



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شماره پیمان:

MECHANICAL DATA SHEETS FOR FIRE WATER JOCKEY PUMPS

053-073-9184

نسخه	سریال	نوع مدرک	رشته	تهیلات	صادرکننده	بسته کاری	پروژه
D02	0028	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: 1 از 9

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR FIRE WATER JOCKEY PUMPS (P-2302 A/B)

نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D02	JUL. 2022	IFA	H. Adineh	M. Fakharian	M. Mehrshad	
D01	APR. 2022	IFA	H. Adineh	M. Fakharian	M. Mehrshad	
D00	FEB. 2022	IFC	H. Adineh	M. Fakharian	M. Mehrshad	

Class: 2 CLIENT Doc. Number: F0Z-708859

status:

IDC: Inter-Discipline Check
IFC: Issued For Comment
IFA: Issued For Approval
AFD: Approved For Design
AFC: Approved For Construction
AFP: Approved For Purchase
AFQ: Approved For Quotation
IFI: Issued For Information
AB-R: As-Built for CLIENT Review
AB-A: As-Built -Approved



NISOC

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D02	0028	DT	ME	120	PEDCO	GCS	BK



شماره صفحه: 2 از 9

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04
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نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



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MECHANICAL DATA SHEETS FOR FIRE WATER JOCKEY PUMPS



نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D02	0028	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: 3 از 9

GENERAL NOTES

D02

- Vendor shall fill in the blanks and return the completed data sheet along with Motor data sheet, "DOC NO.: BK-GCS-PEDCO-120-EL-DT-0008 & 0009 with his proposal.
- Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.
- Vendor is requested to confirm the material, or propose appropriate alternative.
- For Instrumentation, Project specification 'Specification For Instrument and Control of package Unit System (PU)' Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0004, shall be followed.
- Mechanical seal data sheet shall fill in by vendor as per API 682, 4th edition.
- NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1.
- The Tie-in flanges shall conform to ASME B-16.1.
- Pump drain shall be terminated at skid edge with flange connection and valved.
- Supplier to indicate which minimum flow pumps can achieve.
- Nozzle loads shall be 2 times the loads shown in API 610 11th Edition.
- Electrical motor shall be rated for the end of curve.
- The Suction line size is 2 " and discharge line is 2 ".
- Pump Manufacturer shall supply all instrumentation for mechanical seals as per API 682 4th Edition and project requirements.
- Based on project instrumentation specification, these equipments are classified as Type C. Electro pump shall include a dedicated controller/ starter panel installed on pump skid as per NFPA 20 (2019). Pressure switch and pressure sensing line and its accessories are in vendor scope of work and supply.
- Welding repair procedures shall be submitted for approval.
- If pump is self venting there is no need for vent .
- For information on site conditions refer to Process Basis of Design document; Doc.No: BK-GNRAL-PEDCO-000-PR-DB-0001., any required protection for pumps in this regard shall be considered by pump manufacturer.
- Ultrasonic Test shall be performed for forged shaft.
- Couplings shall be dry, flexible and spacer type.
- For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010.
- A local control panel shall be considered by vendor to be located next to the pumps as per "Specification For Fire Water Network", Doc.No.BK-GCS-PEDCO-120-SA-PI-0001. Pump LCP shall be designed to manage all required monitoring and control signals , as minimum in accordance with "P&ID For Fire Water Network", Doc.No.BK-GCS-PEDCO-120-SA-PI-0001.
- Pressure sensing lines are in the vendor's scope of supply.

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شماره پیمان: 053-073-9184	MECHANICAL DATA SHEETS FOR FIRE WATER JOCKEY PUMPS <table><tr><td>نسخه</td><td>سریال</td><td>نوع مدرک</td><td>رشته</td><td>تمهيلات</td><td>صادرکننده</td><td>بسته کاری</td><td>پروژه</td></tr><tr><td>D02</td><td>0028</td><td>DT</td><td>ME</td><td>120</td><td>PEDCO</td><td>GCS</td><td>BK</td></tr></table>	نسخه	سریال	نوع مدرک	رشته	تمهيلات	صادرکننده	بسته کاری	پروژه	D02	0028	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: 5 از 9
نسخه	سریال	نوع مدرک	رشته	تمهيلات	صادرکننده	بسته کاری	پروژه											
D02	0028	DT	ME	120	PEDCO	GCS	BK											




CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2302 A/B (Sheet 2 of 6)

APPLICABLE TO: PROPOSAL	APPLICABLE NTL/INTNTL STANDARD: NFPA20 (2019) & IPS-M-PM-125	
FOR NISOC	UNIT	
SITE BINAK Gas Compressor Station	SERVICE Fire Water Jockey Pumps	
NO. REQ 2 (1+1)	TYPE OH2 (V.T.A)	No. STAGES 1
PUMP SIZE	MODEL V.T.A.	SERIAL NO. V.T.A.
MANUFACTURER		

LIQUID CHARACTERISTICS					
	Units	Maximum	Minimum	Note	SERVICE : INTERMITTENT
LIQUID TYPE OR NAME :		Water		Max & min values refer only to the property listed	• IF INTERMITTENT NO. OF STARTS : PUMPS OPERATE IN: CORROSION DUE TO : (6.12.1.9) EROSION DUE TO : (6.12.1.9) H2S CONCENTRATION (ppm) : (6.12.1.12) CHLORIDE CONCENTRATION (ppm) : PARTICULATE SIZE (DIA IN MICRONS) PARTICULATE CONCENTRATION (PPM)
VAPOR PRESSURE :	bara	0.0087	0.1219		
DENSITY :	kg/m³	997			
SPECIFIC HEAT :	kJ/kgC	4.186			
VISCOSITY :	cP	1			
OPERATING CONDITIONS (6.1.2)					
	Units	Maximum	Rated	Normal	Min
NPSH _A Datum:		C.L. Impeller			
PUMPING TEMPERATURE :	°C	50			5
FLOW :	m³/hr		15.0		
DISCHARGE PRESSURE : (6.3.2)	barg		10.8		
SUCTION PRESSURE :	barg	0.95	0.73		0.10
DIFFERENTIAL PRESSURE :	bar		9.9		
DIFFERENTIAL HEAD :	m		101.2		
NPSH _A :	m		6.9		
HYDRAULIC POWER:	KW		4.50		

SITE AND UTILITY DATA							
LOCATION: OUTDOOR UNHEATED UNDER ROOF		COOLING WATER :					
MOUNTED AT : ● TROPICALISATION REQ'D		TEMP <table><tr><td>RETURN</td><td>DESIGN</td></tr><tr><td></td><td></td></tr></table>		RETURN	DESIGN		
RETURN	DESIGN						
ELECTRIC AREA CLASSIFICATION: (6.1.22) ZONE SAFE		PRESS. <table><tr><td></td><td></td></tr></table>					
GROUP TEMP CLASS		SOURCE <table><tr><td></td><td></td></tr></table>					
SITE DATA :		COOLING WATER CHLORIDE CONCENTRATION: _____ kg MIN _____ kg					
ELEVATION (MSL) : 12.5 m		INSTRUMENT AIR : _____ kg MIN _____ kg					
RANGE OF DESIGN TEMPS: MIN / MAX 5 85 °C		STEAM <table><tr><td>DRIVERS</td><td>HEATING</td></tr><tr><td></td><td></td></tr></table>		DRIVERS	HEATING		
DRIVERS	HEATING						
RELATIVE HUMIDITY: MIN / MAX 0 100 % (@ 25.6 °C)		TEMP <table><tr><td></td><td></td></tr></table>					
UNUSUAL CONDITIONS: NA		PRESS. <table><tr><td></td><td></td></tr></table>					
UTILITY CONDITIONS :							
ELECTRICITY : DRIVERS HEATING CONTROL SHUTDOWN							
VOLTAGE 400							
PHASE 3							
HERTZ 50							

PERFORMANCE				DRIVER (7.1.5) (NOTES 11,20)		D02	
PROPOSAL CURVE NO. _____ RPM _____				Driver Type INDUCTION MOTOR			
As Tested Curve No. _____				GEAR NO			
IMPELLER DIA: RATED _____ MAX. _____ MIN. _____ mm				VARIABLE SPEED REQUIRED NO			
RATED POWER _____ Kw EFFICIENCY _____ (%)				SOURCE OF VARIABLE SPEED _____			
RATED CURVE BEP FLOW (at rated impeller dia) _____ m³/hr				OTHER _____			
MIN FLOW : _____ kJ/Nm³ _____ m³/hr				MANUFACTURER _____			
PREFERRED OPERATING REGION (6.1.11) _____ to _____ m³/hr				NAMEPLATE POWER _____ @ Site Condition _____ KW			
ALLOWABLE OPERATING REGION _____ to _____ m³/hr				Nominal RPM _____			
MAX HEAD @ RATED IMPELLER _____ m				RATED LOAD RPM _____			
MAX POWER @ RATED IMPELLER _____ kW				FRAME OR MODEL _____			
NPSH3 AT RATED FLOW : _____ m				ORIENTATION HORIZONTAL			
CL PUMP TO U/S BASEPLATE _____ m				LUBE _____			
NPSH MARGIN AT RATED FLOW : _____ m				BEARING TYPE: _____			
SPECIFIC SPEED (6.1.9) _____				RADIAL _____ / _____			
SUCTION SPECIFIC SPEED LIMIT _____				THRUST _____ / _____			
SUCTION SPECIFIC SPEED _____				STARTING METHOD D.O.L /Open delivery valve			
MAX. ALLOW. SOUND PRESS. LEVEL REQD (6.1.14) 85 (dBA) @ 1 m				SEE DRIVER DATA SHEET Note 1			
EST MAX SOUND PRESS. LEVEL _____ (dBA)				Max Voltage Variation ±5%			
MAX. SOUND POWER LEVEL REQD (6.1.14) _____				Max Frequency Variation ±2%			
EST MAX SOUND POWER LEVEL _____				Max Voltage and Frequency Variation together ±5%			

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 شرکت توسعه و پیمانکاری HIRGAN ENERGY 	
شماره پیمان: 053-073-9184	MECHANICAL DATA SHEETS FOR FIRE WATER JOCKEY PUMPS								شماره صفحه: 8 از 9
	نسخه	سریال	نوع مدرک	رشته	تمهيلات	صادر کننده	بسته کاری	پروژه	
	D02	0028	DT	ME	120	PEDCO	GCS	BK	

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2302 A/B (Sheet 5 of 6)

SURFACE PREPARATION AND PAINT						TEST		
MANUFACTURER'S STANDARD						SHOP INSPECTION (8.1.1)		Yes
OTHER (SEE BELOW)						PERFORMANCE CURVE		
SPECIFICATION NO. BK-GNRL-PEDCO-000-PI-SP-0006, "Specification for Painting"						& DATA APPROVAL PRIOR TO SHIPMENT.		YES
PUMP:						TEST WITH SUBSTITUTE SEAL (8.3.3.2.b)		
PUMP SURFACE PREPARATION SA 2 1/2						MATERIAL CERTIFICATION REQUIRED		CASING YES
PRIMER AS PER PROJECT PAINTING SPEC.						SHAFT YES		(6.12.1.8) IMPELLER YES
FINISH COAT AS PER PROJECT PAINTING SPEC.						OTHER YES		Casing and impeller Wear ring
BASEPLATE:						CASTING REPAIR WELD PROCEDURE APPR REQD		YES
BASEPLATE SURFACE PREPARATION SA 2 1/2						INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d)		
PRIMER: AS PER PROJECT PAINTING SPEC.						LIQUID PENETRANT YES		MAG PARTICLE
FINISH COAT AS PER PROJECT PAINTING SPEC.						ULTRASONIC		RADIOGRAPHY YES
DETAILS OF LIFTING DEVICES						INSPECTION REQUIRED FOR CASTINGS		
SHIPMENT: (8.4.1) EXPORT						LIQUID PENETRANT YES		MAG PARTICLE YES
EXPORT BOXING REQUIRED YES						ULTRASONIC (NOTE 18) YES		RADIOGRAPHY
OUTDOOR STORAGE MORE THAN 6 MONTHS YES						HARDNESS TEST REQUIRED (8.2.2.7)		
SPARE ROTOR ASSEMBLY PACKAGED FOR:						ADDNL SUBSURFACE EXAMINATION (6.12.1.5) (8.2.1.3)		
ROTOR STORAGE ORIENTATION (9.2.8.2)								FOR
SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3)								METHOD
N ₂ PURGE (9.2.8.4)								
SPARE PARTS						PMI TESTING REQUIRED (8.2.2.8)		
START-UP YES						COMPONENTS TO BE TESTED		
NORMAL MAINTENANCE YES						RESIDUAL UNBALANCE TEST (J.4.1.2)		
						NOTIFICATION OF SUCCESSFUL SHOP		YES
						PERFORMANCE TEST (8.1.1.c) (8.3.3.5)		YES
ITEM No						BASEPLATE TEST (7.3.21)		
PUMP						HYDROSTATIC		WIT
DRIVER						HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.2)		
GEAR						PERFORMANCE TEST		WIT
BASE						TEST IN COMPLIANCE WITH (8.3.3.2)		NFPA 20
TOTAL						TEST DATA POINTS TO (8.3.3.3)		NFPA 20
						TEST TOLERANCES TO (8.3.3.4)		TABLE 16
						NPSH (8.3.4.3.1) (8.3.4.3.4) (NOTE 6)		WIT
						NPSH-1ST STG ONLY (8.3.4.3.2)		
						NPSH TESTING TO HI 1.6 OR ISO 9906 (8.3.4.3.3)		
						TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.3.6)		
						RETEST ON SEAL LEAKAGE (8.3.3.2.d)		OBSERVE
						RETEST REQUIRED AFTER FINAL HEAD ADJ (8.3.3.7.b)		
						COMPLETE UNIT TEST (8.3.4.4.1)		WIT
						SOUND LEVEL TEST (8.3.4.5)		WIT
						CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6)		OBSERVE
						LOCATION OF CLEANLINESS INSPECTION		
						NOZZLE LOAD TEST		
						CHECK FOR CO-PLANAR MOUNTING PAD SURFACES		
						MECHANICAL RUN TEST UNTIL OIL TEMP STABLE		
						4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.1)		WIT
						4 HR. MECH RUN TEST (8.3.4.2.2)		
						BRG HSG RESONANCE TEST (8.3.4.7)		
						STRUCTURAL RESONANCE TEST (9.3.9.2)		
						REMOVE / INSPECT HYDRODYNAMIC BEARINGS AFTER TEST (9.2.7.5)		
						AUXILIARY EQUIPMENT TEST (8.3.4.6)		
						EQUIPMENT TO BE INCLUDED IN AUXILIARY TESTS		
						LOCATION OF AUXILIARY EQUIPMENT TEST		
						IMPACT TEST		PER EN 13445
								PER ASME SECTION VIII
						REMOVE CASING AFTER TEST		

OTHER PURCHASER REQUIREMENTS						
COORDINATION MEETING REQUIRED (10.1.3)						YES
MAXIMUM DISCHARGE PRESSURE TO INCLUDE						
OPERATION TO TRIP SPEED						
MAX DIA. IMPELLERS AND/OR NO OF STAGES						YES
CONNECTION DESIGN APPROVAL (9.2.1.4)						YES
TORSIONAL ANALYSIS / REPORT (6.9.2.10)						NO
PROGRESS REPORTS						YES
OUTLINE OF PROC FOR OPTIONAL TESTS (10.2.5)						
ADDITIONAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1)						
						YES
LATERAL ANALYSIS REQUIRED (9.1.3.4) (9.2.4.1.3)						NO
MODAL ANALYSIS REQUIRED (9.3.9.2)						
DYNAMIC BALANCE ROTOR (6.9.4.4)						YES
INSTALLATION LIST IN PROPOSAL (10.2.3.1)						YES
VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3)						NO
TRANSIENT TORSIONAL RESPONSE						
BEARING LIFE CALCULATIONS REQUIRED (6.10.1.6)						
IGNITION HAZARD ASSMT TO EN 13463-1 (7.2.13.e)						
CASING RETIREMENT THICKNESS DRAWING (10.3.2.3)						
FLANGES RQD IN PLACE OF SKT WELD UNIONS (7.5.2.8)						
INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3)						
CONNECTION BOLTING (7.5.1.7)						
CADMIUM PLATED BOLTS PROHIBITED						
VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c)						
VENDOR SUBMIT TEST PROCEDURES (8.3.1.1)						YES
SUBMIT INSPECTION CHECK LIST (8.1.5) NOTE 2						YES



سطح الارض

حادثہ ردیف تہ اکہم گاز در ایستگاه جمع آوری سینک



شماره پیمان:

053-073-9184

MECHANICAL DATA SHEETS FOR FIRE WATER JOCKEY PUMPS

مستند کاری

تسهيلات

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CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2302 A/B (Sheet 6 of 6)

PRESSURE VESSEL DESIGN CODE REFERENCES

THESE REFERENCES MUST BE LISTED BY THE MANUFACTURER

CASTING FACTORS USED IN DESIGN (TABLE 3)

SOURCE OF MATERIAL PROPERTIES

WELDING AND REPAIRS (NOTE 15)

THESE REFERENCES MUST BE LISTED BY THE PURCHASER. (DEFAULT TO TABLE 11 IF NO PURCHASER PREFERENCE IS STATED)

ALTERNATE WELDING CODES AND STANDARDS

WELDING REQUIREMENT (APPLICABLE CODE OR STANDARD)

WELDER/OPERATOR QUALIFICATION

WELDING PROCEDURE QUALIFICATION

NON-PRESSURE RETAINING STRUCTURAL WELDING SUCH AS BASEPLATES OR SUPPORTS

MAGNETIC PARTICLE OR LIQUID PENETRANT EXAMINATION OF PLATE EDGES

POSTWELD HEAT TREATMENT

POSTWELD HEAT TREATMENT OF CASING FABRICATION WELDS

DEFAULT PER TABLE 13

DEFAULT PER TABLE 13

DEFAULT PER TABLE 1

DEFAULT PER TABLE 13

DEFAULT PER TABLE 13

DEFAULT PER TABLE 13

DEFAULT PER TABLE 13

MATERIAL INSPECTION

THESE REFERENCES MUST BE LISTED BY THE PURCHASER

ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15) (8.2.2.5)

DEFAULT TO TABLE 14

YES

TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS
RADIOGRAPHY			
ULTRASONIC INSPECTION			
MAGNETIC PARTICLE INSPECTION			
LIQUID PENETRANT INSPECTION			
VISUAL INSPECTION (all surfaces)			

REMARKS :

[illegible]