



TREATED WATER DISPOSAL PIPELINE DESIGN DATA	
NOMINAL SIZE	6"
SERVICE	TREATED WATER
MATERIAL	API 5L GR.B PSL-2
DESIGN PRESSURE	139 barg (2016 psig)
DESIGN TEMPERATURE (AG)	-3°C/33°C
DESIGN TEMPERATURE (UG)	-3°C/60°C
DESIGN CODE	ASME B 31.4
ASME CLASS	900#
CATHODIC PROTECTION	YES
WALL THICKNESS	10.97 mm
INTERNAL COATING (UG)	HDPE LINED
EXTERNAL COATING (UG)	3 LAYER POLYETHYLENE
INTERNAL COATING (AG)	FBE
EXTERNAL COATING (AG)	PAINTED
CORROSION ALLOWANCE	3.2 mm
CONSTRUCTION MODE	BURIED

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, SBDV, XV, MOV & ESDV 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 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:

- OUTPUT OF FIC-0374 (PID-1153.003) IS SET POINT TO FIC-0442 AS A TYPICAL.
- REVERSE FLUSHING ARRANGEMENT ARE PROVIDED FOR DISPOSAL LINES.
- DELETED.
- 28 DISPOSAL WELL SLOTS ARE PROVIDED WITH PROVISION FOR THE ADDITION OF 5 FUTURE SLOTS. REFER TABLE-1 IN PID-1153.005.
- FUTURE EXTENSION.
- TRANSITION PIECE BETWEEN EPOXY LINED AND HDPE LINED SECTION OF PIPE. PIT WITH COVER PROVIDED.
- DRAIN IS DIVERTED TO NEARBY GRAVITY DRAIN VESSEL ALONG THE LINE WORK AT EVERY LOW POINT.
- MECHANICAL INTERLOCK OF EACH INDIVIDUAL DISPOSAL LINE DRAIN VALVES TYPICAL IN LINE NO. 4"-WT-1327-Q95B ON MANIFOLD (PID: 1153.005) WITH ISOLATION VALVE ON REVERSE FLUSHING LINE (LINE NO. 4"-WT-1362-Q95B, PID: 1154.001 & 4"-WT-1363-Q95B, PID: 1154.004).
- CATHODIC PROTECTION INSULATING FLANGE TO BE SUPPLIED WITH PIPELINE.
- NO PIGGING REQUIREMENT IS ENVISAGED FOR TREATED WATER DISPOSAL PIPELINE.
- DELETED.
- LOCATE BACK FLUSHING LINE NEAR TO ISOLATION VALVE.
- FOR WELL HEAD INSTRUMENTATION REFER P&ID NO. PID-1311.003
- STRAIGHT LENGTH REQUIREMENT FOR ORIFICE FLOW METER ARE 20D UPSTREAM & 5D DOWNSTREAM.
- REFER SPECIFICATION FOR HDPE LINES DOC. NO. EF1902-615-DKO-SPC-001, INSPECTION SPOOL, PIT WITH COVER TO BE PROVIDED AT 10 METERS FROM EITHER END OF THE PIPELINE.
- SUMMATION BLOCK IS ONLY LIMITED TO THOSE WELLS FOR WHICH RESPECTIVE FIC'S ARE IN CASCADE MODE.
- FOR CORROSION MONITORING STATIONS (CMS):-
 - CMS SHALL BE INSTALLED AS PER KOC-MP-035.
 - PROPER ACCESS PIT OR PLATFORM SHALL BE PROVIDED FOR RETRIEVAL OF COUPON/PROBE.
 - MATERIAL FOR CMS SHALL BE PROCURED FROM KOC APPROVED VENDOR LIST.
 - CMS SHALL BE LOCATED IN BOTTOM 6 O'CLOCK POSITION.
 - TAG NUMBERING OF CMS SHALL BE AS PER APPENDIX-C OF KOC-MP-035.

AS-BUILT KOC APPROVAL

NAME / KOC No: _____
DESIGNATION : _____
GROUP / TEAM : _____
SIGNATURE : _____
DATE : _____

AS-BUILT

LARSEN & TOUBRO LIMITED

NAME : VAIBHAV VERMA
DESIGNATION : AGM
SIGNATURE : _____
DATE : 25-Aug-2018
DEPT/ DIVISION : ENGINEERING

REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
Z0	ISSUED FOR AS-BUILT	BAK/SSI	AKG	SRA	RAK	25.08.18
01	ISSUED FOR CONSTRUCTION	BAK/SSI	AKG	SRA	RAK	29.11.16
0	ISSUED FOR CONSTRUCTION	SHH/VSA	AKG	SRA	RAK	11.04.16
E	ISSUED INCORPORATED CLIENT COMMENTS	SHH/VSA	AKG	SRA	RAK	09.03.16
D	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	22.12.15
C	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	14.10.15
OC	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSA	AKG	SRA	RAK	30.05.15
B	ISSUED INCORPORATED CLIENT COMMENTS	JSI/VSA	AKG	SRA	RAK	20.02.15
A	ISSUED FOR APPROVAL	BAK/VSA	AKG	SRA	RAK	05.12.14

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:-		DRAWING NO.	
PIPING & INSTRUMENTATION DIAGRAM TREATED WATER DISPOSAL WELLS			
PROJECT NO.		CONTRACTOR DRG. NO.	REV.
50489-530-020-PID-1153.005		50489-530-020-PID-1153.005	Z0
SHEET NO. 5 OF 23		SHEET NO.	
COMPANY DRG. NO.		REV.	
EF1902-530-DCO-PID-0153.010		A4	
SHEET NO.			