TANKS  Roof Type EXTERNAL FLOATING ROOF					Req'd FOUR		Item: T-107 TO T-110							
2	Roof Type						Diameter: 26,000 mm Height: 20,000 mm									
3			MATERIALS	DNSTRUCTION DATA  mm PAINTING / COATING												
5	Shell ASTM A573 Gr.70/ASTM A283 Gr. C					0	External (She	II / Roof /		TING	I	Pair	nt / N.A.	I No		
6					N.		Internal (Shel					No / No / No				
7	Floating Roo	of	ASTM A283	Gr.C		)	Floater (Top / Bottom)					Paint / No				
8	Bottom		ASTM A573 Gr.70/AS1			)	1		#			T GITTET TO				
9	Deck Plate		ASTM			Insulation				yes	П	no	-			
0	Nozzle Pige Internal		ASTM A106 Gr.B				Heat Conserv	ation Typ	oe .		cold	Ħ	hot	П		
1	Nozzle Pipe External		ASTM	A106 Gr.B			Steam Tracin	9			yes		no	100		
2	Bolt & Nuts Internal External		ASTM A193 G	r.B7 / A194 Gr	.2H											
3			ASTM A193 Gr.B7 / A194 Gr.2H													
4	Gasket		Non-													
5	Flanges		AST													
6	Platform/Sta	irs/Ladder	AS													
7	Handrail		ASTM													
8	Structures		AS													
9	Fittings		ASTM A234 Gr	.WPB / ASTM /	A105							0.00				
1			(for process)	AS PER CO	DE		-									
2	Fire Protecti						-									
3	Personnel P	rotect. Type		100	OFFICE OFFICE											
4							CESSORIES						1			
5	Foam Cham Water Draw		yes	8	no	=	Mixer Heating Coil				ye		-	no	-	
7	Water Spray		yes yes		no	늗	Anchor Bolt C	hair			ye ye	_=		no	Barriel	
-	Spiral Stairv		yes		no	누	Name Plate	IIaii			ye		3	no		
1	Top Platforn		yes		no		Center Platfor	m			ye	_	1	no	-	
	Maintenance		yes	П	no		Rolling Ladde				ye			no	-	
1	Wind Girder		yes		no	F		Earthing Lug y						no	_=	
	Intermediate	Stiffener	yes		no	〒	Settling Level	Mark			ye	-		no	-	
3	Internals (Vo	rtex breaker,	Stilling wells, etc yes	N .	no	Ī	Cable Condui	t Support	1		ye	s I		no		
5																
			,													
															1 1 200	
2																
3						,										
4																
5																
3						· acceptance -										

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