A&B MYLEC Pty Ltd

DATA UNIFICATION

10 March 2015

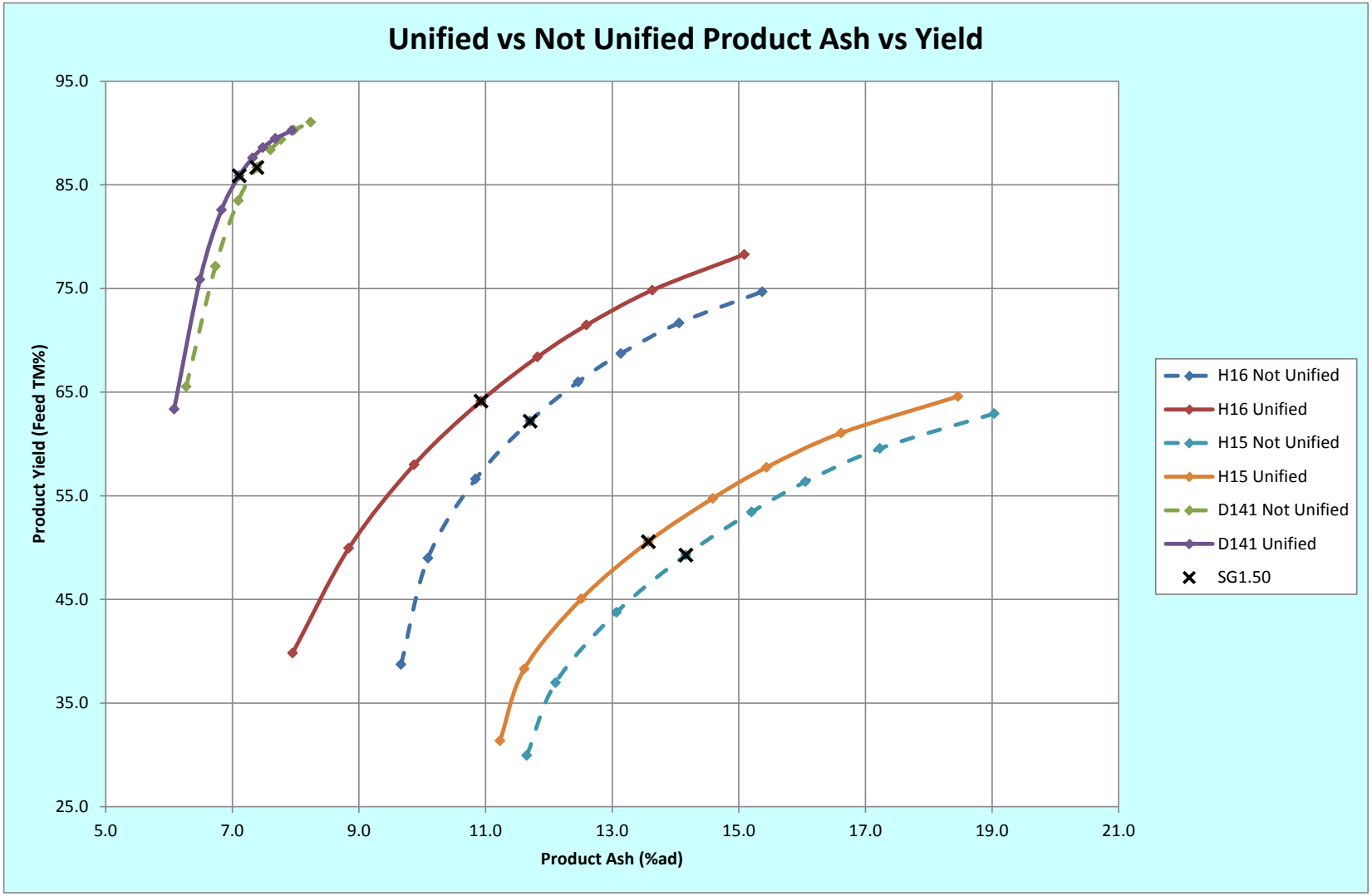
SIMULATION COMPARISON BETWEEN UNIFIED/NON-UNIFIED

- Crushed washability data has two distinct issues for use in practical yield simulations:
  - A size distribution that does not represent the mass proportions feeding each of the CPP circuits
  - A single density distribution is used in both the DMC and RC circuits which is different from the naturally liberated density distribution

- A&B Mylec has developed a technique to repair crushed washability (non-unified) data using properly pretreated reference data so that the repaired (unified) data represents the size and density distributions fed to a wash plant

- As a comparative exercise, three datapoints from seams with distinctly different washability profiles were selected for comparison:
  - D141: Good washability performance
  - H16: Average washability performance
  - H15: Poorer washability performance

SIMULATION COMPARISON BETWEEN UNIFIED/NON-UNIFIED



DATA UNIFICATION PROCESSES

- The following processes were utilised in order to unify the washability database

- Float/sink density interpolations
  - The interpolation and extrapolation of each washability series so that all series have a common 12 density fractions (F1.30, F1.35, F1.40, F1.45, F1.50, F1.55, F1.60, F1.65, F1.70, F1.80, F2.00 & S2.00)
  - Unnecessary density fractions were combined

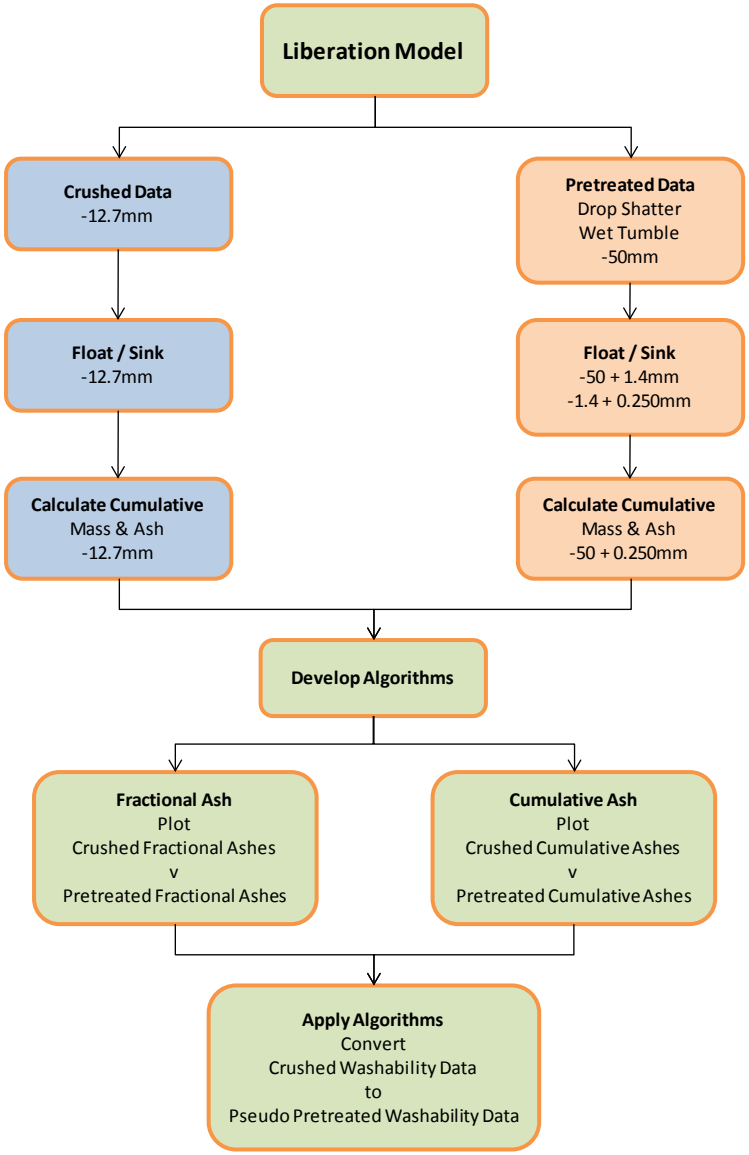
- Combination of pre-treated washability fraction to achieve a common series of size fractions representative of the CHPP, namely:
  - DMC (+1.0mmww)
  - Reflux classifier (1.0ww x 0.250mm)
  - Flotation (-0.250mm)

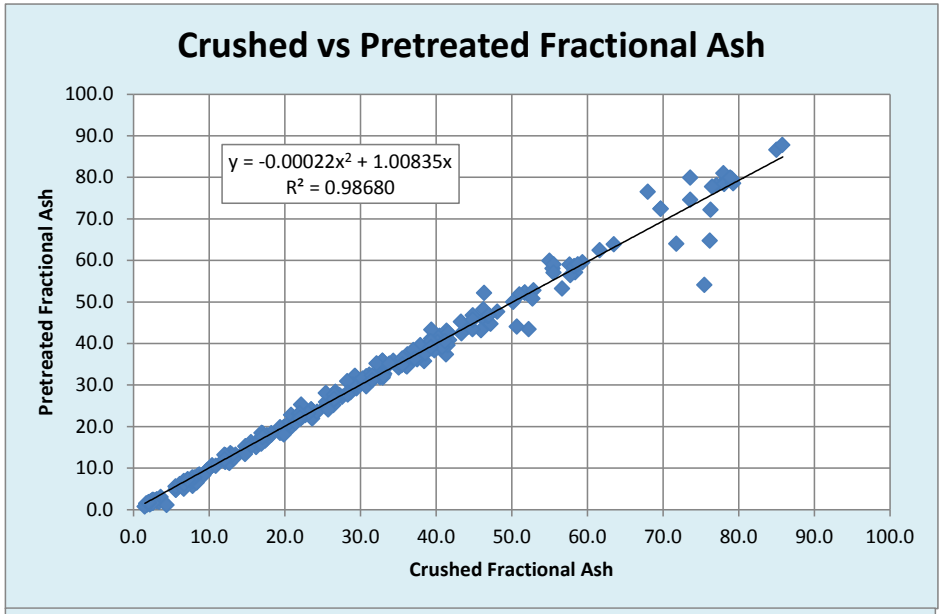
- Development of Liberation models

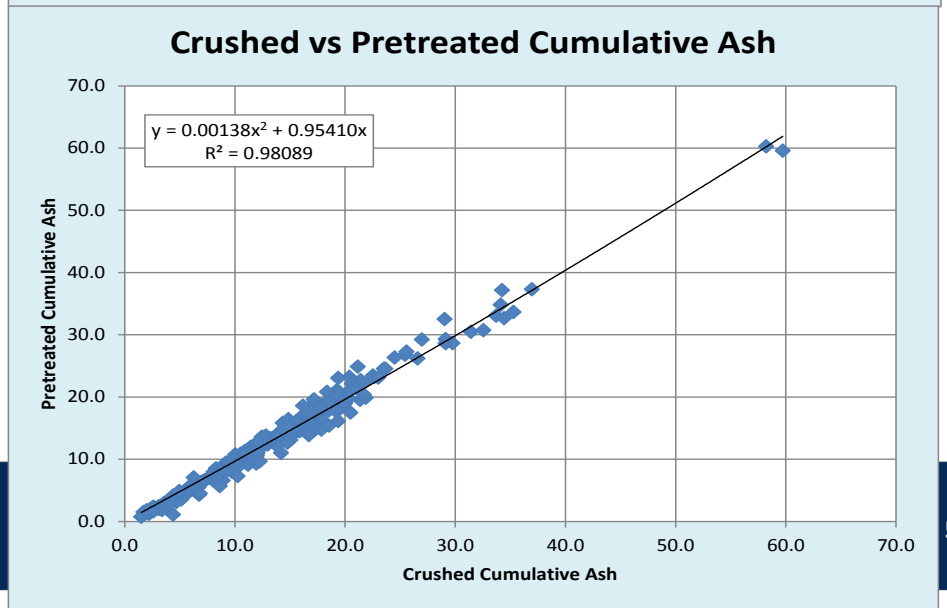
- Development of Circuit Segregation models

LIBERATION MODELS

- Converts crushed washability data into pseudo-pretreated washability data

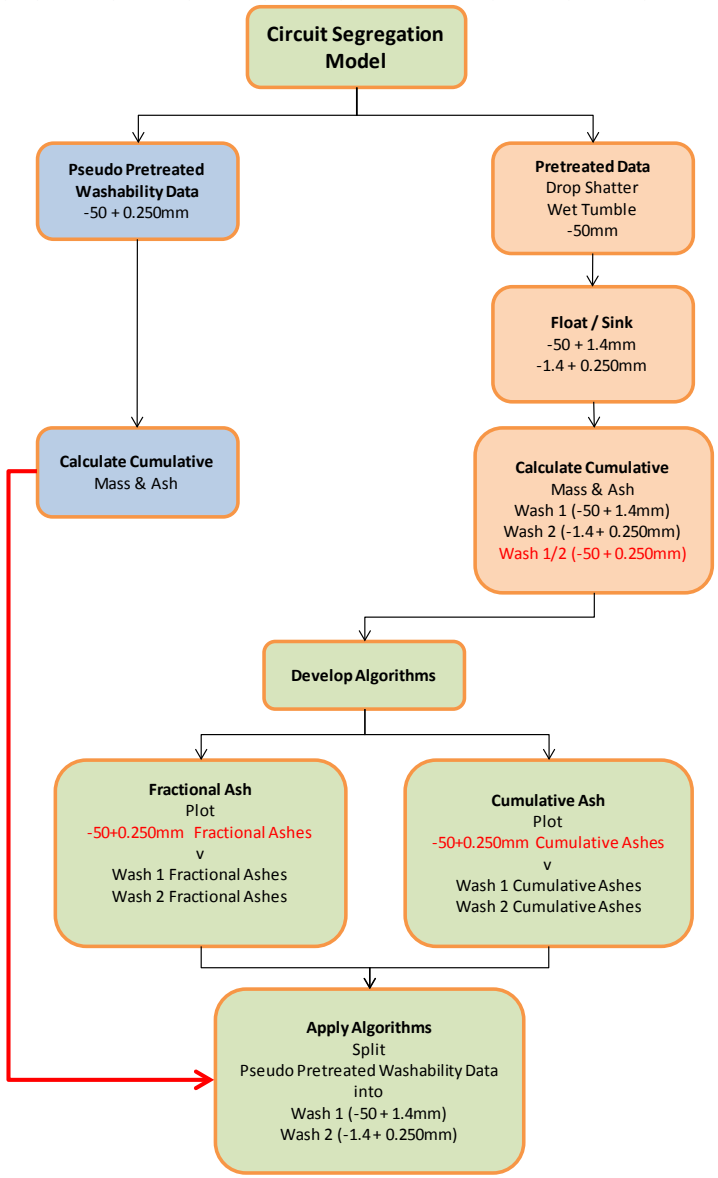


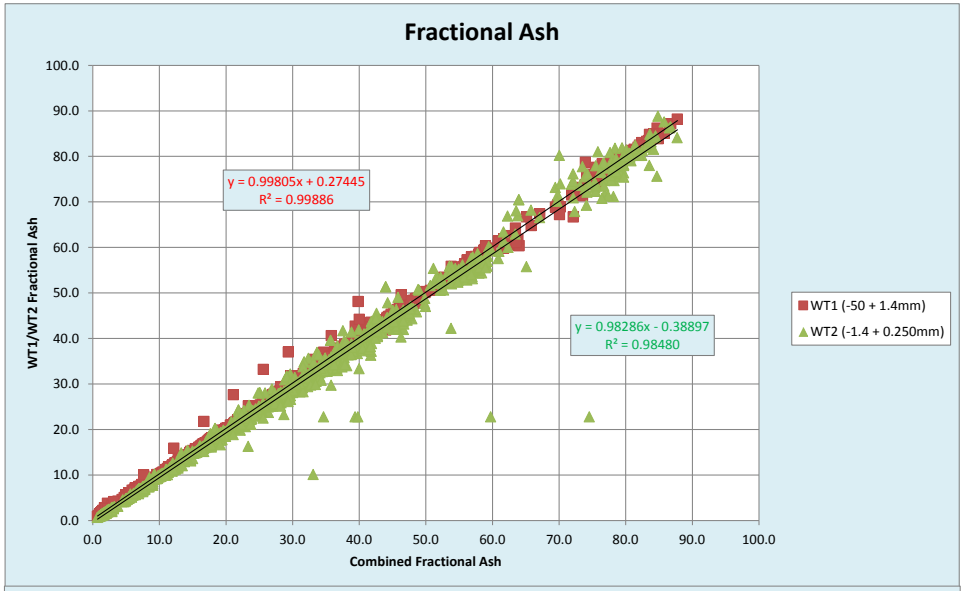


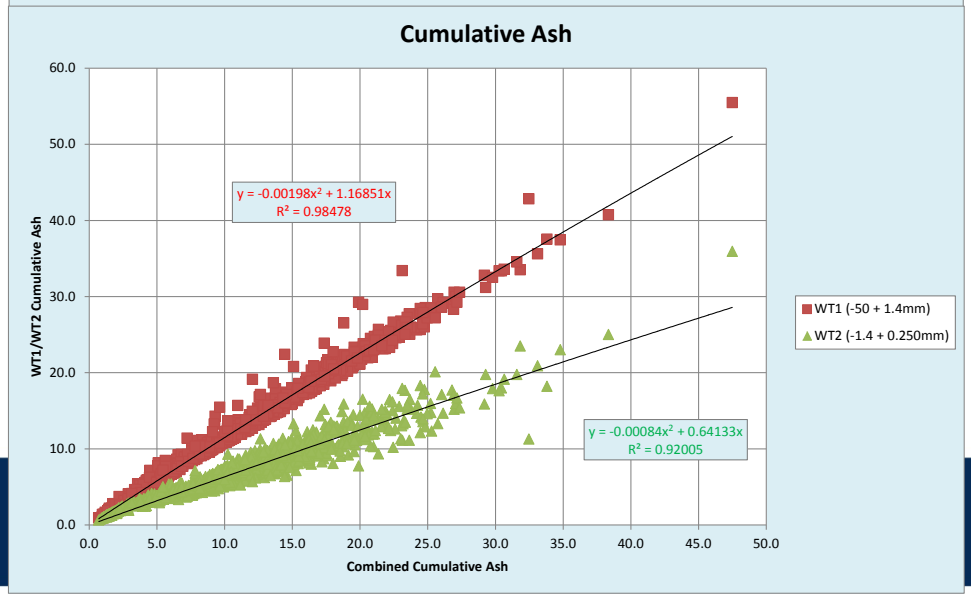


CIRCUIT SEGREGATION MODELS

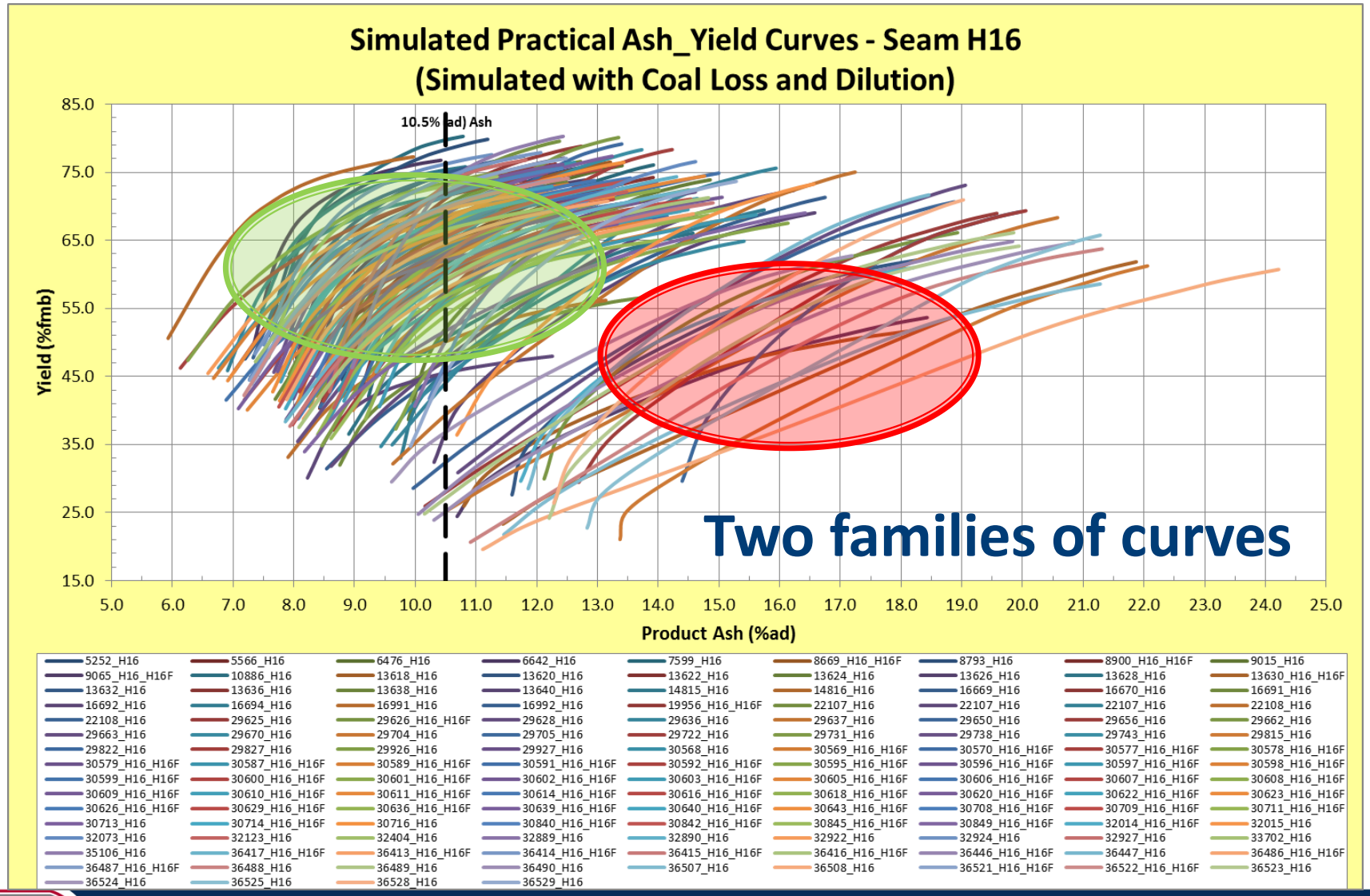
- Distributes pretreated washability data into designated size fractions







Simulate the repaired data set



PRODUCT ASH/YIELD TRENDS – D141 (target 10.5%)

CONCLUSIONS

- A sample with good washability performance will not be as affected by the difference between unified and non-unified data.
- The offset between pretreated (unified) data and crushed (non-unified) data is not consistent within seams or across seams.
- Using the repaired dataset further analysis can be undertaken on the practical yields and ash for blending opportunities to increase total yield at the same product ash.
- Spatial analysis can be completed for different mining areas.