



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



MECHANICAL DATA SHEETS FOR LEAN GLYCOL STORAGE TANK

شماره پیمان:

053 - 073 - 9184

پروژه

BK

بسته کاری

GCS

صادرکننده

PEDCO

تسهیلات

120

رشته

ME

نوع مدرک

DT

سریال

0016

نسخه

D02

شماره صفحه: 1 از 7

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR LEAN GLYCOL STORAGE TANK

نگهداشت و افزایش تولید میدان نفتی بینک

D02	AUG.2023	IFA	H.Ghadyani	M.Fakharian	M.A.Mohseni	
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: 1

CLIENT Doc. Number: F0Z-708847

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

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General Notes

- The asterisk * denotes information and/or confirmation required from vendor. the vendor shall be fully responsible for design and supply of the tank. the tank shall be supplied in accordance with project "Specification For Atmospheric Above Ground Welded Steel Tanks.
- To be finalized/specified by VENDOR.
- The VENDOR/BIDDER shall design and supply the storage tank in accordance with "Specification For Atmospheric Above Ground Welded Steel Tanks" , Document No.: "BK-GNRAL-PEDCO-000-ME-SP-0002" and "Standard Detail Drawing For Storage Tanks", Document No.: BK-GNRAL-PEDCO-000-ME-DW-0002'. VENDOR/BIDDER shall provide completed datasheets with bid.
- Tank height shall be checked based on Freeboard calculation by vendor.
- The VENDOR/BIDDER shall be fully responsible for the complete mechanical design of the tank.
- External and internal surface of tank shall be coated in accordance with BK-GNRAL-PEDCO-000-PI-SP-0006 & BK-GNRAL-PEDCO-000-PI-SP-0007 respectively.
- All materials for pressure parts shall fulfill the impact test requirements of API-650 standard.
- For standard d MAY.2023
Doc. NO. "BK-GNERL-PEDCO-000-ME-DW-0002" and provide minimum two earthing terminals and two cables per tank.
- 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 vessel to 1.5 x Safe Working Load (SWL) and shall be marked accordingly.
- Instrument and piping nozzle flanges shall be in accordance with ASME B 16.5.
- Minimum width of shell courses plates shall be 1.5 m.
- Stairways shall meet the requirements of for IPS-G-ME-100 (Sec. 3.8.10), IPS-D-CE-141 & IPS-D-CE-142 and IPS-E-SF-400.
The angle of stairways to horizontal plane shall not exceed 45°.
- Stand pipe connections on equipment shall be at least 3", 150# and for instruments installation on the stand pipe at least 2", 300# flanges shall be considered as per BK-GNRAL-PEDCO-000-IN-SP-0001.
- If any imposed load (by nozzles or their connections) causes high local stress in any part of shell and roof, the subjected component shall be investigated according to appendix 'P' of API Std. 650.
- Cone roof angle and roof plates joint shall be so selected that tank roof plate thickness will not be greater than 12mm.
- All nozzles equal / greater than 2" shall have reinforcement pad.
- All nozzles connection weld to tank shall be with full penetration.
- Necessity of wind girder and stiffening ring will be finalized by vendor.
- Allowable stress of anchor bolts shall not be greater than those are recommended in API 650 standard.
- The requirement of internal and external cathodic protection shall be considered by VENDOR.
- Seal materials shall have enough resistance against temperature changes, expansion & contraction, fluid weight changes and etc.
- Will be specified later.
- All dimensions are in "mm" unless otherwise specified.
- Vent size and quantity shall be specified/verified by vendor according to API 2000.
- Projection of Horizontal and Vertical nozzles are specified from tank centerline and top of top angle (roof line) respectively.
- For standard detail of earth lug execution refer to the project "standard detail drawing for storage tanks DOC. NO. "BK-GNRAL-PEDCO-000-ME-DW-0002" and provide minimum two earthing terminals and two cables per tank.
- All actual thicknesses shall be checked and calculated by vendor under mechanical guarantee accordingly.
- All nozzle loads shall not be less than specified values in the "Specification For Atmospheric Above Ground Welded Steel Tanks" , Document No.: "BK-GNRAL-PEDCO-000-ME-SP-0002"



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Rev.	GENERAL INFORMATION (TO BE COMPLETED BY PURCHASER)										
	1	1. PURCHASER / AGENT: <i>NISOC</i>									
D02	2	ADDRESS:									
	3	CITY:	<i>Bushehr</i>	PROV.:		POSTAL CODE:		PHONE:			
	4	2. USER:									
	5	3. ERECTION SITE:	NAME OF PLANT: <i>Binak</i>								
D02	6	LOCATION: <i>BINAK, 20 km NORTHWEST of GENAVEH CITY</i>									
	7	4. TANK NO. <i>TK-2102</i>	NOMINAL CAPACITY:		<i>62</i>	m ³	NET WORKING CAPACITY:		<i>44</i>	m ³	
D02	8	QTY. REQ'D: <i>1 Sets</i>		OVERFILL PROTECTION (API RP 2350):		m					
D02	9	5. PUMPING RATES:	IN	<i>3.3</i>	<i>(Note(22))</i>	m ³ /hr	OUT	<i>5.5</i>	<i>(Note(22))</i>	m ³ /hr	
D02	10	6. MIN./MAX. OPERATING TEMPERATURE:				<i>AMB.</i>	°C	OPERATING PRESSURE		<i>0.1</i>	
	11	7. PRODUCT STORED: <i>Lean Glycol Storage Tank</i>						DESIGN SPEC. GRAVITY:	<i>1.1</i>	AT <i>163</i> °C	
D02	12	DESIGN TEMPERATURE:				<i>85</i>	°C	VAPOR PRESSURE:		kPa	
	13	8. CORROSION ALLOWANCE:									
	14	SHELL:		<i>3.2</i>	mm	ROOF:		<i>1.6</i>	mm		
	15	BOTTOM:		<i>3.2</i>	mm	STRUCTURALS:		<i>-</i>	mm		
D02	16	9. SHELL DESIGN: BASIC STANDARD API 650				<i>YES</i>	APPENDIX A	<i>YES</i>	APPENDIX F	<i>YES</i> IPS-G-ME-100 IPS-G-ME-110	
	17	DESIGN PRESSURE : <i>Full water +160 mbarg /-7mbarg</i>									
	18	10. ROOF DESIGN:BASIC STANDARD API 650				<i>YES</i>	IPS-G-ME-100	<i>YES</i>	IPS-G-ME-110	<i>NO</i>	
	19	APPENDIX G (ALUMINUM DOME)				<i>NO</i>					
D02	20	FRANGIBLE ROOF JOINT				<i>NO</i>					
	21	11. ROOF DE MAY.2023									
	22	UNIFORM LIVE LOAD:				<i>1.2</i>	kPa (g)				
	23	SPECIAL LOADS (PROVIDE SKETCH):					kPa (g)				
D02	24	INSULATION LOAD:				<i>-</i>	kPa (g)				
	25	MAXIMUM DESIGN ROOF TEMPERATURE:					°C				
D02	26	GASES IN THE VAPOUR SPACE:									
	27										
	28	12. EARTHQUAKE DESIGN :				(APPENDIX E)	ROOF TIE RODS (5.10.4.5) :				
	29	SEISMIC ZONE:				<i>(ASCE7-10)</i>	IMPORTANCE FACTOR		<i>1.125</i>	<i>Fa : 1</i>	<i>Fv : 1.33</i>
D02	30	SITE CLASS:				<i>D</i>	SITE COEFFICIENT:		<i>I= 1.25</i>	<i>Ss : 1.125</i>	<i>SI : 0.46</i>
D02	31	13. WIND LOAD:									
	32	VELOCITY:				<i>120</i>	km/hr	(DIRECTION: NW TO SE)			
	33	PROVIDE INTERMEDIATE WIND GIRDER (5.9.7) :									
	34	14. ENVIRONMENTAL EFFECTS:									
D02	35	MAXIMUM RAINFALL				mm/year	TOTAL SNOW ACCUMULATION			mm	
	36										
	37	15. SIZE RESTRICTIONS:									
	38	MAXIMUM DIAMETER				<i>4000</i>	mm	MAXIMUM HEIGHT		<i>5000</i>	mm
D02	39	16. FOUNDATION TYPE:				CONCRETE RINGWALL <i>YES</i>					
	40	EARTH				OTHER					
	41	17. APPLICABLE STANDARDS:									
	42	<i>API 650</i>				&	<i>IPS-G-ME-100 (1)</i>				
D02	43	17. SERVICE TYPE									
	44	<i>NO</i>	SOUR	<i>NO</i>	NON-SOUR						
	45		LETHAL		NON-LETHAL						
	46	18. NACE REQUIREMENT									
D02	47	<i>NO</i>	SSC	<i>NO</i>	HIC						
	48	19. THE PROJECT DOCUMENTS :									
	49	<i>Mechanical Design Criteria</i>				<i>BK-GNRAL-PEDCO-000-ME-DC-0001</i>					
	50	<i>Specification For field fabricated Large Welded Low Pressure Storage Tanks</i>				<i>BK-GCS-PEDCO-120-ME-SP-0010</i>					
D02	51	<i>Piping Corrosion Study & Material Selection Report</i>				<i>BK-GCS-PEDCO-120-PI-RT-0001</i>					
	52	<i>Process Basis of Design</i>				<i>BK-GNRAL-PEDCO-000-PR-DB-0001</i>					
	53	<i>Process Design Criteria</i>				<i>BK-GNRAL-PEDCO-000-PR-DC-0001</i>					
	54	<i>P&ID</i>				<i>BK-GCS-PEDCO-120-PR-PI-0014</i>					
D02	55	<i>Specification for Painting</i>				<i>BK-GNRAL-PEDCO-000-PI-SP-0006</i>					
	56	<i>Specification for Insulation</i>				<i>BK-GNRAL-PEDCO-000-PI-SP-0019</i>					
	57	<i>Specification for Lining</i>				<i>BK-GNRAL-PEDCO-000-PI-SP-0007</i>					
	58	REMARKS:									
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CONSTRUCTION DETAILS (TO BE COMPLETED BY MANUFACTURER AND/OR PURCHASER)

Rev.

D02
D02
D02
D02

1	1. MANUFACTURER									
2	ADDRESS:									
3	CITY:		PROV.:			POSTAL CODE:			PHONE:	
4	SERIAL NUMBER:									
5	2. FABRICATOR:									
6	ADDRESS:									
7	CITY:		PROV.:			POSTAL CODE:			PHONE:	
8	SERIAL NUMBER:									
9	3. MATERIAL SPECIFICATIONS:									
10	SHELL :					PIPE :				
11	A-283 GR.C					A-106 GR.B				
12	ROOF :					FLANGE :				
13	A-283 GR.C					A-105				
14	BOTTOM / ANNULAR BOTTOM :					EXT. BOLT / NUT :				
15	A-283 GR.C					A-193 GR.B7 / A-194 GR.2H				
16	FIXED INTERNALS :					INT. BOLT / NUT :				
17	C.S.					S.S.				
18	REMOVABLE INTERNALS :									
19	S.S.									
20	STRUCTURALS :					A-36				
21	4. NO. OF SHELL COURSES									
22	5. PLATE WIDTHS AND THICKNESSES (INCLUDING CORROSION ALLOWANCE) (NOTE 27)									
23	1.	1500	4.	500	7.	10.				
24	2.	1500	5.		8.	11.				
25	3.	1500	6.		9.	12.				
26	MAY.2023									
27	6. TANK BOTTOM: PLATE THICKNESS mm (Note 27) YES LAP BUTT SEAMS									
28	SLOPE 1:120 mm per meter TO YES FROM CENTER									
29	7. MINIMUM WIDTH AND THICKNESS OF BOTTOM ANNULAR PLATES (5.5) :									
30	8. ROOF-TO SHELL DETAIL (FIGURE F-2 'API-650') : Detail B (Note 15)									
31	9. INTERMEDIATE WIND GIRDER (Note 18) NO TOP WIND GIRDER FOR USE AS WALKWAY :									
32	10. ROOF TYPE : YES CONE (Supported) DOME SPHERE									
33	SLOPE OR RADIUS : 1:5 (Note 15)									
34	11. ROOF PLATE: THICKNESS mm YES LAP BUTT JOINT									
35	12. PAINT: (Note 6)									
36	SHELL :		EXTERIOR			YES		INTERIOR		YES
37	SURFACE PREPARATION									
38	BOTTOM :		UNDERSIDE			YES		INTERIOR		YES
39	SURFACE PREPARATION									
40	ROOF :		EXTERIOR					INTERIOR		YES
41	SURFACE PREPARATION									
42	STRUCTURAL STEEL :		EXTERIOR			YES		INTERIOR		-
43	SPECIFICATION :									
44	13. TANK BOTTOM COATING:		INTERIOR			YES		MATERIAL		
45	APPLICATION SPECIFICATION									
46	14. INSPECTION BY:		SHOP			FILED				
47	15. WELD EXAMINATION: Radiograph (extent of radiography as per IPS-G-ME-100)									
48	Supplementary liquid penetrant or ultrasonic									
49	JOINT EFFICIENCY:		As Per Code							
50	16. FILMS :									
51	17. LEAK TESTING: PROPERTY OF									
52	YES BOTTOM YES ROOF YES SHELL									
53	18. MILL TEST REPORTS:		REQUIRED							
54	PLATE					STRUCTURAL SHAPES				
55	19. PURCHASER'S REFERENCE DRAWING :									
56	20. TANK SIZE :		DIAMETER			4000		mm HEIGHT		5000 mm
57	DATE OF STANDARD 650 EDITION/REVISION :									
58	The Latest Edition									
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پروژه	پسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
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APPURTENANCES (TO BE COMPLETED BY MANUFACTURER AND/OR PURCHASER)

D02

D02

1	1. STAIRWAY STYLE (Note 12)	YES	CIRCULAR	STRAIGHT	ANGLE TO HORIZONTAL	DEGREES
2	ROLLING LADDER					
3	2. WALKWAY:		WIDTH	mm	LENGTH	mm
4	3. DRAW -OFF SUMP:	YES	STANDARD	SPECIAL		
5	4. BOLTED DOOR SHEET :	NO	(APPENDIX A TANKS ONLY)	RAISED	FLUSH	
6	5. SCAFFOLD HITCH					
7	6. INTERNAL PIPING:		SWING LINE	SUCTION LINE		
8	HEATING COIL SURFACE AREA			m ²		
9	7. ROOF DRAIN:		HOSE	JOINTED		
10	SIPHON					
11	8. NO. AND SIZE OF SHELL MANHOLES	1x 24"				
12	9. NO. AND SIZE OF ROOF MANHOLES	1 x 20"				
13	SHELL NOZZLES LIST (Notes 1,2,16,17 , 24 , 27 & 28)					
14	MARK	QTY.	DESCRIPTION	PIPE	FLANGE	PROJ.
15				Size(in.)	Thk.	Rate.
16	A	1	Inlet	2		150 #
17	B1	1	Outlet	2		150 #
18	M1	1	Manhole	24		150 #
19	L1,2	2	Stand Pipe	3		150 #
20	L3,4	2	Level Transmitter	2		300 #
21	CC	2	Corrosion Coupon	2		300 #
22	S	1	Utility Connection	2		150 #
23	D	1	Drain	2		150 #
24	B2	1	Outlet to Glycol Regeneration Package	2		150 #
25						
26	ROOF NOZZLES LIST (Notes 1, 2&27)					
27	MARK	QTY.	DESCRIPTION	PIPE	FLANGE	PROJ.
28				Size(in.)	Thk.	Rate.
29	V1	1	Vent	6		150 #
30	V2	1	Gauge Hatch	(By Vendor)		150 #
31	M2	1	Roof Manhole	20		150 #
32	PVS/V 1,2	2	Pressure Vacume Safty Valve	(By Vendor)		150 #
33	N	1	Blanketing	2 (HOLD)		150 #
34	TOTAL WEIGHT (kg) (Note 2)					
35	FABRICATION	OPERATION	HYDROSTATIC TEST	REMOVABLE STANDARD	LADDER & PLATFORM	
36						
37						
38	LOADING (Note 2)					
39	WINDSHEAR (KG)	WIND OVERTURNING MOMENT (KG.M)	EARTHQUAKE SHEAR (KG)	EARTHQUAKE OVERTURNING MOMENT (KG.M)		
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