

### WATER SPRAY NOZZLE SCHEDULE

TYPE	SIZE	SPRAY ANGLE	K-FACTOR	FLOW @2.0 Bar DISCHARAGE PRESSURE	QUANTITY
MV	1/2" NPT MALE	140*	51	72.12 LPM	09

AREA PROTECTED	LINE No.4	LINE No.5	LINE No.6	LINE No.7	LINE No.8
CRUDE EXPORT PUMP (530-G-0004 A/B/C)	3"-WF-9243-Q15A	3"-WF-9244-Q15A1	2"-WF-9245-Q15A1	2"-WF-9246-Q15A1	2"-WF-9247-Q15A1

# DESIGN OBJECTIVE : FIRE EXTINGUISHMENT & EXPOSURE PROTECTION DESIGN CALCULATION CRUDE EXPORT PUMP SURFACE AREA TO BE PROVIDED 20.4 612 778

DESIGNATION

AS-BUILT

VAIBHAV VERMA

AGM

30-SEP-2018 ENGINEERING

#### GENERAL NOTES:

- A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001.
  B. ALL EQUIPMENT NOMBERS SHOWN ON THIS PADID ARE PRECEDED BY 530-.
  C. FOR ESDY, SBDY AND MOV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.001.
- D. FOR MISCELLANEOUS PIPING DETAILS SEE DRAWING 50489-530-020-PID-1108.001.
- NOTES:

- 1. UV/IR FLAME DETECTORS AUTOMATICALLY DETECT FIRE AND WHEN ACTIVATED A SIGNAL IS SENT TO THE FAC PANEL IN THE COR.
   2. AIR SET IS FITTED WITH AIR FILER, REGULATOR AND P.
   3. RO SUPPLIED TO GIVE PRESSURE/LOSS CHARACTERISTICS OF THE DELUGE VALVE.
- 4 WAY SUCTION COLLECTION HEAD IS INSTALLED TO ALLOW SECONDARY 4 SUPPLY OF WATER TO DELUGE SYSTEM.
- 5. DELUGE VALVE ARE DIAPHRAGM TYPE DESIGNED FOR DELUGE OPERATION AND BE UL LISTED AND FM APPROVED 6. TRIGGER HEAD CONFIGURATION
  1/2" FUSABLE PLUGS OVER PROTECTED EQUIPMENT ON A GENERAL 3 x 3 METRE MATRO

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  7.2 WALVES REQUIRED IN BYPRASS LINE TO PREVENT UNINECESSARY DE LONG TO SENDE OF WAITER DUE TO GATE WALVE PASSING.
  A JECULATE DOWNINGET OF SEPTOMEDE ACOUNT DELUGE SYSTEM TO AVOID
  8. ACEDIATE DOWNINGET OF SEPTOMEDE ACOUNT DELUGE SYSTEM TO AVOID
  9. FORVISON SHALL BE MADE FOR PRESSURE TESTING AS PER NFPA 15 CLAUSE NO.
  6.4.4.8 6.4.5. NEAR THE HYDROLLICALY REQUIREST NOZZIE.
  10. BEILUE WALVES ARE HELD CUSED BY ARP RESSURE SYPPLED FROM THE NOTIONAL THE SYSTEM.
  11. BELLUES WALVES SHALL FULLY DOWN WINNIH IN SECONDS ON REMOVE OF INSTRUMENT ARE SYSTEM.
  14. A REMOTE OFFERTION OF A PUSH BUTTON AT THE MANN HER AND CAS PENAL, LOCATED IN THE
  CONTINUE ROWN TO DEMORIZE A SOLICION MANNE BRASS.
  12. SPRAY NOZZIE IS CONSTRUCTED FROM MANNE BRASS.
  13. DELUGE WALVE STATIONS SHALL BE PROTECTED FROM MANDE BRASS.
- 13. DELUGE VALVE STATIONS SHALL BE PROTECTED FROM RADIATED HEAT BY THE PROVISION OF
- 13. DELIDE VALVE STATIONS SMALL BE PROTECTED FROM RADARDE HEAT BY THE PROVISION O METAL RADARDON SHELDS.

  14. PPE' MOC (AS PER KOC-L-009).

  3. SIZE AND BECTOW: 99-01 OCOPPER NIKEL TO ASTIM B 466 UNS.

  5. SIZE AND BECTOW: 99-01 OCOPPER NIKEL TO ASTIM B 466 UNS.

  15. FLAVER INSULITION KITS ARE PROVIDED AT DISSIANCE METAL JUNCTIONS HAVING ELECTROMOTIVE POTATION. DIFFERENCE GREATER THAN 0.009.

  AS PER CAUSE 7.3.1.17 OF KOC-L-009.
- AS PER CLUSE 7.3.1.17 OF KOC1-L-009.

  IS. INTERNALY COACTE US PIPING ARE FLANCED SPOOLS AS PER KOC-L-009.

  17. FLUSHING DRAIN PIT SHALL BE ACCESSIBLE FROM REQUIND LEVEL. IT IS THE THE MORERORMO SECTION IS STORRED HOPE AS PER KOC-POOL PART 6, REV-2 WITH THE WITENAUL PHENOLIC EPOXY ON THE PIPING SHALL BE AS PER KOC-POOS FEV-1.
- 19. THE ABOVE GROUND PIPING SECTION SHALL BE COATED WITH SYSTEM A1-1 OF KOC-P-001 REV 3 13. THE ADDITE SHOULD SECTION FROM EACH TO TO MAKE THE AN ALL THE OWNER OF DELICE VALUE IS CONNECTED TO MAKER IN ALL TO MATER INSECTION THE OWNER OF ACTUATOR WHEN THE ARE PRESSING BOOKS DUE TO DETECTION OF FIRST THE OWNERS OF ACTUATOR IS LETELY AND ALLONS THE MATER PRESSINGE OWNERS OF ADMINISTRATION OF THE OWNERS OF DELICE VALUE OF ALLONNO, THE DELICE VALUE TO OFFEN.

## LEGENDS:

SYMBOL	DESCRIPTION			
;— FW →	FIRE WATER PIPING			
$\forall$	SPRAY NOZZLE			
	REDUCER			
$\bowtie$	GATE VALVE			
$\rightarrow$	END CAP			

### REFERENCE DRAWINGS:

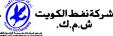
50489-530-000-CAL-1007 HYDRAULIC CALCULATION FOR WATER SPRAY SYSTEM FOR CRUDE EXPORT PUMPS K0C-L-009 KOC STANDARD FOR FIRE PROTECTION SYSTEMS

50489-530-000-LAD-1065 FIRE WATER NETWORK LAYOUT

PAK/DEU NIJ SRA RAK 30.09.18 Z1 RE-ISSUED FOR AS-BUILT ZO ISSUED FOR AS-BUILT PAK/DEU NIJ SRA RAK 05.08.18 PAK/DEU NIJ SRA RAK 13.05.16 0 ISSUED FOR CONSTRUCTION B RE ISSUED FOR CONSTRUCTION PAK/DEU NIJ SRA RAK 10.12.15 A ISSUED FOR APPROVAL DESCRIPTION

CONTRACTOR REVISION





LARSEN & TOUBRO LIMITED FARIDABAD

PROJECT TITLE:-

NEW GATHERING CENTRE GC-30 IN NORTH KUWAIT

DOCUMENT TITLE:-

PIPING & INSTRUMENTATION DIAGRAM DELUGE WATER SPRAY SYSTEM FOR CRUDE EXPORT PUMPS

PROJECT NO.	NO. DRAWING NO.							
	CONTRACTOR DRG. NO.	REV.	KOC DRG. NO.	RE				
	50489-530-000-PID-1126.002							
CC1000	SHEET NO. 2 OF 2		SHEET NO.					
EF 1902	COMPANY DRG. NO.	REV.						
	SHEET NO.							