



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
بسته‌های کاری تحت الارض

احداث خطوط انتقال گاز/مابعات گازی از ایستگاه تقویت فشار گاز بینک تا  
ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک



DATA SHEETS FOR CORROSION COUPON/ PROBE

شماره پیمان:

053 - 073 - 9184

پروژه

BK

بسته کاری

PPL

صادرکننده

PEDCO

تسهیلات

320

رشته

IN

نوع مدرک

DT

سریال

0009

نسخه

D02

شماره صفحه: 1 از 6

## طرح نگهداشت و افزایش تولید 27 مخزن

### DATA SHEETS FOR CORROSION COUPON/ PROBE

نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D02	JUN.2023	AFC	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D01	APR.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	JAN.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	

Class: 1

CLIENT Doc. Number: F9Z-708586

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



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شماره پیمان:

053 - 073 - 9184

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D02	0009	DT	IN	320	PEDCO	PPL	BK

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4	X	X			
5	X	X	X		
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DATA SHEETS FOR CORROSION COUPON/ PROBE

شماره پیمان: 053 - 073 - 9184	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 3 از 6
	BK	PPL	PEDCO	320	IN	DT	0009	D02	

**REFERENCE DOCUMENTS :**

- |  |                                   |
|--|-----------------------------------|
| 1) Instrument & Control System Design Criteria     | BK-PPL-PEDCO-320-IN-DC-0001_D02   |
| 2) P&ID - Gas Pipeline (to Siahmakan G.I. Station) | BK-PPL-PEDCO-320-PR-PI-0001_D02   |
| 3) P&ID - Condensate Pipeline (to Binak PU)        | BK-PPL-PEDCO-320-PR-PI-0002_D01   |
| 4) Piping Material Specification                   | BK-PPL-PEDCO-320-PI-SP-0001_D01   |
| 5) Pipeline Material Specification                 | BK-PPL-PEDCO-320-PL-SP-0001       |
| 6) Specification For Instrumentation               | BK-GNRAL-PEDCO-000-IN-SP-0001_D03 |
| 7) Instrument Hook-Up Diagram                      | BK-PPL-PEDCO-320-IN-DG-0002_D00   |

**FLUID COMPOSITION :**

	SUMMER	WINTER
Master Comp Mole Frac (H2S)	0.0539731	0.046603
Master Comp Mole Frac (Nitrogen)	0.0030171	0.003115
Master Comp Mole Frac (CO2)	0.0318983	0.025261
Master Comp Mole Frac (Methane)	0.6460603	0.742925
Master Comp Mole Frac (Ethane)	0.1390393	0.114718
Master Comp Mole Frac (Propane)	0.0781347	0.047542
Master Comp Mole Frac (i-Butane)	0.0084541	0.003941
Master Comp Mole Frac (n-Butane)	0.0187871	0.008157
Master Comp Mole Frac (i-Pentane)	0.0069993	0.003056
Master Comp Mole Frac (n-Pentane)	0.0038095	0.001453
Master Comp Mole Frac (n-Hexane)	0.0066232	0.002234
Master Comp Mole Frac (n-Heptane)	0.0019785	0.000545
Master Comp Mole Frac (n-Octane)	0.0006027	0.000150
Master Comp Mole Frac (n-Nonane)	0.0003003	0.000071
Master Comp Mole Frac (n-Decane)	0.0001001	0.000000
Master Comp Mole Frac (n-C11)	0.0000000	0.000000
Master Comp Mole Frac (H2O)	0.0002224	0.000230
Master Comp Mole Frac (TEGlycol)	0.0000000	0.000000



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ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک



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شماره صفحه: 4 از 6

## GENERAL NOTE

- Licensed software for probes and training Courses for End User engineering department shall be considered by vendor.
- One set of retriever tool kit and service valve and also other part necessary for mounting of all corrosion coupon and probes shall be provided by vendor. This set of retriever and service valve is common to all CC's fittings. Also any calibration set or special tools for test and installation shall be provided by vendor, as minimum on set portable corrosion meter for local monitoring of probes to be considered.
- According to "Process Basic of Design" Document, Environmental Condition For Field Instrumentation of BINAK Complex Shall Be Considered As Per The Following:
  - Maximum ambient temperature: 50 (°C)
  - Minimum ambient temperature: 5 (°C)
  - Maximum steel surface exposed to sun: 85 (°C)
  - Maximum summer dry bulb: 50 (°C)
  - Maximum Design relative humidity (%): 100
  - Minimum Design relative humidity (%): 0
  - Maximum Design relative humidity (%): 100
  - Minimum Design relative humidity (%): 0
- Training Courses for Installation, Calibration, ... of corrosion transmitters shall be considered by vendor.
- Considering the fluid corrosibility, the Element material shall be in accordance with pipe material.
- All recommendations of IPS-I-TP-802 and NACE RP0775 for corrosion monitoring devices and accessories installation shall be followed by vendor.
- Service valve & retriever system to be have below specification:
  - Suitable connection for 2" Access fitting
  - Isolating Valve
  - Drain Plug
  - Pressure Gauge
  - Retriever/Service Valve Seal Kit
  - Retriever/Service valve Repair Kit
  - Diverter Hose Assembly, Retainer Clamp, Safety Hammer, Head Bar, Back Pressure Pump
  - To be suitable for 40 barg design pressure B38 (suitable for high pressure) and 85° C design temperature.
- Mounting Position for Gas services should be at 12 O'clock Position for easy maintenance.
- Wetted part material shall be according to NACE MR 01-175 where required as per piping material standard.
- Regarding protection of pipeline transportation system, ISO 15589 standards to be followed.



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سیاهمکان/واحد بهره برداری بینک



DATA SHEETS FOR CORROSION COUPON/ PROBE

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تهیه‌ات	رشته	نوع مدرک	سرپال	نسخه	شماره صفحه: 6 از 5
053 - 073 - 9184	BK	PPL	PEDCO	320	IN	DT	0009	D02	

D02

	TAG NO	CC-3201		CC-3202		
		BK-PPL-PEDCO-320-PR-PI-0001- (1/3)	BK-PPL-PEDCO-320-PR-PI-0001 (3/3)			
GENERAL	2	P&ID NO.	AFTER DEHYDRATION (PK-2101)		BEFOR PIG LAUNCHER ON DRAIN LINE	
	3	SERVICE	GAS-111-0072-FN05-6"-PT		GAS-113-0011-FN05-8"-PT	
	4	LINE NO.	6"-SCH 80 (Note 4)		2"-SCH.160 (Note 4)	
	5	LINE SIZE / SCHEDULE	ASTM A106-Gr.B (Note 4)		ASTM A106 Gr.B (Note 4)	
	6	LINE/EQUIPMENT MATERIAL	FN05 (Note 4)		AN07 (Note 4)	
	7	PIPING CLASS	Zone 2,IIB T4			
	8	AREA CLASSIFICATION			Required	
	9	NACE COMPLIANCE (as per NACE MR0175/ISO 15156)				
	10	FLUID			HC	
PROCESS DATA (NOTE 1)	11	PHASE	2-ph		GAS	
	12	DESIGN PRESSURE (barg)			62	
	13	OPERATING PRESSURE (barg)			40	
	14	DESIGN TEMPERATURE (°C)			85	
	15	MIN DESIGN METAL TEMPERATURE (°C)			5	
	16	OPERATING TEMPERATURE (°C)			15-31.3	
	17	MAX FLOW (Kg/hr)			18887.891	
	18	NORMAL FLOW (Kg/hr)			17170.81	
	19	MEAN VELOCITY (m/s)			3.2-3.94	
	20	VISCOSITY (cP)			0.01	
	21	DENSITY (kg/m3)			49.09	
	22	PIPING CORROSION ALLOWANCE (mm)			6	
	23	WATER CUT			-	
	24	RATE OF CO2 CONTENT	0.0319 mole fraction in gas-phase			0.0319 mole fraction in gas phase
	25	RATE OF CHLORIDE CONTENT			-	
26				-		
PROBE & TRANSMITTER	27	PROBE TYPE			N/A	
	28	PROBE INSERTION LENGTH			N/A	
	29	PROBE HOLDER			N/A	
	30	MATERIAL			N/A	
	31	MOUNTING POSITION			N/A	
	32	ENCLOSURE MATERIAL			N/A	
	33	MEASURING RANGE			N/A	
	34	OUTPUT SIGNAL			N/A	
	35	COMMUNICATION PROTOCOL			N/A	
	36	POWER SUPPLY			N/A	
	37	ACCURACY			N/A	
	38	INTEGRAL INDICATOR			N/A	
	39	Ex PROTECTION			N/A	
	40	INGRESS PROTECTION			N/A	
	41	CABLE ENTRY			N/A	
	42				N/A	
COUPON	43	COUPON TYPE	Strip (VTC)		Strip (VTC)	
	44	COUPON MATERIAL	ASTM A106-Gr.B (Note 4)		ASTM A106 Gr.B (Note 4)	
	45	COUPON HOLDER (Note 6 in General Note)	Yes		Yes	
	46	HOLDER MATERIAL	SS 316L, NACE MR01-75 (Note 9 in General Note) (VTC)		SS 316L, NACE MR01-75 (Note 9 in General Note) (VTC)	
	47	HOLDER LENGTH	VTA		VTA	
	48	COUPON INSERTION LENGTH	VTA		VTA	
	49	STYLE	Retrievable (VTC)		Retrievable (VTC)	
ACCESS FITTING (Note 5)	50	PROCESS CONNECTION	2", Flare Weld Type		2", Flare Weld Type	
	51	MOUNTING POSITION	Vertical (Top), 12 O'clock (Note 8 in General Note)		Vertical (Top), 12 O'clock (Note 8 in General Note)	
	52	BRANCH STANDOUT LENGTH	(Note 2)		(Note 2)	
	53	FITTING PLUG	Solid Plug		Solid Plug	
	54	MATERIAL	ASTM A 234 WPB (Note 4)		ASTM A 234 WPB (Note 4)	
	55	PROTECTIVE COVER	Required		Required	
	56	RETRACTABLE TOOL	Required (Note 3)		Required (Note 3)	
	57	SERVICE VALVE	Required (Note 3) & (Note 7 in General Note)		Required (Note 3) & (Note 7 in General Note)	
OTHER	58	MANUFACTURE	Shall be Finalized Latter		Shall be Finalized Latter	
	59	MODEL NO.	Shall be Finalized Latter		Shall be Finalized Latter	
	60	TAG PLATE	Required		Required	
	61	WAKE FREQUENCY STANDARD (NOTE 2)	Required as per ASME PTC 19.3		Required as per ASME PTC 19.3	

DELETED

NOTES : VTA : VENDOR TO ADVISE VTC : VENDOR TO CONFIRM N/A : NOT APPLICABLE

- All process data will be finalized later
- Wake frequency analysis (stress calculation) according to ASME Power Test Code 19.3 shall be done & submitted by vendor.
- One set of retriever and service valve is common to all CC's fittings.
- Piping class, pipe schedule and materials related to Piping Material Specification, will be finalized after confirmation of this document.
- High pressure access fitting to be supplied by vendor.



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DATA SHEETS FOR CORROSION COUPON/ PROBE

شماره پیمان: 053 - 073 - 9184

پروژه	بسته کاری	سازنده	تهیات	رشته	نوع مدرک	سریال	نسخه
BK	PPL	PEDCO	320	IN	DT	0009	D02

شماره صفحه: 6 از 6

D02

GENERAL	1	TAG NO	CP-3201
	2	P&ID NO.	BK-PPL-PEDCO-320-PR-PI-0001 (1/3)
	3	SERVICE	AFTER DEHYDRATION (PK-2101)
	4	LINE NO.	GAS-111-0072-FN05-6"-PT
	5	LINE SIZE / SCHEDULE	6" , SCH 80 (Note 4)
	6	LINE/EQUIPMENT MATERIAL	ASTM A106 Gr.B (Note 4)
	7	PIPING CLASS	FN05 (Note 4)
	8	AREA CLASSIFICATION	Zone 2,IIB T4
	9	NACE COMPLIANCE (as per NACE MR0175/ISO 15156)	Required
PROCESS DATA (NOTE 1)	10	FLUID	GAS
	11	PHASE	2 phase (Liquid/Vapour)
	12	DESIGN PRESSURE (barg)	62
	13	OPERATING. PRESSURE (barg)	50.90-49.40
	14	DESIGN TEMPERATURE (°C)	85
	15	MIN DESIGN METAL TEMPERATURE (°C)	5
	16	OPERATING TEMPERATURE (°C)	58.3
	17	MAX FLOW (Kg/hr)	18887.891
	18	NORMAL FLOW	
	19	MEAN VELOCITY	
	20	VISCOSITY	
	21	DENSITY	
	22	PIPING CORROSION	
23	WATER CUT	-	
24	RATE OF CO2 CONTENT	0.0319 mole fraction in gas phase	
25	RATE OF CHLORIDE CONTENT	-	
26			
PROBE & TRANSMITTER	27	PROBE TYPE/ SHIELD TYPE	LPR probes (VTC)/ required (VTA)
	28	PROBE INSERTION LENGTH	VTA
	29	PROBE HOLDER	Yes
	30	MATERIAL HOLDER	AISI 316 (VTC)
	31	TRANSMITTER MOUNTING POSITION	N/A (Note 8)
	32	ENCLOSURE MATERIAL	N/A (Note 8)
	33	MEASURING RANGE	N/A (Note 8)
	34	OUTPUT SIGNAL	N/A (Note 8)
	35	COMMUNICATION PROTOCOL	N/A (Note 8)
	36	POWER SUPPLY	N/A (Note 8)
	37	ACCURACY	N/A (Note 8)
	38	INTEGRAL INDICATOR	N/A
	39	EX PROTECTION	Eex "ia"
	40	INGRESS PROTECTION	IP 65
41	CABLE ENTRY	N/A	
42	PROBE STYLE	Retrievable Type	
COUPON	43	COUPON TYPE	N/A
	44	COUPON MATERIAL	N/A
	45	COUPON HOLDER (Note 6)	N/A
	46	HOLDER MATERIAL	N/A
	47	HOLDER LENGTH	N/A
	48	COUPON INSERTION LENGTH	N/A
	49	STYLE	N/A
	50		
ACCESS FITTING (Note 5)	51	PROCESS CONNECTION	2", Flare Weld Type
	52	MOUNTING POSITION	Vertical (Top), 12 O'clock (Note 8 in General Note)
	53	BRANCH STANDOUT LENGTH	(Note 2)
	54	FITTING PLUG	Hollow Plug (Note 7)
	55	MATERIAL	ASTM A 234 WPB (Note 4)
	56	PROTECTIVE COVER	Required
	57	RETRACTABLE TOOL	Required (Note 3)
	58	SERVICE VALVE	Required (Note 3) & (Note 7 in General Note)
OTHER	59	MANUFACTURE	Shall be Finalized Latter
	60	MODEL NO.	Shall be Finalized Latter
	61	TAG PLATE	Required
	62	WAKE FREQUENCY STANDARD (NOTE 2)	Required as per ASME PTC 19.3

NOTES : VTA : VENDOR TO ADVISE VTC : VENDOR TO CONFIRM N/A : NOT APPLICABLE

- (1) All process data will be finalized later
- (2) Wake frequency analysis (stress calculation) according to ASME Power Test Code 19.3 shall be done & submitted by vendor.
- (3) One set of retriever and service valve is common to all CC's fittings.
- (4) Piping class, pipe schedule and materials related to Piping Material Specification, will be finalized after confirmation of this document.
- (5) High pressure access fitting to be supplied by vendor.
- (6) One Portable Meter shall be provided for reading the measure of corrosion Probes.
- (7) Since the potable meter device is used instead of the transmitter in corrosion probs so the Hollow Plug shall be confirmed by vendor.
- (8) the corrosion prob in Pipe line shall be connected to the potable meter device that supplied for GCS work package.