

 <b>NISOC</b>	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 		
	MECHANICAL DATA SHEETS FOR SLUG CATCHER								
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۱ از ۸
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0014	D01	

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

### MECHANICAL DATA SHEETS FOR SLUG CATCHER

#### نگهداشت و افزایش تولید میدان نفتی بینک

D01	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D00	DEC.2021	IFC	H.Adineh	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2      CLIENT Doc. Number: F0Z-708845

- 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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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D01	0014	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۸

## REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
1	X	X			
2	X	X			
3	X	X			
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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

پسته کاری

GCS

صادر کننده

PEDCO

تسهیلات

120

رشته

ME

نوع مدرک

DT

سریال

0014

نسخه

D01

شماره صفحه: ۸ از ۳

## General Notes

D01

Rev.

D01

1. The Asterisk \* denotes information and/or confirmation required from VENDOR. The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel.

D01

2. Deleted

3. VENDOR shall include for the services of a independent verification body for mechanical design, stage inspection, testing and stamping of the equipment (if possible).

D01

4. Painting and coating (internal & external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRL-PEDCO-000-PI-SP-0006 and 'Specification for Lining', Doc. No. BK-GNRL-PEDCO-000-PI-SP-0007.

D01

5. Flanges shall comply with ASME B16.5. Nozzle bolt holes shall straddle the natural centrelines for horizontal nozzles. VENDOR to confirm maximum allowable nozzle loads and moments (RF: Raised Face, WN: Welding Neck)

6. All reinforcement pads shall have 1/4" (6mm) tell-tale hole and 1/8" (3mm) vent hole as per Standard Detail Drawing For Pressure Vessels and Heat Exchangers', Doc. No. BK-GNRL-PEDCO-000-ME-DW-0001".

7. Manways shall be supplied complete with blind flange, external grab handles, internal grab handle and ladder rungs, nuts, bolting, gasket and proof load test davits. Davits shall be proof load tested on the vessels to 1.5 x Safe Working Load (SWL) and shall be marked accordingly.

8. All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel.

9. Loads at support base, Shall be calculated and determined by vendor.

10. Access Ladder & Platform to be considered .

D01

11. Deleted

12. All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor.

D01

13. Deleted

D01

14. All nozzle locations and orientations will be finalized later.

15. Instrumentation items are excluded from vendor's scope of supply.

16. Any changes in material of construction, location & orientation of the nozzles shall be confirmed by client.

17. All materials shall be new and unused.

18. Fabrication tolerances for vessel shall be in accordance with requirement of ASME code.

19. Location and number of lifting lugs on vessels shall be specified on VENDOR drawing.

20. All items shall be clearly match marked against vessel drawings to facilitate erection.

D01

21. Deleted

22. Vendor shall supply details of all welding connections and give general specification of used materials.

23. For equipment requiring PWHT, final inspection and acceptance by the CLIENT or its nominated representative shall only be undertaken against NDE after PWHT. All weldings shall be made before vessel heat treatment (if any).

24. Equipment packaging, preparation for shipment and delivery shall be in accordance with the project Packing, Marking, Transportation Procedure Doc. No. "BK-GNRL-PEDCO-000-QC-PR-0045".

25. Specified accessories and attachments shall be supplied by vendor.

26. Gasket shall be spiral wound type, graphite filled with inner ring and outer ring S.S.316.

D01

27. Deleted

D01

28. Deleted

29. Two M12 earthing bosses shall be provided on vessel support. Material of Earthing Bosses shall be S.S. 316



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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تجهیزات

120

رشته

ME

نوع مدرک

DT

سریال

0014

نسخه

D01

شماره صفحه: ۴ از ۸

General Notes (Cont'd)

D01

Rev.

D01

D01

D01

30. For standard detail of Earth lug execution refer to the Project "Standard Detail Drawing For Pressure Vessels and Heat Exchangers Doc. No. BK-GNRL-PEDCO-000-ME-DW-0001".
31. Elliptical heads shall be Ultrasonic Tested for lamination after forming.
32. The projection of equipment's nozzles should be considered as per 'Standard Detail Drawing For Pressure Vessels and Heat Exchangers', Doc. No. BK-GNRL-PEDCO-000-ME-DW-0001".
33. The elevation of equipment's nozzels should be specified as follows :  
I. For vertical vessels : from bottom T.L.  
II. For horizontal vessels : from Left T.L.
34. Nozzles and flanges shall be suitably supported and reinforced based on nozzle loads provided in project Specification for Pressure Vessels, Document No. BK-GNRL-PEDCO-000-ME-SP-0001.
35. Prior to sealing the vessel for shipping and storage, the inside surface of the equipment shall be 100% visually inspected. Internal surfaces shall be clean and thoroughly dried. The CLIENT or its nominated representative shall witness the cleanliness of internal surfaces. Flange faces shall be protected by wooden or plastic dummy flanges.
36. Minimum requirement for pre-commissioning, commissioning, start up and two years operation spare parts shall be in accordance with document E&C-QC-SP-1.
37. Lifting Lugs / trunnions shall be provided to facilitate a single point lift. If a single point lift cannot be achieved without the use of a lifting beam, then VENDOR shall provide a suitable, certified, lifting beam.
38. Design pressure specified is at top of vessels. VENDOR design shall include static head for vessels flooded with specific gravity of the handled liquid.
39. VENDOR is to maximize shop fabrication based on the following transportation limits:  
- Maximum weight: 96 tonnes  
- Maximum load per axle: 12 tonnes  
- Maximum length: 50.0 m  
- Maximum width: 5.0 m  
- Maximum height: 5.2 m  
For items with dimensions and weights greater than the road capacity specified above, VENDOR may be required to split the package into several components.
40. All external attachments directly welded to the pressure part shall be the same material as vessel grade.
41. All dimensions are in "mm" unless otherwise specified.
42. The material shall be in compliance with NACE MR0175/ISO15156 and Specification For Material Requirements in Sour service Document No. BK-GNRL-PEDCO-000-PI-SP-0008.
43. Deleted
44. DEMISTER specification will be finalized latter.
45. Welded carbon and carbon manganese steels for vessel shall comply with the following :  
Carbon content shall not exceed 0.23%.  
Based on the ladel analysis, below equation shall be satisfied.  
$$Ceq. = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni)/15 < 0.42 \%$$
46. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.
47. Sacrificial Anode is required for the equipment.



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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره صفحه: ۵ از ۸

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

بسته کاری

صادر کننده

تسهیلات

رشته

نوع مدرک

سریال

نسخه

BK

GCS

PEDCO

120

ME

DT

0014

D01

Mech. Data Sheet For Slug Catcher (V-2104) / sheet 1 of 4

Rev	DATA SHEET				Rev
	1	Description	: Inlet Gas K.O. Drum		
	2	Tag No.	: V-2104	Quantity	: 1 Set
	3	Type	: Pressure Vessel		
	4	Process Design Data			D01
	5	Contents	H2O-HC	Corrosive / Erosive	CO2,H2S
	6	Operating Temp. (°C)	15.5~32	Liquid Flow (kg/h)	360078
	7	Operating Press. (barg)	5.5	Vap. Molec. Weight (kg/kmol)	33.2
	8	Gas Flow (kg/h)	12223	Liquid Sp. Gravity	0.85
	9	Liquid Viscosity (cP)	0.4207	Lethal / SOUR :	SOUR
	10	Mechanical Design Data (Note 1)			D01
	11	Design Temp. (°C)	85	Vessel Orientation	Horizontal
	12	Design Press. (barg)	9	LLLL / HHLL (mm)	150 / 3414
	13	Test Press. (barg)	Per Code & Spec Requirements.	Nor. Liquid Vol. (m³)	48 (Vol. from Bottom to NLL)
	14	Internal Vacuum (barg)	F.V.	In. Dia. Of Boots (mm)	-
	15	In. Dia. of Shell (mm)	4200	Boot Length (mm)	-
	16	Tan/Tan Dim. (mm)	12600	Boot Head Type	-
	17	Vessel Head Type	2:1 Elliptical (Note 23)	Corr. Allowance (mm)	6
	18	Shell Wall Thk. (mm)	*	Joint Efficiency	0.85 (Shell) / 1 (Head)
	19	Head Wall Thk. (mm)	*(After Forming)	Ambient Temp. (°C)	-
	20	Seismic Design	Site Class : D, Code: ASCE 7-10	MDMT (°C)	5
	21	Wind Design	Speed: 120 Km/hr (Max.), Code: ASCE 7-10	Insulation Required	NO
	22	Materials (Note 45, 46)			D01
	23	Code	ASME II / ASTM	Internal Welded Supports	A 516 Gr. 60 N
	24	Shell	A 516 Gr. 60 N	Nozzle Necks	A 106 Gr.B N
	25	Heads	A 516 Gr. 60 N	Pipes	A 106 Gr.B N
	26	Lining	P3	Plates	A 516 Gr. 60 N
	27	Saddles	A 283 Gr. C	Forgings	A 105 N
	28	Wear Plate	A 516 Gr. 60 N	Flanges	A 105 N
	29	Stiffening Rings	A 516 Gr. 60 N	Fittings	A 234 Gr. WPB
	30	Gaskets	Note 26	Welded Internals	A 516 Gr. 60 N
	31	Lifting Lugs	A 516 Gr.60 N / A 283 Gr. C	External Bolts	A 193 Gr. B7 (8)
	32	Reinforcing Pads	A 516 Gr. 60N	Nuts	A 194 Gr. 2H (8)
	33	Ladder & Platform	C.S.	Internal Bolts	A193 Gr. B8M (8)
	34	Gratings	Hot Dip Galvanized C.S.	Nuts	A194 Gr. 8M (8)
	35	External Welded Clips	A 516 Gr. 60 N	Name Plate	S.S. 316
	36				
	37	REFERENCE STANDARDS & DOCUMENTS			
	38	Mechanical Design Code	ASME SEC. VIII, DIV. 1, IPS-D-ME-140		
	39	Specification for Pressure Vessels	BK-GNRL-PEDCO-000-ME-SP-0001		
	40	Process Basis of Design	BK-GNRL-PEDCO-000-PR-DB-0001		
	41	Piping & Instrument Diagram (P&ID)	BK-GCS-PEDCO-120-PR-PI-0004		
	42	Specification for Painting	BK-GNRL-PEDCO-000-PI-SP-0006		
	43	Specification for Insulation	BK-GNRL-PEDCO-000-PI-SP-0019		
	44	Specification For Material Requirements in Sour service	BK-GNRL-PEDCO-000-PI-SP-0008		
	45	Fabrication and Inspection Requirements			
	46	Inspection Authority	TPI & Client		
	47	Material Certification	In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments		
	48	Hydro Test Medium	Water	Hydro Test Procedure	Yes;Per Code & Spec. Requirements
	49	Post Weld Heat Treatment	YES(PROCESS REASON)	PT	100%
	##	MT	100 % on Lifting Lug Fillet Welds	UT	Yes;Per Code & Spec. Requirements
	##	RT	100 % On T-Joints and Head Joints Butt-Welds,		
	##		Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,		
	##		100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,		
	##	RT Report	Yes; Per Code & Spec. Requir.	PT Report	Yes;Per Code & Spec. Requirements
	##	MT Report	Yes; Per Code & Spec. Requir.	UT Report	Yes;Per Code & Spec. Requirements
	##	Fabrication Quality Control Plan (With Offer)			Yes
	##	Welding Procedure Review / Approval			Yes
	##	Surface Preparation & Coating	Per Specification for Painting: Doc. No. "BK-GNRL-PEDCO-PI-SP-0006"		
	##		Per specification For Lining: Doc. No.: BK-GNRL-PEDCO-000-PI-SP-0007		
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## احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

## MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره پیمان:

• 03 - • 73 - 9184

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D01	0014	DT	ME	120	PEDCO	GCS	BK

Mech. Data Sheet For Slug Catcher (V-2104) / sheet 2 of 4

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نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادرکننده

PEDCO

تجهیزات

120

رشته

ME

نوع مدرک

DT

سریال

0014

نسخه

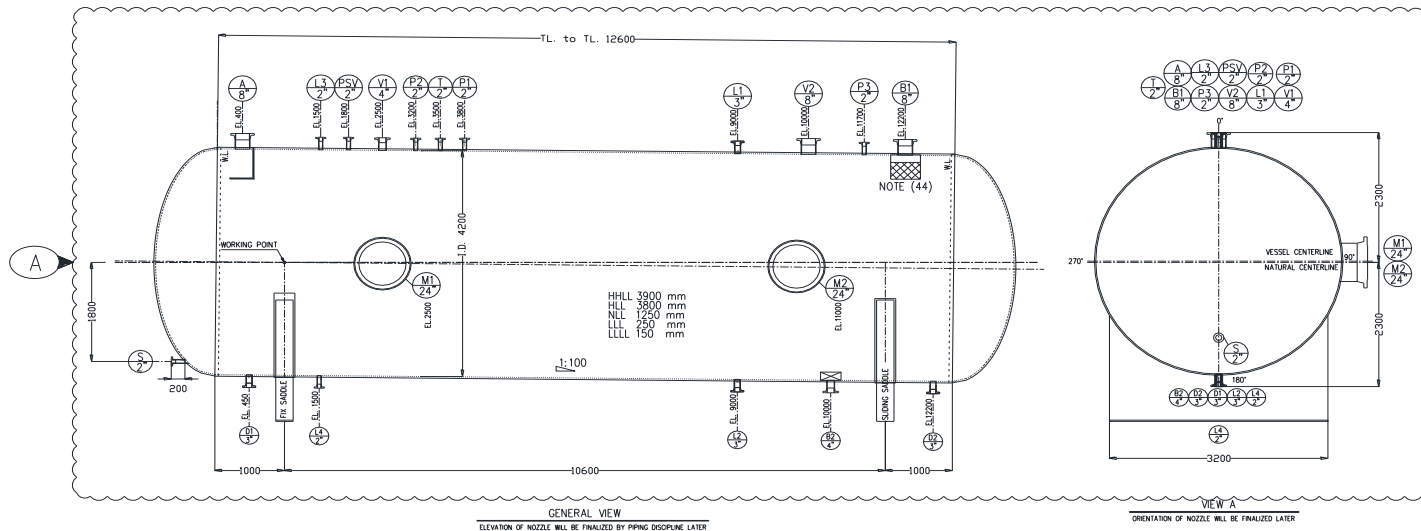
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شماره صفحه: ۸ از ۷

Mech. Data Sheet For Slug Catcher (V-2104) / sheet 3 of 4

Sketch

D01





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نگهداشت و افزایش تولید میدان نفتی بینک

سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR SLUG CATCHER



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تسهیلات

120

رشته

ME

نوع مدرک

DT

سریال

0014

نسخه

D01

شماره صفحه: ۸ از ۸

Mech. Data Sheet For Slug Catcher (V-2104) / sheet 4 of 4

Rev.	WEIGHT						Rev.
1	<b>WEIGHT CONTROL DATA SHEET SI UNIT (1)</b>					<div style="text-align: center;">D01</div>	D01
2							
3							
4							
5							
6	Service : <i>Slug Catcher</i>					Location : <i>Bushehr (Binak Oilfield)</i>	
7	Type :					Quotation No. :	
8	No. trains :					Serial No. :	
9	No. stages :						
10	Supplier :						
11	Manufacturer :						
12	Model :						
13							
14	Note: Information to be completed by equipment vendor.						
15							
16	<b>Total weight (kg)(1,2)</b>						
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform	
18							
19							
20							
21							
22							
23	<b>WEIGHT AND C OF G DATA REQUIRED (9)</b>						
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)			
25				X	Y	Z	
26	Dry						
27							
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30	<b>SKETCH</b>						
31	<div style="text-align: center;"> </div>						
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52	<b>NOTES</b>						
53	1) All lifting points to be load tested and certified.						
54	2) Any spreader beam to be load tested and certified.						
55	3) Lifting / rigging plan for skid mounted equipment to be provided by the Vendor.						
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