

Supplementary Materials

S.1. HEC-RAS 2D Sluice Gate Operation Scripts

As was discovered in previous work and tested in this work, an on-terrain weir (e.g., Piney Point for this work) can be used to measure the flow inside the computation steps of a HEC-RAS model. These measurements can be internal variables for the operation of other structures using the coded rules functionality. The largest hindrances to this, and the reason for the extended code, are the multi-variable relation of the outlet flow and flow being a computed value in the model.

To solve the first issue, the variables of rate of rise (RR) and pool elevation (Pool) were discretized into categories based on the inflections of the operational tables in the WCM. For the rate of rise, the split points for the Addicks reservoir were 0.075, 0.175, 0.225, 0.275, 0.325, 0.38 ft/h and for the pool elevation were 101.6, 102, 103, 104, 105, 106, 107, 108, 109, 109.2 ft. Both are displayed in US standard units as described in the WCM on plate 7-03 and plate 7-04 [12] and as shown in Figure S1 and Supplementary Materials S.2. These sections of the continuum are separated with “If/ElseIf” statements for the layer of pool elevations inside of each discretization of rate of rise statements. This led to a very repetitive code but was necessary because of the lack of loops in the GUI.

The second issue was resolved by taking the desired outlet flow value resulting from the operational If/ElseIf code and computing the desired gate opening. The computation was done by taking a best fit function of the WCM displayed elevation discharge relationship and computing the gate opening knowing the pool elevation and desired flow in that timestep similar to the calculation of the rate of rise. To show how this was accomplished for one of the reservoirs, Figure A1 is a screen capture of the GUI with the plus and minus signs on the left indicating hidden statements, while the full code as seen by the program along with a use summary is shown in Supplementary Materials S.2.

Rule Operations	
row	Operation
1	! =====Variables for the model calculations=====
2	'Pool' = Storage Area Connections:Structure.Stage (Fixed)(Addicks Release,Value at current time step)
3	'prevPool' = Storage Area Connections:Structure.Stage (Fixed)(Addicks Release,Value at previous time step)
4	'PPFlow' = Storage Area Connections:Weir.Flow(Piney Point,Value at current time step)
5	'DelPool' = 'Pool' - 'prevPool'
6	'Time1' = Time:Hour of Simulation(Beginning of time step)
7	'Time2' = Time:Hour of Simulation(End of time step)
8	'Timestep' = 'Time2' - 'Time1'
9	Real 'Pass' (Initial Value = 0)
10	Real 'openx' (Initial Value = 0)
11	Real 'openy' (Initial Value = 0)
12	Real 'openxy' (Initial Value = 0)
13	Real 'open' (Initial Value = 0)
14	Real 'openp' (Initial Value = 0)
15	Real 'passx' (Initial Value = 0)
16	Real 'passy' (Initial Value = 0)
17	Real 'passxy' (Initial Value = 0)
18	Real 'pass' (Initial Value = 0)
19	Real 'passp' (Initial Value = 0)
20	Real 'Outflow' (Initial Value = 0)
21	'RR' = 'DelPool' / 'Timestep'
23	! ===== ESRD Rules =====
- 24	If ('RR' <= 0.075) Then
+ 25-47	If ('Pool' ...
48	ElseIf ('RR' > 0.075) And ('RR' <= 0.175) Then
- 49	If ('Pool' < 101.6) Then
50	'Outflow' = 0
51	ElseIf ('Pool' >= 101.6) And ('Pool' < 102) Then
52	'Outflow' = 0
53	ElseIf ('Pool' >= 102) And ('Pool' < 103) Then
54	'Outflow' = 0
55	ElseIf ('Pool' >= 103) And ('Pool' < 104) Then
56	'Outflow' = 0
57	ElseIf ('Pool' >= 104) And ('Pool' < 105) Then
58	'Outflow' = 0
59	ElseIf ('Pool' >= 105) And ('Pool' < 106) Then
60	'Outflow' = 0
61	ElseIf ('Pool' >= 106) And ('Pool' < 107) Then
62	'Outflow' = 1789
63	ElseIf ('Pool' >= 107) And ('Pool' < 108) Then
64	'Outflow' = 6493
65	ElseIf ('Pool' >= 108) And ('Pool' < 109) Then
66	'Outflow' = 8000
67	ElseIf ('Pool' >= 109) And ('Pool' < 109.2) Then
68	'Outflow' = 8000
69	ElseIf ('Pool' >= 109.2) Then
70	'Outflow' = 8000
71	End If
72	ElseIf ('RR' > 0.175) And ('RR' <= 0.225) Then
+ 73-95	If ('Pool' ...
96	ElseIf ('RR' > 0.225) And ('RR' <= 0.275) Then
+ 97-119	If ('Pool' ...
120	ElseIf ('RR' > 0.275) And ('RR' <= 0.325) Then
+ 121-143	If ('Pool' ...
144	ElseIf ('RR' > 0.325) And ('RR' <= 0.38) Then
+ 145-167	If ('Pool' ...
168	ElseIf ('RR' > 0.38) Then
+ 169-191	If ('Pool' ...
192	! ===== End of ESRD rules =====
193	ElseIf ('PPFlow' < 2000) Then
194	'Pass' = 1000 - 'PPFlow'
195	End If
196	! =====logic for pass vs outflow=====
- 197	If ('Outflow' > 0) Then
198	'openx' = -0.6225 * 'Pool' + 0.003057 * 'Pool'^2
199	'openy' = 0.004288 * 'Outflow' + -8.786E-09 * 'Outflow'^2
200	'openxy' = -2.996E-05 * 'Outflow' * 'Pool'
201	'openp' = [('openx' + 'openy') + 'openxy'] + 31.57
- 202	If ('openp' >= 0) Then
203	'open' = 'openp'
204	Else
205	'open' = 0
206	End If
207	Gate.Opening = 'open'
208	ElseIf ('Outflow' = 0) And ('PPFlow' < 2000) Then
209	'passx' = -0.6225 * 'Pool' + 0.003057 * 'Pool'^2
210	'passy' = 0.004288 * 'Pass' + -8.786E-09 * 'Pass'^2
211	'passxy' = -2.996E-05 * 'Pass' * 'Pool'
212	'passp' = [('passx' + 'passy') + 'passxy'] + 31.57
- 213	If ('openp' >= 0) Then
214	'pass' = 'passp'
215	Else
216	'pass' = 0
217	End If
218	Gate.Opening = 'pass'
219	End If

Figure S1. Rule operation code for Addicks reservoir sluice gate.

S.2. Full Coded Script of Addicks Reservoir Gate Copied from the HEC-RAS Interface

The code in this format the text below can be directly copied back into the HEC-RAS “Rule Operations” GUI and be interacted with in the form seen in Figure A1. Note that lines 207 and 218 from Figure A1 have “Gate.Opening =” objects that are not yet referenced to structures in the model. This is done for ease of a reader who would like to investigate and interact with how the operations are structured. After the reference, these two lines will read “Gate.Opening(X) =” where X is the name of the HEC-RAS gate.

```
“
Rule      Operation=Type=0,Var      Type=1,In      Summary=-1,Description=Flow      across      Piney
Point,Comment=====Variables for the model calculations=====
Rule      Operation=Type=2,Var      Name=Pool,Var      Type=1,In      Summary=-1,Description=Flow      across      Piney
Point,Conn=Addicks      Release,Gate=adk,Sim      Group=Storage      Area      Connections,Sim      Function=Structure.Stage
(Fixed),Time=1
Rule      Operation=Type=2,Var      Name=prevPool,Var      Type=1,Existing      Var=prevPool,In      Summary=-
1,Description=Flow      across      Piney      Point,Conn=Addicks      Release,Gate=adk,Sim      Group=Storage      Area      Connections,Sim
Function=Structure.Stage (Fixed),Time=2
Rule      Operation=Type=2,Var      Name=PPFlow,Var      Type=1,Existing      Var=PPFlow,In      Summary=-
1,Description=Flow      across      Piney      Point,Conn=Piney      Point,Gate=adk,Sim      Group=Storage      Area      Connections,Sim
Function=Weir.Flow,Time=1,LBStart=0.25,LBEnd=0
Rule
Rule      Operation=Type=5,Var
Type=1,MathOperator1=2,MathOperator2=0,MathOperator3=0
Rule      Expression=,Variable=Pool
Rule      Expression=,Variable=prevPool
Rule      Operation=Type=2,Var      Name=Time1,Var      Type=1,Sim      Group=Time,Sim      Function=Hour      of
Simulation,Time=1
Rule      Operation=Type=2,Var      Name=Time2,Var      Type=1,Sim      Group=Time,Sim      Function=Hour      of
Simulation,Time=2
Rule
Rule      Operation=Type=5,Var
Type=1,MathOperator1=2,MathOperator2=0,MathOperator3=0
Rule      Expression=,Variable=Time2
Rule      Expression=,Variable=Time1
Rule      Operation=Type=1,Var      Name=Pass,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=openx,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=openy,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=openxy,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=open,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=openp,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=passx,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=passy,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=passxy,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=pass,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=passp,Var      Type=1,Real=0
Rule      Operation=Type=1,Var      Name=Outflow,Var      Type=1,Real=0
Rule      Operation=Type=5,Var      Name=RR,Var      Type=1,MathOperator1=4,MathOperator2=0,MathOperator3=0
Rule      Expression=,Variable=DelPool
Rule      Expression=,Variable=Timstep
Rule      Operation=Type=0,Var      Type=1,Comment=====End of Variable inputs=====
Rule      Operation=Type=0,Var      Type=1,Comment===== ESRD Rules =====
Rule      Operation=Type=4,Var      Type=1,Branch      Type=0,Branch      Or=0,BranchCompare1=2,BranchCompare2=3
Rule      Expression=,Variable=RR
Rule      Expression=,Constant=0.075
```

Rule Expression=,Variable=RR
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool

Rule Expression=,Constant=106
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=1167
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=3500
 Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=3,BranchCompare2=2
 Rule Expression=,Variable=RR
 Rule Expression=,Constant=0.075
 Rule Expression=,Variable=RR
 Rule Expression=,Constant=0.175
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool

Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=1789
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108

Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=6493				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=108				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109.2				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109.2				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=3,BranchCompare2=2				
Rule Expression=,Variable=RR				
Rule Expression=,Constant=0.175				
Rule Expression=,Variable=RR				
Rule Expression=,Constant=0.225				
Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=101.6				
Rule Expression=,Variable=Pool				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=101.6				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=102				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=102				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=103				

Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=103				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=104				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=104				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=105				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=105				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=106				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=1848				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=106				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=107				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=6325				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=107				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=108				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=108				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				

Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=3,BranchCompare2=2
 Rule Expression=,Variable=RR
 Rule Expression=,Constant=0.225
 Rule Expression=,Variable=RR
 Rule Expression=,Constant=0.275
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0

Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=1611
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=5933
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2

Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=3,BranchCompare2=2				
Rule Expression=,Variable=RR				
Rule Expression=,Constant=0.275				
Rule Expression=,Variable=RR				
Rule Expression=,Constant=0.325				
Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=101.6				
Rule Expression=,Variable=Pool				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=101.6				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=102				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=102				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=103				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=103				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=104				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=1144				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=104				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=105				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=5408				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=105				

Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=3,BranchCompare2=2
 Rule Expression=,Variable=RR
 Rule Expression=,Constant=0.325
 Rule Expression=,Variable=RR
 Rule Expression=,Constant=0.38
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2
 Rule Expression=,Variable=Pool

Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=101.6
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=102
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=875
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=103
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=4843
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=104
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=105
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=106
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=107

Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=107				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=108				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=108				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109.2				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=109.2				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0				
Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=3,BranchCompare2=2				
Rule Expression=,Variable=RR				
Rule Expression=,Constant=0.38				
Rule Expression=,Variable=RR				
Rule Expression=,Constant=0.41				
Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=1,BranchCompare2=2				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=101.6				
Rule Expression=,Variable=Pool				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=0				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=101.6				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=102				

Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=2140				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=102				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=103				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=5533				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=103				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=104				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=104				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=105				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=105				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=106				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=106				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=107				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				
Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=107				
Rule Expression=,Variable=Pool				
Rule Expression=,Constant=108				
Rule	Operation=Type=5,Var	Type=1,Existing	Var=Outflow,Use	Existing=-
1,MathOperator1=0,MathOperator2=0,MathOperator3=0				
Rule Expression=,Constant=8000				

Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=108
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=4,BranchCompare2=1
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=Pool
 Rule Expression=,Constant=109.2
 Rule Operation=Type=5,Var Type=1,Existing Var=Outflow,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=8000
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=0,Var Type=1,Comment===== End of ESRD rules =====
 Rule Operation=Type=4,Var Type=1,Branch Type=2,Branch Or=0,BranchCompare1=1,BranchCompare2=0
 Rule Expression=,Variable=PPFlow
 Rule Expression=,Constant=2000
 Rule Operation=Type=5,Var Name=Pass,Var Type=1,Existing Var=Pass,Use Existing=-
 1,MathOperator1=2,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=1000
 Rule Expression=,Variable=PPFlow
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=0,Var Type=1,Comment=====logic for pass vs. outflow=====
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=3,BranchCompare2=0
 Rule Expression=,Variable=Outflow
 Rule Expression=,Constant=0
 Rule Operation=Type=5,Var Name=openx,Var Type=1,Existing Var=openx,Use Existing=-
 1,MathOperator1=1,MathOperator2=0,MathOperator3=0
 Rule Expression=,Coefficient=-0.6225,Variable=Pool
 Rule Expression=,Coefficient=0.003057,Variable=Pool,Exponent_Coef=2
 Rule Operation=Type=5,Var Name=openy,Var Type=1,Existing Var=openy,Use Existing=-
 1,MathOperator1=1,MathOperator2=0,MathOperator3=0
 Rule Expression=,Coefficient=0.004288,Variable=Outflow
 Rule Expression=,Coefficient=-8.786E-09,Variable=Outflow,Exponent_Coef=2
 Rule Operation=Type=5,Var Name=openxy,Var Type=1,Existing Var=openxy,Use Existing=-
 1,MathOperator1=3,MathOperator2=0,MathOperator3=0
 Rule Expression=,Coefficient=-2.996E-05,Variable=Outflow
 Rule Expression=,Variable=Pool
 Rule Operation=Type=5,Var Name=openp,Var Type=1,Existing Var=openp,Use Existing=-
 1,MathOperator1=1,MathOperator2=1,MathOperator3=1
 Rule Expression=,Variable=openx

Rule Expression=,Variable=openy
 Rule Expression=,Variable=openxy
 Rule Expression=,Constant=31.57
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=openp
 Rule Expression=,Constant=0
 Rule Operation=Type=5,Var Name=open,Var Type=1,Existing Var=open,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Variable=openp
 Rule Operation=Type=4,Var Type=1,Branch Type=4,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=5,Var Name=open,Var Type=1,Existing Var=open,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=3,Var Type=1,Sim Group=Storage Area Connections,Sim Function=Gate.Opening
 Rule Expression=,Variable=open
 Rule Operation=Type=4,Var Type=1,Branch Type=3,Branch Or=0,BranchCompare1=5,BranchCompare2=1
 Rule Expression=,Variable=Outflow
 Rule Expression=,Constant=0
 Rule Expression=,Variable=PPFlow
 Rule Expression=,Constant=2000
 Rule Operation=Type=5,Var Name=passx,Var Type=1,Existing Var=passx,Use Existing=-
 1,MathOperator1=1,MathOperator2=0,MathOperator3=0
 Rule Expression=,Coefficient=-0.6225,Variable=Pool
 Rule Expression=,Coefficient=0.003057,Variable=Pool,Exponent_Coef=2
 Rule Operation=Type=5,Var Name=passy,Var Type=1,Existing Var=passy,Use Existing=-
 1,MathOperator1=1,MathOperator2=0,MathOperator3=0
 Rule Expression=,Coefficient=0.004288,Variable=Pass
 Rule Expression=,Coefficient=-8.786E-09,Variable=Pass,Exponent_Coef=2
 Rule Operation=Type=5,Var Name=passxy,Var Type=1,Existing Var=passxy,Use Existing=-
 1,MathOperator1=3,MathOperator2=0,MathOperator3=0
 Rule Expression=,Coefficient=-2.996E-05,Variable=Pass
 Rule Expression=,Variable=Pool
 Rule Operation=Type=5,Var Name=passp,Var Type=1,Existing Var=passp,Use Existing=-
 1,MathOperator1=1,MathOperator2=1,MathOperator3=1
 Rule Expression=,Variable=passx
 Rule Expression=,Variable=passy
 Rule Expression=,Variable=passxy
 Rule Expression=,Constant=31.57
 Rule Operation=Type=4,Var Type=1,Branch Type=0,Branch Or=0,BranchCompare1=4,BranchCompare2=0
 Rule Expression=,Variable=openp
 Rule Expression=,Constant=0
 Rule Operation=Type=5,Var Name=pass,Var Type=1,Existing Var=pass,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Variable=passp
 Rule Operation=Type=4,Var Type=1,Branch Type=4,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=5,Var Name=open,Var Type=1,Existing Var=pass,Use Existing=-
 1,MathOperator1=0,MathOperator2=0,MathOperator3=0
 Rule Expression=,Constant=0
 Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0
 Rule Operation=Type=3,Var Type=1,Sim Group=Storage Area Connections,Sim Function=Gate.Opening

Rule Expression=,Variable=pass

Rule Operation=Type=4,Var Type=1,Branch Type=5,Branch Or=0,BranchCompare1=0,BranchCompare2=0

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