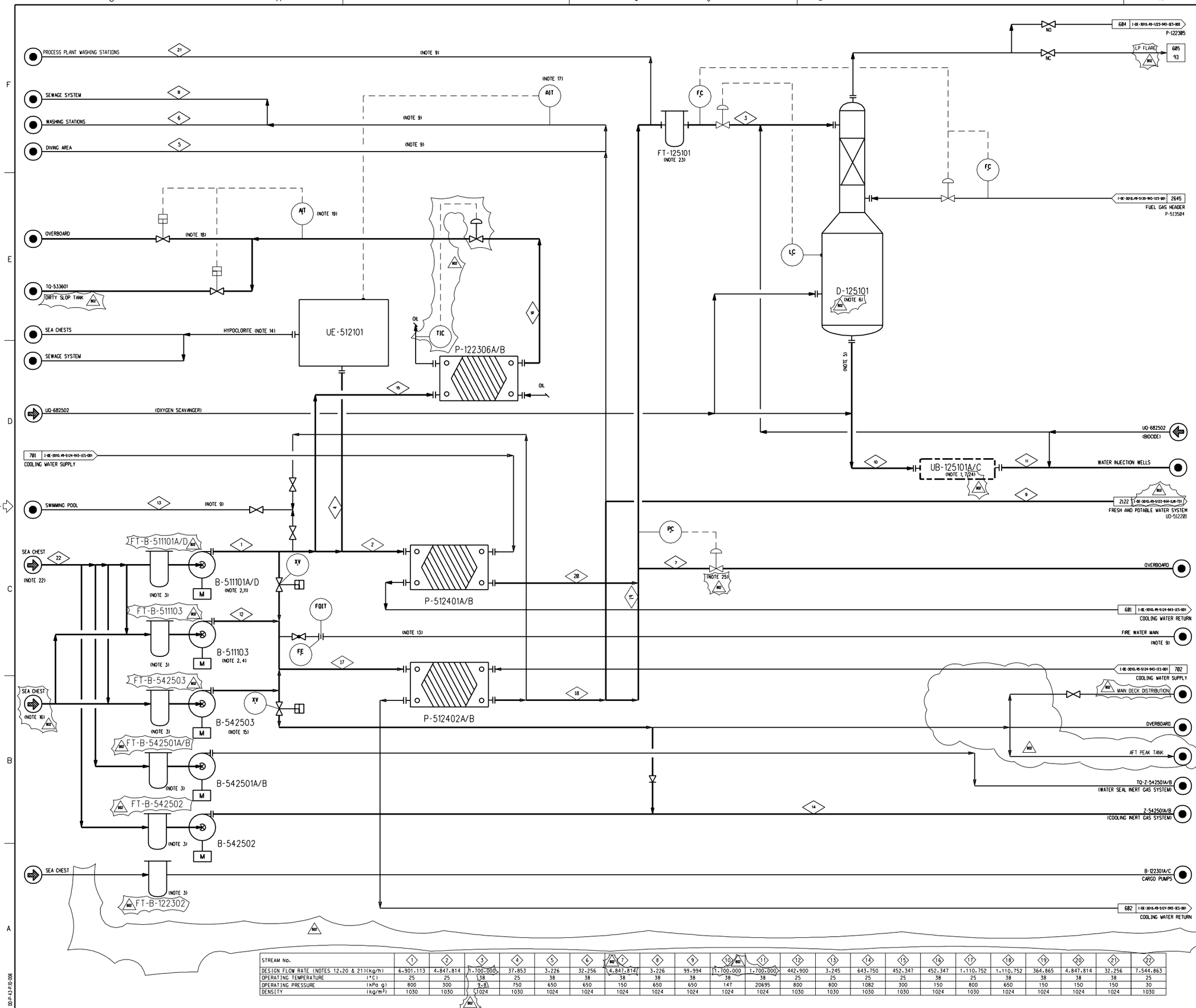

STREAM No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
DESIGN FLOW RATE (NOTES 12.20 & 21)(kg/h)	6.901.113	4.847.814	1.700.000	37.853	3.226	32.256	4.847.814	3.226	99.994	1.700.000	1.700.000	442.900	3.245	643.750	452.347	452.347	1.110.752	1.110.752	364.865	4.847.814	32.256	7.544.863
OPERATING TEMPERATURE (°C)	25	25	38	25	38	38	38	38	38	38	38	25	25	25	25	38	25	38	38	38	38	25
OPERATING PRESSURE (kPa g)	800	300	9.8	750	650	650	150	650	650	147	20695	800	800	1082	300	150	800	650	150	150	150	30
DENSITY (kg/m³)	1030	1030	1024	1030	1024	1024	1024	1024	1024	1024	1024	1030	1030	1030	1030	1024	1030	1024	1024	1024	1024	1030

REFERENCE DOCUMENTS

ET SYMBOLS AND ABBREVIATIONS (ET-3000.00-1200-941-PPC-002)
PIPING AND INSTRUMENT DIAGRAM - "GENERAL NOTES"
(I-DE-3010.49-1200-944-IES-001)

EQUIPMENTS

TAG	DESCRIPTION	TYPE	CAPACITY (NOTE 20)
B-511101A/D (4X33%)	SEA WATER LIFT PUMP	CENTRIFUGAL	1800 m³/h
B-511103 (1x100%)	EMERGENCY SEA WATER LIFT PUMP	CENTRIFUGAL	530 m³/h
UB-125101A/C (3X33%)	INJECTION WATER PUMPING UNIT	(NOTE 1)	556 m³/h
D-125101 (1x100%)	DEAERATOR	PACKED	1667 m³/h
P-512401A/B (2x50%)	PLATE HEAT EXCHANGER FOR CLASSIFIED SYSTEMS	PLATE	36.5x10⁶ w
UE-512101 (1x100%)	ELECTROCHLORINATION UNIT	ELECTROLYSIS (NOTE 8)	-
B-542501A/B (2x100%)	INERT GAS WATER SEAL PUMP	CENTRIFUGAL	5 m³/h
B-542502 (1x100%)	INERT GAS GENERATOR COOLING PUMP	CENTRIFUGAL	700 m³/h
B-542503 (1x100%)	INERT GAS GENERATOR COOLING/ GENERAL SERVICE/ EMERGENCY PUMP	CENTRIFUGAL	700 m³/h
P-122306A/B (2x50%)	OIL COOLER	PLATE	6.4x10⁶ w
P-512402A/B (2x100%)	PLATE HEAT EXCHANGER FOR NON CLASSIFIED SYSTEMS	PLATE	18.0x10⁶ w
FT-125101 (1x100%)	INJECTION SEA WATER PRE-FILTER	CARTRIDGE	1667 m³/h
FT-B-511101A/D (4x33,33%)	SEA WATER PUMP FILTER	BASKET	1800 m³/h
FT-B-511103	EMERGENCY SEA WATER LIFT PUMP FILTER	BASKET	530 m³/h
FT-B-542503	SEA WATER FILTER	BASKET	700 m³/h
FT-B-542501A/B (2x100%)	SEA WATER FILTER	BASKET	5 m³/h
FT-B-542502	SEA WATER FILTER	BASKET	700 m³/h
FT-B-122302	SEA WATER FILTER	BASKET	3412 m³/h

EQUIPMENTS

1- HIGH SPEED TYPE CENTRIFUGAL PUMP.
2- HORIZONTAL SHAFT IN-LINE CENTRIFUGAL PUMP.
3- FILTER FOR PARTICLE SIZE GREATER THAN 500 ☐m.
4- B-511103 ONLY OPERATES ON EMERGENCY CONDITIONS (LOSS OF THE MAIN ELECTRICAL GENERATION).
5- MAXIMUM RESIDUAL OXYGEN CONTENT: 0.05 PPM.
6- THE MASS BALANCE CONSIDERS A WATER INJECTION DESIGN FLOW RATE OF 40000 m³/d.
7- POLYPROPILENE CARTRIDGE FILTER TO RETAIN 5 ☐m DIAMETER PARTICLES (95% EFFICIENCY) SHALL BE SUPPLIED. THIS FILTER MUST BE ASSEMBLY AFTER FIRST STAGE OF THE PUMPING UNIT.
8- VOID
9- DISCONTINUOUS CONSUMPTION NOT CONSIDERED IN THE MASS BALANCE.
10- VOID.
11- WITH THREE COMPRESSORS OPERATING (6MSm³/d CASE) THE SPARE PUMP RUNNING IS REQUIRED. IN CASE OF TWO MOTOCOMPRESSORS OPERATING ONLY THREE PUMPS ARE REQUIRED.
12- VOID.
13- TO FIRE WATER MAIN LOOP PRESSURIZATION.
14- GRAVITY FLOW.
15- B-542503 SHALL OPERATE AS STAND-BY OF B-511103 AND B-542502. CAN ALSO SUCTION FROM UTILITY ROOM.
16- FOR UTILITY ROOM DRAINAGE IN EMERGENCY CONDITION.
17- REDOX POTENCIAL ANALYSER.
18- NORMALLY WATER IS ROUTED OVERBOARD UNLESS THE OIL CONTAINED IN WATER EXCEED 20 ppm IT WILL BE TREATED IN TQ-533601.
19- TOG ANALYZER.
20- ALL DUTIES AND FLOWRATES GIVEN ARE FOR ONE UNIT.
21- THE DESIGN FLOWRATES INCLUDE A MARGIN OF 5%.
22- SEA WATER SHALL BE LIFTED AT WATER DEPTH OF 30m, USING SEA WATER UPTAKE RISER.
23- FILTER FOR PARTICLE SIZE GREATER THAN 80 MICRA.
24- IN THE FIRST YEARS A FLOW OF 50 m³/h (MAXIMUM) WILL BE INJECTED IN THE PRODUCTION SEPARATOR.
25- THIS VALVE WILL BE CALCULATED WITH MAX FLOW 9.500 m³/h.

COPY NOTE
THIS DRAWING IS COMMON FOR BARRACUDA & CARATINGA
THE CARATINGA PROJECT DRG. No IS I-DE-FCT-5111-PR-P.10-001
THE CARATINGA BR DRG. No IS I-DE-3010.59-5111-943-IES-001

Rev	Date	Description	BY	CHK	LEAD	MGMT	KBR	OWNER
B02	24-APR-02	RELEASED FOR DESIGN	BMN	RMC	RSS	RAC	RJ	
B01	04-MAI-01	RELEASED FOR DESIGN - ADP-033/01	JFSG	MJB	RSS	RAC	RJ	
A01	12-APR-01	FOR COMMENTS	JFSG	MJB	RSS	RAC		
001	08-MAR-01	INTER-DISCIPLINE CHECK	JFSG	MJB	RSS	RAC		
								Released

PETRÓLEO BRASILEIRO S.A. PETROBRAS
Barracuda & Caratinga Leasing Corporation
Brown & Root Energy Services
inepar

USER
E & P BACIA DE CAMPOS

PROJECT TITLE
PRODUCTION FACILITIES PROJECT
BARRACUDA AND CARATINGA CRUDE OIL FIELDS

UNIT
FPSO UNIT - P-43

DRAWING TITLE
FIGURA 3.2.3-h
UTILITY FLOW DIAGRAM
SEA WATER SYSTEM

CS APPROVAL	Y	OWNER APPROVAL	Y	COPY CODE	BX	LIFE CYCLE	FL	DATE	08-MAR-01
DRAWN BY	LCST	DESIGNED BY	JFSG	CHECKED BY	MJB	APPROVED BY	RSS		

PROJ. NUMBER: I-DE-FBT-5111-PR-P.10-001
BR NUMBER: I-DE-3010.49-5111-943-IES-001
SCALE:
SHEET: 1 of 1
REV.: B02

DD-P-43-P-10-006