

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض						 		
	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک MECHANICAL DATA SHEETS FOR NITROGEN RECEIVER								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تهیلات 120	رشته ME	نوع مدرک DT	سریال 0009	نسخه D02	شماره صفحه: ۸ از ۱

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR NITROGEN RECEIVER

نگهداشت و افزایش تولید میدان نفتی بینک

D02	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D01	DEC. 2021	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D00	NOV.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-708840

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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REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
1	X	X	X		
2	X	X	X		
3	X	X	X		
4	X	X	X		
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		احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک MECHANICAL DATA SHEETS FOR NITROGEN RECEIVER								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴		پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0009	نسخه D02	شماره صفحه: ۸ از ۳
General Notes										
Rev										
D02	1. The Asterisk * denotes information and/or confirmation required from VENDOR.									
D02	2. Deleted 									
D02	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).									
D02	4. Painting and coating (internal & external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0006. and Specification For Lining Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0007 respectively.									
D02	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-GNRAL-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 .									
D02	11. Deleted 									
	12. All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor.									
D02	13. Deleted 									
D02	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.									
D02	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 Minimum Requirements for Marking, Packing, Shipment & Storage' Document No. IPS-G-GN-210.									
	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									
D02	27. Deleted 									
D02	28. Deleted									
	29. Two M12 earthing lugs shall be provided on vessel support. Material of Earthing lugs shall be S.S. 316									



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General Notes (Cont'd)

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D02

30. For standard detail of Earth lug execution refer to the Project "Standard Detail Drawing For Pressure Vessels and Heat Exchangers Doc. No. BK-GNRAL-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-GNRAL-PEDCO-000-ME-DW-0001". Projection of Horizontal & Vertical nozzles is from tangent line and centerline respectively.

33. The elevation of equipment's nozzles should be specified as follows :

I. For vertical vessels : from bottom T.L.

II. For horizontal vessels : from Left T.L.

D02

34. Nozzles and flanges shall be suitably supported and reinforced based on nozzle loads provided in project Specification for Pressure Vessels, Document No. BK-GNRAL-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.

D02

36. Minimum requirement for pre-commissioning, commissioning, start up and two years operation and 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.

D02

41. The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel.

42. All dimensions shown are in mm unless otherwise indicated. All nozzle sizes are in inch.



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Mechanical Data Sheets For Nitrogen Receiver (V-2204) / sheet 1 of 4

Rev	DATA SHEET					Rev	
	1	Description : Nitrogen Receiver					
	2	Tag No. : V-2204		Quantity : 1 Set			
	3	Type : Pressure Vessel					
	4	Process Design Data					
	5	Contents		Corrosive / Erosive			
	6	Operating Temp. (°C)	60	Liquid Flow (kg/h)			
	7	Operating Press. (barg)	8	Vap. Molec. Weight (kg/kmol)			
	8	Gas Flow (kg/h)	32.5	Liquid Sp. Gravity	1		
	9	Liquid Viscosity (cP)		Service:	N/A		
	10	Mechanical Design Data				D02	
	11	Design Temp. (°C)	85	Vessel Orientation	Vertical		
	12	Design Press. (barg)	12.5	Liquid Level (mm)	300		
	13	Test Press. (barg)	Per Code & Specification	Nor. Liquid Vol. (m³)			
	14	Internal Vacuum (barg)	-	In. Dia. Of Boots (mm)	N/A		
D02	15	In. Dia. of Shell (mm)	1050	Boot Length (mm)	N/A		
D02	16	Tan/Tan Dim. (mm)	3150	Boot Head Type	N/A		
	17	Vessel Head Type	2:1 elliptical	Corr. Allowance (mm)	1.6		
D02	18	Shell Wall Thk. (mm)	*	Joint Efficiency	0.7 (Skirt)/ 0.85 (Shell) /1(Head)	D02	
D02	19	Head Wall Thk. (mm)	* (After Forming)	Ambient Temp. (°C)			
	20	Seismic Design	Site Class: D, Code: ASCE 7-10	MDMT (°C)	5	D02	
	21	Wind Design	Speed: 120 Km/hr (Max.), Code: ASCE 7-10	Insulation Required	No		
	22	Materials				D02	
D02	23	Code	ASME II / ASTM	Nozzle Necks:			
D02	24	Shell	A 516 Gr. 70	Pipes	A 106 Gr.B	D02	
D02	25	Heads	A 516 Gr. 70	Plates	A 516 Gr.70	D02	
	26	Lining / Cladding	P3	Forgings	A 105	D02	
D02	27	Skirt (Top / Bottom)	A 516 Gr. 70 / A 283 Gr. C	Flanges	A 105	D02	
	28	Platform Gratings	Hot Dip Galvanized C.S.	Fittings	A 234 Gr. WPB	D02	
	29	Gaskets	Note 26	External Bolts	A 193 Gr. B7 (Note 8)	D02	
D02	30	Lifting Lugs	A 516 Gr.70 / A 283 Gr. C	External Nuts	A 194 Gr. 2H (Note 8)	D02	
D02	31	Reinforcing Pads	A 516 Gr.70	Internal Bolts / Nuts	S.S.		
	32	Ladder & Platform	C.S.	Name Plate	S.S. 316		
	33						
	34	REFERENCE STANDARDS & DOCUMENTS					
	35	Mechanical Design Code	ASME Sec VIII Div 1, IPS-G-ME-150				
	36	Specification for Pressure Vessels	BK-GNRAL-PEDCO-000-ME-SP-0001				
	37	Process Basis of Design	BK-GNRAL-PEDCO-000-PR-DB-0001				
	38	Piping & Instrument Diagram (P&ID)	BK-GCS-PEDCO-120-PR-PI-0016				
	39	Specification for Painting	BK-GNRAL-PEDCO-000-PI-SP-0006				
	40	Specification for Insulation	BK-GNRAL-PEDCO-000-PI-SP-0019				
	41						
	42						
	43	Fabrication and Inspection Requirements					
	44	Inspection Authority	TPI & Client				
	45	Material Certification	In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments				
	46	Hydro Test Medium	Water	Hydro Test Procedure	Yes;Per Code & Spec. Requirements		
	47	Post Weld Heat Treatment	Per Code & Spec. Requirements	PT	100%		
	48	MT	100 % on Lifting Lug Fillet Welds	UT	Yes;Per Code & Spec. Requirements		
	49	RT	100 % On T-Joints and Head Joints Butt-Welds,				
	50				Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,		
	51				100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,		
	52	RT Report	Yes; Per Code & Spec. Requir.	PT Report	Yes;Per Code & Spec. Requirements		
	53	MT Report	Yes; Per Code & Spec. Requir.	UT Report	Yes;Per Code & Spec. Requirements		
	54	Fabrication Quality Control Plan (With Offer)				Yes	
	55	Welding Procedure Review / Approval				Yes	
	56	Surface Preparation & Coating				Specification for Painting Doc. No. "BK-GNRAL-PEDCO-000-PI-SP-0006"	
	57				Specification for Lining Doc. No: "BK-GNRAL-PEDCO-000-PI-SP-0007"		
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احداث ردیف تہ اکم گاز در ایستگاه جمع آوری بنک



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Mechanical Data Sheets For Nitrogen Receiver (V-2204) / sheet 2 of 4

Rev.	ACCESSORIES , NOZZLES LIST & LOADS @ BASE												Rev.
1	Accessories & Attachments (Note 25)												
2	Supporting Saddles	NO	Name Plate Bracket	D02						YES			
3	Access Ladder & Platform	YES	Name Plate							YES			
4	Insulation Support	NO	Earthing Lug (Note 30)							YES			
5	Insulation	NO	Tailing Lug							YES			
6	Insulation Cover	NO	Cathodic Protection (Sacrificial Anodes)							NO			
7	Fireproofing Support	NO	Anchor Bolts							NO		D02	
8	Lifting Lugs	YES	Instrumentations							NO			
9	Internal/ External Clips	YES	Skid							NO			
10	Template	YES	Support Clips							YES			
11	Boot	NO	Vortex Breaker							YES			
12	Davit for Manhole	YES	Rung & Grip							NO			
13	Internal Lining (By Painting)	YES	Heating Coil							NO			
14													
15													
16													
17													
18	Nozzles List (Note 1, 3, 5, 9, 12, 41)												
19	Mark	Qty.	Description	Pipe			Flange			oj. (mm) (Note 32)	Reinforcement		Remarks
20				Size	Thk.	Sch.	Type	Rate.	Face		Thk.	O.D.	
21	A	1	Inlet	2"			WN	#150	RF	741			
22	B	1	Gas Outlet	2"			WN	#150	RF	See DWG			
23	PSV	1	Pressure Safety Valve	2"			WN	#150	RF	741			
24	V	1	Vent	2"			WN	#150	RF	See DWG			
25	M	1	Manhole	24"			WN	#150	RF	791	*	*	Note 7
26	P	1	Pressure Gauge	2"			WN	#300	RF	741			
27	D	1	Drain	2"			WN	#150	RF	See DWG			
28	L 1,2	2	Level Gauge	2"			WN	#300	RF	741			
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43	Wind and Seismic Loads at Base * Note(9)												
44		Empty Condition			Operating Condition			Testing Condition					
45		Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)			
46	Load Type												
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48	WIND												
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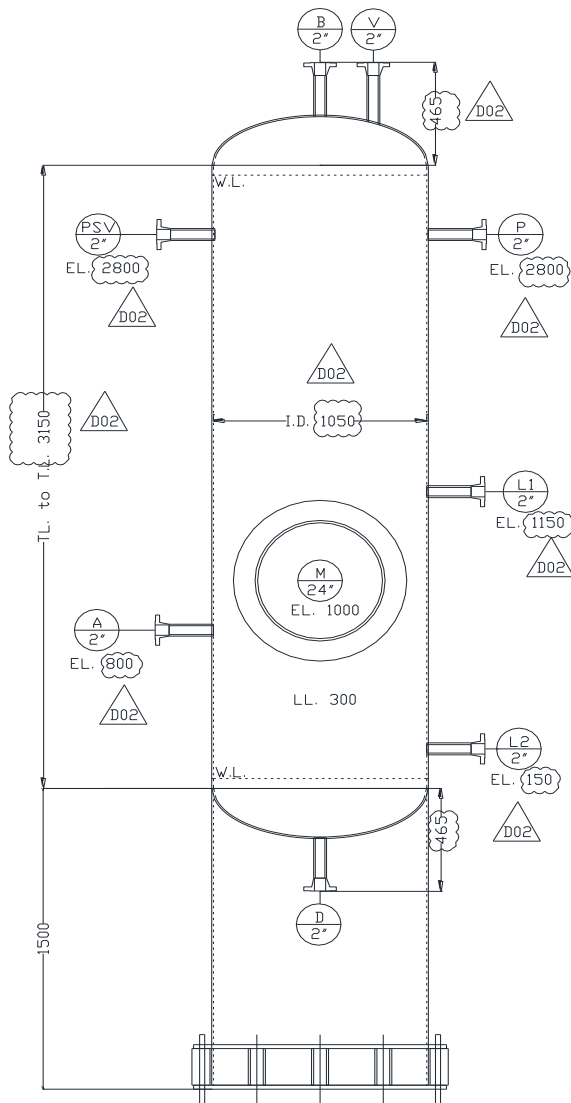
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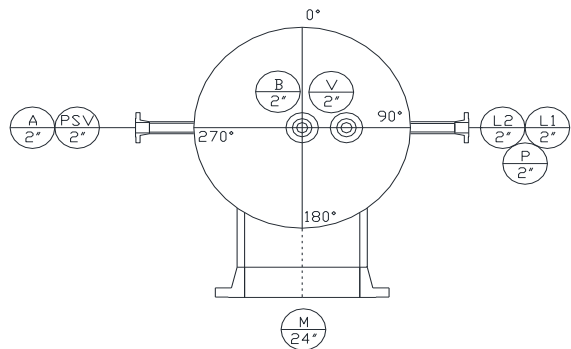
Mechanical Data Sheets For Nitrogen Receiver (V-2204) / sheet 3 of 4

Sketch



ELEVATION VIEW

ELEVATION WILL BE FINALIZED LATER BY PIPING DEPARTMENT.



ORIENTATION VIEW

ORIENTATION WILL BE FINALIZED LATER BY PIPING DEPARTMENT.



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Rev.	WEIGHT						Rev.	
1	WEIGHT CONTROL DATA SHEET SI UNIT *			1/1				D02
2								
3								
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5								
6	Service :	Nitrogen Receiver			Location :	Bushehr (Binak Oilfield)		
7	Type :				Quotation No. :			
8	No. trains :				Serial No. :			
9	No. stages :							
10	Supplier :							
11	Manufacturer :							
12	Model :							
13	Note: Information to be completed by equipment vendor.							
14								
15								
16	Total weight (kg) *							
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform		
18								
19								
20								
21								
22								
23	WEIGHT AND C OF G DATA REQUIRED *							
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)				
25				X	Y	Z		
26	Dry							
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30	SKETCH							
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52	NOTES							
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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