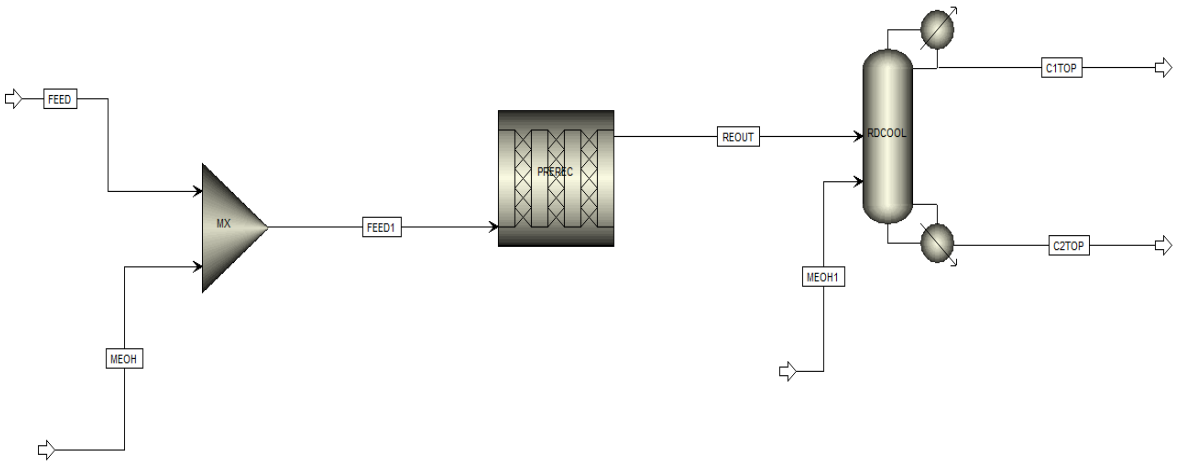
ASSIGNMENT - 06

ROLL NO – 234107206

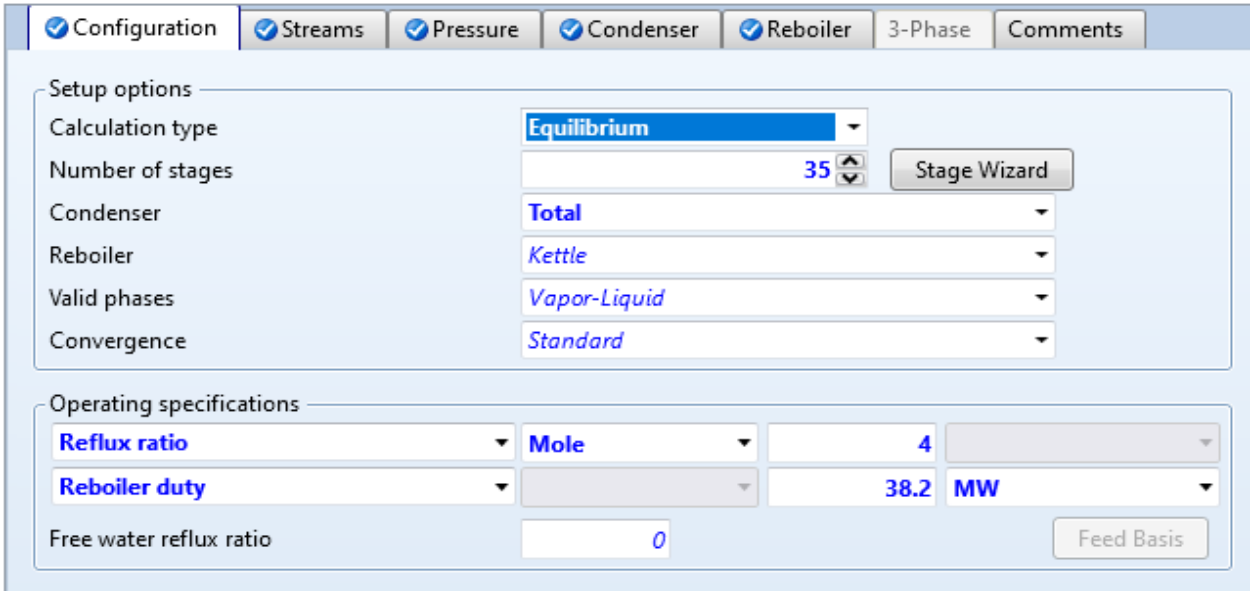
FLOWSHEET :-



STREAM RESULT :-

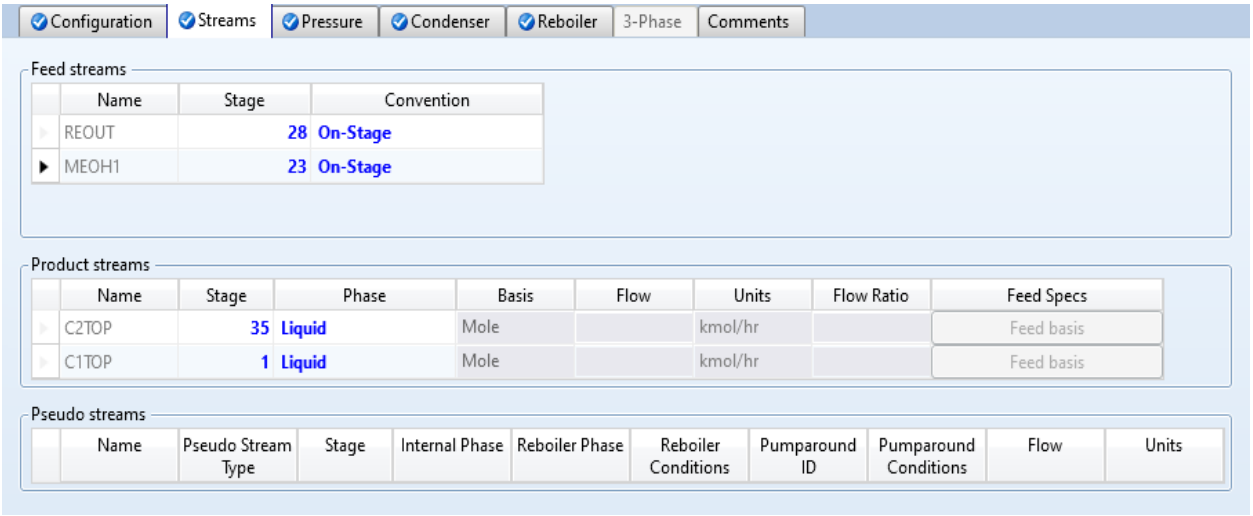
	Units	MEOH1	REOUT	C1TOP	C2TOP
Mass Solid Fraction		0	0	0	0
Molar Enthalpy	cal/mol	-56411.7	-37789.1	-41600.1	-74585.9
Mass Enthalpy	cal/gm	-1760.55	-585.964	-665.759	-730.017
Molar Entropy	cal/mol-K	-55.7204	-105.961	-103.815	-158.074
Mass Entropy	cal/gm-K	-1.73897	-1.64305	-1.66144	-1.54717
Molar Density	mol/cc	0.0221316	0.00933344	0.00905831	0.00609202
Mass Density	gm/cc	0.709143	0.601918	0.56601	0.622422
Enthalpy Flow	cal/sec	-3.68243e+06	-1.3332e+07	-1.2719e+07	-4.18982e+06
Average MW		32.0422	64.4905	62.4852	102.17
− Mole Flows	**kmol/hr**	**235**	**1270.08**	**1100.68**	**202.228**
2-MET-01	kmol/hr	0	85.5868	15.2119	0.00148957
2-MET-02	kmol/hr	0	164.992	33.1894	0.00707714
N-PEN-01	kmol/hr	0	789.5	789.47	0.0295886
METHA-01	kmol/hr	235	229.979	262.808	0.00218316
METHY-01	kmol/hr	0	0.0206742	0.0025744	202.188
− Mole Fractions					
2-MET-01		0	0.067387	0.0138204	7.36581e-06
2-MET-02		0	0.129907	0.0301535	3.49959e-05
N-PEN-01		0	0.621615	0.717256	0.000146313
METHA-01		1	0.181075	0.238768	1.07955e-05
METHY-01		0	1.62779e-05	2.33892e-06	0.999801
+ Mass Flows	**kg/hr**	**7529.91**	**81908**	**68776.3**	**20661.6**

REFLUX RATIO :-



- Reflux Ratio of Red-Frac column for above mentioned purity of TAME is 4
- Total number of stages in Red-Frac column is 35

NUMBER OF STAGES :-



- Feed enter stage for both outlet stream from reactor as well as methanol stream at 28 and 23 on stage respectively

COLUMN INTERNAL SPECIFICATION :-

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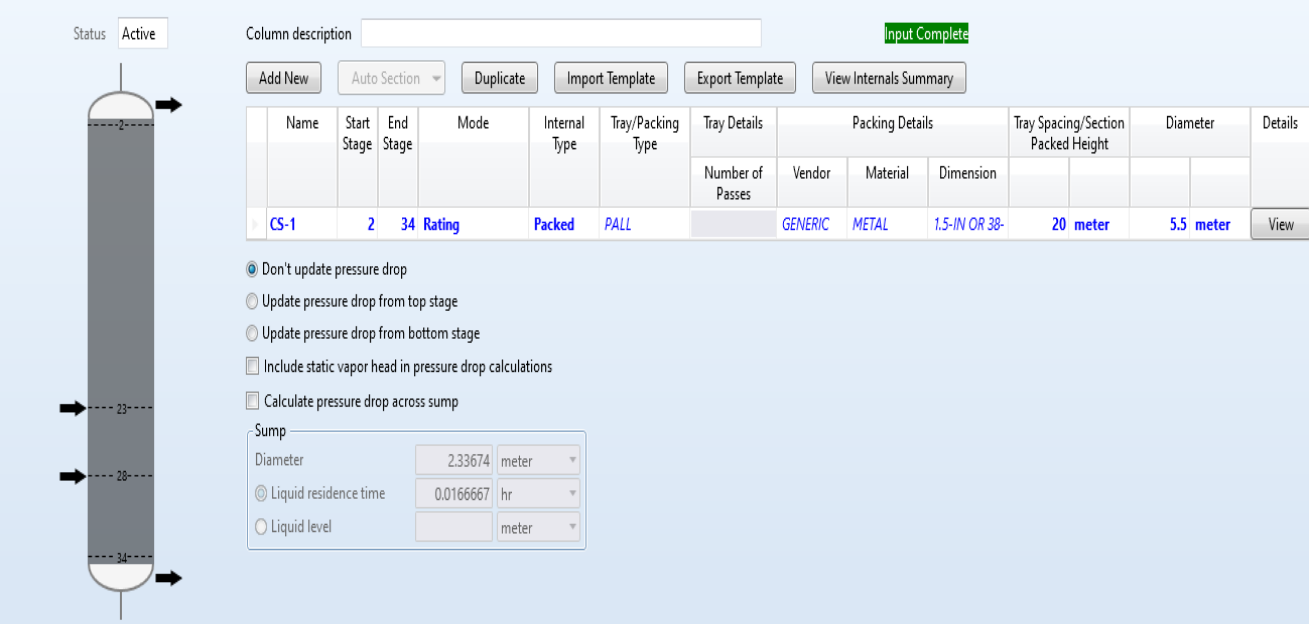
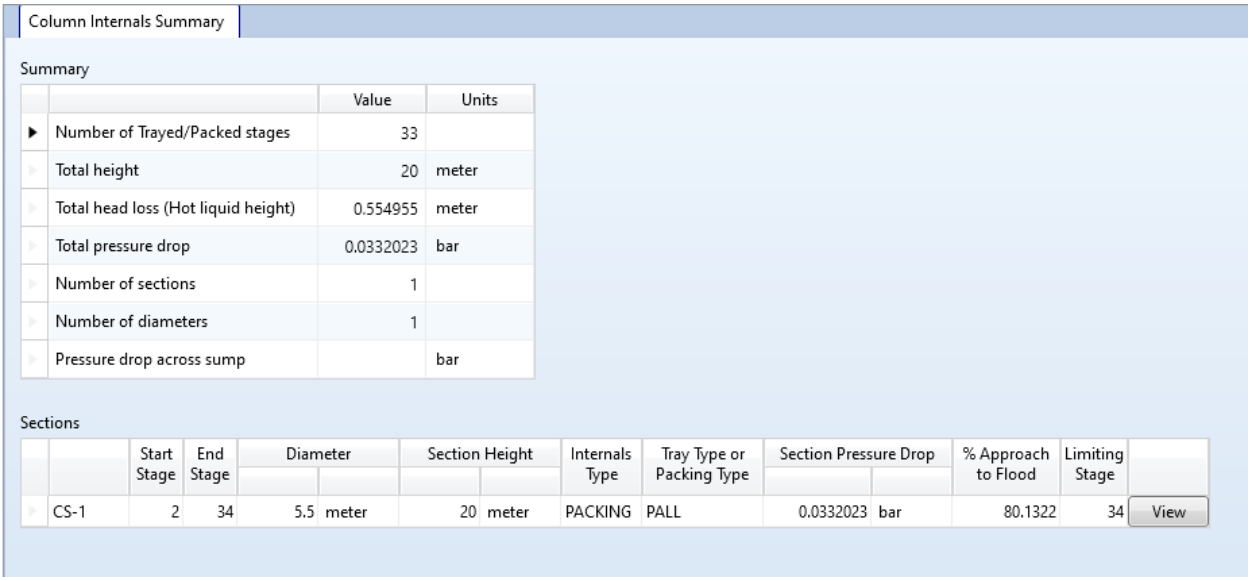


COLUMN INTERNAL SUMMARY :-



- Number of packed stages is 33
- Height = 20 meter & Diameter = 5.5 meter