



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



DATA SHEETS FOR CONTROL/REGULATOR VALVES

شماره پیمان:

053 - 073 - 9184

پروژه

بسته کاری

صادر کننده

تجهیزات

رشته

نوع مدرک

سریال

نسخه

BK

GCS

PEDCO

120

IN

DT

0011

D03

شماره صفحه: 1 از 21

طرح نگهداشت و افزایش تولید 27 مخزن

DATA SHEETS FOR CONTROL/REGULATOR VALVES

نگهداشت و افزایش تولید میدان نفتی بینک

D03	NOV.2023	IFA	P.Hajisadeghi	M.Fakharian	S.Faramarzpour	
D02	JUL.2023	IFA	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D01	MAY.2023	IFA	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D00	JUN.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
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Class: 1

CLIENT Doc. Number: F9Z-708932

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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سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



DATA SHEETS FOR CONTROL/REGULATOR VALVES

شماره پیمان:

053 - 073 - 9184

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BK

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شماره صفحه: 2 از 21

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16	X	X	X	X	
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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک										
	DATA SHEETS FOR CONTROL/REGULATOR VALVES										
	شماره پیمان:	پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 3 از 21	
053 - 073 - 9184	BK	GCS	PEDCO	120	IN	DT	0011	D03			

REFERENCE DOCUMENTS :

Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001
Process Basis Of Design	BK-GNRAL-PEDCO-000-PR-DB-0001
Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001
Symbol & Legend For PFD and P&ID	BK-GCS-PEDCO-120-PR-PI-0001
P&ID - Gas Compression Inlet Gas Pipeline (Binak)	BK-GCS-PEDCO-120-PR-PI-0002
P&ID - Gas Compression Inlet Gas Pipeline (Golkhari)	BK-GCS-PEDCO-120-PR-PI-0003
P&ID - Slug Catcher System	BK-GCS-PEDCO-120-PR-PI-0004
P&ID - Gas Compression Inlet Knock Out Drum	BK-GCS-PEDCO-120-PR-PI-0005
P&ID - 1st Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0006
P&ID - 1st Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0007
P&ID - 1st Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0008
P&ID - 2nd Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0009
P&ID - 2nd Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0010
P&ID - 2nd Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0011
P&ID - 2nd Stage Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012
P&ID - Gas Compression Dehydration Package	BK-GCS-PEDCO-120-PR-PI-0013
P&ID - Lean Glycol Storage Tank	BK-GCS-PEDCO-120-PR-PI-0014
P&ID - Instrument & Plant Air System	BK-GCS-PEDCO-120-PR-PI-0015
P&ID - Nitrogen Generation System	BK-GCS-PEDCO-120-PR-PI-0016
P&ID - Close Drain System	BK-GCS-PEDCO-120-PR-PI-0017
P&ID - Corrosion Inhibitor Package	BK-GCS-PEDCO-120-PR-PI-0018
P&ID - Methanol Injection Package	BK-GCS-PEDCO-120-PR-PI-0019
P&ID - LP Flare System	BK-GCS-PEDCO-120-PR-PI-0020
P&ID - Oily Water Sewer	BK-GCS-PEDCO-120-PR-PI-0021
P&ID - Fuel Gas System	BK-GCS-PEDCO-120-PR-PI-0022
P&ID - Diesel Oil System	BK-GCS-PEDCO-120-PR-PI-0023
P&ID - Potable Water System	BK-GCS-PEDCO-120-PR-PI-0024
P&ID - Glycol Sump Drum	BK-GCS-PEDCO-120-PR-PI-0025
P&ID - Fire Water Network	BK-GCS-PEDCO-120-SA-PI-0001
P&ID - Total Flooding System For Extension of Existing Elect. Building	BK-GCS-PEDCO-120-SA-PI-0002
Instrument & Control System Design Criteria	BK-GCS-PEDCO-120-IN-DC-0002
Specification For Control Valves	BK-GNRAL-PEDCO-000-IN-SP-0005
Calculation Note For Control Valve Sizing	BK-GCS-PEDCO-120-PR-CN-0006

 NISOC		تگه‌داشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 				
		DATA SHEETS FOR CONTROL/REGULATOR VALVES											
شماره پیمان:		پروژه	صادر کننده	بسته کاری	رشته	تهیه‌کننده	نوع مدرک	سریال	نسخه	شماره صفحه:	4	از	21
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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-0002 ".
- 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- 2 Nos. Eye-Bolt and 2 Nos. Jack Bolt for each valve to be supplied by vendor.
- 8 - Environmental condition for field instrumentation of Binak Oilfield shall be considered as per the followings:

• Minimum winter dry bulb: 0.0 °C • Maximum winter relative humidity: 100 • Buildings heating, design dry bulb: 6.0 °C • Design winter dry bulb: -1.0 °C • Design winter relative humidity: 100% • Maximum summer dry bulb: 50.26°C • Maximum summer relative humidity: 100% • Buildings cooling, design dry bulb: 41.0 °C	• Design summer dry bulb: 77.0 °C • Maximum sun temperature: 85.0 °C • Maximum Shade Temperature: 52.0 °C • Minimum Design relative humidity: 0 • Min. average ambient temperature (°C): 8.35 °C • Max. Average ambient temperature (°C): 35 °C • Min .Absolut air temperature(°C): 0 °C • Max .Absolut air temperature(°C): 47.09 °C
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Relative Humidity:

 - Maximum Range: 92.27%
 - Average Relative Humidity 54.7%
 - Minimum Relative Humidity: 34.94%
- 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- Quick Change Trim type control valve to be designed by vendor.
- 13- Main parameters such as Noise level, vibration, actuator sizing, valve construction material, CV factor, Fluid specification, ... to be specified as per standard by vendor.
- 14- The stroking time shall be lower than 5 second for valves up to 4" and 1 second per inch diameter for bigger ones. (VTC)
- 15- Actuators shall be sized for a minimum air pressure of 3 barg. The normal operating pressure is 4.5 barg, and the maximum operating pressure is 8 barg. The capacity of the secured instrument air buffer vessel shall be sized for a minimum instrument air supply pressure of 3 barg.
- 16- Body color of valves shall be selected same as pipe color and actuator shall be green . For more details refer to the latest revision of "Specification For Painting Doc No."BK-GNRL-PEDCO-000-PI-SP-0006 ".
- 17- As per IPS-IN-160 test pressures shall be determined by the following relationships:
 - a) Shell test: $1.5 \times$ maximum permissible, working pressure at 20°C.
 - b) Disk strength test (applicable to valves 14 inches and larger): $1.5 \times$ maximum permissible working pressure at 20°C.
 - c) Seat test: $1.1 \times$ maximum permissible working pressure at 20°C.
- 18- The software using for sizing control valves is Fisher.

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 5	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR FLOW CONTROL VALVES											
GENERAL	1	Tag No.				FCV-2101					
	2	Service				Gas Compression Inlet Gas Pipeline (Binak)					
	3	Line No.		P&ID No.		GAS-111-0001-AN07-6"-PT		BK-GCS-PEDCO-120-PR-PI-0002-D07			
	4	Area Classification				Zone2, 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.		AN07		SCH.80			
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 6"		ASTM A106 Gr.B , B36.10M			
PROCESS CONDITIONS	10	Fluid				Gas					
	11	State				Gas					
	12	Shut Off Pressure delta P (BARG)				18.2					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/water/oil)				kg/h	7220.4928	6564.084	1969.23		
	15	Inlet Pressure				bar-g	6.5	6.5	6.5		
	16	Pressure Drop				bar	1	1	1		
	17	Inlet Temperature(max)				°C	46.11	46.11	46.11		
	18	Specific Gravity (Vapour/water/oil)				0.91					
	19	Compressibility Factor(Z)(vapour/water/oil)				-/0.91					
	20	Viscosity (vapour/water/oil)				cP	0.012 / - / -				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.225 / -					
	CALCULATED RESULTS	22	Vapour Pressure				bar-g				
23		Critical Pressure (liquid)				bar-g					
24		Flow Coefficient Cv				-					
25		Travel				%					
BODY AND TRIM (Note 6)	26	Sound Pressure Level				dBA	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)		
	27	Body size		4" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)		
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart		
	29	End conn. & Rating		4" # 300			52	Power Supply	24 VDC loop powered		
	30	Body/Bonnet Material		ASTM A216 GR. WCB			53	Electrical Connection	ISO M20 x 1.5		
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)		
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)			
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi			
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EExia	Yes	
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)		
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	
	ACTUATOR	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A
		41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A	
		42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A	
43		MFR	Model	(NOTE 4 in Below Table)		66		Switching Position	N/A		
44		Size	Eff.Area	(NOTE 4 in Below Table)		67	I.P.	Ex.Protect.	N/A		
45		Air Failure	Handwheel	FAIL CLOSE		68	MFR	Model	N/A		
46		Air Action	Orientation	AIR TO OPEN		AIR SET	69	Set Pressure	Yes		
47		Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	
48		AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)	7.5	8.5		71	Pnumatic Conn.	1/4 " NPTF		
49		MFR	Model	(NOTE 4 in Below Table)			72	MFR	Model	(NOTE 4 in Below Table)	
PURCHASE	Manufacturer		(NOTE 4 in Below Table)		TESTS	73	Hydro. Pressure	API 598			
	Model		(NOTE 4 in Below Table)			74	Leakage Class	ANSI IV			
						75	Performance Test	Required			
						OPTIONS	76	Internal Tubing	Required(with Double Ferrule Compression conn.)		
							77	Tube Material	316 S.S		
				78	Cable Gland		M20, Nickel plated brass				
					79	Cable Entry	M20 X 1.5				
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 6	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR FLOW CONTROL VALVES											
GENERAL		1 Tag No.		FCV-2102							
		2 Service		Gas Compression Inlet Gas Pipeline (Golkhari)							
		3 Line No.		P&ID No.		GAS-111-0001-FN07-8"-PT			BK-GCS-PEDCO-120-PR-PI-0003-D07		
		4 Area Classification		Zone2, 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.		FN07			SCH.100		
		9 Pipe Line Insulation Line Size		Pipe Material		PT / 8"			ASTM A106 Gr.B , B36.10M		
PROCESS CONDITIONS		10 Fluid		Gas							
		11 State		Gas							
		12 Shut Off Pressure delta P (BARG)		90							
		13		Units	Max	Norm.	Min.				
		14 Flow Rate(vapor/water/oil)		kg/h	12395.9313	11269.03	3380				
		15 Inlet Pressure		bar-g	6.5	6.5	6.5				
		16 Pressure Drop		bar	1	1	1				
		17 Inlet Temperature(max)		°C	32	32	32				
		18 Specific Gravity (Vapour/water/oil)		0.81							
		19 Compressibility Factor(Z)(vapour/water/oil)		0.984 / - / -							
		20 Viscosity (vapour/water/oil)		cP	0.011 / - / -						
21 Specific Heats Ratio(Cp/Cv) (vapour/liquid)		1.26 / - / -									
22 Vapour Pressure		bar-g	-								
23 Critical Pressure (liquid)		bar-g	102.1								
CALCULATED RESULTS		24 Flow Coefficient Cv		-		183.637	166.851	50.132			
		25 Travel		%		63	61	33			
		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		6" (VTC)		POSITIONER (Note 5)		50 Type		Electrical-Pneumatic(SMART)	
		28 Rated Cv		(NOTE 4 in Below Table)				51 Input Signal		4~20 mA-Hart	
		29 End conn. & Rating		6" # 600				52 Power Supply		24 VDC loop powered	
		30 Body/Bonnet Material		ASTM A216 GR. WCB				53 Electrical Connection		ISO M20 x 1.5	
		31 Body/Bonnet Type		GLOBE / Bolted Flange Bonnet				54 Increase/Decrease Air		Increase to Open(VTC)	
		32 Flow Direction		(NOTE 4 in Below Table)				55 Lock Last Position		(NOTE 4 in Below Table)	
		33 Packing Material		P.T.F.E.		SOLENOID VALVE		56 Output Signal		3-15 Psi	
		34 Trim Type		SINGLE SEATED/CAGE				57 I.P./Ex.Protect. Gauge		IP65 / EEExia Yes	
		35 Characteristic		EQUAL PERCENTAGE (VTC)				58 MFR Model		(NOTE 4 in Below Table)	
		36 Guiding		(NOTE 4 in Below Table)				59 Type Qty.		N/A N/A	
		37 Rated Travel		(NOTE 4 in Below Table)				60 MFR Model		N/A N/A	
		38 Plug/Disk Material		SS316 (Note 6)				61 I.P. Ex.Protect.		N/A N/A	
		39 Seat Material		NO. 12 (Note 8)		SWITCHES		62 MFR Model		N/A N/A	
		40 Cage/Guid Material		SS316 (Note 6)				63 Type Qty.		N/A N/A	
		41 Stem Material		SS316 (Note 6)				64 Power Supply		N/A	
		42 Trim Material		SS316 (Note 6)				65 Contacts / Rating		N/A	
43 MFR Model		(NOTE 4 in Below Table)		AIR SET		66 Switching Position		N/A			
44 Size Eff.Area		(NOTE 4 in Below Table)				67 I.P. Ex.Protect.		N/A N/A			
45 Air Failure Handwheel		FAIL CLOSE SIDE MOUNTED				68 MFR Model		N/A N/A			
46 Air Action Orientation		AIR TO OPEN VERT. UP				69 Set Pressure		Yes			
ACTUATOR		47 Actuator Type		Pneumatic Diaphragm Actuators		70 Filter Gauge		Yes Yes			
		48 AIR Press. Min/ Max/ Des. (Barg)		4 (Note 3 in Below Table) 7.5 8.5		71 Pnumatic Conn.		1/4 " NPTF			
		49 MFR Model		(NOTE 4 in Below Table)		72 MFR Model		(NOTE 4 in Below Table)			
PURCHASE		Manufacturer		(NOTE 4 in Below Table)							
		Model		(NOTE 4 in Below Table)							
TESTS		73 Hydro. Pressure		API 598							
		74 Leakage Class		ANSI IV							
		75 Performance Test		Required							
OPTIONS		76 Internal Tubing		Required(with Double Ferrule Compression conn.)							
		77 Tube Material		316 S.S							
		78 Cable Gland		M20, Nickel plated brass							
		79 Cable Entry		M20 X 1.5							
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 seat rings for Erosion or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 7	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR FLOW CONTROL VALVES											
GENERAL	1	Tag No.				FCV-2111					
	2	Service				Slug Catcher System					
	3	Line No.		P&ID No.		CDH-112-0014-CN05-3"-PT		BK-GCS-PEDCO-120-PR-PI-0004-D07(2/2)			
	4	Area Classification				Zone1, 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.		CN05		SCH.40			
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 3"		ASTM A106 Gr.B , B36.10M			
PROCESS CONDITIONS	10	Fluid				Liquid					
	11	State				Liquid					
	12	Shut Off Pressure delta P (BARG)				47.7					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/water/oil)				kg/hr	7873.8	7158	2505.3		
	15	Inlet Pressure				bar-g	19.5	19.5	19.5		
	16	Pressure Drop				bar	1	1	1		
	17	Inlet Temperature(max)				°C	32.0	32.0	32.0		
	18	Specific Gravity (Vapour/water/oil)				0.715					
	19	Compressibility Factor(Z)(vapour/water/oil)				-					
	20	Viscosity (vapour/water/oil)				cP	- / 0.58				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				- / 1.223					
	CALCULATED RESULTS	22	Vapour Pressure				bar-a	6.5			
23		Critical Pressure (liquid)				bar-g	220.3				
24		Flow Coefficient Cv				-	10.804	9.817	3.43		
25		Travel				%	69	64	35		
	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		2" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)		
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart		
	29	End conn. & Rating		2" # 300			52	Power Supply	24 VDC loop powered		
	30	Body/Bonnet Material		ASTM A216 GR. WCB			53	Electrical Connection	ISO M20 x 1.5		
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)		
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)			
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi			
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EEExia	Yes	
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)		
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	
	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A	
	41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A		
	42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A		
43	MFR	Model	(NOTE 4 in Below Table)		66		Switching Position	N/A			
ACTUATOR	44	Size	Eff.Area	(NOTE 4 in Below Table)		AIR SET	67	I.P.	Ex.Protect.	N/A	
	45	Air Failure	Handwheel	FAIL CLOSE	SIDE MOUNTED		68	MFR	Model	N/A	
	46	Air Action	Orientation	AIR TO OPEN	VERT. UP		69	Set Pressure	Yes		
	47	Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	
	48	AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)	7.5	8.5		71	Pnumatic Conn.	1/4 " NPTF		
TESTS	49	MFR	Model	(NOTE 4 in Below Table)		TESTS	72	MFR	Model	(NOTE 4 in Below Table)	
	73	Hydro. Pressure	API 598				OPTIONS	74	Leakage Class	ANSI IV	
	74	Leakage Class	ANSI IV					75	Performance Test	Required	
	75	Performance Test	Required			76		Internal Tubing	Required(with Double Ferrule Compression conn.)		
	76	Internal Tubing	Required(with Double Ferrule Compression conn.)			77		Tube Material	316 S.S		
	77	Tube Material	316 S.S			78		Cable Gland	M20, Nickel plated brass		
	78	Cable Gland	M20, Nickel plated brass			79		Cable Entry	M20 X 1.5		
	79	Cable Entry	M20 X 1.5								
	PURCHASE	Manufacturer		(NOTE 4 in Below Table)							
		Model		(NOTE 4 in Below Table)							
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification' ,Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 8	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR LEVEL CONTROL VALVES											
										D03	
GENERAL	1	Tag No.				LCV-2114					
	2	Service				Gas Compression Inlet Knock Out Drum to Closed Drain					
	3	Line No.		P&ID No.		CDH-111-0019-AS00-2"-NP		BK-GCS-PEDCO-120-PR-PI-0005-D07			
	4	Area Classification				Zone2, IIB T4					
	5	Ambient Temperature		°C	Min.	Max.	5		50		
	6	Available Air Supply Pressure		barg	Min.	Max.	4.5		8		
	7	Nace Requirement:				NOT Required					
PIPE & LINE	8	Pipe Class		Pipe Sch.		AS00		SCH.10S			
	9	Pipe Line Insulation Line Size		Pipe Material		NP / 2"		ASTM A312 TP 316L , B36.19M			
PROCESS CONDITIONS	10	Fluid				Liquid					
	11	State				Liquid					
	12	Shut Off Pressure delta P				13.9					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/water/oil)			kg/h	1119.5286	1017.7533	305.326			
	15	Inlet Pressure			bar-g	5.3	5.3	5.3			
	16	Pressure Drop			bar	4.3	4.3	4.3			
	17	Inlet Temperature(max)			°C	36.9	36.9	36.9			
	18	Specific Gravity (Vapour/water/oil)				0.842					
	19	Compressibility Factor(Z)(vapour/water/oil)				-					
	20	Viscosity (vapour/water/oil)				cP	-0.691				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				-	1.143				
	CALCULATED RESULTS	22	Vapour Pressure				bar-a	0.61			
23		Critical Pressure (liquid)				bar-a	221.413				
24		Flow Coefficient Cv				-	0.186	0.619	0.681		
25		Travel				%	19	16	-		
	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		1 1/2" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)		
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart		
	29	End conn. & Rating		1 1/2" # 300			52	Power Supply	24 VDC loop powered		
	30	Body/Bonnet Material		A351 GR. CF3M			53	Electrical Connection	ISO M20 x 1.5		
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)		
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)			
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi			
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EEExia	Yes	
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)		
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	
	ACTUATOR	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A
		41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A	
		42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A	
43		MFR	Model	(NOTE 4 in Below Table)		66		Switching Position	N/A		
44		Size	Eff.Area	(NOTE 4 in Below Table)		67	I.P.	Ex.Protect.	N/A		
45		Air Failure	Handwheel	FAIL CLOSE		AIR SET	68	MFR	Model	N/A	
46		Air Action	Orientation	AIR TO OPEN			69	Set Pressure	Yes		
47		Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	
48		AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5		8.5	71	Pnumatic Conn.	1/4 " NPTF	
		49	MFR	Model	(NOTE 4 in Below Table)		TESTS	72	MFR	Model	(NOTE 4 in Below Table)
PURCHASE	Manufacturer	(NOTE 4 in Below Table)				73		Hydro. Pressure	API 598		
	Model	(NOTE 4 in Below Table)				74		Leakage Class	ANSI IV		
						75	Performance Test	Required			
						OPTIONS	76	Internal Tubing	Required(with Double Ferrule Compression conn.)		
							77	Tube Material	316 S.S		
					78		Cable Gland	M20, Nickel plated brass			
						79	Cable Entry	M20 X 1.5			
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 9	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR PRESSURE CONTROL VALVES										D03	
GENERAL	1	Tag No.				PCV-2135A					
	2	Service				2nd Stage Gas Compression Air Coolers (C-2102A)					
	3	Line No.		P&ID No.		GAS-111-0057A-FS00-4"-NP		BK-GCS-PEDCO-120-PR-PI-0011-D07(1/3)			
	4	Area Classification				Zone2, 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.		FS00		SCH.40S			
	9	Pipe Line Insulation Line Size		Pipe Material		IS / 4"		ASTM A312 TP 316L , B36.19M			
PROCESS CONDITIONS	10	Fluid				Gas					
	11	State				Gas					
	12	Shut Off Pressure delta P (BARG)				62.4					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/water/oil)				kg/h	9530	8664.00	2166.00		
	15	Inlet Pressure				bar-g	54.1	54.1	54.1		
	16	Pressure Drop				bar	53.6	53.6	53.6		
	17	Inlet Temperature(max)				°C	60	60	60		
	18	Specific Gravity (Vapour/water/oil)				-0.847					
	19	Compressibility Factor(Z)(vapour/water/oil)				0.860 / - / -					
	20	Viscosity (vapour/water/oil)				cP	0.014/ - / -				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.457 / -					
	CALCULATED RESULTS	22	Vapour Pressure				bar-g				
23		Critical Pressure (liquid)				bar-g					
24		Flow Coefficient Cv				-					
25		Travel				%					
BODY AND TRIM (Note 6)	26	Sound Pressure Level				dBA	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)		
	27	Body size		3" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)		
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart		
	29	End conn. & Rating		3" # 600			52	Power Supply	24 VDC loop powered		
	30	Body/Bonnet Material		A351 GR. CF3M			53	Electrical Connection	ISO M20 x 1.5		
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)		
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)			
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi			
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EEExia	Yes	
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)		
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	
	ACTUATOR	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A
		41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A	
		42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A	
		43	MFR	Model	(NOTE 4 in Below Table)			66	Switching Position	N/A	
		44	Size	Eff.Area	(NOTE 4 in Below Table)		67	I.P.	Ex.Protect.	N/A	
45		Air Failure	Handwheel	FAIL OPEN	SIDE MOUNTED	AIR SET	68	MFR	Model	N/A	
46		Air Action	Orientation	AIR TO OPEN	VERT. UP		69	Set Pressure	Yes		
47		Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	
48		AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5		8.5	71	Pnumatic Conn.	1/4 " NPTF	
TESTS		49	MFR	Model	(NOTE 4 in Below Table)		TESTS	72	MFR	Model	(NOTE 4 in Below Table)
	73	Hydro. Pressure	API 598			OPTIONS		74	Leakage Class	ANSI IV	
	74	Leakage Class	ANSI IV					75	Performance Test	Required	
	75	Performance Test	Required				76	Internal Tubing	Required(with Double Ferrule Compression conn.)		
	76	Internal Tubing	Required(with Double Ferrule Compression conn.)				77	Tube Material	316 S.S		
	77	Tube Material	316 S.S				78	Cable Gland	M20, Nickel plated brass		
	78	Cable Gland	M20, Nickel plated brass				79	Cable Entry	M20 X 1.5		
	79	Cable Entry	M20 X 1.5								
	PURCHASE	Manufacturer		(NOTE 4 in Below Table)							
		Model		(NOTE 4 in Below Table)							
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 				
		DATA SHEETS FOR CONTROL/REGULATOR VALVES										
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 10		
		BK	GCS	PEDCO	120	IN	DT	0011	D03			
DATA SHEETS FOR PRESSURE CONTROL VALVES												
GENERAL	1	Tag No.		PCV-2135B								
	2	Service		2nd Stage Gas Compression Air Coolers (C-2102B)								
	3	Line No.	P&ID No.		GAS-111-0057B-FS00-4"-NP			BK-GCS-PEDCO-120-PR-PI-0011-D07(2/3)				
	4	Area Classification		Zone2, 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.		FS00			SCH.40S				
	9	Pipe Line Insulation Line Size	Pipe Material		IS / 4"			ASTM A312 TP 316L , B36.19M				
PROCESS CONDITIONS	10	Fluid		Gas								
	11	State		Gas								
	12	Shut Off Pressure delta P (BARG)		62.4								
	13			Units	Max	Norm.	Min.					
	14	Flow Rate(vapor/water/oil)		kg/h	9530	8664.00	2166.00					
	15	Inlet Pressure		bar-g	54.1	54.1	54.1					
	16	Pressure Drop		bar	53.6	53.6	53.6					
	17	Inlet Temperature(max)		°C	60	60	60					
	18	Specific Gravity (Vapour/water/oil)			-0.847							
	19	Compressibility Factor(Z)(vapour/water/oil)			0.860 / - / -							
	20	Viscosity (vapour/water/oil)		cP	0.014/ - / -							
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)			1.457 / -							
	CALCULATED RESULTS	22	Vapour Pressure		bar-g							
23		Critical Pressure (liquid)		bar-g								
24		Flow Coefficient Cv			11.447	10.406	2.231					
25		Travel		%	51	49	11					
BODY AND TRIM (Note 6)	26	Sound Pressure Level		dBA		MAX 85 dBA(VTC)		MAX 85 dBA(VTC)		MAX 85 dBA(VTC)		
	27	Body size	3" (VTC)									
	28	Rated Cv	(NOTE 4 in Below Table)									
	29	End conn. & Rating	3" # 600									
	30	Body/Bonnet Material	A351 GR. CF3M									
	31	Body/Bonnet Type	GLOBE / Bolted Flange Bonnet									
	32	Flow Direction	(NOTE 4 in Below Table)									
	33	Packing Material	P.T.F.E.									
	34	Trim Type	SINGLE SEATED/CAGE									
	35	Characteristic	EQUAL PERCENTAGE (VTC)									
	36	Guiding	(NOTE 4 in Below Table)									
	37	Rated Travel	(NOTE 4 in Below Table)									
	38	Plug/Disk Material	SS316 (Note 6)									
	39	Seat Material	NO. 12 (Note 8)									
	40	Cage/Guid Material	SS316 (Note 6)									
	41	Stem Material	SS316 (Note 6)									
	42	Trim Material	SS316 (Note 6)									
	43	MFR	Model	(NOTE 4 in Below Table)								
	ACTUTOR	44	Size	Eff.Area	(NOTE 4 in Below Table)							
		45	Air Failure	Handwheel	FAIL OPEN	SIDE MOUNTED						
		46	Air Action	Orientation	AIR TO OPEN	VERT. UP						
		47	Actuator Type	Pneumatic Diaphragm Actuators								
	PURCHASE	48	AIR Press. Min/ Max/ Des. (Barg)	(Note 3 in Below Table)		7.5	8.5					
		49	MFR	Model	(NOTE 4 in Below Table)							
	TESTS	50	Type	Electrical-Pneumatic(SMART)								
		51	Input Signal	4-20 mA-Hart								
52		Power Supply	24 VDC loop powered									
53		Electrical Connection	ISO M20 x 1.5									
54		Increase/Decrease Air	Increase to Open(VTC)									
55		Lock Last Position	(NOTE 4 in Below Table)									
56		Output Signal	3-15 Psi									
57		I.P./Ex.Protect.	Gauge	IP65 / EEExia Yes								
58		MFR	Model	(NOTE 4 in Below Table)								
SOLENOID VALVE		59	Type	Qty.	N/A		N/A					
	60	MFR	Model	N/A		N/A						
	61	I.P.	Ex.Protect.	N/A		N/A						
	62	MFR	Model	N/A		N/A						
SWITCHES	63	Type	Qty.	N/A		N/A						
	64	Power Supply	N/A									
	65	Contacts / Rating	N/A									
	66	Switching Position	N/A									
AIR SET	67	I.P.	Ex.Protect.	N/A		N/A						
	68	MFR	Model	N/A		N/A						
	69	Set Pressure	Yes									
	70	Filter	Gauge	Yes		Yes						
OPTIONS	71	Pnumatic Conn.	1/4 " NPTF									
	72	MFR	Model	(NOTE 4 in Below Table)								
	73	Hydro. Pressure	API 598									
	74	Leakage Class	ANSI IV									
TESTS	75	Performance Test	Required									
	76	Internal Tubing	Required(with Double Ferrule Compression conn.)									
	77	Tube Material	316 S.S									
	78	Cable Gland	M20, Nickel plated brass									
TESTS	79	Cable Entry	M20 X 1.5									

NOTES:

- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 quotation 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 Erosion or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005
- Valve sizing finalized by vendor and client agreement.
- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 11	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR PRESSURE CONTROL VALVES											
D03											
GENERAL	1	Tag No.				PCV-2135C					
	2	Service				2nd Stage Gas Compression Air Coolers (C-2102C)					
	3	Line No.		P&ID No.		GAS-111-0057C-FS00-4"-NP		BK-GCS-PEDCO-120-PR-PI-0011-D07(3/3)			
	4	Area Classification				Zone2, 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.		FS00		SCH.40S			
	9	Pipe Line Insulation Line Size		Pipe Material		IS / 4"		ASTM A312 TP 316L , B36.19M			
PROCESS CONDITIONS	10	Fluid				Gas					
	11	State				Gas					
	12	Shut Off Pressure delta P (BARG)				62.4					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/water/oil)				kg/h	9530	8664.00	2166.00		
	15	Inlet Pressure				bar-g	54.1	54.1	54.1		
	16	Pressure Drop				bar	53.6	53.6	53.6		
	17	Inlet Temperature(max)				°C	60	60	60		
	18	Specific Gravity (Vapour/water/oil)				-0.847					
	19	Compressibility Factor(Z)(vapour/water/oil)				0.860 / - / -					
	20	Viscosity (vapour/water/oil)				cP	0.014/ - / -				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.457 / -					
	CALCULATED RESULTS	22	Vapour Pressure				bar-g				
23		Critical Pressure (liquid)				bar-g					
24		Flow Coefficient Cv				-					
25		Travel				%					
BODY AND TRIM (Note 6)	26	Sound Pressure Level				dBA	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)		
	27	Body size		3" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)		
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart		
	29	End conn. & Rating		3" # 600			52	Power Supply	24 VDC loop powered		
	30	Body/Bonnet Material		A351 GR. CF3M			53	Electrical Connection	ISO M20 x 1.5		
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)		
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)			
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi			
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EExia	Yes	
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)		
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	
	ACTUATOR	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A
		41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A	
		42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A	
		43	MFR	Model	(NOTE 4 in Below Table)			66	Switching Position	N/A	
		44	Size	Eff.Area	(NOTE 4 in Below Table)		67	I.P.	Ex.Protect.	N/A	
		45	Air Failure	Handwheel	FAIL OPEN	SIDE MOUNTED	68	MFR	Model	N/A	
		46	Air Action	Orientation	AIR TO OPEN	VERT. UP	AIR SET	69	Set Pressure	Yes	
		47	Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes
		48	AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5		8.5	71	Pnumatic Conn.	1/4 " NPTF
		49	MFR	Model	(NOTE 4 in Below Table)			72	MFR	Model	(NOTE 4 in Below Table)
	TESTS	73	Hydro. Pressure				API 598				
		74	Leakage Class				ANSI IV				
75		Performance Test				Required					
OPTIONS		76	Internal Tubing				Required(with Double Ferrule Compression conn.)				
		77	Tube Material				316 S.S				
		78	Cable Gland				M20, Nickel plated brass				
		79	Cable Entry				M20 X 1.5				
PURCHASE	Manufacturer		(NOTE 4 in Below Table)								
	Model		(NOTE 4 in Below Table)								
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification' ,Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 12	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR PRESSURE CONTROL VALVES											
GENERAL		1 Tag No.				PCV-2151					
		2 Service				Gas Compression Dehydration Package					
		3 Line No.		P&ID No.		GAS-111-0179-FN05-6"-IS		BK-GCS-PEDCO-120-PR-PI-0013-D07 (1/3)			
		4 Area Classification				Zone2, 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		IS / 6"		ASTM A106 Gr.B , ASME B36.10M			
PROCESS CONDITIONS		10 Fluid				Gas					
		11 State				Gas					
		12 Shut Off Pressure delta P (BARG)				90					
		13				Units	Max	Norm.	Min.		
		14 Flow Rate(vapor/water/oil)				kg/h	18887.886	17170.81	5151.3		
		15 Inlet Pressure				bar-g	52.9	52.9	52.9		
		16 Pressure Drop				bar	1	1	1		
		17 Inlet Temperature(max)				°C	59.36	59.36	59.42		
		18 Specific Gravity (Vapour/water/oil)				0.847/-					
		19 Compressibility Factor(Z)(vapour/water/oil)				0.9 / -					
		20 Viscosity (vapour/water/oil)				cP	0.0141 / - / -				
		21 Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.456 / -					
		CALCULATED RESULTS		22 Vapour Pressure				bar-g			
23 Critical Pressure (liquid)				bar-g							
24 Flow Coefficient Cv				-							
25 Travel				%							
		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		4" (VTC)		POSITIONER (Note 5)		50 Type		Electrical-Pneumatic(SMART)	
		28 Rated Cv		(NOTE 4 in Below Table)				51 Input Signal		4~20 mA-Hart	
		29 End conn. & Rating		4" # 600				52 Power Supply		24 VDC loop powered	
		30 Body/Bonnet Material		A216 GR. WCB				53 Electrical Connection		ISO M20 x 1.5	
		31 Body/Bonnet Type		GLOBE / Bolted Flange Bonnet				54 Increase/Decrease Air		Increase to Open(VTC)	
		32 Flow Direction		(NOTE 4 in Below Table)		55 Lock Last Position		(NOTE 4 in Below Table)			
		33 Packing Material		P.T.F.E.		56 Output Signal		3-15 Psi			
		34 Trim Type		SINGLE SEATED/CAGE		57 I.P./Ex.Protect. Gauge		IP65 / EExia Yes			
		35 Characteristic		EQUAL PERCENTAGE (VTC)		58 MFR Model		(NOTE 4 in Below Table)			
		36 Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE		59 Type Qty.		N/A N/A	
		37 Rated Travel		(NOTE 4 in Below Table)				60 MFR Model		N/A N/A	
		38 Plug/Disk Material		SS316 (Note 6)				61 I.P. Ex.Protect.		N/A N/A	
		39 Seat Material		NO. 12 (Note 8)				62 MFR Model		N/A N/A	
		40 Cage/Guid Material		SS316 (Note 6)		SWITCHES		63 Type Qty.		N/A N/A	
		41 Stem Material		SS316 (Note 6)				64 Power Supply		N/A	
		42 Trim Material		SS316 (Note 6)				65 Contacts / Rating		N/A	
43 MFR Model		(NOTE 4 in Below Table)		66 Switching Position				N/A			
ACTUATOR		44 Size Eff.Area		(NOTE 4 in Below Table)		AIR SET		67 I.P. Ex.Protect.		N/A N/A	
		45 Air Failure Handwheel		FAIL CLOSE SIDE MOUNTED				68 MFR Model		N/A N/A	
		46 Air Action Orientation		AIR TO OPEN VERT. UP				69 Set Pressure		Yes	
		47 Actuator Type		Pneumatic Diaphragm Actuators				70 Filter Gauge		Yes Yes	
		48 AIR Press. Min/ Max/ Des. (Barg)		4 (Note 3 in Below Table) 7.5 8.5		71 Pnumatic Conn.		1/4 " NPTF			
		49 MFR Model		(NOTE 4 in Below Table)		72 MFR Model		(NOTE 4 in Below Table)			
						TESTS		73 Hydro. Pressure		API 598	
								74 Leakage Class		ANSI IV	
								75 Performance Test		Required	
						OPTIONS		76 Internal Tubing		Required(with Double Ferrule Compression conn.)	
								77 Tube Material		316 S.S	
PURCHASE		Manufacturer		(NOTE 4 in Below Table)		78 Cable Gland		M20, Nickel plated brass			
		Model		(NOTE 4 in Below Table)		79 Cable Entry		M20 X 1.5			
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 seat rings for Erosion or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 							
		DATA SHEETS FOR CONTROL/REGULATOR VALVES													
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 13					
		BK	GCS	PEDCO	120	IN	DT	0011	D03						
DATA SHEETS FOR PRESSURE CONTROL VALVES										D03					
GENERAL	1	Tag No.				PCV-2152									
	2	Service				Gas Compression Dehydration Package									
	3	Line No.		P&ID No.		GAS-111-0052-FN05-4"-IS		BK-GCS-PEDCO-120-PR-PI-0013-D07 (1/3)							
	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		IS / 4"		ASTM A106 Gr.B , ASME B36.10M							
PROCESS CONDITIONS	10	Fluid				Gas									
	11	State				Gas									
	12	Shut Off Pressure delta P (BARG)				90									
	13					Units	Max	Norm.	Min.						
	14	Flow Rate(vapor/water/oil)				kg/h	18887.89	17170.81	5151.300						
	15	Inlet Pressure				bar-g	52.9	52.9	52.9						
	16	Pressure Drop				bar	52.4	52.4	52.4						
	17	Inlet Temperature(max)				°C	59.36	59.36	59.36						
	18	Specific Gravity (Vapour/water/oil)				0.847/-									
	19	Compressibility Factor(Z)(vapour/water/oil)				0.900									
	20	Viscosity (vapour/water/oil)				cP	0.0141 / - / -								
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.456 / -									
	CALCULATED RESULTS	22	Vapour Pressure				bar-g								
23		Critical Pressure (liquid)				bar-g									
24		Flow Coefficient Cv				-									
25		Travel				%									
BODY AND TRIM (Note 6)	26	Sound Pressure Level				dBA	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)						
	27	Body size		3" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)						
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart						
	29	End conn. & Rating		3" # 600			52	Power Supply	24 VDC loop powered						
	30	Body/Bonnet Material		A216 GR. WCB			53	Electrical Connection	ISO M20 x 1.5						
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)						
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)							
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi							
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EEExia	Yes					
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)						
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A					
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A					
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A					
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A					
	ACTUATOR	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A				
		41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A					
		42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A					
43		MFR	Model	(NOTE 4 in Below Table)		66		Switching Position	N/A						
44		Size	Eff.Area	(NOTE 4 in Below Table)		67	I.P.	Ex.Protect.	N/A						
45		Air Failure	Handwheel	FAIL OPEN	SIDE MOUNTED	68	MFR	Model	N/A						
46		Air Action	Orientation	AIR TO OPEN	VERT. UP	AIR SET	69	Set Pressure	Yes						
47		Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes					
48		AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5		8.5	71	Pnumatic Conn.	1/4 " NPTF					
49		MFR	Model	(NOTE 4 in Below Table)			72	MFR	Model	(NOTE 4 in Below Table)					
											TESTS	73	Hydro. Pressure	API 598	
												74	Leakage Class	ANSI IV	
												75	Performance Test	Required	
												OPTIONS	76	Internal Tubing	Required(with Double Ferrule Compression conn.)
77	Tube Material	316 S.S													
78	Cable Gland	M20, Nickel plated brass													
79	Cable Entry	M20 X 1.5													
PURCHASE	Manufacturer		(NOTE 4 in Below Table)												
	Model		(NOTE 4 in Below Table)												
NOTES:															
1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.															

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 				
		DATA SHEETS FOR CONTROL/REGULATOR VALVES										
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 14		
		BK	GCS	PEDCO	120	IN	DT	0011	D03			
DATA SHEETS FOR PRESSURE CONTROL VALVES												
GENERAL	1	Tag No.				PCV-2201				D03		
	2	Service				Instrument & Plant Air System						
	3	Line No.		P&ID No.		PLA-112-0010-AN04-1 1/2"-PT		BK-GCS-PEDCO-120-PR-PI-0015-D07 (1/2)				
	4	Area Classification				Zone2, IIB T4						
	5	Ambient Temperature		°C	Min.	Max.	5		50			
	6	Available Air Supply Pressure		barg	Min.	Max.	4.5		8			
	7	Nace Requirement:				NOT Required						
PIPE & LINE	8	Pipe Class		Pipe Sch.		AN04		SCH.80				
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 1 1/2"		ASTM A106 Gr.B , ASME B36.10M				
PROCESS CONDITIONS	10	Fluid				Gas						
	11	State				Gas						
	12	Shut Off Pressure delta P (BARG)				18.2						
	13					Units	Max	Norm.	Min.			
	14	Flow Rate(vapor/water/oil)				kg/h	42.656	38.7782	11.6334			
	15	Inlet Pressure				bar-g	9	9	9			
	16	Pressure Drop				bar	4.5	4.5	4.5			
	17	Inlet Temperature(max)				°C	65	65	65			
	18	Specific Gravity (Vapour/water/oil)				1/-						
	19	Compressibility Factor(Z)(vapour/water/oil)				0.998						
	20	Viscosity (vapour/water/oil)				cP	0.021					
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.410						
	CALCULATED RESULTS	22	Vapour Pressure				bar-g					
23		Critical Pressure (liquid)				bar-g						
24		Flow Coefficient Cv				-						
25		Travel				%						
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		1" (VTC)		POSITIONER (Note 5)	50	Type		Electrical-Pneumatic(SMART)		
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal		4~20 mA-Hart		
	29	End conn. & Rating		1" # 300			52	Power Supply		24 VDC loop powered		
	30	Body/Bonnet Material		ASTM A 105			53	Electrical Connection		ISO M20 x 1.5		
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air		Increase to Open(VTC)		
	32	Flow Direction		(NOTE 4 in Below Table)			55	Lock Last Position		(NOTE 4 in Below Table)		
	33	Packing Material		P.T.F.E.		56	Output Signal		3-15 Psi			
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EExia	Yes		
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)			
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type		Qty.	N/A	N/A
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	N/A	
	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type		Qty.	N/A	N/A
	41	Stem Material		SS316 (Note 6)			64	Power Supply		N/A		
	42	Trim Material		SS316 (Note 6)			65	Contacts / Rating		N/A		
43	MFR	Model	(NOTE 4 in Below Table)		66		Switching Position		N/A			
ACTUATOR	44	Size	Eff.Area	(NOTE 4 in Below Table)		AIR SET	67	I.P.	Ex.Protect.	N/A	N/A	
	45	Air Failure	Handwheel	FAIL CLOSE	SIDE MOUNTED		68	MFR	Model	N/A	N/A	
	46	Air Action	Orientation	AIR TO OPEN	VERT. UP		69	Set Pressure		Yes		
	47	Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	Yes	
	48	AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5	8.5	71	Pnumatic Conn.		1/4 " NPTF		
	49	MFR	Model	(NOTE 4 in Below Table)		72	MFR	Model	(NOTE 4 in Below Table)			
	TESTS	73	Hydro. Pressure		API 598		OPTIONS	76	Internal Tubing		Required(with Double Ferrule Compression conn.)	
		74	Leakage Class		ANSI IV			77	Tube Material		316 S.S	
		75	Performance Test		Required			78	Cable Gland		M20, Nickel plated brass	
	79	Cable Entry		M20 X 1.5								
	PURCHASE	Manufacturer	(NOTE 4 in Below Table)									
		Model	(NOTE 4 in Below Table)									
	NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 			
		DATA SHEETS FOR CONTROL/REGULATOR VALVES									
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 15 از 21	
		BK	GCS	PEDCO	120	IN	DT	0011	D03		
DATA SHEETS FOR PRESSURE CONTROL VALVES											
GENERAL	1	Tag No.				PCV-2211					
	2	Service				Nitrogen Generation System					
	3	Line No.		P&ID No.		NIT-112-0021-AN01-2"-PT		BK-GCS-PEDCO-120-PR-PI-0016-D07			
	4	Area Classification				Zone2, IIB T4					
	5	Ambient Temperature		°C	Min.	Max.	5		50		
	6	Available Air Supply Pressure		barg	Min.	Max.	4.5		8		
	7	Nace Requirement:				NOT Required					
PIPE & LINE	8	Pipe Class		Pipe Sch.		AN01		SCH.40			
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 2"		ASTM A106 Gr.B , ASME B36.10M			
PROCESS CONDITIONS	10	Fluid				Gas					
	11	State				Gas					
	12	Shut Off Pressure delta P (BARG)				18.2					
	13					Units	Max	Norm.	Min.		
	14	Flow Rate(vapor/water/oil)				kg/h	42.5 / - / -	38.62 / - / -	11.59 / - / -		
	15	Inlet Pressure				bar-g	8	8	8		
	16	Pressure Drop				bar	0.5	0.5	0.5		
	17	Inlet Temperature(max)				°C	60	60	60		
	18	Specific Gravity (Vapour/water/oil)				0.966/-					
	19	Compressibility Factor(Z)(vapour/water/oil)				0.998 / - / -					
	20	Viscosity (vapour/water/oil)				cP	0.01999 / - / -				
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.408 / -					
	CALCULATED RESULTS	22	Vapour Pressure				bar-g	-			
23		Critical Pressure (liquid)				bar-g	32.93				
24		Flow Coefficient Cv				-	0.749	0.681	0.204		
25		Travel				%	22	19	-		
	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		1 1/2" (VTC)		POSITIONER (Note 5)	50	Type		Electrical-Pneumatic(SMART)	
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal		4~20 mA-Hart	
	29	End conn. & Rating		1 1/2" # 300			52	Power Supply		24 VDC loop powered	
	30	Body/Bonnet Material		ASTM A 105			53	Electrical Connection		ISO M20 x 1.5	
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air		Increase to Open(VTC)	
	32	Flow Direction		(NOTE 4 in Below Table)			55	Lock Last Position		(NOTE 4 in Below Table)	
	33	Packing Material		P.T.F.E.		56	Output Signal		3-15 Psi		
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EExia	Yes	
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)		
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type		N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	
	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type		N/A	
	41	Stem Material		SS316 (Note 6)			64	Power Supply		N/A	
	42	Trim Material		SS316 (Note 6)			65	Contacts / Rating		N/A	
43	MFR	Model	(NOTE 4 in Below Table)		66		Switching Position		N/A		
ACTUATOR	44	Size	Eff.Area	(NOTE 4 in Below Table)		AIR SET	67	I.P.	Ex.Protect.	N/A	
	45	Air Failure	Handwheel	FAIL OPEN	SIDE MOUNTED		68	MFR	Model	N/A	
	46	Air Action	Orientation	AIR TO OPEN	VERT. UP		69	Set Pressure		Yes	
	47	Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	
	48	AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5	8.5	71	Pnumatic Conn.		1/4 " NPTF	
	49	MFR	Model	(NOTE 4 in Below Table)		72	MFR	Model	(NOTE 4 in Below Table)		
						TESTS	73	Hydro. Pressure		API 598	
							74	Leakage Class		ANSI IV	
							75	Performance Test		Required	
							OPTIONS	76	Internal Tubing		Required(with Double Ferrule Compression conn.)
								77	Tube Material		316 S.S
78	Cable Gland		M20, Nickel plated brass								
PURCHASE	Manufacturer	(NOTE 4 in Below Table)		79	Cable Entry		M20 X 1.5				
	Model	(NOTE 4 in Below Table)									
NOTES: 1- All materials shall be in accordance with 'Piping Material Specification' ,Document No.: .BK-GCS-PEDCO-120-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 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 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 				
		DATA SHEETS FOR CONTROL/REGULATOR VALVES										
شماره پیمان: 053 - 073 - 9038		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 16		
		BK	GCS	PEDCO	120	IN	DT	0011	D03			
DATA SHEETS FOR PRESSURE CONTROL VALVES												
GENERAL	1	Tag No.				PCV-2272				D03		
	2	Service				From Inlet K.O. Drum to V-2205						
	3	Line No.		P&ID No.		GAS-111-0004-AN07-3"-PT		BK-GCS-PEDCO-120-PR-PI-0022-D07				
	4	Area Classification				Zone2, 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.		AN07		SCH.80				
	9	Pipe Line Insulation Line Size		Pipe Material		PT / 3"		ASTM A106 Gr.B , ASME B36.10M				
PROCESS CONDITIONS	10	Fluid				Gas						
	11	State				Gas						
	12	Shut Off Pressure delta P (BARG)				18.2						
	13					Units	Max	Norm.	Min.			
	14	Flow Rate(vapor/water/oil)				kg/h	556.3473	505.8	151.731			
	15	Inlet Pressure				bar-g	5.1	5.1	5.1			
	16	Pressure Drop				bar	0.2	0.2	0.2			
	17	Inlet Temperature(max)				°C	37	37	37			
	18	Specific Gravity (Vapour/water/oil)				0.846/-						
	19	Compressibility Factor(Z)(vapour/water/oil)				0.974 / - / -						
	20	Viscosity (vapour/water/oil)				cP	0.01 / - / -					
	21	Specific Heats Ratio(Cp/Cv) (vapour/liquid)				1.245 / -						
	CALCULATED RESULTS	22	Vapour Pressure				bar-g					
23		Critical Pressure (liquid)				bar-g						
24		Flow Coefficient Cv				-	19.182	17.423	5.206			
25		Travel				%	78	75	41			
BODY AND TRIM (Note 6)	26	Sound Pressure Level				dBA	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)	MAX 85 dBA(VTC)			
	27	Body size		2" (VTC)		POSITIONER (Note 5)	50	Type	Electrical-Pneumatic(SMART)			
	28	Rated Cv		(NOTE 4 in Below Table)			51	Input Signal	4~20 mA-Hart			
	29	End conn. & Rating		2" # 300			52	Power Supply	24 VDC loop powered			
	30	Body/Bonnet Material		A216 GR. WCB			53	Electrical Connection	ISO M20 x 1.5			
	31	Body/Bonnet Type		GLOBE / Bolted Flange Bonnet			54	Increase/Decrease Air	Increase to Open(VTC)			
	32	Flow Direction		(NOTE 4 in Below Table)		55	Lock Last Position	(NOTE 4 in Below Table)				
	33	Packing Material		P.T.F.E.		56	Output Signal	3-15 Psi				
	34	Trim Type		SINGLE SEATED/CAGE		57	I.P./Ex.Protect.	Gauge	IP65 / EExia Yes			
	35	Characteristic		EQUAL PERCENTAGE (VTC)		58	MFR	Model	(NOTE 4 in Below Table)			
	36	Guiding		(NOTE 4 in Below Table)		SOLENOID VALVE	59	Type	Qty.	N/A	N/A	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	N/A	N/A	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	N/A	N/A	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	N/A	N/A	
	ACTUATOR	40	Cage/Guid Material		SS316 (Note 6)		SWITCHES	63	Type	Qty.	N/A	N/A
		41	Stem Material		SS316 (Note 6)			64	Power Supply	N/A		
		42	Trim Material		SS316 (Note 6)			65	Contacts / Rating	N/A		
43		MFR	Model	(NOTE 4 in Below Table)		66		Switching Position	N/A			
44		Size	Eff.Area	(NOTE 4 in Below Table)		67	I.P.	Ex.Protect.	N/A	N/A		
45		Air Failure	Handwheel	FAIL CLOSE	SIDE MOUNTED	AIR SET	68	MFR	Model	N/A	N/A	
46		Air Action	Orientation	AIR TO OPEN	VERT. UP		69	Set Pressure	Yes			
47		Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	Yes	
48		AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)		7.5		8.5	71	Pnumatic Conn.	1/4 " NPTF		
PURCHASE		49	MFR	Model	(NOTE 4 in Below Table)		TESTS	72	MFR	Model	(NOTE 4 in Below Table)	
						73		Hydro. Pressure	API 598			
						74		Leakage Class	ANSI IV			
						75		Performance Test	Required			
						OPTIONS	76	Internal Tubing	Required(with Double Ferrule Compression conn.)			
							77	Tube Material	316 S.S			
							78	Cable Gland	M20, Nickel plated brass			
							79	Cable Entry	M20 X 1.5			
	NOTES: 1- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-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 seat rings for Erosion or cavitation/flashing services as per Control valve specification BK- GENRL-PEDCO-000-IN-SP-0005 7- Valve sizing finalized by vendor and client agreement. 8- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.											

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 			
	DATA SHEETS FOR CONTROL/REGULATOR VALVES										
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 17 از 21		
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D03			

DATA SHEETS FOR PRESSURE REGULATOR VALVES													
GENERAL	1	Tag No.					PRV-2161					D03	
	2	Service					TK-2102						
	3	P & ID No.					BK-GCS-PEDCO-120-PR-PI-0014_D07						
	4	Area Classification					Zone2, IIB T4						
	5	Line No.			Piping Class		NIT-112-0010-AN01-1"-PT			AN01			
	6	Ambient Temperature		°C	Min.	Max.	5			50			
	7	Nace Requirement:					NO						
PROCESS CONDITIONS	8	Fluid			Phase		NITROGEN			GAS			
	9						Min. Flow			Norm. Flow			
	10	Flow Rate					3.091			15.5362			
	11	Inlet Pressure					0.05			0.05			
	12	Outlet Pressure					0			0			
	13	Inlet Temperature					60			60			
	14	Molecular Weight					28.01			28.01			
	15	Density					1.075			1.075			
	16	Viscosity					0.020			0.020			
	17	Design Temperature					85			° C			
	18	Design Pressure					18.2			bar-g			
	19	Calculated Cv / Travel					0.005/2.513/3.267 24/59/66			- / %			
	20	Allowable / Predicted SPL					MAX 85 dBA(VTC)			dBA			
	21	Compressibility Factor (Z)					0.998						
22	Spec. Heat Ratio (K=Cp/Cv)					1.408							
LINE	23	Pipe Line Size		In	Out	1"	1"	ACTUATOR	55	Type		Self-actuated regulator	
	24	Pipe Line Schedule		In	Out	SCH. 80	SCH.80		56	Pilot		N/A	
	25	Pipe Line Insulation/Spec		PAINTING					57	Supply to Pilot		N/A	
	26								58	Spring Range (bar-g)		VTA	
VALVE BODY / BONNET	27	Body Type		GLOBE				POSITIONER	59	Setpoint (bar-g)		50mbarg	
	28	Size	ANSI Class	1" (Note1)	300#	60	Process Connection		1/2" NPTF (Note1)				
	29	Mfr. & Model		VTA					61	Air Failure		N/A	
	30	Body / Bonnet Material		ASTM A 105					62	Spring Action		N/A	
	31	End Connection	In	Out	1" (Note1)	1" (Note1)	63						
	32	Type Of Bonnet	STANDARD				64						
	33	Packing Material		PTFE					65				
	34								66	Type		N/A	
TRIM	37	Characteristics		LINEAR (Note1)				LIMIT SWITCH	67	Mfr. & Model		N/A	
	38	Rated	Cv	FL	XT	VTA	VTA		VTA	68	Input Signal	Output Signal	N/A
	39	Trim Material		SS316 (Note 4)					69	On Incr Signal Output Incr / Decr		N/A	
	40	Seat Material		NO. 12 (Note 5)					70			N/A	
	41	Req. Seat Tightness		Class IV					71	Electrical Connection		N/A	
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)				AIR SET	72	Ex Certificate	Ingress Protection	N/A	
	45	Model		(NOTE 2 in Below Table)					73	Type	Quantity	N/A	
SOLENOID VALVE	46	Type		N/A				TESTS	74	Mfr. & Model		N/A	
	47	Tag Number		N/A					75	Tag Number(s)		N/A	
	48	Body Material		N/A					76	Actuation Point		N/A	
	49	Operating Voltage		N/A					77	Contacts / Rating		N/A	
	50	Elec. Connection		N/A					78	Electrical Connection		N/A	
	51	Manual Reset		N/A					79	Ex Certificate	Ingress Protection	N/A	
SPECIAL ACCESSORIES	53	Fusible Leakage	Booster	N/A		N/A			80	Mfr. & Model		VTA	
	54	Block Relay	Volume Tank	N/A		N/A			81	Set Pressure		VTA	

Notes:

VTA: Vendor To Advise N/A: Not Applicable

1- Shall be confirmed by vendor.

2- Shall be stated by vendor at quotaion stage.

3- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-PI-SP-0001

4- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel.

5- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک										
	DATA SHEETS FOR CONTROL/REGULATOR VALVES										
شماره پیمان:	پروژه	بسته کاری	صادرکننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 21 از 18		
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D03			

DATA SHEETS FOR PRESSURE REGULATOR VALVES												
GENERAL	1	Tag No.					PRV-2162					
	2	Service					From Nitrogen Header to TK-2102					
	3	P & ID No.					BK-GCS-PEDCO-120-PR-PI-0014_D07					
	4	Area Classification					Zone2, IIB T4					
	5	Line No.	Piping Class				NIT-112-0010-AN01-1"-PT			AN01		
	6	Ambient Temperature	°C	Min.	Max.	5			50			
	7	Nace Requirement:					NO					
PROCESS CONDITIONS	8	Fluid	Phase				NITROGEN			GAS		
	9						Min. Flow	Norm. Flow	Max. Flow	Unit		
	10	Flow Rate					6.20	17.87	23.23	Kg/h		
	11	Inlet Pressure					7.5	7.5	7.5	bar-g		
	12	Outlet Pressure					7.49	7.49	7.49	bar-g		
	13	Inlet Temperature					60	60	60	° C		
	14	Molecular Weight					28.01	28.01	28.01	-		
	15	Density					8.620	8.620	8.620	kg/m3		
	16	Viscosity					0.020	0.020	0.020	Cp		
	17	Design Temperature					85			° C		
	18	Design Pressure					18.2			bar-g		
	19	Calculated Cv / Travel					0.048/0.139/0.180 54/50/29			- / %		
	20	Allowable / Predicted SPL					MAX 85 dBA(VTC)			dBA		
	21	Compressibility Factor (Z)					0.998					
22	Spec. Heat Ratio (K=Cp/Cv)					1.408						
LINE	23	Pipe Line Size	In	Out	1"	1"	55	Type	Self-actuated regulator			
	24	Pipe Line Schedule	In	Out	SCH. 80	SCH.80		56	Pilot	N/A		
	25	Pipe Line Insulation/Spec	PAINTING					57	Supply to Pilot	N/A		
	26							58	Spring Range (bar-g)	VTA		
VALVE BODY / BONNET	27	Body Type	GLOBE				60	Setpoint (bar-g)	10mbarg			
	28	Size	ANSI Class	1" (Note1)	300#	61		Process Connection	1/2" NPTF (Note1)			
	29	Mfr. & Model	VTA					62	Air Failure	N/A		
	30	Body / Bonnet Material	ASTM A 105					63	Spring Action	N/A		
	31	End Connection	In	Out	1" (Note1)	1" (Note1)		64				
	32	Type Of Bonnet	STANDARD					65				
	33	Packing Material	PTFE					66	Type	N/A		
	34							67	Mfr. & Model	N/A		
	35							68	Input Signal	Output Signal	N/A	N/A
	36							69	On Incr Signal	Output Incr / Decr	N/A	N/A
TRIM	37	Characteristics	LINEAR (Note1)				70	Electrical Connection	N/A			
	38	Rated	Cv	FL	XT	VTA		VTA	VTA			
	39	Trim Material	SS316 (Note 4)					71	Ex Certificate	Ingress Protection	N/A	N/A
	40	Seat Material	NO. 12 (Note 5)					72	Type	Quantity	N/A	N/A
	41	Req. Seat Tightness	Class IV					73	Mfr. & Model	N/A		
	42							74	Tag Number(s)	N/A		
	43							75	Actuation Point	N/A		
PURCHASE	44	Manufacturer	(NOTE 2 in Below Table)				76	Contacts / Rating	N/A			
	45	Model	(NOTE 2 in Below Table)					77	Electrical Connection	N/A		
SOLENOID VALVE	46	Type	N/A				78	Ex Certificate	Ingress Protection	N/A	N/A	
	47	Tag Number	N/A					79	Mfr. & Model	VTA		
	48	Body Material	N/A					80	Set Pressure	VTA		
	49	Operating Voltage	N/A					81	Filter	Gauges	VTA	VTA
	50	Elec. Connection	N/A					82	Pneumatic Connection	VTA		
	51	Manual Reset	N/A					83	Hydro Pressure	YES		
SPECIAL ACCESSORIES	52	Ex Certificate	Ingress Protection	N/A	N/A	84	NACE MR 0175	No				
	53	Fusible Leakage	Booster	N/A	N/A		85					
	54	Block Relay	Volume Tank	N/A	N/A		86					

Notes:

VTA: Vendor To Advise N/A: Not Applicable

1- Shall be confirmed by vendor.

2- Shall be stated by vendor at quotation stage.

3- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-PI-SP-0001

4- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel.

5- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تا کم گاز در استگاه جمع آوری سنک



شماره صفحه : 19 از 21

ماره پیمان:
053 - 073 - 9038

DATA SHEETS FOR CONTROL/REGULATOR VALVES

21	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
	D03	0011	DT	IN	120	PEDCO	GCS	BK

DATA SHEETS FOR PRESSURE REGULATOR VALVES

PRV-2201

D03

GENERAL	1	Tag No.					PRV-2201							D03	
	2	Service					From Air Dryer Package (Pk-Dr-2203)								
	3	P & ID No.					BK-GCS-PEDCO-120-PR-PI-0015_D07 (2/2)								
	4	Area Classification					Zone2, IIB T4								
	5	Line No.			Piping Class		ISA-112-0112-AZ00-2"-NP				AZ00				
	6	Ambient Temperature		°C	Min.	Max.	5				50				
	7	Nace Requirement:					NO								
PROCESS CONDITIONS	8	Fluid			Phase		AIR				GAS				
	9						Min. Flow		Norm. Flow		Max. Flow		Unit		
	10	Flow Rate					35.664		118.881		154.607		Kg/h		
	11	Inlet Pressure					9		9		9		bar-g		
	12	Outlet Pressure					8		8		8		bar-g		
	13	Inlet Temperature					65		65		65		° C		
	14	Molecular Weight					28.97		28.97		28.97		-		
	15	Density					10.331		10.331		10.331		kg/m3		
	16	Viscosity					0.021		0.021		0.021		Cp		
	17	Design Temperature					85							° C	
	18	Design Pressure					18.2							bar-g	
	19	Calculated Cv / Travel					0.427/1.424/1.852 25/42/52							- / %	
	20	Allowable / Predicted SPL					MAX 85 dBA(VTC)							dBA	
	21	Compressibility Factor (Z)					0.998								
22	Spec. Heat Ratio (K=Cp/Cv)					1.4									
LINE	23	Pipe Line Size		In	Out	2"	2"	ACTUATOR	55	Type		Self-actuated regulator			
	24	Pipe Line Schedule		In	Out	SCH. 40	SCH.40		56	Pilot		N/A			
	25	Pipe Line Insulation/Spec				PAINTING			57	Supply to Pilot		N/A			
	26						58		Spring Range (bar-g)		VTA				
VALVE BODY / BONNET	27	Body Type				GLOBE			59	Setpoint (bar-g)		8barg			
	28	Size		ANSI Class		1 1/2" (Note1)	300#		60	Process Connection		1/2" NPTF (Note1)			
	29	Mfr. & Model				VTA			61	Air Failure		N/A			
	30	Body / Bonnet Material				ASTM B148 UNS C95800			62	Spring Action		N/A			
	31	End Connection		In	Out	2" (Note1)	2" (Note1)	63							
	32	Type Of Bonnet				STANDARD			64						
	33	Packing Material				PTFE			65						
	34						66	Type		N/A					
	35						67	Mfr. & Model		N/A					
	36						68	Input Signal		Output Signal	N/A	N/A			
TRIM	37	Characteristics				LINEAR (Note1)			69	On Incr Signal Output Incr / Decr		N/A			
	38	Rated		Cv	FL	XT	VTA	VTA	VTA	70			N/A		
	39	Trim Material				SS316 (Note 4)			71	Electrical Connection		N/A			
	40	Seat Material				NO. 12 (Note 5)			72	Ex Certificate		Ingress Protection	N/A	N/A	
	41	Req. Seat Tightness				Class IV			73	Type		Quantity		N/A	N/A
	42						74	Mfr. & Model		N/A					
	43						75	Tag Number(s)		N/A					
PURCHASE	44	Manufacturer				(NOTE 2 in Below Table)			76	Actuation Point		N/A			
	45	Model				(NOTE 2 in Below Table)			77	Contacts / Rating		N/A			
SOLENOID VALVE	46	Type				N/A			78	Electrical Connection		N/A			
	47	Tag Number				N/A			79	Ex Certificate		Ingress Protection	N/A	N/A	
	48	Body Material				N/A			80	Mfr. & Model		VTA			
	49	Operating Voltage				N/A			81	Set Pressure		VTA			
	50	Elec. Connection				N/A			82	Filter		Gauges	VTA	VTA	
	51	Manual Reset				N/A			83	Pneumatic Connection		VTA			
	52	Ex Certificate		Ingress Protection		N/A	N/A	84	Hydro Pressure		YES				
SPECIAL ACCESSORIES	53	Fusible Leakage		Booster		N/A	N/A	85	NACE MR 0175		No				
	54	Block Relay		Volume Tank		N/A	N/A	86							

Notes:

VTA: Vendor To Advise N/A: Not Applicable

1- Shall be confirmed by vendor.

2- Shall be stated by vendor at quotaion stage.

3- All materials shall be in accordance with 'Piping Material Specification' ,Document No.: .BK-GCS-PEDCO-120-PI-SP-0001

4- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel.

5- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 				
	DATA SHEETS FOR CONTROL/REGULATOR VALVES											
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	21	از	20	شماره صفحه:
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D03				

DATA SHEETS FOR PRESSURE REGULATOR VALVES																				
GENERAL	1	Tag No.					PRV-2291													
	2	Service					From Nitrogen Header to V-2107													
	3	P & ID No.					BK-GCS-PEDCO-120-PR-PI-0025_D07													
	4	Area Classification					Zone2, IIB T4													
	5	Line No.				Piping Class		NIT-111-0005-AN01-1"-PT			AN01									
	6	Ambient Temperature		°C		Min.		Max.		5		50								
	7	Nace Requirement:					NO													
PROCESS CONDITIONS	8	Fluid			Phase			NITROGEN			GAS									
	9							Min. Flow			Norm. Flow									
	10	Flow Rate						0.74			6.37									
	11	Inlet Pressure						7.5			7.5									
	12	Outlet Pressure						0.01			0.01									
	13	Inlet Temperature						60			60									
	14	Molecular Weight						28.01			28.01									
	15	Density						8.620			8.620									
	16	Viscosity						0.020			0.020									
	17	Design Temperature						85			° C									
	18	Design Pressure						18.2			bar-g									
	19	Calculated Cv / Travel						0.0066/0.054/0.059 81/46/49			- / %									
	20	Allowable / Predicted SPL						MAX 85 dBA(VTC)			dBA									
	21	Compressibility Factor (Z)						0.998												
22	Spec. Heat Ratio (K=Cp/Cv)						1.408													
LINE	23	Pipe Line Size		In	Out	1"	1"	55	Type		Self-actuated regulator									
	24	Pipe Line Schedule		In	Out	SCH. 80	SCH.80		56	Pilot		N/A								
	25	Pipe Line Insulation/Spec		PAINTING					57	Supply to Pilot		N/A								
	26								58	Spring Range (bar-g)		VTA								
VALVE BODY / BONNET	27	Body Type		GLOBE				60	Process Connection		1/2" NPTF (Note1)									
	28	Size	ANSI Class	1" (Note1)	300#	61	Air Failure		N/A											
	29	Mfr. & Model		VTA					62	Spring Action		N/A								
	30	Body / Bonnet Material		ASTM A 105						63										
	31	End Connection	In	Out	1" (Note1)		1" (Note1)				64									
	32	Type Of Bonnet		STANDARD								65								
	33	Packing Material		PTFE									66	Type		N/A				
	34													67	Mfr. & Model		N/A			
	35														68	Input Signal	Output Signal	N/A	N/A	
	36															69	On Incr Signal Output Incr / Decr		N/A	
37	Characteristics		LINEAR (Note1)				70										N/A			
38	Rated	Cv	FL	XT	VTA	VTA		VTA									71	Electrical Connection		N/A
39	Trim Material		SS316 (Note 4)					72	Ex Certificate									Ingress Protection	N/A	N/A
40	Seat Material		NO. 12 (Note 5)						73	Type								Quantity	N/A	N/A
41	Req. Seat Tightness		Class IV							74	Mfr. & Model							N/A		
42											75	Tag Number(s)						N/A		
43												76	Actuation Point					N/A		
44	Manufacturer		(NOTE 2 in Below Table)										77	Contacts / Rating				N/A		
45	Model		(NOTE 2 in Below Table)											78	Electrical Connection			N/A		
46	Type		N/A												79	Ex Certificate		Ingress Protection	N/A	N/A
47	Tag Number		N/A				80									Mfr. & Model		VTA		
48	Body Material		N/A													81	Set Pressure		VTA	
49	Operating Voltage		N/A					82									Filter	Gauges	VTA	VTA
50	Elec. Connection		N/A						83								Pneumatic Connection		VTA	
51	Manual Reset		N/A							84							Hydro Pressure		YES	
52	Ex Certificate	Ingress Protection	N/A	N/A	85	NACE MR 0175					No									
53	Fusible Leakage	Booster	N/A	N/A		86														
54	Block Relay	Volume Tank	N/A	N/A																

Notes:

VTA: Vendor To Advise N/A: Not Applicable

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3- All materials shall be in accordance with 'Piping Material Specification', Document No.: .BK-GCS-PEDCO-120-PI-SP-0001

4- Trim part material shall be considered as minimum 316SS and hard face or any equal hard steel.

5- As per Piping Material Specification Doc. No.: "BK-GCS-PEDCO-120-PI-SP-0001", Refer to table 8 of API 600 Rev. 2015.

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک											
	DATA SHEETS FOR CONTROL/REGULATOR VALVES											
شماره پیمان:	پروژه	بسته کاری	صادرکننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	21	از	21	شماره صفحه:
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D03				

DATA SHEETS FOR PRESSURE REGULATOR VALVES														
GENERAL	1	Tag No.					PRV-2292							
	2	Service					From V-2107 to ATM							
	3	P & ID No.					BK-GCS-PEDCO-120-PR-PI-0025_D07							
	4	Area Classification					Zone2, IIB T4							
	5	Line No.				Piping Class		NIT-111-0009-AN04-1"-PT				AN04		
	6	Ambient Temperature		°C		Min.		Max.		5		50		
	7	Nace Requirement:					YES							
PROCESS CONDITIONS	8	Fluid			Phase			NITROGEN			GAS			
	9							Min. Flow			Norm. Flow			
	10	Flow Rate						0.74			4.26			
	11	Inlet Pressure						0.05			0.05			
	12	Outlet Pressure						0			0			
	13	Inlet Temperature						60			60			
	14	Molecular Weight						28.01			28.01			
	15	Density						1.080			1.080			
	16	Viscosity						0.020			0.020			
	17	Design Temperature						85			° C			
	18	Design Pressure						18.2			bar-g			
	19	Calculated Cv / Travel						0.120/0.689/0.746			- / %			
	20	Allowable / Predicted SPL						MAX 85 dBA(VTC)			dBA			
	21	Compressibility Factor (Z)						0.998						
22	Spec. Heat Ratio (K=Cp/Cv)						1.408							
LINE	23	Pipe Line Size		In	Out	1"	1"	ACTUATOR	55	Type		Self-actuated regulator		
	24	Pipe Line Schedule		In	Out	SCH.XXS	SCH.XXS		56	Pilot		N/A		
	25	Pipe Line Insulation/Spec		PAINTING					57	Supply to Pilot		N/A		
	26								58	Spring Range (bar-g)		VTA		
VALVE BODY / BONNET	27	Body Type		GLOBE				POSITIONER	59	Setpoint (bar-g)		50mbarg		
	28	Size	ANSI Class	1" (Note1)	300#	LIMIT SWITCH	60		Process Connection		1/2" NPTF (Note1)			
	29	Mfr. & Model		VTA					61	Air Failure		N/A		
	30	Body / Bonnet Material		ASTM A 105					62	Spring Action		N/A		
	31	End Connection	In	Out	1" (Note1)		1" (Note1)		63					
	32	Type Of Bonnet		STANDARD					64					
	33	Packing Material		PTFE					65					
	34								66	Type		N/A		
TRIM	37	Characteristics		LINEAR (Note1)				AIR SET	67	Mfr. & Model		N/A		
	38	Rated	Cv	FL	XT	VTA	VTA		VTA	68	Input Signal	Output Signal	N/A	N/A
	39	Trim Material		SS316 (Note 4)					69	On Incr Signal Output Incr / Decr		N/A		
	40	Seat Material		NO. 12 (Note 5)					70			N/A		
	41	Req. Seat Tightness		Class IV					71	Electrical Connection		N/A		
	42								72	Ex Certificate	Ingress Protection	N/A	N/A	
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)				TESTS	73	Type	Quantity	N/A	N/A	
	45	Model		(NOTE 2 in Below Table)					74	Mfr. & Model		N/A		
SOLENOID VALVE	46	Type		N/A				AIR SET	75	Tag Number(s)		N/A		
	47	Tag Number		N/A					76	Actuation Point		N/A		
	48	Body Material		N/A					77	Contacts / Rating		N/A		
	49	Operating Voltage		N/A					78	Electrical Connection		N/A		
	50	Elec. Connection		N/A					79	Ex Certificate	Ingress Protection	N/A	N/A	
	51	Manual Reset		N/A					80	Mfr. & Model		VTA		
SPECIAL ACCESSORIES	52	Ex Certificate	Ingress Protection	N/A	N/A	TESTS	81	Set Pressure		VTA				
	53	Fusible Leakage	Booster	N/A	N/A		82	Filter	Gauges	VTA	VTA			
	54	Block Relay	Volume Tank	N/A	N/A		83	Pneumatic Connection		VTA				
							84	Hydro Pressure		YES				
							85	NACE MR 0175		YES				
							86							

Notes:

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