

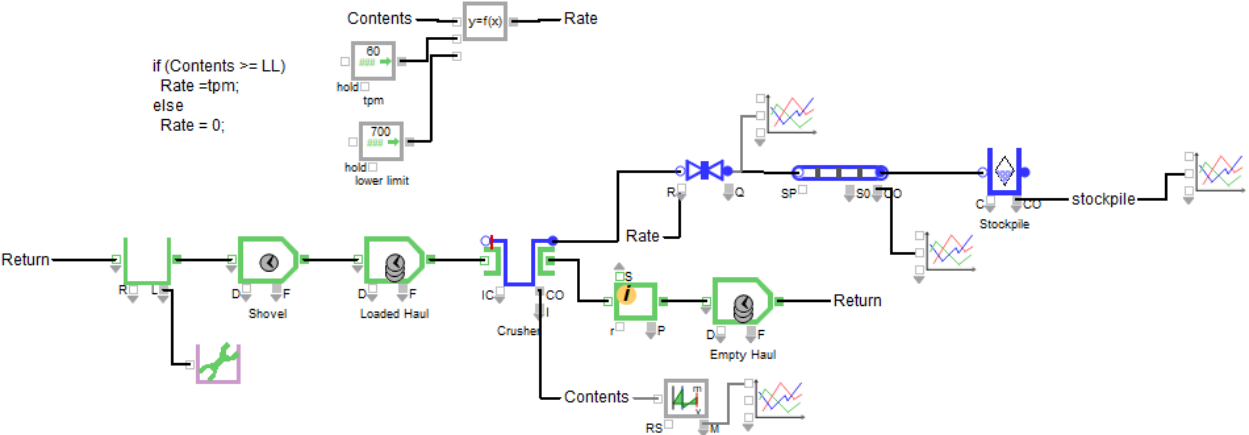
# MINE 350 MODELING AND SIMULATION

## Laboratory #8

November 25, 2021

### Trucks Crusher Conveyor Stockpile

This is a somewhat open-ended exercise to modify an ExtendSim model of a system in which a fleet of haul trucks transports and dumps ore into a crusher. A conveyor then transports the ore from the crusher to a stockpile. The model is *Trucks Crusher Conveyor Stockpile.mox*.



Your mission is to find a set of parameters that will result in the following:

- Average queue times at the shovel is less than a minute.
- Average crusher contents close to some lower limit  $LL \geq 500$  t.
- Conveyor contents do not become zero during simulation.

The following table shows which parameters are fixed and which can be varied:

Fixed	Value	Variable	Current value
Crusher capacity	1000 t	Fleet size	5
Conveyor length	2000 m	Haul truck capacity	200 t
		Crusher lower limit	700 t
		Conveyor speed	360 m/minute
		Conveyor rate	60 t/min
		Belt maximum density	0.3 t/m

Note the relationship between belt density, capacity and speed on slide 15 of the Applications in DRS file. This conveyor is somewhere between the small and large category.

Make a list of the parameter values you adopted in a text box on your ExtendSim model. Rename your model as [yourname] Lab #8.mox and upload it to the site.