

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک فعالیت های رو زمینی در بسته های کاری تحت الارض ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات برق رسانی مربوط به موقعیت W007S و توسعه چندراهه کلاستر بینک DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD							 	
	شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری W007S	صادر کننده PEDCO	تسهیلات 110	رشته IN	نوع مدرک DT	سریال 0006	نسخه D04

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD

نگهداشت و افزایش تولید میدان نفتی بینک

D04	NOV.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D03	OCT.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D02	AUG.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D01	JUN.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	MAR.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	Client Approval

Class: 2

Client Doc. Number: F9Z-707976

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

نگهداشت و افزایش تولید میدان نفتی بینک
فعالیت های رو زمینی در بسته های کاری تحت الارض

ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات
برق رسانی مربوط به موقعیت W007S و توسعه چندراهه کلاستر بینک

DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C
MANIFOLD



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D04	0006	DT	IN	110	PEDCO	W007S	BK

شماره صفحه: ۱۰ از ۲

REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
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3	X	X			
4	X	X			
5	X	X	X	X	X
6	X	X	X	X	X
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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک فعالیت های رو زمینی در بسته های کاری تحت الارض ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات برق رسانی مربوط به موقعیت W007S و توسعه چندراهه کلاستر بینک							
	DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD							
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	
۰۵۳ - ۰۷۳ - ۹۱۸۴	D04	0006	DT	IN	110	PEDCO	W007S	BK
شماره صفحه: ۱۰ از ۳								شماره پیمان:

REFERENCE DOCUMENTS :

Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001
Process Basis Of Design	BK-GNRAL-PEDCO-000-PR-DB-0001
P&ID - Extension of Binak B/C Manifold	BK-W007S-PEDCO-110-PR-PI-0001
Piping Material Specification	BK-SSGRL-PEDCO-110-PI-SP-0001
Instrument & Control System Design Criteria	BK-SSGRL-PEDCO-110-IN-DC-0002
Process Flow Diagram - Extension of Binak B/C Manifold	BK-W007S-PEDCO-110-PR-PF-0001
Specification for Control Valve	BK-GNRAL-PEDCO-000-IN-SP-0005
Process Design Criteria	BK-GNRAL-PEDCO-000-PR-DC-0001



NISOC

تنگه‌داشت و افزایش تولید میدان نفتی بینک
فعالیت های رو زمینی در بسته‌های کاری تحت‌الارض

ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات
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DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C
MANIFOLD



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

W007S

صادر کننده

PEDCO

تسهیلات

110

رشته

IN

نوع مدرک

DT

سریال

0006

نسخه

D04

شماره صفحه: ۴ از ۱۰

GENERAL NOTES:

- 1-The electrical equipment shall be suitable for hazardous area Zone 2, gas group IIB, temperature class T4.
- 2-Flow direction shall be specified on the valve body.
- 3- All flanges shall be in accordance with ASME B16.5.
- 4- Each valve shall be furnished with name plate as per "specification for control valves" with No. "BK-GNRL-PEDCO-000-IN-SP-0005".
- 5- The following items shall be considered:

Design standard for globe valves: IPS-M-IN-160, BS1873

Design standard for plug valves: IPS-M-IN-160 API 599

Valve bonnet and bottom flanges shall be of bolted construction with fully retained gaskets

Trim and seat shall be easily replaceable. seat should be damped or backed up by a seat retainer

Packing material / Packing construction: Teflon/Chevron type

Material test certificate

Dimensional check

Hydrostatic test

Performance and mechanical operation test

Testy certificate including pressure test, visual, Dimensional and nude

Seal leakage test

Casting examination for valves 6 inches and larger in class 600 and higher as per ANSI B 16.34

Casting quality valves shall NDT (RT tested)

Mill test certificate for all metallic parts

- 6- Screwed bolt-type limit stops, e.g. on the control valve stem, adjustable over the full length of the stroke shall be applied. the vendor shall set the limit/travel stops at the required minimum or maximum valve opening.

- 7- Environmental Condition For Field Instrumentation Of BINAK oilfield Shall Be Considered As Per The Following:

Maximum ambient temperature: 50 (°C)

Minimum ambient temperature: -5 (°C)

Maximum steel surface exposed to sun: 85 (°C)

Maximum summer dry bulb: - (°C)

DB/RH for Summer HVAC Design: 41 °C / 61 % (Note */ Note**)

DB FOR Winter HVAC Design: 6 °C Note *

* Refer to " HVAC Design Criteria; N.I.O.C. NO.: F-1-B-422001".

** Refer to "NISOC Meteorological Studies Report". □

Relative Humidity:

Maximum Design relative humidity (%): 100Minimum Design relative humidity (%): 0

- 8- Below content to be considered in process condition for all control valves:

H2S Mol% = W007S ,W035 , W028 , W046S =0.0003 / W018S , W008N = 0.0004

CO2 Mol%= W007S ,W035 , W028 , W046S = 0.0014 / W018S, W008N = 0.0022

CL- Content in formation water is 133504 ppm

MAX. Water CUT: ASMARI =20% , BANGESTAN =60%

- 9- All Control valves shall be IP 65 and weather proof.
- 10- Standard ISA75.01 for sizing of Control valves shall be considered by vendor.
- 11- In accordance to IPS-E-IN-160, Control valve body size normally shall not be less than half of normal line size.
- 12- 2 Nos. Eye-Bolt and 2 Nos. Jack Bolt for each valve to be supplied by vendor.
- 13- Quick Change Trim type control valve to be designed by vendor.
- 14- Main parameters such as Noise level, vibration, actuator sizing, valve construction material, CV factor, Fluid specification, ... to be specified as per standard by vendor.
- 15- The stroking time shall be lower than 5 second for valves up to 4" and 1 second per inch diameter for bigger ones. (VTC)
- 16- Actuators shall be sized for a minimum air pressure of 3 barg. The normal operating pressure is 4 barg, and the maximum operating pressure is 10 barg. The capacity of the secured instrument air buffer vessel shall be sized for a minimum instrument air supply pressure of 3 barg.



نگهداشت و افزایش تولید میدان نفتی بینک

فعالیت های رو زمینی در بسته های کاری تحت الارض

ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات

برق رسانی مربوط به موقعیت W007S و توسعه چندراهه کلاستر بینک

DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD




شماره صفحه: ۵ از ۱۰

نسخه

سریال

نوع مدرک

رشته

تسهیلات

صادرکننده

بسته کاری

پروژه

۰۵۳ - ۰۷۳ - ۹۰۳۸

شماره پیمان:

D04

Control Valve

GENERAL	1	Tag No.			FCV-1701A			
	2	Service			FROM W018S			
	3	Line No.		P&ID No.		CRD-110-171A-FN05-4"-PT		
	4	Area Classification			Zone 2, IIB,T4			
	5	Ambient Temperature		°C	Min.	Max.	-5	50
	6	Available Air Supply Pressure		barg	Min.	Max.	4.5	8
	7	Nace Requirement:			Required			
PIPE & LINE	8	Pipe Class		Pipe Sch.		FN05		SCH. 80
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 4"		ASTM A 106-Gr.B, SMLS,ASME B36.10M
PROCESS CONDITIONS	10	Fluid			Crude oil			
	11	State			Mixed Gas,Hydrocarbon,Water /3 phase			
	12	Valve Design Pressure(barg)/ Actuator Shut Off Pressure DP			93/93			
	13				Units	Max	Norm.	Min.
	14	Flow Rate(vapor/liquid)			kg/h	195.88/12285.84	178.076/11168.95	59.35/3722.98
	15	Inlet Pressure			bar-g	12.78	12.78	12.78
	16	Pressure Drop			bar	1.5		
	17	Inlet Temperature(max)			°C	36.31		
		Molecular Weight(MIX)			77.41			
	18	Liquid Specific Gravity (GI) / Gas Specific Gravity			0.908/0.8			
	19	Compressibility Factor(Z)(vapour)			0.94			
	20	Viscosity (vapour/oil/water)			cP	0.011/8.89/0.69		
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)			1.27/1.13			
22	Vapour Pressure (True Vapor Pressure of Liquid Phase - HYSYS result)			bar-g	12.78			
23	Critical Pressure (liquid)			bar-g	291.2			
CALCULATED RESULTS	24	Flow Coefficient Cv (max-case)			20.32 (VTC)			
	25	Travel (max-case)			BY VENDOR			
	26	Sound Pressure Level			dBA	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)
BODY AND TRIM(Note 6)	27	Body size		3" (VTC)(Note4)				
	28	Rated Cv		VTA				
	29	End conn. & Rating IN/OUT		RF Flange # 600 ASME B16.5 (VTC)				
	30	Leakage class		IV				
	31	Body/Bonnet Material		ASTM A216 GR. WCB				
	32	Body/Bonnet Type		GLOBE (Balanced) / Standard Bolted Flange Bonnet				
	33	Flow Direction		FLOW TEND TO OPEN(VTC)				
	34	Packing Material		P.T.F.E.				
	35	Trim Type		SINGLE SEATED/CAGE				
	36	Characteristic		EQUAL PERCENTAGE (VTC)				
	37	Guiding		(NOTE 4)				
	38	Rated Travel		(NOTE 4)				
	39	Plug/Disk Material		SS316 (Note 6)				
	40	Seat Material		SS316 (Note 6)				
	41	Cage/Guid Material		SS316 (Note 6)				
	42	Stem Material		SS316 (Note 6)				
43	Trim Material		SS316 (Note 6)					
ACTUTOR	44	MFR	Model	(NOTE 4)	(NOTE 4)			
	45	Size	Eff.Area	(NOTE 4)	(NOTE 4)			
	46	Air Failure	Handwheel	FAIL CLOSE	TOP MOUNTED			
	47	Air Action	Orientation	AIR TO OPEN	VERT. UP			
	48	Actuator Type		Spring Return and Diaphragm Type				
	49	AIR	Min/ Max/ Des. (Barg)	4.5 (Note3)	7	8		
	50	MFR	Model	(NOTE 4)	(NOTE 4)			
PURCHASE	51	Type		Electro-Pneumatic Smart				
	52	Input Signal		4-20 mA-HART Smart				
	53	Power Supply		24 VDC loop powered				
	54	Electrical Connection		ISO M20x 1.5				
	55	Increase/Decrease Air		Increase to Open(VTC)				
	56	Lock Last Position		Failure Position/Close				
	57	Output Signal		3-15 Psi				
	58	I.P./Ex.Protect.	Gauge	65 / EExia	Yes			
	59	MFR/Model	LCD requirement	(NOTE 4)	Yes			
	60	Type	Qty.	N/A	N/A			
POSITIONER (Note 5)	61	MFR	Model	N/A	N/A			
	62	I.P.	Ex.Protect.	N/A	N/A			
	63	MFR	Model	N/A	N/A			
	64	Type	Qty.	N/A	N/A			
	65	Power Supply	N/A					
	66	Contacts / Rating	N/A					
	67	Switching Position	N/A					
	68	I.P.	Ex.Protect.	N/A	N/A			
	69	MFR	Model	N/A	N/A			
	70	Set Pressure	Yes (NOTE 4)					
SOLENOID VALVE	71	Filter	Gauge	Yes	Yes			
	72	Pnumatic Conn.	1/4 " NPTF					
	73	MFR	Model	(NOTE 4)	(NOTE 4)			
	74	Hydro. Pressure	API 598					
	75	Leakage Class	Certificate Required					
	76	Performance Test	Required					
	77	Internal Tubing	Required(with Double Ferrule Compression conn.)					
	78	Tube Material	316 S.S L					
	79	Cable Gland	M20, Nickel plated brass					
	80	Cable Entry	M20 x 1.5					
TESTS	81	Options						
	82	Options						
	83	Options						
	84	Options						
OPTIONS	85	Options						
	86	Options						
	87	Options						
	88	Options						

NOTES:

1- All materials shall be in accordance with 'Piping Material Specification', "Document No.: BK-SSGRL-PEDCO-110-PI-SP-0001".

2- VTA: Vendor To Advise VTC: Vendor To Confirm

3- Minimum of instrument air pressure supply is 4 barg but 3 barg as minimum working pressure, shall be considered for actuator sizing .

4- Shall be finalized by vendor at quotaion stage.

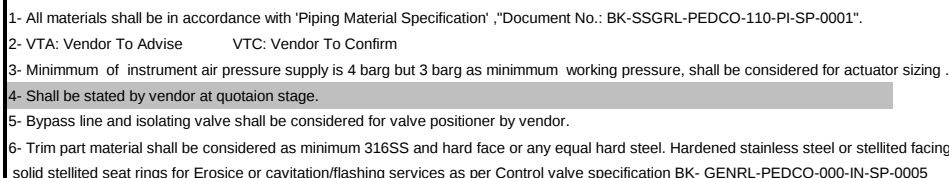
5- Bypass line and isolating valve shall be considered for valve positioner by vendor.

6- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel. Hardened stainless steel or stellited facing shall be supplied for valve plugs and guides with solid stellited seat rings for Erosice or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005

		تجهیزات و افزایش تولید میدان نفتی بینک فعالیت های روزمینی در بسته های کاری تحت الارض					 			
		ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات برق رسانی مربوط به موقعیت W007S و توسعه چندراهه کلاستر بینک								
		DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۰۳۸		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۶ از ۱۰
		BK	W007S	PEDCO	110	IN	DT	0006	D04	

Control Valve										D04	
GENERAL	1	Tag No.				FCV-1701B					
	2	Service				FROM W046S					
	3	Line No.		P&ID No.		CRD-110-171B-FN05-4"-PT		BK-W007S-PEDCO-110-PR-PI-0001-D02 (3 of 6)			
	4	Area Classification				Zone 2, IIB,T4					
	5	Ambient Temperature		°C	Min.	Max.	-5		50		
	6	Available Air Supply Pressure		barg	Min.	Max.	4.5		8		
	7	Nace Requirement:				Required					
PIPE & LINE	8	Pipe Class		Pipe Sch.		FN05		SCH. 80			
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 4"		API 5L GR.B, SMLS, BE, ASME, B36.10M			
PROCESS CONDITIONS	10	Fluid				Crude oil					
	11	State				mixed / 3 phase					
	12	Valve Design Pressure(barg)/ Actuator Shut Off Pressure DP				93/93					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/liquid)				kg/h	712.24/18451.85	647.492/16774.41		431.66/11182.94	
	15	Inlet Pressure				bar-g	12.78	12.78		12.78	
	16	Pressure Drop				bar	1.5				
	17	Inlet Temperature(max)				°C	31.37				
		Molecular Weight(MIX)				39.09					
	18	Liquid Specific Gravity (GI) / Gas Specific Gravity				0.952/0.8					
	19	Compressibility Factor(Z)(vapour)				-	0.94				
	20	Viscosity (vapour/oil/water)				cP	0.011/6.25/0.77				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				-	1.276/3.66				
22	Vapour Pressure (True Vapor Pressure of Liquid Phase - HYSYS result)				bar-g	12.78					
23	Critical Pressure (liquid)				bar-g	1140					
CALCULATED RESULTS	24	Flow Coefficient Cv (max-case)				-	40.052 (VTC)				
	25	Travel (max-case)				%	BY VENDOR				
	26	Sound Pressure Level				dBA	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)		Max. 85 dBA(VTC)	
BODY AND TRIM(Note 6)	27	Body size		3" (VTC)(Note4)		POSITIONER (Note 5)	51	Type		Electro-Pneumatic Smart	
	28	Rated Cv		VTA			52	Input Signal		4-20 mA-HART Smart	
	29	End conn. & Rating IN/OUT		RF Flange # 600 ASME B16.5 (VTC)			53	Power Supply		24 VDC loop powered	
	30	Leakage class		IV			54	Electrical Connection		ISO M20x 1.5	
	31	Body/Bonnet Material		ASTM A216 GR. WCB			55	Increase/Decrease Air		Increase to Open(VTC)	
	32	Body/Bonnet Type		GLOBE (Balanced) / Standard Bolted Flange Bonnet			56	Lock Last Position		Failure Position/Close	
	33	Flow Direction		FLOW TEND TO OPEN(VTC)		57	Output Signal		3-15 Psi		
	34	Packing Material		P.T.F.E.		SOLENOID VALVE	58	I.P./Ex.Protect.	Gauge	65 / EExia	Yes
	35	Trim Type		SINGLE SEATED/CAGE			59	MFR/Model	LCD requirement	(NOTE 4)	Yes
	36	Characteristic		EQUAL PERCENTAGE (VTC)			60	Type	Qty.	N/A	N/A
	37	Guiding		(NOTE 4)			61	MFR	Model	N/A	N/A
	38	Rated Travel		(NOTE 4)			62	I.P.	Ex.Protect.	N/A	N/A
	39	Plug/Disk Material		SS316 (Note 6)			63	MFR	Model	N/A	N/A
	40	Seat Material		SS316 (Note 6)		SWITCHES	64	Type	Qty.	N/A	N/A
	41	Cage/Guid Material		SS316 (Note 6)			65	Power Supply		N/A	
	42	Stem Material		SS316 (Note 6)			66	Contacts / Rating		N/A	
43	Trim Material		SS316 (Note 6)		67		Switching Position		N/A		
44	MFR	Model	(NOTE 4)	(NOTE 4)	68		I.P.	Ex.Protect.	N/A	N/A	
45	MFR	Model	(NOTE 4)	(NOTE 4)	69		MFR	Model	N/A	N/A	
ACTUTOR	45	Size	Eff.Area	(NOTE 4)	(NOTE 4)	AIR SET	70	Set Pressure		Yes (NOTE 4)	
	46	Air Failure	Handwheel	FAIL CLOSE	TOP MOUNTED		71	Filter	Gauge	Yes	Yes
	47	Air Action	Orientation	AIR TO OPEN	VERT. UP		72	Pnumatic Conn.		1/4 " NPTF	
	48	Actuator Type			Spring Return and Diaphragm Type		73	MFR	Model	(NOTE 4)	(NOTE 4)
	49	AIR Press.	Min/ Max/ Des. (Barg)	4.5 (Note3)	7	8	TESTS	74	Hydro. Pressure		API 598
50	MFR	Model	(NOTE 4)	(NOTE 4)	75	Leakage Class		Certificate Required			
PURCHASE	Manufacturer	(Note 4)			OPTIONS	76	Performance Test		Required		
		Model	(Note 4)			77	Internal Tubing		Required(with Double Ferrule Compression conn.)		
			78	Tube Material		316 S.S L					
			79	Cable Gland		M20, Nickel plated brass					
						80	Cable Entry		M20 x 1.5		

NOTES:
1- All materials shall be in accordance with 'Piping Material Specification' , "Document No.: BK-SSGRL-PEDCO-110-PI-SP-0001".
2- VTA: Vendor To Advise VTC: Vendor To Confirm
3- Minimum of instrument air pressure supply is 4 barg but 3 barg as minimum working pressure, shall be considered for actuator sizing .
4- Shall be stated by vendor at quotaion stage.
5- Bypass line and isolating valve shall be considered for valve positioner by vendor.
6- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel. Hardened stainless steel or stellite facing shall be supplied for valve plugs and guides with solid stellite seat rings for Erosice or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005





نگهداشت و افزایش تولید میدان نفتی بینک

فعالیت های رو زمینی در بسته های کاری تحت الارض

ساخت موقعیت چاه، تأسیسات سر چاهی، خطوط جریانی، تسهیلات

برق رسانی مربوط به موقعیت W007S و توسعه چندراهه کلاستر بینک

DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD




شماره پیمان: ۰۳ - ۰۷۳ - ۹۰۳۸

شماره صفحه: ۸ از ۱۰

Control Valve

D04

GENERAL	1	Tag No.				FCV-1701D					
	2	Service				FROM W028					
	3	Line No.		P&ID No.		CRD-110-171D-FN05-4"-PT		BK-W007S-PEDCO-110-PR-PI-0001-D02 (4 of 6)			
	4	Area Classification				Zone 2, IIB,T4					
	5	Ambient Temperature		°C	Min.	Max.	-5		50		
	6	Available Air Supply Pressure		barg	Min.	Max.	4.5		8		
	7	Nace Requirement:				Required					
PIPE & LINE	8	Pipe Class		Pipe Sch.		FN05		SCH. 80			
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 4"		API 5L GR.B, SMLS, BE, ASME, B36.10M			
PROCESS CONDITIONS	10	Fluid				Crude oil					
	11	State				mixed / 3 phase					
	12	Valve Design Pressure(barg)/ Actuator Shut Off Pressure DP				93/93					
	13		Units	Max	Norm.	Min.					
	14	Flow Rate(vapor/liquid)		kg/h	1316.60/30623.54	1196.917/27839.59	718.15/16703.75				
	15	Inlet Pressure		bar-g	12.78	12.78	12.78				
	16	Pressure Drop		bar		1.5					
	17	Inlet Temperature(max)		°C		44.41					
		Molecular Weight(MIX)				39.09					
	18	Liquid Specific Gravity (G1) / Gas Specific Gravity				0.951/0.8					
	19	Compressibility Factor(Z)(vapour)				0.94					
	20	Viscosity (vapour/oil/water)				cP 0.012/5.39/0.60					
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.24/1.12					
22	Vapour Pressure (True Vapor Pressure of Liquid Phase - HYSYS result)				bar-g 11.95						
23	Critical Pressure (liquid)				bar-g 1081						
CALCULATED RESULTS	24	Flow Coefficient Cv (max-case)				70.72 (VTC)					
	25	Travel (max-case)				BY VENDOR					
	26	Sound Pressure Level		dBA	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)				
BODY AND TRIM(Note 6)	27	Body size		3" (VTC)(Note4)		POSITIONER (Note 5)	51	Type		Electro-Pneumatic Smart	
	28	Rated Cv		VTA			52	Input Signal		4~20 mA-HART Smart	
	29	End conn. & Rating IN/OUT		RF Flange # 600 ASME B16.5 (VTC)			53	Power Supply		24 VDC loop powered	
	30	Leakage class		IV			54	Electrical Connection		ISO M20x 1.5	
	31	Body/Bonnet Material		ASTM A216 GR. WCB			55	FlowDirection		Flow to Open(VTC)	
	32	Body/Bonnet Type		GLOBE (Balanced) / Standard Bolted Flange Bonnet			56	Lock Last Position		Failure Position/Close	
	33	Flow Direction		FLOW TEND TO OPEN(VTC)			57	Output Signal		3-15 Psi	
	34	Packing Material		P.T.F.E.		58	I.P./Ex.Protect.	Gauge	65 / EExia	Yes	
	35	Trim Type		SINGLE SEATED/CAGE		59	MFR/Model	LCD requirement	(NOTE 4)	Yes	
	36	Characteristic		EQUAL PERCENTAGE (VTC)		SOLENOID VALVE	60	Type	Qty.	N/A	N/A
	37	Guiding		(NOTE 4)			61	MFR	Model	N/A	N/A
	38	Rated Travel		(NOTE 4)			62	I.P.	Ex.Protect.	N/A	N/A
	39	Plug/Disk Material		SS316 (Note 6)		SWITCHES	63	MFR	Model	N/A	N/A
	40	Seat Material		SS316 (Note 6)			64	Type	Qty.	N/A	N/A
	41	Cage/Guid Material		SS316 (Note 6)			65	Power Supply		N/A	
	42	Stem Material		SS316 (Note 6)			66	Contacts / Rating		N/A	
43	Trim Material		SS316 (Note 6)		67	Switching Position		N/A			
ACTUATOR	44	MFR	Model	(NOTE 4)	(NOTE 4)	68	I.P.	Ex.Protect.	N/A	N/A	
	45	Size	Eff.Area	(NOTE 4)	(NOTE 4)	AIR SET	69	MFR	Model	N/A	N/A
	46	Air Failure	Handwheel	FAIL CLOSE	TOP MOUNTED		70	Set Pressure		Yes (NOTE 4)	
	47	Air Action	Orientation	AIR TO OPEN	VERT. UP		71	Filter	Gauge	Yes	Yes
	48	Actuator Type		Spring Return and Diaphragm Type		72	Pnumatic Conn.		1/4 " NPTF		
	49	AIR Press.	Min/ Max/ Des.	(Barg)	4.5 (Note3)	7	8	73	MFR	Model	(NOTE 4) (NOTE 4)
	50	MFR	Model	(NOTE 4)	(NOTE 4)	TESTS	74	Hydro. Pressure		API 598	
PURCHASE	Manufacturer		(Note 4)		75		Leakage Class		Certificate Required		
	Model		(Note 4)		76		Performance Test		Required		
					OPTIONS	77	Internal Tubing		Required(with Double Ferrule Compression conn.)		
						78	Tube Material		316 S.S L		
					79	Cable Gland		M20, Nickel plated brass			
					80	Cable Entry		M20 x 1.5			

NOTES:

1- All materials shall be in accordance with 'Piping Material Specification' ,"Document No.: BK-SSGRL-PEDCO-110-PI-SP-0001".

2- VTA: Vendor To Advise VTC: Vendor To Confirm

3- Minimum of instrument air pressure supply is 4 barg but 3 barg as minimum working pressure, shall be considered for actuator sizing .

4- Shall be stated by vendor at quotaion stage.

5- Bypass line and isolating valve shall be considered for valve positioner by vendor.

6- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel. Hardened stainless steel or stelled facing shall be supplied for valve plugs and guides with solid stelled seat rings for Erosice or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005

شماره پیمان:

$$\cdot 53 - \cdot 73 - 9.38$$

شماره صفحه: ۹ از ۱۰

Control Valve

D04

GENERAL	1 Tag No.				FCV-1701E						
	2 Service				FROM W035						
	3 Line No.		P&ID No.		CRD-110-171E-FN05-4"-PT		BK-W007S-PEDCO-110-PR-PI-0001-D02 (5 of 6)				
	4 Area Classification				Zone 2, IIB,T4						
	5 Ambient Temperature		°C	Min.	Max.	-5		50			
	6 Available Air Supply Pressure		barg	Min.	Max.	4.5		8			
	7 Nace Requirement:				Required						
PIPE & LINE	8 Pipe Class		Pipe Sch.		FN05		SCH. 80				
	9 Pipe Line Insulation Line Size		Pipe Material		PT / 4"		API 5L GR.B, SMLS, BE, ASME, B36.10M				
PROCESS CONDITIONS	10 Fluid				Crude oil						
	11 State				mixed / 3 phase						
	12 Valve Design Pressure(barg)/ Actuator Shut Off Pressure DP				93/93						
	13				Units	Max	Norm.	Min.			
	14 Flow Rate(vapor/liquid)				kg/h	1278.20/30661.96	1162.004/27874.51	697.2/16724.7			
	15 Inlet Pressure				bar-g	12.78	12.78	12.78			
	16 Pressure Drop				bar	1.5					
	17 Inlet Temperature(max)				°C	40.71					
	Molecular Weight(MIX)				39.09						
	18 Liquid Specific Gravity (G1) / Gas Specific Gravity				0.953/0.8						
	19 Compressibility Factor(Z)(vapour)				0.94						
	20 Viscosity (vapour/oil/water)				cP0.012/5.60/0.64						
	21 Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.25/1.12						
	22 Vapour Pressure (True Vapor Pressure of Liquid Phase - HYSYS result)				bar-g		12.4				
CALCULATED RESULTS	23 Critical Pressure (liquid)				bar-g		1140				
	24 Flow Coefficient Cv (max-case)				-		69.02 (VTC)				
	25 Travel (max-case)				%		BY VENDOR				
	26 Sound Pressure Level				dBA	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)	Max. 85 dBA(VTC)			
BODY AND TRIM(Note 6)	27 Body size		3" (VTC)(Note4)		POSITIONER (Note 5)	51 Type		Electro-Pneumatic Smart			
	28 Rated Cv		VTA			52 Input Signal		4~20 mA-HART Smart			
	29 End conn. & Rating IN/OUT		RF Flange # 600 ASME B16.5 (VTC)			53 Power Supply		24 VDC loop powered			
	30 Leakage class		IV			54 Electrical Connection		ISO M20x 1.5			
	31 Body/Bonnet Material		ASTM A216 GR. WCB			55 FlowDirection		Flow to Open(VTC)			
	32 Body/Bonnet Type		GLOBE (Balanced) / Standard Bolted Flange Bonnet			56 Lock Last Position		Failure Position/Close			
	33 Flow Direction		FLOW TEND TO OPEN(VTC)			57 Output Signal		3-15 Psi			
	34 Packing Material		P.T.F.E.			58 I.P./Ex.Protect.		Gauge	65 / EExia	Yes	
	35 Trim Type		SINGLE SEATED/CAGE			59 MFR/Model		LCD requirement (NOTE 4)		Yes	
	36 Characteristic		EQUAL PERCENTAGE (VTC)		SOLENOID VALVE	60 Type		Qty.	N/A	N/A	
	37 Guiding		(NOTE 4)			61 MFR		Model	N/A	N/A	
	38 Rated Travel		(NOTE 4)			62 I.P.		Ex.Protect.	N/A	N/A	
	39 Plug/Disk Material		SS316 (Note 6)			63 MFR		Model	N/A	N/A	
	40 Seat Material		SS316 (Note 6)			SWITCHES	64 Type		Qty.	N/A	N/A
	41 Cage/Guid Material		SS316 (Note 6)		65 Power Supply		N/A				
	42 Stem Material		SS316 (Note 6)		66 Contacts / Rating		N/A				
	43 Trim Material		SS316 (Note 6)		67 Switching Position		N/A				
	44 MFR		Model	(NOTE 4)	(NOTE 4)		68 I.P.		Ex.Protect.	N/A	N/A
	ACTUTOR	45 Size		Eff.Area	(NOTE 4)	(NOTE 4)	AIR SET	70 Set Pressure		Yes (NOTE 4)	
		46 Air Failure		Handwheel	FAIL CLOSE	TOP MOUNTED		71 Filter		Gauge	Yes
47 Air Action		Orientation	AIR TO OPEN	VERT. UP	72 Pnumatic Conn.			1/4 " NPTF			
48 Actuator Type		Spring Return and Diaphragm Type			73 MFR			Model	(NOTE 4)	(NOTE 4)	
49 AIR Press.		Min/ Max/ Des.	(Barg)	4.5 (Note3)	7	8	TESTS	74 Hydro. Pressure		API 598	
50 MFR		Model	(NOTE 4)	(NOTE 4)	75 Leakage Class			Certificate Required			
					OPTIONS	76 Performance Test		Required			
						77 Internal Tubing		Required(with Double Ferrule Compression conn.)			
						78 Tube Material		316 S.S L			
						79 Cable Gland		M20, Nickel plated brass			
						80 Cable Entry		M20 x 1.5			
PURCHASE	Manufacturer		(Note 4)								
	Model		(Note 4)								

NOTES:

- 1- All materials shall be in accordance with "Piping Material Specification" ,"Document No.: BK-SSGRL-PEDCO-110-PI-SP-0001".
- 2- VTA: Vendor To Advise VTC: Vendor To Confirm
- 3- Minimum of instrument air pressure supply is 4 barg but 3 barg as minimum working pressure, shall be considered for actuator sizing .
- 4- Shall be stated by vendor at quotation stage.
- 5- Bypass line and isolating valve shall be considered for valve positioner by vendor.
- 6- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel. Hardened stainless steel or stellite facing shall be supplied for valve plugs and guides with solid stellite seal rings for Erosive or cavitation/flushing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005

		نگهداشت و افزایش تولید میدان نفتی بینک فعالیت های رو زمینی در بسته های کاری تحت الارض ساخت موقعیت چاه، تأسیسات سرچاهی، خطوط جریانی، تسهیلات برقی رسانی مربوط به موقعیت W-007S و توسعه چندراهه کلاستر بینک						 		
		DATA SHEETS FOR CONTROL/REGULATOR VALVES - EXTENSION OF BINAK B/C MANIFOLD								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۰۳۸		پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۱۰ از ۱۰
		BK	W007S	PEDCO	110	IN	DT	0006	D04	

Control Valve										D04		
GENERAL	1	Tag No.				FCV-1701F						
	2	Service				FROM W007S						
	3	Line No.		P&ID No.		CRD-110-171F-FN05-4"-PT			BK-W007S-PEDCO-110-PR-PI-0001-D02 (5 of 6)			
	4	Area Classification				Zone 2, IIB,T4						
	5	Ambient Temperature		°C	Min.	Max.		-5		50		
	6	Available Air Supply Pressure		barg	Min.	Max.		4.5		8		
	7	Nace Requirement:				Required						
PIPE & LINE	8	Pipe Class		Pipe Sch.		FN05			SCH. 80			
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 4"			ASTM A 106-Gr.B, SMLS,ASME B36.10M			
PROCESS CONDITIONS	10	Fluid				Crude oil						
	11	State				mixed / 3 phase						
	12	Valve Design Pressure(barg)/ Actuator Shut Off Pressure DP				93/93						
	13				Units	Max	Norm.		Min.			
	14	Flow Rate(vapor/liquid)			kg/h	515.64/12260.413		468.769/11145.83		5572.91/5572.91		
	15	Inlet Pressure			bar-g	12.78		12.78		12.78		
	16	Pressure Drop			bar	1.5						
	17	Inlet Temperature(max)			°C	41.77						
		Molecular Weight(MIX)				39.09						
	18	Liquid Specific Gravity (G1) / Gas Specific Gravity				0.952/0.8						
	19	Compressibility Factor(Z)(vapour)				0.94						
	20	Viscosity (vapour/oil/water)				cP						
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				-						
22	Vapour Pressure (True Vapor Pressure of Liquid Phase - HYSYS result)				bar-g		12.27					
23	Critical Pressure (liquid)				bar-g		1140					
CALCULATED RESULTS	24	Flow Coefficient Cv (max-case)				-		61.76 (VTC)				
	25	Travel (max-case)				%		BY VENDOR				
	26	Sound Pressure Level				dBA	Max. 85 dBA(VTC)		Max. 85 dBA(VTC)			
BODY AND TRIM(Note 6)	27	Body size		3" (VTC)(Note4)		POSITIONER (Note 5)	51	Type		Electro-Pneumatic Smart		
	28	Rated Cv		VTA			52	Input Signal		4~20 mA-HART Smart		
	29	End conn. & Rating IN/OUT		RF Flange # 600 ASME B16.5 (VTC)			53	Power Supply		24 VDC loop powered		
	30	Leakage class		IV			54	Electrical Connection		ISO M20x 1.5		
	31	Body/Bonnet Material		ASTM A216 GR. WCB			55	Increase/Decrease Air		Increase to Open(VTC)		
	32	Body/Bonnet Type		GLOBE (Balanced) / Standard Bolted Flange Bonnet			56	Lock Last Position		Failure Position/Close		
	33	Flow Direction		FLOW TEND TO OPEN(VTC)		57	Output Signal		3-15 Psi			
	34	Packing Material		P.T.F.E.		58	I.P./Ex.Protect.	Gauge	65 / EEExia	Yes		
	35	Trim Type		SINGLE SEATED/CAGE		59	MFR/Model	LCD requirement	(NOTE 4)	Yes		
	36	Characteristic		EQUAL PERCENTAGE (VTC)		SOLENOID VALVE	60	Type	Qty.	N/A	N/A	
	37	Guiding		(NOTE 4)			61	MFR	Model	N/A	N/A	
	38	Rated Travel		(NOTE 4)			62	I.P.	Ex.Protect.	N/A	N/A	
	39	Plug/Disk Material		SS316 (Note 6)			63	MFR	Model	N/A	N/A	
	40	Seat Material		SS316 (Note 6)		SWITCHES	64	Type	Qty.	N/A	N/A	
	41	Cage/Guid Material		SS316 (Note 6)			65	Power Supply		N/A		
	42	Stem Material		SS316 (Note 6)			66	Contacts / Rating		N/A		
43	Trim Material		SS316 (Note 6)		67		Switching Position		N/A			
44	MFR	Model	(NOTE 4)	(NOTE 4)	68		I.P.	Ex.Protect.	N/A	N/A		
ACTUATOR	45	Size	Eff.Area	(NOTE 4)	(NOTE 4)	AIR SET	70	Set Pressure		Yes (NOTE 4)		
	46	Air Failure	Handwheel	FAIL CLOSE	TOP MOUNTED		71	Filter	Gauge	Yes	Yes	
	47	Air Action	Orientation	AIR TO OPEN	VERT. UP		72	Pnumatic Conn.		1/4 " NPTF		
	48	Actuator Type		Spring Return and Diaphragm Type		73	MFR	Model	(NOTE 4)	(NOTE 4)		
	49	AIR Press.	Min/ Max/ Des.	(Barg)	4.5 (Note3)	7	8	TESTS	74	Hydro. Pressure		API 598
	50	MFR	Model	(NOTE 4)	(NOTE 4)	75	Leakage Class		Certificate Required			
PURCHASE	51	Manufacturer		(Note 4)		OPTIONS	76	Performance Test		Required		
	52	Model		(Note 4)			77	Internal Tubing		Required(with Double Ferrule Compression conn.)		
	53						78	Tube Material		316 S.S L		
	54						79	Cable Gland		M20, Nickel plated brass		
							80	Cable Entry		M20 x 1.5		

NOTES:

- All materials shall be in accordance with 'Piping Material Specification' , "Document No.: BK-SSGRL-PEDCO-110-PI-SP-0001".
- VTA: Vendor To Advise VTC: Vendor To Confirm
- Minimum of instrument air pressure supply is 4 barg but 3 barg as minimum working pressure, shall be considered for actuator sizing .
- Shall be stated by vendor at quotaion stage.
- Bypass line and isolating valve shall be considered for valve positioner by vendor.
- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel. Hardened stainless steel or stellite facing shall be supplied for valve plugs and guides with solid stellite seat rings for Erosive or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005