

G-011-V-001
BLADDER ACCUMULATOR

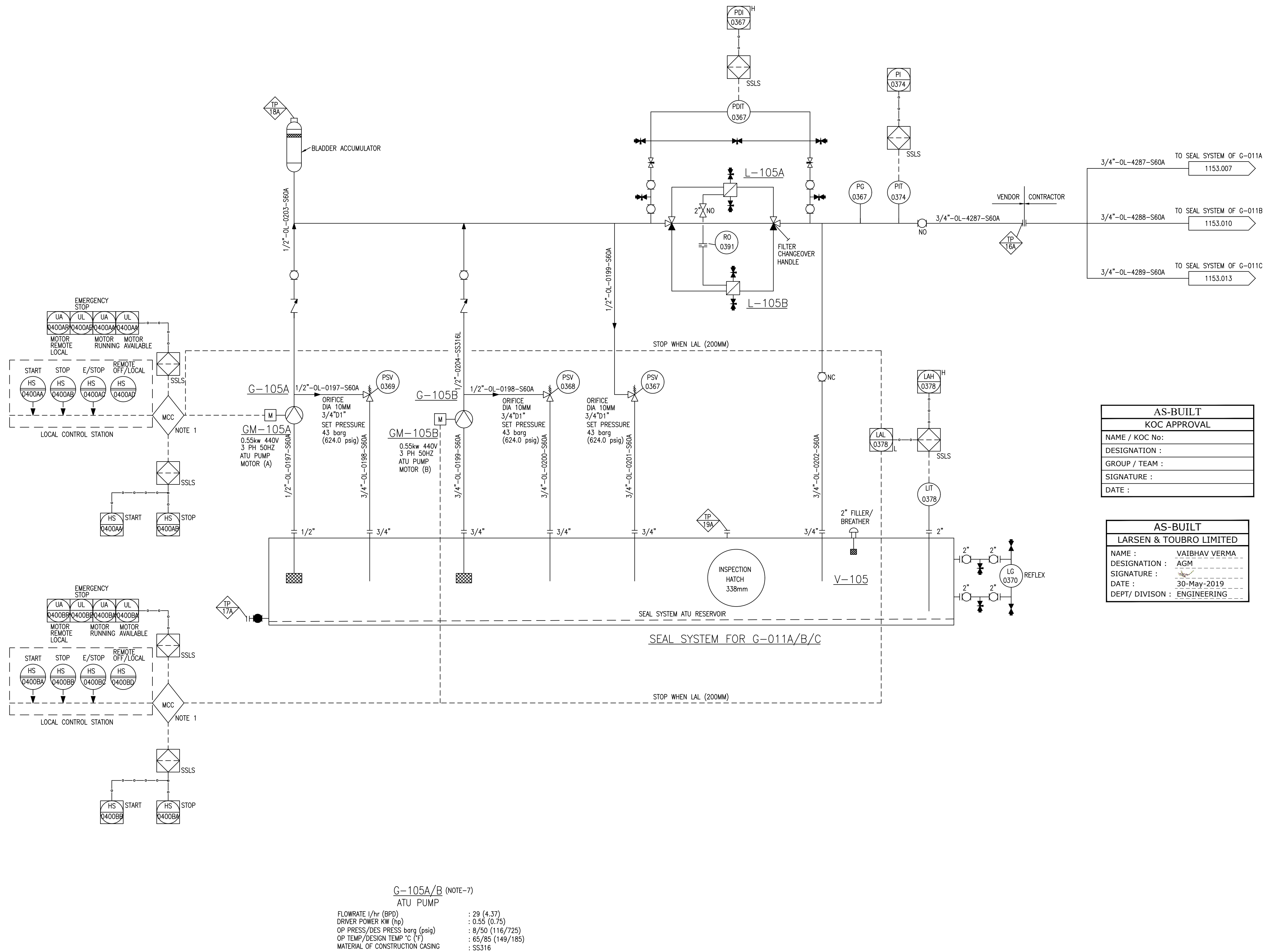
CAPACITY LITER (BBLs) : 4 (0.0252)
DESIGN PRESS.Barg (psig) : 70 (1015)
DESIGN TEMP.°C (°F) : 85 (185)
MATERIAL OF CONSTRUCTION
BLADDER/ SHELL : NITRILE/316L

V-105
BARRIER FLUID RESERVOIR (ATU TANK)

CAPACITY m3 (BBLs) : 0.5 (3.1)
LENGTH mm (ft-in) : 1200 (3'-11")
WIDTH mm (ft-in) : 600 (1'-11")
HEIGHT mm (ft-in) : 700 (2'-3")
OP. PRESS./DESIGN PRESS.Barg (psig) : ATM (ATM/-FULL OF LIQUID)
OP. TEMP./DESIGN TEMP.°C (°F) : 15-56 (59-132.8)
MATERIAL OF CONSTRUCTION : SS 316

L-015A/B
ATU FILTERS

FLOWRATE L/hr (BPD) : 29 (4.37)
OP PRESS/DES PRESS barg (psig) : 8/16.8 (116/244)
OP TEMP/DESIGN TEMP °C (°F) : 65/95 (149/203)
MATERIAL OF CONSTRUCTION CASING : SS316



GENERAL NOTES:

- FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & .002.
- ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530--.
- ALL INSTRUMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 030--.
- FOR TYPICAL INSTRUMENT CONNECTION, SBOV, XV, MOV & ESSV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.001, .002, .003, .004, .005, .006 & .007.
- FOR MISCELLANEOUS PIPING TYPICAL VALVING, DRAINAGE & GENERAL ARRANGEMENT OF LEVEL INSTRUMENTS, PUMPS, STRAINERS & CONTROL VALVES SEE DRAWINGS 50489-530-020-PID-1108.001 TO 1108.010.
- 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.
- FOR MATERIAL SELECTION DIAGRAM SEE DRAWINGS 50489-530-020-MSD-1001.001 TO 1023.
- DETAIL NUMBERING FOR CI, SC, CC & CP SEE DRAWING 50489-530-020-PID-1108.003.
- PAINTING & COATING ARE IN ACCORDANCE WITH KOC-P-001.
- LOW POINT DRAIN & HIGH POINT VENT ARE INDICATED IN P&ID.
- FOR CAUSE & EFFECT REFER DOC. NO. 50489-530-020-PHL-1009.
- FOR ALARM VALUES REFER DOC. NO. 50489-530-020-SUM-1006.

NOTES:

- MCC AND LCS ARE NOT IN PUMP VENDOR SCOPE OF SUPPLY WIRING FROM LCS TO MCC IS NOT IN PUMP VENDOR SCOPE OF SUPPLY.
- REFERENCE VENDOR DRAWING NUMBER:
50489-530-020-07262-PID-V001, SHEET 1,2,3,4
50489-530-020-07262-PID-V002
- DELETED.
- FOR SET POINT INFORMATION REFER TO ALARM & TRIP LIST, REFER VENDOR DOC. NO. 50489-530-030-07262-LST-V001.
- DELETED.
- FOR SEAL SYSTEM REFERENCE P&IDS:
50489-530-020-PID-1153.007, 50489-530-020-PID-1153.010, 50489-530-020-PID-1153.013.
- ATU SYSTEM OPERATING DATA :
NORMAL BARRIER PRESSURE : 8 BARG
MAIN PUMP START : < 5 BARG
MAIN PUMP STOP : > 8 BARG
ATU STANDBY PUMPS SHALL AUTO START IF DUTY PUMP IS RUNNING AND PRESSURE IS NOT HEALTHY. (IN 15 SEC) OR IF DUTY PUMP FAULT/NOT AVAILABLE THEN STANDBY ATU PUMP SHALL START
N2 ACCUMULATOR PRE-CHARGE : 2.7 BARG
MOC OF SYSTEM : STAINLESS STEEL 216
MAX DESIGN PRESSURE : 50 BARG
BARRIER MEDIUM : 70% WATER, 30% GLYCOL

TERMINATION POINT LIST (PROVISIONAL)			
TP No.	SIZE/TYPE	DESCRIPTION	
TP16A	3/4" NB (20MM) ANSI B16.5 CLASS 600 R.F	SUPPLY TO SEAL SYSTEM	
TP17A	1/2" (15MM) NB ANSI B16.5 CLASS 150 R.F	RESERVOIR DRAIN	
TP18A	1/4" B.S.P.P (MALE)	ACCUMULATOR CHARGE	
TP19A	2" (50MM) NB ANSI B16.5 CLASS 150 R.F	RESERVOIR FILL	

LEGEND

ATU PUMP

REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
Z2	ISSUED FOR AS-BUILT	VPA/CHS	AKG	SRA	RAK	30.05.19
Z1	ISSUED FOR AS-BUILT	VPA/CHS	AKG	SRA	RAK	09.12.18
Z0	ISSUED FOR AS-BUILT	VPA/CHS	AKG	SRA	RAK	24.09.18
02	ISSUED FOR CONSTRUCTION	VPA/CHS	AKG	SRA	RAK	21.10.17
01	ISSUED FOR CONSTRUCTION	VPA/CHS	AKG	SRA	RAK	05.10.17
0	ISSUED FOR CONSTRUCTION	BAK/AGK	AKG	SRA	RAK	14.10.16
E	ISSUED FOR APPROVAL	BAK/VSA	AKG	SRA	RAK	03.10.16
D	ISSUED FOR APPROVAL	HSH/VSA	AKG	SRA	RAK	05.09.16
C	ISSUED FOR APPROVAL	HSH/VSA	AKG	SRA	RAK	10.08.16
B	ISSUED FOR APPROVAL	HSH/VSA	AKG	SRA	RAK	05.07.16
A	ISSUED FOR APPROVAL	PAK/VSA	AKG	SRA	RAK	13.05.16

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 AUTOMATIC TOP-UP UNIT FOR TREATED WATER TRANSFER PUMP (G-011A/B/C)**

PROJECT NO.	DRAWING NO.		REV.
	CONTRACTOR DRG. NO.	REV. KOC DRG. NO.	
EF1902	50489-530-020-PID-1153.025	Z2	SHEET NO.
	SHEET NO. 25 OF 25		
	COMPANY DRG. NO.	REV.	SHEET NO.
	EF1902-530-DCO-PID-0153.005	A1	