
 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b>  <b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b>								
شماره پیمان:	<b>MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)</b>							شماره صفحه: ۱ از ۱۰	
۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	DT	0022		D06



طرح نگهداشت و افزایش تولید ۲۷ مخزن

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

نگهداشت و افزایش تولید میدان نفتی بینک

D06	OCT. 2023	IFA	H.Ghadyani	M.Fakharian	S.Faramarzpour	
D05	MAY. 2023	IFA	H. Adineh	M.Fakharian	A.M.Mohseni	
D04	SEP. 2022	IFA	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: 1	CLIENT Doc. Number: F0Z-708853
status:	<p>IDC: Inter-Discipline Check</p> <p>IFC: Issued For Comment</p> <p>IFA: Issued For Approval</p> <p>AFD: Approved For Design</p> <p>AFC: Approved For Construction</p> <p>AFP: Approved For Purchase</p> <p>AFQ: Approved For Quotation</p> <p>IFI: Issued For Information</p> <p>AB-R: As-Built for CLIENT Review</p> <p>AB-A: As-Built –Approved</p>

 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b>							
	<b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b>						شماره صفحه: ۲ از ۱۰	
	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)							
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0022	نسخه D06

**REVISION RECORD SHEET**

page	D00	D01	D02	D03	D04	page	D05	D06	D07	D08	D09
1	x	x	x	x	x	1	x	x			
2	x	x	x	x	x	2	x	x			
3	x	x		x	x	3	x	x			
4	x					4					
5	x	x	x	x	x	5	x				
6	x	x	x	x	x	6	x	x			
7	x					7					
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## احداث ردیف تہ اکم گاز در ایستگاه جمع آوری سنک



MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)

شماره صفحه: ۳ از ۱۰

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D06	0022	DT	ME	120	PEDCO	GCS	BK

D06

D04



## احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



**شماره پیمان:**

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)

• 03 - • 73 - 9184

شماره صفحه: ۴ از ۱۰

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D06	0022	DT	ME	120	PEDCO	GCS	BK

### طرح نگهداشت و افزایش تولید 27 مخزن

**CLIENT:** National Iranian South Oil Company (NISOC)

**PROJECT TITLE:** BINAK New Compressor Gas Station

**JOB NUMBER:**

EQUIPMENT NUMBER: P-2202 A/B

**EQUIPMENT SERVICE:** CLOSED DRAIN PUMPS

**SERIAL NUMBER:**

**REQ. / SPEC NO. :** BK-GCS-PEDCO-120-ME-SP-0003

**PURCH ORDER NO.**

Cells coloured thus

contain drop-down options

contain calculated values based on input data; do not change.





identify a cross referenced paragraph in the document note, and may also contain a drop down list

When you have completed the DS, highlight the whole page format cells pattern none

Delete these notes on completion



**COMMENTS:**

PUMP MOTOR GEAR TURBINE	DATA SHEETS					
	ITEM No.	ATT	ITEM No.	ATT	ITEM No.	ATT
	P-2202 A		P-2202 B			



 <b>NISOC</b>		<p align="center"><b>نگهداشت و افزایش تولید میدان نفتی بینک</b></p> <p align="center"><b>سطح الارض</b></p> <p align="center"><b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b></p>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴		<b>MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)</b>							شماره صفحه: ۱۰ از ۵	
		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	
		BK	GCS	PEDCO	120	ME	DT	0022	D06	




  

طرح نگهداشت و افزایش تولید 27 مخزن										
APPLICABLE TO: <b>PROPOSAL</b> FOR: <b>NISOC</b> SITE: <b>BINAK Gas Compressor Station</b> NO. REQ: <b>2(1+1)</b> PUMP SIZE: _____ MANUFACTURER: _____					APPLICABLE NTL/INTNL. STANDARD: <b>API 610 - 11th Edition, IPS-G-PM-105</b> UNIT: _____ SERVICE: <b>Closed Drain Pump</b> TYPE: <b>Centrifugal</b> No. STAGES: _____ MODEL: <b>VS6 (VTA)</b> SERIAL NO.: _____					
<b>LIQUID CHARACTERISTICS</b>										
Units		Maximum		Minimum		Note		<b>SERVICE :</b> <b>• IF INTERMITTENT NO. OF STARTS :</b> _____ <b>INTERMITTENT</b> 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) _____		
LIQUID TYPE OR NAME		Hydrocarbon Drain(HC)(NOTE 1)				Max & min values refer only to the property listed				
VAPOR PRESSURE		bara		1						
DENSITY (NOTE 2)		kg/m³		1023		829				
SPECIFIC HEAT		kj/kgC								
VISCOSITY (NOTE 3)		cP		1.37		0.443		861.46		
<b>OPERATING CONDITIONS (6.1.2)</b>										
Units		Maximum		Rated		Normal		Min		
NPSH <sub>A</sub> Datum:				C.L. Impeller						
PUMPING TEMPERATURE :		°C				5 (worse case)				
FLOW :		m³/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 <sub>A</sub> :		m				0.3				
HYDRAULIC POWER:		KW				0.60				
<b>SITE AND UTILITY DATA</b>										
<b>LOCATION:</b> <b>OUTDOOR UNHEATED</b> <b>MOUNTED AT:</b> _____ <b>ELECTRIC AREA CLASSIFICATION:</b> (6.1.22) ZONE <b>1</b> GROUP <b>II B</b> TEMP CLASS <b>T3</b> <b>SITE DATA :</b> ELEVATION (MSL) : <b>12.5</b> m <b>BAROMETER :</b> (Note 28) _____ mBar RANGE OF DESIGN TEMPS:MIN / MAX <b>5</b> <b>85</b> °C RELATIVE HUMIDITY: MIN / MAX <b>0</b> <b>100</b> % (@ 25.6 °C) <b>UNUSUAL CONDITIONS:</b> _____ <b>UTILITY CONDITIONS :</b> <b>ELECTRICITY :</b> DRIVERS HEATING CONTROL SHUTDOWN VOLTAGE <b>400</b> PHASE <b>3</b> HERTZ <b>50</b>					<b>COOLING WATER :</b> RETURN DESIGN TEMP PRESS. SOURCE COOLING WATER CHLORIDE CONCENTRATION: _____ <b>INSTRUMENT AIR :</b> _____ kg MIN _____ kg <b>STEAM</b> TEMP PRESS. DRIVERS HEATING					
<b>PERFORMANCE</b>										
PROPOSAL CURVE NO. _____ RPM As Tested Curve No. _____ IMPELLER DIA.: RATED _____ MAX. _____ MIN. _____ mm RATED POWER Kw EFFICIENCY _____ (%) RATED CURVE BEP FLOW (at rated impeller dia) _____ m³/hr MIN. FLOW: _____ kJ/Nm³ m³/hr PREFERRED OPERATING REGION (6.1.11) _____ to _____ m³/hr ALLOWABLE OPERATING REGION _____ to _____ m³/hr MAX HEAD @ RATED IMPELLER _____ m MAX POWER @ RATED IMPELLER _____ kW NPSH3 AT RATED FLOW : _____ m CL PUMP TO U/S BASEPLATE _____ m NPSH MARGIN AT RATED FLOW : _____ m SPECIFIC SPEED (6.1.9) _____ SUCTION SPECIFIC SPEED LIMIT _____ SUCTION SPECIFIC SPEED _____ MAX. ALLOW. SOUND PRESS. LEVEL REQD (6.1.14) <b>85.00</b> (dBA) EST MAX SOUND PRESS. LEVEL _____ (dBA) MAX. SOUND POWER LEVEL REQD (6.1.14) _____ EST MAX SOUND POWER LEVEL _____					<b>DRIVER (7.1.5) (NOTE 22)</b> Driver Type <b>MOTOR</b> GEAR <b>NO</b> VARIABLE SPEED REQUIRED <b>NO</b> SOURCE OF VARIABLE SPEED _____ OTHER _____ MANUFACTURER _____ NAMEPLATE POWER AND POWER FACTOR @Site Condition _____ KW Nominal RPM _____ RATED LOAD RPM _____ FRAME OR MODEL _____ ORIENTATION <b>Vertical</b> LUBE _____ BEARING TYPE: _____ RADIAL <b>/</b> THRUST <b>/</b> STARTING METHOD <b>OPEN DISCHARGE VALVE</b> INSULATION/TEMP. RISE <b>F/B</b> Max Voltage Variation <b>±10%</b> Max Frequency Variation <b>±5%</b> Max Voltage and Frequency Variation together <b>±10%</b>					

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شماره پیمان: <b>۰۵۳ - ۰۷۳ - ۹۱۸۴</b>	<b>MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)</b> <table><tr><td>نسخه</td><td>سریال</td><td>نوع مدرک</td><td>رشته</td><td>تسهیلات</td><td>صادرکننده</td><td>بسته کاری</td><td>پروژه</td></tr><tr><td>D06</td><td>0022</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	تسهیلات	صادرکننده	بسته کاری	پروژه	D06	0022	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: ۱۰ از ۱۶
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
D06	0022	DT	ME	120	PEDCO	GCS	BK											



طرح نگهداشت و افزایش تولید 27 مخزن

<b>CONSTRUCTION</b>																																																										
<b>API PUMP TYPE:</b> <u>VS6</u> [Based on API 610 definitions] <b>SEE ALSO PAGE 6</b> <b>NOZZLE CONNECTIONS:</b> (6.5.5) <table><tr><th></th><th>Size</th><th>Facing</th><th>Rating</th><th>Position</th></tr><tr><td>SUCTION</td><td>Note 21</td><td>RF</td><td>300</td><td></td></tr><tr><td>DISCHARGE</td><td>Note 21</td><td>RF</td><td>300</td><td></td></tr></table> <b>PRESSURE CASING AUX. CONNECTIONS:</b> (6.4.3.2) <table><tr><th>No.</th><th>Size</th><th>Type</th><th>Facing</th><th>Rating</th><th>Posn.</th></tr><tr><td>BAL./LEAK OFF</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>DRAIN</td><td></td><td></td><td>RF</td><td>300</td><td></td></tr><tr><td>VENT</td><td></td><td></td><td>RF</td><td>300</td><td></td></tr><tr><td>PRESSURE GAGE</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>TEMP GAGE</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>WARM-UP LINE</td><td></td><td></td><td></td><td></td><td></td></tr></table> Drain Valve Supplied By <u>SUPPLIER</u> DRAINS MANIFOLDED <u>BY SUPPLIER</u> VENT Valve Supplied By <u>SUPPLIER</u> 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 <u>YES</u>		Size	Facing	Rating	Position	SUCTION	Note 21	RF	300		DISCHARGE	Note 21	RF	300		No.	Size	Type	Facing	Rating	Posn.	BAL./LEAK OFF						DRAIN			RF	300		VENT			RF	300		PRESSURE GAGE						TEMP GAGE						WARM-UP LINE						<b>CASING MOUNTING:</b> <b>CASING TYPE:</b> (6.3.10) _____ <b>OH3 BACKPULLOUT LIFTING DEVICE REQD.</b> (9.1.2.6)  <b>CASE PRESSURE RATING:</b> Note 30 MAWP : (6.3.5) <u>40</u> barg @ <u>38</u> °C HYDROTEST : <u>1.5*MAWP</u> barg @ _____ °C  <b>HYDROTEST OH PUMP AS ASSEMBLY</b> SUCTION PRESS. REGIONS DESIGNED FOR MAWP <u>YES</u> <b>ROTATION:</b> (VIEWED FROM COUPLING END) • IMPELLERS INDIVIDUALLY SECURED : <u>YES</u> • BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION : _____ • PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS _____  <b>ROTOR:</b> SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3) _____ First Critical Speed Wet (Multi stage pumps only) _____ COMPONENT BALANCE TO ISO 1940 G1.0 _____ SHRINK FIT -LIMITED MOVEMENT IMPELLERS (9.2.2.3) _____ <b>COUPLING:</b> (7.2.3) (7.2.13.f) _____ MANUFACTURER _____ MODEL _____ RATING (POWER/100 RPM) _____ SPACER LENGTH _____ mm SERVICE FACTOR <u>min 1.5</u> RIGID (Note 26) <u>NO</u> COUPLING WITH HYDRAULIC FIT (7.2.10)  COUPLING BALANCED TO ISO 1940-1 G6.3 (7.2.3) <u>YES</u> COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.11) _____  COUPLING IN COMPLIANCE WITH (7.2.4) <u>API 610 compliant</u> COUPLING GUARD STANDARD PER (7.2.13.a) <u>ISO 14120</u> Window on Coupling Guard _____
	Size	Facing	Rating	Position																																																						
SUCTION	Note 21	RF	300																																																							
DISCHARGE	Note 21	RF	300																																																							
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<b>MATERIAL (6.12.1.1) (VTA)</b> APPENDIX H CLASS <u>S-6</u> MIN DESIGN METAL TEMP (6.12.4.1) <u>5</u> °C REDUCED-HARDNESS MATERIALS REQ'D (6.12.1.12.1) <u>YES</u> (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 <u>Level 2</u>																																																										
<b>BEARINGS AND LUBRICATION (6.10.1.1)</b> BEARING (TYPE / NUMBER): (6.11.4) RADIAL _____ / _____ THRUST _____ / _____  LUBRICATION : (6.10.2.2) (6.11.3) (9.2.6) <u>FLOOD</u> 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 <u>Supplier</u> OIL VISC. ISO GRADE VG _____ CONSTANT LEVEL OILER : <u>REQUIRED</u>																																																										
<b>BASEPLATE</b> API BASEPLATE NUMBER : _____ BASEPLATE CONSTRUCTION (7.3.14) _____ BASEPLATE DRAINAGE (7.3.1) <u>Entire Baseplate Drain Pan</u> MOUNTING : _____ NON-GROUT CONSTRUCTION : (7.3.13) _____ VERTICAL LEVELING SCREWS : <u>REQUIRED</u> LONGITUDINAL DRIVER POSITIONING SCREWS : <u>REQUIRED</u> SUPPLIED WITH : <ul style="list-style-type: none"><li>● GROUT AND VENT HOLES <u>YES</u></li><li>● DRAIN CONNECTION <u>YES</u></li></ul> MOUNTING PADS SIZED FOR BASEPLATE LEVELING (7.3.5) _____ MOUNTING PADS TO BE MACHINED (7.3.6) _____ PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET _____ OTHER _____  <b>REMARKS :</b> _____ _____ _____ _____																																																										

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	شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴								شماره صفحه: ۷ از ۱۰
	<b>MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)</b>								
	پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	DT	0022	D06	

طرح نگهداشت و افزایش تولید 27 مخزن

INSTRUMENTATION	SEAL SUPPORT SYSTEM MOUNTING
SEE ATTACHED API-670 DATA SHEET	SEAL SUPPORT SYSTEM MOUNTED ON PUMP BASEPLATE
ACCELEROMETER (7.4.2.1)	(7.5.1.4)
Number of Accelerometers	IDENTIFY LOCATION ON BASEPLATE
Mounting Location of Accelerometers	INTERCONNECTING PIPING BY <b>Supplier</b>
PROVISION FOR MTG ONLY (6.10.2.10)	<b>MECHANICAL SEAL (6.8.1) (VTS)</b>
Number of Accelerometers	SEE ATTACHED ISO 21049/API 682 DATA SHEET (NOTE 4)
Mounting Location of Accelerometers	ADDITIONAL CENTRAL FLUSH PORT (6.8.9)
FLAT SURFACE REQUIRED (6.10.2.11) <b>YES</b>	HEATING JACKET REQ'D. (6.8.11)
Number of Accelerometers	FLUSH PLAN <b>31+53B</b> (NOTE 9.1)
Mounting Location of Accelerometers	
VIBRATION PROBES (7.4.2.2)	<b>HEATING AND COOLING (6.1.17) (VTS)</b>
PROVISIONS FOR VIB. PROBES	COOLING REQ'D
NUMBER PER RADIAL BEARING	COOLING WATER PIPING PLAN
NUMBER PER AXIAL BEARING	COOLING WATER PIPING
MONITORS AND CABLES SUPPLIED BY (7.4.2.4)	FITTINGS
TEMPERATURE (7.4.2.3)	COOLING WATER PIPING MATERIALS
PROVISIONS FOR TEMP PROBES	COOLING WATER REQUIREMENTS:
RADIAL BEARING TEMP.	TOTAL COOLING WATER
NUMBER PER RADIAL BEARING	HEATING MEDIUM
THRUST BEARING TEMP.	OTHER
NUMBER PER THRUST BEARING ACTIVE SIDE	HEATING PIPING
NUMBER PER THRUST BEARING INACTIVE SIDE	
TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.6)	<b>PIPING &amp; APPURTENANCES</b>
PRESSURE GAUGE TYPE	MANIFOLD PIPING FOR PURCHASER CONNECTION (7.5.1.6)
Remarks	VENT <b>YES</b>
	DRAIN <b>YES</b>
	VALVES <b>YES (NOTE 7)</b>
	COOLING WATER <b>YES</b>
	TAG ALL ORIFICES (7.5.2.4) <b>YES</b>
	SOCKET WELD CONN ON SEAL GLAND (7.5.2.8)

 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b> <b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b>																	
شماره پیمان: <b>۰۵۳ - ۰۷۳ - ۹۱۸۴</b>	<b>MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)</b> <table><tr><td>نسخه</td><td>سریال</td><td>نوع مدرک</td><td>رشته</td><td>تسهیلات</td><td>صادر کننده</td><td>بسته کاری</td><td>پروژه</td></tr><tr><td>D06</td><td>0022</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	تسهیلات	صادر کننده	بسته کاری	پروژه	D06	0022	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: ۱۰ از ۸
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه											
D06	0022	DT	ME	120	PEDCO	GCS	BK											

طرح نگهداشت و افزایش تولید 27 مخزن

SURFACE PREPARATION AND PAINT						TEST	
MANUFACTURER'S STANDARD OTHER (SEE BELOW) <u>YES</u> SPECIFICATION NO. <u>As per Project Specification.</u> "Specification for Painting; BK-GNRL-PEDCO-000-PI-SP-0006" <b>PUMP:</b> PUMP SURFACE PREPARATION <u>BY VENDOR</u> PRIMER <u>BY VENDOR</u> FINISH COAT <u>BY VENDOR</u> <b>BASEPLATE:</b> BASEPLATE SURFACE PREPARATION <u>BY VENDOR</u> PRIMER: <u>BY VENDOR</u> FINISH COAT <u>BY VENDOR</u> DETAILS OF LIFTING DEVICES <b>SHIPMENT: (8.4.1)</b> <u>EXPORT</u> EXPORT BOXING REQUIRED <u>YES</u> OUTDOOR STORAGE MORE THAN 6 MONTHS <u>YES</u>  ROTOR STORAGE ORIENTATION (9.2.8.2) _____ SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3) _____ N <sub>2</sub> PURGE (9.2.8.4) _____ <b>SPARE PARTS</b> START-UP <u>YES</u> NORMAL MAINTENANCE <u>YES</u>						SHOP INSPECTION (8.1.1) _____ PERFORMANCE CURVE _____ & DATA APPROVAL PRIOR TO SHIPMENT. <u>YES</u> TEST WITH SUBSTITUTE SEAL (8.3.3.2.b) <u>NO</u> MATERIAL CERTIFICATION REQUIRED CASING <u>YES</u> SHAFT <u>YES</u> (6.12.1.8) IMPELLER <u>YES</u> OTHER <u>YES</u> CASTING REPAIR WELD PROCEDURE APPR REQD <u>YES</u> INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d) LIQUID PENETRANT <u>YES</u> MAG PARTICLE <u>YES</u> ULTRASONIC RADIOGRAPHY _____ INSPECTION REQUIRED FOR CASTINGS LIQUID PENETRANT <u>YES</u> MAG PARTICLE <u>YES</u> ULTRASONIC (NOTE 14) RADIOGRAPHY _____ 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) <u>YES</u> COMPONENTS TO BE TESTED RESIDUAL UNBALANCE TEST (J.4.1.2) _____ NOTIFICATION OF SUCCESSFUL SHOP PERFORMANCE TEST (8.1.1.c) (8.3.3.5) (WIT) <u>YES</u> BASEPLATE TEST (7.3.21) _____ HYDROSTATIC <u>WIT</u> HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.2) <u>WIT</u> PERFORMANCE TEST <u>WIT</u> TEST IN COMPLIANCE WITH (8.3.3.2) <u>8.3.3.2</u> TEST DATA POINTS TO (8.3.3.3) <u>8.3.3.3</u> TEST TOLERANCES TO (8.3.3.4) _____ NPSH (8.3.4.3.1) (8.3.4.3.4) (NOTE 6) <u>WIT</u> 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) _____ 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) <u>WIT</u> CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6) <u>NON-WIT</u> LOCATION OF CLEANLINESS INSPECTION _____ NOZZLE LOAD TEST _____ CHECK FOR CO-PLANAR MOUNTING PAD SURFACES _____ MECHANICAL RUN TEST UNTIL OIL TEMP STABLE <u>WIT</u> 4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.1) <u>WIT</u> 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 _____	
<b>OTHER PURCHASER REQUIREMENTS</b>							
COORDINATION MEETING REQUIRED (10.1.3) <u>YES</u> MAXIMUM DISCHARGE PRESSURE TO INCLUDE MAX RELATIVE DENSITY <u>YES</u> 1023 kg/m <sup>3</sup> OPERATION TO TRIP SPEED MAX DIA. IMPELLERS AND/OR NO OF STAGES <u>YES</u> 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 (8.2.1.1) _____  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) <u>YES</u> VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3) _____ TRANSIENT TORSIONAL RESPONSE _____ BEARING LIFE CALCULATIONS REQUIRED (6.10.1.6) <u>YES</u> 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) <u>YES</u> INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3) _____ CONNECTION BOLTING (7.5.1.7) <u>SS</u> CADMIUM PLATED BOLTS PROHIBITED _____ VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c) <u>YES</u> VENDOR SUBMIT TEST PROCEDURES (8.3.1.1) <u>YES</u> SUBMIT INSPECTION CHECK LIST (8.1.5) <u>YES</u>							





NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

۰۵۳-۰۷۳-۹۱۸۴

## MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)

شماره صفحه: ۱۰ از ۹

نسخه	سریال	نوع مدرک	رشته	تهیهات	صادرکننده	بسته کاری	پروژه
D06	0022	DT	ME	120	PEDCO	GCS	BK

طرح نگهداشت و افزایش تولید 27 مخزن

1	Note	VERTICAL TYPE (FIG 1.1)	VS6	Rev
2	REMARKS	For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0017		
3				
4				
5		VERTICAL PUMPS		VERTICAL PUMPS (CONT'D)
6	PUMP THRUST:	(+) UP	(-) DOWN	LINE SHAFT:
7	STATIC THRUST	_____ N	_____ N	LINE SHAFT DIAMETER _____ mm
8	AT MIN FLOW	_____ N	_____ N	TUBE DIAMETER _____ mm
9	AT RATED FLOW	_____ N	_____ N	LINE SHAFT COUPLING:
10	AT MAX FLOW	_____ N	_____ N	LINESHAFT CONNECTION _____
11	MAX THRUST	_____ N	_____ N	
12	SOLEPLATE REQUIRED	_____	_____	• SUCTION STRAINER TYPE _____
13	SOLEPLATE Length x Width	_____ m	X _____ m	• LEVEL CONTROL _____
14	SOLEPLATE THICKNESS	_____	_____ mm	IMPELLER COLLETS ACCEPTABLE _____
15	MOUNTING FLANGE REQUIRED	_____	_____	HARDENED SLEEVES UNDER BEARINGS (9.3.10.5) _____
16	COLUMN PIPE:			RESONANCE TEST _____
17	DIAMETER	_____	_____ mm	STRUCTURAL ANALYSIS (9.3.5) _____
18	LENGTH	_____	_____ m	
19	NUMBER	_____	_____	DRIVER ALIGNMENT SCREWS _____
20	SPACING	_____	_____ m	SUCTION CAN
21	GUIDE BUSHINGS:			SUCTION CAN THICKNESS _____ mm
22	NUMBER	_____	_____	LENGTH _____ m
23	LINE SHAFT BEARING SPACING	_____	_____ mm	DIAMETER _____ mm
24	GUIDE BUSHING LUBE:	_____	_____	SEPARTATE MOUNTING PLATE (9.3.8.3.1) <b>YES</b>
25				PROVIDE SEPARATE SOLEPLATE (9.3.8.3.3) <b>YES</b>
26				DRAIN PIPED TO SURFACE (9.3.13.5) _____
27				BOWL HEAD CALCULATION REQUIRED _____
28		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: _____
34	BELLMOUTH :	_____	_____	MAWP _____ HYDRO _____
35	BOWL BEARING :	_____	_____	HEAD _____
36	LINESHAFT BEARING :	_____	_____	COLUMN PIPE _____
37				BOWL _____
38		SUMP ARRANGEMENT		
39	SUMP DIMENSIONS :			
40	GRADE ELEVATION	1	_____ m	
41	LOW LIQUID LEVEL	2	_____ m	
42	C.L. OF DISCHARGE	3	_____ m	
43	SUMP DEPTH	$l_1$	_____ m	
44	PUMP LENGTH	$l_2$	_____ m	
45	GRADE TO DISCH.	$l_3$	_____ m	
46	GRADE TO LOW LIQUID LVL	$l_4$	_____ m	
47	GRADE TO 1ST STG IMPL'R.	$l_5$	_____ m	
48	SUBMERGENCE REQ'D	$l_6$	_____ m	
49	SUMP DIAMETER	$\Phi d$	_____ m	



سطح الارض

## احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

• 03 - • 73 - 9184

## MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)

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## نتیجه کار

صادر کنندہ

## تسهيلات

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شماره صفحه: ۱۰ از ۱۰

طرح نگهداشت و افزایش تولید 27 مخزن

## 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

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

### REQUIRED

### REQUIRED

## 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]

