

 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	نسخه D06	سریال 0011	نوع مدبرک DT	رشته IN	تسهیلات 120	صادرکننده PEDCO	بسته کاری GCS	پروژه BK	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

D06	NOV.2024	AFC	P.Hajisadeghi	M.Fakharian	M.Sadeghian	
D05	APR.2024	AFC	P.Hajisadeghi	M.Fakharian	S.Faramarzpour	
D04	FEB.2024	IFA	P.Hajisadeghi	M.Fakharian	S.Faramarzpour	
D03	OCT.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	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

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



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



DATA SHEETS FOR CONTROL/REGULATOR VALVES

شماره پیمان:

053 - 073 - 9184

یوزہ

بسته کاری

صادر کنندہ

تسهيلات

رشته

نوع مدرک

نسویال

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فسخا

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شماره ۵ صفحه:

REVISION RECORD SHEET

[illegible]

 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	D06			

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: 053 - 073 - 9184	پروژه	بسته کاری	صادر کننده	تهیه‌کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 4 از 21	
	BK	GCS	PEDCO	120	IN	DT	0011	D06		

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.
- 19- All control and regulator valves shall have flanged end connection.
- 20- All mentioned valued as valve coefficient (Cv) and travel are preliminary and shall be finalized/confirmed by Vendor

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		DATA SHEETS FOR CONTROL/REGULATOR VALVES								
شماره پیمان:		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 5 از 21
053 - 073 - 9038		BK	GCS	PEDCO	120	IN	DT	0011	D06	

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 D06 BK-GCS-PEDCO-120-PR-PI-0002-D08					
	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)				- /0.98					
	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	106.096				
24		Flow Coefficient Cv (Note 20 in page 4)				D06	104.86	95.16	28.427		
25		Travel (Note 20 in page 4)				D06	65	63	39		
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)							
	28	Rated Cv		(NOTE 4 in Below Table)							
	29	End conn. & Rating		4" # 300							
	30	Body/Bonnet Material		ASTM A216 GR. WCB							
	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)							
	ACTUTOR	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)							
44		Size	Eff.Area	(NOTE 4 in Below Table)							
45		Air Failure	Handwheel	FAIL CLOSE	SIDE MOUNTED						
46		Air Action	Orientation	AIR TO OPEN	VERT. UP						
47		Actuator Type		Pneumatic Diaphragm Actuators							
48		AIR Press. Min/ Max/ Des. (Barg)	4 (Note 3 in Below Table)	7.5	8.5						
49		MFR	Model	(NOTE 4 in Below Table)							
PURCHASE		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)							
	59	Type	Qty.	N/A					N/A		
TESTS	60	MFR	Model	N/A					N/A		
	61	I.P.	Ex.Protect.	N/A					N/A		
	62	MFR	Model	N/A					N/A		
	63	Type	Qty.	N/A					N/A		
	64	Power Supply		N/A							
	65	Contacts / Rating		N/A							
	66	Switching Position		N/A							
	67	I.P.	Ex.Protect.	N/A					N/A		
	68	MFR	Model	N/A					N/A		
	69	Set Pressure		Yes							
OPTIONS	70	Filter	Gauge	Yes					Yes		
	71	Pnumatic Conn.		1/4 " NPTF							
	72	MFR	Model	(NOTE 4 in Below Table)							
	73	Hydro. Pressure		API 598							
	74	Leakage Class		ANSI V							
	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							
	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 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 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
- 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.

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		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: 6 از 21		
		BK	GCS	PEDCO	120	IN	DT	0011	D06			
DATA SHEETS FOR FLOW CONTROL VALVES												
GENERAL	1	Tag No.				FCV-2102						
	2	Service				Gas Compression Inlet Gas Pipeline (Golghari)						
	3	Line No.		P&ID No.		GAS-111-0001-FN07-8"-PT D06 BK-GCS-PEDCO-120-PR-PI-0003-D08						
	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 / - / -						
	CALCULATED RESULTS	22	Vapour Pressure				bar-g	-				
23		Critical Pressure (liquid)				bar-g	102.1					
24		Flow Coefficient Cv (Note 20 in page 4)				-	183.637	166.851	50.132			
25		Travel (Note 20 in page 4)				%	63	61	33			
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		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.		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		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		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		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 V			
					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 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 7	
		BK	GCS	PEDCO	120	IN	DT	0011	D06		
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 D06 BK-GCS-PEDCO-120-PR-PI-0004-D09(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					
	22	Vapour Pressure				bar-a	6.5				
	CALCULATED RESULTS	23	Critical Pressure (liquid)				bar-g	220.3			
24		Flow Coefficient Cv (Note 20 in page 4)				-	10.804	9.817	3.43		
25		Travel (Note 20 in page 4)				%	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 V	
	74	Leakage Class	ANSI V					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	D06		
DATA SHEETS FOR LEVEL CONTROL VALVES											
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 D06 BK-GCS-PEDCO-120-PR-PI-0005-D09					
	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.		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 (Note 20 in page 4)				-	0.681	0.619	0.186		
25		Travel (Note 20 in page 4)				%	72	69	32		
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		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 / 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		
ACTUTOR	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	
49	MFR	Model	(NOTE 4 in Below Table)		TESTS	72	MFR	Model	(NOTE 4 in Below Table)		
PURCHASE	Manufacturer		(NOTE 4 in Below Table)			OPTIONS	73	Hydro. Pressure		API 598	
	Model		(NOTE 4 in Below Table)				74	Leakage Class		ANSI V	
							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			
					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 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 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 9	
		BK	GCS	PEDCO	120	IN	DT	0011	D06		
DATA SHEETS FOR PRESSURE CONTROL VALVES											
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-FS00-6"-IS  BK-GCS-PEDCO-120-PR-PI-0011-D09(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 / 6"		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 (Note 20 in page 4) 				-		11.145	10.132	2.75	
25		Travel (Note 20 in page 4) 				%		54	52	25	
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		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	
	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 OPEN	SIDE MOUNTED		68	MFR	Model	N/A	
	46	Air Action	Orientation	AIR TO CLOSE	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 V					
	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 10	
		BK	GCS	PEDCO	120	IN	DT	0011	D06		
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-FS00-6"-IS / BK-GCS-PEDCO-120-PR-PI-0011-D09(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 / 6"		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 (Note 20 in page 4)				-					
25		Travel (Note 20 in page 4)				%					
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		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	
	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 OPEN	SIDE MOUNTED		68	MFR	Model	N/A	
	46	Air Action	Orientation	AIR TO CLOSE	VERT. UP		69	Set Pressure	Yes		
	47	Actuator Type		Pneumatic Diaphragm Actuators			70	Filter	Gauge	Yes	
	48	AIR Press. Min/ Max/ Des. (Barg)	(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 V					
	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 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: 11 از 21	
		BK	GCS	PEDCO	120	IN	DT	0011	D06		
DATA SHEETS FOR PRESSURE CONTROL VALVES											
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-FS00-6"-IS / D06 BK-GCS-PEDCO-120-PR-PI-0011-D09(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 / 6"		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 (Note 20 in page 4)				11.145		10.132		2.75	
25		Travel (Note 20 in page 4)				54		52		25	
26		Sound Pressure Level				dBA		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		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		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.	
	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.		
	45	Air Failure	Handwheel	FAIL OPEN	SIDE MOUNTED		68	MFR	Model		
	46	Air Action	Orientation	AIR TO CLOSE	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		
TESTS	73	Hydro. Pressure		API 598		OPTIONS	76	Internal Tubing		Required(with Double Ferrule Compression conn.)	
	74	Leakage Class		ANSI V			77	Tube Material		316 S.S	
	75	Performance Test		Required			78	Cable Gland		M20, Nickel plated brass	
	76	Internal Tubing		Required(with Double Ferrule Compression conn.)			79	Cable Entry		M20 X 1.5	
	77	Tube Material		316 S.S							
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	D06	
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-D08 (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	59.36	
	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 / -				
	22	Vapour Pressure				bar-g	-			
CALCULATED RESULTS	23	Critical Pressure (liquid)				bar-g	104.9			
	24	Flow Coefficient Cv (Note 20 in page 4)  				-	96.547	87.644	26.124	
	25	Travel (Note 20 in page 4)  				%	64	62	37	
	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 / 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		
	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 V		
						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:		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 13 از 21	
053 - 073 - 9038		BK	GCS	PEDCO	120	IN	DT	0011	D06		
DATA SHEETS FOR PRESSURE CONTROL VALVES											
GENERAL	1	Tag No.				PCV-2152					
	2	Service				Gas Compression Dehydration Package					
	3	Line No.		P&ID No.		GAS-111-0052-FN05-4"-IS D06 BK-GCS-PEDCO-120-PR-PI-0013-D08 (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	104.9				
24		Flow Coefficient Cv (Note 20 in page 4)				-	26.114	21.585	5.96		
25		Travel (Note 20 in page 4)				%	68	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		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		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		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 OPEN	SIDE MOUNTED		68	MFR	Model	N/A	N/A
	46	Air Action	Orientation	AIR TO CLOSE	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 V			77	Tube Material		316 S.S	
	75	Performance Test		Required			78	Cable Gland		M20, Nickel plated brass	
	76	Internal Tubing		Required(with Double Ferrule Compression conn.)			79	Cable Entry		M20 X 1.5	
	77	Tube Material		316 S.S							
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: 14 از 21		
		BK	GCS	PEDCO	120	IN	DT	0011	D06			
DATA SHEETS FOR PRESSURE CONTROL VALVES												
GENERAL	1	Tag No.				PCV-2201						
	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						
	22	Vapour Pressure				bar-g	-					
	CALCULATED RESULTS	23	Critical Pressure (liquid)				bar-g	36.73				
24		Flow Coefficient Cv (Note 20 in page 4)				-	0.281	0.255	0.077			
25		Travel (Note 20 in page 4)				%	65	64	43			
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.	Single Acting	1	
	37	Rated Travel		(NOTE 4 in Below Table)			60	MFR	Model	VTA	VTA	
	38	Plug/Disk Material		SS316 (Note 6)			61	I.P.	Ex.Protect.	IP 65	Eexd	
	39	Seat Material		NO. 12 (Note 8)			62	MFR	Model	VTA	VTA	
	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	68	MFR	Model	N/A	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	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 V			
						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 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 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 15	
		BK	GCS	PEDCO	120	IN	DT	0011	D06		
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 D06 BK-GCS-PEDCO-120-PR-PI-0016-D08					
	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 (Note 20 in page 4)				-	0.752	0.684	0.204		
25		Travel (Note 20 in page 4)				%	75	72	35		
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		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 / 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 CLOSE	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 V		
							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: 16 از 21
		BK	GCS	PEDCO	120	IN	DT	0011	D06	
DATA SHEETS FOR PRESSURE CONTROL VALVES										
GENERAL	1	Tag No.				PCV-2272				
	2	Service				From Inlet K.O. Drum to V-2205				
	3	Line No.		P&ID No.		GAS-111-0004-AN07-3"-PT D06 BK-GCS-PEDCO-120-PR-PI-0022-D09				
	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 / -				
	22	Vapour Pressure				bar-g	-			
	23	Critical Pressure (liquid)				bar-g	93.650			
CALCULATED RESULTS	24	Flow Coefficient Cv (Note 20 in page 4)				-	19.182	17.423	5.206	
	25	Travel (Note 20 in page 4)				%	78	75	41	
	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		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		
	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 V	
							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.										

 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	17	شماره صفحه:
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D06				

DATA SHEETS FOR PRESSURE REGULATOR VALVES														
GENERAL	1	Tag No.					PRV-2161							
	2	Service					TK-2102							
	3	P & ID No.					 BK-GCS-PEDCO-120-PR-PI-0014_D09							
	4	Area Classification					Zone2, IIB T4							
	5	Line No.				Piping Class		NIT-112-0040-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					3.7175		15.3909		16.9299		Kg/h	
	11	Inlet Pressure					0.05		0.05		0.05		bar-g	
	12	Outlet Pressure					0		0		0		bar-g	
	13	Inlet Temperature					60		60		60		° C	
	14	Molecular Weight					28.01		28.01		28.01		-	
	15	Density					1.075		1.075		1.075		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					0.601/2.4/2.739		27/59/61				- / %	
	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)	50mbarg (Note 6)				
	28	Size	ANSI Class		1"	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"	1"		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	71	Ex Certificate	Ingress Protection	N/A	N/A
	39	Trim Material		SS316 (Note 4)					72	Type	Quantity	N/A	N/A	
	40	Seat Material		NO. 12 (Note 5)					73	Mfr. & Model	N/A			
	41	Req. Seat Tightness		Class IV					74	Tag Number(s)	N/A			
	42								75	Actuation Point	N/A			
	43								76	Contacts / Rating	N/A			
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)				77	Electrical Connection	N/A				
	45	Model		(NOTE 2 in Below Table)					78	Ex Certificate	Ingress Protection	N/A	N/A	
SOLENOID VALVE	46	Type		N/A				79	Mfr. & Model	VTA				
	47	Tag Number		N/A					80	Set Pressure	VTA			
	48	Body Material		N/A					81	Filter	Gauges	VTA	VTA	
	49	Operating Voltage		N/A					82	Pneumatic Connection		VTA		
	50	Elec. Connection		N/A					83	Hydro Pressure	YES			
	51	Manual Reset		N/A					84	NACE MR 0175	No			
SPECIAL ACCESSORIES	52	Ex Certificate	Ingress Protection		N/A	N/A	85							
	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

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.

6- This valve shall keep upstream pressure at set value.

 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	18	شماره صفحه :
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D06				

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_D09						
	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						6.20			17.87		
	11	Inlet Pressure						7.5			7.5		
	12	Outlet Pressure						7.49			7.49		
	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						0.058/0.160/0.176 48/72/74			- / %		
	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 (Note 6)		
	28	Size	ANSI Class		1"	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"	1"			64				
	32	Type Of Bonnet		STANDARD					65				
	33	Packing Material		PTFE									
	34												
	35												
	36												
TRIM	37	Characteristics		LINEAR (Note1)				66	Type		N/A		
	38	Rated	Cv	FL	XT	VTA	VTA		VTA	67 Mfr. & Model		N/A	
	39	Trim Material		SS316 (Note 4)					68 Input Signal		Output Signal		
	40	Seat Material		NO. 12 (Note 5)					69 On Incr Signal Output Incr / Decr		N/A		
	41	Req. Seat Tightness		Class IV					70		N/A		
	42								71 Electrical Connection		N/A		
	43								72 Ex Certificate		Ingress Protection		
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)				73	Type		Quantity		
	45	Model		(NOTE 2 in Below Table)					74 Mfr. & Model		N/A		
SOLENOID VALVE	46	Type		N/A				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		
	51	Manual Reset		N/A					80 Mfr. & Model		VTA		
SPECIAL ACCESSORIES	52	Ex Certificate	Ingress Protection		N/A	N/A		81	Set Pressure		VTA		
	53	Fusible Leakage	Booster		N/A	N/A			82 Filter		Gauges		
	54	Block Relay	Volume Tank		N/A	N/A			83 Pneumatic Connection		VTA		
TESTS	84	Hydro Pressure		YES				85	NACE MR 0175		No		
	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.

6- This valve shall keep downstream pressure at set value.

 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	19	شماره صفحه:
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D06				

DATA SHEETS FOR PRESSURE REGULATOR VALVES															
GENERAL	1	Tag No.					PRV-2201								
	2	Service					From Air Dryer Package (Pk-Dr-2203)								
	3	P & ID No.					 BK-GCS-PEDCO-120-PR-PI-0015_D08 (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			
	7	Nace Requirement:					NO								
PROCESS CONDITIONS	8	Fluid				Phase		AIR				GAS			
	9							Min. Flow				Norm. Flow			
	10	Flow Rate						35.664				118.881			
	11	Inlet Pressure						9				9			
	12	Outlet Pressure						8				8			
	13	Inlet Temperature						65				65			
	14	Molecular Weight						28.97				28.97			
	15	Density						10.331				10.331			
	16	Viscosity						0.021				0.021			
	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"	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				60	Setpoint (bar-g)		8barg (Note 6)				
	28	Size		ANSI Class		1 1/2"	300#		61		Air Failure		N/A		
	29	Mfr. & Model		VTA					62		Spring Action		N/A		
	30	Body / Bonnet Material		ASTM B148 UNS C95800					63						
	31	End Connection		In	Out	1 1/2"	1 1/2"		64						
	32	Type Of Bonnet		STANDARD					65						
	33	Packing Material		PTFE											
	34														
	35														
	36														
TRIM	37	Characteristics		LINEAR (Note1)				66	Type		N/A				
	38	Rated		Cv	FL	XT	VTA		VTA	VTA	67		Mfr. & Model		N/A
	39	Trim Material		SS316 (Note 4)					68		Input Signal		Output Signal	N/A	N/A
	40	Seat Material		NO. 12 (Note 5)					69		On Incr Signal Output Incr / Decr		N/A		
	41	Req. Seat Tightness		Class IV					70				N/A		
	42								71		Electrical Connection		N/A		
	43								72		Ex Certificate		Ingress Protection	N/A	N/A
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)				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				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											
SPECIAL ACCESSORIES	52	Ex Certificate		Ingress Protection		N/A	N/A	80	Mfr. & Model		VTA				
	53	Fusible Leakage		Booster		N/A	N/A		81		Set Pressure		VTA		
	54	Block Relay		Volume Tank		N/A	N/A		82		Filter		Gauges	VTA	VTA
									83		Pneumatic Connection		VTA		
TESTS	84	Hydro Pressure		YES				85	NACE MR 0175		No				
	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.

6- This valve shall keep downstream pressure at set value.

 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	20	شماره صفحه:
053 - 073 - 9038	BK	GCS	PEDCO	120	IN	DT	0011	D06				

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_D09						
	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		Max. Flow		Unit
	10	Flow Rate					0.74		4.45		4.90		Kg/h
	11	Inlet Pressure					7.5		7.5		7.5		bar-g
	12	Outlet Pressure					0.01		0.01		0.01		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					0.0053/0.032/0.035		40/68/70				- / %
	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"						
	24	Pipe Line Schedule		In	Out	SCH. 80	SCH.80						
	25	Pipe Line Insulation/Spec		PAINTING									
	26												
VALVE BODY / BONNET	27	Body Type		GLOBE									
	28	Size	ANSI Class		1"	300#							
	29	Mfr. & Model		VTA									
	30	Body / Bonnet Material		ASTM A 105									
	31	End Connection	In	Out	1"	1"							
	32	Type Of Bonnet		STANDARD									
	33	Packing Material		PTFE									
	34												
	35												
	36												
TRIM	37	Characteristics		LINEAR (Note1)									
	38	Rated	Cv	FL	XT	VTA	VTA	VTA					
	39	Trim Material		SS316 (Note 4)									
	40	Seat Material		NO. 12 (Note 5)									
	41	Req. Seat Tightness		Class IV									
	42												
	43												
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)									
	45	Model		(NOTE 2 in Below Table)									
SOLENOID VALVE	46	Type		N/A									
	47	Tag Number		N/A									
	48	Body Material		N/A									
	49	Operating Voltage		N/A									
	50	Elec. Connection		N/A									
	51	Manual Reset		N/A									
SPECIAL ACCESSORIES	52	Ex Certificate	Ingress Protection		N/A	N/A							
	53	Fusible Leakage	Booster		N/A	N/A							
	54	Block Relay	Volume Tank		N/A	N/A							
ACTUATOR	55	Type		Self-actuated regulator									
	56	Pilot		N/A									
	57	Supply to Pilot		N/A									
	58	Spring Range (bar-g)		VTA									
	59	Setpoint (bar-g)		10mbarg (Note 6)									
	60	Process Connection		1/2" NPTF (Note1)									
	61	Air Failure		N/A									
	62	Spring Action		N/A									
	63												
	64												
	65												
	POSITIONER	66	Type		N/A								
		67	Mfr. & Model		N/A								
		68	Input Signal	Output Signal		N/A	N/A						
		69	On Incr Signal Output Incr / Decr		N/A								
		70			N/A								
		71	Electrical Connection		N/A								
		72	Ex Certificate	Ingress Protection		N/A	N/A						
LIMIT SWITCH	73	Type	Quantity		N/A	N/A							
	74	Mfr. & Model		N/A									
	75	Tag Number(s)		N/A									
	76	Actuation Point		N/A									
	77	Contacts / Rating		N/A									
AIR SET	78	Electrical Connection		N/A									
	79	Ex Certificate	Ingress Protection		N/A	N/A							
	80	Mfr. & Model		VTA									
	81	Set Pressure		VTA									
	82	Filter	Gauges		VTA	VTA							
	83	Pneumatic Connection		VTA									
TESTS	84	Hydro Pressure		YES									
	85	NACE MR 0175		No									
	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.

6- This valve shall keep downstream pressure at set value.

 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	D06				

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_D09						
	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						
1.00 €	8	Fluid			Phase		NITROGEN				GAS		
	9						Min. Flow		Norm. Flow		Max. Flow		Unit
	10	Flow Rate					0.74		6.93		7.63		Kg/h
	11	Inlet Pressure					0.05		0.05		0.05		bar-g
	12	Outlet Pressure					0		0		0		bar-g
	13	Inlet Temperature					60		60		60		° C
	14	Molecular Weight					28.01		28.01		28.01		-
	15	Density					1.080		1.080		1.080		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					0.119/1.122/1.234		31/71/72				- / %
	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 56 Pilot N/A 57 Supply to Pilot N/A 58 Spring Range (bar-g) VTA 59 Setpoint (bar-g) 50mbarg (Note 6) 60 Process Connection 1/2" NPTF (Note1) 61 Air Failure N/A 62 Spring Action N/A 63 64 65					
	24	Pipe Line Schedule		In	Out	SCH.XXS	SCH.XXS						
	25	Pipe Line Insulation/Spec		PAINTING									
	26												
VALVE BODY / BONNET	27	Body Type		GLOBE			66 Type N/A 67 Mfr. & Model N/A 68 Input Signal Output Signal N/A N/A 69 On Incr Signal Output Incr / Decr N/A 70 N/A 71 Electrical Connection N/A 72 Ex Certificate Ingress Protection N/A N/A 73 Type Quantity N/A N/A 74 Mfr. & Model N/A 75 Tag Number(s) N/A 76 Actuation Point N/A 77 Contacts / Rating N/A 78 Electrical Connection N/A 79 Ex Certificate Ingress Protection N/A N/A 80 Mfr. & Model VTA 81 Set Pressure VTA 82 Filter Gauges VTA VTA 83 Pneumatic Connection VTA 84 Hydro Pressure YES 85 NACE MR 0175 YES 86						
	28	Size	ANSI Class	1"	300#								
	29	Mfr. & Model		VTA									
	30	Body / Bonnet Material		ASTM A 105									
	31	End Connection	In	Out	1"	1"							
	32	Type Of Bonnet		STANDARD									
	33	Packing Material		PTFE									
	34												
TRIM	37	Characteristics		LINEAR (Note1)			74 Mfr. & Model N/A 75 Tag Number(s) N/A 76 Actuation Point N/A 77 Contacts / Rating N/A 78 Electrical Connection N/A 79 Ex Certificate Ingress Protection N/A N/A 80 Mfr. & Model VTA 81 Set Pressure VTA 82 Filter Gauges VTA VTA 83 Pneumatic Connection VTA 84 Hydro Pressure YES 85 NACE MR 0175 YES 86						
	38	Rated	Cv	FL	XT	VTA						VTA	VTA
	39	Trim Material		SS316 (Note 4)									
	40	Seat Material		NO. 12 (Note 5)									
	41	Req. Seat Tightness		Class IV									
	42												
PURCHASE	44	Manufacturer		(NOTE 2 in Below Table)			74 Mfr. & Model N/A 75 Tag Number(s) N/A 76 Actuation Point N/A 77 Contacts / Rating N/A 78 Electrical Connection N/A 79 Ex Certificate Ingress Protection N/A N/A 80 Mfr. & Model VTA 81 Set Pressure VTA 82 Filter Gauges VTA VTA 83 Pneumatic Connection VTA 84 Hydro Pressure YES 85 NACE MR 0175 YES 86						
	45	Model		(NOTE 2 in Below Table)									
SOLENOID VALVE	46	Type		N/A			74 Mfr. & Model N/A 75 Tag Number(s) N/A 76 Actuation Point N/A 77 Contacts / Rating N/A 78 Electrical Connection N/A 79 Ex Certificate Ingress Protection N/A N/A 80 Mfr. & Model VTA 81 Set Pressure VTA 82 Filter Gauges VTA VTA 83 Pneumatic Connection VTA 84 Hydro Pressure YES 85 NACE MR 0175 YES 86						
	47	Tag Number		N/A									
	48	Body Material		N/A									
	49	Operating Voltage		N/A									
	50	Elec. Connection		N/A									
	51	Manual Reset		N/A									
SPECIAL ACCESSORIES	52	Ex Certificate	Ingress Protection	N/A	N/A	74 Mfr. & Model N/A 75 Tag Number(s) N/A 76 Actuation Point N/A 77 Contacts / Rating N/A 78 Electrical Connection N/A 79 Ex Certificate Ingress Protection N/A N/A 80 Mfr. & Model VTA 81 Set Pressure VTA 82 Filter Gauges VTA VTA 83 Pneumatic Connection VTA 84 Hydro Pressure YES 85 NACE MR 0175 YES 86							
	53	Fusible Leakage	Booster	N/A	N/A								
54	Block Relay	Volume Tank	N/A	N/A									

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.

6- This valve shall keep upstream pressure at set value.