



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

Process Data Sheets For Gas Compressors Packages



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادرکننده

PEDCO

تسهیلات

120

رشته

PR

نوع مدرک

DT

سریال

0030

نسخه

D04

شماره صفحه: ۱ از ۵

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

### Process Data Sheets For Gas Compressors Packages

#### نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D04	SEP.2022	IFA	M.Aryafar	M.Fakharian	M.Mehrshad	
D03	AUG.2022	IFA	M.Aryafar	M.Fakharian	M.Mehrshad	
D02	MAR.2022	IFA	M.Aryafar	M.Fakharian	M.Mehrshad	
D01	DEC.2021	IFA	M.Aryafar	M.Fakharian	M.Mehrshad	
D00	NOV.2021	IFC	M.Aryafar	M.Fakharian	M.Mehrshad	

Class: 2

COMPANY Doc. Number:

F0Z-708774

status:

IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

AFD: Approved For Design

AFC: Approved For Construction

AFP: Approved For Purchase

AFQ: Approved For Quotation

IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built -Approved



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

Process Data Sheets For Gas Compressors Packages



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D04	0030	DT	PR	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۵

REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
1	X	X	X	X	X
2	X	X	X	X	X
3	X	X	X	X	X
4	X	X	X		X
5	X	X	X		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					

Page	D00	D01	D02	D03	D04
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					
101					
102					
103					
104					
105					
106					
107					
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



Process Data Sheets For Gas Compressors Packages

شماره پیمان:

۰۵۳ - ۰۲۳ - ۹۱۸۴

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	DT	0030	D04

شماره صفحه: ۳ از ۵

1	REV									
2		<b>GENERAL DATA</b>								
3		Item (Note 13)				No. of Main / Stand By Units (Note 13)				
4		Service Sour Gas				Type of Driver Electrical				
5		Equipment		<input checked="" type="checkbox"/> Compressor		<input type="checkbox"/> Expander		<input type="checkbox"/> Compressor & Expander		
6		General Type		<input type="checkbox"/> Centrifugal		<input checked="" type="checkbox"/> Reciprocating		<input type="checkbox"/> Axial		
7		Operation		<input checked="" type="checkbox"/> Continuous		<input type="checkbox"/> Discontinuous		<input type="checkbox"/> Other		
8		Installation		<input type="checkbox"/> Indoor		<input checked="" type="checkbox"/> Outdoor		<input type="checkbox"/> Other		
9		<b>CHARACTERISTICS OF GAS</b>								
10		Gas Handled								
11		Corrosive Compounds				Yes / No		Yes		
12		Toxicity of Gas				Yes / No		Yes		
13		Presence of Solids or Mist				Yes / No		No		
14		<b>PROCESS OPERATING DATA</b>								
15		Operating Case		Summer			Winter			
16		Stage		1st stage		2nd stage		1st stage	2nd stage	
17		Mass Flow Rate		<input checked="" type="checkbox"/> Wet	Dry	kg/h	8664	8664	7585	7585
18		Certified Point		X			X			
19		<b>Inlet Conditions</b>		Summer			Winter			
20		Stage		1st stage		2nd stage		1st stage	2nd stage	
21		Flow Rate		Nm <sup>3</sup> /h		7918		7918	7887	7887
22				Am <sup>3</sup> /h		1501		479	1411	485
23		Pressure (Note 2)		barg		4.9		18.1	4.9	18.1
24		Temperature		°C		36.8		59.9	18.9	59.9
25		Compressibility Factor				0.975		0.936	0.977	0.951
26		Specific Heat Ratio		CP/CV		1.245		1.278	1.280	1.295
27		Relative Humidity		%						
28		Dew Point		°C						
29		<b>Discharge Conditions</b>		Summer			Winter			
30		Stage		1st stage		2nd stage		1st stage	2nd stage	
31		Pressure		barg		19.0		54.8	19.0	54.8
32		Temperature (Estimated)		°C		124.8		142.3	113.1	149.5
33		Compressibility Factor				0.964		0.923	0.970	0.948
34		Specific Heat Ratio		CP/CV		1.225		1.278	1.253	1.281
35		Brake HP (Estimated)		Kw		484.3		436.5	463.4	448.3
36		Polytropic Efficiency		%		85.0		85.0	85.0	85.0
37		<b>DESIGN DATA</b>		1st stage			2nd stage			
38		Design Temperature (SUC / DISCH.)		°C		155		175		
39		Design Pressure (SUC / DISCH.)		barg		22		62		
40		<b>MECHANICAL DATA</b>								
41		Gas Contamination Allowed		Yes / No		Yes		No		
42		Internal Lubrication for Reciprocating Compressor		Lube or Non Lube		Lube		Lube		
43		Internal Lubrication for Rotary Compressor		Dry Screw or Flooded Screw		Dry Screw		NA		
44		Allowable Leakage at Shaft Seal		Yes / No		Yes		No		
45		Buffer Gas Type / Start-up Gas Type						(Note 16) N2/-		
46	04	Automatic Sequence for Start-up / Shut-down		Yes / No		Yes		Yes		
47		Reacceleration Required		Yes / No		Yes		NA		
48		Settling Out Pressure		barg		barg		(Note 12)		
49		Safety Valve Set Pressure (Inlet / Discharge)		barg		barg		(Note 12)		
50		Material in Contact with Gas Handled (Minimum Requirement)				-		-		
51		Casing Corrosion Allowance (Minimum)				-		-		
52		Suction Line (Diameter / Rating)				8"		150#	6"	300#
53		Sidestream Line (Diameter / Rating)								
54		Discharge Line (Diameter / Rating)				6"		300#	6"	600#
55										



نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

Process Data Sheets For Gas Compressors Packages

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	PR	DT	0030	D04

شماره صفحه: ۴ از ۵

56	REV	<b>PROCESS CONTROL</b>							
57		Centrifugal / Axial							
58		Method							
59		<input type="checkbox"/> Suction Throttling	From				To		
60		<input type="checkbox"/> Discharge Throttling	From				To		
61		<input type="checkbox"/> Discharge Blow-off	From				To		
62		<input type="checkbox"/> Cooled By-pass	From				To		
63		<input type="checkbox"/> Speed Variation	From				To		
64		<input type="checkbox"/> Variable Guide Vanes							
65		Control Type	<input type="checkbox"/> Manual				<input type="checkbox"/> Automatic		
66		Control Signal Source	<input type="radio"/> Electrical				<input type="radio"/> Pneumatic <input type="radio"/> Other		
67		Anti-Surge / Bypass Recycle	<input type="checkbox"/> Manual				<input type="checkbox"/> Automatic <input type="checkbox"/> Other		
68		Reciprocating							
69		Capacity Control							
70	04	By	<input type="checkbox"/> MFG's Cap. Control	<input type="checkbox"/> Purchasers Bypass	<input checked="" type="checkbox"/> Both	<input type="checkbox"/> Other	(Note 14) Spill back/Step Unloading		
71	04	For	<input type="checkbox"/> Part Load Cond	<input type="checkbox"/> Start-up Only	<input checked="" type="checkbox"/> Both	<input type="checkbox"/> Other			
72		Number of Steps	<input type="checkbox"/> One	<input type="checkbox"/> Three	<input checked="" type="checkbox"/> Five	<input type="checkbox"/> Other			
73		Manual Control from Local Panel for							
74		Manual Control from Control Room for							
75		Automatic Control for							
76		Control Signal Source	<input checked="" type="radio"/> Electrical				<input type="radio"/> Pneumatic <input type="radio"/> Other		
77		Rotary							
78		Method							
79		<input type="checkbox"/> Bypass Control	<input type="radio"/> Manual				<input type="radio"/> Automatic From To		
80		<input type="checkbox"/> Variable Speed Drive					From To		
81		<input type="checkbox"/> Slide Valves							
82		<b>GAS ANALYSIS</b>							
83		<b>Other Conditions</b>							
84		Component	<input checked="" type="checkbox"/> Mol%	<input type="checkbox"/> Mass%	Normal	Summer st1	Summer st2	Winter st1	Winter st2
85		H2O				1.0314	1.0314	0.3638	0.363775
86		CO2				3.1606	3.1606	2.5202	2.520235
87		H2S				5.4119	5.4119	4.7056	4.705553
88		Methane				63.8921	63.8921	73.9809	73.980864
89		Ethane				13.7515	13.7515	11.4249	11.424943
90		Propane				7.7314	7.7314	4.7371	4.737086
91		i-Butane				0.8394	0.8394	0.3942	0.394247
92		n-Butane				1.8594	1.8594	0.8130	0.812964
93		i-Pentane				0.6968	0.6968	0.3066	0.306573
94		n-Pentane				0.3774	0.3774	0.1450	0.144980
95		n-Hexane				0.6549	0.6549	0.2224	0.222399
96		n-Heptane				0.1956	0.1956	0.0542	0.054218
97		n-Octane				0.0596	0.0596	0.0149	0.014939
98		n-Nonane				0.0297	0.0297	0.0071	0.007099
99		n-Decane				0.0099	0.0099	0.0000	0.000000
100		n-C11				0.0000	0.0000	0.0000	0.000000
101		Nitrogen				0.2984	0.2984	0.3101	0.310125
102									
103		Corrosive Agents				H2S/CO2	H2S/CO2	H2S/CO2	H2S/CO2
104		Total				100.00	100.00	100.00	100.00
105		AVG. Mol. Wt				24.52	24.52	21.56	21.56



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

Process Data Sheets For Gas Compressors Packages



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D04	0030	DT	PR	120	PEDCO	GCS	BK

شماره صفحه: ۵ از ۵

Note	REV	
1		Following items to be confirmed / specified by vendor - Discharge temprature - Specification of strainer at compressor suction line - Max. pressure drop across strainer
2		Suction pressure is specified at upstream of strainer.
3		Nitrogen for seal gas is available. For nitrogen Operating Conditions Refer to "Process Basis Of Design; Doc. No.BK-GNRAL-PEDCO-000-PR-DB-0001".
4		Deleted.
5		Deleted.
6		For available utilities, refer to "Process Basis Of Design; Doc. No.BK-GNRAL-PEDCO-000-PR-DB-0001".
7		Manufacturer to consider in design the risk of hydrate formation.
8		Process turndown is 35% of Winter Case Flowrate.
9		Requirement of start-up (auto / manual, local / remote with permissives from main control room and local technical room) shall be considered.
10		0.9 bar pressure drop between stages has been considered (inter air cooler, suction scrubber and relevant piping).
11		Inlet gas are in water saturated condition.
12		To be finalized by vendor.
13		Train 1 are including C 2101 A (as Stage 1) and C 2102 A (as Stage 2). Train 2 are including C 2101 B (as Stage 1) and C 2102 B (as Stage 2). Train 3 are including C 2101 C (as Stage 1) and C 2102 C (as Stage 2). <b>2 trains as operating+1 train as stand-by</b>
14		<b>Spill Back Valve to be supplied by Vendor.</b>
15		<b>Site Condition:</b> Min .Absolut air temperature(°C): 5 °C Max .Absolut air temperature(°C): 50 °C Humidity Maximum Range (%): 0 ~ 100 Elevation from sea level ~ 12.5 m
16		For intermediate partition purge, N2 gas has been considered as inert buffer purge gas