

ITEM	DESCRIPTION	UNIT	QTY.
1	SOUTH OIL COMPANY PROJECT DIVISION GAS CONDENSATE GATHERING SYSTEM FOR BIN UMER DEGASSING STATION <u>INTRODUCTION</u> SOC INTEND TO PURCHASE CONDENSATE GATHERING SYSTEM TO GAS FLARING SYSTEM AT BIN UMER DEGASSING STATION. THE FUNCTION OF THIS SYSTEM IS TO GATHER CONDENSATES AND/OR REJECTED CARRYOVER FROM EACH FLARE LINES, WHERE SUCH MATERIALS ARE COLLECTED TRANSFERED AUTOMATICALLY TO DRAINAGE SYSTEM <u>PROCESS DESCRIPTION:</u> ALL FLARES TO HAVE MAIN GAS LINES AND UNDERGROUND COLLECTOR WITH APPROPRIATE STACKS WITH STAINLESS STEEL BURNERS GAS LINES TO HAVE DRIP POINTS (KNOCKOUT DRUMS) FOR CONDENSATE GATHERING SUITABLE TO HANDLE COLLECTION ACCUMULATED LIQUID THAT ACCOMPANIES LIBERATED GASES FROM FIRST, SECOND, THIRD AND FOURTH STAGES AS WELL AS LIBRETAED GASES FROM TANKS THE COLD FLARE SYSTEM SHOULD BE DESGIN TO COLLECT ALL POSSIBLE DISCHARGES FROM THE SAFTEY VALVES INSTALLED ON THE EQUIPMENT, THE DISCHARGE IN VAPOR OR MIXED PHASE SHOULD BE ROUTED INTO COLD FLARE KO DRUM WHERE THE GAS IS SEPARATED FROM LIQUID. THE GAS PHASE LEAVING THE KO DRUM TO COLD FLARE AND DISPERSED IN ATMOSPHERE.THE LIQUID PHASE SOUHLD BE SEND TO DRAIN SYSTEM BY PUMP. <u>SPECIFICATIONS OF KNOCK OUT DRUMS</u> A- 1ST STAGE GAS SKID MOUNTED KNOCK OUT DRUM DESIGN TEMP. MIN/MAX : -5/80 C DESIGN PRESS 15 BARG CAPACITY : 5 M³ GAS INLET PIPE SIZE : 10" GAS OUTLET PIPE SIZE : 10" LIQUID OUTLET PIPE SIZE : 3" DRAIN :3 " UTILITY CONN. :2' LSHL : 3" LSHH : 3" PRESSURE INDICATOR : 1" B- 2ND STAGE GAS SKID MOUNTED KNOCK OUT DRUM DESIGN TEMP. MIN/MAX : -5/80 C DESIGN PRESS : 10 BARG CAPACITY : 3 M³ GAS INLET PIPE SIZE : 10" GAS OUTLET PIPE SIZE : 10" LIQUID OUTLET PIPE SIZE : 3" DRAIN :3 " UTILITY CONN. :2' LSHL : 3" LSHH : 3" PRESSURE INDICATOR : 1" C- 3RD&4TH STAGE GAS SKID MOUNTED KNOCK OUT DRUM DESIGN TEMP. MIN/MAX : -5/80 C DESIGN PRESS 4 BARG CAPACITY : 3 M³ GAS INLET PIPE SIZE : 10" GAS OUTLET PIPE SIZE : 10"		

LIQUID OUTLET PIPE SIZE : 3" DRAIN :3 " UTILITY CONN. :2' LSHL : 3" LSHH : 3" PRESSURE INDICATOR : 1"		
D- TANK GAS SKID MOUNTED KNOCK OUT DRUMS DESIGN TEMP. MIN/MAX : -5/80 C DESIGN PRESS 4 BARG CAPACITY : 3 M ³ GAS INLET PIPE SIZE : 10" GAS OUTLET PIPE SIZE : 10" LIQUID OUTLET PIPE SIZE : 3" DRAIN :3 " UTILITY CONN. :2' LSHL : 3" LSHH : 3" PRESSURE INDICATOR : 1"		
E- COLD FLARE SKID MOUNTED KNOCK OUT DRUM DESIGN TEMP. MIN/MAX : -5/80 C DESIGN PRESS : 50 BARG CAPACITY : 10 M ³ GAS INLET PIPE SIZE : 10" GAS OUTLET PIPE SIZE : 10" LIQUID OUTLET PIPE SIZE : 3" DRAIN :3 " UTILITY CONN. :2' LSHL : 3" LSHH : 3" PRESSURE INDICATOR : 1"		
MECHANICAL & MATERIAL REQUIREMENTS: PUMPS DESIGN CODE SHOULD BE API 610 LAST EDITION DIRECT FLEXIBLE COMPILING , MECHANICAL SEAL TYPE , ST-STEEL CLOSED IMPELLER , ST. STEEL SHAFT . - MAX.- MIN. AMBIENT TEMP. 55 C° TO -5 C° . - ALL VESSELS TO BE ACCORDING TO ASME (SEC. 8 DIV 1) . - ALL VALVES TO BE ACCORDING TO API 610 & API 600 . - ALL PIPES TO BE ACCORDING TO API 5L - CORROSION PROTECTION ACCORDING TO - NACE - THE DEPTH OF THE CONCRETE BASIN NOT MORE THAN 4M		
<u>SCOPE OF SUPPLY</u>		
REQUIRED CONDENSATE SEPARATING SYSTEM SHOULD BE PROVIDED WITH, DESIGN ENGINEERING DETAILED DRAWINGS PROCUREMENTS, FABRICATION DRAWING, PIPING, FITTINGS, CONTROL VALVES, PUMPS AND ALL REQUIRED ACCESSORIES AND SHOULD BE SKID MOUNTED.		
- DESIGN , DETAIL ENGINEERING, DRAWING FOR ALL SYSTEM . INCLUDING ISOMETRIC DRAWING & FABRICATION DRAWING . OPERATING AND MAINTENANCE DOCUMENTATION (3 HARD COPIES & 3 ELECTRONIC COPIES)	SET	1
A - 1 ST STAGE GAS KNOCK OUT DRUM	NO	1
B- 2 ND STAGE GASKNOCK OUT DRUM	NO	1
C- 3RD&4TH STAGES GAS KNOCK OUT DRUM	NO	1
D- GAS TANK KNOCK OUT DRUM	NO	2
E- COLD FLARE KNOCK OUT DRUM	NO	1
F- FLAME ARRESTOR	NOS	5
D.P. : 2 BARG		
D.T. : 90 C		
Mat. : SA – 283 - C		
G- CONDENSATE PUMPS	NOS	4
FLOW RATE : 5 M ³ /HR		
OPERATING PRESS : 3 KG/CM ²		
H- CONTROL SYSTEM WITH CONTROL PANEL	SET	1

- I- ALL INTER CONNECTING PIPING, VALVES, FITTING AND ACCESSORIES WITHIN THE BOUNDARY LIMIT AND ALL LOCAL INSTRUMENT ,LEVEL SWITCHES , MECH. LEVEL INDICATED, PRESS & TEMP . INDS SHOULD BE INCLUDED WITH ADDITIONAL , LOCAL SWITCHES TO OPERATE PUMPS AUTOMATICALLY ADDITIONAL TO PUMP MANUAL OPERATED AS OVERRIDE .
- J- SPAR PARTS FOR TOW YEARS

LOT 1

LOT 1

ELECTRICAL SYSTEM

A * SPECIFICATION OF MOTOR

- PRELIMINARY OUTPUT POWER 2 KW
- SPEED 1500 MIN⁻¹
- PHASE , VOLTAGE, FREQUENCY 3 PH, 380V , 50HZ
- INSULATION TYPE CLASS F
- AMBIENT DESIGN TEMP 55 C⁰
- INGRESS PROTECTION AGAINST EXPLOSION (EEX) d II B T3/IP 58
- INSTALLATION OUT DOOR

CABLE TYPE AND SIZE PVC / SWA / PVC HYDROCARBON RESISTANT (COVERED WITH LEAD LAYER)

MANUFACTURER ORIGIN GERMANY , U.K , U.S.A , ITALY , FRANCE , JAPAN

NOTE :-

THE PROTECTION OF MOTORS AND MAIN OPERATING PANEL (LOCAL) :-

DEGREE OF PROTECTION AGAINST EXPLOSION (EEX) d II B T3 FOR 55C⁰ AMBIENT TEMPERATURE

B *

1. MAIN OPERATING PANEL

MAIN OPERATING PANEL SHOULD BE OPERATE (4) FOUR MOTORS AND HAVE THE FOLLOWING :-

* MAIN CIRCUIT BREA KER (3PH , 63A)	NO.	1
* CIRCUIT BREA KER (3PH, 16A)	NOS	4
* CONTACTOR (3 PH , 10 A)	NOS	4
* OVER LOAD (1 TO 10A)	NOS	4
* PHASE FAILURE TO PROTECTION OF MOTOR	NOS	4
* INDICATE LAMPS 3 NOS FOR STOP , RUNNING , AND FAULT	SET	4
* PUSH BUTTONS : FOR(STOP AND START)	SET	4
* SELECTOR SWITCH : TO OPERATE (AUTO / MANUAL)	NOS	4
* VOLTAGE INDICATOR LAMPS (THREE LAMPS (220V)	SET	4
* CURRENT MEASUREMENT : (0 TO 10 A) WITH SELECTOR SWITCH	SET	4
* SUITABLE COPPER BUS BARS , INSULATORS , CONNECTORS AND ALL ACCESSORIES		
2. ELECTRICAL CABLES :		
* SIZE OF CABLE (4 C X 50 MM ²) / BETWEEN MAIN OPERATING PANEL AND ELECTRIC SUBSTATION .	M	230
* FOUR PIECES FROM CABLE SIZE (4 C X 6 MM ²) / TOTAL LENGTH (FOUR PIECES)	M	150

CONDITIONS TO BE ADHERED BY SUPPLIER

- ORIGIN OF VESSELS & ACCESSORIES SHOULD BE FROM USA, JAPAN, AND WEST EUROPE.
- THE OFFER SHALL INCLUDE ALL THE REQUIRED TECHNICAL SPECIFICATIONS.
- CERTIFICATES OF ORIGIN TO BE SUBMITTED FOR EACH OF THE INDIVIDUAL ITEMS.

- 4- 3RD PARTY ACTIVITIES ARE OBLIGATION OF SOC ACC. TO A CONTRACT BETWEEN SOC AND A WELL KNOWN INSPECTION COMPANY THAT HAVE THE RIGHT TO INSPECT ALL ITEMS INCLUDED IN MANUFACTURING OF PIPE FITTINGS ACCORDING TO API STANDARD . THE INSPECTION COMPANY ALSO HAVE THE RIGHT TO REJECT THE DEFECTED ONE DURING THE MANUFACTURING PROCESS
- 5- MILL TEST CERTIFICATE TO BE SUBMITTED WITH THE APPROVAL OF MATERIALS APPROVED BY THE THIRD PARTY.
- 6- COMMERCIAL OFFER SHOULD BE IN U.S. \$ DOLLAR ONLY.
- 7- POINT OF ENTRY SHOULD BE STATED AS CIP BASRAH.
- 8- DESIGNS DOCUMENTS ARE SUBJECT TO S.O.C. APPROVAL BEFORE MANUFACTURING, FINAL APPROVAL SHOULD BE CARRIED OUT AT SOC (IRAQ) .
- 9- TECHNICAL & COMMERCIAL OFFERS TO BE SUBMITTED IN DUPLICATE FORM WITHIN THE SAME SEALD ENVELOPE IN WHICH THE OFFER REF.NO. , BATCH NO. , AND RECEIPT NO. SHOULD BE PRINTED.
10. OFFERS TO BE SUBMITTED BEFORE OR WITHIN THE SPECIFIED CLOSING DATE.
11. OFFER VALIDITY MUST BE NOT LESS THAN (90) DAYS FROM THE CLOSING DATE.
12. ALL OFFER CONDITIONS SHOULD BE CLEARLY MENTIONED SUCH AS THE DELIVERY TERMS, DELIVRY PERIOD, COUNTRY OF ORIGIN, POINT OF SHIPMENT, ENTRY POINT BENEFICES FULL NAME ,ADDRESS AND ADVISING BANK, AND ALL OTHER NECESSARY INFORMATION REQUIRED FOR CONTRACTING PURPOSES .
13. S.O.C. PREFERS ORIGINS TO BE FROM U.S.A, JAPAN AND WEST EUROPE
14. A PERFORMANCE BOND SHOULD BE SUBMITTED OF 5% OF THE TOTAL AMOUNT BEFORE OPENING THE LETTER OF CREDIT, IT SHOULD BE VALID FOR 12 MONTH AFTER THE SUCCESSFUL COMMISSIONING OR 18 MONTHS AFTER THE LAST DELIVERY OF THE MATERIALS.
15. CERTIFICATE OF ORIGIN FOR MATERIALS THE ORIGIN OF THE MATERIALS SHOULD BE APPLICABLE WITH THE CONTRACTS , OTHERWISE THE SUPPLIER WILL BE LIABLE TO THE DIFFERENCE IN ORIGIN APPROVED BY IRAQ EMBASSY IN VENDER COUNTRY

GAS COMPONENTS ANALYSIS

STAGE NO.	1ST	2ND	3RD	4TH
GAS PRESSURE (Kg/Cm2)	40	11	1.8	0.3
GAS TEMPERATURE C°	60	50	45	40
GAS VOL. %				
COMPONENTS				
NITROGEN	0.26	0.22	0.20	0.18
CARBON DIOXIDE	2.35	2.28	1.85	1.53
HYDROGEN SULPHIDE (PPMV)	8 ppmv	20 ppmv	40 ppmv	50 ppmv
METHANE	78.25	72.14	49.42	35.54
ETHANE	9.92	11.04	13.63	12.64
PROPANE	5.00	6.90	13.27	17.83
i- BUTANE	0.84	1.39	3.37	4.60
n- BUTANE	1.77	2.99	7.41	13.20
i- PENTANE	0.49	0.92	3.01	4.16
n- PENTANE	0.53	1.00	3.55	4.89
HEXANES	0.35	0.70	2.55	3.28
HEPTANES	0.15	0.29	1.15	1.34
OCTANES	0.07	0.11	0.37	0.51
NONANES	0.02	0.02	0.22	0.30
TOTAL	100.00	100.00	100.00	100.00
GAS SP. GR. CALCULATED @15.6/15.6°C	0.7492	0.8292	1.118	1.3852
GAS M. WT. CALCULATED	21.70	24.02	33.83	40.12
DENSITY LBS/SCF	0.0570	0.0631	0.0889	0.1054

CONDENSATE ANALYSIS

COMPONENT	MOL %
C1	0.01
C2	0.05
C3	0.56
I-C4	0.55
N-C4	2.38
I-C5	2.93
N-C5	4.94
TOTAL C6	13.64
TOTAL C7	18.81
TOTAL C8	21.60
TOTAL C9	16.78
TOTAL C10	9.996
TOTAL C11	4.40
TOTAL C12	1.62
TOTAL C13	0.72
TOTAL C14	0.42
TOTAL C15	0.26
TOTAL C16	0.17
TOTAL C17	0.11
TOTAL C18	0.05
TOTAL C19	0.004
TOTAL C20	0
	100

CALCULATED SP.GR. @ 15.6/15.6 C°= 0.7309

MEASURED SP.GR. @ 15.6/15.6 C°= 0.7732