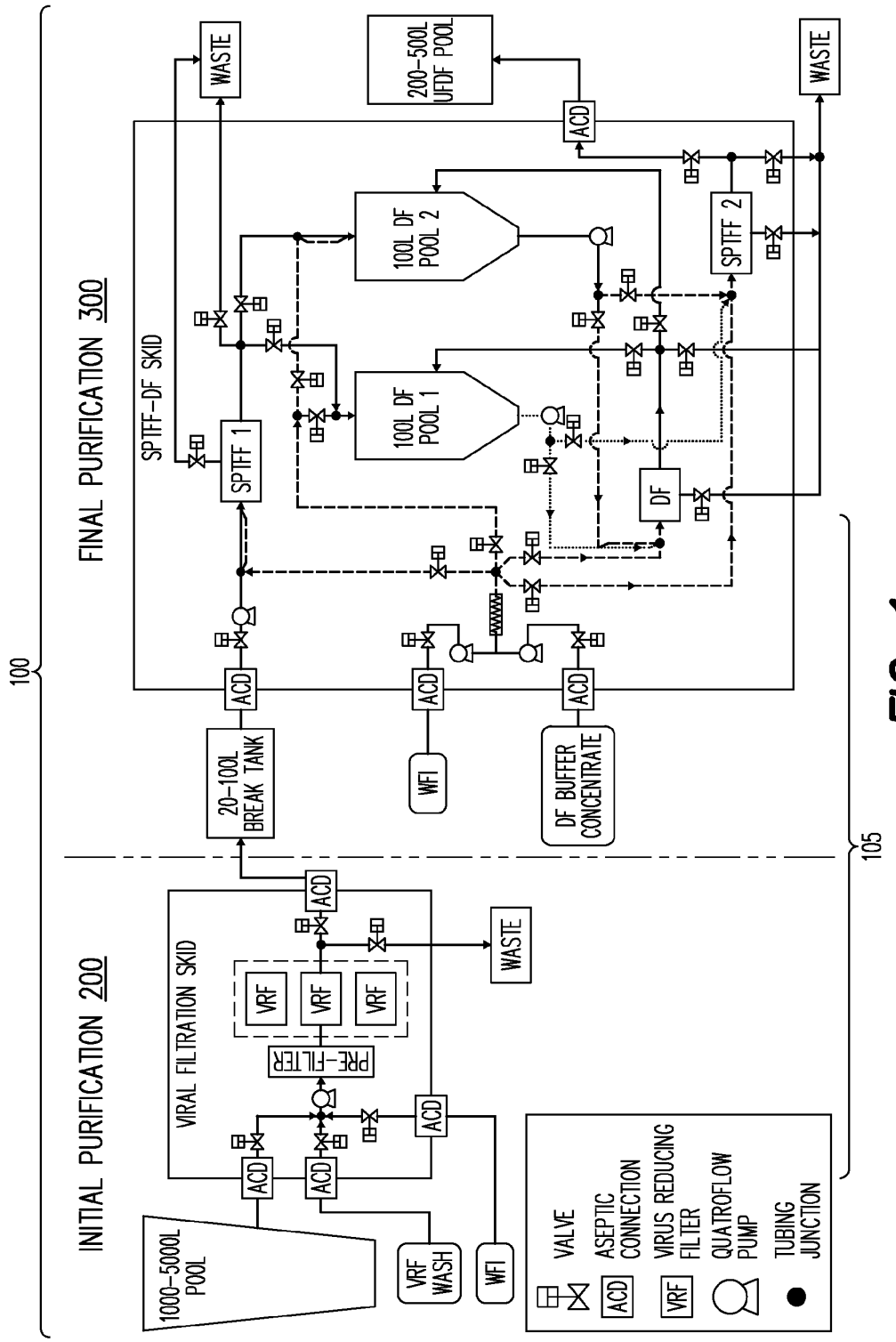

100
FINAL PURIFICATION 300
INITIAL PURIFICATION 200
105
SPTFF-DF SKID
SPTFF 1
SPTFF 2
100L DF POOL 1
100L DF POOL 2
DF
WASTE
200-500L UFDF POOL
20-100L BREAK TANK
WFI
DF BUFFER CONCENTRATE
VIRAL FILTRATION SKID
VRF
PRE-FILTER
1000-5000L POOL
VRF WASH
VALVE
ASEPTIC CONNECTION
VIRUS REDUCING FILTER
QUATROFLOW PUMP
TUBING JUNCTION
ACD

FIG. 1

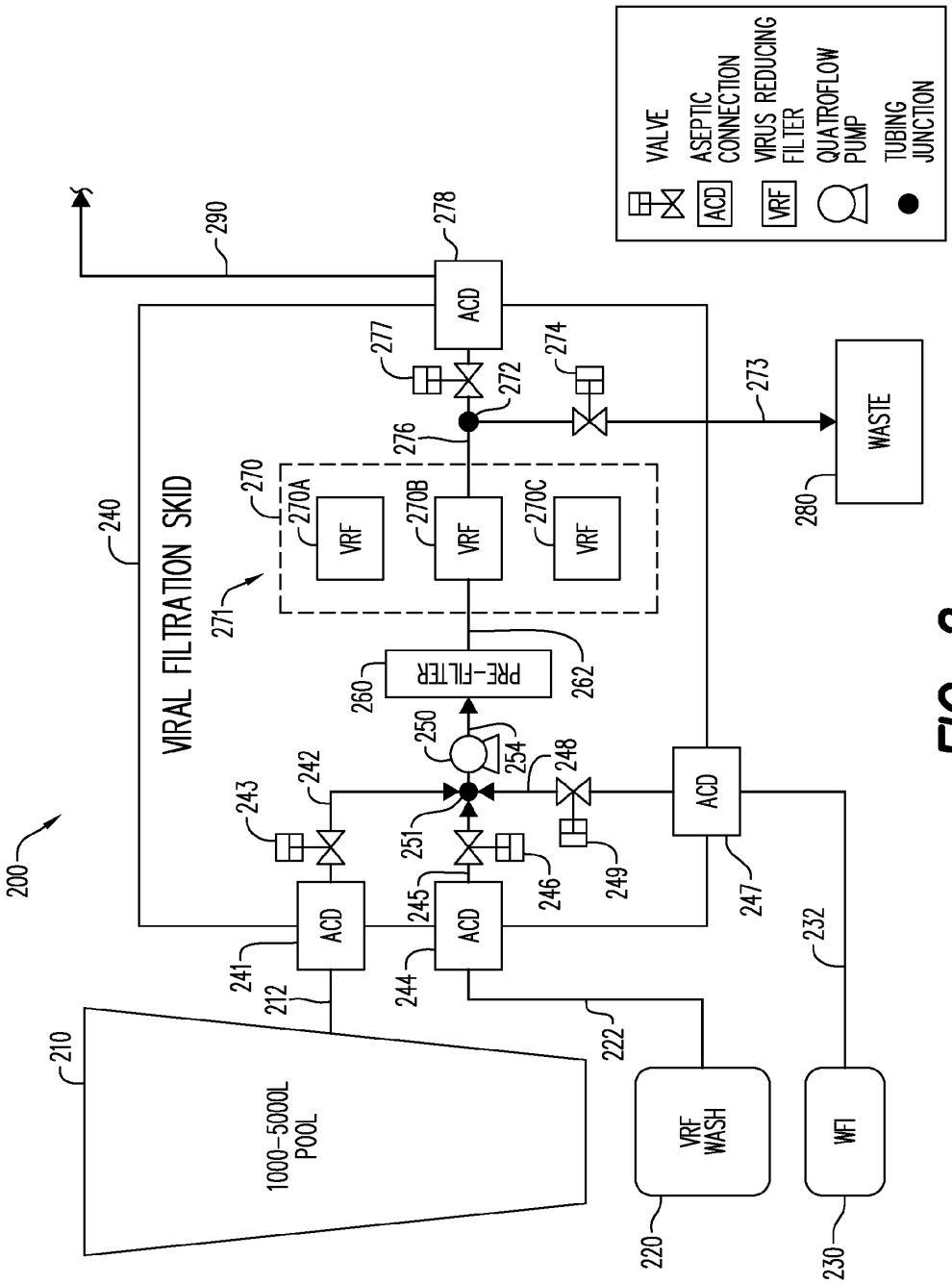

VALVE
ASEPTIC CONNECTION
VIRUS REDUCING FILTER
QUATROFLOW PUMP
TUBING JUNCTION
200
210
1000–5000L POOL
212
VIRAL FILTRATION SKID
240
241
242
243
244
245
246
247
248
249
250
251
254
260
PRE-FILTER
262
270
270A
270B
270C
VRF
271
272
273
274
276
277
278
280
WASTE
290
ACD
222
VRF WASH
220
232
WFI
230

FIG. 2

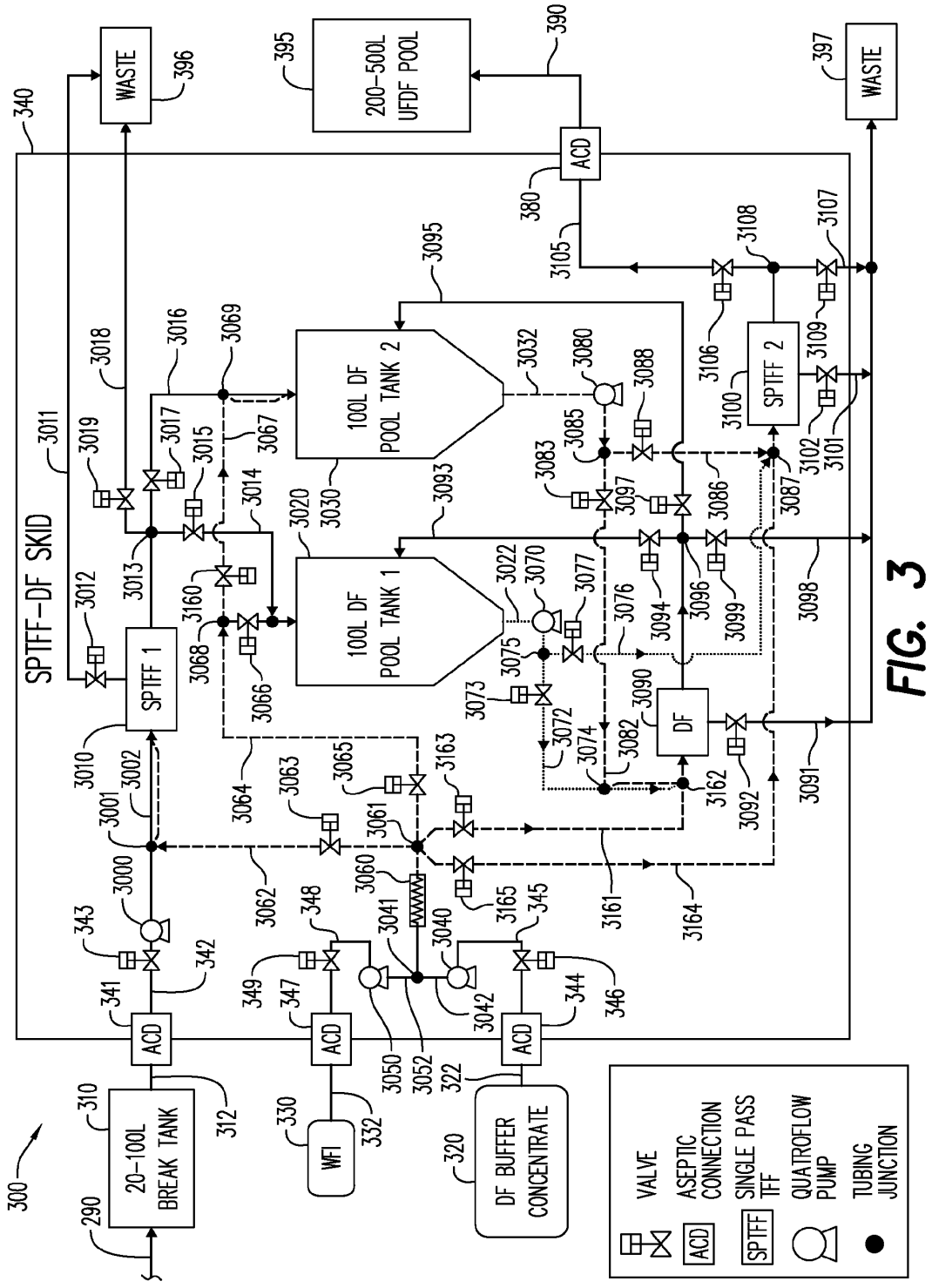

SPTFF-DF SKID
340
WASTE
396
395
200-500L UFDF POOL
390
397
WASTE
ACD
380
3105
3095
3108
3107
3106
SPTFF 2
3109
3100
3102
3101
3087
3086
3099
3098
3096
3094
3076
3077
3070
3022
3075
3073
3072
3074
3082
3090
DF
3162
3092
3091
3164
3161
3165
345
3040
3041
3060
3062
348
3061
3063
3065
3163
3064
3066
3068
3160
3013
3012
SPTFF 1
3010
3002
3001
3000
343
342
341
ACD
310
20-100L BREAK TANK
312
290
300
330
WFI
332
ACD
349
347
3042
344
346
ACD
3050
3052
322
320
DF BUFFER CONCENTRATE
3030
3020
100L DF POOL TANK 1
3093
3032
3080
3088
3085
3083
3097
3014
3015
3017
3016
3069
3067
100L DF POOL TANK 2
3011
3019
3018
VALVE
ASEPTIC CONNECTION
SINGLE PASS TFF
QUATROFLOW PUMP
TUBING JUNCTION
ACD
SPTFF

FIG. 3

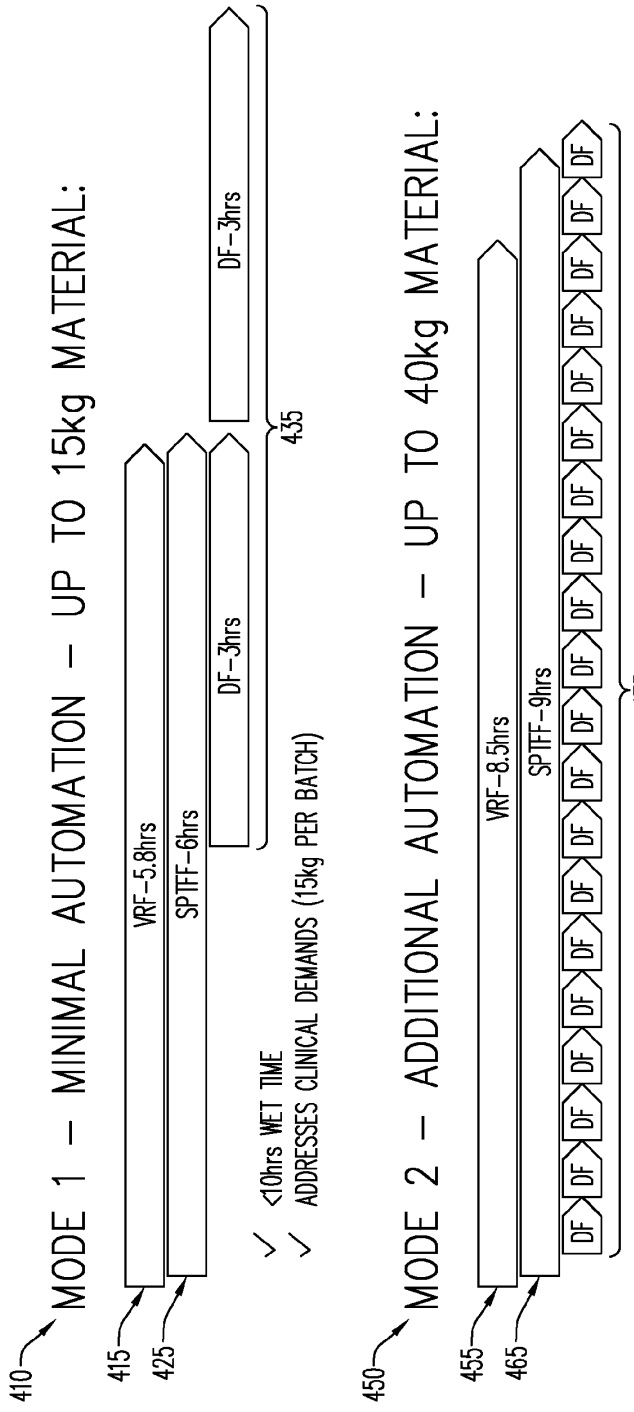

400
MODE 1 – MINIMAL AUTOMATION – UP TO 15kg MATERIAL:
VRF–5.8hrs
SPTFF–6hrs
DF–3hrs
DF–3hrs
435
410
415
425
✓ <10hrs WET TIME
✓ ADDRESSES CLINICAL DEMANDS (15kg PER BATCH)
MODE 2 – ADDITIONAL AUTOMATION – UP TO 40kg MATERIAL:
VRF–8.5hrs
SPTFF–9hrs
DF
475
450
455
465
✓ <10hrs WET TIME
✓ ADDRESSES CLINICAL DEMANDS (15kg PER BATCH)
✓ ADDRESSES COMMERCIAL DEMANDS (40kg PER BATCH)

FIG. 4

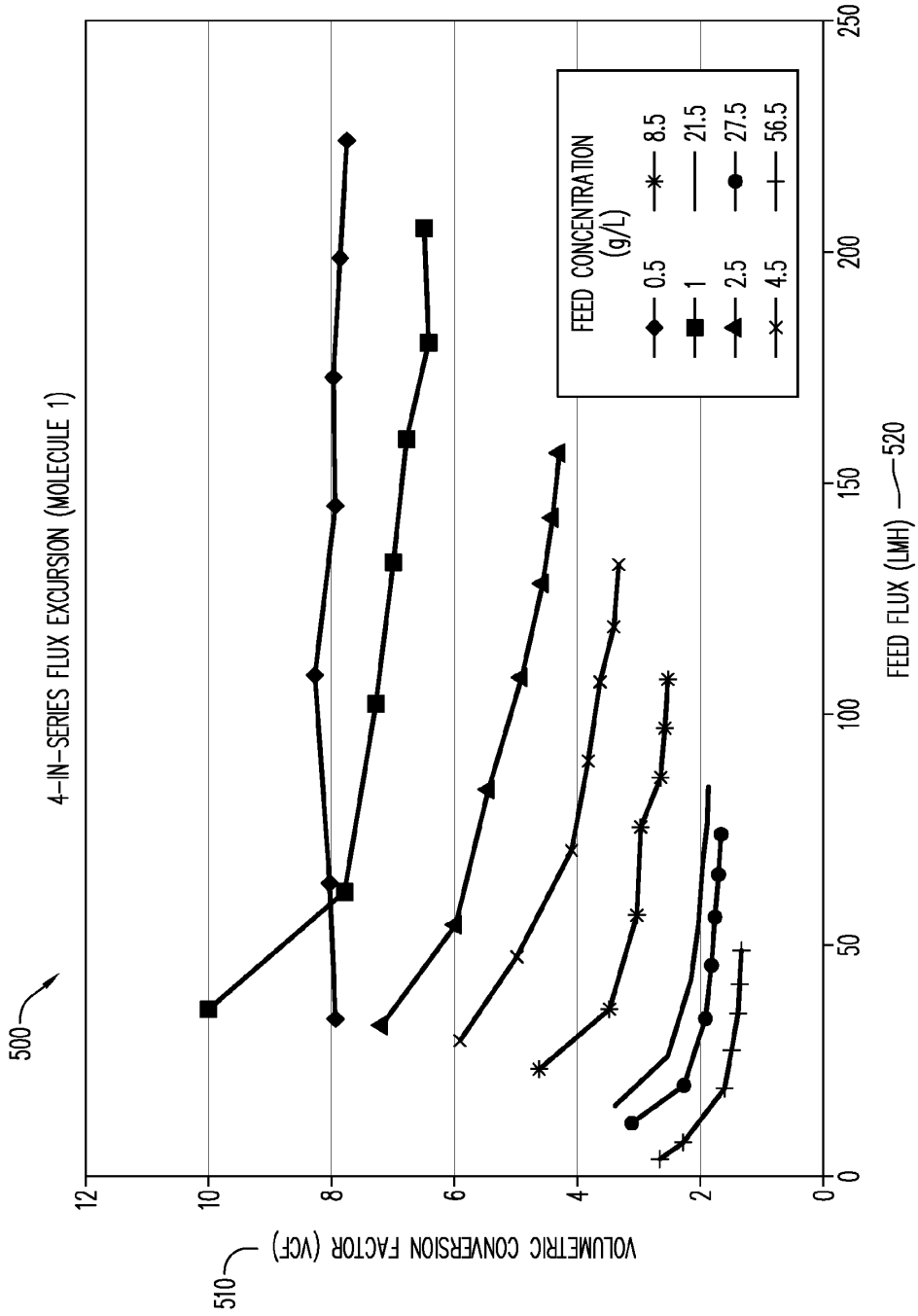

4-IN-SERIES FLUX EXCURSION (MOLECULE 1)
500
VOLUMETRIC CONVERSION FACTOR (VCF)
510
FEED FLUX (LMH)
520
FEED CONCENTRATION (g/L)
0.5
1
2.5
4.5
8.5
21.5
27.5
56.5
0
2
4
6
8
10
12
0
50
100
150
200
250

FIG. 5A

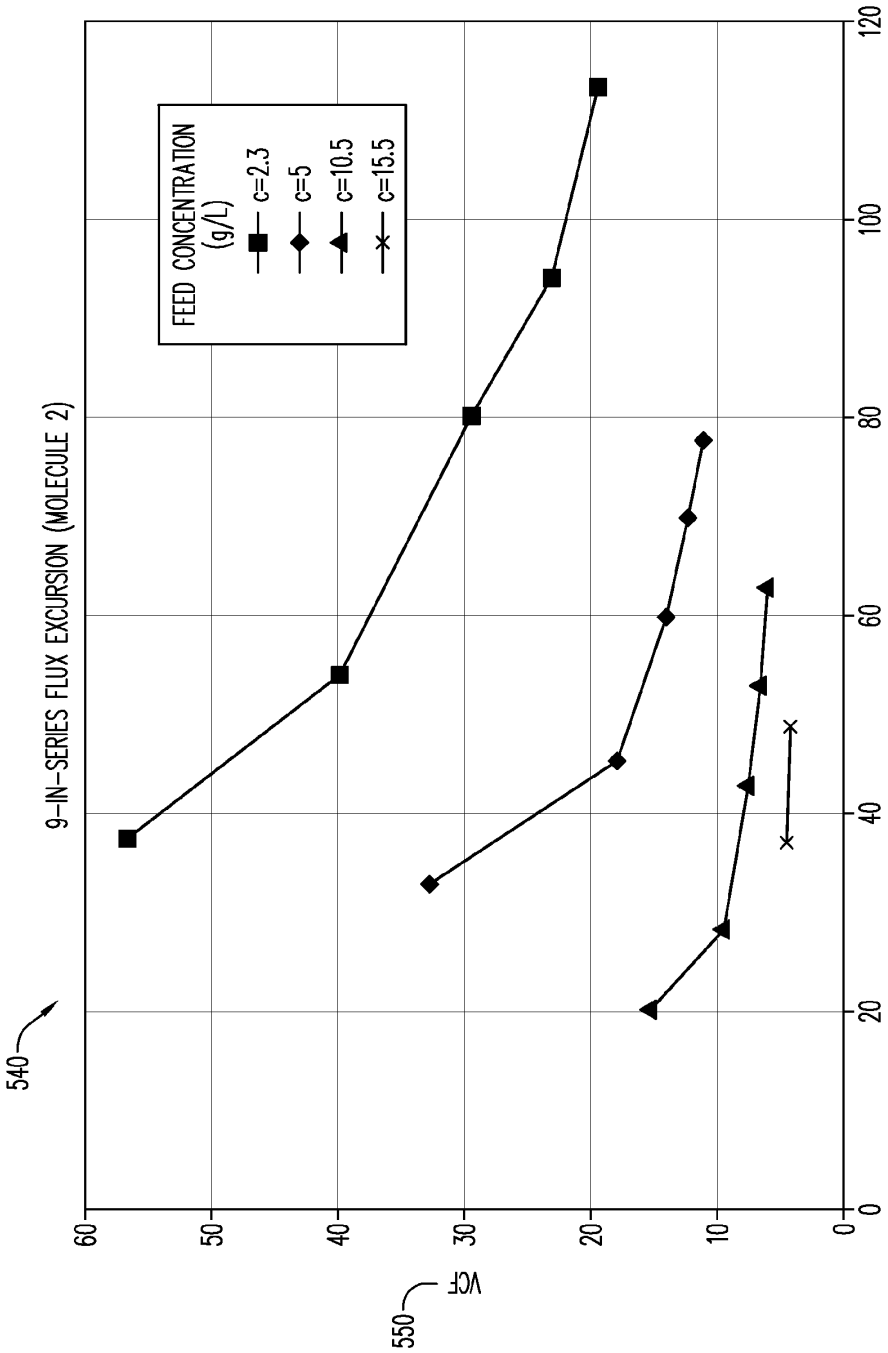

9-IN-SERIES FLUX EXCURSION (MOLECULE 2)
540
FEED CONCENTRATION (g/L)
c=2.3
c=5
c=10.5
c=15.5
VCF
550
0
10
20
30
40
50
60
FEED FLUX (LMH)
560
0
20
40
60
80
100
120

FIG. 5B

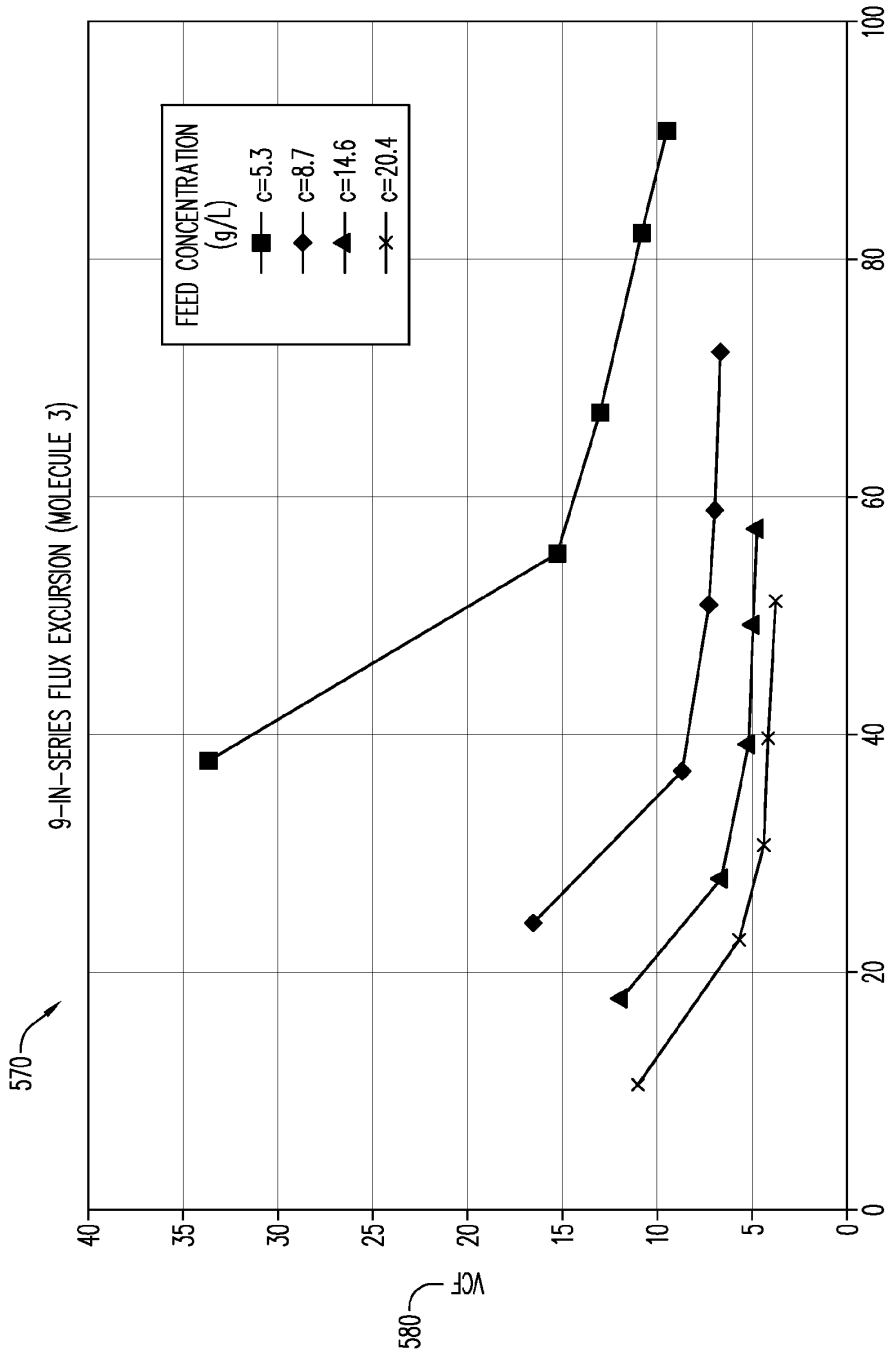

9-IN-SERIES FLUX EXCURSION (MOLECULE 3)
570
FEED CONCENTRATION (g/L)
c=5.3
c=8.7
c=14.6
c=20.4
VCF
580
40
35
30
25
20
15
10
5
0
0
20
40
60
80
100
FEED FLUX (LMH)
590

FIG. 5C