

CENTRIFUGAL PUMP DATASHEET

Project N°

Unit

Document Code

Serial N°

Rev

Page

218857C

01

SP 0910

0101

B

1

Doc. Client Code: 218857C-01-MAC-DS-1901-0000

IMPORTANT NOTE

Electrical Area Classification

Note that the selections available allow for both Europe and US designations

Some of the drop-down selections may not adequately cover the project requirements.

PROJECT UNITS

SI

CLIENT:

SOCAR

PROJECT TITLE:

SOCAR DOWNSTREAM INTEGRATION NEW REFINERY IN SUMGAYIT FEED PROJECT

JOB NUMBER:

EQUIPMENT NUMBER:

01-P-101 A/B/C/D

EQUIPMENT SERVICE:

CRUDE OIL PUMPS

SERIAL NUMBER:

REQ / SPEC NUMBER :

PURCHASE ORDER NUMBER :

Cells coloured thus contain drop-down options

Text in BLACK color are by Purchaser

Text in BLUE color are by Supplier

Text in RED color are by Purchaser OR Supplier

COMMENTS:

ADDITIONAL / RELATED DATASHEETS

	ITEM / TAG NUMBERS	ATT	ITEM / TAG NUMBERS	ATT	ITEM / TAG NUMBERS	ATT
PUMP(s)						
MOTOR(s)						
GEAR(s)						
TURBINE(s)						

APPLICABLE OVERLAY STANDARDS

B	ISSUED FOR REVIEW (IFR)	20/02/2026	F. Tortorici	M. Pasini	M. Sani E. Ventimiglia						
A	ISSUED FOR REVIEW	28/8/2025	E. Sanchez	C. Ruiz C. Ariete	A. Guerrieri E. Ventimiglia						
Rev	Status	Date	Wrt	Verif.	App/Auth.	Rev	Status	Date	Wrt	Verif.	App/Auth.

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				SOCAR DOWNSTREAM INTEGRATION - NEW REFINERY IN SUMGAYIT FEED PROJECT						
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				218857C	01	SP 0910	0101	B	2	
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GENERAL										
1	Note	APPLICABLE TO: PROPOSAL		APPLICABLE NATIONAL / INTERNATIONAL STANDARD : API-610 12th edition		Rev				
2		CLIENT SOCAR		UNIT UNIT 01 - CRUDE OIL TANKS AREA						
3		SITE NEW REFINERY SUMGAYIT - AZERBAIJAN		SERVICE CRUDE OIL PUMPS		B				
4	(1)	NO. REQ 4	PUMP SIZE	TYPE HORIZONTAL		No. STAGES				
5		MANUFACTURER		MODEL		SERIAL NO.				
6		EQUIPMENT NUMBER 01-P-101 A/B/C/D								
7										
LIQUID CHARACTERISTICS										
9			Units	@ RATED TEMP	@ MAXIMUM TEMP	@ MINIMUM TEMP	Alternate LIQUID			
10	(19)	LIQUID TYPE OR NAME :		NEFT DASHLARI CRUDE		SHIRVAN CRUDE	SHIRVAN CRUDE		B	
11		PUMPING TEMPERATURE :	°C	42.0		5.0	0.0		B	
12		VAPOR PRESSURE :	bar a	0.43						
13		RELATIVE DENSITY (3.1.53) :		0.838		0.912	0.916		B	
14		SPECIFIC HEAT :	kJ/(kg-K)	1.86						
15		VISCOSITY :	Cp	5.8		179.7	258.3		B	
16										
17	(11)	OPERATING CONDITIONS (6.1.3)								
18			Units	Rated	Normal	Alt Condition 1	Alt Condition 2	Alt Condition 3	Alt Condition 4	
19						Max. Suction pressure	{Name 2}	{Name 3}	{Name 4}	
20		NPSHA Datum:	C.L. Suction Nozzle							
21		PUMPING TEMPERATURE :	°C	42.0	42.0				B	
22		FLOW :	m³/h	350.0	318.2					
23	(9, 18)	DISCHARGE PRESSURE (6.3.2) :	bar a	33.52					B	
24	(9, 12)	SUCTION PRESSURE :	bar a	0.98	2.54				B	
25		DIFFERENTIAL PRESSURE :	bar	32.54					B	
26		DIFFERENTIAL HEAD :	m	396					B	
27	(9,8)	NPSHA :	m	5.3					B	
28	(17)	HYDRAULIC POWER :	kW	344.4					B	
29										
30										
31	(2, 10)	SERVICE (CONTINUOUS/INTERMITTENT) :	CONTINUOUS		INSTALLATION LOCATION : OUTDOOR					
32		• IF INTERMITTENT, NO. OF STARTS :			IF INDOOR, TEMPERATURE: MAX: °C MIN: °C					
33	(1, 3, 14)	PUMPS OPERATE IN:	PARALLEL		ELECTRIC AREA CLASSIFICATION (6.1.29): HAZARDOUS					
34		CORROSION DUE TO : (6.12.1.9)			DIVISION		ZONE 2		B	
35		EROSION DUE TO : (6.12.1.9)			GROUP Group IIA					B
36	(15)	H2S CONCENTRATION (ppm) : (6.12.1.13)			TEMP CLASS T3					B
37	(13)	CHLORIDE CONCENTRATION (ppm) :			PUMP VALVE START POSITION : Partially Open Valve					
38		PARTICULATE SIZE (DIA IN MICRONS)								
39		PARTICULATE CONCENTRATION (ppm)								
40		CORROSION ALLOWANCE (6.3.10) :								
41		DESIGN NOTES: Pump design shall comply with specification "CENTRIFUGAL PUMPS FOR HEAVY DUTY SERVICES AMENDMENT TO HS523217-00-MAC-PE-0001-0000								
42		Rev0 " no 218857C-00-MAC-SPE-0001-0000								B
43										
PERFORMANCE					DRIVER (7.1)					
44	(13)	PROPOSAL CURVE NO.	RPM		DRIVER TYPE MOTOR					
45		IMPELLER DIA.: RATED MAX. MIN.		mm	GEAR					
46		RATED POWER : kW	EFFICIENCY	(%)	VARIABLE SPEED REQUIRED NO					
47		RATED CURVE BEP FLOW (at rated impeller diameter) (6.1.16) :		m³/h	SOURCE OF VARIABLE SPEED					
48		MIN FLOW : THERMAL m³/h	STABLE	m³/h	MANUFACTURER					
49		PREFERRED OPERATING REGION (6.1.16)		m³/h	NAMEPLATE POWER : kW					
50		ALLOWABLE OPERATING REGION (6.9.4.1)		m³/h	NOMINAL RPM					
51		MAX HEAD @ RATED IMPELLER		m	RATED LOAD RPM					B
52	(24)	MAX POWER @ RATED IMPELLER		kW	FRAME					
53		NPSH3 AT RATED FLOW (6.1.9) :		m	ORIENTATION HORIZONTAL		B			
54		CENTERLINE OF PUMP TO NPSHA DATUM		m	LUBRICATION					
55		NPSH MARGIN AT RATED FLOW (6.1.10) :		m	BEARING TYPE					
56		SPECIFIC SPEED (6.1.17)	m³/h, rpm, m		RADIAL					
57		SUCTION SPECIFIC SPEED LIMIT (6.1.11)	m³/h, rpm, m	213	THRUST					B
58		SUCTION SPECIFIC SPEED (6.1.11)	m³/h, rpm, m		STARTING METHOD Direct On Line (DOL)		B			
59	(23)	MAX. ALLOWABLE SOUND PRESSURE LEVEL (6.1.19)		85 (dBA)	DRIVER DATASHEET NUMBER					B
60		ESTIMATED MAX. SOUND PRESSURE LEVEL		(dBA)	DRIVE DESIGN STANDARD IEC		B			
61		MAX. ALLOWABLE SOUND POWER LEVEL (6.1.19)		(dB)						
62		ESTIMATED MAX SOUND POWER LEVEL		(dB)						
63										
64										
65										

CENTRIFUGAL PUMP DATASHEET

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1	Note	CONSTRUCTION				Rev
2	(29)	API PUMP TYPE (Table 1):	BB			B
3						
4		NOZZLE CONNECTIONS (6.4.2):				
5						
6		SUCTION				
7		DISCHARGE				
8		PRESSURE CASING AUX. CONNECTIONS: (6.4.3)				
9						
10		BALANCE/LEAK OFF				
11		DRAIN				
12		VENT				
13		PRESSURE GAGE				
14		TEMP GAGE				
15		WARM-UP LINE				
16						
17		DRAIN VALVE SUPPLIED BY (7.6.2.5)	SUPPLIER			
18		DRAINS MANIFOLDED (7.6.2.5)	YES			
19		VENT VALVE SUPPLIED BY	SUPPLIER			
20		VENTS MANIFOLDED	YES			
21		THREADED CONS FOR PIPELINE SERVICE & < 55°C (6.4.3.2)	NO			
22		ESTIMATED HYDRAULIC POWER CONSIDERED THE MAXIMUM CRUDE	NO			
23		CYLINDRICAL THREADS REQUIRED (6.4.3.2)	NO			
24		MACHINED AND STUDDED AUX CONNECTIONS (6.4.3.6)	NO			
25		ROUTE DRAIN TO SKID EDGE	YES			
26						
27						
28		MATERIAL (6.12.1.1)				
29	(6, 15)	ANNEX H CLASS	S-6			
30	(4)	MINIMUM DESIGN METAL TEMPERATURE (6.12.4.1)	-14	°C		
31		MAXIMUM ALLOWABLE TEMPERATURE (3.1.19)		°C		
32		REDUCED-HARDNESS MATERIALS REQ'D (6.12.1.14)	YES			
33		APPLICABLE HARDNESS STANDARD (6.12.1.14)				
34		BARREL :				
35		CASE :	CS			
36		DIFFUSERS				
37		IMPELLER :	13Cr4Ni			
38		IMPELLER WEAR RING :				
39		CASE WEAR RING :				
40		SHAFT:				
41		BOWL (IF VS-TYPE)				
42						
43						
44		BEARINGS AND BEARING HOUSINGS (6.10.1)				
45		BEARING (TYPE / NUMBER):				
46		RADIAL		/		
47		THRUST		/		
48		REVIEW AND APPROVE THRUST BEARING SIZE : (9.2.5.2.6)				
49		LUBRICATION (6.11.3) (9.3.12.4) :				
50		PRESSURE LUBE SYSTEM TO API-614, CHAPTER :				
51		API 614 DATASHEETS ATTACHED (9.2.6.4)				
52		PRESSURIZED LUBE OIL SYSTEM MOUNTED ON BASEPLATE:				
53		LOCATION OF PRESSURIZED LUBE OIL SYSTEM:				
54	(5, 16)	INTERCONNECTING PIPING PROVIDED BY				
55		OIL VISC. ISO GRADE	VG			
56		VENT-TO-HOUSING CONSTANT LEVEL OILER (6.10.2.4) :				
57		OIL MIST PROVISIONS (6.11.3)				
58		GREASE LUBRICATION (6.11.4)				
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						

CASING MOUNTING (6.3.14, 9.3.8.3):						B
CASING TYPE:						
OH3 BACK-PULLOUT LIFTING DEVICE REQD. (9.1.2.6)						
CASING PRESSURE RATING:						
MAWP (6.3.6) :		bar g	@		°C	
HYDROTEST (8.3.2.2) :		bar g	@		°C	
WETTING AGENT REQUIRED FOR HYDROTEST (8.3.2.7) :						
HYDROTEST OH PUMP AS ASSEMBLY (8.3.2.14) :						
SUCT'N PRESS. REGIONS DESIGNED FOR MAWP (6.3.8) :						
ROTOR:						
SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3)						
FIRST CRITICAL SPEED WET (MULTISTAGE PUMPS ONLY)						
COMPONENT BALANCE TO ISO 1940-1, G1 (6.9.3.4) :						
SHRINK-FIT-LIMITED MOVEMENT IMPELLERS (9.2.2.3)						
ROTATION (VIEWED FROM COUPLING END) :						B
IMPELLERS INDIVIDUALLY SECURED (6.6.3) :						B
COUPLING: (7.2)						B
MANUFACTURER						B
MODEL						B
RATING (kW / 100 RPM)						B
SPACER LENGTH (7.2.2.d)					mm	B
SERVICE FACTOR (7.2.3)						B
RIGID-TYPE						
COUPLING WITH HYDRAULIC FIT (7.2.9)						
COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.10)						
COUPLING IN COMPLIANCE WITH (7.2.4)(7.2.2.f)						
GUARDS (7.3)						
COUPLING AND SHAFT GUARD STANDARD (7.3)						
IGNITION HAZARD ASSESSMENT PER EN 13463-1 (7.3.2.2; 7.3.3.4)						B
COUPLING GUARD MATERIAL (7.3.2.1; 7.3.3.3) :						
SHAFT GUARD MATERIAL (7.3.2.1; 7.3.3.3) :						
SPARK RESISTANT MATERIAL REQUIRED (7.3.2.1) :					YES	B
BASEPLATE						
API BASEPLATE NUMBER (ANNEX D) :						
IF NON-STD BASEPLATE DIMENSIONS (LxW) (mm²) :						
BASEPLATE CONSTRUCTION (7.4)					TOP DECKING	B
BASEPLATE DRAINAGE (7.4.1)					SLOPED FULL DECK PLATE	B
MOUNTING :					GROUTED	B
NON-GROUT CONSTRUCTION (7.4.1.e):						
SUPPLIED WITH :						
● GROUT AND VENT HOLES					YES	B
● DRAIN CONNECTION					YES	B
DEMONSTRATE BASEPLATE PAD FLATNESS (7.4.9)						
PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET (7.4.10)						
BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION :						
PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS (9.1.2) :						
REMARKS :						
DISCHARGE CIRCUIT PIPING DESIGN:						
DESIGN PRESSURE		44	bar g			
DESIGN TEMPERATURE		80	°C			

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1	Note	SURFACE PREPARATION, PAINT & SPARES					TEST					Rev		
2		MANUFACTURER'S STANDARD (8.4.3.4)					SHOP INSPECTION (8.1.1.1)					YES	B	
3		OTHER (SEE BELOW)					PERF. CURVE & DATA APPROVAL REQ'D PRIOR TO SHIPMENT (8.3.3.4.6) :					YES	B	
4		SPECIFICATION NO. 218857C-00-MT-SPE-0005-0000					TEST WITH SUBSTITUTE SEAL (8.3.3.3.1)					NO	B	
5		PUMP:					MATERIAL CERTIFICATION REQUIRED (6.12.1.8): CASING					YES	B	
6		PUMP SURFACE PREPARATION					IMPELLER					YES	B	
7		PRIMER					SHAFT					YES	B	
8		FINISH COAT					OTHER							
9		BASEPLATE:					CASTING REPAIR WELD PROCEDURE APPROVAL REQD (6.12.2.5):					YES	B	
10		SURFACE PREPARATION					INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4)							
11	(27)	PRIMER:					MAG PARTICLE					YES	B	
12		FINISH COAT					RADIOGRAPHY							
13	(27)	UNDERSIDE					LIQUID PENETRANT					YES	B	
14							ULTRASONIC							
15		SHIPMENT: (8.4)					HARDNESS TEST REQUIRED (6.12.1.14; 8.2.2.7)					YES	B	
16		EXPORT BOXING REQUIRED					ADDITIONAL SUBSURFACE EXAMINATION (6.12.1.6) (8.2.1.3)						B	
17		PREPARE FOR OUTDOOR STORAGE (NUMBER OF MONTHS) :					FOR: _____							
18							METHOD: _____							
19		SPARE ROTOR ASSEMBLY PACKAGED FOR:					PMI TESTING REQUIRED (8.2.2.8)					YES	B	
20		ROTOR STORAGE ORIENTATION (9.2.8.2)					COMPONENTS TO BE TESTED : Note 22						B	
21		SHIPPING & STORAGE CONTAINER SUITABLE FOR					RESIDUAL UNBALANCE TEST (J.4.1.2)							
22		ESTIMATED HYDRAULIC POWER CON VERTICAL STORAGE (9.2.8.3) :					NOTIFICATION OF SUCCESSFUL PERFORMANCE TEST (8.1.1.3) (8.3.3.4.6)							
23		N2 PURGE REQUIRED (9.2.8.4) :					BASEPLATE (NOZZLE LOAD) TEST (7.4.24)							
24							HYDROSTATIC TEST (8.3.2)					OBSERVE	B	
25		SPARE PARTS (10.3.4.2)					HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.1)							
26		START-UP					PERFORMANCE TEST (8.3.3)					OBSERVE	B	
27		NORMAL MAINTENANCE					RETEST ON SEAL LEAKAGE (8.3.3.2)							
28							TEST DATA POINTS TO (8.3.3.4)					8.3.3.4	B	
29							ALTERNATE TEST TOLERANCES PER (8.3.3.5)							
30	(25)	MASSES kg					NPSH (8.3.4.3)					WIT	B	
31		ITEM No	PUMP	DRIVER	GEAR	BASE	TOTAL	NPSH BASED ON 1ST STG ONLY ALLOWED (8.3.4.3.2)						
32								TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.3.7)						
33								RETEST REQUIRED AFTER FINAL HEAD ADJUSTMENT (8.3.3.8.2)					OBSERVE	B
34								COMPLETE UNIT TEST (8.3.4.4.1)						
35							SOUND LEVEL TEST (8.3.4.5)					OBSERVE	B	
36		OTHER PURCHASER REQUIREMENTS					CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6)							
37		COORDINATION MEETING REQUIRED					LOCATION OF CLEANLINESS INSPECTION:							
38	(27)	MAXIMUM DISCHARGE PRESSURE TO INCLUDE (6.3.2)					CHECK FOR CO-PLANAR MOUNTING PAD FLATNESS (7.4.8)					OBSERVE	B	
39		MAX RELATIVE DENSITY					MECHANICAL RUN TEST UNTIL OIL TEMP STABLE (8.3.4.2.1)					OBSERVE	B	
40		OPERATION TO TRIP SPEED					4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.2)							
41		MAX DIA. IMPELLERS AND/OR NO OF STAGES					BRG HSG RESONANCE TEST (8.3.4.7)							
42		CONNECTION DESIGN APPROVAL (9.2.1.4)					STRUCTURAL RESONANCE TEST (9.3.9.2)							
43		TORSIONAL ANALYSIS / REPORT (6.9.2)					REMOVE / INSPECT HYDRODYNAMIC BEARINGS AFTER TEST (9.2.7.4)							
44		PROGRESS REPORTS (L.3.3)					AUXILIARY EQUIPMENT TEST (8.3.4.6)						B	
45		OUTLINE OF PROCEDURES USED FOR OPTIONAL TESTS (L.2.5)					EQUIPMENT TO BE INCLUDED IN AUXILLIARY TESTS :						B	
46		ADDITIONNAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1)					LOCATION OF AUXILIARY EQUIPMENT TEST :							
47		LATERAL ANALYSIS REQUIRED (9.2.4.1.2)												
48		ROTOR DYNAMIC BALANCE TO 4W/N (6.9.3.5)					IMPACT TEST (6.12.4.3) PER EN 13445							
49		VFD STEADY STATE FORCED RESPONSE ANALYSIS (6.9.2.3)					PER ASME SECTION VIII							
50		TRANSIENT FORCED RESPONSE (6.9.2.4)					CASING DISASSEMBLY AFTER TEST (8.3.3.9)							
51		BEARING LIFE CALCULATIONS REQUIRED (6.10.1.11)					SPARE PARTS TEST (8.3.4.8)							
52		CASING RETIREMENT THICKNESS DRAWING [L.3.6.1 cc) 7) xiii)]												
53		CONNECTION BOLTING (7.6.1.7)												
54		VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c)												
55		VENDOR SUBMIT TEST PROCEDURES (8.3.1.1)											B	
56		SUBMIT INSPECTION CHECK LIST (8.1.5)												
57		ACOUSTIC ANALYSIS OF CROSSOVER PASSAGE (BB3, BB5)(9.2.1.5)												
58		API-691 DOCUMENTATION REQUIRED (6.1.3.1)												
59														
60														
61														
62														
63														
64														
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66														
67														
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1	Note #	NOTES					Rev
2	(1)	TWO PUMPS IN PARALLEL OPERATION AND TWO SPARES.					B
3	(2)	FOR SITE CONDITIONS & UTILITIES OPERATING AND DESIGN CONDITIONS REFER TO BASIC DESIGN DATA DOC.					
4		218857C-00-PR-BD-0001-0000_A.					
5	(3)	FOR HAZARDOUS AREA CLASSIFICATION REFER TO HAZARDOUS AREA CLASSIFICATION DRAWINGS. Refer Doc no 218857C-01-ELE-HAD-0001-0001.					B
6	(4)	CORRESPONDING TO MINIMUM AMBIENT TEMPERATURE.					
7	(5)	ANTICIPATED (DISCHARGE) MECHANICAL DESIGN PRESSURE IS BASED ON ESTIMATED PUMP SHUTOFF PRESSURE. DETAIL					
8		ENGINEERING CONTRACTOR TO UPDATE DISCHARGE SYSTEM MECHANICAL DESIGN PRESSURE BASED ON ACTUAL INSTALLED					
9		PUMP SHUTOFF, WHICH SHALL NOT EXCEED 120% OF THE DIFFERENTIAL HEAD AT RATED FLOW.					
10	(6)	MATERIAL SELECTION TO BE FINALIZED ON VENDOR DESIGN.					
11	(7)	Deleted.					B
12	(8)	NPSH SHALL EXCEED THE NPSH3 BY AT LEAST 0.5M, OVER THE ENTIRE ANTICIPATED OPERATING RANGE.					
13	(9)	ALL CALCULATION WERE PERFORMED WITH REFERENCE TO THE GROUND LEVEL.					
14	(10)	ENVIRONMENTAL TO BE CONSIDERED MARINE SALT LADEN AND CORROSIVE. DUSTY ATMOSPHERE WITH SAND POLLUTION TO BE					
15		CONSIDERED.					
16	(11)	CONTROLLING CASE: LCM CASE.					
17	(12)	ALTERNATIVE CONDITION IS REFERENCED TO MAXIMUM SUCTION PRESSURE.					
18	(13)	PUMP MOTOR TO BE SIZED FOR END OF CURVE OPERATION.					
19	(14)	PUMP SHALL OPERATE IN PARALLEL WITH PUMPS 01-P-102A/B/C.					B
20	(15)	H2S CONTENT: 0.21 PPM WT (LCM CASE), 0 PPM (HSCM CASE). SULFUR CONTENT: 0.151%WT (LCM CASE), 1.16%WT(HSCM CASE)					
21	(16)	PUMP IS SUBJECTED TO STEAM OUT CONDITIONS 4.5 BARG @ 166°C AND FV @ 166°C.					
22	(17)	ESTIMATED HYDRAULIC POWER CONSIDERED THE MAXIMUM CRUDE OIL DENSITY (SHIRVAN CRUDE) AT MINIMUM TEMPERATURE.					B
23	(18)	NPSH TO BE CONFIRMED BASED ON FINAL PIPING CONFIGURATION.					B
24	(19)	MINIMUM OPERATIVE TEMPERATURE: 5 °C. ALTERNATIVE TEMPERATURE FOR REFERENCE: 0 °C.					B
25	(20)	Two Flat/Dimpled Faces only per Bearing Housing					B
26	(21)	Project welding specification to be applied 218857C-00-MT-SPE-0001-0000.					B
27	(22)	Test applicability for PMI: all pressure component in contact with process fluid including and not limited to casing, impeller, shaft.					B
28	(23)	The noise level shall be measured 1 m from the equipment and also at the ground level or nearest manned platform/workplace.					B
30	(24)	Unless otherwise agreed upon, the shutoff head, inclusive of the positive (API 610 XII ed table 16) tolerance shall not exceed 120% of rated head.					B
31	(25)	Preliminary, the mechanical seal plan selection for dual pressurized seal arrangement is Plan 53B.					B
32		To be confirmed by vendor during detail engineering phase.					
33	(26)	Witnessed NPSH3 test shall be performed on each pump, when the margin is 1.0 m or less.					B
34	(27)	With reference to the check for Co-Planar mounting pad flatness, applicability is for baseplates longer than 4 m.					B
35	(28)	Magnetic Particle or Liquid Penetrant required.					B
36	(29)	To be defined during detail engineering based on the evaluation of Vendors offers and available selections.					B
37							
38							
39							
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