Filter aid
From truck

Bleaching earth
From truck

A

Crude Waste Oils

XXX
Extraction fan
x1

XXX
Wet scrubber
x1

T3030/31
Crude Oil Storage Tank
x2

T3032/33
Crude Oil Storage Tank
x2

XXX
Crude Feed Pump
x1

S3002A-I
Prefiltration filters
x9

S3001
Lamellar filter
x1

T3010/12
Condensate return tank
x2

P3016/17
Condensate return booster pump
x2

Nitrogen

Caustic soda
From piperack

LP steam
From piperack

XXX
Pressure reducer station
x1

Condensate return
To piperack

Cooling water supply
From piperack

Cooling water return
To piperack

In water
From piperack

Instrument air

Plant air

V3008
Air buffer vessel
x1

Condensate
To CWZ

E3081A/B
Guard cooler
x2

Condensate
To condensate return

Pretreated oil
To Storage

B

Signal exchange

Citric acid
From truck

T3003
Citric acid storage tank
x1

Fire water

Electrical power

Potable water

P3032/13
Hydrofoor unit
x2

XXX
?
x1

V3019
Lye storage tank
x1

P3021A/B
Lye dosing pump
x2

M3014
Lye static mixer
x1

V3035
Hot water tank
x1

P3015A/B
Hot water pump
x2

E3013A/B
Hot water heater
x2

E3033A/B
Final cooler
x2

P3034A/B
Tempered water circulation pump
x2

XXX
?
x1

P3036A/B
Citric acid dosing pump
x2

P3022A/B
Citric acid dosing pump
x2

P3081
Citric acid dosing pump
x1

V3010
Feedtank
x1

S3010A/B
Feed strainer
x2

P3010A/B
Feed pump
x2

E3010A/B
Feed heater
x2

M3010A/B
Acid conditioning mixer
x2

V3011
Acid retention tank
x1

P3011A/B
Reactor pump
x2

M3011
Neutralization mixer
x1 + static mixer

M3013
Water static mixer
x1

V3012A/B
Retention tank
x2

P3016A-D
Separator feed pump
x4

S3011A-D
Gum separator
x4

V3013
Buffer tank
x1

P3012A/B
Transfer pump
x2

E3011A/B
Economizer
x2

C

E3012A/B
Washing heater
x2

M3012
Washing mixer
x1 + static mixer

S3012A-C
Washing separator
x3

V3014
Buffer tank
x1

P3013A/B
Transfer pump
x2

E3031A/B
Feed heater
x2

M3030A/B
Acid conditioning mixer
x2

T3049
CIP tank
x1

P3057
CIP pump
x1

K3030
Bleaching earth
transportation blower
x1

S3032
Dust filter for bleaching
earth day tank
x1

V3032A
Bleaching earth day tank
x1

X3030/31
Rotary valve
x2

X1034/35
Screw conveyor
x2

V1045A/B
Slurry mixer
x2

V1040A
Bleacher cyclone
x1

V1041A/B
1st stage bleacher
x2

P3030A-C
Transfer pump
x3

E3032A-C
Trim heater
x3

S3057A-C
Dust filter
x3

T3057A-C
Bleaching earth
storage silo
x3

X1057A-C
Rotary valve
x3

S3032/33
Dust filter for bleaching
earth day tank
x2

K3031/32
Bleaching earth
transportation blower
x2

V3032B/C
Bleaching earth day tank
x2

A3032A/B
Bleaching earth
proportioning system
x2

V1038A/39A
Bleacher cyclone
x2

V1042A/B
2nd stage bleacher
x2

P3033A-M
Bleaching filter feed pump
x13

S3058A-D
Dust filter
x2 + x2 future

T3058A-D
Filter aid storage silo
x2 + x2 future

X3058A-D
Rotary valve
x2 + x2 future

K3033
Filter aid transportation
blower
x1

S3035
Filter aid dust
filter
x1

V3033
Filter aid day tank
x1

X1032A/B
Filter aid dosing
x2

V1034A/B
Filter aid dosing tank
x2

X1033A/B
Filter aid dosing
x2

V3033A/B
Precoat tank
x2

J3030A/B
Filter aid eductor
x2

P3033A-C
Precoat pump
x3

S3030A-M
Bleaching filter
x13

V2043
Break tank
x1

V3036A/B
Cyclone
x2

V3044A/B
Condenser
x2

V3035
Settling tank
x1

P3035A-C
Condensing water pump
x3

E3034A-C
Water cooler
x3

To truck

P3033A/B
Filtered oil pump
x2

S3033A/B
Polish filtration unit
x2

V3050A
Vacuum system
x1

P3052
Vacuum pump
x1

V3050B
Vacuum system
x1

P3051A/B
Vacuum pump
x2

V3050
Hotwell
x1

P3050A/B
Barometric pump
x2

E3050A/B
Barometric cooler
x2

Ventgas
To safe location

Ventgas
To safe location

Ventgas
To safe location

Spent transport air
To safe location

V3088
Filter Leaf Cleaning Tank
x1

To truck

XX01/018/022/024
Receiving hopper with screw
conveyer
x4 + (x1 filter 13)

XX02/019/023/025
Screw conveyer
x4

XX28/027/030/029
Screw conveyer
x4

V3030A/B
Feed tank
x2

To truck

V3037
Filter Leaf Cleaning Tank
x1

To truck

T3010A-C
Gums tank
x3

Gums
To truck

P3035A/B
Gums discharge pump
x2

V3068/78
Vacuum pump seal
x2

P3069/79
Vacuum pump
x1 (x2 total)

50HE02
...
X...

E3064/74
Condenser
x1 (x2 total)

V3063/73
Effect 3
Seperator vessel
x1 (x2 total)

P3068/78
Condenser
Condensate pump
x1 (x2 total)

P3064/74
Effect 3
Product pump
x1 (x2 total)

P3063/73
Effect 3
Recirculation pump
x1 (x2 total)

E3063/73
Effect 3
Evaporator
x1 (x2 total)

P3067/77
Effect 3
Condensate pump
x1 (x2 total)

V3062/72
Effect 2
Seperator vessel
x1 (x2 total)

P3066/76
Effect 2
Condensate pump
x1 (x2 total)

P3062/72
Effect 2
Recirculation pump
x1 (x2 total)

E3062/72
Effect 2
Evaporator
x1 (x2 total)

J3040/70
Thermo vapour recompresser
x1 (x2 total)

V3061/71
Effect 1
Seperator vessel
x1 (x2 total)

P3065/75
Effect 1
Condensate pump
x1 (x2 total)

P3061/71
Effect 1
Recirculation pump
x1 (x2 total)

E3061/71
Effect 1
Evaporator
x1 (x2 total)

E3060/70
Preheater
x1 (x2 total)

D

P1007A/B
Condensate pump
x2

NO1-PTU-T3007
Condensate tank
x1

P3005
Concentrate pump
x1

T3005
Concentrate tank
x1

Concentrate
To truck

P1082
CIP pump
x1

V3082
Caustic CIP tank
x1

V3081
Acid CIP tank
x1

T3004
Equalisation tank
x1

P1083
Sludge pump
x1

P1070A/B
Waste water feed pump
x2 (N+1)

P3004
Rainwater collection pit pump
x1

P1020A/B
Off-spec pump
x2

V3018
Off-spec tank
x1

P3017A/B
Recovered water pump
x2

P3014A/B
Recovered oil pump
x2

V3016
Settling tank
x1

REVISIONS				
REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	27/01/2021	Updated final remarks	...	...
B	07/05/2021	Updated final remarks	...	... er
C	01/07/2021	Updated changes	...	... er

BiLFINGER

Client:
Shell Pernis

Project Name:
Renewable Fuel Pre-Treatment Unit

Title:
Renewable Fuel Pre-Treatment Unit – Overall Project PFD

SIZE	PROJECT NO	DWG NO	REV
A0	T54306	31420003	C
SCALE	1:1	18/12/2020	SHEET 1 OF 1