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* XPSIM, Vers. 1.07b*          *... extended Process Simulation ...*
* Cust/User "          " *          - INPUT -          * Job "          " *
* Proj/Problem "          " *          * Date          OCT 06, 2008 *

--- Simulation Input File ---
*-STMT-*
*XPSIM> ...generated by XpsimWin v.1.06 ...
*EXE-0PT> PAGELEN=66
*
100 RUN ID=OFFSHORE CUSTOMER=A-CLIENT PROJECT='XYZ GAS FIELD'
200 DESC XYZ GAS FIELD PRODUCTION - PHASES 1&2
300 DIMENSION INPUT SI PRES=BAR
*
400 Petroleum Data
*
500 HYP0 ID=C11+ NAME='C11 PLUS FRAC' SPGR=0.853 MW=211.6
*
600 System Data
*
700 CHEMCOMP N2 / CO2 / H2S / C1 / C2 / C3 / IC4 / NC4 / IC5 / NC5 / NC6 +
/ CH / MCP / BNZN / NC7 / MCH / TOLU / NC8 / EBZN / NC9 / M3EZ / +
NC10 / C11+ / H2O
800 THERMSET UID=M1
900 METHODS K=SRK-KD HS=LK CP=LK D=LK IV=LK TRAN=ELYHAN SURT=IDEAL
1000 WOPT K=2
*
1100 Flowsheet Data
*
1200 EQUI 3PHASE LLSM=L1L2 KEY1=H2O
*
1300 STREAM=FEED TEMP=90 PRES=241 RATE=60862 XBASIS=M
1400 COMP N2:2.981 / CO2:1.771 / H2S:0.800 / C1:82.262 / C2:5.197 / +
C3:1.732 / IC4:0.374 / NC4:0.630 / IC5:0.256 / NC5:0.256 / NC6:0.295 +
/ CH:0.039 / MCP:0.030 / BNZN:0.020 / NC7:0.305 / MCH:0.079 / +
TOLU:0.030 / NC8:0.325 / EBZN:0.128 / NC9:0.275 / M3EZ:0.039 / +
NC10:0.216 / C11+:0.502 / H2O:1.611
*
1500 SPLITTER IN FEED OUT S1T S1 UID=SPL1
1600 SPEC STR=S1T RATE=5370.6
*
1700 VALVE IN S1T OUT S2T UID=V1
1800 CALC PRES=126
*
1900 FLASH IN S2T OUT S3T(V) S5T(LW) S4T(LH) UID=VP-001 +
DESC='TEST SEPARATOR'
*
2000 VALVE IN S1 OUT S2 UID=V2
2100 CALC PRES=125
*
2200 SPLITTER IN S2 OUT S3 S3A UID=SPL2
2300 SPEC STR=S3 RATE=0.5 RATIO
*
2400 FLASH IN S3 OUT S4(V) S6(LW) S5(LH) UID=VS-001
2500 CALC ADIA DP=0
2600 ENTRAIN PHASE=LW IN=LH RATIO(V)=0.08
*
2700 VALVE IN S4 OUT S9 UID=V3
2800 CALC DP=-2
*
2900 MIXER IN S3T S9 OUT S9M UID=MX1
```

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* XPSIM, Vers. 1.07b*
* Cust/User " " *
* Proj/Problem " " *
* Date OCT 06, 2008 *
* Job " " *
* Page 0002 *
extended Process Simulation ...*
- INPUT -
- Simulation input - Continuation -
*-STMT-*
*
3000 COMPSEP IN S5 OUT S7 S8 UID=SEP1
3100 OVHD STR=S7
3200 BTMS STR=S8
3300 OVHFLOW COMP=N2,C11+ RATIO=1
3400 OVHFLOW COMP=H2O RATIO=0.20
*
3500 SETSTR UID=SS1 STR=S1PSV
3600 COPY STR=S1
3700 REDEF RATE(M)=1000
*
3800 PSD IN S1PSV OUT S10 UID=PSD1
3900 PARA CALC=1 METHOD=MXFLOW PSET=241 PBACK=1
4000 SIZE DEVICE=VALVE KB=1 KC=1 KD=1
*
4100 SETSTR UID=SS2 STR=S4PSV
4200 COPY STR=S4
4300 REDEF RATE(M)=1000
*
4400 PSD IN S4PSV OUT S11 UID=PSD2
4500 PARA CALC=1 METHOD=MXFLOW PSET=139 PBACK=1
4600 SIZE DEVICE=VALVE KB=1 KC=1 KD=1
*
4700 SETSTR UID=SS3 STR=S2PSV
4800 COPY STR=S2
4900 REDEF RATE(M)=1000
*
5000 PSD IN S2PSV OUT S13 UID=PSD3
5100 PARA CALC=1 METHOD=MXFLOW PSET=139 PBACK=1
5200 SIZE DEVICE=VALVE KB=1 KC=1 KD=1
*
5300 SETSTR UID=SS4 STR=S5PSV
5400 COPY STR=S5
5500 REDEF RATE(M)=1000
*
5600 PSD IN S5PSV OUT S15 UID=PSD4
5700 PARA CALC=1 METHOD=OMEGA PSET=139 PBACK=1
5800 SIZE DEVICE=VALVE KB=1 KC=1 KD=1
*
*
5900 Output Data
*
*
6000 PRINT FORMAT=2
*
*
6100 END
--- End of Simulation Input File ---
```

I) * PROBLEM GENERAL DATA *

- 1) * PROBLEM/PROJECT *
'XYZ GAS FIELD PRODUCTION - PHASES 1&2'
- 2) * UNITS OF MEASURE *
- Input system SI - Output system SI
- INPUT AND OUTPUT UNITS -
Time - HR Weight - KG
Temperature - CENT Pressure - BAR
Energy/Duty - M-KJ Work - KW
Liq volums - CUMT Vap Volume - CUMT
Viscosity - CP Thermal cond - W/MC
Surface tens - DYCM Std Vap Vol - N-CUMT

Standard Vapor Volume is 23.64469 M3/KMOL
Reference Status - Temperature 15°C - Pressure 1 atm

Enthalpy is 0.0 for ideal gas at 298.15 K
Std entropy is for ideal gas at 298.15 K and 1 Atm

*** HYPOTHETICAL/PETROLEUM COMPONENTS CALCULATION OPTIONS ***

Initial point interval 2.00
End point interval 98.00

Critical props calculation method 'STD80'

II) * DEFINED COMPONENTS *

* No of Chemical Components 24
No of Hypothetical/Petroleum Components 1

No	1	2	3	4	5
CAS Registry no.	7727-37-9	124-38-9	7783-06-4	74-82-8	74-84-0
Name	NITROGEN	CARBON DIOXIDE	HYDROGEN SULPHIDE	METHANE	ETHANE
Component Key	N2	C02	H2S	C1	C2
Type	LIBRARY	LIBRARY	LIBRARY	LIBRARY	LIBRARY
Class	INOR	INOR	INOR	SHYD	SHYD
Formula	N2	C02	H2S	CH4	C2H6
Molecular weight	28.010	44.010	34.080	16.040	30.070
Boiling point,CENT	-195.80	-78.55	-60.25	-161.52	-88.60
Std spec. gravity	0.64315	0.81906	0.78638	0.40749	0.35522
Critical temp,CENT	-146.95	31.06	100.05	-82.62	32.27
Critical pres,BAR	34.000	73.825	89.400	45.950	48.790
Critical vol,CUMT	0.089489	0.094039	0.098498	0.099013	0.148129
Critical Z	0.289987	0.274489	0.283798	0.287211	0.284617
Acentric factor	0.037000	0.223000	0.104000	0.011000	0.099000
Lat. heat, KJ/KMOL	5552.287	15245.787	18893.595	8176.826	14535.497
H form, KJ/KMOL	0.000	-393494.298	-20584.362	-74586.151	-84015.754
G form, KJ/KMOL	-57066.025	-447817.337	-81913.940	-130101.793	-152322.057
Std entr, KJ/KML-C	191.40074	182.20071	205.70080	186.20072	229.10089
No	6	7	8	9	10
CAS Registry no.	74-98-6	75-28-5	106-97-8	78-78-4	109-66-0
Name	PROPANE	ISOBUTANE	BUTANE	ISOPENTANE	PENTANE
Component Key	C3	IC4	NC4	IC5	NC5
Type	LIBRARY	LIBRARY	LIBRARY	LIBRARY	LIBRARY
Class	SHYD	SHYD	SHYD	SHYD	SHYD
Formula	C3H8	C4H10	C4H10	C5H12	C5H12
Molecular weight	44.100	58.120	58.120	72.150	72.150
Boiling point,CENT	-42.10	-11.73	-0.50	27.88	36.06
Std spec. gravity	0.50430	0.55891	0.58434	0.62469	0.63094
Critical temp,CENT	96.67	134.99	152.03	187.28	196.59
Critical pres,BAR	42.490	36.480	37.980	33.830	33.700
Critical vol,CUMT	0.203227	0.262988	0.254914	0.305722	0.304432
Critical Z	0.280844	0.282728	0.273882	0.270180	0.262694
Acentric factor	0.153000	0.183000	0.200000	0.227000	0.251000
Lat. heat, KJ/KMOL	18848.524	21127.358	21978.088	24309.374	25651.643
H form, KJ/KMOL	-103855.711	-134606.193	-125771.935	-154473.463	-146464.797
G form, KJ/KMOL	-184416.002	-222679.880	-218138.991	-256918.009	-250638.616
Std entr, KJ/KML-C	270.20105	295.40115	309.80120	343.60134	349.40136
No	11	12	13	14	15
CAS Registry no.	110-54-3	110-82-7	96-37-7	71-43-2	142-82-5
Name	HEXANE	CYCLOHEXANE	METHYLCYCLOPENTANE	BENZENE	HEPTANE
Component Key	NC6	CH	MCP	BNZN	NC7
Type	LIBRARY	LIBRARY	LIBRARY	LIBRARY	LIBRARY
Class	SHYD	CHYD	CHYD	AROM	SHYD
Formula	C6H14	C6H12	C6H12	C6H6	C7H16
Molecular weight	86.180	84.161	84.161	78.110	100.210
Boiling point,CENT	68.73	80.73	71.81	80.09	98.43
Std spec. gravity	0.65877	0.78123	0.75344	0.87917	0.68637
Critical temp,CENT	234.75	280.35	259.61	289.01	266.95
Critical pres,BAR	30.320	40.750	37.840	48.980	27.360
Critical vol,CUMT	0.369874	0.308284	0.318794	0.258644	0.431942
Critical Z	0.265578	0.272991	0.272343	0.271049	0.263181
Acentric factor	0.294000	0.213000	0.232000	0.212000	0.349000
Lat. heat, KJ/KMOL	28788.103	30126.856	25523.451	30824.106	31677.227
H form, KJ/KMOL	-166930.999	-123127.790	-106716.357	82952.984	-187693.711
G form, KJ/KMOL	-282851.951	-212095.928	-208057.745	2690.843	-315272.352
Std entr, KJ/KML-C	388.80151	298.40116	339.90132	269.20105	427.90166

No	16	17	18	19	20
CAS Registry no.	108-87-2	108-88-3	111-65-9	100-41-4	111-84-2
Name	METHYLCYCLOHEXANE	METHYLBENZENE	OCTANE	ETHYLBENZENE	NONANE
Component	Key	Key	Key	Key	Key
	MCH	TOLU	NC8	EBZN	NC9
Type	LIBRARY	LIBRARY	LIBRARY	LIBRARY	LIBRARY
Class	CHYD	AROM	SHYD	AROM	SHYD
Formula	C7H14	C7H8	C8H18	C8H10	C9H20
Molecular weight	98.188	92.140	114.230	106.170	128.260
Boiling point,CENT	100.93	110.63	125.67	136.19	150.82
Std spec. gravity	0.77329	0.87299	0.70390	0.87191	0.72446
Critical temp,CENT	299.10	318.65	295.66	344.05	321.42
Critical pres,BAR	34.700	41.040	24.880	36.000	22.900
Critical vol,CUMT	0.367748	0.315550	0.492374	0.373840	0.548123
Critical Z	0.268214	0.263201	0.259039	0.262271	0.253920
Acentric factor	0.236000	0.263000	0.397000	0.302000	0.445000
Lat. heat, KJ/KMOL	30950.190	33050.276	33940.343	35442.000	36590.750
H form, KJ/KMOL	-154744.604	50032.118	-208812.874	29833.837	-228816.304
G form, KJ/KMOL	-257129.520	-45286.629	-348108.833	-77619.639	-379799.767
Std entr, KJ/KML-C	343.40134	319.70124	467.20182	360.40140	506.40197

No	21	22	23	24
CAS Registry no.	620-14-4	124-18-5	00000-00-0	7732-18-5
Name	1-METH-3-ETH-BENZENE	DECANE	C11 PLUS FRAC	WATER
Component	Key	Key	Key	Key
	M3EZ	NC10	C11+	H2O
Type	LIBRARY	LIBRARY	PETRO	LIBRARY
Class	AROM	SHYD	PETR	INOR
Formula	C9H12	C10H22		H2O
Molecular weight	120.194	142.290	211.600	18.020
Boiling point,CENT	161.33	174.19	268.73	100.00
Std spec. gravity	0.86892	0.73518	0.85300	1.00100
Critical temp,CENT	363.85	346.00	453.34	374.15
Critical pres,BAR	31.400	21.598	19.331	221.200
Critical vol,CUMT	0.490591	0.602928	0.751292	0.056313
Critical Z	0.290869	0.252971	0.240451	0.231459
Acentric factor	0.368000	0.485000	0.631858	0.344000
Lat. heat, KJ/KMOL	37087.668	39262.509	48196.127	40714.413
H form, KJ/KMOL	-1923.108	-249577.166	0.000	-241828.891
G form, KJ/KMOL	-122435.580	-412218.318	0.000	-298119.724
Std entr, KJ/KML-C	404.20157	545.50212	113.21368	188.80073

III) * PVT/THERMO/TRANSPORT PROPERTIES CALCULATION METHODS *

* CALCULATION SET 1 - M1 *

VLE K-values	SRK-KD	- SRK KABADI-DANNER
ENTHALPY - Vapor	LK	- LEE-KESLER
ENTHALPY - Liquid	LK	- LEE-KESLER
ENTROPY - Vapor	LK	- LEE-KESLER
ENTROPY - Liquid	LK	- LEE-KESLER
DENSITY - Vapor	LK	- LEE-KESLER
DENSITY - Liquid	LK	- LEE-KESLER
VISCOSITY - Vapor	ELYHAN	- ELY/HANLEY
VISCOSITY - Liquid	ELYHAN	- ELY/HANLEY
HEAT CAPACITY - Vapor	LK	- LEE-KESLER
HEAT CAPACITY - Liquid	LK	- LEE-KESLER
CONDUCTIVITY - Vapor	ELYHAN	- ELY/HANLEY
CONDUCTIVITY - Liquid	ELYHAN	- ELY/HANLEY
ISENTROPIC Vapor Coeff	LK	- LEE-KESLER
SURFACE TENSION	IDEAL	- IDEAL/LIBRARY

- LIMITS AND OPTIONS -
Temperature - Min -223.15 CENT - Max 1200.05 CENT
Pressure - Min 0.100000E-04 BAR - Max 3000.00 BAR

Lowest significant composition 0.10000000E-19

Water K-values are calculated based on
'NGPA vapor pressure chart'
Water thermo-props are calculated based on
'Saturated conditions'
Water solubility in hydr phases calculated based on
'API solubility in HC mixtures'

*** STREAM 'FEED ' ***

- Temperature 90.000 CENT

- Pressure 241.0000 BAR

GLOBAL STREAM

* No	* Component	* Mols	- Mol fr-	- Weight	- Wt fr-
1	NITROGEN	1811.525	0.029764	50740.795	0.038537
2	CARBON DIOXIDE	1076.219	0.017683	47364.411	0.035973
3	HYDROGEN SULPHIDE	486.152	0.007988	16568.068	0.012583
4	METHANE	49989.814	0.821363	801836.267	0.608990
5	ETHANE	3158.166	0.051891	94966.078	0.072126
6	PROPANE	1052.519	0.017294	46416.116	0.035253
7	ISOBUTANE	227.276	0.003734	13209.289	0.010032
8	BUTANE	382.845	0.006290	22250.941	0.016899
9	ISOPENTANE	155.569	0.002556	11224.281	0.008525
10	PENTANE	155.569	0.002556	11224.281	0.008525
11	HEXANE	179.269	0.002945	15449.368	0.011734
12	CYCLOHEXANE	23.700	0.000389	1994.609	0.001515
13	METHYLCYCLOPENTANE	18.231	0.000300	1534.314	0.001165
14	BENZENE	12.154	0.000200	949.334	0.000721
15	HEPTANE	185.346	0.003045	18573.477	0.014106
16	METHYLCYCLOHEXANE	48.008	0.000789	4713.763	0.003580
17	METHYLBENZENE	18.231	0.000300	1679.777	0.001276
18	OCTANE	197.499	0.003245	22560.348	0.017134
19	ETHYLBENZENE	77.784	0.001278	8258.364	0.006272
20	NONANE	167.115	0.002746	21434.144	0.016279
21	1-METH-3-ETH-BENZENE	23.700	0.000389	2848.588	0.002163
22	DECANE	131.261	0.002157	18677.139	0.014185
23	C11 PLUS FRAC	305.060	0.005012	64550.801	0.049026
24	WATER	978.989	0.016085	17641.385	0.013399

* TOTAL *

60862.000 1.000000

1316665.937 1.000000

KMOL

KG

*** UNIT 1 - 'SPL1 ' - ' STREAM SPLITTER ' ***

--- Feed Streams ---

- Product Streams -

'FEED '

'S1T '

'S1 '

to unit 2 - V1

to unit 4 - V2

- 3 Phase VLE equilibrium applied

1) * PRESSURE SPECIFICATION *

Products pressure set at lowest feed pressure

2) * SPLITTING SPECIFICATIONS *

Spec 1

Product 'S1T ' calculated so that

its MOLAR flow-rate VALUE

is equal 5370.600 KMOL

3) * BALANCE STREAM *

Product 'S1 ' calculated as results of material balance

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*** UNIT 2 - 'V1' - ' VALVE

--- Feed Streams ---

from unit 1 - SPL1 'S1T'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S2T'

to unit 3 - VP-001

1) SPECIFICATIONS

Outlet pressure set at 126.0000 BAR

*** UNIT 3 - 'VP-001' - ' FLASH

Service/Desc 'TEST SEPARATOR

--- Feed Streams ---

from unit 2 - V1 'S2T'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S3T' VAPOR

'S5T' LIQUID W

'S4T' LIQUID H

to unit 8 - MX1

1) * CALCULATION TYPE *

Adiabatic flash

Temperature is variable

Pressure is fixed at lowest feed pressure

*** UNIT 4 - 'V2' - ' VALVE

--- Feed Streams ---

from unit 1 - SPL1 'S1'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S2'

to unit 5 - SPL2

1) SPECIFICATIONS

Outlet pressure set at 125.0000 BAR

*** UNIT 5 - 'SPL2' - ' STREAM SPLITTER

--- Feed Streams ---

from unit 4 - V2 'S2'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S3'

'S3A'

to unit 6 - VS-001

1) * PRESSURE SPECIFICATION *

Products pressure set at lowest feed pressure

2) * SPLITTING SPECIFICATIONS *

Spec 1

Product 'S3' calculated so that

its MOLAR flow-rate RATIO

respect sum of MOLAR flow-rates inlet streams

is equal to 0.50000

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3) * BALANCE STREAM *

Product 'S3A' calculated as results of material balance

*** UNIT 6 - 'VS-001' - 'FLASH'

--- Feed Streams ---

from unit 5 - SPL2 'S3'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S4' 'VAPOR' to unit 7 - V3

'S6' 'LIQUID W' to unit 9 - SEP1

'S5' 'LIQUID H'

1) * CALCULATION TYPE *

Adiabatic flash

Temperature is variable

Pressure is fixed at lowest feed pressure

2) * ENTRAINMENT SPECIFICATION *

1- 'LIQUID WATER' phase is entrained into 'LIQUID HYDR' phase

entrained VOLUME FLOW RATIO 0.080

reference phase 'LIQUID WATER'

*** UNIT 7 - 'V3' - 'VALVE'

--- Feed Streams ---

from unit 6 - VS-001 'S4'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S9' to unit 8 - MX1

1) SPECIFICATIONS

Outlet pressure set at lowest feed pressure plus -2.0000 BAR

*** UNIT 8 - 'MX1' - 'STREAM MIXER'

--- Feed Streams ---

from unit 3 - VP-001 'S3T'

from unit 7 - V3 'S9'

- 3 Phase VLE equilibrium applied

- Product Streams -

'S9M'

1) * SPECIFICATIONS *

Outlet pressure set at lowest feed pressure

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* Proj/Problem "XYZ GAS FIELD" *
*** UNIT 9 - 'SEP1' - 'COMPONENT SEPARATOR' ***
--- Feed Streams ---
from unit 6 - VS-001 'S5'
- 3 Phase VLE equilibrium applied
- Product Streams -
'S7'
'S8'

* Job "OFFSHORE" *
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1) * PRODUCT STREAMS *

OVERHEAD / MAIN product - stream 'S7'
Pressure set at lowest feed pressure
Temperature set at feed temperature
BOTTOM / SIDE product - stream 'S8'
Pressure set at lowest feed pressure
Temperature set at feed temperature

2) * SPECIFICATIONS *

1 - Hold ratio of sum of MOLAR flowrate of components
1 - NITROGEN 2 - CARBON DIOXIDE 3 - HYDROGEN SULPHIDE 4 - METHANE
5 - ETHANE 6 - PROPANE 7 - ISOBUTANE 8 - BUTANE
9 - ISOPENTANE 10 - PENTANE 11 - HEXANE 12 - CYCLOHEXANE
13 - METHYLCYCLOPENTANE 14 - BENZENE 15 - HEPTANE 16 - METHYLCYCLOHEXANE
17 - METHYLBENZENE 18 - OCTANE 19 - ETHYLBENZENE 20 - NONANE
21 - 1-METH-3-ETH-BENZENE 22 - DECANE 23 - C11 PLUS FRAC
in OVERHEAD product
with respect to sum in total feed
equal to 1.000000
2 - Hold ratio of sum of MOLAR flowrate of components
24 - WATER
in OVERHEAD product
with respect to sum in total feed
equal to 0.200000

*** STREAM SET OPER 1 ***

Stream 'S1PSV' data updated
Base data copied from stream 'S1'
MOLAR flow-rate reset at 1000.000 KMOL

*** UNIT 10 - 'PSD1' - 'PRESSURE SAFETY DEVICE' ***
--- Feed Streams ---
'S1PSV'
- 3 Phase VLE equilibrium applied
- Product Streams -
'S10'

1) * CALCULATION PARAMETERS *

Type area calculation
Method Isentr max flow
Set pressure 241.000 BAR
Back pressure 1.00000 BAR

2) * DEVICE DATA *

Type 'PSV'
KB value 1.000
KC value 1.000
KD value 1.000

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*** STREAM SET OPER 2 ***

Stream 'S4PSV ' data updated
Base data copied from stream 'S4 '

MOLAR flow-rate reset at 1000.000 KMOL


*** UNIT 11 - 'PSD2 ' - ' PRESSURE SAFETY DEVICE ' ***
--- Feed Streams --- - Product Streams -
'S4PSV ' 'S11 '
- 3 Phase VLE equilibrium applied

1) * CALCULATION PARAMETERS *

Type area calculation
Method Isentr max flow
Set pressure 139.000 BAR
Back pressure 1.00000 BAR

2) * DEVICE DATA *

Type 'PSV '
KB value 1.000
KC value 1.000
KD value 1.000

*** STREAM SET OPER 3 ***

Stream 'S2PSV ' data updated
Base data copied from stream 'S2 '

MOLAR flow-rate reset at 1000.000 KMOL


*** UNIT 12 - 'PSD3 ' - ' PRESSURE SAFETY DEVICE ' ***
--- Feed Streams --- - Product Streams -
'S2PSV ' 'S13 '
- 3 Phase VLE equilibrium applied

1) * CALCULATION PARAMETERS *

Type area calculation
Method Isentr max flow
Set pressure 139.000 BAR
Back pressure 1.00000 BAR

2) * DEVICE DATA *

Type 'PSV '
KB value 1.000
KC value 1.000
KD value 1.000
```

*** STREAM SET OPER 4 ***

Stream 'S5PSV' data updated
Base data copied from stream 'S5'

MOLAR flow-rate reset at 1000.000 KMOL

*** UNIT 13 - 'PSD4' - 'PRESSURE SAFETY DEVICE' ***
--- Feed Streams --- - Product Streams -
'S5PSV' 'S15'

- 3 Phase VLE equilibrium applied

1) * CALCULATION PARAMETERS *

Type area calculation
Method OMEGA method
Set pressure 139.000 BAR
Back pressure 1.00000 BAR

2) * DEVICE DATA *

Type 'PSV'
KB value 1.000
KC value 1.000
KD value 1.000

V) ***** STREAM / UNITS DICTIONARY *****

1) STREAMS-UNITS CROSS-REFERENCE TABLE

No	Stream Id	Description/Service	Product of Unit	Feed of Unit(s)
1	FEED	.....		1 SPL1
2	S1T	.....	1 SPL1	2 V1
3	S1	.....	1 SPL1	4 V2
4	S2T	.....	2 V1	3 VP-001
5	S3T	.....	3 VP-001	8 MX1
6	S5T	.....	3 VP-001	
7	S4T	.....	3 VP-001	
8	S2	.....	4 V2	5 SPL2
9	S3	.....	5 SPL2	6 VS-001
10	S3A	.....	5 SPL2	
11	S4	.....	6 VS-001	7 V3
12	S6	.....	6 VS-001	
13	S5	.....	6 VS-001	9 SEP1
14	S9	.....	7 V3	8 MX1
15	S9M	.....	8 MX1	
16	S7	.....	9 SEP1	
17	S8	.....	9 SEP1	
18	S1PSV	.....		10 PSD1
19	S10	.....	10 PSD1	
20	S4PSV	.....		11 PSD2
21	S11	.....	11 PSD2	
22	S2PSV	.....		12 PSD3
23	S13	.....	12 PSD3	
24	S5PSV	.....		13 PSD4
25	S15	.....	13 PSD4	

2) UNITS-STREAMS CROSS-REFERENCE TABLE

No	Unit	Unit Description	Feed Streams		Product Streams	
1	SPL1	.....	1	FEED	2 3	S1T S1
2	V1	.....	2	S1T	4	S2T
3	VP-001	TEST SEPARATOR	4	S2T	5 6 7	S3T S5T S4T
4	V2	.....	3	S1	8	S2
5	SPL2	.....	8	S2	9 10	S3 S3A
6	VS-001	.....	9	S3	11 12 13	S4 S6 S5
7	V3	.....	11	S4	14	S9
8	MX1	.....	5 14	S3T S9	15	S9M
9	SEP1	.....	13	S5	16 17	S7 S8
10	PSD1	.....	18	S1PSV	19	S10
11	PSD2	.....	20	S4PSV	21	S11
12	PSD3	.....	22	S2PSV	23	S13
13	PSD4	.....	24	S5PSV	25	S15

VI) **** RUN STATISTICS ****

* No of streams	25
process operations	13
topping structures	0
control operations	0
set operations	0

The calculation is NOT a RECYCLE PROBLEM
Calculation sequence defined by input sequence

* XPSIM, Vers. 1.07b*
* Cust/User "A-CLIENT" *
* Proj/Problem "XYZ GAS FIELD" *

*** SIMULATION TRACE FOLLOWS ***

... New/output binary file 'OFFSHORE' initialized ...

. Stream 'FEED' flashed .
. Feed/Recycle streams processed .
Unit op 1 - 'SPL1' calculated
Unit op 2 - 'V1' calculated
Unit op 3 - 'VP-001' calculated
Unit op 4 - 'V2' calculated
Unit op 5 - 'SPL2' calculated
Unit op 6 - 'VS-001' calculated
Unit op 7 - 'V3' calculated
Unit op 8 - 'MX1' calculated
Unit op 9 - 'SEP1' calculated

* Stream S1PSV set as copy of stream S1 *
* Stream S1PSV flowrate set at 1000.000 KMOL *
. SET STREAM OP '1' RESOLVED .
Unit op 10 - 'PSD1' calculated

* Stream S4PSV set as copy of stream S4 *
* Stream S4PSV flowrate set at 1000.000 KMOL *
. SET STREAM OP '2' RESOLVED .
Unit op 11 - 'PSD2' calculated

* Stream S2PSV set as copy of stream S2 *
* Stream S2PSV flowrate set at 1000.000 KMOL *
. SET STREAM OP '3' RESOLVED .
Unit op 12 - 'PSD3' calculated

* Stream S5PSV set as copy of stream S5 *
* Stream S5PSV flowrate set at 1000.000 KMOL *
. SET STREAM OP '4' RESOLVED .
Unit op 13 - 'PSD4' calculated

*** SOLUTION OBTAINED ***

... Base case results loaded on binary file 'OFFSHORE' ...

* ... extended Process SIMulation ...*
* - CALCULATION - *
* Job "OFFSHORE" *
* Date OCT 06, 2008 *

*** UNIT 1 - 'SPL1' - 'STREAM SPLITTER'

--- Feed Streams ---

'FEED'

- Product Streams -

'S1T'

'S1'

to unit 2 - V1

to unit 4 - V2

1) * OPERATING CONDITIONS *

Outlet temperature	90.00 °C
Outlet pressure	241.0 bar

2) * FEEDS *

Stream	FEED
Temperature, °C	90.00
Pressure, bar	241.000
Total rate, kmol/h	60862.
Vapor, kmol/h	59009.
Liquid 1/H, kmol/h	962.36
Liquid 2/W, kmol/h	890.

3) * PRODUCTS *

Stream	S1T	S1
Temperature, °C	90.00	90.00
Pressure, bar	241.000	241.000
Total rate, kmol/h	5370.6	55491.
Vapor, kmol/h	5207.1	53802.
Liquid 1/H, kmol/h	84.921	877.44
Liquid 2/W, kmol/h	78.6	812.

*** UNIT 2 - 'V1 ' - ' VALVE ' ***

--- Feed Streams ---

from unit 1 - SPL1 'S1T ' - Product Streams - 'S2T ' to unit 3 - VP-001

1) * OPERATING CONDITIONS *

Outlet Temperature73.04 °C

Outlet Pressure126.0000 bar

2) * FEEDS *

StreamS1T

Temperature, °C90.00

Pressure, bar241.000

Total rate, kmol/h5370.6

Vapor, kmol/h5207.1

Liquid 1/H, kmol/h84.921

Liquid 2/W, kmol/h78.6

3) * PRODUCTS *

StreamS2T

Temperature, °C73.04

Pressure, bar126.000

Total rate, kmol/h5370.6

Vapor, kmol/h5133.4

Liquid 1/H, kmol/h155.98

Liquid 2/W, kmol/h81.2

*** UNIT 3 - 'VP-001' - ' FLASH

Service/Desc 'TEST SEPARATOR

--- Feed Streams ---

from unit 2 - V1 'S2T'

'

- Product Streams -

'S3T' VAPOR

'S5T' LIQUID W

'S4T' LIQUID H

to unit 8 - MX1

1) * OPERATING CONDITIONS *

Outlet temperature	73.04 °C
Outlet pressure	126.0000 bar

2) * FEEDS *

Stream	S2T
Temperature, °C	73.04
Pressure, bar	126.000
Total rate, kmol/h	5370.6
Vapor, kmol/h	5133.4
Liquid 1/H, kmol/h	155.98
Liquid 2/W, kmol/h	81.2

3) * PRODUCTS *

Stream	S3T	S5T	S4T
Temperature, °C	73.04	73.04	73.04
Pressure, bar	126.000	126.000	126.000
Total rate, kmol/h	5133.4	81.225	155.98
Vapor, kmol/h	5133.4	0.0000	0.0000
Liquid 1/H, kmol/h	0.0000	0.0000	155.98
Liquid 2/W, kmol/h	0.00	81.2	0.00

*** UNIT 4 - 'V2 ' - ' VALVE ***

--- Feed Streams ---

from unit 1 - SPL1 'S1

- Product Streams - 'S2

to unit 5 - SPL2

1) * OPERATING CONDITIONS *

Outlet Temperature

Outlet Pressure

72.84 °C

125.0000 bar

2) * FEEDS *

Stream

Temperature, °C

Pressure, bar

Total rate, kmol/h

Vapor, kmol/h

Liquid 1/H, kmol/h

Liquid 2/W, kmol/h

S1

90.00

241.000

55491.

53802.

877.44

812.

3) * PRODUCTS *

Stream

Temperature, °C

Pressure, bar

Total rate, kmol/h

Vapor, kmol/h

Liquid 1/H, kmol/h

Liquid 2/W, kmol/h

S2

72.84

125.000

55491.

53037.

1614.4

840.

UNIT 5 - 'SPL2'

- 'STREAM SPLITTER'

from unit 4 - V2

'S2'

Feed Streams ---

'S3'

'S3A'

Product Streams -

to unit 6 - VS-001

1) * OPERATING CONDITIONS *

Outlet temperature

72.84 °C

Outlet pressure

125.0 bar

2) * FEEDS *

Stream	S2
Temperature, °C	72.84
Pressure, bar	125.000
Total rate, kmol/h	55491.
Vapor, kmol/h	53037.
Liquid 1/H, kmol/h	1614.4
Liquid 2/W, kmol/h	840.

3) * PRODUCTS *

Stream	S3	S3A
Temperature, °C	72.84	72.84
Pressure, bar	125.000	125.000
Total rate, kmol/h	27746.	27746.
Vapor, kmol/h	26519.	26519.
Liquid 1/H, kmol/h	807.22	807.22
Liquid 2/W, kmol/h	420.	420.

*** UNIT 6 - 'VS-001 ' - ' FLASH

--- Feed Streams ---

from unit 5 - SPL2 'S3

- Product Streams -

'S4 ' VAPOR to unit 7 - V3

'S6 ' LIQUID W

'S5 ' LIQUID H to unit 9 - SEP1

1) * OPERATING CONDITIONS *

Outlet temperature	72.84 °C
Outlet pressure	125.0000 bar

2) * FEEDS *

Stream	S3
Temperature, °C	72.84
Pressure, bar	125.000
Total rate, kmol/h	27746.
Vapor, kmol/h	26519.
Liquid 1/H, kmol/h	807.22
Liquid 2/W, kmol/h	420.

3) * PRODUCTS *

Stream	S4	S6	S5
Temperature, °C	72.84	72.84	72.84
Pressure, bar	125.000	125.000	125.000
Total rate, kmol/h	26519.	386.17	840.80
Vapor, kmol/h	26519.	0.0000	0.0000
Liquid 1/H, kmol/h	0.0000	0.0000	807.22
Liquid 2/W, kmol/h	0.00	386.	33.6

*** UNIT 7 - 'V3 ' - ' VALVE ***

--- Feed Streams ---

from unit 6 - VS-001 'S4 ' - Product Streams - 'S9 ' to unit 8 - MX1

1) * OPERATING CONDITIONS *

Outlet Temperature

Outlet Pressure

72.34 °C

123.0000 bar

2) * FEEDS *

Stream

Temperature, °C

Pressure, bar

Total rate, kmol/h

Vapor, kmol/h

Liquid, kmol/h

S4

72.84

125.000

26519.

26519.

0.0000

3) * PRODUCTS *

Stream

Temperature, °C

Pressure, bar

Total rate, kmol/h

Vapor, kmol/h

Liquid 1/H, kmol/h

Liquid 2/W, kmol/h

S9

72.34

123.000

26519.

26517.

1.6845

0.354

*** UNIT 8 - 'MX1' - ' STREAM MIXER ***

--- Feed Streams --- - Product Streams -

from unit 3 - VP-001 'S3T' 'S9M'

from unit 7 - V3 'S9'

1) * OPERATING CONDITIONS *

Outlet Temperature

72.33 °C

Outlet Pressure

123.0000 bar

2) * FEEDS *

Stream	S3T	S9
Temperature, °C	73.04	72.34
Pressure, bar	126.000	123.000
Total rate, kmol/h	5133.4	26519.
Vapor, kmol/h	5133.4	26517.
Liquid 1/H, kmol/h	0.0000	1.6845
Liquid 2/W, kmol/h	0.00	0.354

3) * PRODUCTS *

Stream	S9M
Temperature, °C	72.33
Pressure, bar	123.000
Total rate, kmol/h	31652.
Vapor, kmol/h	31649.
Liquid 1/H, kmol/h	2.1863
Liquid 2/W, kmol/h	0.458

*** UNIT 9 - 'SEP1' - ' COMPONENT SEPARATOR ' ***
--- Feed Streams --- - Product Streams -
from unit 6 - VS-001 'S5' 'S7' 'S8'

1) * FEEDS *

Stream	S5
Temperature, °C	72.84
Pressure, bar	125.000
Total rate, kmol/h	840.80
Vapor, kmol/h	0.0000
Liquid 1/H, kmol/h	807.22
Liquid 2/W, kmol/h	33.6

2) * PRODUCTS *

Stream	S7	S8
Temperature, °C	72.84	72.84
Pressure, bar	125.000	125.000
Total rate, kmol/h	813.33	27.476
Vapor, kmol/h	0.10574	0.0000
Liquid 1/H, kmol/h	807.12	27.476
Liquid 2/W, kmol/h	6.10	0.00

*** UNIT 10 - 'PSD1' - 'PRESSURE SAFETY DEVICE' ***
--- Feed Streams --- - Product Streams -
'S1PSV' 'S10'

1) * OPERATING CONDITIONS *

Relief pressure 241.000 bar
Relief temperature 90.00 °C
Relief status - Molar fractions
Vap 0.969561 - Liq 1/H 0.015812 - Liq 2/W 0.014626

Flow is critical
Critical flow pressure 129.924 bar Ratio 0.5391
Critical flow temperature 51.47 °C
Status - Molar fractions
Vap 0.945761 - Liq 1/H 0.038487 - Liq 2/W 0.015752
Fluid velocity 367.531 MT/s
Sonic velocity 367.816 MT/s
Mach no 0.9992
Final pressure 1.000 bar
Final temperature 24.27 °C

2) * SIZE DATA *

Calculation method 'Isentr max flow'
Calculated discharge area 0.196 in2
1.262 CM2

KB value 1.000
KC value 1.000
KD value 1.000

2) * FEEDS *

Stream	S1PSV
Temperature, °C	90.00
Pressure, bar	241.000
Total rate, kmol/h	1000.0
Vapor, kmol/h	969.56
Liquid 1/H, kmol/h	15.812
Liquid 2/W, kmol/h	14.6

3) * PRODUCTS *

Stream	S10
Temperature, °C	24.27
Pressure, bar	1.000
Total rate, kmol/h	1000.0
Vapor, kmol/h	978.06
Liquid 1/H, kmol/h	12.144
Liquid 2/W, kmol/h	9.80

*** UNIT 11 - 'PSD2' - 'PRESSURE SAFETY DEVICE' ***

--- Feed Streams --- - Product Streams -

'S4PSV' 'S11'

1) * OPERATING CONDITIONS *

Relief pressure 139.000 bar

Relief temperature 96.96 °C

Relief status - Molar fractions

Vap 1.000000 - Liq 0.015752

Flow is critical

Critical flow pressure 77.240 bar Ratio 0.5557

Critical flow temperature 53.31 °C

Status - Molar fractions

Vap 0.994328 - Liq 1/H 0.005200 - Liq 2/W 0.000472

Fluid velocity 390.082 MT/s

Sonic velocity 389.888 MT/s

Mach no 1.0005

Final pressure 1.000 bar

Final temperature 53.94 °C

2) * SIZE DATA *

Calculation method ' Isentr max flow '

Calculated discharge area 0.341 in2

2.201 CM2

KB value 1.000

KC value 1.000

KD value 1.000

2) * FEEDS *

Stream S4PSV

Temperature, °C 72.84

Pressure, bar 125.000

Total rate, kmol/h 1000.0

Vapor, kmol/h 1000.0

Liquid, kmol/h 0.0000

3) * PRODUCTS *

Stream S11

Temperature, °C 53.94

Pressure, bar 1.000

Total rate, kmol/h 1000.0

Vapor, kmol/h 999.99

Liquid, kmol/h 1.18564E-02

*** UNIT 12 - 'PSD3' - 'PRESSURE SAFETY DEVICE' ***
--- Feed Streams --- - Product Streams -
'S2PSV' 'S13'

1) * OPERATING CONDITIONS *

Relief pressure 139.000 bar
Relief temperature 97.53 °C
Relief status - Molar fractions
Vap 0.965744 - Liq 1/H 0.020744 - Liq 2/W 0.013512

Flow is critical
Critical flow pressure 77.677 bar Ratio 0.5588
Critical flow temperature 61.68 °C
Status - Molar fractions
Vap 0.954966 - Liq 1/H 0.029702 - Liq 2/W 0.015332
Fluid velocity 367.757 MT/s
Sonic velocity 368.329 MT/s
Mach no 0.9984
Final pressure 1.000 bar
Final temperature 43.92 °C

2) * SIZE DATA *

Calculation method ' Isentr max flow '
Calculated discharge area 0.364 in2
2.346 CM2

KB value 1.000
KC value 1.000
KD value 1.000

2) * FEEDS *

Stream	S2PSV
Temperature, °C	72.84
Pressure, bar	125.000
Total rate, kmol/h	1000.0
Vapor, kmol/h	955.78
Liquid 1/H, kmol/h	29.094
Liquid 2/W, kmol/h	15.1

3) * PRODUCTS *

Stream	S13
Temperature, °C	43.92
Pressure, bar	1.000
Total rate, kmol/h	1000.0
Vapor, kmol/h	991.70
Liquid, kmol/h	8.2967

*** UNIT 13 - 'PSD4' - 'PRESSURE SAFETY DEVICE' ***
--- Feed Streams --- - Product Streams -
'S5PSV' 'S15'

1) * OPERATING CONDITIONS *

Relief pressure 139.000 bar
Relief temperature 75.01 °C
Relief status - Molar fractions
Vap 0.000000 - Liq 1/H 0.960130 - Liq 2/W 0.039870

Flow is critical
Critical flow pressure 75.769 bar Ratio 0.5451
Critical flow temperature 69.28 °C
Status - Molar fractions
Vap 0.177536 - Liq 1/H 0.782486 - Liq 2/W 0.039979
Fluid velocity 145.996 MT/s
Sonic velocity 139.484 MT/s
Mach no 1.0467
Omega value 0.599
Final pressure 1.000 bar
Final temperature 56.19 °C

2) * SIZE DATA *

Calculation method ' OMEGA method '
Calculated discharge area 0.497 in2
3.205 CM2

KB value 1.000
KC value 1.000
KD value 1.000

2) * FEEDS *

Stream	S5PSV
Temperature, °C	72.84
Pressure, bar	125.000
Total rate, kmol/h	1000.0
Vapor, kmol/h	0.0000
Liquid 1/H, kmol/h	960.06
Liquid 2/W, kmol/h	39.9

3) * PRODUCTS *

Stream	S15
Temperature, °C	56.19
Pressure, bar	1.000
Total rate, kmol/h	1000.0
Vapor, kmol/h	541.22
Liquid 1/H, kmol/h	436.12
Liquid 2/W, kmol/h	22.7

*** STREAM DATA CALCULATION AND STORING ***

Stream 'FEED	'	pvt/thermo/trans	props	calculated
Stream 'S1T	'	pvt/thermo/trans	props	calculated
Stream 'S1	'	pvt/thermo/trans	props	calculated
Stream 'S2T	'	pvt/thermo/trans	props	calculated
Stream 'S3T	'	pvt/thermo/trans	props	calculated
Stream 'S5T	'	pvt/thermo/trans	props	calculated
Stream 'S4T	'	pvt/thermo/trans	props	calculated
Stream 'S2	'	pvt/thermo/trans	props	calculated
Stream 'S3	'	pvt/thermo/trans	props	calculated
Stream 'S3A	'	pvt/thermo/trans	props	calculated
Stream 'S4	'	pvt/thermo/trans	props	calculated
Stream 'S6	'	pvt/thermo/trans	props	calculated
Stream 'S5	'	pvt/thermo/trans	props	calculated
Stream 'S9	'	pvt/thermo/trans	props	calculated
Stream 'S9M	'	pvt/thermo/trans	props	calculated
Stream 'S7	'	pvt/thermo/trans	props	calculated
Stream 'S8	'	pvt/thermo/trans	props	calculated
Stream 'S1PSV	'	pvt/thermo/trans	props	calculated
Stream 'S10	'	pvt/thermo/trans	props	calculated
Stream 'S4PSV	'	pvt/thermo/trans	props	calculated
Stream 'S11	'	pvt/thermo/trans	props	calculated
Stream 'S2PSV	'	pvt/thermo/trans	props	calculated
Stream 'S13	'	pvt/thermo/trans	props	calculated
Stream 'S5PSV	'	pvt/thermo/trans	props	calculated
Stream 'S15	'	pvt/thermo/trans	props	calculated

XPSIM, Vers. 1.07b*		*... extended		Process SIMulation		...*		* Page 0031 *	
* Cust/User "A-CLIENT "		* " "		- SOLUTION -		* " "		* Job "OFFSHORE "	
* Proj/Problem "XYZ GAS FIELD "		* " "				* Date		OCT 06, 2008 *	
*** STREAM COMPONENT MOLAR FLOW RATES - kmol/h ***									
Stream Id	FEED	S1T	S1	S2T	S3T	S5T			
Temperature, °C	90.000	90.000	90.000	73.043	73.043	73.043			
Pressure, bar	241.0000	241.0000	241.0000	126.0000	126.0000	126.0000			
Phase	MIXED	MIXED	MIXED	MIXED	VAPOR	LIQUID			
1 NITROGEN	1811.524587	159.853011	1651.671576	159.853011	159.024065	0.000024			
2 CARBON DIOXIDE	1076.219404	94.968025	981.251379	94.968025	93.138480	0.002703			
3 HYDROGEN SULPHIDE	486.152187	42.899164	443.253023	42.899164	41.208087	0.010463			
4 METHANE	49989.814025	4411.213815	45578.600210	4411.213815	4357.641142	0.006397			
5 ETHANE	3158.166146	278.683696	2879.482450	278.683696	270.232617	0.000059			
6 PROPANE	1052.519485	92.876691	959.642795	92.876691	87.647201	0.000003			
7 ISOBUTANE	227.276147	20.055359	207.220788	20.055359	18.361885	0.000000			
8 BUTANE	382.844847	33.783092	349.061756	33.783092	30.336879	0.000000			
9 ISOPENTANE	155.568700	13.727733	141.840967	13.727733	11.647875	0.000000			
10 PENTANE	155.568700	13.727733	141.840967	13.727733	11.373610	0.000000			
11 HEXANE	179.268619	15.819067	163.449552	15.819067	11.582402	0.000000			
12 CYCLOHEXANE	23.699919	2.091334	21.608585	2.091334	1.373789	0.000186			
13 METHYLCYCLOPENTANE	18.230707	1.608719	16.621988	1.608719	1.121356	0.000012			
14 BENZENE	12.153805	1.072479	11.081326	1.072479	0.709188	0.000000			
15 HEPTANE	185.345521	16.355306	168.990215	16.355306	9.953994	0.000000			
16 METHYLCYCLOHEXANE	48.007528	4.236292	43.771236	4.236292	2.425833	0.000009			
17 METHYLBENZENE	18.230707	1.608719	16.621988	1.608719	0.827789	0.000000			
18 OCTANE	197.499326	17.427785	180.071541	17.427785	8.266518	0.000000			
19 ETHYLBENZENE	77.784350	6.863866	70.920484	6.863866	2.633480	0.000000			
20 NONANE	167.114814	14.746588	152.368227	14.746588	5.078967	0.000000			
21 1-METH-3-ETH-BENZENE	23.699919	2.091334	21.608585	2.091334	0.542839	0.000000			
22 DECAENE	131.261091	11.582774	119.678316	11.582774	2.710785	0.000000			
23 C11 PLUS FRAC	305.060497	26.919226	278.141272	26.919226	0.527906	0.000000			
24 WATER	978.988967	86.388192	892.600775	86.388192	5.032880	81.204966			
TOTALS, kmol/h	60862.000000	5370.600000	55491.400000	5370.600000	5133.399565	81.224823			
VAPOR fraction	0.969561	0.969561	0.969561	0.955834	1.000000	0.000000			
LIQUID 1/H fraction	0.015812	0.015812	0.015812	0.029042	0.000000	0.000000			
LIQUID 2/W fraction	0.014626	0.014626	0.014626	0.015124	0.000000	1.000000			
Enthalpy MJ/h	-70461.885203	-6217.715499	-64244.169705	-6217.715499	-73.038261	-3266.414561			

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* Cust/User "A-CLIENT "		* " *		- SOLUTION -		* Job "OFFSHORE "		* " *	
* Proj/Problem "XYZ GAS FIELD		" *				* Date OCT 06, 2008		" *	
*** STREAM COMPONENT MOLAR FLOW RATES - kmol/h ***									
Stream Id	S4T	S2	S3	S3A	S4	S6			
Temperature, °C	73.043	72.840	72.840	72.840	72.840	72.840			
Pressure, bar	126.0000	125.0000	125.0000	125.0000	125.0000	125.0000			
Phase	LIQUID	MIXED	MIXED	MIXED	VAPOR	LIQUID			
1 NITROGEN	0.828922	1651.671576	825.835788	825.835788	821.581781	0.000110			
2 CARBON DIOXIDE	1.826842	981.251379	490.625690	490.625690	481.188510	0.012760			
3 HYDROGEN SULPHIDE	1.680615	443.253023	221.626511	221.626511	212.884761	0.049502			
4 METHANE	53.566277	45578.600210	22789.300105	22789.300105	22513.536155	0.030105			
5 ETHANE	8.451020	2879.482450	1439.741225	1439.741225	1396.062783	0.000278			
6 PROPANE	5.229487	959.642795	479.821397	479.821397	452.714499	0.000016			
7 ISOBUTANE	1.693474	207.220788	103.610394	103.610394	94.814766	0.000000			
8 BUTANE	3.446213	349.061756	174.530878	174.530878	156.620746	0.000001			
9 ISOPENTANE	2.079857	141.840967	70.920484	70.920484	60.093550	0.000000			
10 PENTANE	2.354122	141.840967	70.920484	70.920484	58.661100	0.000000			
11 HEXANE	4.236664	163.449552	81.724776	81.724776	59.635506	0.000000			
12 CYCLOHEXANE	0.717359	21.608585	10.804292	10.804292	7.065902	0.000892			
13 METHYLCYCLOPENTANE	0.487350	16.621988	8.310994	8.310994	5.771424	0.000059			
14 BENZENE	0.363291	11.081326	5.540663	5.540663	3.648563	0.000000			
15 HEPTANE	6.401313	168.990215	84.495107	84.495107	51.111700	0.000000			
16 METHYLCYCLOHEXANE	1.810450	43.771236	21.885618	21.885618	12.452229	0.000044			
17 METHYLBENZENE	0.780930	16.621988	8.310994	8.310994	4.244637	0.000000			
18 OCTANE	9.161268	180.071541	90.035770	90.035770	42.292941	0.000000			
19 ETHYLBENZENE	4.230387	70.920484	35.460242	35.460242	13.453653	0.000000			
20 NONANE	9.667621	152.368227	76.184113	76.184113	25.873043	0.000000			
21 1-METH-3-ETH-BENZENE	1.548495	21.608585	10.804292	10.804292	2.760661	0.000000			
22 DECAENE	8.871989	119.678316	59.839158	59.839158	13.747169	0.000000			
23 C11 PLUS FRAC	26.391319	278.141272	139.070636	139.070636	2.630316	0.000000			
24 WATER	0.150347	892.600775	446.300387	446.300387	25.875671	386.079935			
TOTALS, kmol/h	155.975612	55491.400000	27745.700000	27745.700000	26518.722067	386.173703			
VAPOR fraction	0.000000	0.955778	0.955778	0.955778	1.000000	0.000000			
LIQUID 1/H fraction	1.000000	0.029094	0.029094	0.029094	0.000000	0.000000			
LIQUID 2/W fraction	0.000000	0.015129	0.015129	0.015129	0.000000	1.000000			
Enthalpy MJ/h	-2878.258249	-64244.169705	-32122.084852	-32122.084852	-263.478986	-15536.222319			

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* Cust/User "A-CLIENT " *		- SOLUTION -				* Job "OFFSHORE " *	
* Proj/Problem "XYZ GAS FIELD " *						* Date OCT 06, 2008 *	
*** STREAM COMPONENT MOLAR FLOW RATES - kmol/h ***							
Stream Id	S5	S9	S9M	S7	S8	S1PSV	
Temperature, °C	72.840	72.337	72.329	72.840	72.840	90.000	
Pressure, bar	125.0000	123.0000	123.0000	125.0000	125.0000	241.0000	
Phase	LIQUID	MIXED	MIXED	MIXED	LIQUID	MIXED	
1 NITROGEN	4.253897	821.581781	980.605846	4.253897	0.000000	29.764460	
2 CARBON DIOXIDE	9.424420	481.188510	574.326990	9.424420	0.000000	17.682945	
3 HYDROGEN SULPHIDE	8.692248	212.884761	254.092848	8.692248	0.000000	7.987779	
4 METHANE	275.733845	22513.536155	26871.177297	275.733845	0.000000	821.363314	
5 ETHANE	43.678164	1396.062783	1666.295401	43.678164	0.000000	51.890607	
6 PROPANE	27.106882	452.714499	540.361700	27.106882	0.000000	17.293541	
7 ISOBUTANE	8.795628	94.814766	113.176651	8.795628	0.000000	3.734287	
8 BUTANE	17.910131	156.620746	186.957625	17.910131	0.000000	6.290376	
9 ISOPENTANE	10.826934	60.093550	71.741425	10.826934	0.000000	2.556089	
10 PENTANE	12.259383	58.661100	70.034710	12.259383	0.000000	2.556089	
11 HEXANE	22.089270	59.635506	71.217909	22.089270	0.000000	2.945493	
12 CYCLOHEXANE	3.737498	7.065902	8.439691	3.737498	0.000000	0.389404	
13 METHYLCYCLOPENTANE	2.539510	5.771424	6.892780	2.539510	0.000000	0.299542	
14 BENZENE	1.892100	3.648563	4.357751	1.892100	0.000000	0.199694	
15 HEPTANE	33.383408	51.111700	61.065693	33.383408	0.000000	3.045341	
16 METHYLCYCLOHEXANE	9.433345	12.452229	14.878062	9.433345	0.000000	0.788793	
17 METHYLBENZENE	4.066357	4.244637	5.072426	4.066357	0.000000	0.299542	
18 OCTANE	47.742830	42.292941	50.559459	47.742830	0.000000	3.245035	
19 ETHYLBENZENE	22.006589	13.453653	16.087132	22.006589	0.000000	1.278045	
20 NONANE	50.311070	25.873043	30.952010	50.311070	0.000000	2.745799	
21 1-METH-3-ETH-BENZENE	8.043631	2.760661	3.303501	8.043631	0.000000	0.389404	
22 DECAENE	46.091989	13.747169	16.457954	46.091989	0.000000	2.156700	
23 C11 PLUS FRAC	136.440320	2.630316	3.158222	136.440320	0.000000	5.012331	
24 WATER	34.344782	25.875671	30.908550	6.868956	27.475825	16.085389	
TOTALS, kmol/h	840.804230	26518.722067	31652.121633	813.328405	27.475825	1000.000000	
VAPOR fraction	0.000000	0.999923	0.999916	0.000130	0.000000	0.969561	
LIQUID 1/H fraction	0.960062	0.000064	0.000069	0.992373	1.000000	0.015812	
LIQUID 2/W fraction	0.039938	0.000013	0.000014	0.007497	0.000000	0.014626	
Enthalpy MJ/h	-16322.357880	-263.478986	-336.517247	-15216.686533	-1105.627411	-1157.732004	

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* Cust/User "A-CLIENT " *		- SOLUTION -				* Job "OFFSHORE " *	
* Proj/Problem "XYZ GAS FIELD " *						* Date OCT 06, 2008 *	
*** STREAM COMPONENT MOLAR FLOW RATES - kmol/h ***							
Stream Id	S10	S4PSV	S11	S2PSV	S13	S5PSV	
Temperature, °C	24.269	72.840	53.939	72.840	43.924	72.840	
Pressure, bar	1.0000	125.0000	1.0000	125.0000	1.0000	125.0000	
Phase	MIXED	VAPOR	MIXED	MIXED	MIXED	LIQUID	
1 NITROGEN	29.764460	30.981198	30.981198	29.764460	29.764460	5.059319	
2 CARBON DIOXIDE	17.682945	18.145238	18.145238	17.682945	17.682945	11.208816	
3 HYDROGEN SULPHIDE	7.987779	8.027716	8.027716	7.987779	7.987779	10.338017	
4 METHANE	821.363314	848.967612	848.967612	821.363314	821.363314	327.940601	
5 ETHANE	51.890607	52.644422	52.644422	51.890607	51.890607	51.948078	
6 PROPANE	17.293541	17.071505	17.071505	17.293541	17.293541	32.239231	
7 ISOBUTANE	3.734287	3.575390	3.575390	3.734287	3.734287	10.460970	
8 BUTANE	6.290376	5.906044	5.906044	6.290376	6.290376	21.301190	
9 ISOPENTANE	2.556089	2.266080	2.266080	2.556089	2.556089	12.876879	
10 PENTANE	2.556089	2.212064	2.212064	2.556089	2.556089	14.580544	
11 HEXANE	2.945493	2.248808	2.248808	2.945493	2.945493	26.271597	
12 CYCLOHEXANE	0.389404	0.266450	0.266450	0.389404	0.389404	4.445146	
13 METHYLCYCLOPENTANE	0.299542	0.217636	0.217636	0.299542	0.299542	3.020335	
14 BENZENE	0.199694	0.137584	0.137584	0.199694	0.199694	2.250346	
15 HEPTANE	3.045341	1.927382	1.927382	3.045341	3.045341	39.704139	
16 METHYLCYCLOHEXANE	0.788793	0.469564	0.469564	0.788793	0.788793	11.219431	
17 METHYLBENZENE	0.299542	0.160062	0.160062	0.299542	0.299542	4.836271	
18 OCTANE	3.245035	1.594833	1.594833	3.245035	3.245035	56.782338	
19 ETHYLBENZENE	1.278045	0.507327	0.507327	1.278045	1.278045	26.173262	
20 NONANE	2.745799	0.975652	0.975652	2.745799	2.745799	59.836842	
21 1-METH-3-ETH-BENZENE	0.389404	0.104102	0.104102	0.389404	0.389404	9.566592	
22 DECAENE	2.156700	0.518395	0.518395	2.156700	2.156700	54.818931	
23 C11 PLUS FRAC	5.012331	0.099187	0.099187	5.012331	5.012331	162.273589	
24 WATER	16.085389	0.975751	0.975751	16.085389	16.085389	40.847537	
TOTALS, kmol/h	1000.000000	1000.000000	1000.000000	1000.000000	1000.000000	1000.000000	
VAPOR fraction	0.978060	1.000000	0.999988	0.955778	0.991703	0.000000	
LIQUID 1/H fraction	0.012144	0.000000	0.000012	0.029094	0.008297	0.960062	
LIQUID 2/W fraction	0.009795	0.000000	0.000000	0.015129	0.000000	0.039938	
Enthalpy MJ/h	-1157.732004	-9.935584	1141.965008	-1157.732004	289.285401	-19412.792294	

*** STREAM COMPONENT MOLAR FLOW RATES - kmol/h ***

Stream Id	S15
Temperature, °C	56.188
Pressure, bar	1.0000
Phase	MIXED
1 NITROGEN	5.059319
2 CARBON DIOXIDE	11.208816
3 HYDROGEN SULPHIDE	10.338017
4 METHANE	327.940601
5 ETHANE	51.948078
6 PROPANE	32.239231
7 ISOBUTANE	10.460970
8 BUTANE	21.301190
9 ISOPENTANE	12.876879
10 PENTANE	14.580544
11 HEXANE	26.271597
12 CYCLOHEXANE	4.445146
13 METHYLCYCLOPENTANE	3.020335
14 BENZENE	2.250346
15 HEPTANE	39.704139
16 METHYLCYCLOHEXANE	11.219431
17 METHYLBENZENE	4.836271
18 OCTANE	56.782338
19 ETHYLBENZENE	26.173262
20 NONANE	59.836842
21 1-METH-3-ETH-BENZENE	9.566592
22 DECANE	54.818931
23 C11 PLUS FRAC	162.273589
24 WATER	40.847537
TOTALS, kmol/h	1000.000000
VAPOR fraction	0.541224
LIQUID 1/H fraction	0.436122
LIQUID 2/W fraction	0.022654
Enthalpy MJ/h	-18915.587066

STREAM SUMMARY						
Stream Id		FEED	S1T	S1	S2T	S3T
Temperature, °C		90.000	90.000	90.000	73.043	73.043
Pressure, bar		241.0000	241.0000	241.0000	126.0000	126.0000
Phase		MIXED	MIXED	MIXED	MIXED	VAPOR
Flow rate	kmol/h	60862.000	5370.600	55491.400	5370.600	5133.400
	kg/h	1316665.937	116185.569	1200480.369	116185.569	101440.883
Vapor fract.		0.969561	0.969561	0.969561	0.955834	1.000000
LIQUID 1/H FRACT		0.015812	0.015812	0.015812	0.029042	0.000000
LIQUID 2/W FRACT		0.014626	0.014626	0.014626	0.015124	0.000000
Mol. weight		21.6336	21.633629	21.633629	21.633629	19.760956
Act. Volume rate	m3/h	6726.090921	593.525417	6132.565505	1039.157311	1018.607923
Enthalpy	MJ/h	-70461.885203	-6217.715499	-64244.169705	-6217.715499	-73.038261
Spec. enthalpy	kJ/kmol	-1157.942	-1157.942	-1157.942	-1157.942	-14.231
	kJ/kg	-53.525	-53.525	-53.525	-53.525	-0.720
*** VAPOUR ***						
Flow rate	kmol/h	59009.447	5207.127	53802.321	5133.400	5133.400
	kg/h	1232607.453	108768.059	1123839.395	101440.883	101440.883
Wt. fraction		0.936158	0.936158	0.936158	0.873094	1.000000
Mol. weight		20.8883	20.8883	20.8883	19.7610	19.7610
Std. Volume rate	N-m3/h	1395269.131866	123121.691689	1272147.440177	121378.428357	121378.428357
Act. Volume rate	m3/h	6607.6401	583.0730	6024.5670	1018.6079	1018.6079
Enthalpy	MJ/h	-25496.156926	-2249.838329	-23246.318597	-73.038261	-73.038261
Spec. enthalpy	kJ/kmol	-432.148	-432.148	-432.148	-14.231	-14.231
	kJ/kg	-20.688	-20.688	-20.688	-0.720	-0.720
Spec. Heat cap.	kJ/kmol °C	64.324449	64.324449	64.324449	55.823748	55.823748
	kJ/kg °C	3.079448	3.079448	3.079448	2.824952	2.824952
Spec. Entropy	kJ/kmol °C	158.4574	158.4574	158.4574	161.7922	161.7922
	kJ/kg °C	7.5859	7.5859	7.5859	8.1875	8.1875
Compressibility		0.893630	0.893630	0.893630	0.868473	0.868473
Density	kg/m3	186.5428	186.5428	186.5428	99.5878	99.5878
Isentr. Exponent		1.240116	1.240116	1.240116	1.288946	1.288946
Viscosity	cP	0.2329E-01	0.2329E-01	0.2329E-01	0.1674E-01	0.1674E-01
Thermal Conduct.	W/m°C	0.068967	0.068967	0.068967	0.053837	0.053837
Reference Gas Status - Temperature 15°C			- Pressure 1 atm			
*** LIQUID 1/H ***						
Flow rate	kmol/h	962.360	84.921	877.439	155.976	
	kg/h	68013.420	6001.657	62011.762	13280.773	
Wt. fraction		0.051656	0.051656	0.051656	0.114307	
Mol. weight		70.6736	70.6736	70.6736	85.1465	
Std. Volume rate	m3/h	97.906818	8.639518	89.267300	18.675457	
Act. Volume rate	m3/h	101.9949	9.0003	92.9946	19.0565	
Enthalpy	MJ/h	-10449.687528	-922.103970	-9527.583557	-2878.258249	
Spec. enthalpy	kJ/kmol	-10860.371	-10860.371	-10860.371	-18456.610	
	kJ/kg	-153.669	-153.669	-153.669	-216.763	
Spec. Heat cap.	kJ/kmol °C	167.988438	167.988438	167.988438	197.984720	
	kJ/kg °C	2.376962	2.376962	2.376962	2.325225	
Spec. Entropy	kJ/kmol °C	175.9659	175.9659	175.9659	220.7376	
	kJ/kg °C	2.4898	2.4898	2.4898	2.5924	
Density	kg/m3	666.8315	666.8315	666.8315	696.9175	
Sp. Grav. 60/60		0.6947	0.6947	0.6947	0.7111	
Viscosity	cP	0.2354	0.2354	0.2354	0.3055	
Thermal Conduct.	W/m°C	0.135027	0.135027	0.135027	0.132768	
Surface Tension	dyn/cm	7.2480	7.2480	7.2480	10.5350	

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* Cust/User "A-CLIENT " *		- SOLUTION -		* Job "OFFSHORE " *	
* Proj/Problem "XYZ GAS FIELD " *				* Date OCT 06, 2008 *	
Stream Id	FEED	S1T	S1	S2T	S3T
*** LIQUID 2/W ***					
Flow rate	kmol/h	890.193	78.553	811.640	81.225
	kg/h	16045.064	1415.853	14629.211	1463.912
Wt. fraction		0.012186	0.012186	0.012186	0.012600
Mol. weight		18.0243	18.0243	18.0243	18.0230
Std. Volume rate	m3/h	16.034350	1.414907	14.619443	1.462687
Act. Volume rate	m3/h	16.4559	1.4521	15.0038	1.4929
Enthalpy	MJ/h	-34516.040749	-3045.773199	-31470.267550	-3266.414561
Spec. enthalpy	kJ/kmol	-38780.704	-38780.704	-38780.704	-40221.791
	kJ/kg	-2151.584	-2151.584	-2151.584	-2231.697
Spec. Heat cap.	kJ/kmol °C	74.863291	74.863291	74.863291	75.047847
	kJ/kg °C	4.153475	4.153475	4.153475	4.164012
Spec. Entropy	kJ/kmol °C	57.8524	57.8524	57.8524	53.4981
	kJ/kg °C	3.2097	3.2097	3.2097	2.9683
Density	kg/m3	975.0321	975.0321	975.0321	980.5580
Sp. Grav. 60/60		1.0006	1.0006	1.0006	1.0008
Viscosity	cP	0.3127	0.3127	0.3127	0.3845
Thermal Conduct.	W/m°C	0.667326	0.667326	0.667326	0.655250
Surface Tension	dyn/cm	60.8121	60.8121	60.8121	63.9404

STREAM SUMMARY						
Stream Id		S5T	S4T	S2	S3	S3A
Temperature, °C		73.043	73.043	72.840	72.840	72.840
Pressure, bar		126.0000	126.0000	125.0000	125.0000	125.0000
Phase		LIQUID	LIQUID	MIXED	MIXED	MIXED
Flow rate	kmol/h	81.225	155.976	55491.400	27745.700	27745.700
	kg/h	1463.912	13280.773	1200480.369	600240.184	600240.184
Vapor fract.		0.000000	0.000000	0.955778	0.955778	0.955778
LIQUID 1/H FRACT		0.000000	1.000000	0.029094	0.029094	0.029094
LIQUID 2/W FRACT		1.000000	0.000000	0.015129	0.015129	0.015129
Mol. weight		18.0230	85.146474	21.633629	21.633629	21.633629
Act. Volume rate	m3/h	1.492938	19.056450	10818.616383	5409.308191	5409.308191
Enthalpy	MJ/h	-3266.414561	-2878.258249	-64244.169705	-32122.084852	-32122.084852
Spec. enthalpy	kJ/kmol	-40221.791	-18456.610	-1157.942	-1157.942	-1157.942
	kJ/kg	-2231.697	-216.763	-53.525	-53.525	-53.525
*** VAPOUR ***						
Flow rate	kmol/h			53037.444	26518.722	26518.722
	kg/h			1047633.518	523816.759	523816.759
Wt. fraction				0.872679	0.872679	0.872679
Mol. weight				19.7527	19.7527	19.7527
Std. Volume rate	N-m3/h			1254062.055985	627031.027992	627031.027992
Act. Volume rate	m3/h			10605.6640	5302.8320	5302.8320
Enthalpy	MJ/h			-526.957973	-263.478986	-263.478986
Spec. enthalpy	kJ/kmol			-9.937	-9.937	-9.937
	kJ/kg			-0.503	-0.503	-0.503
Spec. Heat cap.	kJ/kmol °C			55.707218	55.707218	55.707218
	kJ/kg °C			2.820231	2.820231	2.820231
Spec. Entropy	kJ/kmol °C			161.8354	161.8354	161.8354
	kJ/kg °C			8.1931	8.1931	8.1931
Compressibility				0.868767	0.868767	0.868767
Density	kg/m3			98.7806	98.7806	98.7806
Isentr. Exponent				1.289249	1.289249	1.289249
Viscosity	cP			0.1669E-01	0.1669E-01	0.1669E-01
Thermal Conduct.	W/m°C			0.053702	0.053702	0.053702
Reference Gas Status - Temperature 15°C			- Pressure 1 atm			
*** LIQUID 1/H ***						
Flow rate	kmol/h		155.976	1614.448	807.224	807.224
	kg/h		13280.773	137716.437	68858.219	68858.219
Wt. fraction			1.000000	0.114718	0.114718	0.114718
Mol. weight			85.1465	85.3025	85.3025	85.3025
Std. Volume rate	m3/h		18.675457	193.617360	96.808680	96.808680
Act. Volume rate	m3/h		19.0565	197.5231	98.7616	98.7616
Enthalpy	MJ/h		-2878.258249	-29942.764053	-14971.382027	-14971.382027
Spec. enthalpy	kJ/kmol		-18456.610	-18550.121	-18550.121	-18550.121
	kJ/kg		-216.763	-217.463	-217.463	-217.463
Spec. Heat cap.	kJ/kmol °C		197.984720	198.289643	198.289643	198.289643
	kJ/kg °C		2.325225	2.324547	2.324547	2.324547
Spec. Entropy	kJ/kmol °C		220.7376	221.1917	221.1917	221.1917
	kJ/kg °C		2.5924	2.5930	2.5930	2.5930
Density	kg/m3		696.9175	697.2168	697.2168	697.2168
Sp. Grav. 60/60			0.7111	0.7113	0.7113	0.7113
Viscosity	cP		0.3055	0.3063	0.3063	0.3063
Thermal Conduct.	W/m°C		0.132768	0.132748	0.132748	0.132748
Surface Tension	dyn/cm		10.5350	10.5756	10.5756	10.5756

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* Proj/Problem "XYZ GAS FIELD " *				* Date OCT 06, 2008 *		
Stream Id		S5T	S4T	S2	S3	S3A
*** LIQUID 2/W ***						
Flow rate	kmol/h	81.225		839.508	419.754	419.754
	kg/h	1463.912		15130.413	7565.207	7565.207
Wt. fraction		1.000000		0.012604	0.012604	0.012604
Mol. weight		18.0230		18.0230	18.0230	18.0230
Std. Volume rate	m3/h	1.462687		15.117731	7.558866	7.558866
Act. Volume rate	m3/h	1.4929		15.4293	7.7146	7.7146
Enthalpy	MJ/h	-3266.414561		-33774.396345	-16887.198172	-16887.198172
Spec. enthalpy	kJ/kmol	-40221.791		-40238.483	-40238.483	-40238.483
	kJ/kg	-2231.697		-2232.624	-2232.624	-2232.624
Spec. Heat cap.	kJ/kmol °C	75.047847		75.049213	75.049213	75.049213
	kJ/kg °C	4.164012		4.164091	4.164091	4.164091
Spec. Entropy	kJ/kmol °C	53.4981		53.4468	53.4468	53.4468
	kJ/kg °C	2.9683		2.9655	2.9655	2.9655
Density	kg/m3	980.5580		980.6306	980.6306	980.6306
Sp. Grav. 60/60		1.0008		1.0008	1.0008	1.0008
Viscosity	cP	0.3845		0.3855	0.3855	0.3855
Thermal Conduct.	W/m°C	0.655250		0.655090	0.655090	0.655090
Surface Tension	dyn/cm	63.9404		63.9769	63.9769	63.9769

STREAM SUMMARY						
Stream Id		S4	S6	S5	S9	S9M
Temperature, °C		72.840	72.840	72.840	72.337	72.329
Pressure, bar		125.0000	125.0000	125.0000	123.0000	123.0000
Phase		VAPOR	LIQUID	LIQUID	MIXED	MIXED
Flow rate	kmol/h	26518.722	386.174	840.804	26518.722	31652.122
	kg/h	523816.759	6959.990	69463.435	523816.759	625257.642
Vapor fract.		1.000000	0.000000	0.000000	0.999923	0.999916
LIQUID 1/H FRACT		0.000000	0.000000	0.960062	0.000064	0.000069
LIQUID 2/W FRACT		0.000000	1.000000	0.039938	0.000013	0.000014
Mol. weight		19.7527	18.022952	82.615468	19.752715	19.754052
Act. Volume rate	m3/h	5302.831997	7.097464	99.378730	5382.337217	6423.823348
Enthalpy	MJ/h	-263.478986	-15536.222319	-16322.357880	-263.478986	-336.517247
Spec. enthalpy	kJ/kmol	-9.937	-40238.483	-19416.318	-9.937	-10.634
	kJ/kg	-0.503	-2232.624	-235.020	-0.503	-0.538
*** VAPOUR ***						
Flow rate	kmol/h	26518.722			26516.683	31649.478
	kg/h	523816.759			523667.390	625063.958
Wt. fraction		1.000000			0.999715	0.999690
Mol. weight		19.7527			19.7486	19.7496
Std. Volume rate	N-m3/h	627031.027992			626982.815354	748346.942836
Act. Volume rate	m3/h	5302.8320			5382.1248	6423.5478
Enthalpy	MJ/h	-263.478986			-217.621194	-277.441797
Spec. enthalpy	kJ/kmol	-9.937			-8.208	-8.768
	kJ/kg	-0.503			-0.416	-0.444
Spec. Heat cap.	kJ/kmol °C	55.707218			55.524481	55.528702
	kJ/kg °C	2.820231			2.811565	2.811639
Spec. Entropy	kJ/kmol °C	161.8354			161.9488	161.9508
	kJ/kg °C	8.1931			8.2005	8.2002
Compressibility		0.868767			0.868980	0.868948
Density	kg/m3	98.7806			97.2975	97.3082
Isentr. Exponent		1.289249			1.289759	1.289753
Viscosity	cP	0.1669E-01			0.1660E-01	0.1660E-01
Thermal Conduct.	W/m°C	0.053702			0.053428	0.053427
Reference Gas Status - Temperature 15°C			- Pressure 1 atm			
*** LIQUID 1/H ***						
Flow rate	kmol/h			807.224	1.685	2.186
	kg/h			68858.219	142.981	185.438
Wt. fraction				0.991287	0.000273	0.000297
Mol. weight				85.3025	84.8776	84.8183
Std. Volume rate	m3/h			96.808680	0.201493	0.261384
Act. Volume rate	m3/h			98.7616	0.2059	0.2672
Enthalpy	MJ/h			-14971.382027	-31.337526	-40.648280
Spec. enthalpy	kJ/kmol			-18550.121	-18606.286	-18595.678
	kJ/kg			-217.463	-219.213	-219.241
Spec. Heat cap.	kJ/kmol °C			198.289643	197.486939	197.373512
	kJ/kg °C			2.324547	2.326727	2.327015
Spec. Entropy	kJ/kmol °C			221.1917	224.6393	224.8430
	kJ/kg °C			2.5930	2.6466	2.6509
Density	kg/m3			697.2168	694.3347	694.0539
Sp. Grav. 60/60				0.7113	0.7096	0.7094
Viscosity	cP			0.3063	0.3032	0.3028
Thermal Conduct.	W/m°C			0.132748	0.132267	0.132231
Surface Tension	dyn/cm			10.5756	10.5854	10.5796

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Stream Id	S4	S6	S5	S9	S9M
*** LIQUID 2/W ***					
Flow rate	kmol/h	386.174	33.580	0.354	0.458
	kg/h	6959.990	605.217	6.389	8.247
Wt. fraction		1.000000	0.008713	0.000012	0.000013
Mol. weight		18.0230	18.0230	18.0229	18.0229
Std. Volume rate	m3/h	6.954156	0.604709	0.006383	0.008240
Act. Volume rate	m3/h	7.0975	0.6172	0.0065	0.0084
Enthalpy	MJ/h	-15536.222319	-1350.975854	-14.275756	-18.426996
Spec. enthalpy	kJ/kmol	-40238.483	-40238.483	-40279.242	-40279.823
	kJ/kg	-2232.624	-2232.624	-2234.890	-2234.922
Spec. Heat cap.	kJ/kmol °C	75.049213	75.049213	75.050926	75.050843
	kJ/kg °C	4.164091	4.164091	4.164193	4.164188
Spec. Entropy	kJ/kmol °C	53.4468	53.4468	53.3214	53.3196
	kJ/kg °C	2.9655	2.9655	2.9585	2.9584
Density	kg/m3	980.6306	980.6306	980.8376	980.8426
Sp. Grav. 60/60		1.0008	1.0008	1.0008	1.0008
Viscosity	cP	0.3855	0.3855	0.3881	0.3881
Thermal Conduct.	W/m°C	0.655090	0.655090	0.654702	0.654697
Surface Tension	dyn/cm	63.9769	63.9769	64.0674	64.0688

STREAM SUMMARY						
Stream Id		S7	S8	S1PSV	S10	S4PSV
Temperature, °C		72.840	72.840	90.000	24.269	72.840
Pressure, bar		125.0000	125.0000	241.0000	1.0000	125.0000
Phase		MIXED	LIQUID	MIXED	MIXED	VAPOR
Flow rate	kmol/h	813.328	27.476	1000.000	1000.000	1000.000
	kg/h	68968.321	495.114	21633.629	21633.629	19752.715
Vapor fract.		0.000130	0.000000	0.969561	0.978060	1.000000
LIQUID 1/H FRACT		0.992373	1.000000	0.015812	0.012144	0.000000
LIQUID 2/W FRACT		0.007497	0.000000	0.014626	0.009795	0.000000
Mol. weight		84.7976	18.020004	21.633629	21.633629	19.752715
Act. Volume rate	m3/h	98.888656	0.504305	110.513800	24127.907412	199.965594
Enthalpy	MJ/h	-15216.686533	-1105.627411	-1157.732004	-1157.732004	-9.935584
Spec. enthalpy	kJ/kmol	-18712.552	-40247.316	-1157.942	-1157.942	-9.937
	kJ/kg	-220.673	-2233.480	-53.525	-53.525	-0.503
*** VAPOUR ***						
Flow rate	kmol/h	0.106		969.561	978.060	1000.000
	kg/h	2.089		20252.497	19539.112	19752.715
Wt. fraction		0.000030		0.936158	0.903182	1.000000
Mol. weight		19.7534		20.8883	19.9774	19.7527
Std. Volume rate	N-m3/h	2.500248		22925.127861	23126.086425	23644.843307
Act. Volume rate	m3/h	0.0211		108.5676	24125.4214	199.9656
Enthalpy	MJ/h	-0.001064		-418.917501	-48.005878	-9.935584
Spec. enthalpy	kJ/kmol	-10.064		-432.148	-49.092	-9.937
	kJ/kg	-0.510		-20.688	-2.457	-0.503
Spec. Heat cap.	kJ/kmol °C	55.709881		64.324449	39.711430	55.707218
	kJ/kg °C	2.820273		3.079448	1.987817	2.820231
Spec. Entropy	kJ/kmol °C	161.8375		158.4574	201.3186	161.8354
	kJ/kg °C	8.1929		7.5859	10.0773	8.1931
Compressibility		0.868750		0.893630	0.997338	0.868767
Density	kg/m3	98.7857		186.5428	0.8099	98.7806
Isentr. Exponent		1.289243		1.240116	1.266877	1.289249
Viscosity	cP	0.1669E-01		0.2329E-01	0.1135E-01	0.1669E-01
Thermal Conduct.	W/m°C	0.053702		0.068967	0.033778	0.053702
Reference Gas Status - Temperature 15°C			- Pressure 1 atm			
*** LIQUID 1/H ***						
Flow rate	kmol/h	807.125	27.476	15.812	12.144	
	kg/h	68856.331	495.114	1117.502	1918.001	
Wt. fraction		0.998376	1.000000	0.051656	0.088658	
Mol. weight		85.3106	18.0200	70.6736	157.9370	
Std. Volume rate	m3/h	96.804230	0.494605	1.608669	2.412150	
Act. Volume rate	m3/h	98.7554	0.5043	1.6758	2.3091	
Enthalpy	MJ/h	-14971.362389	-1105.627411	-171.694777	-677.455980	
Spec. enthalpy	kJ/kmol	-18552.374	-40247.316	-10860.371	-55794.988	
	kJ/kg	-217.468	-2233.480	-153.669	-353.274	
Spec. Heat cap.	kJ/kmol °C	198.306564	75.038587	167.988438	315.907078	
	kJ/kg °C	2.324523	4.164183	2.376962	2.000209	
Spec. Entropy	kJ/kmol °C	221.1995	53.4024	175.9659	212.7643	
	kJ/kg °C	2.5929	2.9635	2.4898	1.3471	
Density	kg/m3	697.2409	981.7761	666.8315	830.6286	
Sp. Grav. 60/60		0.7113	1.0010	0.6947	0.7951	
Viscosity	cP	0.3064	0.3857	0.2354	1.286	
Thermal Conduct.	W/m°C	0.132749	0.652446	0.135027	0.138621	
Surface Tension	dyn/cm	10.5768	63.9919	7.2480	25.7660	

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Stream Id		S7	S8	S1PSV	S10
*** LIQUID 2/W ***					S4PSV
Flow rate	kmol/h	6.098		14.626	9.795
	kg/h	109.901		263.630	176.516
Wt. fraction		0.001593		0.012186	0.008159
Mol. weight		18.0230		18.0243	18.0202
Std. Volume rate	m3/h	0.109809		0.263454	0.176335
Act. Volume rate	m3/h	0.1121		0.2704	0.1769
Enthalpy	MJ/h	-245.323080		-567.119726	-431.772139
Spec. enthalpy	kJ/kmol	-40238.482		-38780.704	-44086.845
	kJ/kg	-2232.624		-2151.584	-2446.523
Spec. Heat cap.	kJ/kmol °C	75.049225		74.863291	75.300787
	kJ/kg °C	4.164091		4.153475	4.178687
Spec. Entropy	kJ/kmol °C	53.4468		57.8524	41.0164
	kJ/kg °C	2.9655		3.2097	2.2761
Density	kg/m3	980.6306		975.0321	997.5925
Sp. Grav. 60/60		1.0008		1.0006	1.0010
Viscosity	cP	0.3855		0.3127	0.9070
Thermal Conduct.	W/m°C	0.655091		0.667326	0.609112
Surface Tension	dyn/cm	63.9769		60.8121	72.0989

STREAM SUMMARY						
Stream Id		S11	S2PSV	S13	S5PSV	S15
Temperature, °C		53.939	72.840	43.924	72.840	56.188
Pressure, bar		1.0000	125.0000	1.0000	125.0000	1.0000
Phase		MIXED	MIXED	MIXED	LIQUID	MIXED
Flow rate	kmol/h	1000.000	1000.000	1000.000	1000.000	1000.000
	kg/h	19752.715	21633.629	21633.629	82615.468	82615.468
Vapor fract.		0.999988	0.955778	0.991703	0.000000	0.541224
LIQUID 1/H FRACT		0.000012	0.029094	0.008297	0.960062	0.436122
LIQUID 2/W FRACT		0.000000	0.015129	0.000000	0.039938	0.022654
Mol. weight		19.7527	21.633629	21.633629	82.615468	82.615468
Act. Volume rate	m3/h	27148.052399	194.960235	26089.975661	118.194850	14832.625270
Enthalpy	MJ/h	1141.965008	-1157.732004	289.285401	-19412.792294	-18915.587066
Spec. enthalpy	kJ/kmol	1142.172	-1157.942	289.338	-19416.318	-18919.023
	kJ/kg	57.824	-53.525	13.374	-235.020	-229.001
*** VAPOUR ***						
Flow rate	kmol/h	999.988	955.778	991.703		541.224
	kg/h	19750.354	18879.205	20168.069		16501.256
Wt. fraction		0.999880	0.872679	0.932255		0.199736
Mol. weight		19.7506	19.7527	20.3368		30.4888
Std. Volume rate	N-m3/h	23644.562966	22599.214581	23448.668409		12797.159135
Act. Volume rate	m3/h	27148.0498	191.1227	26088.2613		14749.7766
Enthalpy	MJ/h	1142.629555	-9.496210	744.041397		928.029936
Spec. enthalpy	kJ/kmol	1142.851	-9.937	750.402		1714.998
	kJ/kg	57.864	-0.503	36.899		56.250
Spec. Heat cap.	kJ/kmol °C	40.954657	55.707218	41.265741		58.141082
	kJ/kg °C	2.073592	2.820231	2.029117		1.906967
Spec. Entropy	kJ/kmol °C	204.0008	161.8354	205.3832		243.4114
	kJ/kg °C	10.3288	8.1931	10.0991		7.9836
Compressibility		0.998113	0.868767	0.997712		0.995103
Density	kg/m3	0.7275	98.7806	0.7731		1.1187
Isentr. Exponent		1.256234	1.289249	1.254059		1.168969
Viscosity	cP	0.1240E-01	0.1669E-01	0.1195E-01		0.1085E-01
Thermal Conduct.	W/m°C	0.037977	0.053702	0.036192		0.030005
Reference Gas Status - Temperature 15°C			- Pressure 1 atm			
*** LIQUID 1/H ***						
Flow rate	kmol/h	0.012	29.094	8.297	960.062	436.122
	kg/h	2.361	2481.762	1465.560	81895.661	65705.982
Wt. fraction		0.000120	0.114718	0.067745	0.991287	0.795323
Mol. weight		199.1491	85.3025	176.6431	85.3025	150.6596
Std. Volume rate	m3/h	0.002806	3.489142	1.795140	115.138193	83.249541
Act. Volume rate	m3/h	0.0026	3.5595	1.7144	117.4608	82.4344
Enthalpy	MJ/h	-0.679413	-539.592875	-454.755674	-17806.026051	-18900.064912
Spec. enthalpy	kJ/kmol	-57314.100	-18550.121	-54821.385	-18550.121	-43344.513
	kJ/kg	-287.795	-217.463	-310.351	-217.463	-287.698
Spec. Heat cap.	kJ/kmol °C	407.368584	198.289643	362.479671	198.289643	325.977029
	kJ/kg °C	2.045546	2.324547	2.052046	2.324547	2.163666
Spec. Entropy	kJ/kmol °C	60.8905	221.1917	161.4047	221.1917	252.9356
	kJ/kg °C	0.3058	2.5930	0.9137	2.5930	1.6789
Density	kg/m3	896.4314	697.2168	854.8767	697.2168	797.0698
Sp. Grav. 60/60		0.8415	0.7113	0.8164	0.7113	0.7892
Viscosity	cP	1.590	0.3063	1.304	0.3063	0.7626
Thermal Conduct.	W/m°C	0.134482	0.132748	0.134415	0.132748	0.126433
Surface Tension	dyn/cm	26.5525	10.5756	25.4922	10.5756	22.1872

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Stream Id	S11	S2PSV	S13	S5PSV	S15
*** LIQUID 2/W ***					
Flow rate	kmol/h	15.129		39.938	22.654
	kg/h	272.662		719.807	408.230
Wt. fraction		0.012604		0.008713	0.004941
Mol. weight		18.0230		18.0230	18.0203
Std. Volume rate	m3/h	0.272434		0.719203	0.407813
Act. Volume rate	m3/h	0.2780		0.7340	0.4143
Enthalpy	MJ/h	-608.641994		-1606.766243	-944.129934
Spec. enthalpy	kJ/kmol	-40238.483		-40238.483	-41683.932
	kJ/kg	-2232.624		-2232.624	-2313.163
Spec. Heat cap.	kJ/kmol °C	75.049213		75.049213	75.360611
	kJ/kg °C	4.164091		4.164091	4.181979
Spec. Entropy	kJ/kmol °C	53.4468		53.4468	48.9311
	kJ/kg °C	2.9655		2.9655	2.7153
Density	kg/m3	980.6306		980.6306	985.3570
Sp. Grav. 60/60		1.0008		1.0008	1.0010
Viscosity	cP	0.3855		0.3855	0.4906
Thermal Conduct.	W/m°C	0.655090		0.655090	0.640116
Surface Tension	dyn/cm	63.9769		63.9769	66.9119

* Job "OFFSHORE" *

* Date OCT 06, 2008 *

- Simulation no. 10 - Ended at 12.06.25 on OCT 06, 2008 -

XPSIM, Steady State Process Simulation Software
Version 1.07b
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