



GENERAL NOTES:

- A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & .002.
B. ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530-..
C. ALL INSTRUMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 030-..
D. FOR TYPICAL INSTRUMENT CONNECTION SBOV, XV, MOV AND ESDV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.001, .002, .003, .004, .006 & .007.
E. FOR MISCELLANEOUS PIPING TYPICAL VALVING, DRAINAGE AND GENERAL ARRANGEMENT OF LEVEL INSTRUMENTS, PUMPS, STRAINERS & CONTROL VALVES SEE DRAWING 50489-530-020-PID-1108.001 TO 1108.010.
F. DRAWING NUMBERS SHOWN IN P&ID CONTINUATION BOXES ARE ABBREVIATED SHOWING DRAWING SEQUENTIAL NUMBERS ONLY. THE FULL FORM OF THE DRAWING NUMBER IS 50489-530-020-PID-XXXX.SHT. NO.
G. FOR MATERIAL SELECTION DIAGRAM SEE DRAWINGS 50489-530-020-MSD-1001.001 TO 1023.
H. DETAIL NUMBERING FOR CI, SC, CC & CP SEE DRAWING 50489-530-020-PID-1108.003.
I. PAINTING & COATING ARE IN ACCORDANCE WITH KOC-P-001.
J. LOW POINT DRAIN & HIGH POINT VENT ARE PROVIDED AS PER PIPING LAYOUT.
K. FOR CAUSE & EFFECT REFER DOC. NO. 50489-530-020-PHL-1009.
L. FOR ALARM VALUES REFER DOC. NO. 50489-530-020-SUM-1006.
- NOTES:
1.2. DELETED.
3. REFERENCE VENDOR P&ID:- 50489-530-020-07278-PID-V001, SHEET 1 OF 3.
4. AUXILIARY LUBE OIL PUMP CONTINUES TO RUN WITHOUT ON AND OFF OPERATION TIMER TO BE ACTIVE ONLY DURING START UP.
5. LUBE OIL ELECTRICAL HEATER OFF AT 21°C (69.8°F) & ON AT 18°C (64.4°F). LUBE OIL HEATER POWER CUT AT 80°C (176°F). LOCAL CUTOFF ONLY.
6. AUXILIARY LUBE OIL PUMP STARTS AT 1.2 BARG (17.4 PSIG) & STOPS AT 1.5 BARG (21.75 PSIG).
7. LUBE OIL COOLER FAN STARTS AT 70°C (158°F) & STOPS AT 20°C (68°F).
8. SAMPLING POINT FOR LUBE OIL.
9. FOR DETAILS & LEGENDS REFER: 50489-530-020-PID-1126.012.
10. FOR VENDOR CAUSE & EFFECT REFER: 50489-530-020-07278-CAE-V001.
11. FOR VENDOR ALARM VALUES REFER: 50489-530-020-07278-LST-V003.
12. FOR VENDOR PIPING DETAILS REFER 50489-530-040-07278-GAD-V006, V-0005.
13. CRUDE OIL EXPORT PUMP (G-004C) PERMISSIVE FOR START IF
a. LUBE OIL HEATER PRESSURE (PIT-0120 > 1.5 BARG)
b. LUBE OIL TEMPERATURE TIT-0107 > 20°C)
c. LUBE OIL TANK LEVEL (LAL-0102 > 275MM)
d. SEAL SYSTEM PRESSURE (PIT-0136/0139 > 13 BARG)
e. LUBE OIL COOLER FAN STATUS (RUNNING)
f. SEAL SYSTEM COOLER FAN STATUS (RUNNING)
14. "XX"-USED FOR CASING VENT/DRAIN INSIDE THE PACKAGE. REFER P&ID NO. 50489-530-020-PID-1108.005.

PIPING CONNECTIONS		
REF.	DIMENSION	SERVICE
TP1C	10" 600 RF	PUMP SUCTION
TP2C	6" 600 RF	PUMP DISCHARGE
TP3C	3/4" 600 RF	PUMP DRAIN
TP4C	3/4" 600 RF	PUMP VENT
TP5C	1" 150 RF	L.O. TANK DRAIN
TP6C	1" 150 RF	L.O. TO AIR COOLER
TP7C	1" 150 RF	L.O. FROM AIR COOLER
TP8C	1" 150 RF	L.O. AIR COOLER INLET
TP9C	1" 150 RF	L.O. AIR COOLER OUTLET
TP10C	3/4" 150 RF	L.O. AIR COOLER DRAIN
TP11C	3/4" 150 RF	L.O. AIR COOLER VENT
TP14C1	3/4" 600 RF	FILLING FLAN 53B
TP15C1/C2	1" 150 RF	L.O. BASE DRAIN
TP16C1/C2	2" 150 RF	BASE PLATE DRAIN
TP18C	3/4" 600 RF	BLEED PUMP DRAIN
TP19C	3/4" 600 RF	BLEED PUMP VENT
TP20C	1" 150 RF	VENT PROVISION
TP21C	1" 150 RF	PURGING PROVISION
TP22C	2" NPT	FILLER BREATHER

REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
ZO	ISSUED FOR AS-BUILT	BAK/SSI	AKG	SRA	RAK	17.09.18
01	ISSUED FOR CONSTRUCTION	BAK/SSI	AKG	SRA	RAK	30.11.16
0	ISSUED FOR CONSTRUCTION	PAK/PRS	AKG	SRA	RAK	09.06.16
D	ISSUED INCORPORATED CLIENT COMMENTS	PAK/ABY	AKG	SRA	RAK	26.04.16
C	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	09.09.15
B	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	13.02.15
A	ISSUED FOR APPROVAL	BAK/VSA	AKG	SRA	RAK	29.11.14

CONTRACTOR REVISION

KUWAIT OIL CO. K. S. C. **شركة نفط الكويت ش.م.ك.**

CONTRACTOR DETAILS:- **LARSEN & TOUBRO LIMITED FARIDABAD**

PROJECT TITLE:- **NEW GATHERING CENTRE GC-30 IN NORTH KUWAIT**

DOCUMENT TITLE:- **PIPING & INSTRUMENTATION DIAGRAM LUBE OIL SYSTEM FOR CRUDE OIL EXPORT PUMP (G-004C)**

PROJECT NO.		DRAWING NO.	
EF1902	CONTRACTOR DRG. NO.	REV.	KOC DRG. NO.
	50489-530-020-PID-1126.009	Z0	
	SHEET NO. 9 OF 12	REV.	SHEET NO.
	COMPANY DRG. NO.	REV.	
EF1902-530-DCO-PID-0126.003		A1	
SHEET NO.			

AS-BUILT
KOC APPROVAL
NAME / KOC No.:
DESIGNATION :
GROUP / TEAM :
SIGNATURE :
DATE :

AS-BUILT
LARSEN & TOUBRO LIMITED
NAME : VAIBHAV VERMA
DESIGNATION : AGM
SIGNATURE :
DATE : 17-Sep-2018
DEPT/ DIVISION : ENGINEERING

LEGEND:

- CONTRACTOR
VENDOR
(*) SIL2 RATED TRANSMITTER

G-004C-G-001 MAIN LUBE OIL PUMP
FLOWRATE m3/hr (BPD) : 3.3 (498)
DRIVER POWER KW (hp) : N/A
OP PRESS/DES PRESS barg (PSIG) : 8.2/19.9 (118.9/288.5)
OP TEMP/DESIGN TEMP °C (°F) : 75/99~3 (67/210.2~27)
MATERIAL OF CONSTRUCTION CASING : CS
MAIN SCREW : 17 NICR MO 6-4
IDLER SCREW : CAST IRON

G-004C-G-002 AUX. LUBE OIL PUMP
FLOWRATE m3/hr (BPD) : 2.5 (377)
DRIVER POWER KW (hp) : 2.2 (2.95)
OP PRESS/DES PRESS barg (PSIG) : 8.2/19.9 (118.9/288.5)
OP TEMP/DESIGN TEMP °C (°F) : 75/99~3 (67/210.2~27)
MATERIAL OF CONSTRUCTION CASING : CS
MAIN SCREW : 17 NICR MO 6-4
IDLER SCREW : CAST IRON