



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شماره پیمان:

053 - 073 - 9184

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D04	0022	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: 1 از 10

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (P-2202 A/B)

نگهداشت و افزایش تولید میدان نفتی بینک



D04	SEP. 2022	AFC	H. Adineh	M.Fakharian	M. Mehrshad	
D03	APR. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D02	MAR. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D01	JAN. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D00	NOV.2021	IFC	H. Adineh	M.Fakharian	M. Mehrshad	
REV.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2

CLIENT Doc. Number: F0Z-708853



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 شماره پیمان: 053 - 073 - 9184	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							
	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)							شماره صفحه: 2 از 10
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدارک	سریال	نسخه
	BK	GCS	PEDCO	120	ME	DT	0022	D04

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04	page	D00	D01	D02	D03	D04
1	x	x	x	x	x	65					
2	x	x	x	x	x	66					
3	x	x		x	x	67					
4	x					68					
5	x	x	x	x	x	69					
6	x	x	x	x	x	70					
7	x					71					
8	x	x				72					
9	x	x				73					
10					x	74					
11						75					
12						76					
13						77					
14						78					
15						79					
16						80					
17						81					
18						82					
19						83					
20						84					
21						85					
22						86					
23						87					
24						88					
25						89					
26						90					
27						91					
28						92					
29						93					
30						94					
31						95					
32						96					
33						97					
34						98					
35						99					
36						100					
37						101					
38						102					
39						103					
40						104					
41						105					
42						106					
43						107					
44						108					
45						109					
46						110					
47						111					
48						112					
49						113					
50						114					
51						115					
52						116					
53						117					
54						118					
55						119					
56						120					
57						121					
58						122					
59						123					
60						124					
61						125					
62						126					
63						127					
64						128					

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک																	
شماره پیمان: 053 - 073 - 9184	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)	شماره صفحه: 3 از 10																
	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>پروژه</th> <th>بسته کاری</th> <th>صادرکننده</th> <th>تسهیلات</th> <th>رشته</th> <th>نوع مدرک</th> <th>سریال</th> <th>نسخه</th> </tr> <tr> <td>BK</td> <td>GCS</td> <td>PEDCO</td> <td>120</td> <td>ME</td> <td>DT</td> <td>0022</td> <td>D04</td> </tr> </table>	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	GCS	PEDCO	120	ME	DT	0022	D04	
پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه											
BK	GCS	PEDCO	120	ME	DT	0022	D04											

GENERAL NOTES	
D04	
1	Pumping fluid might be hydrocarbon, water or a mixture of both and also is corrosive / erosive / hazardous agents / flammable and its contamination is allowed.
2	Density at Normal Temperature is 980 kg/m3.
3	Viscosity at Normal Temperature is 0.46 cP.
4	Mechanical seal shall be as per API 682, 4th edition Data Sheet.
5	PMI Testing For Alloy Steel Shall be Done.
6	If NPSH margine be less than 1m, NPSH Test Shall be Done.
7	Pump drain shall be terminated at skid edge with flange connection and valved. Valves in the piping system shall be Welded Flanged type.
8	Min./ Max. Design temperature (°C): 5 / 85
9	API Seal Plan 31-53B shall be considred.(vendor to confirm)
10	Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.
11	The motors, pump mechanical seal, pump coupling and pump accessories shall be supplied from the project's approved vendor list (A.V.L.). Chinese & Indian vendors are not acceptable for Mechanical seal , Electro motor and coupling subvendors.
12	Vendor is requested to confirm the material, or propose appropriate alternative.
13	The Tie-in flanges shall conform to ASME B-16.5
14	Ultrasonic Test shall be performed for forged shaft.
15	For pumps with vacuum suction pressure the minimum NPSH margin shall be 2 m. for other pumps the minimum NPSH margin shall be 1 m.
16	Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.; BK-GCS-PEDCO-120-ME-MR-0009'
17	Bearing temperature shall be measured during mechanical run test.
18	For electrical motor descriptions, refer to 'Specification For LV induction Motors' Doc. No.BK-GNRAL-PEDCO-000-EL-SP-0010. and Specification for MV induction motors' Doc.No. BK-GNRAL-PEDCO-000-EL-SP-0017.
19	Electrical motor shall be rated for the end of curve.
20	For site conditions refer to Process Basis of Design Document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001.
21	Suction & Discharge line Size is 2".
22	Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.
23	Allowable external forces and moments on nozzle equal to two times of table 5 of API 610-11th edition.
24	The material shall be in compliance with NACE MR0175/ISO15156 and Specification For Material Requirements in Sour service Document No. BK-GNRAL-PEDCO-000-PI-SP-0008
25	Range of ambient design temperature: Min. ambient design temperature: 5 °C , Max. ambient design temperature: 50 °C
26	Coupling shall be flexible with spacer.
27	Max allowable pressure at shut-off at rated impeller: 16.8 barg
28	Barometric pressure in Binak new GCS; winter: 14.37 psia summer: 13.26 psia



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

053 - 073 - 9184

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0022	D04

شماره صفحه: 10 از 15

طرح نگهداشت و افزایش تولید 27 مخزن

APPLICABLE TO: PROPOSAL	APPLICABLE NTL/INTNTL STANDARD: API 610 - 11th Edition, IPS-G-PM-105
FOR: NISOC	UNIT: _____
SITE: BINAK Gas Compressor Station	SE: _____
NO. REQ: 2(1+1)	TY: _____
PUMP SIZE: _____	M: _____
MANUFACTURER: _____	No. STAGES: _____
	SERIAL NO: _____

please specify the Density and viscosity values in max and min
Hirgan Reply: Noted

LIQUID TYPE OR NAME	Units	Maximum	Minimum	Note	INTERMITTENT
Hydrocarbon Drain(HC)(NOTE 1)				Max & min values refer only to the property listed	
VAPOR PRESSURE	bara	1.20			
DENSITY (NOTE 2)	kg/m ³				
SPECIFIC HEAT	kJ/kgC				
VISCOSITY (NOTE 3)	cP				

OPERATING CONDITIONS (6.1.2)				
D04	Units	Maximum	Rated	Min
NPSH _A Datum: _____ C.L. Impeller				
PUMPING TEMPERATURE :	°C			5 (worse case)
FLOW :	m ³ /hr		3.30	3.0
DISCHARGE PRESSURE:	barg		7.0	
SUCTION PRESSURE :	barg	0.800		0.0
DIFFERENTIAL PRESSURE :	bar		7.0	
DIFFERENTIAL HEAD :	m		72.80	
NPSH _A :	m		0.3	
HYDRAULIC POWER:	KW		0.60	

barrel and pump shall have the same MAWP and to be hydrotest in same value with pump
Hirgan Reply: Noted, will be added to notes

SITE AND UTILITY DATA

<p>LOCATION: OUTDOOR UNHEATED</p> <p>MOUNTED AT: _____ TROPICALISATION REQ'D _____</p> <p>ELECTRIC AREA CLASSIFICATION: (6.1.22) ZONE 1</p> <p>GROUP II B TEMP CLASS T3</p> <p>SITE DATA :</p> <p>ELEVATION (MSL) : 12.5 m</p> <p>RANGE OF DESIGN TEMPS:MIN / MAX 5 / 85 °C</p> <p>RELATIVE HUMIDITY: MIN / MAX 0 / 100 % (@ 25.6 °C)</p> <p>UNUSUAL CONDITIONS: _____</p> <p>UTILITY CONDITIONS :</p> <p>ELECTRICITY : DRIVERS HEATING CONTROL SHUTDOWN</p> <p>VOLTAGE 400</p> <p>PHASE 3</p> <p>HERTZ 50</p>	<p>COOLING WATER :</p> <table border="1"> <tr> <td></td> <td>RETURN</td> <td>DESIGN</td> </tr> <tr> <td>TEMP</td> <td></td> <td></td> </tr> <tr> <td>PRESS.</td> <td></td> <td></td> </tr> <tr> <td>SOURCE</td> <td></td> <td></td> </tr> </table> <p>COOLING WATER CHLORIDE CONCENTRATION: _____</p> <p>INSTRUMENT AIR : _____ kg MIN _____ kg</p> <p>STEAM</p> <table border="1"> <tr> <td></td> <td>DRIVERS</td> <td>HEATING</td> </tr> <tr> <td>TEMP</td> <td></td> <td></td> </tr> <tr> <td>PRESS.</td> <td></td> <td></td> </tr> </table>		RETURN	DESIGN	TEMP			PRESS.			SOURCE				DRIVERS	HEATING	TEMP			PRESS.		
	RETURN	DESIGN																				
TEMP																						
PRESS.																						
SOURCE																						
	DRIVERS	HEATING																				
TEMP																						
PRESS.																						

NSS limitation shall be considered 213
Hirgan Reply: No limitation has been specified in project specification and related standards. NSS limitation will be checked and finalized at vendor's offer stage.

Insulation/ temp rise to be mentioned : F/B
Hirgan Reply: Noted

PERFORMANCE	DRIVER (7.1.5) (NOTE 22)
PROPOSAL CURVE NO. _____ RPM	Driver Type MOTOR
As Tested Curve No. _____	GEAR NO
IMPELLER DIA.: RATED _____ MAX. _____ mm	VARIABLE SPEED REQUIRED NO
RATED POWER _____ Kw	SOURCE OF VARIABLE SPEED _____
RATED CURVE BEP FLOW (at rated impeller) _____ m ³ /hr	OTHER _____
MIN. FLOW: _____ kJ/Nm ³	MANUFACTURER _____
PREFERRED OPERATING REGION (6.1.11) _____ m ³ /hr	NAMEPLATE POWER AND POWER FACTOR _____
ALLOWABLE OPERATING REGION _____ m ³ /hr	Nominal RPM _____
MAX HEAD @ RATED IMPELLER _____ m	RATED LOAD RPM _____
MAX POWER @ RATED IMPELLER _____ kW	FRAME OR MODEL _____
NPSH ₃ AT RATED FLOW : _____ m	ORIENTATION _____
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 OPEN DISCHARGE VALVE
MAX. ALLOW. SOUND PRESS. LEVEL REQD (6.1.14) 85.00 (dBA)	SEE DRIVER DATA SHEET _____
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

تگداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

053 - 073 - 9184

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0022	D04

شماره صفحه: 10 از 10

طرح تگداشت و افزایش تولید 27 مخزن

CONSTRUCTION

API PUMP TYPE: VS6 [Based on API 610 de
SEE ALSO PAGE 6
NOZZLE CONNECTIONS: (6.5.5)

Size	Facing	Rating
Note 21	RF	300
Note 21	RF	300

SUCTION
DISCHARGE

PRESSURE CASING AUX. CONNECTIONS: (6.4.3.2)

No.	Size	Type	Facing
			RF
			RF

BAL./LEAK OFF
DRAIN
VENT
PRESSURE GAGE
TEMP GAGE
WARM-UP LINE

Drain Valve Supplied By SUPPLIER
DRAINS MANIFOLDED BY SUPPLIER
VENT Valve Supplied By SUPPLIER
VENTS MANIFOLDED
THREAD. CONS FOR PIPELINE SERVICE & < 50°C (6.4.3.2)
SPECIAL FITTINGS FOR TRANSITIONING (6.4.3.3)
CYLINDRICAL THREADS REQUIRED (6.4.3.8)
GUSSET SUPPORT REQUIRED _____ If Needed
MACHINED AND STUDDED CONNECTIONS (6.4.3.12)
VS 6 DRAIN
DRAIN TO SKID EDGE YES

it shall be mentioned a drain line to be considered in barrel and to be pipe up to mounted skid
Hirgan Reply: Noted, will be added to notes

CASING MOUNTING: CENTERLINE
CASING TYPE: (6.3.10)
OH3 BACKPULLOUT LIFTING DEVICE REQD. (9.1.2.6)

CASE PRESSURE RATING:
D04 MAWP: (6.3.5) By Vendor barg @ °C
HYDROTEST: 1.5*MAWP barg @ °C

HYDROTEST OH PUMP AS ASSEMBLY
SUCTION PRESS. REGIONS DESIGNED FOR MAWP YES
ROTATION: (VIEWED FROM COUPLING END)
• IMPELLERS INDIVIDUALLY SECURED: YES
• BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION :
• PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS

ROTOR:
SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3)
First Critical Speed Wet (Multi stage pumps only)
COMPONENT BALANCE TO ISO
SHRINK FIT -LIMITED MOVEMENT
COUPLING: (7.2.3) Non-Sparking
MANUFACTURER
MODEL
RATING (POWER/100 RPM)
SPACER LENGTH
SERVICE FACTOR
RIGID (Note 26)
COUPLING WITH HYDRAULIC FIT (7.2.10)
COUPLING BALANCED TO ISO 1940-1 G6.3 (7.2.3)
COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.11)
COUPLING IN COMPLIANCE WITH (7.2.4)
COUPLING GUARD STANDARD PER (7.2.13.a)
Window on Coupling Guard

Non-Sparking
Hirgan Reply: Noted, will be added to Note 26

coupling to be balance at least G2.5
Hirgan Reply: No balance grade has been specified in project specification. as per clause 7.2.3 of API 610 standard G6.3 is sufficient for coupling balance.

MATERIAL (6.12.1.1) (VTA)
APPENDIX H CLASS S-6
MIN DESIGN METAL TEMP (6.12.4.1) 5 °C
REDUCED-HARDNESS MATERIALS REQD (6.12.1.12.1) YES (Note 24)
Applicable Hardness Standard (6.12.1.12.3)
BARREL :
CASE :
DIFFUSERS
IMPELLER :
IMPELLER WEAR RING :
CASE WEAR RING :
SHAFT:
Bowl (if VS-type)
Inspection Class Level 2

to be marked
Hirgan Reply: Noted

BASEPLATE
API BASEPLATE NUMBER :
BASEPLATE CONSTRUCTION (7.3.14)
BASEPLATE DRAINAGE (7.3.1) Entire Baseplate Drain Pan
CONSTRUCTION : (7.3.13)
LEVELING SCREWS : REQUIRED
LONGITUDINAL DRIVER POSITIONING SCREWS : REQUIRED
SUPPLIED WITH : GROUT AND VENT HOLES DRAIN CONNECTION

BEARINGS AND LUBRICATION (6.10.1.1)
BEARING (TYPE / NUMBER): (6.11.4)
RADIAL /
THRUST /
LUBRICATION : (6.10.2.2) (6.11.3) (9.2.6) RING OIL
PRESSURE LUBE SYSTEM TO ISO 10438- (9.2.6.5)
ISO 10438 DATA SHEETS ATTACHED
Pressurized Lube Oil System mtd on pump baseplate
Location of Pressurized Lube Oil System mounted on baseplate :
INTERCONNECTING PIPING PROVIDED BY Supplier
OIL VISC. ISO GRADE VG
CONSTANT LEVEL OILER : REQUIRED

flood
Hirgan Reply: Noted

OTHER
REMARKS :



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

شماره پیمان:

053 - 073 - 9184

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0022	D04

شماره صفحه: 7 از 10

طرح نگهداشت و افزایش تولید 27 مخزن

INSTRUMENTATION	
SEE ATTACHED API-670 DATA SHEET	_____
ACCELEROMETER (7.4.2.1)	_____
Number of Accelerometers	_____
Mounting Location of Accelerometers	_____
PROVISION FOR MTG ONLY (6.10.2.10)	_____
Number of Accelerometers	_____
Mounting Location of Accelerometers	_____
FLAT SURFACE REQUIRED (6.10.2.11)	YES
Number of Accelerometers	_____
Mounting Location of Accelerometers	_____
VIBRATION PROBES (7.4.2.2)	_____
PROVISIONS FOR VIB. PROBES	_____
NUMBER PER RADIAL BEARING	_____
NUMBER PER AXIAL BEARING	_____
MONITORS AND CABLES SUPPLIED BY (7.4.2.4)	_____
TEMPERATURE (7.4.2.3)	_____
PROVISIONS FOR TEMP PROBES	_____
RADIAL BEARING TEMP.	_____
NUMBER PER RADIAL BEARING	_____
THRUST BEARING TEMP.	_____
NUMBER PER THRUST BEARING ACTIVE SIDE	_____
NUMBER PER THRUST BEARING INACTIVE SIDE	_____
TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.6)	_____
PRESSURE GAUGE TYPE	_____
Remarks	_____

SEAL SUPPORT SYSTEM MOUNTING	
SEAL SUPPORT SYSTEM MOUNTED ON PUMP BASEPLATE	_____
(7.5.1.4)	_____
IDENTIFY LOCATION ON BASEPLATE	_____
INTERCONNECTING PIPING BY	Supplier
MECHANICAL SEAL (6.8.1) (VTS)	
SEE ATTACHED ISO 21049/API 682 DATA SHEET	_____ (NOTE 4)
ADDITIONAL CENTRAL FLUSH PORT	(6.8.9) _____
HEATING JACKET REQ'D.	(6.8.11) _____
FLUSH PLAN	31-53B (NOTE 9.1)
HEATING AND COOLING (6.1.17) (VTS)	
COOLING REQ'D	_____
COOLING WATER PIPING PLAN	_____
COOLING WATER PIPING	_____
	FITTINGS
COOLING WATER PIPING MATERIALS	_____
COOLING WATER REQUIREMENTS:	_____
TOTAL COOLING WATER	_____
HEATING MEDIUM	_____
OTHER	_____
HEATING PIPING	_____
PIPING & APPURTENANCES	
MANIFOLD PIPING FOR PURCHASER CONNECTION (7.5.1.6)	_____
VENT	_____
DRAIN	_____
VALVES	_____
COOLING WATER	YES
TAG ALL ORIFICES (7.5.2.4)	_____
SOCKET WELD CONN ON SEAL GLAND (7.5.2.8)	_____

yes
Hirgan Reply: Noted



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)

شماره صفحه: 10 از 18

053 - 073 - 9184

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D04	0022	DT	ME	120	PEDCO	GCS	BK

طرح نگهداشت و افزایش تولید 27 مخزن

SURFACE PREPARATION AND PAINT

MANUFACTURER'S STANDARD	
OTHER (SEE BELOW)	YES
SPECIFICATION NO.	As per Project Specification.
"Specification for Painting; BK-GNRL-PEDCO-000-PI-SP-0006"	
PUMP:	
PUMP SURFACE PREPARATION	BY VENDOR
PRIMER	BY VENDOR
FINISH COAT	BY VENDOR
BASEPLATE:	
BASEPLATE SURFACE PREPARATION	BY VENDOR
PRIMER:	BY VENDOR
FINISH COAT	BY VENDOR
DETAILS OF LIFTING DEVICES	
SHIPMENT: (8.4.1)	
EXPORT BOXING REQUIRED	YES
OUTDOOR STORAGE MORE THAN 6 MONTHS	YES
ROTOR STORAGE ORIENTATION (9.2.8.2)	
SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3)	
N ₂ PURGE (9.2.8.4)	
SPARE PARTS	
START-UP	
NORMAL MAINTENANCE	

it has mentioned yes but the max density has not specified
Hirgan Reply: Max. density will be specified in next revision.

ITEM No	PUMP	DRIVER	GEAR

OTHER PURCHASES

COORDINATION MEETING REQUIRED (10.1.3)	YES
MAXIMUM DISCHARGE PRESSURE TO INCLUDE	
MAX RELATIVE DENSITY	YES
OPERATION TO TRIP SPEED	
MAX DIA. IMPELLERS AND/OR NO OF STAGES	YES
CONNECTION DESIGN APPROVAL (9.2.1.4)	
TORSIONAL ANALYSIS / REPORT (6.9.2.10)	
PROGRESS REPORTS	
OUTLINE OF PROC FOR OPTIONAL TESTS (10.2.5)	
ADDITIONAL DATA REQUIRING 20 YEARS RETENTION	
LATERAL ANALYSIS REQUIRED (9.1.3.4) (9.2.4.1.3)	
MODAL ANALYSIS REQUIRED (9.3.9.2)	
DYNAMIC BALANCE ROTOR (6.9.4.4)	
INSTALLATION LIST IN PROPOSAL (10.2.3.1)	YES
VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3)	
TRANSIENT TORSIONAL RESPONSE	
BEARING LIFE CALCULATIONS REQUIRED (10.1.6)	yes
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)	YES
INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3)	
CONNECTION BOLTING (5.1.7)	
CADMIUM PLATED BOLTS PROHIBITED	SS
VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1)	Hirgan Reply: Noted
VENDOR SUBMIT TEST PROCEDURES (8.3.1.1)	YES
SUBMIT INSPECTION CHECK LIST (8.1.5)	YES

yes
Hirgan Reply: This is a fresh comment and not applicable for this pump type. because the pump is constant speed.

yes
Hirgan Reply: Noted

SS
Hirgan Reply: Noted

TEST

SHOP INSPECTION (8.1.1)	
PERFORMANCE CURVE	
& DATA APPROVAL PRIOR TO SHIPMENT.	YES
TEST WITH SUBSTITUTE SEAL (8.3.3.2.b)	NO
MATERIAL CERTIFICATION REQUIRED	CASING YES
SHAFT	YES (6.12.1.8)
OTHER	YES
CASTING REPAIR WELD PROCEDURE APPR REQD	YES
INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d)	
LIQUID PENETRANT	YES
ULTRASONIC	
INSPECTION REQUIRED FOR CASTINGS	
LIQUID PENETRANT	YES
ULTRASONIC (NOTE 14)	
HARDNESS TEST REQUIRED (8.2.2.7)	
ADDNL SUBSURFACE EXAMINATION (6.12.1.5) (8.2.1.3)	
FOR	
METHOD	
PMI TESTING REQUIRED (8.2.2.8) (NOTE 5)	YES
COMPONENTS TO BE TESTED	
RESIDUAL UNBALANCE TEST (J.4.1.2)	
NOTIFICATION OF SUCCESSFUL S	
PERFORMANCE TEST (8.1.1.c) (8.3.3.2)	YES
BASEPLATE TEST (7.3.21)	WIT
HYDROSTATIC	
HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.2)	
PERFORMANCE TEST	
TEST IN COMPLIANCE WITH (8.3.3.2)	8.3.3.2
TEST DATA POINTS TO (8.3.3.3)	Hirgan Reply: Noted
TEST TOLERANCES TO (8.3.3.4)	
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 (8.3.4.3.5)	8.3.3.3
TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.4.3.6)	Hirgan Reply: Noted
RETEST ON SEAL LEAKAGE (8.3.3.2.d)	
RETEST REQUIRED AFTER FINAL HEAD ADJ (8.3.3.7.b)	
COMPLETE UNIT TEST (8.3.4.4.1)	
SOUND LEVEL TEST (8.3.4.5)	WIT
CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6)	NON-WIT
LOCATION OF CLEANLINESS INSPECTION	
NOZZLE LOAD TEST	
CHECK FOR CO-PLANAR MOUNTING PAD SURFACES	
MECHANICAL RUN TEST UNTIL OIL TEMP STABLE	WIT
4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.1)	WIT
4 HR. MECH RUN TEST (8.3.4.2.2)	
RESONANCE TEST (8.3.4.7)	
GLOBAL RESONANCE TEST (9.3.9.2)	
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	

WIT
Hirgan Reply: Noted

8.3.3.3
Hirgan Reply: Noted

8.3.3.2
Hirgan Reply: Noted



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMP (API 610)

053-073-9184

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0022	D04

شماره صفحه: 10 از 9

طرح نگهداشت و افزایش تولید 27 مخزن

1	Note	VERTICAL TYPE (FIG 1.1)	<u>VS6</u>	Rev
2	REMARKS	For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0017		
3				
4				
5		VERTICAL PUMPS		
6	PUMP THRUST:	(+) UP	(-) DOWN	
7	STATIC THRUST	_____ N	_____ N	
8	AT MIN FLOW	_____ N	_____ N	
9	AT RATED FLOW	_____ N	_____ N	
10	AT MAX FLOW	_____ N	_____ N	
11	MAX THRUST	_____ N	_____ N	
12	SOLEPLATE REQUIRED	_____	_____	
13	SOLEPLATE Length x Width	_____ m X _____ m		
14	SOLEPLATE THICKNESS	_____	_____ mm	
15	MOUNTING FLANGE REQUIRED	_____	_____	
16	COLUMN PIPE:			
17	DIAMETER	_____	_____ mm	
18	LENGTH	_____	_____ m	
19	NUMBER	_____	_____	
20	SPACING	_____	_____ m	
21	GUIDE BUSHINGS:			
22	NUMBER	_____	_____	
23	LINE SHAFT BEARING SPACING	_____	_____	
24	GUIDE BUSHING LUBE:	_____	_____	
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				

yes
Hirgan Reply: Noted

SEPARATE MOUNTING PLATE (9.3.8.3.1)
PROVIDE SEPARATE SOLEPLATE (9.3.8.3.3)

MATERIALS (additional)

29	SUCTION CAN / BARREL :	_____	LINESHAFT SLEEVES :	_____
30	DISCHARGE HEAD :	_____	BEARING RETAINER :	_____
31	BOWL SHAFT :	_____	SHAFT ENCLOSING TUBE :	_____
32	LINESHAFT :	_____	DISCHARGE COLUMN :	_____
33	LINESHAFT HARDFACING :	_____	PRESSURE RATING:	MAWP HYDRO
34	BELLMOUTH :	_____	HEAD	_____
35	BOWL BEARING :	_____	COLUMN PIPE	_____
36	LINESHAFT BEARING :	_____	BOWL	_____

SUMP ARRANGEMENT

38	SUMP DIMENSIONS :		
39	GRADE ELEVATION	1	_____ m
40	LOW LIQUID LEVEL	2	_____ m
41	C.L. OF DISCHARGE	3	_____ m
42	SUMP DEPTH	l_1	_____ m
43	PUMP LENGTH	l_2	_____ m
44	GRADE TO DISCH.	l_3	_____ m
45	GRADE TO LOW LIQUID LVL	l_4	_____ m
46	GRADE TO 1ST STG IMPL'R.	l_5	_____ m
47	SUBMERGENCE REQ'D	l_6	_____ m
48	SUMP DIAMETER	Φd	_____ m

