



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تجهیزات

120

رشته

IN

نوع مدرک

DT

سرنال

0009

نسخه

D02

شماره صفحه: ۱ از ۳۳

## طرح نگهداشت و افزایش تولید 27 مخزن

## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

نگهداشت و افزایش تولید میدان نفتی بینک

D02	SEP.2023	AFC	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D01	OCT.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	MAY.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-708930

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 (will be finalized later)

AFQ: Approved For Quotation

IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built -Approved





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## REVISION RECORD SHEET

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4	X	X	X		
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## REFERENCE DOCUMENTS :

D02

Specification For Instrumentation

Process Basis Of Design

Specification For Painting

Piping Material Specification

Specification For Pressure Safety Valves (PSV)

Instrument &amp; Control System Design Criteria

Symbol &amp; Legend For PFD and P&amp;ID

P&amp;ID - Gas Compression Inlet Gas Pipeline (Binak)

P&amp;ID - Gas Compression Inlet Gas Pipeline (Golkhari)

P&amp;ID - Slug Catcher System

P&amp;ID - Gas Compression Inlet Knock Out Drum

P&amp;ID - 1st Stage Gas Compression Suction Drums

P&amp;ID - 1st Stage Gas Compression Compressors

P&amp;ID - 1st Stage Gas Compression Air Coolers

P&amp;ID - 2nd Stage Gas Compression Suction Drums

P&amp;ID - 2nd Stage Gas Compression Compressors

P&amp;ID - 2nd Stage Gas Compression Air Coolers

P&amp;ID - 2nd Stage Gas Compression Discharge Drum

P&amp;ID - Gas Compression Dehydration Package

P&amp;ID - Lean Glycol Storage Tank

P&amp;ID - Instrument &amp; Plant Air System

P&amp;ID - Nitrogen Generation System

P&amp;ID - Close Drain System

P&amp;ID - Corrosion Inhibitor Package

P&amp;ID - Methanol Injection Package

P&amp;ID - LP Flare System

P&amp;ID - Oily Water Sewer

P&amp;ID - Fuel Gas System

P&amp;ID - Diesel Oil System

P&amp;ID - Potable Water System

P&amp;ID - Glycol Sump Drum

P&amp;ID - Fire Water Network

P&amp;ID - Total Flooding System For Extension of Existing Elect. Building

BK-GNRL-PEDCO-000-IN-SP-0001\_D04

BK-GNRL-PEDCO-000-PR-DB-0001\_D08

BK-GNRL-PEDCO-000-PI-SP-0006

BK-GCS-PEDCO-120-PI-SP-0001\_D02

BK-GNRL-PEDCO-000-IN-SP-0007\_D04

BK-GCS-PEDCO-120-IN-DC-0002\_D01

BK-GCS-PEDCO-120-PR-PI-0001\_D04

BK-GCS-PEDCO-120-PR-PI-0002\_D06

BK-GCS-PEDCO-120-PR-PI-0003\_D06

BK-GCS-PEDCO-120-PR-PI-0004\_D06

BK-GCS-PEDCO-120-PR-PI-0005\_D06

BK-GCS-PEDCO-120-PR-PI-0006\_D06

BK-GCS-PEDCO-120-PR-PI-0007\_D06

BK-GCS-PEDCO-120-PR-PI-0008\_D06

BK-GCS-PEDCO-120-PR-PI-0009\_D06

BK-GCS-PEDCO-120-PR-PI-0010\_D05

BK-GCS-PEDCO-120-PR-PI-0011\_D06

BK-GCS-PEDCO-120-PR-PI-0012\_D06

BK-GCS-PEDCO-120-PR-PI-0013\_D06

BK-GCS-PEDCO-120-PR-PI-0014\_D06

BK-GCS-PEDCO-120-PR-PI-0015\_D06

BK-GCS-PEDCO-120-PR-PI-0016\_D06

BK-GCS-PEDCO-120-PR-PI-0017\_D06

BK-GCS-PEDCO-120-PR-PI-0018\_D06

BK-GCS-PEDCO-120-PR-PI-0019\_D06

BK-GCS-PEDCO-120-PR-PI-0020\_D06

BK-GCS-PEDCO-120-PR-PI-0021\_D05

BK-GCS-PEDCO-120-PR-PI-0022\_D06

BK-GCS-PEDCO-120-PR-PI-0023\_D06

BK-GCS-PEDCO-120-PR-PI-0024\_D06

BK-GCS-PEDCO-120-PR-PI-0025\_D06

BK-GCS-PEDCO-120-SA-PI-0001\_D04

BK-GCS-PEDCO-120-SA-PI-0002\_D02





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## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

نسخه	سریال	نوع مدرک	رشته	تهیلات	صادرکننده	پسته کاری	پروژه	شماره پیمان:
D02	0009	DT	IN	120	PEDCO	GCS	BK	۰۵۳ - ۰۷۳ - ۹۱۸۴

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## GENERAL NOTES:

1- All valves shall be clearly and permanently marked. The name plate shall be corrosion resistant Stainless Steel and pinned to the valve body. Wired on labels are not acceptable. Following information shall be submitted on nameplate for approval.

- Tag number
- Manufacturer name, model and serial number
- Set Pressure
- Pressure rating
- Body size and material
- Measurement Range
- Liquid density
- Degree of protection & electrical construction
- Marking as per IEC Codes
- Well name

2- Calculation sheet using API RP-520 formula shall be provided by vendor for each safety/relief valve in accordance with process values.

3- All wetted part material shall be in accordance with ISO 15156-2 region 2 or NACE MR-01-75 as specified in data sheets for each tag. For these mentioned tags, both the compliance shall be provided, primary and secondary sides of valves shall meet NACE MR-01-75 requirements and certificate of

4- The safety/ relief valves shall comply with API RP 520, 521, 526 and 527 standards. All valves shall be supplied with ASME section VIII.

5- All valves shall be tested for leakage at the manufacturer's works in accordance with API 527. The procedures for these tests shall be submitted for approval.

6- Gasket material shall be suitable for the application.

7- The inlet/outlet sizes & rating and center to flange face dimensions for all valves shall be in accordance with API-526.

8- All the valves with the materials offered shall meet the set pressure and other design conditions for the orifice selected.

9- Vendor to advise all wetted parts materials include disc holder, stem guide, blowdown ring, ring pin, bushing and other internal components in contact with process fluid in bid stage

10 - Environmental condition for field instrumentation of Binak Oilfield shall be considered as per the followings:

Maximum ambient temperature: 50 (°C)  
Minimum ambient temperature: 5 (°C)  
Maximum steel surface exposed to sun: 85 (°C)  
Maximum summer dry bulb: 50 (°C)  
DB/RH for Summer HVAC Design: 41 °C / 61 %  
DB for Winter HVAC Design: 6 °C

## Relative Humidity:

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

11 - Material Test Certificate and calibration Certificate for all transmitters to be submitted by Vendor.

12- Body and other pressure parts subject to inlet pressure (primary pressure zone) shall be hydrostatically tested at a pressure of at least 1.5 times the design pressure of the parts

13- Safety relief valves shall be subject to a seat leakage test in accordance with API standard 527 as applicable, or as agreed upon by the manufacturer and the CLINET

14- Lifting lever shall be provided whenever the fluid to be relieved, is steam, air, or hot water (60°C and above)

15- Balanced bellows valves shall have open bonnet construction.

16- In valves with balancing below, the bonnet shall have a ½" threaded hole, NPT as per ANSI 1.20.1.

17- In bellows type, bonnet shall be vented separately from discharge.

18- Body color of Pressure & Safety Relief Valves shall be yellow. For more details refer to the latest revision of Specification For Painting Doc No.

"BK-GNRL-PEDCO-000-PI-SP-0006"







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شماره صفحه: ۵ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2111		D02	
	2	Service		GAS			
	3	Line No.	Vessel No.	GAS-111-0013-AN07-2"-PT	V-2104		
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm	BK-GCS-PEDCO-120-PR-PI-0004-D06 (1 of 2)		
	5	Discharge to		To LP FLARE HEADER			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		YES			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Bellows			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase		
	14	Required Capacity		37247.20	kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	48.1	kg/kmol	1.659	kg/m3
	16	Oper. Pressure	Set Pressure	5.3	/	9	bar-g
	17	Oper. Temperature	RelievingTemp.	32	/	284	°C
	18	Back Pressure	Constant	-		bar-g	
	19		Variable	3.4		bar-g	
	20		Total	3.4		bar-g	
	21	% Allowable Overpressure		21%			
	22	Over Pressure Factor		1.21			
	23	Compressibility Factor(Z)		0.95			
	24	Latent Heat of Vaporization (Kj/Kg)		431.6			
	25	Ratio of Specific Heats(Cp/Cv)		1.223			
	26	Density @ flowing temprature		12.837	kg/m3		
	27	Operating Viscosity		0.015	cP		
	28	Barometric Pressure		13.26 ~ 14.37	psia		
SELECTION	29	Design Code	Sizing Basis	API 520		-	
	30	Construction Code		API 520			
	31	Fire		YES			
	32	Basis of Selection		FIRE			
	33	Calculated Area	MM²	4134(VTC)			
	34	Required Area	MM²	8742 (VTC)			
	35	Orifice Designation		Q (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	6" in	8" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)			
	39	Seat and Disc (Trim)		SS316+PTFE (VTC)			
	40	Nozzle		SS316 (VTC)			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC)(Note2)			
	43	Bellows		SS316+PTFE (VTC)			
	44						
OPTIONS	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
	51	Compliance Standard		N/A			
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-000

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. Cadmium plated has been specified as per your previous recommendation. since it is not mandatory ,vendor advice will finalized the subject.





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شماره صفحه: ۶ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2112			D02
	2	Service		GAS			
	3	Line No.	Vessel No.	GAS-111-0014-AN07-2"-PT		V-2104	
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm		BK-GCS-PEDCO-120-PR-PI-0004-D06 (1 of 2)	
	5	Discharge to		To FLARE			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		YES			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Bellows			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase	
	14	Required Capacity		37247.20		kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp	48.1    kg/kmol		1.659    kg/m3	
	16	Oper. Pressure	Set Pressure	5.3    /		9    bar-g	
	17	Oper. Temperature	RelievingTemp.	32    /		284    °C	
	18	Back Pressure	Constant	-		bar-g	
	19		Variable	3.4		bar-g	
	20		Total	3.4		bar-g	
	21	% Allowable Overpressure		21%			
	22	Over Pressure Factor		1.21			
	23	Compressibility Factor(Z)		0.95			
	24	Latent Heat of Vaporization (Kj/Kg)		431.6			
	25	Ratio of Specific Heats(Cp/Cv)		1.223			
	26	Density @ flowing temprature		12.837    kg/m3			
27	Operating Viscosity		0.015    cP				
28	Barometric Pressure		13.26 ~ 14.37    psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-	
	30	Construction Code		API 520			
	31	Fire		YES			
	32	Basis of Selection		FIRE			
	33	Calculated Area	MM²	4134(VTC)			
	34	Required Area	MM²	8742 (VTC)			
	35	Orifice Designation		Q (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	6"    in		8"    in	
	37	Rating & Facing :In	Outlet	#300 FLANGED RF		#150 FLANGED RF	
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)			
	39	Seat and Disc		SS316+PTFE (VTC)			
	40	Nozzle		SS316 (VTC)			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)			
	43	Bellows		SS316+PTFE (VTC)			
	44						
OPTIONS	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
	51	Compliance Standard		N/A			
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## PRESSURE SAFETY VALVE

PRESSURE SAFETY VALVE					
GENERAL	1	Tag Number		PSV-2113	
	2	Service		GAS	
	3	Line No.	Vessel No.	GAS-111-0021-AN07-2"-PT	V-2105
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm	BK-GCS-PEDCO-120-PR-PI-0005_D06
	5	Discharge to		To FLARE	
	6	Protect Equipment		-	
	7	Area Clacification		Zone 2, IIB T4	
	8	NACE MR0175/ISO 15156 Compliance		Yes	
BASIS	9	Nozzle (Full, Semi)		Full Nozzle	
	10	Design Type	Safety, Relief, Safety-Relief	Safety	
	Conventional, bellows, Pilot Op.		Bellows		
	12	Bonnet Type		Closed	
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase
	14	Required Capacity		17833.1	kg/h
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52    kg/kmol	0.846    kg/m3
	16	Oper. Pressure	Set Pressure	5.1    /    9	bar-g
	17	Oper. Temperature	RelievingTemp.	36.92    /    36.92	°C
	18	Back Pressure	Constant	-	bar-g
	19		Variable	1.2	bar-g
	20		Total	1.2	bar-g
	21	% Allowable Overpressure		10%	
	22	Over Pressure Factor		1.10	
	23	Compressibility Factor(Z)		0.954	
	24	Latent Heat of Vaporization (Kj/Kg)		1994.0	
	25	Ratio of Specific Heats(Cp/Cv)		1.246	
	26	Density @ flowing temprature		11.981    kg/m3	
	27	Operating Viscosity		0.012    cP	
	28	Barometric Pressure		13.26 ~ 14.37    psia	
SELECTION	29	Design Code	Sizing Basis	API 520	-
	30	Construction Code		API 520	
	31	Fire		NO	
	32	Basis of Selection		Blocked Outlet	
	33	Calculated Area	MM²	2240.6 (VTC)	
	34	Required Area	MM²	3421 (VTC)	
	35	Orifice Designation		N (VTC)	
CONNECTIONS	36	Size: Inlet	Outlet	4"    in	6"    in
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)	
	39	Seat and Disc		SS316+PTFE (VTC)	
	40	Nozzle		SS316 (VTC)	
	41	Guide and Rings		VTA	
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)	
	43	Bellows		SS316+PTFE (VTC)	
	44				
OPTIONS	45	Cap: Screwed or Bolted		Screwed	
	46	Lever: Plain or Packed		N/A	
	47	Test Gage		Yes	
	48	With Rupture Disc		No	
	49	Hydro Test		Required	
	50	Seat Leakage Test		Required	
	51	Compliance Standard		N/A	
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later	
	53	Model		Will Be Finalized Later	
	54	Serial No.		Will Be Finalized Later	

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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شماره صفحه: ۸ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2114				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0022-AN07-2"-PT	V-2105			
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm	BK-GCS-PEDCO-120-PR-PI-0005_D06			
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		Yes				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Bellows				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		17833.1		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.846	kg/m3	
	16	Oper. Pressure	Set Pressure	5.1 /		9 bar-g		
	17	Oper. Temperature	Relieving Temp.	36.92 /		36.92 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.2		bar-g		
	20		Total	1.2		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.954				
	24	Latent Heat of Vaporization (Kj/Kg)		1994.0				
	25	Ratio of Specific Heats(Cp/Cv)		1.246				
	26	Density @ flowing temprature		11.981	kg/m3			
	27	Operating Viscosity		0.012	cP			
	28	Barometric Pressure		13.26 ~ 14.37	psia			
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	2240.6 (VTC)				
	34	Required Area	MM²	3421 (VTC)				
	35	Orifice Designation		N (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	4" in		6" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+PTFE (VTC)				
	40	Nozzle		SS316 (VTC)				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		SS316+PTFE (VTC)				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## PRESSURE SAFETY VALVE

PRESSURE SAFETY VALVE					
GENERAL	1	Tag Number		PSV-2121A	
	2	Service		GAS	
	3	Line No.	Vessel No.	GAS-111-0029A-AN07-2"-PT	V-2101A
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm	BK-GCS-PEDCO-120-PR-PI-0006_D06 (1 OF 3)
	5	Discharge to		To FLARE	
	6	Protect Equipment		-	
	7	Area Clacification		Zone 2, IIB T4	
	8	NACE MR0175/ISO 15156 Compliance		YES	
BASIS	9	Nozzle (Full, Semi)		Full Nozzle	
	10	Design Type	Safety, Relief, Safety-Relief	Safety	
	11		Conventional, bellows, Pilot Op.	Bellows	
	12	Bonnet Type		Closed	
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase
	14	Required Capacity		2166.00	kg/h
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.55 kg/kmol	0.847 kg/m3
	16	Oper. Pressure	Set Pressure	4.9 /	9 bar-g
	17	Oper. Temperature	RelievingTemp.	36.78 /	60 °C
	18	Back Pressure	Constant	-	bar-g
	19		Variable	0.5	bar-g
	20		Total	0.5	bar-g
	21	% Allowable Overpressure		10%	
	22	Over Pressure Factor		1.10	
	23	Compressibility Factor(Z)		0.822	
	24	Latent Heat of Vaporization (Kj/Kg)		1827.0	
	25	Ratio of Specific Heats(Cp/Cv)		1.457	
	26	Density @ flowing temprature		24.192 kg/m3	
	27	Operating Viscosity		0.013 cP	
	28	Barometric Pressure		13.26 ~ 14.37 psia	
SELECTION	29	Design Code	Sizing Basis	API 520	-
	30	Construction Code		API 520	
	31	Fire		YES	
	32	Basis of Selection		Control Valve Faiilure	
	33	Calculated Area	MM²	107.25 (VTC)	
	34	Required Area	MM²	153.938 (VTC)	
	35	Orifice Designation		E (VTC)	
	CONNECTIONS	36	Size: Inlet	Outlet	1" in
37		Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)	
	39	Seat and Disc		SS316+PTFE (VTC)	
	40	Nozzle		SS316 (VTC)	
	41	Guide and Rings		VTA	
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)	
	43	Bellows		SS316+PTFE (VTC)	
	44				
OPTIONS	45	Cap: Screwed or Bolted		Screwed	
	46	Lever: Plain or Packed		N/A	
	47	Test Gage		Yes	
	48	With Rupture Disc		No	
	49	Hydro Test		Required	
	50	Seat Leakage Test		Required	
	51	Compliance Standard		N/A	
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later	
	53	Model		Will Be Finalized Later	
	54	Serial No.		Will Be Finalized Later	

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

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## PRESSURE SAFETY VALVE

PRESSURE SAFETY VALVE					
GENERAL	1	Tag Number		PSV-2121B	
	2	Service		GAS	
	3	Line No.	Vessel No.	GAS-111-0029B-AN07-2"-PT	V-2101B
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm	BK-GCS-PEDCO-120-PR-PI-0006_D06 (2 OF 3)
	5	Discharge to		To FLARE	
	6	Protect Equipment		-	
	7	Area Clacification		Zone 2, IIB T4	
	8	NACE MR0175/ISO 15156 Compliance		YES	
BASIS	9	Nozzle (Full, Semi)		Full Nozzle	
	10	Design Type	Safety, Relief, Safety-Relief	Safety	
	11		Conventional, bellows, Pilot Op.	Bellows	
	12	Bonnet Type		Closed	
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase
	14	Required Capacity		2166.00	kg/h
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.55 kg/kmol	0.847 kg/m3
	16	Oper. Pressure	Set Pressure	4.9	9 bar-g
	17	Oper. Temperature	RelievingTemp.	36.78	60 °C
	18	Back Pressure	Constant	-	bar-g
	19		Variable	0.5	bar-g
	20		Total	0.5	bar-g
	21	% Allowable Overpressure		10%	
	22	Over Pressure Factor		1.10	
	23	Compressibility Factor(Z)		0.822	
	24	Latent Heat of Vaporization (Kj/Kg)		1827.0	
	25	Ratio of Specific Heats(Cp/Cv)		1.457	
	26	Density @ flowing temprature		24.192 kg/m3	
	27	Operating Viscosity		0.013 cP	
	28	Barometric Pressure		13.26 ~ 14.37 psia	
SELECTION	29	Design Code	Sizing Basis	API 520	-
	30	Construction Code		API 520	
	31	Fire		YES	
	32	Basis of Selection		Control Valve Failure	
	33	Calculated Area	MM²	107.25 (VTC)	
	34	Required Area	MM²	153.938 (VTC)	
	35	Orifice Designation		E (VTC)	
CONNECTIONS	36	Size: Inlet	Outlet	1" in	2" in
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)	
	39	Seat and Disc		SS316+PTFE (VTC)	
	40	Nozzle		SS316 (VTC)	
	41	Guide and Rings		VTA	
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)	
	43	Bellows		SS316+PTFE (VTC)	
OPTIONS	44				
	45	Cap: Screwed or Bolted		Screwed	
	46	Lever: Plain or Packed		N/A	
	47	Test Gage		Yes	
	48	With Rupture Disc		No	
	49	Hydro Test		Required	
	50	Seat Leakage Test		Required	
PURCHASE (will be finalized later)	51	Compliance Standard		N/A	
	52	Manufacturer		Will Be Finalized Later	
	53	Model		Will Be Finalized Later	
	54	Serial No.		Will Be Finalized Later	

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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شماره صفحه: ۱۱ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2121C				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0029C-AN07-2"-PT		V-2101C		
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm		BK-GCS-PEDCO-120-PR-PI-0006_D06 (3 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Bellows				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		2166.00		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.55	kg/kmol	0.847	kg/m3	
	16	Oper. Pressure	Set Pressure	4.9	/	9	bar-g	
	17	Oper. Temperature	RelievingTemp.	36.78	/	60	°C	
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	0.5		bar-g		
	20		Total	0.5		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.822				
	24	Latent Heat of Vaporization (Kj/Kg)		1827.0				
	25	Ratio of Specific Heats(Cp/Cv)		1.457				
	26	Density @ flowing temprature		24.192	kg/m3			
	27	Operating Viscosity		0.013	cP			
	28	Barometric Pressure		13.26 ~ 14.37 psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		YES				
	32	Basis of Selection		Control Valve Failiure				
	33	Calculated Area	MM²	107.25 (VTC)				
	34	Required Area	MM²	153.938 (VTC)				
	35	Orifice Designation		E (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	1" in		2" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+PTFE (VTC)				
	40	Nozzle		SS316 (VTC)				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		SS316+PTFE (VTC)				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2122A		<div>D02</div>
	2	Service		GAS		
	3	Line No.	Vessel No.	GAS-111-0032A-CN05-2"-PT	-	
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm	BK-GCS-PEDCO-120-PR-PI-0007_D06 (1 OF 3)	
	5	Discharge to		To FLARE		
	6	Protect Equipment		-		
	7	Area Clacification		Zone 2, IIB T4		
	8	NACE MR0175/ISO 15156 Compliance		YES		
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type		
	10	Design Type	Safety, Relief, Safety-Relief	Safety		
	11		Conventional, bellows, Pilot Op.	Conventional		
	12	Bonnet Type		Closed		
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase	
	14	Required Capacity		8664.0	kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52    kg/kmol	0.85    kg/m3	
	16	Oper. Pressure	Set Pressure	19        /        22	bar-g	
	17	Oper. Temperature	RelievingTemp.	124.8        /        124.8	°C	
	18	Back Pressure	Constant	-	bar-g	
	19		Variable	0.9	bar-g	
	20		Total	0.9	bar-g	
	21	% Allowable Overpressure		10%		
	22	Over Pressure Factor		1.10		
	23	Compressibility Factor(Z)		0.964		
	24	Latent Heat of Vaporization (Kj/Kg)		693.3		
	25	Ratio of Specific Heats(Cp/Cv)		1.225		
	26	Density @ flowing temprature		19.56        kg/m3		
	27	Operating Viscosity		0.015        cP		
	28	Barometric Pressure		13.26 ~ 14.37    psia		
SELECTION	29	Design Code	Sizing Basis	API 520	-	
	30	Construction Code		API 520		
	31	Fire		NO		
	32	Basis of Selection		Blocked Outlet		
	33	Calculated Area	MM²	539.85 (VTC)		
	34	Required Area	MM²	1017(VTC)		
	35	Orifice Designation		J (VTC)		
CONNECTIONS	36	Size: Inlet	Outlet	2"        in	3"        in	
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF	
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)		
	39	Seat and Disc		SS316+RPTFE		
	40	Nozzle		316 SS		
	41	Guide and Rings		VTA		
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)		
	43	Bellows		N/A		
OPTIONS	44					
	45	Cap: Screwed or Bolted		Screwed		
	46	Lever: Plain or Packed		N/A		
	47	Test Gage		Yes		
	48	With Rupture Disc		No		
	49	Hydro Test		Required		
	50	Seat Leakage Test		Required		
PURCHASE (will be finalized later)	51	Compliance Standard		N/A		
	52	Manufacturer		Will Be Finalized Later		
	53	Model		Will Be Finalized Later		
	54	Serial No.		Will Be Finalized Later		

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 "

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2122B				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0032B-CN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0007_D06 (2 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85	kg/m3	
	16	Oper. Pressure	Set Pressure	19 /		22 bar-g		
	17	Oper. Temperature	RelievingTemp.	124.8 /		124.8 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	0.9		bar-g		
	20		Total	0.9		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.964				
	24	Latent Heat of Vaporization (Kj/Kg)		693.3				
	25	Ratio of Specific Heats(Cp/Cv)		1.225				
	26	Density @ flowing temprature		19.56	kg/m3			
	27	Operating Viscosity		0.015	cP			
	28	Barometric Pressure		13.26 ~ 14.37 psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	539.85 (VTC)				
	34	Required Area	MM²	1017(VTC)				
	35	Orifice Designation		J (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	2" in		3" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
OPTIONS	44							
	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
PURCHASE (will be finalized later)	51	Compliance Standard		N/A				
	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 "

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تجهیزات

120

رشته

IN

نوع مدرک

DT

سریال

0009

نسخه

D02

شماره صفحه: ۱۴ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2122C			D02
	2	Service		GAS			
	3	Line No.	Vessel No.	GAS-111-0032C-CN05-2"-PT	-		
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm	BK-GCS-PEDCO-120-PR-PI-0007_D06 (3 OF 3)		
	5	Discharge to		To FLARE			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		YES			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Conventional			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase		
	14	Required Capacity		8664.0	kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85	
	16	Oper. Pressure	Set Pressure	19	/	22 bar-g	
	17	Oper. Temperature	RelievingTemp.	124.8	/	124.8 °C	
	18	Back Pressure	Constant	- bar-g			
	19		Variable	0.9 bar-g			
	20		Total	0.9 bar-g			
	21	% Allowable Overpressure		10%			
	22	Over Pressure Factor		1.10			
	23	Compressibility Factor(Z)		0.964			
	24	Latent Heat of Vaporization (Kj/Kg)		693.3			
	25	Ratio of Specific Heats(Cp/Cv)		1.225			
	26	Density @ flowing temprature		19.56	kg/m3		
	27	Operating Viscosity		0.015	cP		
	28	Barometric Pressure		13.26 ~ 14.37	psia		
SELECTION	29	Design Code	Sizing Basis	API 520	-		
	30	Construction Code		API 520			
	31	Fire		NO			
	32	Basis of Selection		Blocked Outlet			
	33	Calculated Area	MM²	539.85 (VTC)			
	34	Required Area	MM²	1017(VTC)			
	35	Orifice Designation		J (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	2" in	3" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)			
	39	Seat and Disc		SS316+RPTFE			
	40	Nozzle		316 SS			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)			
	43	Bellows		N/A			
OPTIONS	44						
	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
PURCHASE (will be finalized later)	51	Compliance Standard		N/A			
	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک

سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تجهیزات

120

رشته

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DT

سریال

0009

نسخه

D02

شماره صفحه: ۱۵ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2123A				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0033A-CN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0007_D06 (1 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52 kg/kmol		0.85 kg/m3		
	16	Oper. Pressure	Set Pressure	19 /		22 bar-g		
	17	Oper. Temperature	RelievingTemp.	124.8 /		124.8 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	0.9		bar-g		
	20		Total	0.9		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.964				
	24	Latent Heat of Vaporization (Kj/Kg)		693.3				
	25	Ratio of Specific Heats(Cp/Cv)		1.225				
	26	Density @ flowing temprature		19.56 kg/m3				
	27	Operating Viscosity		0.015 cP				
	28	Barometric Pressure		13.26 ~ 14.37 psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	539.85 (VTC)				
	34	Required Area	MM²	1017(VTC)				
	35	Orifice Designation		J (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	2" in		3" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable




1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.



 <b>NISOC</b>	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 		
	DATA SHEETS FOR PRESSURE & SAFETY RELIEF VALVES								
شماره پیمان:		پروژه	بسته کاری	صادرکننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه
۰۵۳ - ۰۷۳ - ۹۱۸۴		BK	GCS	PEDCO	120	IN	DT	0009	D02
شماره صفحه: ۱۶ از ۳۳									

PRESSURE SAFETY VALVE									
GENERAL	1	Tag Number			PSV-2123B				
	2	Service			GAS				
	3	Line No.	Vessel No.		GAS-111-0033B-CN05-2"-PT			-	
	4	Pipe Class / C.A.	P&ID No.		CN05 / 3mm			BK-GCS-PEDCO-120-PR-PI-0007_D06 (2 OF 3)	
	5	Discharge to			To FLARE				
	6	Protect Equipment			-				
	7	Area Classification			Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance			YES				
BASIS	9	Nozzle (Full, Semi)			Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief		Safety				
	Conventional, bellows, Pilot Op.		Conventional						
	12	Bonnet Type			Closed				
PROCESS CONDITIONS	13	Fluid	State		GAS			Singel Phase	
	14	Required Capacity			8664.0			kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp		24.52 kg/kmol			0.85 kg/m3	
	16	Oper. Pressure	Set Pressure		19 / 22			bar-g	
	17	Oper. Temperature	Relieving Temp.		124.8 / 124.8			°C	
	18	Back Pressure	Constant		-			bar-g	
	Variable		0.9			bar-g			
	Total		0.9			bar-g			
	21	% Allowable Overpressure			10%				
	22	Over Pressure Factor			1.10				
	23	Compressibility Factor(Z)			0.964				
	24	Latent Heat of Vaporization (Kj/Kg)			693.3				
	25	Ratio of Specific Heats(Cp/Cv)			1.225				
	26	Density @ flowing temprature			19.56			kg/m3	
27	Operating Viscosity			0.015			cP		
28	Barometric Pressure			13.26 ~ 14.37			psia		
SELECTION	29	Design Code	Sizing Basis		API 520			-	
	30	Construction Code			API 520				
	31	Fire			NO				
	32	Basis of Selection			Blocked Outlet				
	33	Calculated Area	MM²		539.85 (VTC)				
	34	Required Area	MM²		1017(VTC)				
	35	Orifice Designation			J (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet		2" in			3" in	
	37	Rating & Facing :In	Outlet		#300 FLANGEDRF			#150 FLANGED RF	
MATERIALS (VTC)	38	Body and Bonnet			ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc			SS316+RPTFE				
	40	Nozzle			316 SS				
	41	Guide and Rings			VTA				
	42	Spring			ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows			N/A				
	44								
OPTIONS	45	Cap: Screwed or Bolted			Screwed				
	46	Lever: Plain or Packed			N/A				
	47	Test Gage			Yes				
	48	With Rupture Disc			No				
	49	Hydro Test			Required				
	50	Seat Leakage Test			Required				
	51	Compliance Standard			N/A				
PURCHASE (will be finalized later)	52	Manufacturer			Will Be Finalized Later				
	53	Model			Will Be Finalized Later				
	54	Serial No.			Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تجهیزات

120

رشته

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DT

سریال

0009

نسخه

D02

شماره صفحه: ۱۷ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2123C			D02
	2	Service		GAS			
	3	Line No.	Vessel No.	GAS-111-0033C-CN05-2"-PT	-		
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm	BK-GCS-PEDCO-120-PR-PI-0007_D06 (3 OF 3)		
	5	Discharge to		To FLARE			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		YES			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Conventional			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase	
	14	Required Capacity		8664.0		kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85 kg/m3	
	16	Oper. Pressure	Set Pressure	19	/	22 bar-g	
	17	Oper. Temperature	RelievingTemp.	124.8	/	124.8 °C	
	18	Back Pressure	Constant	-		bar-g	
	19		Variable	0.9		bar-g	
	20		Total	0.9		bar-g	
	21	% Allowable Overpressure		10%			
	22	Over Pressure Factor		1.10			
	23	Compressibility Factor(Z)		0.964			
	24	Latent Heat of Vaporization (Kj/Kg)		693.3			
	25	Ratio of Specific Heats(Cp/Cv)		1.225			
	26	Density @ flowing temprature		19.56	kg/m3		
	27	Operating Viscosity		0.015	cP		
	28	Barometric Pressure		13.26 ~ 14.37	psia		
SELECTION	29	Design Code	Sizing Basis	API 520		-	
	30	Construction Code		API 520			
	31	Fire		NO			
	32	Basis of Selection		Blocked Outlet			
	33	Calculated Area	MM²	539.85 (VTC)			
	34	Required Area	MM²	1017(VTC)			
	35	Orifice Designation		J (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	2" in	3" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)			
	39	Seat and Disc		SS316+RPTFE			
	40	Nozzle		316 SS			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)			
	43	Bellows		N/A			
OPTIONS	44						
	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
PURCHASE (will be finalized later)	51	Compliance Standard		N/A			
	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 "

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارضی

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D02	0009	DT	IN	120	PEDCO	GCS	BK

شماره صفحه: ۱۸ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2131A				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0042A-CN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0009_D06 (1 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Bellows				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		982.27		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85	kg/m3	
	16	Oper. Pressure	Set Pressure	18.1	/	22	bar-g	
	17	Oper. Temperature	RelievingTemp.	60	/	208	°C	
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	3.4		bar-g		
	20		Total	3.4		bar-g		
	21	% Allowable Overpressure		21%				
	22	Over Pressure Factor		1.21				
	23	Compressibility Factor(Z)		0.936				
	24	Latent Heat of Vaporization (Kj/Kg)		1807.0				
	25	Ratio of Specific Heats(Cp/Cv)		1.278				
	26	Density @ flowing temprature		17.34	kg/m3			
27	Operating Viscosity		0.017	cP				
28	Barometric Pressure		13.26 ~ 14.37	psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		YES				
	32	Basis of Selection		FIRE				
	33	Calculated Area	MM²	59.62 (VTC)				
	34	Required Area	MM²	153.93 (VTC)				
	35	Orifice Designation		D (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	1" in	2" in			
	37	Rating & Facing :In	Outlet	#300 FLANGED RF		#300 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		SS316+PTFE (VTC)				
OPTIONS	44							
	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
PURCHASE (will be finalized later)	51	Compliance Standard		N/A				
	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is  
recommended.

H.R. as per  
previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D02	0009	DT	IN	120	PEDCO	GCS	BK

شماره صفحه: ۱۹ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number	PSV-2131B	
	2	Service	GAS	
	3	Line No.	Vessel No.	GAS-111-0042B-CN05-2"-PT
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm
	5	Discharge to	To FLARE	
	6	Protect Equipment	-	
	7	Area Classification	Zone 2, IIB T4	
	8	NACE MR0175/ISO 15156 Compliance	YES	
BASIS	9	Nozzle (Full, Semi)	Full Nozzle	
	10	Design Type	Safety, Relief, Safety-Relief	Safety
	11		Conventional, bellows, Pilot Op.	Bellows
	12	Bonnet Type	Closed	
PROCESS CONDITIONS	13	Fluid	State	GAS Singel Phase
	14	Required Capacity	982.27 kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52 kg/kmol 0.85 kg/m3
	16	Oper. Pressure	Set Pressure	18.1 / 22 bar-g
	17	Oper. Temperature	Relieving Temp.	60 / 208 °C
	18	Back Pressure	Constant	- bar-g
	19		Variable	3.4 bar-g
	20		Total	3.4 bar-g
	21	% Allowable Overpressure	21%	
	22	Over Pressure Factor	1.21	
	23	Compressibility Factor(Z)	0.936	
	24	Latent Heat of Vaporization (Kj/Kg)	1807.0	
SELECTION	25	Ratio of Specific Heats(Cp/Cv)	1.278	
	26	Density @ flowing temprature	17.34 kg/m3	
	27	Operating Viscosity	0.017 cP	
	28	Barometric Pressure	13.26 ~ 14.37 psia	
	29	Design Code	Sizing Basis	API 520 -
	30	Construction Code	API 520	
	31	Fire	YES	
	32	Basis of Selection	FIRE	
CONNECTIONS	33	Calculated Area	MM <sup>2</sup>	59.62 (VTC)
	34	Required Area	MM <sup>2</sup>	153.93 (VTC)
	35	Orifice Designation	D (VTC)	
MATERIALS (VTC)	36	Size: Inlet	Outlet	1" in 2" in
	37	Rating & Facing :In	Outlet	#300 FLANGED RF #300 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet	ASTM A216 GR. WCB (VTC)	
	39	Seat and Disc	SS316+RPTFE	
	40	Nozzle	316 SS	
	41	Guide and Rings	VTA	
	42	Spring	ASTM A216 GR. WCB (VTC) (Note2)	
	43	Bellows	SS316+PTFE (VTC)	
	44			
OPTIONS	45	Cap: Screwed or Bolted	Screwed	
	46	Lever: Plain or Packed	N/A	
	47	Test Gage	Yes	
	48	With Rupture Disc	No	
	49	Hydro Test	Required	
	50	Seat Leakage Test	Required	
	51	Compliance Standard	N/A	
PURCHASE (will be finalized later)	52	Manufacturer	Will Be Finalized Later	
	53	Model	Will Be Finalized Later	
	54	Serial No.	Will Be Finalized Later	

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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شماره صفحه: ۲۰ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2131C				<div>D02</div>
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0042C-CN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	CN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0009_D06(3 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Bellows				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		982.27		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85	kg/m3	
	16	Oper. Pressure	Set Pressure	18.1 / 22		bar-g		
	17	Oper. Temperature	RelievingTemp.	60 / 208		°C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	3.4		bar-g		
	20		Total	3.4		bar-g		
	21	% Allowable Overpressure		21%				
	22	Over Pressure Factor		1.21				
	23	Compressibility Factor(Z)		0.936				
	24	Latent Heat of Vaporization (Kj/Kg)		1807.0				
	25	Ratio of Specific Heats(Cp/Cv)		1.278				
	26	Density @ flowing temprature		17.34	kg/m3			
	27	Operating Viscosity		0.017	cP			
	28	Barometric Pressure		13.26 ~ 14.37		psia		
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		YES				
	32	Basis of Selection		FIRE				
	33	Calculated Area	MM²	59.62 (VTC)				
	34	Required Area	MM²	153.93 (VTC)				
	35	Orifice Designation		D (VTC)				
	CONNECTIONS	36	Size: Inlet	Outlet	1" in		2" in	
37		Rating & Facing :In	Outlet	#300 FLANGED RF		#300 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		SS316+PTFE (VTC)				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 "

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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شماره صفحه: ۲۱ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2132A				<div>D02</div>
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0047A-FN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0010_D05 (1 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52 kg/kmol		0.85 kg/m3		
	16	Oper. Pressure	Set Pressure	54.80 /		62 bar-g		
	17	Oper. Temperature	RelievingTemp.	142.3 /		142.3 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.0		bar-g		
	20		Total	1.0		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.923				
	24	Latent Heat of Vaporization (Kj/Kg)		566.7				
	25	Ratio of Specific Heats(Cp/Cv)		1.28				
	26	Density @ flowing temprature		54.06 kg/m3				
	27	Operating Viscosity		0.017 cP				
	28	Barometric Pressure		13.26 ~ 14.37 psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	193.67 (VTC)				
	34	Required Area	MM²	397.60 (VTC)				
	35	Orifice Designation		G (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in		3" in		
	37	Rating & Facing :In	Outlet	#600 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 "

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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شماره صفحه: ۲۲ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2133A				<div>D02</div>
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0048A-FN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0010_D05 (1 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52 kg/kmol		0.85 kg/m3		
	16	Oper. Pressure	Set Pressure	54.80 /		62 bar-g		
	17	Oper. Temperature	RelievingTemp.	142.3 /		142.3 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.0		bar-g		
	20		Total	1.0		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.923				
	24	Latent Heat of Vaporization (Kj/Kg)		566.7				
	25	Ratio of Specific Heats(Cp/Cv)		1.28				
	26	Density @ flowing temprature		54.06 kg/m3				
	27	Operating Viscosity		0.017 cP				
	28	Barometric Pressure		13.26 ~ 14.37 psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	193.67 (VTC)				
	34	Required Area	MM²	397.60 (VTC)				
	35	Orifice Designation		G (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in		3" in		
	37	Rating & Facing :In	Outlet	#600 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2132B			<div>D02</div>
	2	Service		GAS			
	3	Line No.	Vessel No.	GAS-111-0047B-FN05-2"-PT	-		
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm	BK-GCS-PEDCO-120-PR-PI-0010_D05 (2 OF 3)		
	5	Discharge to		To FLARE			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		YES			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Conventional			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase	
	14	Required Capacity		8664.0		kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85 kg/m3	
	16	Oper. Pressure	Set Pressure	54.80	/	62 bar-g	
	17	Oper. Temperature	RelievingTemp.	142.3	/	142.3 °C	
	18	Back Pressure	Constant	-		bar-g	
	19		Variable	1.0		bar-g	
	20		Total	1.0		bar-g	
	21	% Allowable Overpressure		10%			
	22	Over Pressure Factor		1.10			
	23	Compressibility Factor(Z)		0.923			
	24	Latent Heat of Vaporization (Kj/Kg)		566.7			
	25	Ratio of Specific Heats(Cp/Cv)		1.28			
	26	Density @ flowing temprature		54.06	kg/m3		
	27	Operating Viscosity		0.017	cP		
	28	Barometric Pressure		13.26 ~ 14.37	psia		
SELECTION	29	Design Code	Sizing Basis	API 520		-	
	30	Construction Code		API 520			
	31	Fire		NO			
	32	Basis of Selection		Blocked Outlet			
	33	Calculated Area	MM²	193.67 (VTC)			
	34	Required Area	MM²	397.60 (VTC)			
	35	Orifice Designation		G (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in		3" in	
	37	Rating & Facing :In	Outlet	#600 FLANGED RF		#150 FLANGED RF	
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)			
	39	Seat and Disc		SS316+RPTFE			
	40	Nozzle		316 SS			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)			
	43	Bellows		N/A			
	44						
OPTIONS	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
	51	Compliance Standard		N/A			
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2133B				<div>D02</div>
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0048B-FN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0010_D05 (2 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85 kg/m3		
	16	Oper. Pressure	Set Pressure	54.80 /		62 bar-g		
	17	Oper. Temperature	RelievingTemp.	142.3 /		142.3 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.0		bar-g		
	20		Total	1.0		bar-g		
	21	% Allowable Overpressure				10%		
	22	Over Pressure Factor				1.10		
	23	Compressibility Factor(Z)				0.923		
	24	Latent Heat of Vaporization (Kj/Kg)				566.7		
	25	Ratio of Specific Heats(Cp/Cv)				1.28		
	26	Density @ flowing temprature		54.06	kg/m3			
	27	Operating Viscosity		0.017	cP			
	28	Barometric Pressure		13.26 ~ 14.37		psia		
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	193.67 (VTC)				
	34	Required Area	MM²	397.60 (VTC)				
	35	Orifice Designation		G (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in		3" in		
	37	Rating & Facing :In	Outlet	#600 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره صفحه: ۲۵ از ۳۳

شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	D02	سریال	0009	بوع مدرک	DT	رشته	IN	تجهیزات	120	صادر کننده	PEDCO	بسته کاری	GCS	پروژه	BK
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## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2132C				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0047C-FN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0010_D05 (3 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52	kg/kmol	0.85 kg/m3		
	16	Oper. Pressure	Set Pressure	54.80 /		62 bar-g		
	17	Oper. Temperature	RelievingTemp.	142.3 /		142.3 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.0		bar-g		
	20		Total	1.0		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.923				
	24	Latent Heat of Vaporization (Kj/Kg)		566.7				
	25	Ratio of Specific Heats(Cp/Cv)		1.28				
	26	Density @ flowing temprature		54.06	kg/m3			
	27	Operating Viscosity		0.017	cP			
	28	Barometric Pressure		13.26 ~ 14.37 psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	193.67 (VTC)				
	34	Required Area	MM²	397.60 (VTC)				
	35	Orifice Designation		G (VTC)				
	CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in		3" in	
37		Rating & Facing :In	Outlet	#600 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

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## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

شماره صفحه: ۲۶ از ۳۳

نسخه	سریال	بوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D02	0009	DT	IN	120	PEDCO	GCS	BK

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2133C				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0048C-FN05-2"-PT		-		
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0010_D05 (3 OF 3)		
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		8664.0		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.52 kg/kmol		0.85 kg/m3		
	16	Oper. Pressure	Set Pressure	54.80 /		62 bar-g		
	17	Oper. Temperature	RelievingTemp.	142.3 /		142.3 °C		
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.0		bar-g		
	20		Total	1.0		bar-g		
	21	% Allowable Overpressure				10%		
	22	Over Pressure Factor				1.10		
	23	Compressibility Factor(Z)				0.923		
	24	Latent Heat of Vaporization (Kj/Kg)				566.7		
	25	Ratio of Specific Heats(Cp/Cv)				1.28		
	26	Density @ flowing temprature		54.06 kg/m3				
	27	Operating Viscosity		0.017 cP				
	28	Barometric Pressure		13.26 ~ 14.37 psia				
	SELECTION	29	Design Code	Sizing Basis	API 520		-	
		30	Construction Code		API 520			
31		Fire		NO				
32		Basis of Selection		Blocked Outlet				
33		Calculated Area	MM²	193.67 (VTC)				
34		Required Area	MM²	397.60 (VTC)				
35		Orifice Designation		G (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in		3" in		
	37	Rating & Facing :In	Outlet	#600 FLANGED RF		#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

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GCS

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نسخه

D02

شماره صفحه: ۲۷ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2141				D02
	2	Service		GAS				
	3	Line No.	Vessel No.	GAS-111-0060-FN05-2"-PT	-			
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm	BK-GCS-PEDCO-120-PR-PI-0012 _D06			
	5	Discharge to		To FLARE				
	6	Protect Equipment		-				
	7	Area Clacification		Zone 2, IIB T4				
	8	NACE MR0175/ISO 15156 Compliance		YES				
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type				
	10	Design Type	Safety, Relief, Safety-Relief	Safety				
	11		Conventional, bellows, Pilot Op.	Conventional				
	12	Bonnet Type		Closed				
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase		
	14	Required Capacity		17252.50		kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.562	kg/kmol	0.85	kg/m3	
	16	Oper. Pressure	Set Pressure	53.9	/	62	bar-g	
	17	Oper. Temperature	RelievingTemp.	60	/	60	°C	
	18	Back Pressure	Constant	-		bar-g		
	19		Variable	1.0		bar-g		
	20		Total	1.0		bar-g		
	21	% Allowable Overpressure		10%				
	22	Over Pressure Factor		1.10				
	23	Compressibility Factor(Z)		0.823				
	24	Latent Heat of Vaporization (Kj/Kg)		1456.0				
	25	Ratio of Specific Heats(Cp/Cv)		1.461				
	26	Density @ flowing temprature		78.39	kg/m3			
	27	Operating Viscosity		0.015	cP			
	28	Barometric Pressure		13.26 ~ 14.37	psia			
SELECTION	29	Design Code	Sizing Basis	API 520		-		
	30	Construction Code		API 520				
	31	Fire		NO				
	32	Basis of Selection		Blocked Outlet				
	33	Calculated Area	MM²	311 (VTC)				
	34	Required Area	MM²	629.01 (VTC)				
	35	Orifice Designation		H (VTC)				
CONNECTIONS	36	Size: Inlet	Outlet	2" in		3" in		
	37	Rating & Facing :In	Outlet	#600 FLANGEDRF		#150 FLANGEDRF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)				
	39	Seat and Disc		SS316+RPTFE				
	40	Nozzle		316 SS				
	41	Guide and Rings		VTA				
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)				
	43	Bellows		N/A				
	44							
OPTIONS	45	Cap: Screwed or Bolted		Screwed				
	46	Lever: Plain or Packed		N/A				
	47	Test Gage		Yes				
	48	With Rupture Disc		No				
	49	Hydro Test		Required				
	50	Seat Leakage Test		Required				
	51	Compliance Standard		N/A				
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later				
	53	Model		Will Be Finalized Later				
	54	Serial No.		Will Be Finalized Later				

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

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D02

شماره صفحه: ۲۸ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2142			D02
	2	Service		GAS			
	3	Line No.	Vessel No.	GAS-111-0062-FN05-2"-PT		-	
	4	Pipe Class / C.A.	P&ID No.	FN05 / 3mm		BK-GCS-PEDCO-120-PR-PI-0012_D06	
	5	Discharge to		To FLARE			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		YES			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Conventional			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase	
	14	Required Capacity		17252.50		kg/h	
	15	Molecular Mass	Sp. Gr. @ relief Tmp	24.562    kg/kmol		0.85    kg/m3	
	16	Oper. Pressure	Set Pressure	53.9    /    62		bar-g	
	17	Oper. Temperature	RelievingTemp.	60    /    60		°C	
	18	Back Pressure	Constant	-		bar-g	
	19		Variable	1.0		bar-g	
	20		Total	1.0		bar-g	
	21	% Allowable Overpressure		10%			
	22	Over Pressure Factor		1.10			
	23	Compressibility Factor(Z)		0.823			
	24	Latent Heat of Vaporization (Kj/Kg)		1456.0			
	25	Ratio of Specific Heats(Cp/Cv)		1.461			
	26	Density @ flowing temprature		78.39    kg/m3			
27	Operating Viscosity		0.015    cP				
28	Barometric Pressure		13.26 ~ 14.37    psia				
SELECTION	29	Design Code	Sizing Basis	API 520		-	
	30	Construction Code		API 520			
	31	Fire		NO			
	32	Basis of Selection		Blocked Outlet			
	33	Calculated Area	MM²	311 (VTC)			
	34	Required Area	MM²	629.01 (VTC)			
	35	Orifice Designation		H (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	2"    in		3"    in	
	37	Rating & Facing :In	Outlet	#600 FLANGEDRF		#150 FLANGEDRF	
MATERIALS (VTC)	38	Body and Bonnet		ASTM A216 GR. WCB (VTC)			
	39	Seat and Disc		SS316+RPTFE			
	40	Nozzle		316 SS			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)			
	43	Bellows		N/A			
	44						
OPTIONS	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
	51	Compliance Standard		N/A			
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

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0009

نسخه

D02

شماره صفحه: ۲۹ از ۳۳

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2201			D02
	2	Service		GAS			
	3	Line No.	Vessel No.	ISA-112-0008-AZ00-2"-NP	-		
	4	Pipe Class / C.A.	P&ID No.	AZ00 / 0mm	BK-GCS-PEDCO-120-PR-PI-0015_D06		
	5	Discharge to		To ATM			
	6	Protect Equipment		-			
	7	Area Clacification		Zone 2, IIB T4			
	8	NACE MR0175/ISO 15156 Compliance		No			
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type			
	10	Design Type	Safety, Relief, Safety-Relief	Safety			
	11		Conventional, bellows, Pilot Op.	Conventional			
	12	Bonnet Type		Closed			
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase		
	14	Required Capacity		1071.8	kg/h		
	15	Molecular Mass	Sp. Gr. @ relief Tmp	28.95	kg/kmol	1.00 kg/m3	
	16	Oper. Pressure	Set Pressure	8.00	12.5 bar-g		
	17	Oper. Temperature	RelievingTemp.	65	/	323.4 °C	
	18	Back Pressure	Constant	-	bar-g		
	19		Variable	0.0	bar-g		
	20		Total	0.0	bar-g		
	21	% Allowable Overpressure		21%			
	22	Over Pressure Factor		1.21			
	23	Compressibility Factor(Z)		0.99			
	24	Latent Heat of Vaporization (Kj/Kg)		1949.0			
	25	Ratio of Specific Heats(Cp/Cv)		1.42			
	26	Density @ flowing temprature		9.37	kg/m3		
	27	Operating Viscosity		0.032	cP		
	28	Barometric Pressure		13.26 ~ 14.37	psia		
SELECTION	29	Design Code	Sizing Basis	API 520	-		
	30	Construction Code		API 520			
	31	Fire		Yes			
	32	Basis of Selection		FIRE			
	33	Calculated Area	MM²	113.24 (VTC)			
	34	Required Area	MM²	153.95 (VTC)			
	35	Orifice Designation		E (VTC)			
CONNECTIONS	36	Size: Inlet	Outlet	1" in	2" in		
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF		
MATERIALS (VTC)	38	Body and Bonnet		ASTM B148 UNS C95800			
	39	Seat and Disc		ASTM B148 UNS C95800			
	40	Nozzle		316 SS			
	41	Guide and Rings		VTA			
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)			
	43	Bellows		N/A			
OPTIONS	44						
	45	Cap: Screwed or Bolted		Screwed			
	46	Lever: Plain or Packed		N/A			
	47	Test Gage		Yes			
	48	With Rupture Disc		No			
	49	Hydro Test		Required			
	50	Seat Leakage Test		Required			
PURCHASE (will be finalized later)	51	Compliance Standard		N/A			
	52	Manufacturer		Will Be Finalized Later			
	53	Model		Will Be Finalized Later			
	54	Serial No.		Will Be Finalized Later			

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.  
H.R. as per previous pages.





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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

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D02

شماره صفحه: ۳۰ از ۳۳

## PRESSURE SAFETY VALVE

PRESSURE SAFETY VALVE					
GENERAL	1	Tag Number		PSV-2211A	
	2	Service		GAS	
	3	Line No.	Vessel No.	NIT-112-0022-AN01-2"-PT	-
	4	Pipe Class / C.A.	P&ID No.	AN01 / 1mm	BK-GCS-PEDCO-120-PR-PI-0016_D06
	5	Discharge to		To ATM	
	6	Protect Equipment		-	
	7	Area Clacification		Zone 2, IIB T4	
	8	NACE MR0175/ISO 15156 Compliance		No	
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type	
	10	Design Type	Safety, Relief, Safety-Relief	Safety	
	11		Conventional, bellows, Pilot Op.	Conventional	
	12	Bonnet Type		Closed	
PROCESS CONDITIONS	13	Fluid	State	GAS	Singel Phase
	14	Required Capacity		500.4	kg/h
	15	Molecular Mass	Sp. Gr. @ relief Tmp	28	kg/kmol
	16	Oper. Pressure	Set Pressure	8.00	12.5 bar-g
	17	Oper. Temperature	RelievingTemp.	60	323.4 °C
	18	Back Pressure	Constant	-	bar-g
	19		Variable	0.5	bar-g
	20		Total	0.5	bar-g
	21	% Allowable Overpressure		21%	
	22	Over Pressure Factor		1.21	
	23	Compressibility Factor(Z)		0.99	
	24	Latent Heat of Vaporization (Kj/Kg)		1950.0	
	25	Ratio of Specific Heats(Cp/Cv)		1.40	
	26	Density @ flowing temprature		7.60	kg/m3
	27	Operating Viscosity		0.030	cP
	28	Barometric Pressure		13.26 ~ 14.37	psia
SELECTION	29	Design Code	Sizing Basis	API 520	-
	30	Construction Code		API 520	
	31	Fire		Yes	
	32	Basis of Selection		FIRE	
	33	Calculated Area	MM²	54.241 (VTC)	
	34	Required Area	MM²	153.9 (VTC)	
	35	Orifice Designation		D (VTC)	
CONNECTIONS	36	Size: Inlet	Outlet	1" in	2" in
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet		A216 Gr. WCB	
	39	Seat and Disc		13Cr+PTFE	
	40	Nozzle		316 SS	
	41	Guide and Rings		VTA	
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)	
	43	Bellows		N/A	
	44				
OPTIONS	45	Cap: Screwed or Bolted		Screwed	
	46	Lever: Plain or Packed		N/A	
	47	Test Gage		Yes	
	48	With Rupture Disc		No	
	49	Hydro Test		Required	
	50	Seat Leakage Test		Required	
	51	Compliance Standard		N/A	
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later	
	53	Model		Will Be Finalized Later	
	52	Serial No.		Will Be Finalized Later	

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02 ".

2- Suitable coating such as cadmiun plated shall be considered ( vendor to advise)

Chrome Plated is recommended.

H.R. as per previous pages.





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## DATA SHEETS FOR PRESSURE &amp; SAFETY RELIEF VALVES

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D02

شماره صفحه: ۳۱ از ۳۳

## PRESSURE SAFETY VALVE

D02

GENERAL	1	Tag Number	PSV-2271	
	2	Service	GAS	
	3	Line No.	Vessel No.	FLG-111-0011-AN07-2"-PT
	4	Pipe Class / C.A.	P&ID No.	AN07 / 6mm
	5	Discharge to	BK-GCS-PEDCO-120-PR-PI-0022_D06	
	6	Protect Equipment	To FLARE	
	7	Area Classification	-	
	8	NACE MR0175/ISO 15156 Compliance	Zone 2, IIB T4	
BASIS	9	Nozzle (Full, Semi)	Yes	
	10	Design Type	Full Nozzle	
	11	Safety, Relief, Safety-Relief	Safety	
	12	Conventional, bellows, Pilot Op.	Bellows	
PROCESS CONDITIONS	13	Bonnet Type	Closed	
	14	Fluid	State	GAS Singel Phase
	15	Required Capacity	174.5	kg/h
	16	Molecular Mass	Sp. Gr. @ relief Tmp	18.02 kg/kmol 0.62 kg/m3
	17	Oper. Pressure	Set Pressure	4.90 9 bar-g
	18	Oper. Temperature	Relieving Temp.	36.78 / 182.6 °C
	19	Back Pressure	Constant	- bar-g
	20	Variable	3.2	bar-g
	21	Total	3.2	bar-g
	22	% Allowable Overpressure	21%	
	23	Over Pressure Factor	1.21	
	24	Compressibility Factor(Z)	0.975	
	25	Latent Heat of Vaporization (Kj/Kg)	1994.0	
	26	Ratio of Specific Heats(Cp/Cv)	1.25	
	27	Density @ flowing temprature	6.46	kg/m3
	28	Operating Viscosity	0.012	cP
SELECTION	29	Barometric Pressure	13.26 ~ 14.37	psia
	30	Design Code	Sizing Basis	API 520
	31	Construction Code	API 520	
	32	Fire	NO	
	33	Basis of Selection	FIRE	
	34	Calculated Area	MM²	28.75(VTC)
	35	Required Area	MM²	153.9 (VTC)
CONNECTIONS	36	Orifice Designation	D (VTC)	
	37	Size: Inlet	Outlet	1" in 2" in
MATERIALS (VTC)	38	Rating & Facing :In	Outlet	#300 FLANGED RF #150 FLANGED RF
	39	Body and Bonnet	ASTM A216 GR. WCB	
	40	Seat and Disc	SS316+PTFE	
	41	Nozzle	316SS	
	42	Guide and Rings	VTA	
	43	Spring	ASTM A216 GR. WCB (VTC) (Note2)	
	44	Bellows	SS316+PTFE (VTC)	
OPTIONS	45	Cap: Screwed or Bolted	Screwed	
	46	Lever: Plain or Packed	N/A	
	47	Test Gage	Yes	
	48	With Rupture Disc	No	
	49	Hydro Test	Required	
	50	Seat Leakage Test	Required	
	51	Compliance Standard	N/A	
PURCHASE (will be finalized later)	52	Manufacturer	Will Be Finalized Later	
	53	Model	Will Be Finalized Later	
	54	Serial No.	Will Be Finalized Later	

Notes: □

VTA : Vendor to Advise in bidding stage

VTC : Vendor to confirm in bidding stage

N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No." BK-GCS-PEDCO-120-PI-SP-0001-D02".

2- Suitable coating such as cadmium plated shall be considered ( vendor to advise)

Chrome Plated is recommended.  
H.R. as per previous pages.





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D02

## PRESSURE SAFETY VALVE

GENERAL	1	Tag Number		PSV-2293		D02
	2	Service		GAS		
	3	Line No.	Vessel No.	TEG-111-0113-AN04-2"-PT		-
	4	Pipe Class / C.A.	P&ID No.	AN04 / 3mm		BK-GCS-PEDCO-120-PR-PI-0025_D06
	5	Discharge to		To FLARE		
	6	Protect Equipment		-		
	7	Area Clacification		Zone 2, IIB T4		
	8	NACE MR0175/ISO 15156 Compliance		Yes		
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type		
	10	Design Type	Safety, Relief, Safety-Relief	Safety		
	11		Conventional, bellows, Pilot Op.	Conventional		
	12	Bonnet Type		Closed		
PROCESS CONDITIONS	13	Fluid	State	GAS		Singel Phase
	14	Required Capacity		2098.0		kg/h
	15	Molecular Mass	Sp. Gr.@ relief Tmp	143.6 kg/kmol		4.95 kg/m3
	16	Oper. Pressure	Set Pressure	0.10		3.5 bar-g
	17	Oper. Temperature	Relieving Temp.	AMB /		335.9 °C
	18	Back Pressure	Constant	-		bar-g
	19		Variable	0.1		bar-g
	20		Total	0.1		bar-g
	21	% Allowable Overpressure		21%		
	22	Over Pressure Factor		1.21		
	23	Compressibility Factor(Z)		0.646		
	24	Latent Heat of Vaporization (Kj/Kg)		314.3		
	25	Ratio of Specific Heats(Cp/Cv)		1.08		
	26	Density @ flowing temprature		10.29 kg/m3		
	27	Operating Viscosity		0.010 cP		
	28	Barometric Pressure		13.26 ~ 14.37 psia		
SELECTION	29	Design Code	Sizing Basis	API 520		-
	30	Construction Code		API 520		
	31	Fire		NO		
	32	Basis of Selection		FIRE		
	33	Calculated Area	MM²	275(VTC)		
	34	Required Area	MM²	397.6 (VTC)		
	35	Orifice Designation		G (VTC)		
	CONNECTIONS	36	Size: Inlet	Outlet	1 1/2" in	
37		Rating & Facing :In	Outlet	#300 FLANGED RF		#150 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet		ASTM A105		
	39	Seat and Disc		SS316+PTFE		
	40	Nozzle		316 SS		
	41	Guide and Rings		VTA		
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)		
	43	Bellows		N/A		
	44					
OPTIONS	45	Cap: Screwed or Bolted		Screwed		
	46	Lever: Plain or Packed		N/A		
	47	Test Gage		Yes		
	48	With Rupture Disc		No		
	49	Hydro Test		Required		
	50	Seat Leakage Test		Required		
	51	Compliance Standard		N/A		
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later		
	53	Model		Will Be Finalized Later		
	52	Serial No.		Will Be Finalized Later		

Notes:

VTA : Vendor to Advise in bidding stage VTC : Vendor to confirm in bidding stage N/A: Not applicable

1- For material details refer to "Piping Material Specification Doc No. BK-GCS-PEDCO-120-PI-SP-0001-D02".

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Chrome Plated is  
recommended.

H.R. as per  
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D02

## TEMPERATURE SAFETY VALVE

D02

GENERAL	1	Tag Number		TSV-2281	
	2	Service		LIQUID	
	3	Line No.	Vessel No.	DO-112-0005A-AN01-1"-PT	-
	4	Pipe Class / C.A.	P&ID No.	AN01 / 1mm	BK-GCS-PEDCO-120-PR-PI-0023_D06 (1 OF 3)
	5	Discharge to		To DIESEL OIL DRUM	
	6	Protect Equipment		-	
	7	Area Classification		Zone 2, IIB T4	
	8	NACE MR0175/ISO 15156 Compliance		NO	
BASIS	9	Nozzle (Full, Semi)		Full Nozzle, Spring Loaded Type	
	10	Design Type	Safety, Relief, Safety-Relief	Safety	
	11		Conventional, bellows, Pilot Op.	Conventional	
	12	Bonnet Type		Closed	
PROCESS CONDITIONS	13	Fluid	State	LIQUID	Singel Phase
	14	Required Capacity		39.537 (V.T.C)	kg/h
	15	Molecular Mass	Sp. Gr.@ relief Tmp	184.4	0.85
	16	Oper. Pressure	Set Pressure	0.10	3.5 bar-g
	17	Oper. Temperature	RelievingTemp.	AMB /	VTA °C
	18	Back Pressure	Constant	-	bar-g
	19		Variable	0.0	bar-g
	20		Total	0.0	bar-g
	21	% Allowable Overpressure		10%	
	22	Over Pressure Factor		110%	
	23	Compressibility Factor(Z)		-	
	24	Latent Heat of Vaporization (Kj/Kg)		-	
	25	Ratio of Specific Heats(Cp/Cv)		1.118	
	26	Density @ flowing temprature		850.00	
	27	Operating Viscosity (cp)		2.143	
	28	Barometric Pressure		13.26 - 14.37	psia
SELECTION	29	Design Code	Sizing Basis	-	-
	30	Construction Code		-	
	31	Fire		-	
	32	Basis of Selection		Thermal Expansion	
	33	Calculated Area	MM <sup>2</sup>	0.00003	
	34	Required Area	MM <sup>2</sup>	0.0000709676 (V.T.C)	
	35	Orifice Designation		D	
CONNECTIONS	36	Size: Inlet	Outlet	3/4" in	1" in
	37	Rating & Facing :In	Outlet	#300 FLANGED RF	#150 FLANGED RF
MATERIALS (VTC)	38	Body and Bonnet		ASTM A105	
	39	Seat and Disc		SS316+PTFE	
	40	Nozzle		316 SS	
	41	Guide and Rings		VTA	
	42	Spring		ASTM A216 GR. WCB (VTC) (Note2)	
	43	Bellows		N/A	
OPTIONS	44				
	45	Cap: Screwed or Bolted		Screwed	
	46	Lever: Plain or Packed		N/A	
	47	Test Gage		Yes	
	48	With Rupture Disc		No	
	49	Hydro Test		Required	
	50	Seat Leakage Test		Required	
	51	Compliance Standard		N/A	
PURCHASE (will be finalized later)	52	Manufacturer		Will Be Finalized Later	
	53	Model		Will Be Finalized Later	
	54	Serial No.		Will Be Finalized Later	

Notes: □

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H.R. as per previous pages.