

MECHANICAL DESIGN DATA				
CODE	ASME VIII DIV.1 , 2007 Ed. + GOOD ENGINEERING PRACTICE			
'U' STAMP	YES (SEE NOTE-7)			
TEMA TYPE	NEN (SPECIAL)			
SERVICE	UNFIRED STEAM BOILER (SHELL SIDE ONLY)			
WIND / EARTHQUAKE	UBC 1997 / UBC 1997			
	SHELL SIDE		TUBE SIDE	
FLUID	WATER/STEAM		PROCESS GAS	
DESIGN PRESS. (int./ext.)	(1000/FV) / (689.476/FV)		(14/-) / (96.526/-) (SEE NOTE-9)	
DESIGN TEMP.	350 / 176.667		*F / *C (SEE NOTE-10)	
TEST PRESSURE	216.798 / 1494.77		PSIG / KPA (SEE NOTE-11&14)	
TUBESHEET PRESS.	100 / 689.476		PSIG / KPA	
TUBESHEET TEMP.	750 / 389.89		*F / *C	
TUBESHEET TOT.CORR.	6.35		MM	
MAWP @ TEMP	(164.91 / 350) / (1932.05 / 176.667) (PSIG / *F) (KPA / *C)		(14 / 650) / (96.526 / SEE NOTE-10) (PSIG / *F) (KPA / *C)	
MDMT @ MAWP	(0 / 164.910 / -17.778 / 1932.05)*F / PSIG/(°C / KPA)		(0 / 14) / (-17.778 / 96.526) (*F / PSIG)/(°C / KPA)	
IMPACT TEST	NO		NO	
CORROSION	3.175		MM	
JOINT EFFICIENCY	1		0.85	
RADIOGRAPHY	FULL [AS PER UW-11(a)(13)] (SEE NOTE-5)		SPOT (SEE NOTE-6)	
STRESS RELIEVING	YES [AS PER UW-2(c)]		YES (SEE NOTE-13)	
NO. OF PASSES	1		5	
INSULATION	YES 75 THK. (SEE NOTE-8)		YES 75 THK. (SEE NOTE-8)	

EXPANSION JOINT

FLANGED & FLUED	NO	BELLOW TYPE	NO
TUBE BUNDLE DATA			

725 NO's TUBES OF OD 38.1mm AT 57.15mm PITCH	LENGTH	6096	MM
53 NO's TUBES OF OD 50.8mm AT 69.85mm PITCH	LAYOUT	60°	
THK. BWG 12 [MIN.]	MM	JOINT	STRENGTH WELD
SURFACE [EFFECTIVE]	528.9	M ²	

MATERIALS			
SHELL		CHANNEL	
BARREL	SA 516 GR. 70	BARREL	SA 516 GR. 70
GIRTH FLANGES	-	COVER	SA 516 GR. 70
NOZZLE FROM PIPE	SA 106 GR. B	NOZZLE FROM PIPE	SA 106 GR. B
NOZZLE FROM PLATE	SA 516 GR. 70	NOZZLE FROM PLATE	SA 516 GR. 70
NOZZLE FLANGES	SA 105	NOZZLE FLANGES	SA 105
COUPLINGS & PLUGS	-	COUPLINGS & PLUGS	SA 105
NOZZLE REINF. PAD	SA 516 GR. 70	NOZZLE REINF. PAD	SA 516 GR. 70
SADDLE (WEAR / RING PLATE)	SA 36 (SA 516 GR. 70)	SADDLE (WEAR / RING PLATE)	SA 36 (SA 516 GR. 70)
LIFTING LUG PAD / LIFTING LUG	SA 516 GR. 70 / SA 36	LIFTING LUG PAD / LIFTING LUG	SA 516 GR. 70 / SA 36
INTERNAL LINING	SA 516 GR. 70	PARTITION PLATES	SA 516 GR. 70
EXTERNAL LINING	SA 516 GR. 70	EXTERNAL LINING	SA 516 GR. 70

LINEING	SHELL COVER	LINEING	FLOATING HEAD
BARREL	-	COVER	-
FLANGES	-	FLANGES	-
COVER	-	SPLIT RING	-


BOLTS & NUTS		GASKETS	
SHELL/COVER	-	MANWAY	FLEXITALLIC STYLE CG WITH FLEXITE FILLER
SHELL/CHANNEL	-	CHANNEL/TUBESHEET	-
CHANNEL/COVER	-	CHANNEL/COVER	-
FLOATING HEAD	-	FLOATING HEAD	-

TUBE BUNDLE		WEIGHTS & LOADING DATA			
TUBES & SPACERS	SA 210 GR. A-1 (SMLS)	CONSOLIDATED WEIGHT OF EACH SECTION	TUBE BUNDLE	14,388 KG [APPROX.]	
TUBESHEETS	SA 516 GR. 70		TOTAL DRY	37,500 KG [APPROX.]	
BAFFLES	SA 36		FULL OF WATER	87,500 KG [APPROX.]	
TIE RODS	SA 36				
		LOADING AT BASE (OPERATING) CONDITION	EARTH QUAKE	MOMENT N/M	117,840
				SHEAR N	82,450
			WIND	MOMENT N/M	47,100
				SHEAR N	33,410
SURFACE PREPARATION (EXTERNAL)	PRIMER	INDORGANIC ZINC (75 L)			
	INTERMEDIATE COAT	-			
	FINISH COAT	-			
	SAND BLAST	SA 2 1/2			

MARK	D.N. (INCH)	PLANGES			SCH/THK MM	R. PAD DIA MM x THK	PROJ. SHELL OUT SIDE MM	SERVICE	REMARKS
		RATING	TYPE	FAC					
A	600 (24")	150	50	RF	-712	-	SEE DWG	1st COND. PASS INLET	-
B1	400 (16")	150	50	RF	-714	506 x 10	203	2nd COND. PASS INLET	-
B2	400 (16")	150	50	RF	-712	-	SEE DWG	3rd COND. PASS INLET	-
B3	400 (16")	150	50	RF	-714	506 x 10	203	4th COND. PASS INLET	-
C	400 (16")	150	50	RF	-714	881 x 10	SEE DWG	1st COND. PASS OUTLET	-
D1	400 (16")	150	50	RF	-714	881 x 10	SEE DWG	2nd COND. PASS OUTLET	-
D2	400 (16")	150	50	RF	-714	606 x 10	203	3rd COND. PASS OUTLET	-
D3	400 (16")	150	50	RF	-714	836 x 10	203	4th COND. PASS OUTLET	-
E	50 (2")	150	WN	RF	160/-	-	169	INTERMITTENT BLOWDOWN	-
F1-F2	50 (2")	300	WN	RF	160/-	-	169	RELIEF	-
G	600 (24")	150	WN	RF	-714	1020 x 14	SEE DWG	MANWAY	WITH DAVIT ARM
H1-H3	80 (3")	150	WN	RF	160/-	190 x 14	169	LEVEL BRIDLE	-
H2-H4	80 (3")	150	WN	RF	160/-	190 x 14	SEE DWG	LEVEL BRIDLE	-
N	20 (3/4")	150	WN	RF	XXS/-	-	SEE DWG	SURFACE BLOWDOWN	-
P	250 (10")	150	50	RF	60/-	473 x 10	198	PREHEAT PASS INLET	-
R	250 (10")	150	50	RF	60/-	383 x 10	198	PREHEAT PASS OUTLET	-
S1-S4	80 (3") x 100 (4")	150	3" BLIND	RF	40/-X 80/-	690 x 10	SEE DWG	SULFUR OUTLET	-
T	50 (2")	150	WN	RF	160/-	-	SEE DWG	BFW INLET	-
U	250 (10")	150	WN	RF	80/-	433 x 14	169	STEAM OUTLET	-
V1-V4	150 (6")	150	STUD	-	-763.5	-	-	INSPECTION OPENING	WITH BLIND FLANGE
W1-W4	600 (24")	150	50	RF	-714	-	SEE DWG	MANWAY	WITH PLATE FLANGE
X	80 (3")	150	WN	RF	160/-	201 x 14	173	CONDENSATE RETURN	-
Y1-Y4	20 (3/4")	6000	HALF (RING THRO)		-	-	-	JACKET STEAM INLET	SPECIAL FITTING
Z1-Z4	20 (3/4")	6000	HALF (RING THRO)		-	-	-	JACKET STEAM OUTLET	SPECIAL FITTING

[illegible]

06	SPECIFICATION FOR INSULATION - HOT SERVICES	4/98-PA-702 (REV-5)
	<p>OIL AND GAS DEVELOPMENT COMPANY LIMITED</p> <p>OGDCL HOUSE , 1st FLOOR, JINNAH AVENUE ISLAMABAD Telephone: +92 51 297683-85 Fax:+92 51 297686</p>	<p>CLIENT REFERENCE</p>
		<p>PRO-FC/CB/DKN/EXP-1882/2007</p>
	<p>DESCON ENGINEERING LIMITED</p> <p>P.O.BOX 1201,LAHORE-53000 PAKISTAN TEL:+92-42-5805134, UAN: 111-DESCON FAX: +92-42-5811005/5811135</p>	<p>DESCON PROJECT NO.</p>
		<p>6218</p>
	<p>PRESSON DESCON INTERNATIONAL PRIVATE LIMITED</p> <p>18 - KM, FER02PUR ROAD, LAHORE - 54700, PAKISTAN. VOICE: +92 42 5923710-16 WEB: www.pdii.com</p>	<p>PDIL PROJECT NO.</p>
		<p>1029</p>

PROJECT:					
SULFUR RECOVERY UNIT FOR DAKHNI EXPANSION PROJECT					
TITLE:					
G.A OF SULFUR CONDENSER (E-1902)					
DRAWING NUMBER:					REV
1029-09-04-GA-015					
DRAWN	CHECKED	APPROVED	SCALE	DATE	SHEET
MAT	SN	ARS	(40 Sheet, A1)	17/09/2008	1 OF 1