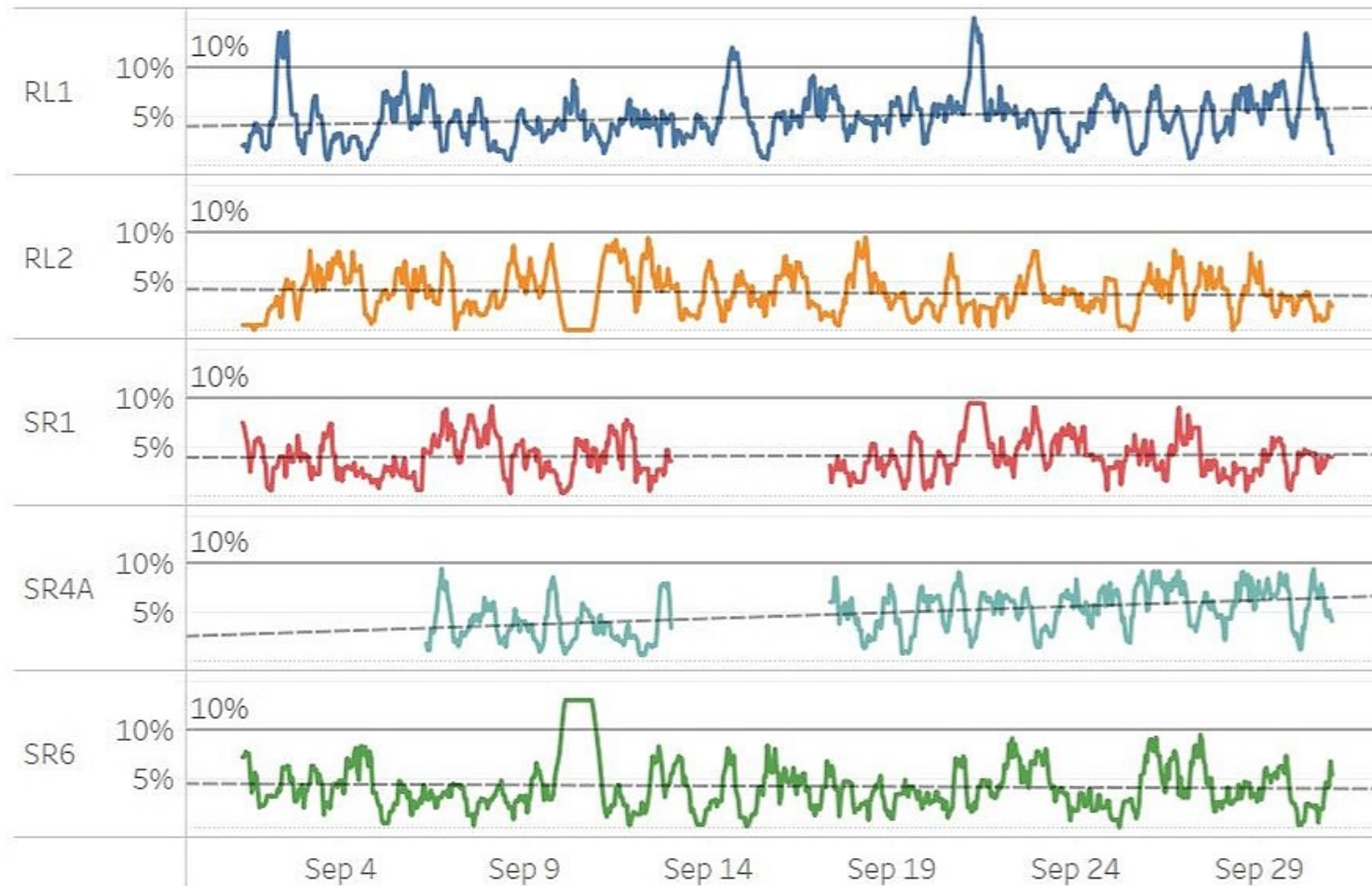


Coal Terminal Maintenance Analysis

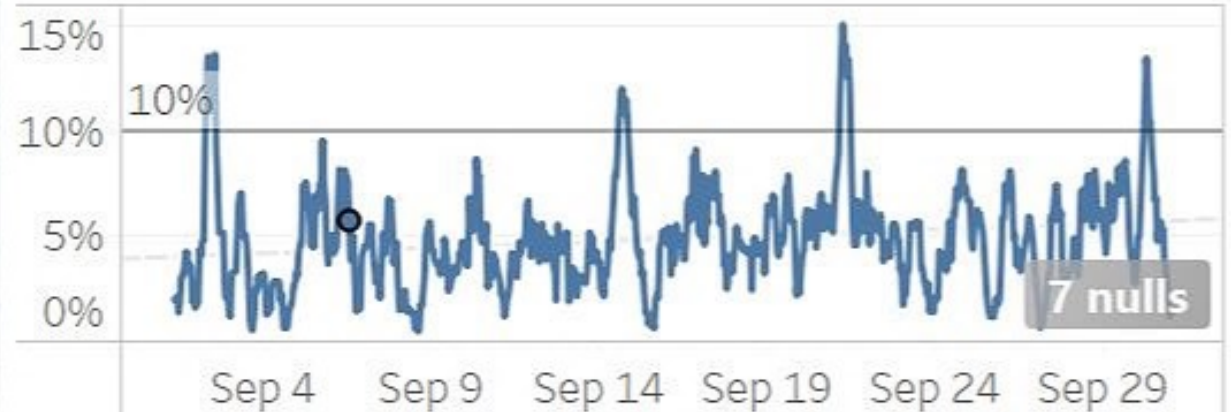


Reclaimers





Reclaimer 1 (RL1)



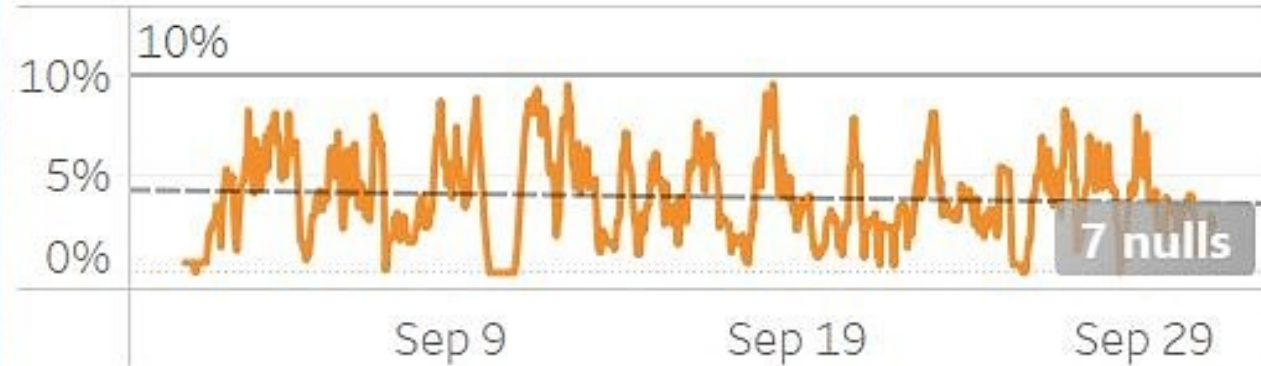
The above illustration depicts the 8 hour moving average of Idle Capacity for Reclaimer1 i.e RL1, expressed as a percentage of Nominal Capacity.

Through the month of September RL1 exceeded the allowable threshold multiple times:

- 2nd September - moving average peaked at 14%
- 14th September - moving average peaked at 12%
- 21st September - moving average peaked at 15%
- 30th September - moving average peaked at 13%



Reclaimer 2(RL2)



The illustration above depicts the 8 hour moving average of Idle Capacity for Reclaimer 2 (RL2), expressed as a percentage of Nominal Capacity.

The chart shows that at no given point in time did the 8 hour average exceed the threshold of 10%. Thus, the machine is running smoothly and does not require maintenance.

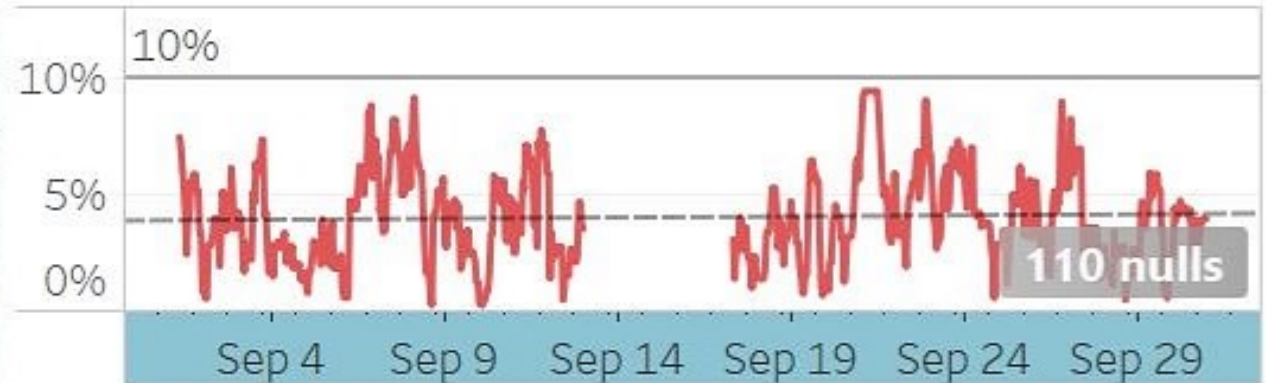
The chart plateaus at the 10th of September 2015, indicating that the machine was working at full capacity for a prolonged period of time.

Stacker-Reclaimers





Stacker-Reclaimer 1 (SR1)



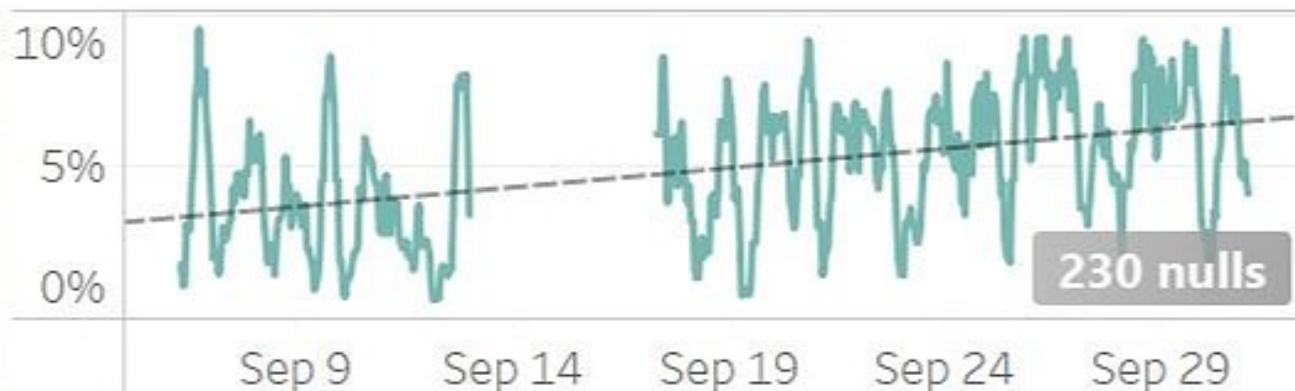
The illustration above depicts the 8 hour moving average of Idle Capacity for Stacker-Reclaimer 1 (SR1), expressed as a percentage of Nominal Capacity.

The chart shows that at no given point in time did the 8 hour average exceed the threshold of 10%. This suggests that the machine is running smoothly and does not require maintenance.

The gap in the chart signifies the lack of data for the period between 10 September 00:00 to 16 September 23:00 (inclusive). It is assumed the machine was performing stacking tasks during this period.



Stacker-Reclaimer 4A (SR4A)

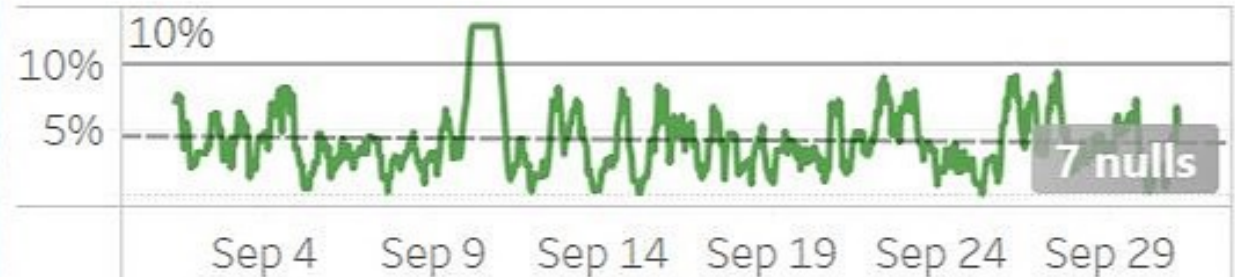


Idle Capacity for Stacker-Reclaimer 4A (SR4A), expressed as a percentage of Nominal Capacity.

The chart shows that at no given point in time did the 8 hour average exceed the threshold of 10%. However, there is an evident upward trend in the dynamic range of this metric. If this trend continues, the 8 hour moving average of idle capacity is predicted to increase at an approximate rate of 0.12% per hour in the long run.

The gap in the chart signifies the lack of data for the period between 13 September 00:00 to 16 September 23:00 (inclusive). It is assumed the machine was performing stacking tasks during this period.

Stacker-Reclaimer 6 (SR6)



The illustration above depicts the 8 hour moving average of Idle Capacity for Stacker-Reclaimer 6 (SR6), expressed as a percentage of Nominal Capacity.

The chart shows a surge in the 8 hour moving average of Idle Capacity around the 10th of September 2015. Although per standard criterion this suggests that SR6 requires maintenance, this surge doesn't look normal.

Further study uncovered that for the period between 9 September 19:00 to 10 September 19:00 this machine was operating at constant reduced capacity of 3,000 tonnes. This happens to be the same period when RL2 was operating at its maximum capacity. Given that both these machines are situated on the same line in stockyard, it may be the case there was a conflict of tasks between the two machines and priority was given to RL2. If this is the case, then it appears SR6 does not require maintenance since it has not exceeded the threshold at any other point in time.

