SOCAR DOWNSTREAM | T.EN TECHNIP ENERGIES

SOCAR DOWNSTREAM INTEGRATION - NEW REFINERY IN SUMGAYIT FEED PROJECT

CENTRIFUGAL PUMP DATASHEET

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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 adequetly cover the project requiremets.

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

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

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GENERAL

Note			Rev
	APPLICABLE TO: PROPOSAL	APPLICABLE NATIONAL / INTERNATIONAL STANDARD : API-610 12th edition	
	CLIENT: SOCAR	UNIT: UNIT 01 - CRUDE OIL TANKS AREA	
	SITE: NEW REFINERY SUMGAYIT - AZERBAIJAN	SERVICE: CRUDE OIL PUMPS	B
(1)	NO. REQ: 4 PUMP SIZE:	TYPE: HORIZONTAL No. STAGES:	
	MANUFACTURER:	MODEL: SERIAL NO.	
	EQUIPMENT NUMBER: 01-P-101 A/B/C/D		

LIQUID CHARACTERISTICS

Note		Units	@ RATED TEMP	@ MAXIMUM TEMP	@ MINIMUM TEMP	*Alternate LIQUID*	Rev
(19)	LIQUID TYPE OR NAME :		NEFT DASHLARI CRUDE		SHIRVAN CRUDE	SHIRVAN CRUDE	B
	PUMPING TEMPERATURE :	°C	42.0		5.0	0.0	B
	VAPOR PRESSURE :	bar a	0.43				
	RELATIVE DENSITY (3.1.53) :		0.838		0.912	0.916	B
	SPECIFIC HEAT :	kJ/(kg-K)	1.86				
	VISCOSITY :	Cp	5.8		179.7	258.3	B

OPERATING CONDITIONS (6.1.3)

Note		Units	Rated	Normal	Alt Condition 1	Alt Condition 2	Alt Condition 3	Alt Condition 4	Rev
					Max. Suction pressure	*{Name 2}*	*{Name 3}*	*{Name 4}*	
	NPSHA Datum:		C.L. Suction Nozzle						
	PUMPING TEMPERATURE :	°C	42.0	42.0					B
	FLOW :	m³/h	350.0	318.2					
(9, 18)	DISCHARGE PRESSURE (6.3.2) :	bar a	33.52						B
(9, 12)	SUCTION PRESSURE :	bar a	0.98		2.54				B
	DIFFERENTIAL PRESSURE :	bar	32.54						B
	DIFFERENTIAL HEAD :	m	396						B
(9,8)	NPSHA :	m	5.3						B
(17)	HYDRAULIC POWER :	kW	344.4						B

Note			Rev
(2, 10)	SERVICE (CONTINUOUS/INTERMITTENT) : CONTINUOUS	INSTALLATION LOCATION : OUTDOOR	
	• IF INTERMITTENT, NO. OF STARTS :	IF INDOOR, TEMPERATURE: MAX: °C MIN: °C	
(1, 3, 14)	PUMPS OPERATE IN: PARALLEL	**ELECTRIC AREA CLASSIFICATION (6.1.29):** HAZARDOUS	
	CORROSION DUE TO : (6.12.1.9)	DIVISION: ZONE: 2	B
	EROSION DUE TO : (6.12.1.9)	GROUP: Group IIA	B
(15)	H2S CONCENTRATION (ppm) : (6.12.1.13)	TEMP CLASS: T3	B
(13)	CHLORIDE CONCENTRATION (ppm) :	PUMP VALVE START POSITION : Partially Open Valve	
	PARTICULATE SIZE (DIA IN MICRONS)		
	PARTICULATE CONCENTRATION (ppm)		
	CORROSION ALLOWANCE (6.3.10) :		
	DESIGN NOTES: Pump design shall comply with specification "CENTRIFUGAL PUMPS FOR HEAVY DUTY SERVICES AMENDMENT TO HS523217-00-MAC-PE-0001-0000		
	Rev0 " no 218857C-00-MAC-SPE-0001-0000		B

PERFORMANCE

Note				Rev
(13)	PROPOSAL CURVE NO.	RPM		
	IMPELLER DIA.: RATED	MAX.	MIN.	mm
	RATED POWER :	kW	EFFICIENCY	(%)
	RATED CURVE BEP FLOW (at rated impeller diameter) (6.1.16) :			m³/h
	MIN FLOW : THERMAL	m³/h	STABLE	m³/h
	PREFERRED OPERATING REGION (6.1.16)		to	m³/h
	ALLOWABLE OPERATING REGION (6.9.4.1)		to	m³/h
(24)	MAX HEAD @ RATED IMPELLER			m
	MAX POWER @ RATED IMPELLER			kW
	NPSH3 AT RATED FLOW (6.1.9) :			m
	CENTERLINE OF PUMP TO NPSHA DATUM			m
	NPSH MARGIN AT RATED FLOW (6.1.10) :			m
	SPECIFIC SPEED (6.1.17)	m3/h, rpm, m		
	SUCTION SPECIFIC SPEED LIMIT (6.1.11)	m3/h, rpm, m	213	
	SUCTION SPECIFIC SPEED (6.1.11)	m3/h, rpm, m		
(23)	MAX. ALLOWABLE SOUND PRESSURE LEVEL (6.1.19)		85	(dBA)
	ESTIMATED MAX. SOUND PRESSURE LEVEL			(dBA)
	MAX. ALLOWABLE SOUND POWER LEVEL (6.1.19)			(dB)
	ESTIMATED MAX SOUND POWER LEVEL			(dB)

DRIVER (7.1)

Note			Rev
	DRIVER TYPE: MOTOR		
	GEAR		
	VARIABLE SPEED REQUIRED: NO		
	SOURCE OF VARIABLE SPEED		
	MANUFACTURER		
	NAMEPLATE POWER : kW		
	NOMINAL RPM		
	RATED LOAD RPM		B
	FRAME		
	ORIENTATION: HORIZONTAL		B
	LUBRICATION		
	BEARING TYPE		
	RADIAL		
	THRUST		B
	STARTING METHOD: Direct On Line (DOL)		B
	DRIVER DATASHEET NUMBER		B
	DRIVE DESIGN STANDARD: IEC		B

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CONSTRUCTION

API PUMP TYPE (Table 1): BB

NOZZLE CONNECTIONS (6.4.2):

	Size	Facing	Rating	Position
SUCTION				
DISCHARGE				

PRESSURE CASING AUX. CONNECTIONS: (6.4.3)

	No.	Size	Type	Facing	Rating	Posn.
BALANCE/LEAK OFF						
DRAIN						
VENT						
PRESSURE GAGE						
TEMP GAGE						
WARM-UP LINE						

		Note
DRAIN VALVE SUPPLIED BY (7.6.2.5)	SUPPLIER	
DRAINS MANIFOLDED (7.6.2.5)	YES	
VENT VALVE SUPPLIED BY	SUPPLIER	
VENTS MANIFOLDED	YES	
THREADED CONS FOR PIPELINE SERVICE & < 55°C (6.4.3.2)	NO	
ESTIMATED HYDRAULIC POWER CONSIDERED THE MAXIMUM CRUDE	NO	
CYLINDRICAL THREADS REQUIRED (6.4.3.2)	NO	
MACHINED AND STUDDED AUX CONNECTIONS (6.4.3.6)	NO	
ROUTE DRAIN TO SKID EDGE	YES	

MATERIAL (6.12.1.1)

		Note
ANNEX H CLASS	S-6	(6,15)
MINIMUM DESIGN METAL TEMPERATURE (6.12.4.1)	-14 °C	(4)
MAXIMUM ALLOWABLE TEMPERATURE (3.1.19)	°C	
REDUCED-HARDNESS MATERIALS REQ'D (6.12.1.14)	YES	
APPLICABLE HARDNESS STANDARD (6.12.1.14)		
BARREL :		
CASE :	CS	
DIFFUSERS		
IMPELLER :	13Cr4Ni	
IMPELLER WEAR RING :		
CASE WEAR RING :		
SHAFT:		
BOWL (IF VS-TYPE)		

BEARINGS AND BEARING HOUSINGS (6.10.1)

		Note
BEARING (TYPE / NUMBER):		
RADIAL	/	
THRUST	/	
REVIEW AND APPROVE THRUST BEARING SIZE : (9.2.5.2.6)		
LUBRICATION (6.11.3) (9.3.12.4) :		
PRESSURE LUBE SYSTEM TO API-614, CHAPTER :		
API 614 DATASHEETS ATTACHED (9.2.6.4)		
PRESSURIZED LUBE OIL SYSTEM MOUNTED ON BASEPLATE:		
LOCATION OF PRESSURIZED LUBE OIL SYSTEM:		
INTERCONNECTING PIPING PROVIDED BY		(5, 16)
OIL VISC. ISO GRADE	VG	
VENT-TO-HOUSING CONSTANT LEVEL OILER (6.10.2.4) :		
OIL MIST PROVISIONS (6.11.3)		
GREASE LUBRICATION (6.11.4)		

		Rev
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

		Rev
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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Note	INSTRUMENTATION		Rev
	INSTRUMENTATION PER API-670 (7.5.2)		
	ACCELEROMETERS (7.5.2.1)		
	NUMBER OF ACCELEROMETERS		
	MOUNTING LOCATION:		
	PROVISION FOR MTG ONLY (6.10.2.13)	YES	
(20)	FLAT SURFACE REQUIRED (6.10.2.14)	YES	
	VIBRATION PROBES (7.5.2.2)		
	VIBRATION PROBES REQUIRED (7.5.2.2)		
	NUMBER PER RADIAL BEARING		
	NUMBER PER AXIAL BEARING		
	THREADED PROVISION FOR MTG ONLY (6.10.2.13; 6.6.12)		
	FLAT SURFACE PROVISION ONLY (6.10.2.14)		
(25)	MONITORS AND CABLES SUPPLIED BY (7.5.2.4)		
	TEMPERATURE DETECTORS (7.5.2.3)		
	TEMP. PROBES REQUIRED (7.5.2.3)		
	PROVISIONS FOR MOUNTING ONLY (6.10.2.2)		
	RADIAL BEARING TEMP.		
	NUMBER PER RADIAL BEARING		
	ESTIMATED HYDRAULIC POWER CONSIDERED THE MAXIMUM		
	NUMBER PER THRUST BEARING ACTIVE SIDE		
	NUMBER PER THRUST BEARING INACTIVE SIDE		
	TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.5)		
	TEMP. GAUGE LOCATION		
	SUPPLY UPPER/LOWER CASING RTD'S FOR WARMUP		
	PRESSURE GAUGE TYPE		
	PRESSURE GAUGE LOCATION		
	REMARKS		

	PIPING & APPURTENANCES		
	TAG ALL ORIFICES (7.6.2.4)	YES	
	SOCKET WELD UNION ON 1st SEAL GLAND NIPPLE (7.6.2.8)		
	MANIFOLD AUX PIPING SYSTEMS AT SKID EDGE (7.6.1.6)	YES	

	SEAL SUPPORT SYSTEM MOUNTING		
	MOUNTED ON PUMP BASEPLATE (7.6.1.4)	YES	B
	LOCATION ON OR OFF BASEPLATE (7.4.6) :		
	INTERCONNECTING PIPING BY	Supplier	B
			B

	MECHANICAL SEAL (6.8)		
	SEAL TYPE	API 682 MECHANICAL SEAL	B
	API 682 DATASHEET ATTACHED :		
	ADDITIONAL CENTRAL FLUSH PORT (6.8.9)		
	HEATING JACKET REQ'D. (6.8.11)		
	SEAL MANUFACTURER		
	SIZE / TYPE	/	
	MANUFACTURER CODE		
	ARRANGEMENT	DUAL PRESSURIZED	B
	SEAL CHAMBER DATA:		
	TEMPERATURE	°C	
	PRESSURE	bar g	
	FLOW	m³/h	
	SEAL FLUSH PIPING PLAN:		
	PIPE in	STAINLESS STEEL	B
	SEAL FLUSH FLUID TYPE		
	PIPING ASSEMBLY		
	AUXILIARY PIPING PLAN:		
	PIPE in	STAINLESS STEEL	B
	AUXILIARY FLUSH FLUID TYPE		
	PIPING ASSEMBLY		

	HEATING AND COOLING (6.1.23-6.1.27)			
	COOLING REQ'D			
	COOLING WATER PIPING PLAN (7.6.3.1)			
	COOLING WATER PIPING			
	FITTINGS			
	COOLING WATER PIPING MATERIALS	GALVANISED		B
	COOLING WATER REQUIREMENTS:	SUPPLY PRESSURE	bar g	
		BEARING HOUSING	m³/h	
		HEAT EXCHANGER	m³/h	
		TOTAL COOLING WATER	m³/h	B
	HEATING MEDIUM			
	HEATING PIPING			B

PRESSURE VESSEL DESIGN CODE REFERENCES

THESE REFERENCES SHALL BE PROVIDED BY THE MANUFACTURER

CASTING FACTORS USED IN DESIGN (PER TABLE 4)

SOURCE OF MATERIAL PROPERTIES (6.3.5)

WELDING AND REPAIRS (6.12.3.1)

THESE REFERENCES SHALL BE PROVIDED BY THE PURCHASER. (DEFAULT TO TABLE 11 IF NO PURCHASER PREFERENCE IS STATED)

(21)	ALTERNATIVE WELDING CODES AND STANDARDS	YES	B
	WELDING REQUIREMENT (APPLICABLE CODE OR STANDARD)		
	ALTERNATIVE WELDER/OPERATOR QUALIFICATION STANDARD		
	ALTERNATIVE WELDING PROCEDURE QUALIFICATION STANDARD		
	NON-PRESSURE RETAINING STRUCTURAL WELDING STANDARD (BASEPLATES OR SUPPORTS)		
	STANDARD FOR MAGNETIC PARTICLE OR LIQUID PENETRANT EXAMINATION (PLATE EDGES)		
	STANDARD FOR POSTWELD HEAT TREATMENT		
	STANDARD FOR POSTWELD HEAT TREATMENT OF CASING FABRICATION WELDS		

MATERIAL INSPECTION

THESE REFERENCES SHALL BE PROVIDED BY THE PURCHASER

DEFAULT TO TABLE 14: YES — TABLE 14 INSPECTION CLASS: II — B

ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15, 8.2.2.5)

TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS
RADIOGRAPHY			
ULTRASONIC INSPECTION			
MAGNETIC PARTICLE INSPECTION			
LIQUID PENETRANT INSPECTION			
VISUAL INSPECTION (all surfaces)			

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Note	SURFACE PREPARATION, PAINT & SPARES		Rev
	MANUFACTURER'S STANDARD (8.4.3.4)	NO	
	OTHER (SEE BELOW)	YES	
	SPECIFICATION NO.	218857C-00-MT-SPE-0005-0000	
	PUMP:		
	PUMP SURFACE PREPARATION		
	PRIMER		
	FINISH COAT		
	BASEPLATE:		
	SURFACE PREPARATION		
(27)	PRIMER:		
	FINISH COAT		
(27)	UNDERSIDE		
	SHIPMENT: (8.4)	EXPORT	
	EXPORT BOXING REQUIRED	YES	
	PREPARE FOR OUTDOOR STORAGE (NUMBER OF MONTHS) :		
	SPARE ROTOR ASSEMBLY PACKAGED FOR:		
	ROTOR STORAGE ORIENTATION (9.2.8.2)		
	SHIPPING & STORAGE CONTAINER SUITABLE FOR		
	ESTIMATED HYDRAULIC POWER CON VERTICAL STORAGE (9.2.8.3) :		
	N2 PURGE REQUIRED (9.2.8.4) :		
	SPARE PARTS (10.3.4.2)		
	START-UP	YES	
	NORMAL MAINTENANCE		

MASSES kg

ITEM No	PUMP	DRIVER	GEAR	BASE	TOTAL

Note	OTHER PURCHASER REQUIREMENTS		Rev
	COORDINATION MEETING REQUIRED		
(27)	MAXIMUM DISCHARGE PRESSURE TO INCLUDE (6.3.2)		
	MAX RELATIVE DENSITY	YES	
	OPERATION TO TRIP SPEED		
	MAX DIA. IMPELLERS AND/OR NO OF STAGES		
	CONNECTION DESIGN APPROVAL (9.2.1.4)		
	TORSIONAL ANALYSIS / REPORT (6.9.2)		
	PROGRESS REPORTS (L.3.3)	YES	
	OUTLINE OF PROCEDURES USED FOR OPTIONAL TESTS (L.2.5)	YES	
	ADDITIONNAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1)		
	LATERAL ANALYSIS REQUIRED (9.2.4.1.2)		
	ROTOR DYNAMIC BALANCE TO 4W/N (6.9.3.5)		
	VFD STEADY STATE FORCED RESPONSE ANALYSIS (6.9.2.3)		
	TRANSIENT FORCED RESPONSE (6.9.2.4)		
	BEARING LIFE CALCULATIONS REQUIRED (6.10.1.11)		
	CASING RETIREMENT THICKNESS DRAWING [L.3.6.1 cc) 7) xiii)]		
	CONNECTION BOLTING (7.6.1.7)		
	VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c)		
	VENDOR SUBMIT TEST PROCEDURES (8.3.1.1)	YES	
	SUBMIT INSPECTION CHECK LIST (8.1.5)		
	ACOUSTIC ANALYSIS OF CROSSOVER PASSAGE (BB3, BB5)(9.2.1.5)		
	API-691 DOCUMENTATION REQUIRED (6.1.3.1)		

TEST			Rev
SHOP INSPECTION (8.1.1.1)		YES	B
PERF. CURVE & DATA APPROVAL REQ'D PRIOR TO SHIPMENT (8.3.3.4.6) :		YES	B
TEST WITH SUBSTITUTE SEAL (8.3.3.3.1)		NO	B
MATERIAL CERTIFICATION REQUIRED (6.12.1.8):	CASING	YES	B
	IMPELLER	YES	B
	SHAFT	YES	B
	OTHER		
CASTING REPAIR WELD PROCEDURE APPROVAL REQD (6.12.2.5):		YES	B
INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4)			
	MAG PARTICLE	YES	B
	RADIOGRAPHY		
	LIQUID PENETRANT	YES	B
	ULTRASONIC		
HARDNESS TEST REQUIRED (6.12.1.14; 8.2.2.7)		YES	B
ADDITIONAL SUBSURFACE EXAMINATION (6.12.1.6) (8.2.1.3)			B
FOR:			
METHOD:			
PMI TESTING REQUIRED (8.2.2.8)		YES	B
COMPONENTS TO BE TESTED :	Note 22		B
RESIDUAL UNBALANCE TEST (J.4.1.2)			
NOTIFICATION OF SUCCESSFUL PERFORMANCE TEST (8.1.1.3) (8.3.3.4.6)			
BASEPLATE (NOZZLE LOAD) TEST (7.4.24)			
HYDROSTATIC TEST (8.3.2)		OBSERVE	B
HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.1)			
PERFORMANCE TEST (8.3.3)		OBSERVE	B
RETEST ON SEAL LEAKAGE (8.3.3.3.2)			
TEST DATA POINTS TO (8.3.3.4)		8.3.3.4	B
ALTERNATE TEST TOLERANCES PER (8.3.3.5)			
NPSH (8.3.4.3)		WIT	B
NPSH BASED ON 1ST STG ONLY ALLOWED (8.3.4.3.2)			
TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.3.7)			
RETEST REQUIRED AFTER FINAL HEAD ADJUSTMENT (8.3.3.8.2)		OBSERVE	B
COMPLETE UNIT TEST (8.3.4.4.1)			
SOUND LEVEL TEST (8.3.4.5)		OBSERVE	B
CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6)			
LOCATION OF CLEANLINESS INSPECTION:			
CHECK FOR CO-PLANAR MOUNTING PAD FLATNESS (7.4.8)		OBSERVE	B
MECHANICAL RUN TEST UNTIL OIL TEMP STABLE (8.3.4.2.1)		OBSERVE	B
4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.2)			
BRG HSG RESONANCE TEST (8.3.4.7)			
STRUCTURAL RESONANCE TEST (9.3.9.2)			
REMOVE / INSPECT HYDRODYNAMIC BEARINGS AFTER TEST (9.2.7.4)			
AUXILIARY EQUIPMENT TEST (8.3.4.6)			B
EQUIPMENT TO BE INCLUDED IN AUXILLIARY TESTS :			B
LOCATION OF AUXILIARY EQUIPMENT TEST :			
IMPACT TEST (6.12.4.3)	PER EN 13445		
	PER ASME SECTION VIII		
CASING DISASSEMBLY AFTER TEST (8.3.3.9)			
SPARE PARTS TEST (8.3.4.8)			

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CENTRIFUGAL PUMP DATASHEET

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Note #	NOTES	Rev
(1)	TWO PUMPS IN PARALLEL OPERATION AND TWO SPARES.	B
(2)	FOR SITE CONDITIONS & UTILITIES OPERATING AND DESIGN CONDITIONS REFER TO BASIC DESIGN DATA DOC.	
	218857C-00-PR-BD-0001-0000_A.	
(3)	FOR HAZARDOUS AREA CLASSIFICATION REFER TO HAZARDOUS AREA CLASSIFICATION DRAWINGS. Refer Doc no 218857C-01-ELE-HAD-0001-0001.	B
(4)	CORRESPONDING TO MINIMUM AMBIENT TEMPERATURE.	
(5)	ANTICIPATED (DISCHARGE) MECHANICAL DESIGN PRESSURE IS BASED ON ESTIMATED PUMP SHUTOFF PRESSURE. DETAIL	
	ENGINEERING CONTRACTOR TO UPDATE DISCHARGE SYSTEM MECHANICAL DESIGN PRESSURE BASED ON ACTUAL INSTALLED	
	PUMP SHUTOFF, WHICH SHALL NOT EXCEED 120% OF THE DIFFERENTIAL HEAD AT RATED FLOW.	
(6)	MATERIAL SELECTION TO BE FINALIZED ON VENDOR DESIGN.	
(7)	Deleted.	B
(8)	NPSH SHALL EXCEED THE NPSH3 BY AT LEAST 0.5M, OVER THE ENTIRE ANTICIPATED OPERATING RANGE.	
(9)	ALL CALCULATION WERE PERFORMED WITH REFERENCE TO THE GROUND LEVEL.	
(10)	ENVIRONMENTAL TO BE CONSIDERED MARINE SALT LADEN AND CORROSIVE. DUSTY ATMOSPHERE WITH SAND POLLUTION TO BE	
	CONSIDERED.	
(11)	CONTROLLING CASE: LCM CASE.	
(12)	ALTERNATIVE CONDITION IS REFERENCED TO MAXIMUM SUCTION PRESSURE.	
(13)	PUMP MOTOR TO BE SIZED FOR END OF CURVE OPERATION.	
(14)	PUMP SHALL OPERATE IN PARALLEL WITH PUMPS 01-P-102A/B/C.	B
(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)	
(16)	PUMP IS SUBJECTED TO STEAM OUT CONDITIONS 4.5 BARG @ 166°C AND FV @ 166°C.	
(17)	ESTIMATED HYDRAULIC POWER CONSIDERED THE MAXIMUM CRUDE OIL DENSITY (SHIRVAN CRUDE) AT MINIMUM TEMPERATURE.	B
(18)	NPSH TO BE CONFIRMED BASED ON FINAL PIPING CONFIGURATION.	B
(19)	MINIMUM OPERATIVE TEMPERATURE: 5 °C. ALTERNATIVE TEMPERATURE FOR REFERENCE: 0 °C.	B
(20)	Two Flat/Dimpled Faces only per Bearing Housing	B
(21)	Project welding specification to be applied 218857C-00-MT-SPE-0001-0000.	B
(22)	Test applicability for PMI: all pressure component in contact with process fluid including and not limited to casing, impeller, shaft.	B
(23)	The noise level shall be measured 1 m from the equipment and also at the ground level or nearest manned platform/workplace.	B
(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
(25)	Prelliminary, the mechanical seal plan selection for dual pressurized seal arrangement is Plan 53B.	B
	To be confirmed by vendor during detail engineering phase.	
(26)	Witnessed NPSH3 test shall be performed on each pump, when the margin is 1.0 m or less.	B
(27)	With reference to the check for Co-Planar mounting pad flatness, applicability is for baseplates longer than 4 m.	B
(28)	Magnetic Particle or Liquid Penetrant required.	B
(29)	To be defined during detail engineering based on the evaluation of Vendors offers and available selections.	B

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