SHEET INDEX	
SHEET	DESCRIPTIONS
1	COVER
2	REVISIONS
3	NATURAL GAS TREATMENT CO2 REMOVAL
4	NATURAL GAS TREATMENT NG DRYING
5	LNG COLD BOX, HC HEATER AND BOG COMPRESSOR
6	NITROGEN RECYCLE COMPRESSOR AND TURBINE/BOOSTER
7	LNG STORAGE AND LNG PUMP TRUCK LOADING
8	TRUCK LOADIND BAY
9	CHILLED WATER AND STEAM PRODUCTION
10	VENT, THERMAL OXIDIZER AND HOT FLARE
11	COOLING WATER
12	LIN STORAGE AND NITROGEN DISTRIBUTION
13	INSTRUMENT AIR PRODUCTION PACKAGE
14	DEMI WATER PRODUCTION PACKAGE
15–21	HEAT & MASS BALANCE

NOTE :

ALL PARAMETERS ARE RELATED TO NORMAL OPERATION WHICH IS THE GUARANTEED MODE WITH BOG RECIRCULATION ONLY FROM BOG TANKS. BOG RECIRCULATION FROM TRUCK LOADING BAY IS CONSIDERED ONLY FOR POINTS 5.4, 5.8, 5.9, 5.10, 5.11, 8.3, 8.4, 9.3, 9.5, 9.8, 9.10

Rev. Nr.	Datum	Beschreibung	erstellt	geprüft	freigegeben	Datum	freigegeben
06							
05							
04							
03							
02							
01							
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Projektnummer OGE	Maßnahmenbezeichnung OGE	

Projekt - Nr.		Standort / Projektname
DG-001115	SIAD MACCHINE IMPIANTI	RENZENHOF

	Datum	Name
Erst.	28.04.2023	C.S.
Gepr.	28.04.2023	L.G.
Freig.	28.04.2023	L.G.

bioplusLNG

Zeichnungsbenennung

PROCESS FLOW DIAGRAM
PROZESSFLUSSDIAGRAMM

Schutzvermerk ISO 16016 beachten	Blattgr.	Maßst. 1/	OGE
	A3	____	

F-Tech	Standortkurzname	A-Art	Anl-Nr	A-Teil	D-Art	Lfd.-Nr	Blatt	Änd
520	REZH	700	001	000	SGR	001	01+	0C

Urspr.: I20785 Rev.0C | Ers.f.: | Ers.d.:

520REZH700001000SGR00101+0C.dwg

REV.	INT. REV.	SHEET	REVISIONS	DATE	PREPARED	CHECKED
0A	0	ALL	ISSUE	30/11 2022	SANSEVERINO	L.GALATIOTO
0B	1	ALL	ISSUE	30/01 2023	SANSEVERINO	L.GALATIOTO
0C	1	ALL	ISSUE	28/04 2023	SANSEVERINO	L.GALATIOTO

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C	
	Scale:	Format: A3	
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 2	

CO2 ABSORPTION UNIT
AU1000

FROM PRECOOLER CONDENSATE SEPARATOR SHEET 4

S1003 FLASH VESSEL

PIC

LIC

3.5

3.2

S1001 GUARD SEPARATOR

3.3

3.9

NG TO DRYER UNIT SHEET 4

AMINE FLASH SHEET 4

COOLING WATER SHEET 11

P2013 DOSING PUMP

ANTIFOAM DRUM (REMOVABLE)

CO2 VENT TO THERMAL OXIDIZER SHEET 10

PIC

3.29

H2001 CO2 VENT HEATER

3.28

HW2010 STRIPPER CONDENSER

3.17

S2011 CONDENSATE SEPARATOR

3.15

3.16

3.24

HC LIQUID TO SHEET 10

3.27

3.6

REGENERATION NG SHEET 4

FROM BOG COMPRESSOR SHEET 5

3.1

3.21

3.25

3.20

NATURAL GAS

FISCAL METERING STATION

HW6000 NG PRE-HEATER

STEAM SHEET 9

TW1002 ABSORPTION COLUMN

3.14

F1005 MERCURY TRAP

F1006 DUST FILTER

LIC

F2002 CARTDRIGE FILTER

F2001 CARBON FILTER GUARD

F2003 CARTDRIGE FILTER

P2005A/B LEAN MDEA PUMPS

3.13

3.12

HW2004 MDEA COOLER

3.4

3.26

3.8

3.18

TW2008 STRIPPING COLUMN

P2012A/B CONDENSATE PUMPS

3.19

3.7

HW2007 LEAN/RICH MDEA EXCHANGER

3.11

3.10

HW2009 REBOILER

3.23

3.22

STEAM SHEET 9

CONDENSATE FROM CONDENSATE SEPARATOR SHEET 4

DEMI WATER SHEET 14

STRIPPING UNIT
SU2000

MDEA IBC TANK (REMOVABLE)

P3001

MDEA LOADING PUMP

V3004 MDEA BLOWDOWN TANK

P3002

UNLOADING TO TRUCK

MDEA UNLOADING PUMP

SOLVENT ADDITION AND REMOVAL UNIT
SRU3000

NG TO REDUCTION STATION SHEET 9

BUYER'S SCOPE

VENDOR'S SCOPE

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C
	Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 3

NG FROM CO2 REMOVAL UNIT SHEET 3

NATURAL GAS PRECOOLING AND DRYING UNIT
DU4000

4.1

H4006
RIGENERATION
HEATER

4.10

4.5

V4003
DRYER
VESSEL #1

V4004
DRYER
VESSEL #2

V4005
DRYER
VESSEL #3

F4005
DUST
FILTER

4.6

HW4002
DRYER
AFTERCOOLER

NG TO COLD BOX
SHEET 5

4.7

4.8

FIC

4.9

TO HOT FLARE
FOR MAINTENANCE ONLY
SHEET 10

4.3

ONLY WITH NG
REGENERATION COMPRESSOR STOP

TO VENT
SHEET 10

+C5500
NG
REGENERATION
COMPRESSOR

4.14

HW4001
PRECOOLER

4.2

ST4001
PRECOOLER
CONDENSATE
SEPARATOR

LIC

4.11

4.13

4.15

4.16

REGENERATION NG
SHEET 3

+HW5000
NG
REGENERATION
COOLER

+ST5000
NG
CONDENSATE
SEPARATOR

LIC

COOLING WATER
SHEET 11

STEAM FROM
SHEET 9

MAKE-UP WATER
SHEET 11

CONDENSATE
SHEET 9

4.4

TO FLASH
VESSEL
SHEET 3

4.12

+EW5000
NG REGENERATION HEATER

CHILLED
WATER
SHEET 9

AMINE
FLASH
SHEET 3

CHILLED
WATER
SHEET 9

CONDENSATE TO
CONDENSATE SEPARATOR
SHEET 3

4.17

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI		Dwg N.o: I20785	Sheet: 4

+CB7000
COLD BOX

+HX7000
PRIMARY HEAT
EXCHANGER

5.13

NITROGEN FOR
SEAL GAS AND PURGING
SHEET 6

LIQUID NITROGEN FROM
LIN STORAGE TANKS
SHEET 12

5.12

NITROGEN TO COLD BOX
SHEET 6

ONLY FOR
EMERGENCY STOP

TO LNG DRAIN
KO DRUM
SHEET 10

5.6

5.4

LIN FROM COLD BOX
SHEET 6

+SC7001
LNG
SUBCOOLER

5.2

5.1

NG FROM DRYING UNIT
SHEET 4

LNG

+HX7001
LNG SUBCOOLER
HEAT EXCHANGER

+S7003
LNG
SEPARATOR

5.3

LIC

VENT

+E7001
LIN DRAIN
VAPORIZER

TO HOT FLARE
FOR MAINTENANCE ONLY
SHEET 10

+E7002
LNG DRAIN
VAPORIZER

5.5

LNG TO
STORAGE
SHEET 7

ONLY FOR EMERGENCY
AND PLANT SHUT DOWN

DRAIN TO LNG
DRAIN KO DRUM
SHEET 10

FROM PIC
SHEET 7

5.7

5.9

BOIL–OFF GAS
FROM LNG STORAGE
SHEET 7

FLASHING TO
THERMAL OXIDIZER
SHEET 10

5.8

BOIL–OFF GAS FROM
TRUCK LOADING BAYS
SHEET 8

5.10

5.11

ONLY WITH BOG
COMPRESSOR STOP

TO VENT
SHEET 10

BOG TO
SHEET 3

+C9100
BOG
COMPRESSOR

COOLING WATER
SHEET 11

STEAM FROM
SHEET 9

MAKE–UP WATER
SHEET 11

CONDENSATE
SHEET 9

+EW9000
HC HEATER

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 5

NITROGEN PURGE
SHEET 12

NITROGEN PURGE TO
COLD BOX

NITROGEN FROM
COLD BOX
SHEET 5

6.15

6.18

PIC

6.1

NITROGEN FROM TURBINE SEALS RECOVERY

FROM LNG SUBCOOLER
SHEET 5

6.20

6.22

TO LNG SUBCOOLER
SHEET 5

6.14

+HX7000
PRIMARY HEAT
EXCHANGER

6.13

+HW7400
N2 RECYCLE COMPRESSOR
POST–AFTERCOOLER

6.4

+T7500
WARM TURBINE

6.3

CHILLED
WATER
SHEET 9

6.5

+SE7400
N2 RECYCLE
COMPRESSOR
VENT
SILENCER

6.19

+SE7500
BOOSTER COMPRESSOR
VENT SILENCER

6.16

6.23

HIC

+CB7000
COLD BOX

MAKE UP NITROGEN
SHEET 12

6.2

+C7400
N2 RECYCLE
COMPRESSOR

+E7400/+E7401
N2 RECYCLE COMPRESSOR
INTERCOOLER/AFTERCOOLER

6.6

+C7500
WARM
BOOSTER

6.7

+E7500
WARM BOOSTER
AFTERCOOLER

+C7600
COLD
BOOSTER

6.8

6.9

+E7600
COLD BOOSTER
AFTERCOOLER

6.10

+HW7601
COLD BOOSTER
POST–AFTERCOOLER

6.11

CHILLED
WATER
SHEET 9

6.12

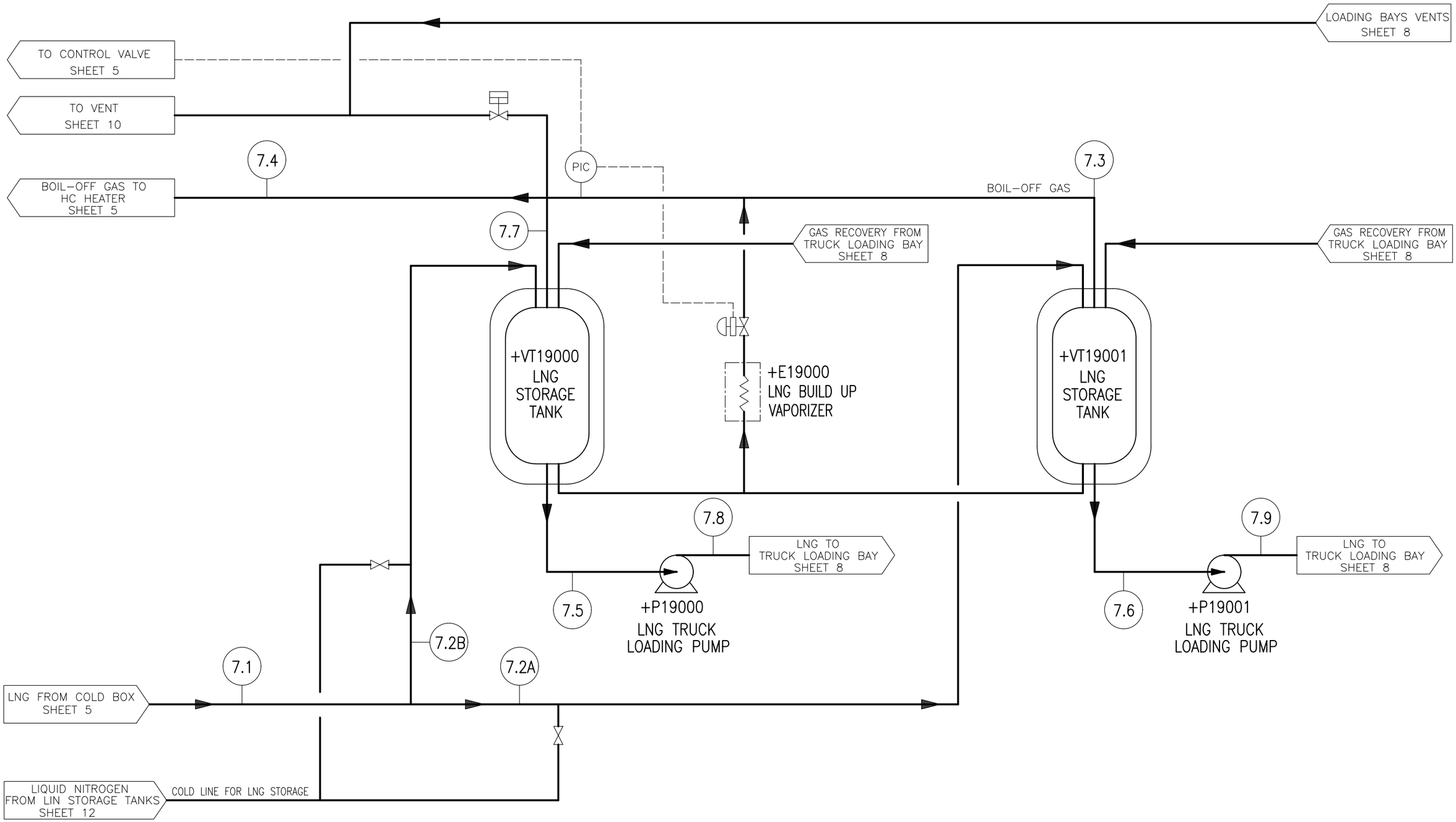
6.21

+T7600
COLD
TURBINE

6.17

LOSS OF
MACHINE
SEALS

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 6



Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 7

TO HC HEATER
SHEET 5

TO VENT
LNG STORAGE TANK
SHEET 7

PIC FROM
LNG TANK

PIC

PIC

8.3

TO LNG
STORAGE TANK +VT19000
SHEET 7

FROM TRUCK

HIC

8.1

FIC

FROM LNG STORAGE
PUMP +P19000
SHEET 7

TRUCK FILLING

DRAIN COLLECTOR

PIC FROM
LNG TANK

PIC

PIC

8.4

TO LNG
STORAGE TANK +VT19001
SHEET 7

FROM TRUCK

HIC

8.2

FIC

FROM LNG STORAGE
PUMP +P19001
SHEET 7

TRUCK FILLING

DRAIN COLLECTOR

NITROGEN FOR PURGE
SHEET 12

TRUCK LOADING BAY TL19000/19001

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 8

+RS6000
NG REDUCTION STATION

9.1

NG FROM
NG PREHEATER
SHEET 3

9.2

9.13

TO
THERMAL OXIDIZER
SHEET 10

+GRM15200
GAS REGULATION
MODULE

EXHAUST

+SG15200
STEAM BOILER
WITH PRE–HEATER

9.3

DRAIN BOILER AND
CONDENSATE TRAPS

9.11

9.10

+P15100A
CONDENSATE
RECOVERY PUMPS

9.12

COOLING WATER PURGE
SHEET 11

+P15100B

9.9

DEMI WATER
SHEET 14

+V15100
WATER SERVICE
MODULE WSMT

9.6

9.7

9.4

9.5

+HW15000
ATMOSPHERIC STEAM
CONDENSER

+P15000
CONDENSATE
TRANSFER PUMP

9.8

NG PREHEATER
SHEET 3

HC HEATER
SHEET 5

REBOILER
SHEET 3

NATURAL GAS
REGENERATION HEATER
SHEET 4

SATURATED STEAM

COOLING
WATER
SHEET 11

COOLING WATER
SHEET 11

FRU11000
CHILLER

9.30

+V11000
CHILLED WATER
EXPANSION DRUM

P11000A

P11000B
CHILLED WATER
PUMPS

9.29

9.20

9.28

9.21

DRYER PRECOOLER AND
AFTERCOOLER
SHEET 4

9.27

9.22

NATURAL GAS
REGENERATION COOLER
SHEET 4

9.26

9.23

NITROGEN RECYCLE COMPRESSOR
POST–AFTERCOOLER
SHEET 6

9.25

9.24

COLD BOOSTER POST–AFTERCOOLER
SHEET 6

WATER FILLING
SYSTEM
SHEET 11

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 9

SNUFFING SYSTEM
FL16001

+FL16000
VENT

FROM TANK LNG
SHEET 7

SAFETY VALVES COLLECTOR
FROM FEED GAS MODULE

SAFETY VALVES COLLECTOR
NATURAL GAS TREATMENT

SAFETY VALVES COLLECTOR
COLD BOX

FROM NG REGENERATION
HEATER AREA

SAFETY VALVES COLLECTOR OF
NG REGENERATION COMPRESSOR

SAFETY VALVES COLLECTOR
OF BOG COMPRESSOR

SAFETY VALVES COLLECTOR
OF HC HEATER MODULE

PURGING NITROGEN
SHEET 12

NATURAL GAS FROM
GAS TREATMENT UNITS
SHEET 4

NATURAL GAS FROM
COLD BOX
SHEET 5

NATURAL GAS FROM
LNG STORAGE TANKS AREA

NATURAL GAS FROM
NG COMPRESSOR AREA

NATURAL GAS FROM
BOG COMPRESSOR AREA

+FL16002
HOT FLARE

NATURAL GAS
FROM CLIENT

EMERGENCY FROM
LNG SEPARATOR
FOGLIO 5

DRAIN FROM
COLD BOX
FOGLIO 5

+V16000
LNG
DRAIN
KO DRUM

HC LIQUID FROM
FLASH VESSEL
SHEET 3

CO2 VENT FROM
SHEET 3

+V16200
HEAVY HC
KO DRUM

+H16201
HEAVY HC
SUPERHEATER

ANALYZER VENT

FLASHING FROM
HC HEATER
SHEET 5

FROM NG
REDUCTION STATION
SHEET 9

+IN16200
THERMAL
OXIDIZER

+B16200
THERMAL OXIDIZER
BLOWER

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C
	Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 10

COOLING WATER PURGE TO STEAM BOILER SHEET 9

FILLING WATER CIRCUITS FOR CHILLER SHEET 9

TO DEMI WATER PRODUCTION FOGLIO 14

TO HC HEATER SHEET 5

TO NG REGENERATION HEATER SHEET 4

WATER FILLING SYSTEM

11.17

+E8000
COOLING WATER
AIR COOLER

+E8001
COOLING WATER
AIR COOLER

+E8002
COOLING WATER
AIR COOLER

11.4 — N2 RECYCLE COMPRESSOR MV MOTOR AND LUBE OIL SYSTEM SHEET 6 — 11.3

11.6 — TURBINE/BOOSTER OIL COOLER SHEET 6 — 11.5

11.8 — NG REGENERATION COMPRESSOR SHEET 4 — 11.7

11.10 — MDEA COOLER AND STRIPPER CONDENSER SHEET 3 — 11.9

11.12 — CHILLER SHEET 9 — 11.11

11.14 — ATMOSPHERIC STEAM CONDENSER SHEET 9 — 11.13

11.16 — BOG COMPRESSOR SHEET 5 — 11.15

+P8000A
COOLING WATER
PUMP

11.1

11.2

+V8000
COOLING WATER
EXPANSION DRUM

+V8001
COOLING WATER
EXPANSION DRUM

+P8000B
COOLING WATER
PUMP

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 11

12.1

LIQUID NITROGEN TO COLD BOX SHEET 5

LIQUID NITROGEN TO LNG STORAGE TANKS FOR COOLDOWN SHEET 7

NITROGEN FOR NG REGENERATION COMPRESSOR SHEET 4

NITROGEN FOR BOG COMPRESSOR SHEET 5

NITROGEN FOR EMERGENCY PURGING FOR LIQUEFACTOR AND GAS TREATMENT

NITROGEN FOR COLD FLARE PURGING SHEET 10

NITROGEN FOR PLANT PURGING

NITROGEN TO TRUCK LOADING BAY SHEET 8

NITROGEN FOR PURGING SHEET 6

EMERGENCY INSTRUMENTAL NITROGEN SHEET 13

MAKE UP NITROGEN SHEET 6

NITROGEN FOR COLD BOX HEATING

NITROGEN FOR TURBINE SEALS

12.4

+H17000
NITROGEN BACK–UP
TRIM HEATER

12.3

+E17002A
LIN BACK–UP
VAPORIZER

+E17002B
LIN BACK–UP
VAPORIZER

12.2

BUYER'S SCOPE

VENT

12.5

+VT17000
LIN
STORAGE
TANK

+E17000
LIN
BUILD–UP
VAPORIZER

LOADING
FROM TANK

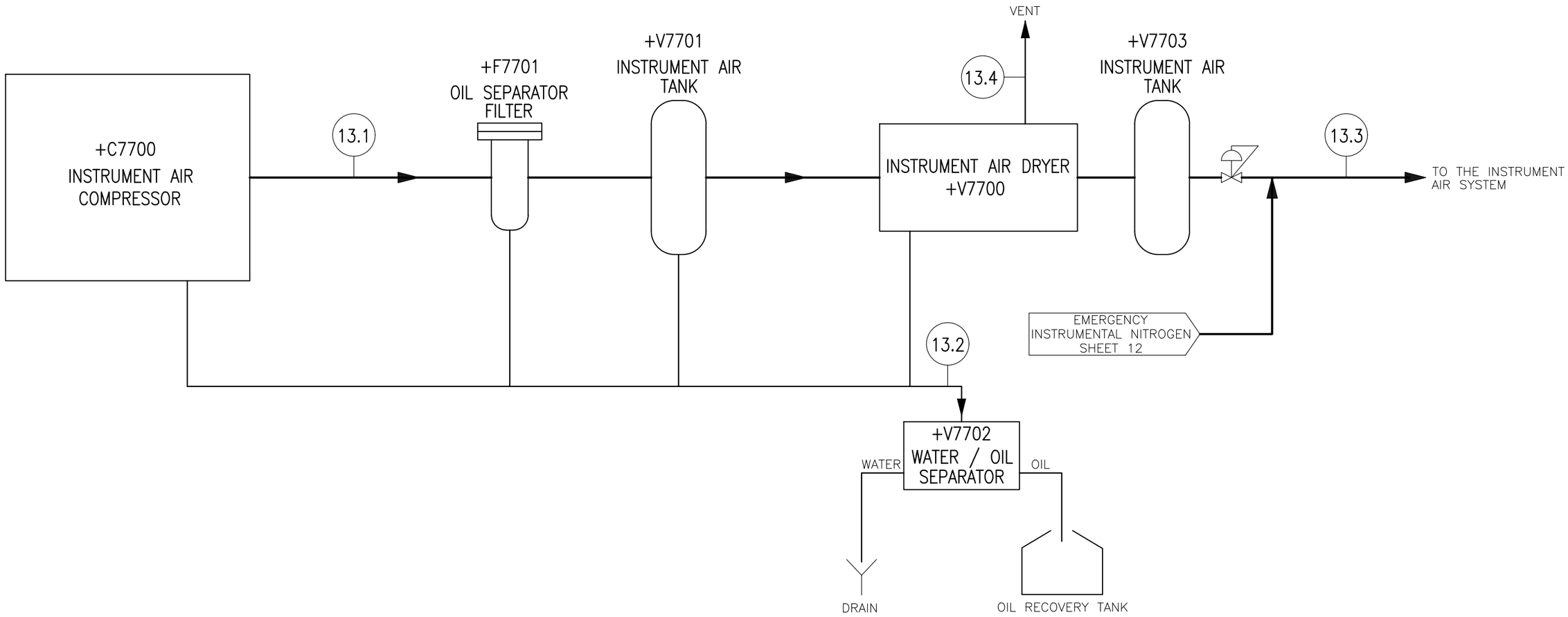
VENT

12.6

+VT17001
LIN
STORAGE
TANK

+E17001
LIN BUILD–UP
VAPORIZER

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 12



INSTRUMENT AIR PACKAGE IA7700

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		Job: L43374	Alteration: 0C
		Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785		Sheet: 13

14.1

WATER FILLING
SHEET 11

CARTRIDGE FILTER

CARTRIDGE FILTER

14.2

OSMOSIS
VESSEL

DRAIN

OSMOSIS
VESSEL

14.3

STORAGE TANK

14.4

DEMI WATER TO
STRIPPING UNIT
SHEET 3

DEMI WATER TO
CONDENSATE RECOVERY TANK
SHEET 9

CIRCULATING PUMP

DELIVERY
PUMP

DOSING PUMP

CIRCULATING PUMP

ANTI–ALGAE

DISPERDANT

DEMI WATER PACKAGE DW8000

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C	
	Scale:	Format: A3	
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 14	

3,1		
Mol Vap Frac	1,0000	-
T	30,00	°C
P	43,90	bara
n	7757	Nm^3/h
m	6413	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0242	-
CO_2	0,0195	-
Hydrogen	0,0010	-
H_2O	0,0002	-
Ucarsol AP-814	0,0000	-

3,2		
Mol Vap Frac	1,0000	-
T	50,06	°C
P	43,81	bara
n	7616	Nm^3/h
m	6124	kg/h
Mol Frac		
Methane	0,8799	-
Ehane	0,0701	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0247	-
CO_2	40	ppm
Hydrogen	0,0011	-
H_2O	0,0028	-
Ucarsol AP-814	0,0000	-

3,3		
Mol Vap Frac	1,0000	-
T	50,06	°C
P	43,80	bara
n	7616	Nm^3/h
m	6124	kg/h
Mol Frac		
Methane	0,8799	-
Ehane	0,0701	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0247	-
CO_2	40	ppm
Hydrogen	0,0011	-
H_2O	0,0028	-
Ucarsol AP-814	0,0000	-

3,4		
Mol Vap Frac	0,0000	-
T	53,76	°C
P	43,82	bara
n	7323	Nm^3/h
m	10270	kg/h
Mol Frac		
Methane	0,0012	-
Ehane	0,0002	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0208	-
Hydrogen	0,0000	-
H_2O	0,8447	-
Ucarsol AP-814	0,1331	-

3,5		
Mol Vap Frac	0,1206	-
T	54,59	°C
P	6,15	bara
n	7340	Nm^3/h
m	10283	kg/h
Mol Frac		
Methane	0,0012	-
Ehane	0,0002	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0208	-
Hydrogen	0,0000	-
H2O	0,8450	-
Ucarsol AP-814	0,1328	-

3,6		
Mol Vap Frac	0,0000	-
T	54,59	°C
P	6,15	bara
n	7331	Nm^3/h
m	10276	kg/h
Mol Frac		
Methane	0,0002	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0208	-
Hydrogen	0,0000	-
H2O	0,8460	-
Ucarsol AP-814	0,1330	-

3,7		
Mol Vap Frac	0,0000	-
T	99,00	°C
P	5,85	bara
n	7331	Nm^3/h
m	10276	kg/h
Mol Frac		
Methane	0,0002	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0208	-
Hydrogen	0,0000	-
H2O	0,8460	-
Ucarsol AP-814	0,1330	-

3,8		
Mol Vap Frac	0,0007	-
T	98,84	°C
P	1,9	bara
n	7331	Nm^3/h
m	10276	kg/h
Mol Frac		
Methane	0,0002	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0208	-
Hydrogen	0,0000	-
H2O	0,8460	-
Ucarsol AP-814	0,1330	-

3,9		
Mol Vap Frac	1,0000	-
T	53,02	°C
P	3,00	bara
n	9	Nm^3/h
m	8	kg/h
Mol Frac		
Methane	0,8427	-
Ehane	0,1000	-
Propane	0,0176	-
i-Butane	0,0018	-
n-Butane	0,0027	-
i-Pentane	0,0003	-
n-Pentane	0,0003	-
neo-Pentane	0,0000	-
C6+	0,0004	-
N2	0,0072	-
CO2	0,0042	-
Hydrogen	0,0005	-
H2O	0,0222	-
Ucarsol AP-814	0,0000	-

3,10		
Mol Vap Frac	0,0000	-
T	123,00	°C
P	1,9	bara
n	7173	Nm^3/h
m	9974	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0002	-
Hydrogen	0,0000	-
H2O	0,8639	-
Ucarsol AP-814	0,1359	-

3,11		
Mol Vap Frac	0,0000	-
T	81,87	°C
P	1,8	bara
n	7173	Nm^3/h
m	9974	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0002	-
Hydrogen	0,0000	-
H2O	0,8639	-
Ucarsol AP-814	0,1359	-

3,12		
Mol Vap Frac	0,0000	-
T	78,81	°C
P	1,8	bara
n	7980	Nm^3/h
m	11090	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0002	-
Hydrogen	0,0000	-
H2O	0,8641	-
Ucarsol AP-814	0,1359	-

3,13		
Mol Vap Frac	0,0000	-
T	81,52	°C
P	47,25	bara
n	7980	Nm^3/h
m	11090	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0002	-
Hydrogen	0,0000	-
H2O	0,8641	-
Ucarsol AP-814	0,1357	-

3,14		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	47,00	bara
n	7182	Nm^3/h
m	9981	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0002	-
Hydrogen	0,0000	-
H2O	0,8641	-
Ucarsol AP-814	0,1357	-

3,15		
Mol Vap Frac	1,0000	-
T	113,20	°C
P	1,9	bara
n	589	Nm^3/h
m	651	kg/h
Mol Frac		
Methane	0,0022	-
Ehane	0,0005	-
Propane	0,0001	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,2571	-
Hydrogen	0,0000	-
H2O	0,7394	-
Ucarsol AP-814	0,0006	-

3,16		
Mol Vap Frac	0,2746	-
T	45,00	°C
P	1,7	bara
n	589	Nm^3/h
m	651	kg/h
Mol Frac		
Methane	0,0022	-
Ehane	0,0005	-
Propane	0,0001	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,2571	-
Hydrogen	0,0000	-
H2O	0,7394	-
Ucarsol AP-814	0,0006	-

3,17		
Mol Vap Frac	1,0000	-
T	44,80	°C
P	1,69	bara
n	162	Nm^3/h
m	305	kg/h
Mol Frac		
Methane	0,0081	-
Ehane	0,0019	-
Propane	0,0003	-
i-Butane	0,0000	-
n-Butane	0,0001	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,9250	-
Hydrogen	0,0000	-
H2O	0,0645	-
Ucarsol AP-814	0,0000	-

3,18		
Mol Vap Frac	0,0000	-
T	44,82	°C
P	3,50	bara
n	431	Nm^3/h
m	349	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0015	-
Hydrogen	0,0000	-
H2O	0,9977	-
Ucarsol AP-814	0,0009	-

3,19		
Mol Vap Frac	0,1563	-
T	123,00	°C
P	1,9	bara
n	8502	Nm^3/h
m	11051	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0002	-
Hydrogen	0,0000	-
H2O	0,8849	-
Ucarsol AP-814	0,1149	-

3,20		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	44,00	bara
n	7527	Nm^3/h
m	6227	kg/h
Mol Frac		
Methane	0,8678	-
Ehane	0,0695	-
Propane	0,0155	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N_2	0,0212	-
CO_2	0,0202	-
Hydrogen	0,0000	-
H_2O	0,0000	-
Ucarsol AP-814	0,0000	-

3,21		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	44,00	bara
n	7848	Nm^3/h
m	6489	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0242	-
CO2	0,0195	-
Hydrogen	0,0010	-
H2O	0,0002	-
Ucarsol AP-814	0,0000	-

3,22		
Mol Vap Frac	1,0000	-
T	151,92	°C
P	5,00	bara
n	1369	Nm^3/h
m	1100	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0000	-
Hydrogen	0,0000	-
H2O	1,0000	-
Ucarsol AP-814	0,0000	-

3,23		
Mol Vap Frac	0,0000	-
T	148,40	°C
P	4,55	bara
q	1369	Nm^3/h
m	1100	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0000	-
Hydrogen	0,0000	-
H2O	1,0000	-
Ucarsol AP-814	0,0000	-

3,24		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	4,00	bara
q	0,10	m^3/h
m	100	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0000	-
Hydrogen	0,0000	-
H2O	1,0000	-
Ucarsol AP-814	0,0000	-

3,25		
Mol Vap Frac	1,0000	-
T	30,00	°C
P	43,90	bara
n	7848	Nm^3/h
m	6489	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0242	-
CO2	0,0195	-
Hydrogen	0,0010	-
H2O	0,0002	-
Ucarsol AP-814	0,0000	-

3,26		
Mol Vap Frac	1,0000	-
T	30,00	°C
P	43,90	bara
n	92	Nm^3/h
m	76	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0242	-
CO_2	0,0195	-
Hydrogen	0,0010	-
H_2O	0,0002	-
Ucarsol AP-814	0,0000	-

3,27		
Mol Vap Frac	0,0000	-
T	54,59	°C
P	6,15	bara
n	0,05	Nm^3/h
m	0,20	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	1,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	-
Ucarsol AP-814	0,0000	-

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C
	Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 15

3,28		
Mol Vap Frac	1,0000	-
T	70,00	°C
P	1,64	bara
n	162	Nm^3/h
m	305	kg/h
Mol Frac		
Methane	0,0081	-
Ehane	0,0019	-
Propane	0,0003	-
i-Butane	0,0000	-
n-Butane	0,0001	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,9250	-
Hydrogen	0,0000	-
H2O	0,0645	-
Ucarsol AP-814	0,0000	-

3,29		
Mol Vap Frac	1,0000	-
T	69,79	°C
P	1,4	bara
n	162	Nm^3/h
m	305	kg/h
Mol Frac		
Methane	0,0081	-
Ehane	0,0019	-
Propane	0,0003	-
i-Butane	0,0000	-
n-Butane	0,0001	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,9250	-
Hydrogen	0,0000	-
H2O	0,0645	-
Ucarsol AP-814	0,0000	-

4,1		
Mol Vap Frac	1,0000	-
T	50,06	°C
P	43,80	bara
n	7616	Nm^3/h
m	6124	kg/h
Mol Frac		
Methane	0,8799	-
Ehane	0,0701	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_{6+}	0,0005	-
N_2	0,0247	-
CO_2	40	ppm
Hydrogen	0,0011	-
H_2O	0,0028	-
Ucarsol AP-814	0,0000	-

4,2		
Mol Vap Frac	0,9978	-
T	20,00	°C
P	43,70	bara
n	7616	Nm^3/h
m	6124	kg/h
Mol Frac		
Methane	0,8799	-
Ehane	0,0701	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0028	-
Ucarsol AP-814	0,0000	-

4,3		
Mol Vap Frac	1,0000	-
T	20,00	°C
P	43,65	bara
n	7599	Nm^3/h
m	6111	kg/h
Mol Frac		
Methane	0,8818	-
Ehane	0,0702	-
Propane	0,0157	-
i-Butane	0,0020	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0006	-
Ucarsol AP-814	0,0000	-

4,4		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	43,70	bara
q	0,01	m^3/h
m	13	kg/h
Mol Frac		
Methane	0,0009	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	0,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,9978	-
Ucarsol AP-814	0,0012	-

4,5		
Mol Vap Frac	1,0000	-
T	25,00	°C
P	43,60	bara
n	7594	Nm^3/h
m	6107	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm
Ucarsol AP-814	0,0000	-

4,6		
Mol Vap Frac	1,0000	-
T	25,00	°C
P	43,60	bara
n	7348	Nm^3/h
m	5909	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm
Ucarsol AP-814	0,0000	-

4,7		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	43,50	bara
n	7348	Nm^3/h
m	5909	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm
Ucarsol AP-814	0,0000	-

4,8		
Mol Vap Frac	1,0000	-
T	25,00	°C
P	43,60	bara
n	246	Nm^3/h
m	198	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm
Ucarsol AP-814	0,0000	-

4,9		
Mol Vap Frac	1,0000	-
T	0,85	°C
P	3,07	bara
n	246	Nm^3/h
m	198	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm
Ucarsol AP-814	0,0000	-

4,10		
Mol Vap Frac	1,0000	-
T	250,00	°C
P	3,02	bara
n	246	Nm^3/h
m	198	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm
Ucarsol AP-814	0,0000	-

4,11		
Mol Vap Frac	1,0000	-
T (max / min)	220 / 25	°C
P	3,00	bara
n	251	Nm^3/h
m	202	kg/h
Mol Frac		
Methane	0,8655	-
Ehane	0,0689	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0243	-
CO2	0	ppm
Hydrogen	0,0010	-
H2O	0,0191	-
Ucarsol AP-814	0,0000	-

4,12		
Mol Vap Frac	1,0000	-
T	53,02	°C
P	3,00	bara
n	9	Nm^3/h
m	8	kg/h
Mol Frac		
Methane	0,8427	-
Ehane	0,1000	-
Propane	0,0176	-
i-Butane	0,0018	-
n-Butane	0,0027	-
i-Pentane	0,0003	-
n-Pentane	0,0003	-
neo-Pentane	0,0000	-
C6+	0,0004	-
N2	0,0072	-
CO2	0,0042	ppm
Hydrogen	0,0005	-
H2O	0,0222	-
Ucarsol AP-814	0,0000	-

4,13		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	2,85	bara
n	257	Nm^3/h
m	207	kg/h
Mol Frac		
Methane	0,8786	-
Ehane	0,0700	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0246	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0042	-
Ucarsol AP-814	0,0000	-

4.14 (depressurization only)		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	3,00	bara
n	154	Nm^3/h
m	127	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_{6+}	0,0005	-
N_2	0,0248	-
CO_2	40	ppm
Hydrogen	0,0011	-
H_2O	0,0000	-
Ucarsol AP-814	0,0000	-

4.15 [rev.0C]		
Mol Vap Frac	1,0000	-
T	35,00	°C
P	2,55	bara
n	257 ÷ 414	Nm^3/h
m	207 ÷ 334	kg/h
Mol Frac		
Methane	0,8786	-
Ehane	0,0700	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_{6+}	0,0005	-
N_2	0,0246	-
CO_2	0,0000	-
Hydrogen	0,0011	-
H_2O	0,0042	-
Ucarsol AP-814	0,0000	-

4.16 [rev.0C]		
Mol Vap Frac	1,0000	-
T	50,00	°C
P	44,50	bara
n	257 ÷ 414	Nm^3/h
m	207 ÷ 334	kg/h
Mol Frac		
Methane	0,8786	-
Ehane	0,0700	-
Propane	0,0156	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_{6+}	0,0005	-
N_2	0,0246	-
CO_2	0,0000	-
Hydrogen	0,0011	-
H_2O	0,0042	-
Ucarsol AP-814	0,0000	-

4,17		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	2,85	bara
n	4	Nm^3/h
m	3	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_{6+}	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-
Ucarsol AP-814	0,0000	-

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C	
	Scale:	Format: A3	
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 16	

5,1		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	43,40	bara
n	7348	Nm^3/h
m	5909	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N2	0,0247	-
CO2	40	ppm
Hydrogen	0,0011	-
H2O	0,0000	ppm

5,2		
Mol Vap Frac	0,0000	-
T	-168,00	°C
P	43,15	bara
n	7348	Nm^3/h
m	5909	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0247	-
CO_2	40	ppm
Hydrogen	0,0011	-
H_2O	0,0000	ppm

5,3		
Mol Vap Frac	0,0039	-
T	-166,53	°C
P	1,50	bara
n	7348	Nm^3/h
m	5909	kg/h
Mol Frac		
Methane	0,8823	-
Ehane	0,0703	-
Propane	0,0157	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0247	-
CO_2	40	ppm
Hydrogen	0,0011	-
H_2O	0,0000	ppm

5,4		
Mol Vap Frac	1,0000	-
T	-166,53	°C
P	1,50	bara
n [note 1]	29 ÷ 60	Nm^3/h
m [note 1]	22 ÷ 59	kg/h
Mol Frac		
Methane	0,4030	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3653	-
CO_2	40	ppm
Hydrogen	0,2317	-
H_2O	0,0000	ppm

5,5		
Mol Vap Frac	0,0000	-
T	-166,53	°C
P	1,50	bara
n [note 2]	7318	Nm^3/h
m [note 2]	5886	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

5,6		
Mol Vap Frac	1,0000	-
T	-175,52	°C
P	6,60	bara
n	886	Nm^3/h
m	1107	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

5,7		
Mol Vap Frac	1,0000	-
T	-166,53	°C
P	1,40	bara
n	64	Nm^3/h
m	54	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

5,8		
Mol Vap Frac	1,0000	-
T	-166,53	°C
P	1,40	bara
n [note 1]	0 ÷ 236	Nm^3/h
m [note 1]	0 ÷ 253	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

5,9		
Mol Vap Frac	1,0000	-
T	20,00	°C
P	1,30	bara
n [note 1]	29 ÷ 60	Nm^3/h
m [note 1]	22 ÷ 59	kg/h
Mol Frac		
Methane	0,4030	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3653	-
CO_2	0	ppm
Hydrogen	0,2317	-
H_2O	0,0000	ppm

5,10		
Mol Vap Frac	1,0000	-
T	20,00	°C
P	1,20	bara
n [note 1]	64 ÷ 300	Nm^3/h
m [note 1]	54 ÷ 307	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

5,11		
Mol Vap Frac	1,0000	-
T	50,00	°C
P	44,50	bara
n [note 1]	64 ÷ 300	Nm^3/h
m [note 1]	54 ÷ 307	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

5,12		
Mol Vap Frac	0,0000	-
T	-167,98	°C
P	11,00	bara
n	195,00	Nm^3/h
m	243,71	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

5,13		
Mol Vap Frac	1,0000	-
T	8,09	°C
P	10,85	bara
n	195,00	Nm^3/h
m	243,71	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,1		
Mol Vap Frac	1,0000	-
T	8,09	°C
P	6,10	bara
n	44600	Nm^3/h
m	55741	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,2		
Mol Vap Frac	1,0000	-
T	126,00	°C
P	28,30	bara
n	44740	Nm^3/h
m	55916	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,3		
Mol Vap Frac	1,0000	-
T	40,00	°C
P	28,20	bara
n	17150	Nm^3/h
m	21434	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,4		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	28,12	bara
n	17150	Nm^3/h
m	21434	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,5		
Mol Vap Frac	1,0000	-
T	6,45	°C
P	27,77	bara
n	17150	Nm^3/h
m	21434	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,6		
Mol Vap Frac	1,0000	-
T	40,00	°C
P	28,20	bara
n	27450	Nm^3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,7		
Mol Vap Frac	1,0000	-
T	88,20	°C
P	41,97	bara
n	27450	Nm^3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,8		
Mol Vap Frac	1,0000	-
T	40,00	°C
P	41,87	bara
n	27450	Nm^3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,9		
Mol Vap Frac	1,0000	-
T	105,43	°C
P	68,96	bara
n	27450	Nm^3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	ppm

[note 1] The higher value is related to case with BoG recirculation from truck loading bay

[note 2] The value includes the thermal losses

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C	
	Scale:	Format: A3	
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 17	

6,10		
Mol Vap Frac	1,0000	-
T	40,00	°C
P	68,86	bara
n	27450	Nm3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,11		
Mol Vap Frac	1,0000	-
T	10,00	°C
P	68,78	bara
n	27450	Nm3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,12		
Mol Vap Frac	1,0000	-
T	-69,20	°C
P	68,38	bara
n	26564	Nm3/h
m	33200	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,13		
Mol Vap Frac	1,0000	-
T	-160,42	°C
P	6,60	bara
n	27450	Nm3/h
m	34307	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,14		
Mol Vap Frac	1,0000	-
T	-77,03	°C
P	6,50	bara
n	17150	Nm3/h
m	21434	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,15		
Mol Vap Frac	1,0000	-
T	8,09	°C
P	10,85	bara
n	195,00	Nm3/h
m	243,71	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6.16 (shut down only)		
Mol Vap Frac	1,0000	-
T	8,09	°C
P	1,50	bara
n	7000	Nm3/h
m	8749	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,17		
Mol Vap Frac	1,0000	-
T	40,00	°C
P	28,20	bara
n	140	Nm3/h
m	175	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	-
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,18		
Mol Vap Frac	1,0000	-
T	8,09	°C
P	10,85	bara
n	140	Nm3/h
m	175	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	-
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,19		
Mol Vap Frac	1,0000	-
T	8,09	°C
P	6,10	bara
n	44740	Nm3/h
m	55916	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,20		
Mol Vap Frac	1,0000	-
T	-175,52	°C
P	6,60	bara
n	886	Nm^3/h
m	1107	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

6,21		
Mol Vap Frac	1,0000	-
T	-159,88	°C
P	6,60	bara
n	26564	Nm3/h
m	33200	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6,22		
Mol Vap Frac	0,0000	-
T	-160,00	°C
P	68,33	bara
n	886	Nm3/h
m	1107	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

6.23 (shut down only)		
Mol Vap Frac	1,0000	-
T	-4,20	°C
P	1,50	bara
n	4000	Nm3/h
m	5000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C6+	0,0000	-
N2	1,0000	-
CO2	0,0000	ppm
Hydrogen	0,0000	-
H2O	0,0000	ppm

7.1 [note 2]		
Mol Vap Frac	0,0000	-
T	-166,53	°C
P	1,50	bara
n	7318	Nm^3/h
m	5886	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

7.2 A/B		
Mol Vap Frac	0,0000	-
T	-166,53	°C
P	1,50	bara
n	3659	Nm^3/h
m	2943	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

7,3		
Mol Vap Frac	1,0000	-
T	-166,53	°C
P	1,50	bara
n	32	Nm^3/h
m	27	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0,0000	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

7,4		
Mol Vap Frac	1,0000	-
T	-166,53	°C
P	1,50	bara
n	64	Nm^3/h
m	54	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0,0000	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

7,5		
Mol Vap Frac	0,0000	-
T	-166,53	°C
P	1,50	bara
n	42768	Nm^3/h
m	34400	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

7,6		
Mol Vap Frac	0,0000	-
T	-166,53	°C
P	1,50	bara
n	42768	Nm^3/h
m	34400	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

7,7		
Mol Vap Frac	1,0000	-
T	-166,53	°C
P	1,50	bara
n	32	Nm^3/h
m	27	kg/h
Mol Frac		
Methane	0,4810	-
Ehane	0,0001	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,3951	-
CO_2	0,0000	ppm
Hydrogen	0,1238	-
H_2O	0,0000	ppm

7,8		
Mol Vap Frac	0,0000	-
T	-166,16	°C
P	6,50	bara
n	42768	Nm^3/h
m	34400	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

7,9		
Mol Vap Frac	0,0000	-
T	-166,16	°C
P	6,50	bara
n	42768	Nm^3/h
m	34400	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	40	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

[note 2] The value includes the thermal losses

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C	
	Scale:	Format: A3	
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 18	

8,1		
Mol Vap Frac	0,0000	-
T	-166,16	°C
P	6,50	bara
n	42394	Nm^3/h
m	34400	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	0,0000	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

8,2		
Mol Vap Frac	0,0000	-
T	-166,16	°C
P	6,50	bara
n	42394	Nm^3/h
m	34400	kg/h
Mol Frac		
Methane	0,8842	-
Ehane	0,0706	-
Propane	0,0158	-
i-Butane	0,0021	-
n-Butane	0,0024	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0234	-
CO_2	0,0000	ppm
Hydrogen	0,0002	-
H_2O	0,0000	ppm

8,3		
Mol Vap Frac	1,0000	-
T	-166,67	°C
P	1,50	bara
n [note 1]	292 ÷ 517	Nm^3/h
m [note 1]	298 ÷ 528	kg/h
Mol Frac		
Methane	0,3927	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,5911	-
CO_2	0,0000	ppm
Hydrogen	0,0162	-
H_2O	0,0000	ppm

8,4		
Mol Vap Frac	1,0000	-
T	-166,67	°C
P	1,50	bara
n [note 1]	292 ÷ 517	Nm^3/h
m [note 1]	298 ÷ 528	kg/h
Mol Frac		
Methane	0,3927	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,5911	-
CO_2	0,0000	ppm
Hydrogen	0,0162	-
H_2O	0,0000	ppm

9,1		
Mol Vap Frac	1,0000	-
T	30,00	°C
P	43,90	bara
n	92	Nm^3/h
m	76	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0242	-
CO_2	0,0195	-
Hydrogen	0,0010	-
H_2O	0,0002	-

9,2		
Mol Vap Frac	1,0000	-
T	6,00	°C
P	2,00	bara
n	92	Nm^3/h
m	76	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0242	-
CO_2	0,0195	-
Hydrogen	0,0010	-
H_2O	0,0002	-

9,3		
Mol Vap Frac	1,0000	-
T	151,85	°C
P	5,00	bara
n [note 1]	1571 ÷ 1606	Nm^3/h
m [note 1]	1263 ÷ 1291	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,4		
Mol Vap Frac	0,0939	-
T	104,10	°C
P	1,17	bara
n	173	Nm^3/h
m	139	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,5		
Mol Vap Frac	0,0939	-
T	104,10	°C
P	1,17	bara
n [note 1]	18 ÷ 53	Nm^3/h
m [note 1]	15 ÷ 43	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,6		
Mol Vap Frac	0,0939	-
T	104,10	°C
P	1,17	bara
n	1369	Nm^3/h
m	1100	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,7		
Mol Vap Frac	0,0939	-
T	104,10	°C
P	1,17	bara
n	11	Nm^3/h
m	9	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,8		
Mol Vap Frac	0,0000	-
T	85,00	°C
P	1,10	bara
n [note 1]	1571 ÷ 1606	Nm^3/h
m [note 1]	1263 ÷ 1291	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,9		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	1,01	bara
q	0,04	m^3/h
m	40	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,10		
Mol Vap Frac	0,0000	-
T	85,09	°C
P	5,50	bara
n [note 1]	1621 ÷ 1656	Nm^3/h
m [note 1]	1303 ÷ 1331	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,11		
Mol Vap Frac	0,0000	-
T	60,00	°C
P	1,01	bara
q	0,085	m^3/h
m	85	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,12		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	2,00	bara
q	0,045	m^3/h
m	45	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,13		
Mol Vap Frac	1,0000	-
T	6,00	°C
P	2,00	bara
n	7	Nm^3/h
m	6	kg/h
Mol Frac		
Methane	0,8650	-
Ehane	0,0690	-
Propane	0,0154	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C_6+	0,0005	-
N_2	0,0242	-
CO_2	0,0195	-
Hydrogen	0,0010	-
H_2O	0,0002	-

9,20		
Mol Vap Frac	0,0000	-
T	5,00	°C
P	3,50	bara
q	134	m^3/h
m	134000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,21		
Mol Vap Frac	0,0000	-
T	5,00	°C
P	3,00	bara
q	37	m^3/h
m	37000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,22		
Mol Vap Frac	0,0000	-
T	5,00	°C
P	3,00	bara
q	6	m^3/h
m	6000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,23		
Mol Vap Frac	0,0000	-
T	5,00	°C
P	3,00	bara
q	34	m^3/h
m	34000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,24		
Mol Vap Frac	0,0000	-
T	5,00	°C
P	3,00	bara
q	57	m^3/h
m	57000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

[note 1] The higher value is related to case with BoG recirculation from truck loading bay

Title		Job	Alteration
PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)		L43374	0C
		Scale	Format A3
SIAD MACCHINE IMPIANTI	Dwg N.o I20785		Sheet 19

9,25		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	2,50	bara
q	57	m^3/h
m	57000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,26		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	2,50	bara
q	34	m^3/h
m	34000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,27		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	2,50	bara
q	6	m^3/h
m	6134	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,28		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	2,50	bara
q	37	m^3/h
m	37000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,29		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	2,00	bara
q	134	m^3/h
m	134000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

9,30		
Mol Vap Frac	0,0000	-
T	10,00	°C
P	4,00	bara
q	134	m^3/h
m	134000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

10,1		
Mol Vap Frac	1,0000	-
T	10,00	°C
P (min/max)	3 / 9	bara
n	6	Nm^3/h
m	5	kg/h
Mol Frac		
Methane	0,8678	-
Ehane	0,0695	-
Propane	0,0155	-
i-Butane	0,0020	-
n-Butane	0,0023	-
i-Pentane	0,0005	-
n-Pentane	0,0004	-
neo-Pentane	0,0000	-
C6+	0,0005	-
N_2	0,0212	-
CO_2	0,0202	-
Hydrogen	0,0000	-
H_2O	0,0000	-

11,1		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	2,00	bara
q	243	m^3/h
m	243000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,2		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	4,00	bara
q	243	m^3/h
m	243000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,3		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	50	m^3/h
m	50000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,4		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	50	m^3/h
m	50000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,5		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	15	m^3/h
m	15000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,6		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	15	m^3/h
m	15000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,7		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	4	m^3/h
m	4000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,8		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	4	m^3/h
m	4000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,9		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	59	m^3/h
m	59000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,10		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	59	m^3/h
m	59000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,11		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	101	m^3/h
m	101000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,12		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	101	m^3/h
m	101000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,13		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	9	m^3/h
m	9000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,14		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	9	m^3/h
m	9000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,15		
Mol Vap Frac	0,0000	-
T	40,00	°C
P	3,50	bara
q	5	m^3/h
m	5000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,16		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	3,00	bara
q	5	m^3/h
m	5000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

11,16		
Mol Vap Frac	0,0000	-
T	50,00	°C
P	2,50	bara
q	243	m^3/h
m	243000	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

Title: PROCESS FLOW DIAGRAM
PLANT TYPE: LNG LIQUEFACTION PLANT
CLIENT: BIOPLUS LNG GmbH
LOCATION: RENZENHOF (Germany)

Job: L43374
Alteration: 0C
Scale:
Format: A3
Dwg N.o: 120785
Sheet: 20

12,1		
Mol Vap Frac	0,0000	-
T	-167,98	°C
P	11,00	bara
n	195,00	Nm^3/h
m	243,71	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0	ppm
Hydrogen	0,0000	-
H_2O	0,0000	ppm

12,2		
Mol Vap Frac	0,0000	-
T	-168,00	°C
P	11,00	bara
n [note 3]	0 ÷ 2200	Nm^3/h
m [note 3]	0 ÷ 2750	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	-

12,3		
Mol Vap Frac	1,0000	-
T (min/max)	-35 / 25	°C
P	10,70	bara
n [note 3]	0 ÷ 2200	Nm^3/h
m [note 3]	0 ÷ 2750	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	-

12,4		
Mol Vap Frac	1,0000	-
T (min/max)	10	°C
P	10,40	bara
n [note 3]	0 ÷ 2200	Nm^3/h
m [note 3]	0 ÷ 2750	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	-

12,5		
Mol Vap Frac	1,0000	-
T	-168,00	°C
P	1,01	bara
n	2	Nm^3/h
m	3	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	-

12,6		
Mol Vap Frac	1,0000	-
T	-168,00	°C
P	1,01	bara
n	2	Nm^3/h
m	3	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	1,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	0,0000	-

13,1		
Mol Vap Frac	1,0000	-
T	42,00	°C
P	13,00	bara
n	600	Nm^3/h
m	763	kg/h
Mol Frac		
O_2	0,2094	-
Ar	0,0093	-
N_2	0,7803	-
CO_2	0,0000	-
H_2O	0,0010	-

13,2		
Mol Vap Frac	0,0001	-
T	42,00	°C
P	1,01	bara
n	28	Nm^3/h
m	23	kg/h
Mol Frac		
O_2	0,0000	-
Ar	0,0000	-
N_2	0,0002	-
CO_2	0,0000	-
H_2O	0,9998	-

13,3		
Mol Vap Frac	1,0000	-
T	42,00	°C
P	8,00	bara
n	300	Nm^3/h
m	388	kg/h
Mol Frac		
O_2	0,2096	-
Ar	0,0093	-
N_2	0,7811	-
CO_2	0,0000	-
H_2O	0,0000	-

13,4		
Mol Vap Frac	1,0000	-
T	42,00	°C
P	1,01	bara
n	100	Nm^3/h
m	130	kg/h
Mol Frac		
O_2	0,2083	-
Ar	0,0092	-
N_2	0,7764	-
CO_2	0,0000	-
H_2O	0,0060	-

14.1 [rev.0C]		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	2,50	bara
q	0,55	m^3/h
m	550	kg/h
Caratteristiche		
pH	6-8	-
Cond.	< 500	$\mu s/cm^2$
Durezza	< 250	ppm
Alc. M	< 200	ppm
Cl	< 50	ppm
Fe	< 0.05	ppm
Mn	< 0.02	ppm
SO_4	< 50	ppm
Mol Frac		
H_2O	1,0000	-
-	-	-
-	-	-
-	-	-

14.2 [rev.0C]		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	1,01	bara
q	0,25	m^3/h
m	250	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

14.3 [rev.0C]		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	7,00	bara
q	0,30	m^3/h
m	300	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

14.4 [rev.0C]		
Mol Vap Frac	0,0000	-
T	20,00	°C
P	2,00	bara
q	0,3	m^3/h
m	300	kg/h
Mol Frac		
Methane	0,0000	-
Ehane	0,0000	-
Propane	0,0000	-
i-Butane	0,0000	-
n-Butane	0,0000	-
i-Pentane	0,0000	-
n-Pentane	0,0000	-
neo-Pentane	0,0000	-
C_6+	0,0000	-
N_2	0,0000	-
CO_2	0,0000	-
Hydrogen	0,0000	-
H_2O	1,0000	-

[note 3] Maximum consumption during purging for emergency and seal gas back-up to turbines and nitrogne recycle compressor

Title: PROCESS FLOW DIAGRAM PLANT TYPE: LNG LIQUEFACTION PLANT CLIENT: BIOPLUS LNG GmbH LOCATION: RENZENHOF (Germany)	Job: L43374	Alteration: 0C
	Scale:	Format: A3
SIAD MACCHINE IMPIANTI	Dwg N.o: I20785	Sheet: 21