

DICK CHURNS

19

$$T_o \text{ EDC DENSITY} = 10.9148 - 0.0066441 T$$

$$\text{FEED TO C-102} = \frac{8.3454 \text{ \#/gal}}{1.268 - 0.0015 T} \times CR$$

$$\text{FEED TO C-103} = 30601.0 \sqrt{G_f} \times CR$$

$$\text{REFLUX} = 38000 \times CR \times G_f$$

$$\text{STEAM TO H-105 A \& B} = \frac{5535}{5535} \times CR$$

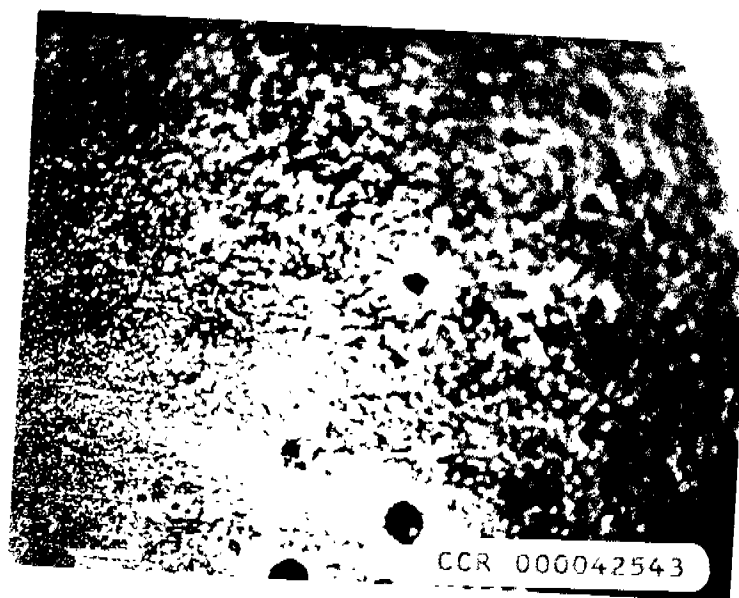
$$\text{ENTHALPY} = \frac{150 \text{ \# STEAM}}{1225.2} = 1232.3 \text{ BTU/LB}$$

AREA

$$\begin{aligned} \text{H-105A} &= \frac{6263}{2384} \text{ FT}^2 \\ \text{H-105B} &= 4502 \text{ FT}^2 \\ \text{H-106} &= 5630 \text{ FT}^2 \end{aligned}$$

$$\begin{aligned} 1.3684 \text{ \#EDC} / \text{\#Cl}_2 &- \text{DIRECT} \\ 0.7491 \text{ \#EDC} / \text{\#VCM} &- \text{OKY} \\ 2651.1135 \text{ \#EDC} / \text{TON Cl}_2 &- \text{R-304} \end{aligned}$$

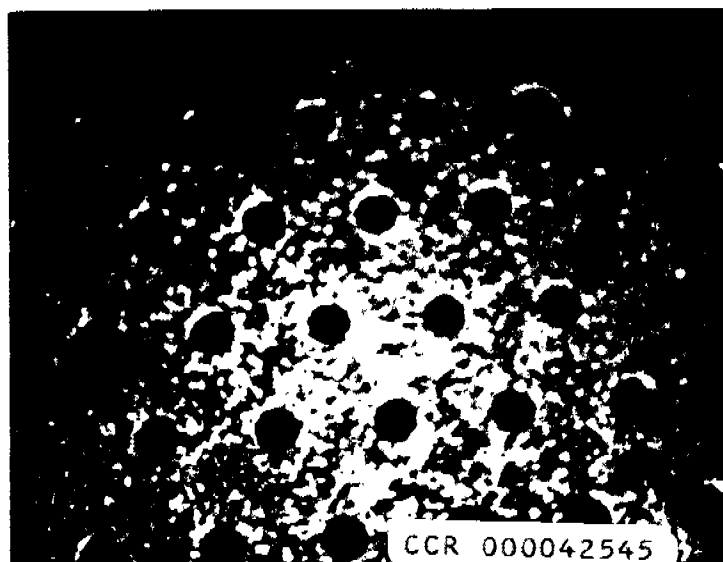
CCR 000042542



Nov 72 turn around
after wash

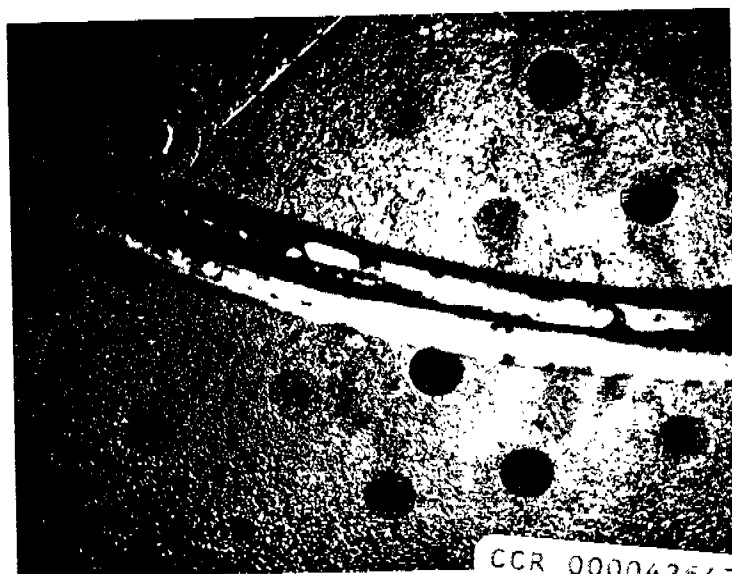
looking up
at underneath
of tray 51
outside edge

CCR 000042544



—
—
—
—
—
—
—

CCR 000042546



CCR 000042547

Nov 72 Tennessee
after wash

looking down
at top of
hang 50
outside edge

CCR 000042548

DATE 6/28/73
TIME 330 PM

FLOWS

FEED TO C-102 8.5
FEED TO C-103 8.7
PURE EDC PRODUCT 7.6
C-102 REFLUX 3.8
LIGHT ENDS DRAW 6.7 x 0.45
STEAM TO H-105A 8.2
STEAM TO H-105B 0
VCM TOTALIZER 633005
C-103 TOTALIZER 366362
C-203 EDC TOTALIZER 679500
REWORK 0

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 43

TEMPERATURES

C-102 FEED (T-453)
C-102 BOTTOM 139.0 °C
C-102 TRAY 30 136.5 °C
C-102 TRAY 67
C-102 OVERHEAD 98 °C
AFTER H-106 52 °C
CW TO H-106
CW FROM H-106

PRESSURES

BOTTOM 52
BOTTOM FEED
TOP FEED
OVERHEAD
S-102 38
STEAM TO H-105A
STEAM TO H-105B

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT

USED

MADE BY

RWC

CHECKED BY

DATE

PAGE

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CCR 000042549

TITLE LIGHT ENDS COLUMN

FIELD

STATE

DATE 6-7-73

TIME 330 PM

FLOWS

FEED TO C-102 7.5

FEED TO C-103 7.7

PURE EDC PRODUCT 6.7

C-102 REFLUX 4.0

LIGHT ENDS DRAW 3.7 x 0.45

STEAM TO H-105A 0

STEAM TO H-105B 7.4

VCM TOTALIZER 226065

C-103 TOTALIZER 250009

C-203 EDC TOTALIZER 192369

REWORK 0

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 39 TPD

TEMPERATURES

C-102 FEED (T-453) 115°F

C-102 BOTTOM 132.5°C

C-102 TRAY 30 129.7

C-102 TRAY 67 120°C

C-102 OVERHEAD 91

AFTER H-106 53

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM 43

BOTTOM FEED 37

TOP FEED 34.5

OVERHEAD 32.5

S-102 31

STEAM TO H-105A

STEAM TO H-105B

H-105 A

DUTY

FLUX

ΔT

COEFFICIENT

H-105 B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT

USED

MADE BY

RWC

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CCR 000042550

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE

OF

STATE

DATE 5/24/73

TIME 2 PM

FLOWS

FEED TO C-102 8.55

FEED TO C-103 8.8

PURE EDC PRODUCT 7.4

C-102 REFLUX 4.2

LIGHT ENDS DRAW 6.1 x 0.45

STEAM TO H-105A 0

STEAM TO H-105B 7.75

VCM TOTALIZER 950346

C-103 TOTALIZER 167075

C-203 EDC TOTALIZER 867310

REWORK 2.3

LIQUID CHLORINE 5.5 units

TOTAL CHLORINE

CHLORINE TO R-304 97 TPD

TEMPERATURES

C-102 FEED (T-453)

C-102 BOTTOM 130.5°C

C-102 TRAY 30 127.5

C-102 TRAY 67 119°C

C-102 OVERHEAD 92.5°C

AFTER H-106 46.0°C

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM 40

BOTTOM FEED 33

TOP FEED 33

OVERHEAD 29

S-102 28.0 PSIG

STEAM TO H-105A

STEAM TO H-105B

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT

USED

MADE BY

RWC

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE OF

STATE

CCR 000042551

5-16-73

DATE 5/2/73

H-105 A

TIME 330 P.M.

DUTY

FLOWS

FLUX

FEED TO C-102 7.75

 ΔT

FEED TO C-103 7.90

COEFFICIENT

PURE EDC PRODUCT 6.90

C-102 REFLUX 3.80

H-105 B

LIGHT ENDS DRAW 7.0 x 4.5 GPM

DUTY

STEAM TO H-105A

FLUX

STEAM TO H-105B 7.40 (new)

 ΔT

VCM TOTALIZER 786053

COEFFICIENT

C-103 TOTALIZER 126327

C-203 EDC TOTALIZER 682181

CONDENSER

REWORK 0

DUTY

LIQUID CHLORINE 0

FLUX

TOTAL CHLORINE

 ΔT

CHLORINE TO R-304 40 TPD

COEFFICIENT

TEMPERATURES

CW

C-102 FEED (T-453) 120°F

C-102 BOTTOM 139.5°C

HEAT BALANCE

C-102 TRAY 30 136.5

FEED

C-102 TRAY 67 128°C

REBOILERS

C-102 OVERHEAD 94.5°C

AFTER H-106 51.5°C

BOTTOMS

CW TO H-106

CONDENSER

CW FROM H-106

PRESSURES

EDC SOURCE

BOTTOM 51.5 psi

DIRECT

BOTTOM FEED 45.5

RECYCLE

TOP FEED 42.5

OXY

OVERHEAD 40.0

R-304

S-102 39.0 psi

STEAM TO H-105A

AMMONIA

STEAM TO H-105B

LEVEL

QUANT

TEMP

USED

MADE BY

RWC

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CHECKED BY

CCR 000042552

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE

OF

STATE

DATE 4-11-73
TIME 1500

FLOWS

FEED TO C-102 8.55
FEED TO C-103 8.75
PURE EDC PRODUCT 7.6
C-102 REFLUX 4.45
LIGHT ENDS DRAW 8.3 x 0.45
STEAM TO H-105A 8.5
STEAM TO H-105B —
VCM TOTALIZER 74271
C-103 TOTALIZER 921965
C-203 EDC TOTALIZER 846888
REWORK 4.2
LIQUID CHLORINE
TOTAL CHLORINE
CHLORINE TO R-304 457PD

TEMPERATURES

C-102 FEED (T-453) 107°F
C-102 BOTTOM 132.5°C
C-102 TRAY 30 129°C
C-102 TRAY 67 115°C
C-102 OVERHEAD 84°C
AFTER H-106 41°C
CW TO H-106
CW FROM H-106

PRESSURES

BOTTOM 43
BOTTOM FEED 35
TOP FEED 33
OVERHEAD 30
S-102 30 PSIG
STEAM TO H-105A
STEAM TO H-105B

H-105A

DUTY
FLUX
ΔT
COEFFICIENT

H-105B

DUTY
FLUX
ΔT
COEFFICIENT

CONDENSER

DUTY
FLUX
ΔT
COEFFICIENT
CW

HEAT BALANCE

FEED
REBOILERS
BOTTOMS
CONDENSER

EDC SOURCE

DIRECT
RECYCLE
OXY
R-304

AMMONIA

LEVEL QUANT
TEMP USED

MADE BY

RWC

CONTINENTAL OIL COMPANY
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JOB NO

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DATE

TITLE LIGHT ENDS COLUMN

FIELD

CCR 000042553

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STATE

DATE 5/10/73
TIME 930AM

H-105A

FLOWS

FEED TO C-102 7.95

FEED TO C-103 8.2

PURE EDC PRODUCT 7.2

C-102 REFLUX 3.9

LIGHT ENDS DRAW 3.3 x 4.5 gpm

STEAM TO H-105A 7.6

STEAM TO H-105B 0

VCM TOTALIZER

C-103 TOTALIZER 089831

C-203 EDC TOTALIZER

REWORK 0

LIQUID CHLORINE 120708

TOTAL CHLORINE

CHLORINE TO R-304

TEMPERATURES

C-102 FEED (T-453) 118°F

C-102 BOTTOM 138.2°C

C-102 TRAY 30 135°C

C-102 TRAY 67 122.2°C

C-102 OVERHEAD 88°C

AFTER H-106 46°C

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM 50

BOTTOM FEED 44

TOP FEED 41.5

OVERHEAD 39

S-102 39 psig

STEAM TO H-105A

STEAM TO H-105B

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT
USED

MADE BY

RWC

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DATE

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CALCULATION SHEET

JOB NO.

TITLE LIGHT ENDS COLUMN

FIELD

STATE

CCR 000042554

ATE	H-105 A
TIME	DUTY
FLUX	FLUX
FEED TO C-102	ΔT
FEED TO C-103	COEFFICIENT
PURE EDC PRODUCT	
C-102 REFLUX	H-105 B
LIGHT ENDS DRAW	DUTY
STEAM TO H-105A	FLUX
STEAM TO H-105B	ΔT
VCM TOTALIZER	COEFFICIENT
C-103 TOTALIZER	
C-203 EDC TOTALIZER	CONDENSER
REWORK	DUTY
LIQUID CHLORINE	FLUX
TOTAL CHLORINE	ΔT
CHLORINE TO R-304	COEFFICIENT
TEMPERATURES	CW
C-102 FEED (T-453)	
C-102 BOTTOM	HEAT BALANCE
C-102 TRAY 30	FEED
C-102 TRAY 67	REBOILERS
C-102 OVERHEAD	
AFTER H-106	BOTTOMS
CW TO H-106	CONDENSER
CW FROM H-106	
PRESSURES	EDC SOURCE
BOTTOM	DIRECT
BOTTOM FEED	RECYCLE
TOP FEED	OXY
OVERHEAD	R-304
S-102	
STEAM TO H-105A	AMMONIA
STEAM TO H-105B	LEVEL
	TEMP
	QUANT
	USED

13-2311-18

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CONTINENTAL OIL COMPANY
 CALCULATION SHEET

TITLE LIGHT ENDS COLUMN

JOB NO. _____
 FIELD _____
 STATE _____
 CCR 000042555

ATE	H-105 A
TIME	DUTY
FLUX	FLUX
FEED TO C-102	ΔT
FEED TO C-103	COEFFICIENT
PURE EDC PRODUCT	
C-102 REFLUX	H-105 B
LIGHT ENDS DRAW	DUTY
STEAM TO H-105A	FLUX
STEAM TO H-105B	ΔT
VCM TOTALIZER	COEFFICIENT
C-103 TOTALIZER	
C-203 EDC TOTALIZER	CONDENSER
REWORK	DUTY
LIQUID CHLORINE	FLUX
TOTAL CHLORINE	ΔT
CHLORINE TO R-304	COEFFICIENT
TEMPERATURES	CW
C-102 FEED (T-453)	
C-102 BOTTOM	HEAT BALANCE
C-102 TRAY 30	FEED
C-102 TRAY 67	REBOILERS
C-102 OVERHEAD	
AFTER H-106	BOTTOMS
CW TO H-106	CONDENSER
CW FROM H-106	
PRESSURES	EDC SOURCE
BOTTOM	DIRECT
BOTTOM FEED	RECYCLE
TOP FEED	OXY
OVERHEAD	R-304
S-102	
STEAM TO H-105A	AMMONIA
STEAM TO H-105B	LEVEL
	TEMP
	QUANT
	USED

BA137-11

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CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO. _____
CCR 000042556

TITLE LIGHT ENDS COLUMN

FIELD _____

STATE _____

DATE
TIME

FLOWS

FEED TO C-102
FEED TO C-103
PURE EDC PRODUCT
C-102 REFLUX
LIGHT ENDS DRAW
STEAM TO H-105A
STEAM TO H-105B
VCM TOTALIZER
C-103 TOTALIZER
C-103 EDC TOTALIZER
REWORK
LIQUID CHLORINE
TOTAL CHLORINE
CHLORINE TO R-304

TEMPERATURES

C-102 FEED (T 453)
C-102 BOTTOM
C-102 TRAY 30
C-102 TRAY 40
C-102 OVERHEAD
AFTER H-106
CW TO H-106
CW FROM H-106

PRESSURES

BOTTOM
BOTTOM FEED
TOP FEED
OVERHEAD
S-102
STEAM TO H-105A
STEAM TO H-105B

H-105A

DUTY
FLUX
 ΔT
COEFFICIENT

H-105B

DUTY
FLUX
 ΔT
COEFFICIENT

CONDENSER

DUTY
FLUX
 ΔT
COEFFICIENT
CW

HEAT BALANCE

FEED
REBOILERS

BOTTOMS
CONDENSER

EDC SOURCE

DIRECT
RECYCLE
OXY
R-304

AMMONIA

LEVEL
TEMP
QUANT
USED

MADE BY RWC

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CALCULATION SHEET

TITLE LIGHT ENDS COLUMN

JOB NO.

FIELD

STATE

CCR 000042557

DATE 3-21-73
TIME 3pm

FLOWS

FEED TO C-102 7.5
FEED TO C-103 7.7
PURE EDC PRODUCT 6.7
C-102 REFLUX 9.0
LIGHT ENDS DRAW 8.0 x 0.45 gpm
STEAM TO H-105A 8.4
STEAM TO H-105B 0
VCM TOTALIZER 669567
C-103 TOTALIZER 808120
C-203 EDC TOTALIZER 360350
REWORK 1.0 x 9.5 gpm
LIQUID CHLORINE 0
TOTAL CHLORINE
CHLORINE TO RE-304 51 TPD

TEMPERATURES

C-102 FEED (T-453)
C-102 BOTTOM 140.0 °C
C-102 TRAY 20 136.5 °C
C-102 TRAY 67 130
C-102 OVERHEAD 90 °C
AFTER H-106 49 °C
CW TO H-106
CW FROM H-106

PRESSURES

BOTTOM 52
BOTTOM FEED 45
TOP FEED 43
OVERHEAD 38
S-102 37
STEAM TO H-105A
STEAM TO H-105B

H-105A

DUTY
FLUX
 ΔT
COEFFICIENT

H-105B

DUTY
FLUX
 ΔT
COEFFICIENT

CONDENSER

DUTY
FLUX
 ΔT
COEFFICIENT
CW

HEAT BALANCE

FEED
REBOILERS
BOTTOMS
CONDENSER

EDC SOURCE

DIRECT
RECYCLE
OXY
R-304

AMMONIA

LEVEL QUANT
TEMP USED

1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100

MADE BY RWC

CHECKED BY

DATE

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CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CCR 000042558

TITLE LIGHT ENDS COLUMN

FIELD

STATE

DATE 11-3-72

TIME 340

FLOWS

FEED TO C-102 8.3 264610

FEED TO C-103 8.55 271651

PURE EDC PRODUCT 7.6

C-102 REFLUX 3.5 161196

LIGHT ENDS DRAIN —

STEAM TO H-105A 8.6 43430

STEAM TO H-105B —

VCM TOTALIZER 323810

C-103 TOTALIZER 099786

C-203 EDC TOTALIZER 340049

REWORK —

LIQUID CHLORINE —

TOTAL CHLORINE —

CHLORINE TO R-304 25

TEMPERATURES

C-102 FEED (T-453) 108

C-102 BOTTOM 131.7

C-102 TRAY 30 123.6

C-102 TRAY 67 113.5

C-102 OVERHEAD 77.8

AFTER H-106 38.4

CW TO H-106 73

CW FROM H-106 27.4

PRESSURES

BOTTOM 40.5

BOTTOM FEED 31.6

TOP FEED 30.1

OVERHEAD 28.0

S-102 27

STEAM TO H-105A 87

STEAM TO H-105B —

H-105 A

DUTY 40494132

FLUX 6466

ΔT 60.19

COEFFICIENT 107.42

H-105 B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY 25871958

FLUX 4595

ΔT 53.64

COEFFICIENT 85.67

CW 6249

HEAT BALANCE

FEED - 7742054

REBOILERS + 40494132

BOTTOMS - 4835388

CONDENSER - 25871958

- 2044732

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL 28 QUANT

TEMP 31 USED

MADE BY

RWC

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO. CCR 000042559

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE 1 OF 1

STATE

DATE 11-2-72
TIME 3 PM

FLOWS

FEED TO C-102 8.3 264523
FEED TO C-103 8.5 268933
PURE EDC PRODUCT 7.5
C-102 REFLUX 3.4 145996
LIGHT ENDS DRAW 7.8
STEAM TO H-105A 8.45 42673
STEAM TO H-105B —
VCM TOTALIZER 304409
C-103 TOTALIZER 093409
C-203 EDC TOTALIZER 315913
REWORK —
LIQUID CHLORINE —
TOTAL CHLORINE —
CHLORINE TO R-304 25

TEMPERATURES

C-102 FEED (T-453) 110
C-102 BOTTOM 131.7
C-102 TRAY 30 128.3
C-102 TRAY 67 113.5
C-102 OVERHEAD 80.4
AFTER H-106 38.3
CW TO H-106 74 23.3
CW FROM H-106 28

PRESSURES

BOTTOM 40.0
BOTTOM FEED 31.8
TOP FEED 30.3
OVERHEAD 28.3
S-102 26.9
STEAM TO H-105A 82
STEAM TO H-105B —

H-105 A

DUTY 39916283
FLUX 6373
 ΔT 56.19
COEFFICIENT 113.42

H-105 B

DUTY —
FLUX —
 ΔT —
COEFFICIENT —

CONDENSER

DUTY 23549155
FLUX 4183
 ΔT 54.00
COEFFICIENT 77.46
CW 55.67

HEAT BALANCE

FEED - 7530124
REBOILERS + 39916283
BOTTOMS - 4840794
CONDENSER - 23549155
- 3996210

EDC SOURCE

DIRECT 27% 60369
RECYCLE 46% 100729
OXY 26% 57550
R-304 1% 2762
221410

AMMONIA

LEVEL 28" QUANT 5334
TEMP 31 USED 0

MADE BY

RWC

CHECKED BY

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

DATE

TITLE LIGHT ENDS COLUMN

FIELD

CCR 000042560

PAGE 1 OF 1

STATE

DATE
TIME

11-1-72
3 PM

FLOWS

FEED TO C-102 8.25 262758
FEED TO C-103 8.50 268933
PURE EDC PRODUCT 7.3
C-102 REFLUX 3.55 161475
LIGHT ENDS DRAW —
STEAM TO H-105A —
STEAM TO H-105B 8.4 42420
VCM TOTALIZER 285919
C-103 TOTALIZER 291880
C-203 EDC TOTALIZER 087268
REWORK 53 day
LIQUID CHLORINE —
TOTAL CHLORINE —
CHLORINE TO R-304 26

TEMPERATURES

C-102 FEED (T-453) 112
C-102 BOTTOM 131.9
C-102 TRAY 30 128.8
C-102 TRAY 67 115.5
C-102 OVERHEAD 84.8
AFTER H-106 48.2
CW TO H-106 86
CW FROM H-106 35.2

PRESSURES

BOTTOM 40.0
BOTTOM FEED 32.1
TOP FEED 30.6
OVERHEAD 28.6
S-102 27

STEAM TO H-105A

STEAM TO H-105B 95

H-105 A

DUTY

FLUX

ΔT

COEFFICIENT

H-105 B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED - 7395658
REBOILERS + 39308069
BOTTOMS - 4840794
CONDENSER - 25513050
- 1558567

EDC SOURCE

DIRECT 22% 44387
RECYCLE 49% 100725
OXY 28% 58189
R-304 1% 2541
205842

AMMONIA

LEVEL 28" QUANT 5334
TEMP 31 USED

MADE BY

RWC

CHECKED BY

DATE

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CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB No.

CCR 000042561

TITLE LIGHT ENDS COLUMN

FIELD

STATE

DATE 10-31-72
TIME 3:20 PM

FLOWS

FEED TO C-102	8.25	262929
FEED TO C-103	8.5	268933
PURE EDC PRODUCT	7.45	
C-102 REFLUX	3.7	168298
LIGHT ENDS DRAW	8.1	
STEAM TO H-105A	—	
STEAM TO H-105B	8.52	43026
VCM TOTALIZER	267716	
C-103 TOTALIZER	081126	
C-203 EDC TOTALIZER	267860	
REWORK 9.5 x 52	267716	
LIQUID CHLORINE	—	
TOTAL CHLORINE	—	
CHLORINE TO R-304	27	

TEMPERATURES

C-102 FEED (T-453)	110
C-102 BOTTOM	131.9
C-102 TRAY 30	128.6
C-102 TRAY 67	114
C-102 OVERHEAD	81.8
AFTER H-106	47.9
CW TO H-106	86
CW FROM H-106	35

PRESSURES

BOTTOM	40.0
BOTTOM FEED	32.2
TOP FEED	30.3
OVERHEAD	28.2
S-102	27.0
STEAM TO H-105A	—
STEAM TO H-105B	92

H-105A

DUTY	
FLUX	
ΔT	
COEFFICIENT	

H-105B

DUTY	39960828
FLUX	8876
ΔT	63.32
COEFFICIENT	140.18

CONDENSER

DUTY	26557424
FLUX	5899
ΔT	54.36
COEFFICIENT	86.78
CW	5902

HEAT BALANCE

FEED	-	7557017
REBOILERS		39960828
BOTTOMS	-	4840794
CONDENSER	-	26557424
	-	1005593

EDC SOURCE

DIRECT	21%	42614
RECYCLE	48%	96879
OXY	30%	60612
R-304	1%	2983
		203087

AMMONIA

LEVEL	28"	QUANT	5334
TEMP	31	USED	0

MADE BY RWC

CHECKED BY

DATE

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CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB No. CCR 000042562

TITLE LIGHT ENDS COLUMN FIELD

STATE

DATE	10-30-72			H-105A		
TIME	3 PM			DUTY		
FLOWS				FLUX		
				DOWN		
FEED TO C-102	8.25	263101	AT			
FEED TO C-103	8.5	269310	COEFFICIENT			
PURE EDC PRODUCT	7.3					
C-102 REFLUX	3.5	159467		H-105B		
LIGHT ENDS DRAW	—		DUTY	39050529		
STEAM TO H-105A	0		FLUX	8674		
STEAM TO H-105B	8.3	41915	AT	62.52		
VCM TOTALIZER	248267		COEFFICIENT	138.74		
C-103 TOTALIZER	074862					
C-203 EDC TOTALIZER	244039			CONDENSER		
REWORK dry	5.3 x 9.5		DUTY	25275520		
LIQUID CHLORINE	0		FLUX	4489		
TOTAL CHLORINE	—		AT	58.68		
CHLORINE TO R-304	27		COEFFICIENT	76.51		
TEMPERATURES				CW		
C-102 FEED (T-453)	108					
C-102 BOTTOM	130.4			HEAT BALANCE		
C-102 TRAY 30	127.8		FEED	- 7675335		
C-102 TRAY 67	112.5		REBOILERS	39050529		
C-102 OVERHEAD	83.9					
AFTER H-106	46.8		BOTTOMS	- 4578270		
CW TO H-106	84		CONDENSER	- 25275520		
CW FROM H-106	32.2			- 1521404		
PRESSURES				EDC SOURCE		
BOTTOM	37.5		DIRECT	21%	42854	
BOTTOM FEED	29.8		RECYCLE	48%	97350	
TOP FEED	28.2		OXY	30%	61052	
OVERHEAD	26.3		R-304	1%	2983	
S-102	24.8				204239	
STEAM TO H-105A	—		AMMONIA			
STEAM TO H-105B	88		LEVEL	28	QUANT	5334
			TEMP	31	USED	<115>

DATE	10-27-72		H-105A
TIME	3:15 PM 3:35 PM		DUTY DOWN
<u>FLUX</u>			
FEED TO C-102	8.2	263543	AT
FEED TO C-103	8.4	265893	COEFFICIENT
PURE EDC PRODUCT	407		
C-102 REFLUX	3.7	1687.20	H-105B
LIGHT ENDS DRAW	0		DUTY 39991506
STEAM TO H-105A	Down		FLUX 8883
STEAM TO H-105B	8.5	52,000 ⁴²⁹²⁵ / hr	AT 62.16
VCM TOTALIZER	229167		COEFFICIENT 142.91
C-103 TOTALIZER	068760		
C-203 EDC TOTALIZER	221443		CONDENSER
REWORK	50 gpm		DUTY 26573400
LIQUID CHLORINE	0		FLUX 4720
TOTAL CHLORINE	50.5 in. R-304		AT 49.68
CHLORINE TO R-304	2.6 TPD		COEFFICIENT 95.00
<u>TEMPERATURES</u>			CW
C-102 FEED (T-453)	84		
C-102 BOTTOM	131		HEAT BALANCE
C-102 TRAY 30	127.5		FEED - 8797748
C-102 TRAY 67			REBOILERS 39991506
C-102 OVERHEAD	78		
AFTER H-106	46		BOTTOMS - 4677957
CW TO H-106	30°C		CONDENSER - 26573400
CW FROM H-106	34°C		+ 57599
<u>PRESSURES</u>			EDC SOURCE
BOTTOM	36		DIRECT
BOTTOM FEED	30		RECYCLE
TOP FEED			OXY
OVERHEAD	25		R-304
S-102	25		
STEAM TO H-105A	—		AMMONIA
STEAM TO H-105B	88		LEVEL 27 1/8" QUANT 5219
			TEMP 31°C USED 252

DATE 3-14-73
TIME 230 PM

FLOWS

FEED TO C-102 8.0
FEED TO C-103 8.25
PURE EDC PRODUCT 7.2
C-102 REFLUX 4.8
LIGHT ENDS DRAW 6.8 x 4.5 gpm
STEAM TO H-105A 9.05
STEAM TO H-105B 0
VCM TOTALIZER 529210
C-103 TOTALIZER 767340
C-203 EDC TOTALIZER 190600
REWORK 0
LIQUID CHLORINE 6.8
TOTAL CHLORINE
CHLORINE TO R-304 61 TPD

TEMPERATURES

C-102 FEED (T-453)
C-102 BOTTOM 135.5
C-102 TRAY 30 132.5°C
C-102 TRAY 67 122°C
C-102 OVERHEAD 84°C
AFTER H-106 54.5
CW TO H-106
CW FROM H-106

PRESSURES

BOTTOM 47.5
BOTTOM FEED 39
TOP FEED 37
OVERHEAD 32.5
S-102 31
STEAM TO H-105A
STEAM TO H-105B

H-105 A

DUTY
FLUX
 ΔT
COEFFICIENT

H-105 B

DUTY
FLUX
 ΔT
COEFFICIENT

CONDENSER

DUTY
FLUX
 ΔT
COEFFICIENT
CW

HEAT BALANCE

FEED
REBOILERS
BOTTOMS
CONDENSER

EDC SOURCE

DIRECT
RECYCLE
OXY
R-304

AMMONIA

LEVEL QUANT
TEMP USED

MADE BY RWC

CHECKED BY

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JOB NO.

TITLE LIGHT ENDS COLUMN FIELD

STATE

CCR 000042565

2-28-73

DATE

~~1-31-73~~

TIME

3PM

FLOWS

FEED TO C-102 7.8
 FEED TO C-103 8.0
 PURE EDC PRODUCT 7.15
 C-102 REFLUX 9.75
 LIGHT ENDS DRAW 9.5 x 4.56 PM
 STEAM TO H-105A 9.0
 STEAM TO H-105B 0
 VCM TOTALIZER
 C-103 TOTALIZER 688870
 C-203 EDC TOTALIZER
 REWORK 0
 LIQUID CHLORINE 6.9
 TOTAL CHLORINE 60%
 CHLORINE TO R-304

TEMPERATURES

C-102 FEED (T-453)
 C-102 BOTTOM 135°C
 C-102 TRAY 30 131.5°C
 C-102 TRAY 67 126°C
 C-102 OVERHEAD 99.5°C
 AFTER H-106 54.5°C
 CW TO H-106
 CW FROM H-106

PRESSURES

BOTTOM 40.5
 BOTTOM FEED 41.0
 TOP FEED 38.5
 OVERHEAD 35.5
 S-102 31.5 PSIG
 STEAM TO H-105A
 STEAM TO H-105B

H-105 A

DUTY
 FLUX
 ΔT
 COEFFICIENT

H-105 B

DUTY
 FLUX
 ΔT
 COEFFICIENT

CONDENSER

DUTY
 FLUX
 ΔT
 COEFFICIENT
 CW

HEAT BALANCE

FEED
 REBOILERS

BOTTOMS
 CONDENSER

EDC SOURCE

DIRECT
 RECYCLE
 OXY
 R-304

AMMONIA

LEVEL
 TEMP
 QUANT
 USED

MADE BY

RWC

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

CCR 000042566

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STATE

DATE 1-8-73
TIME 330 PM

FLOWS

FEED TO C-102 7.9 252677
FEED TO C-103 8.2 258142
PURE EDC PRODUCT 6.9
C-102 REFLUX 5.1 230525
LIGHT ENDS DRAW —
STEAM TO H-105A 9.3
STEAM TO H-105B —
VCM TOTALIZER 385680
C-102 TOTALIZER 424612
C-203 EDC TOTALIZER 726632
REWORK
LIQUID CHLORINE
TOTAL CHLORINE
CHLORINE TO R-304 52

TEMPERATURES

C-102 FEED (T-453) 98
C-102 BOTTOM 139.8
C-102 TRAY 30 136.5
C-102 TRAY 67 127.5
C-102 OVERHEAD 94.6
AFTER H-106 52.3
CW TO H-106 68
CW FROM H-106 25

PRESSURES

BOTTOM 49
BOTTOM FEED 41
TOP FEED 39.3
OVERHEAD 36.9
S-102 33
STEAM TO H-105A 77
STEAM TO H-105B

H-105A

DUTY
FLUX
 ΔT
COEFFICIENT

H-105B

DUTY
FLUX
 ΔT
COEFFICIENT

CONDENSER

DUTY
FLUX
 ΔT
COEFFICIENT
CW

HEAT BALANCE

FEED
REBOILERS

BOTTOMS
CONDENSER

EDC SOURCE

DIRECT
RECYCLE
OXY
R-304

AMMONIA

LEVEL 33 QUANT.
TEMP 29 USED

MADE BY

RWC

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CALCULATION SHEET

JOB NO

CCR 000042567

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE

OF

STATE

DATE 1-5-73

TIME 3 PM

FLOWS

FEED TO C-102 8.15 260334

FEED TO C-103 8.35 262954

PURE EDC PRODUCT 7.2

C-102 REFLUX 5.2 233543

LIGHT ENDS DRAW —

STEAM TO H-105A 9.3

STEAM TO H-105B —

VCM TOTALIZER 326678

C-103 TOTALIZER 406781

C-203 EDC TOTALIZER 651761

REWORK

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 59

TEMPERATURES

C-102 FEED (T-453) 102

C-102 BOTTOM 139.3

C-102 TRAY 30 136.2

C-102 TRAY 67 126.8

C-102 OVERHEAD 93.4

AFTER H-106 57.4

CW TO H-106 75

CW FROM H-106 29

PRESSURES

BOTTOM 49.6

BOTTOM FEED 41.0

TOP FEED 39.1

OVERHEAD 36.9

S-102 33

STEAM TO H-105A 75

STEAM TO H-105B —

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL 33 3/4

TEMP 30

QUANT

USED

MADE BY

RWC

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DATE

TITLE LIGHT ENDS COLUMN

FIELD

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CALCULATION SHEET

JOB No.

CCR 000042568

STATE

DATE	12-3-73		H-105 A	
TIME	3 AM		DUTY	
FLOWS			FLUX	
FEED TO C-102	7.4	236153	ΔT	
FEED TO C-103	7.6	239533	COEFFICIENT	
PURE EDC PRODUCT	6.45			
C-102 REFLUX	5.2	235678	H-105 B	
LIGHT ENDS DRAW	7.4		DUTY	
STEAM TO H-105A	9.3		FLUX	
STEAM TO H-105B	—		ΔT	
VCM TOTALIZER	288309		COEFFICIENT	
C-103 TOTALIZER	395294			
C-203 EDC TOTALIZER	601230		CONDENSER	
REWORK	—		DUTY	
LIQUID CHLORINE	—		FLUX	
TOTAL CHLORINE	—		ΔT	
CHLORINE TO R-304	58		COEFFICIENT	
TEMPERATURES			CW	
C-102 FEED (T-453)	105		HEAT BALANCE	
C-102 BOTTOM	138.1		FEED	
C-102 TRAY 30	134.8		REBOILERS	
C-102 TRAY 67	127			
C-102 OVERHEAD	94.2		BOTTOMS	
AFTER H-106	50.2		CONDENSER	
CW TO H-106	69			
CW FROM H-106	25		EDC SOURCE	
PRESSURES			DIRECT	
BOTTOM	47.8		RECYCLE	
BOTTOM FEED	39.2		OXY	
TOP FEED	38.3		R-304	
OVERHEAD	35			
S-102	33		AMMONIA	
STEAM TO H-105A	71		LEVEL 34"	
STEAM TO H-105B			TEMP 30	
			QUANT USED	

MADE BY

RWC

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CCR 000042569

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE

OF

STATE

DATE 1-2-73

TIME 3 PM

FLOWS

FEED TO C-102 7.45

FEED TO C-103 7.70

PURE EDC PRODUCT 6.45

C-102 REFLUX 5.2

LIGHT ENDS DRAW —

STEAM TO H-105A 9.3

STEAM TO H-105B

VCM TOTALIZER 269170

C-103 TOTALIZER 389803

C-203 EDC TOTALIZER 575181

REWORK

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 57

TEMPERATURES

C-102 FEED (T-453) 96

C-102 BOTTOM 139.4

C-102 TRAY 30 136.2

C-102 TRAY 67

C-102 OVERHEAD 95.2

AFTER H-106 54.8

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM

BOTTOM FEED

TOP FEED

OVERHEAD

S-102 33

STEAM TO H-105A

STEAM TO H-105B

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

34 1/4

30

QUANT

USED

MADE BY

RWC

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO. CCR 000042570

DATE 12-27-72

TIME 3PM

FLOWS

FEED TO C-102 7.7 245960

FEED TO C-103 8.0 252168

PURE EDC PRODUCT 7.05

C-102 REFLUX 4.8 219464

LIGHT ENDS DRAW —

STEAM TO H-105A 9.3

STEAM TO H-105B —

VCM TOTALIZER 152785

C-103 TOTALIZER 355996

C-203 EDC TOTALIZER 423826

REWORK

LIQUID CHLORINE 100

TOTAL CHLORINE

CHLORINE TO R-304 62

TEMPERATURES

C-102 FEED (T-453) 102

C-102 BOTTOM 137.9

C-102 TRAY 30 134.4

C-102 TRAY 67 127.0

C-102 OVERHEAD 99.6

AFTER H-106 43.2

CW TO H-106 67

CW FROM H-106 24

PRESSURES

BOTTOM 47.2

BOTTOM FEED 38.5

TOP FEED 37.2

OVERHEAD 34.8

S-102 33.0

STEAM TO H-105A 69

STEAM TO H-105B

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

36 1/4
30QUANT
USED

MADE BY

RWC

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO. CCR 000042571

DATE 12-28-72

TIME 3 PM

FLOWS

FEED TO C-102 7.7

FEED TO C-103 7.9

PURE EDC PRODUCT 6.9

C-102 REFLUX 5.3

LIGHT ENDS DRAW -

STEAM TO H-105A 9.3

STEAM TO H-105B -

VCM TOTALIZER 361758

C-103 TOTALIZER 172160

C-203 EDC TOTALIZER 449337

REWORK

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 62

TEMPERATURES

C-102 FEED (T-453) 105

C-102 BOTTOM 138.4

C-102 TRAY 30 135

C-102 TRAY 67

C-102 OVERHEAD 94.7

AFTER H-106 53.8

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM

BOTTOM FEED

TOP FEED

OVERHEAD

S-102 33

STEAM TO H-105A

STEAM TO H-105B

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT

USED

MADE BY

RWC

CONTINENTAL OIL COMPANY

CALCULATION SHEET

JOB No.

CCR 000042572

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

DATE 12-9-72

TIME 3 PM

H-105 A

FLOWS

FEED TO C-102 390 gpm

FEED TO C-103 405 ✓

PURE EDC PRODUCT 379 -

C-102 REFLUX 370

LIGHT ENDS DRAW —

STEAM TO H-105A 56200

STEAM TO H-105B —

VCM TOTALIZER ?

C-103 TOTALIZER ?

C-203 EDC TOTALIZER ?

REWORK —

LIQUID CHLORINE 8800 #/HR

TOTAL CHLORINE 520 T/D

CHLORINE TO R-304 62 T/D

TEMPERATURES

C-102 FEED (T-453) —

C-102 BOTTOM 135

C-102 TRAY 30 132

C-102 TRAY 67 1

C-102 OVERHEAD 89

AFTER H-106 42

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM 41

BOTTOM FEED 34

TOP FEED 33

OVERHEAD 26

S-102 30#

STEAM TO H-105A 162

STEAM TO H-105B —

DUTY

FLUX

ΔT

COEFFICIENT

H-105 B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT

USED

MADE BY

RWC

CONTINENTAL OIL COMPANY

JOB NO.

CHECKED BY

CALCULATION SHEET

DATE

TITLE LIGHT ENDS COLUMN

FIELD

CCR 000042573

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OF

STATE

FEEDING C-102 FROM T-102

DATE 12-21-72

TIME 3 PM

Flows

FEED TO C-102 7.35 234,473

FEED TO C-103 7.7 242,744

PURE EDC PRODUCT 6.7 236,112

C-102 REFLUX 5.2 236,112

LIGHT ENDS DRAW

STEAM TO H-105A

STEAM TO H-105B 9.4 52029

VCM TOTALIZER 036777

C-103 TOTALIZER 322050

C-203 EDC TOTALIZER 272865

REWORK

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 61.5

TEMPERATURES

C-102 FEED (T-453) 106 41.1

C-102 BOTTOM 137.7 280

C-102 TRAY 30 134.2

C-102 TRAY 67 122.5

C-102 OVERHEAD 96.5

AFTER H-106 48.7

CW TO H-106 69 20.6

CW FROM H-106 25

PRESSURES

BOTTOM 46.8

BOTTOM FEED 38.5

TOP FEED 36.7

OVERHEAD 34.7

S-102 33.5

STEAM TO H-105A 96

STEAM TO H-105B

H-105A

DUTY

FLUX

ΔT

COEFFICIENT

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED - 6918204

REBOILERS + 47805806

BOTTOMS - 5340368

CONDENSER - 38084866

+ 2537632

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL 37

TEMP 30

QUANT

USED

MADE BY

RWC

CHECKED BY

DATE

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JOB NO.

CCR 000042574

TITLE LIGHT ENDS COLUMN

FIELD

STATE

DATE 12-20-72
TIME 530 PM

FLOWS

FEED TO C-102 7.8 248423
FEED TO C-103 8.1 255354
PURE EDC PRODUCT 7.0
C-102 REFLUX 5.3 238417
LIGHT ENDS DRAW —
STEAM TO H-105A —
STEAM TO H-105B 9.35 51752
VCM TOTALIZER 017743
C-103 TOTALIZER 316362
C-203 EDC TOTALIZER 247906

REWORK —
LIQUID CHLORINE 100
TOTAL CHLORINE —
CHLORINE TO R-304 60

TEMPERATURES

C-102 FEED (T-453) 111 43.9
C-102 BOTTOM 137.8 280
C-102 TRAY 30 134.7
C-102 TRAY 67 123.5
C-102 OVERHEAD 97.7
AFTER H-106 56.1
CW TO H-106 81 27.2
CW FROM H-106 32

PRESSURES

BOTTOM 47.7
BOTTOM FEED 39.3
TOP FEED 37.6
OVERHEAD 35.8
S-102 33.5

STEAM TO H-105A —
STEAM TO H-105B 92

H-105.A

DUTY

FLUX

AT

COEFFICIENT

H-105.B

DUTY

FLUX

AT

COEFFICIENT

CONDENSER

DUTY

FLUX

AT

COEFFICIENT

CW

HEAT BALANCE

FEED - 6894558
REBOILERS + 47735140
BOTTOMS - 5617788
CONDENSER - 37765253
+ 2542359

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT

USED

RWC

MADE BY

CHECKED BY

DATE

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CONTINENTAL OIL COMPANY
CALCULATION SHEET

JOB NO.

CCR 000042575

TITLE LIGHT ENDS COLUMN

FIELD

STATE

DATE 12-18-72
TIME 3 10 PM

FLOWS

FEED TO C-102 8.15 260232
FEED TO C-103 8.30 261697
PURE EDC PRODUCT 7.25
C-102 REFLUX 5.0 226328
LIGHT ENDS DRAW —
STEAM TO H-105A 9.2 50922
STEAM TO H-105B —
VCM TOTALIZER 978744
C-103 TOTALIZER 304410
C-203 EDC TOTALIZER 196125
REWORK
LIQUID CHLORINE
TOTAL CHLORINE
CHLORINE TO R-304 6.0

TEMPERATURES

C-102 FEED (T-453) 103 39.4
C-102 BOTTOM 137.6 279.7
C-102 TRAY 30 134.2
C-102 TRAY 67 125.5
C-102 OVERHEAD 99.8
AFTER H-106 51.2
CW TO H-106 77 25
CW FROM H-106 29.5

PRESSURES

BOTTOM 47.6
BOTTOM FEED 38.4
TOP FEED 36.8
OVERHEAD 34.9
S-102 33.5
STEAM TO H-105A 69
STEAM TO H-105B

H-105 A

DUTY 47894178
FLUX 7647
ΔT 34.91 ~~279.68~~
COEFFICIENT 219.05

H-105 B

DUTY
FLUX
ΔT
COEFFICIENT

CONDENSER

DUTY 36438808
FLUX 6472
ΔT 82.8
COEFFICIENT 78.16
CW 9000

HEAT BALANCE

FEED - 7589213
REBOILERS + 47894178
BOTTOMS - 5757334
CONDENSER - 36438808
+ 1891177

EDC SOURCE

DIRECT
RECYCLE
OXY
R-304

AMMONIA

LEVEL 37 QUANT
TEMP 30 USED

DATE 12-15-72

TIME 3 PM

FLOWS

FEED TO C-102 7.55 241560

FEED TO C-103 7.5 236521

PURE EDC PRODUCT 6.3

C-102 REFLUX 5.2 237278

LIGHT ENDS DRAW 5.3

STEAM TO H-105A 8.9 49262

STEAM TO H-105B

VCM TOTALIZER 919588

C-103 TOTALIZER 286719

C-203 EDC TOTALIZER 121367

REWORK —

LIQUID CHLORINE —

TOTAL CHLORINE

CHLORINE TO R-304 61

TEMPERATURES

C-102 FEED (T-453) 97 36.1

C-102 BOTTOM 137.3 279.14

C-102 TRAY 30 133.5

C-102 TRAY 67 123.5

C-102 OVERHEAD 93.1

AFTER H-106 44.8

CW TO H-106 70 21.1

CW FROM H-106 25.5

PRESSURES

BOTTOM 45.8

BOTTOM FEED 37.7

TOP FEED 36.0

OVERHEAD 31.1

S-102 30

STEAM TO H-105A 66

STEAM TO H-105B

H-105A

DUTY 46418619

FLUX 7412

ΔT 33.75

COEFFICIENT 219.60

H-105B

DUTY 38439036

FLUX 6828

ΔT 75.06

COEFFICIENT 90.96

CONDENSER

DUTY 38439036

FLUX 6828

ΔT 75.06

COEFFICIENT 90.96

CW 97.07

HEAT BALANCE

FEED - 7095630

REBOILERS + 46418619

BOTTOMS - 4966941

CONDENSER - 38439036

+ 4082988

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL 37 QUANT

TEMP 30 USED

RWC

MADE BY

CONTINENTAL OIL COMPANY

JOB NO. CCR 000042577

CHECKED BY

CALCULATION SHEET

DATE

TITLE LIGHT ENDS COLUMN

FIELD

PAGE

OF

STATE

DATE 12-13-72

TIME 320 PM

FLOWS

FEED TO C-102 8.15 260926

FEED TO C-103 8.3 262174

PURE EDC PRODUCT 55

C-102 REFLUX 4.8 217384

LIGHT ENDS DRAW 8.4

STEAM TO H-105A 8.8 48708

STEAM TO H-105B

VCM TOTALIZER 881206

C-103 TOTALIZER 275315

C-203 EDC TOTALIZER 068755

REWORK —

LIQUID CHLORINE —

TOTAL CHLORINE

CHLORINE TO R-304 61

TEMPERATURES

C-102 FEED (T-453) 95 -35.0

C-102 BOTTOM 135.2 275.36

C-102 TRAY 30 131.8

C-102 TRAY 67 123

C-102 OVERHEAD 94.2

AFTER H-106 50.8

CW TO H-106 78 25.6

CW FROM H-106 29.5

PRESSURES

BOTTOM 44

BOTTOM FEED 35.2

TOP FEED 33.5

OVERHEAD 31.1

S-102 30

STEAM TO H-105A 68

STEAM TO H-105B

H-105A

DUTY 45811822

FLUX 7315

ΔT 39.23

COEFFICIENT 18645

H-105B

DUTY

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY 34781440

FLUX 6178

ΔT 73.80

COEFFICIENT 83.71

CW 9909

HEAT BALANCE

FEED - 8127394

REBOILERS + 45811822

BOTTOMS - 5243480

CONDENSER - 34781440

+ 2340492

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL 37" QUANT

TEMP 30 USED

DATE 12-11-72

TIME 3:10 PM

FLOWS

FEED TO C-102 8.15 260673

FEED TO C-103 8.4 265333

PURE EDC PRODUCT —

C-102 REFLUX 4.9 217767

LIGHT ENDS DRAW —

STEAM TO H-105A 9.0

STEAM TO H-105B —

VCM TOTALIZER 842293

C-103 TOTALIZER 264172

C-203 EDC TOTALIZER 017748

REWORK —

LIQUID CHLORINE

TOTAL CHLORINE

CHLORINE TO R-304 61

TEMPERATURES

C-102 FEED (T-453) 99

C-102 BOTTOM 135.2

C-102 TRAY 30 131.5

C-102 TRAY 67 123

C-102 OVERHEAD 94.3

AFTER H-106 49.4

CW TO H-106 79

CW FROM H-106 30

PRESSURES

BOTTOM 44.0

BOTTOM FEED 35.2

TOP FEED 33.2

OVERHEAD 31.6

S-102 30

STEAM TO H-105A 68

STEAM TO H-105B

H-105A

DUTY 46,885,880

FLUX 7486.2

AT

COEFFICIENT

H-105B

DUTY

FLUX

AT

COEFFICIENT

CONDENSER

DUTY

FLUX

AT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

20% AMMONIA FILLING

LEVEL

TEMP

QUANT
USED

MADE BY

RWC

CONTINENTAL OIL COMPANY

CALCULATION SHEET

JOB NO.

CHECKED BY

CCR 000042579

DATE

TITLE LIGHT ENDS COLUMN

FIELD

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OF

STATE

DATE 12-10-72

TIME 3 PM

H-105 A

FLOWS

FEED TO C-102 400 GPM

FEED TO C-103 415 -

PURE EDC PRODUCT 329 -

C-102 REFLUX 380 -

LIGHT ENDS DRAW

STEAM TO H-105A 56800

STEAM TO H-105B

VCM TOTALIZER 823349

C-103 TOTALIZER 259179

C-203 EDC TOTALIZER 992229

REWORK 0

LIQUID CHLORINE 8800 #/HR.

TOTAL CHLORINE 520 T/D

CHLORINE TO R-304 62 T/D

TEMPERATURES

C-102 FEED (T-453)

C-102 BOTTOM 135

C-102 TRAY 30 132

C-102 TRAY 67

C-102 OVERHEAD 89

AFTER H-106 42

CW TO H-106

CW FROM H-106

PRESSURES

BOTTOM 41

BOTTOM FEED 34

TOP FEED 33

OVERHEAD 28

S-102 30#

STEAM TO H-105A 182

STEAM TO H-105B

DUTY

FLUX

ΔT

COEFFICIENT

H-105 B

DUTY Down

FLUX

ΔT

COEFFICIENT

CONDENSER

DUTY

FLUX

ΔT

COEFFICIENT

CW

HEAT BALANCE

FEED

REBOILERS

BOTTOMS

CONDENSER

EDC SOURCE

DIRECT

RECYCLE

OXY

R-304

AMMONIA

LEVEL

TEMP

QUANT.

USED

MADE BY

RWC

CONTINENTAL OIL COMPANY

CALCULATION SHEET

JOB NO.

CHECKED BY

DATE

TITLE LIGHT ENDS COLUMN

FIELD

CCR 000042580

PAGE

OF

STATE