No:20170119-1

Taizhou Elite Drilling Pipe Co.,Ltd

Drill Pipe Quality Certificate

Customer	Channel Ark Enterprises.
Ref. No.:	ELT2016-11-22
Quantity	429 Pcs
Total Weight	70.785 T
Total Length	4130.06 M
Standard	API SPEC 5DP-2009 PSL-1

Description	Spec	2 7/8" 10.40	Length range	R2	Steel type of tool joint	SAE4137H1	Size of pin connection	NC31 Φ104.8 OD * Φ50.8 ID	Heat Treatment	Quenching and Tempering
	Steel Grade	S135	Upset type	EU	Hard band	\	Size of box connection	NC31 Φ104.8 OD * Φ50.8 ID		

			(wt%)Chemical Composition											Tensile Test			Impact Test									
																	Akv(J)				percent shear area			Appearance Test	NDT
	Drill pipe Manufacturer	M welt No./Heat Treatment No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Al	V	YS Rt0.7(M pa) 931~1024	TS Rm(M pa) ≥1000	ELA % ≥11	1	2	3	Avg	1	2	3		
						≤0.020	≤0.015										≥38			≥43	%				
Pipe Body	CB	TX16-03146LG/612271	0.29	0.22	0.9	0.007	0.004	0.91	0.43	0.02	0.04	0.015	0.005	993	1073	21	88	90	96	91	85	85	86	Passed	Passed
			0.29	0.22	0.89	0.007	0.004	0.91	0.44	0.02	0.04	0.015	0.005												
		TX16-03146LG/612272	0.29	0.22	0.9	0.007	0.004	0.91	0.43	0.02	0.04	0.015	0.005	1010	1090	20	92	88	86	85	86	85	85		
			0.29	0.22	0.89	0.007	0.004	0.91	0.44	0.02	0.04	0.015	0.005												
		TX16-03146LG/612273	0.29	0.22	0.9	0.007	0.004	0.91	0.43	0.02	0.04	0.015	0.005	1025	1135	20	86	82	88	85	85	85	86		
			0.29	0.22	0.89	0.007	0.004	0.91	0.44	0.02	0.04	0.015	0.005												

			Tensile Test			Impact Test							Hardness Test(HRC) ≤37				Bend Test	Appearance Test	NDT
						Akv(J)				percent shear area			Pipe Body		Tool Joint				
	LOT NO.	NO.	YS Rp0.2(M pa) ≥724	TS Rm(M pa) ≥793	EL A% ≥13	1	2	3	Avg	1	2	3	OD	ID	OD	ID			
						≥14			≥16	%									
Weld Zone	612271	6233	865	943	17	82	90	88	87	85	85	85	28.0	27.5	30.5	31.0	Passed	Passed	Passed
	612272	6234	845	925	17	82	84	84	83	85	85	85	28.5	29.0	31.5	31.3			
	612273	6235	845	928	18	82	86	88	85	85	85	85	27.8	27.9	30.3	31.2			

			(wt%)Chemical Composition								Tensile Test			Impact Test							Hardness Test (HB)285~341			Appearance Test	NDT
														Akv(J)				percent shear area							
	Tool Joint Manufacturer	M welt No./Heat Treatment No.	C	Si	Mn	P ≤ 0.020	S ≤ 0.015	Cr	Mo	Ni	YS Rp0.2(M pa) 827~1034	TS Rm(M pa) ≥965	ELA % ≥13	1	2	3	Avg	1	2	3	OD	MD	ID		
														≥47			≥54	%							
Tool Joint	HY	16710036/16CE00133	0.37	0.24	0.91	0.008	0.001	1.10	0.31	0.02	921	1029	19	107	110	112	109	81	81	81	315	321	319	Passed	Passed
		16710036/16CF00414	0.37	0.24	0.91	0.008	0.001	1.10	0.31	0.02	910	1023	19	111	116	113	113	81	81	81	315	313	311		
		16710036/16CF00802	0.37	0.24	0.91	0.008	0.001	1.10	0.31	0.02	903	1018	19	115	119	115	116	81	81	81	315	317	321		

Remarks	1、Specimen size for Impact Test and testing temperature: pipe body10x7.5x55mm(21℃); weld zone10x10x55mm(21℃); tool joint10x10x55mm(-20℃). Specimen size: for Tensile strength: pipe body (specimen strip) 19.1mm; weld zone Φ12.5mm; tool joint Φ12.5mm.
	2、NDT：Artificial reference indicators are :1/16 in radially drilled hole:N5 notch:MT—A30/100
Conclusion	The products listed in this Quality Certificate are all manufactured according to API SPEC 5DP-2009 and API SPEC 7-2 -2008&Addendum2010 .All products have passed the inspection.

TAIZHOU ELITE DRILLING PIPE CO.,LTD 台州依莱特钻杆有限公司 检验专用章

PREPARED BY: Dengzheng
QUALITY MANAGER

Date:2017.01.19

Taizhou Elite Drilling Pipe Co.,Ltd

UT INSPECTION REPORT

ELT/A2-14-1 A / 0

Specification	2 7/8"	Material	27CrMo
Heat treatment state	Quenching and Tempering	Grade	S135
Instrument Model	SST-168	Reference Standard	N5
Method	Water film method	Couplant	Water
Inspection Location	Pipe Bod	The reference reflector echo	80%
Probe Type	4Z-2.5P18×10K1 3Z-2.5P12×16K1 4Z-5P18×4×2F10 C543		
Standard	ASTM E213	Acceptance standard	API SPEC 5DP

Serial No.	M welt No./Heat Treatment No.	Check total	Passing No.	Unqualified No.
1	TX16-03146LG/612271	181	181	0
2	TX16-03146LG/612272	180	180	0
3	TX16-03146LG/612273	71	71	0
Remarks				

Inspector	Dou Lanping	Qualification grade	II
Authetication	Zhao Suzhen	Qualification grade	II

TAIZHOU ELITE DRILLING PIPE CO.,LTD 台州依维钻杆有限公司 检验专用章

Date:2017.01.19

Taizhou Elite Drilling Pipe Co.,Ltd

Magnetic Particle Examination Peport

ELT/A2-14 A / 0

Specification	2 7/8"	Material	27CrMo
Heat treatment state	Quenching and Tempering	Equipment type	CDG-3000
Particle type	Fluorescent	Sensitivity	A 30/100
Field direction	Longitudinal and transverse	Suspension vehicle	Water
Magnetization method	Wet Continuous Magnetization method	Inspection Location	Weld Zone
Standard	ASTM E709	Acceptance standard	API SPEC 5DP

Result

Serial No.	Heat No.	Check total	Passing No.	Unqualified No.
1	TX16-03146LG/612271	361	361	0
2	TX16-03146LG/612272	360	360	0
3	TX16-03146LG/612273	141	141	0
Remarks				

Inspector	Liukaping	Qualification grade	II
Authetication	Luo Yi Lu	Qualification grade	II

TAIZHOU ELITE DRILLING PIPE CO., LTD 台州优泰特钻杆有限公司 检验专用章

Date:2017.01.19