CONTRACTOR:	PROJECT:	CLIENT:	CONSULTANT:
tara engineering co. شرکت مهندسی تارا	طرح تأمین آب شهر رابر از سد صفا رود (شهیدان امیر تیموری) به شهر رابر	شرکت سهامی آب منطقه ای کرمان	RAYAB CONSULTING ENGINEERS

Doc. title : PUMP Data sheet	REV : 00	**Page Number :**	**Date: 97. 02 .15**
Equipment : **Main Pump**	**Location:** KERMAN PUMP STATION	1 / 3	**By :** M.ABOLHASANI
	No. in P&ID: P - 201 A / F		**Chk'd :** N.HOSEINZADEH
			Appr'd : M.MADDAH
Data sheet for : consultant √ client √ purchaser contract Doc. Manufacturer			**Quantity : 6 units**

1	**PROCESS AND OPERATING CONDITIONS**						
2	**Liquid**	Raw water		**Capacity (each pump)**	norm. : 600 l/s	min. :400 max: 3000 m3/hr	
3	**Density**	0.981-0.977	Kg/dm^3	**Static Head Min/Max**	min 10		m
4	**PH value**	Refer to water analysis report		**Suction pressure Max/Min**			bar
5	**Viscosity**	1.3	cp	**Differential head Max/Min**	372		m
6	**Solids content**	Refer to water analysis report		**NPSH available**	-		m
7	**Particle size**	Refer to water analysis report		**NPSH required**	≤ 7		m
8	**Vapour pressure**	0.13-0.43	m	**NPSH 3 %**	7.0		m
9	**Liquid Temperature (min/norm/max)**	5/20/30	℃	**Pump service**	continuous		
10	**Indoor temperature (min/max)**	-5 / 40	℃	**Pump Operation**	parallel		
11	**Elevation above sea level**	1700	m	**Location**	indoor		
12	**Corrosives in liquid**	Refer to water analysis report		**Relative Humidity**	17/83		%
13	**Ambient conditions**	corrosive	dusty	**Ambient temperature(min/max**	-15 / 45 (Outdoor)		℃
14	**TECHNICAL SPECIFICATION**						
15	**Pump type**	Horizental,Centrifugal Double suction **pump**					
16	**Manufacturer (1**	TORISHIMA			**Materials :**	**Standard code :**	
17				**Casing / cover (2**	JIS-FCD500-7		
18	**Model (1**	MSH 450 /2T		**Shaft (2**	DUPLEX SS		
19	**Serial No. (1**			**Impeller (2**	DUPLEX SS		
20	**Arrangement**	Horizental		**Shaft sleeve (2**	DUPLEX SS		
21	**No of stages (1**	Single or Multistage (by vendor)		**Int-stage sleeve/bush (2**	DUPLEX SS		
22	**Impeller type (1**	CLOSE/SINGLE(1ST)&DOUBLE(2ND) ENTRY		**Base plate (2**	JIS-STKR400(PUMP) JIS-SS400(MOTOR)		
23	**Impeller diam. Min/Max (1**		mm	**Casing wear ri (2**	DUPLEX SS		
24	**Impeller diam. Designed (1**		mm	**Impeller wear ring (**	DUPLEX SS		
25	**Suction size /standard (1**	2 X 20 INCH		**Seal plate/latern ring (**	BY VENDOR		
26	**Discharge size /standard (1**	18 INCH		**Bearing brack (2**	BY VENDOR		
27	**Pump speed Min/Max (1**		rpm	**Auxiliary pipi (2**	CS		
28	**Pump speed Norm. (1**	1480	rpm	**Balance drum/disc (2**			
29	**Required power (1**	2140	kw	**Flanges (2**	CS		
30	**Direction of rotation (1**	CW		**Bolts and nuts (2**	CS		

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Doc. title : PUMP Data sheet	REV : 00	**Page Number :**	**Date: 97. 02 .15**
Equipment : **Main Pump**	**Location:** KERMAN PUMP STATION	2 / 3	**By :** M.ABOLHASANI
	No. in P&ID: P - 201 A / F		**Chk'd :** N.HOSEINZADEH
			Appr'd : M.MADDAH
Data sheet for : consultant √ client √ purchaser contract Doc. Manufacturer			**Quantity : 6 units**

31	**Driver type**	Electromotor		**Shaft diameter (2**	-	
32	**Motor power rating (1**	2500	kw	**Bearing type-axial**	-	
33	**Required motor speed (1**	≤ 1500	rpm	**Bearing type-radial**	-	
34	**Start frequency**	By vendor	start/hour	**Bearing lubrictiion**	grease lubricated	
35	**Power transmission**	Coupling		**Bearing span**		mm
36	**Pump moment of inertia (1**		$kg\text{-}m^2$			Kg
37	**Motor inertia moment (1**		$kg.m^2$			
38	**Pump weight with baseplate:(without motor) (1**	9500	kg			
41	**Electromotor Type**	By vendor				
42	**ACCESSORIES**					
43	**Name plate including TAG**	required		**Stator RTD**	required	
44	**Transport packing :**	required		**Base plate**	required	
45	**Electromotor/ pump bearing RTD**	required				
46	**REMARKS**					
47	1) Vendor to verify					
48	2) Vendor to verify in accordance to the water analysis report & attaced specification					
49						
50	All items should be checked & Completed by the supplier					
51	**PERFORNANCE DATA**					
52	**Pump efficiency(In working point) (1**	85	%			
53	**Pump efficiency Min/Max (1**	-	%			
54	**Pump absorbed power (1**	-	kw			
55	**Driver rated power (1**	-	kw			
56	**Minimum flow for continous operation (1**	-	m^3/h			
57	**Minimum flow for starting (1**	-	m^3/h			
58	**Maximum head (1**	-	m			
59	**Shut-off head (1**	-	m			

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Doc. title : PUMP Data sheet	REV : 00	**Page Number :**	**Date: 97. 02 .15**
Equipment :	**Location:**		**By :** M.ABOLHASANI
Main Pump	KERMAN PUMP STATION	3 / 3	**Chk'd :** N.HOSEINZADEH
	No. in P&ID: P - 201 A / F		**Appr'd :** M.MADDAH
Data sheet for : consultant √ client √ purchaser contract Doc. Manufacturer			**Quantity : 6 units**

60	**CONSTRUCTION FEATURES**				
61					
62	**Casing Design**	Between bearing			
63	**Volute type**	Double volute			
64	**Suction type**	Double Suction			
65	**Casing split**	Axially split			
66	**Casing support type**	By vendor			
67	**Design pressure**	41 bar			
68	**Test pressure**	61.5 bar			
69	**Design temperature**	norm / max: ℃			
70	**Shaft sealing**	Single cartridge mechanical Seal			
71	**Seal manufacturer & model**	By vendor			
72	**Seal size** (1				
73	**Seal area pressure** (1				
74	**Coupling type** (1	Spacer type			
75	**Coupling make** (1				
76	**Coupling model & size** (1				
77	**Coupling guard** (1				
78	**Shaft dia. at cuopling end** (1	mm			
79	**Thrust balancing method** (1				
80	**Wear ring type** (1				
81	**TEST & CERTIFICATES**				
81	**Performance**	Wit+CERT	**Material**	UW+CERT	Performance Test according to ISO9906 Class 1B
82	**Vibration**	Wit+CERT	**Hydrostatic**	Wit+CERT	Minus tolerance for efficiency is not accepted
83	**NPSH**	Wit+CERT	**Bearing Temp. Rise**	Wit+CERT	Inspection Shall be done via. Approoved International third party Institue, determined by client
84	**Shop**	UW+CERT			
85	**Dimensional**	UW+CERT			
86	**REMARKS**				
87	1) Vendor to verify				
88	One Year Spare Part List Should be offered Separately				
89					
90	All items should be checked & Completed by the supplier				