

SLIME OR SLURRY?

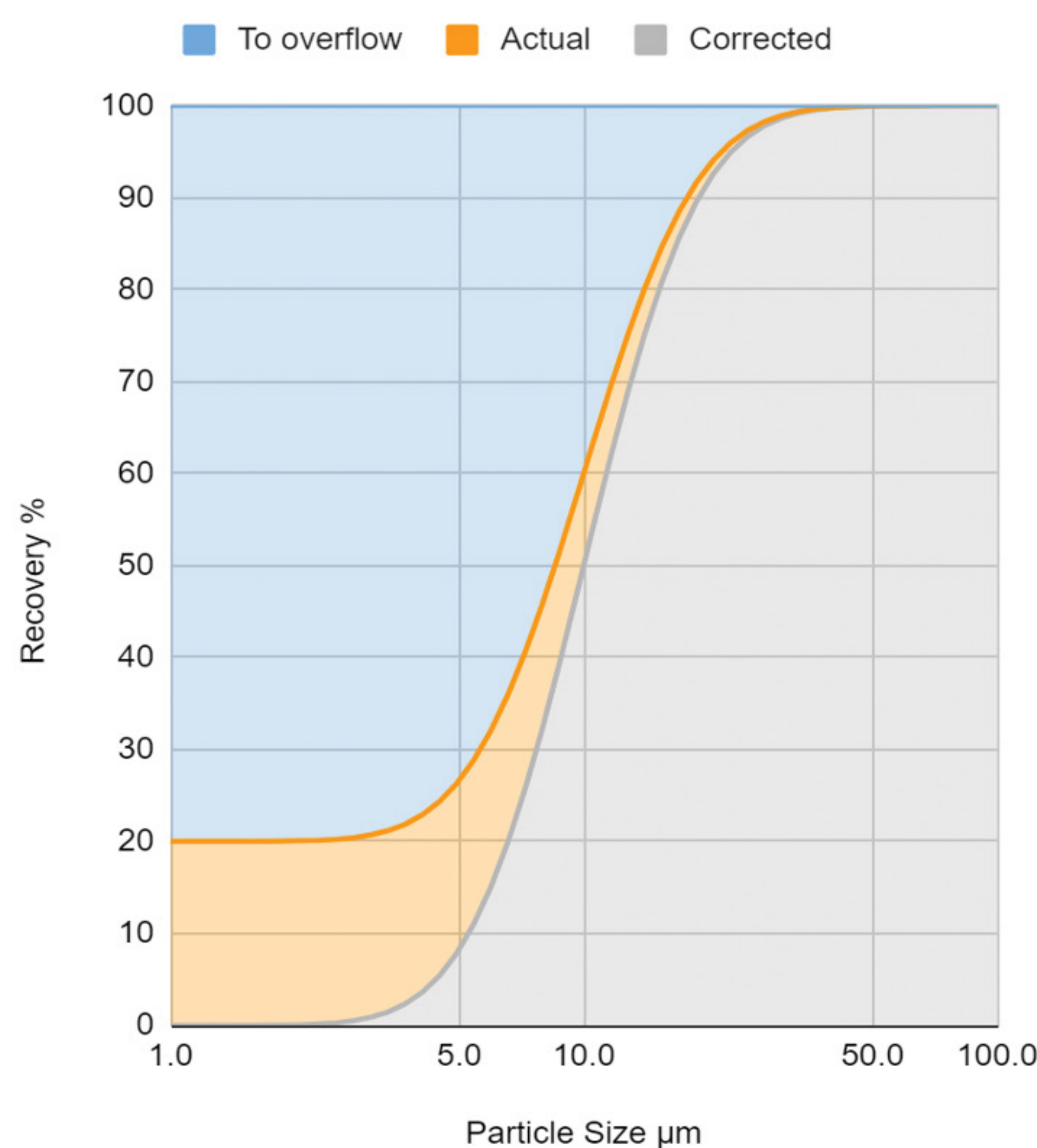
KEY POINTS

- Slime is any fine material that will compromise mineral extraction efficiency
- It is defined by the process not the particle size Hydrocyclone systems are used to remove slime
- Fine cut sizes dictate small diameter multi cyclone deslime cyclone systems

Slime is any fine material that reduces the separation efficiency of gravity separation equipment by compromising the separation process or simply by diluting the concentration of minerals that are capable of being extracted. Slime can still contain valuable material in its own right, however, if this cannot be extracted by the process used it is still slime.

By implication the point at which slurry becomes slime changes with the extraction process used. A shaking table is capable of separation down to 50 to 75µm so particles below this size are considered slime. The MGS system, however, is capable of extracting particles as small as 5µm, so, in this case, slurry becomes slime at 5µm.

Typical Recovery Curve



CYCLONES

Slime is typically removed by hydrocyclone systems. Valuable coarse fractions are directed to the underflow with slime exiting through the overflow. Deslime hydrocyclones offer the added benefit of dewatering the feed to the ideal pulp density for the extraction process employed.

Hydrocyclone performance can be characterised by the actual and corrected recovery curves with the cut point generally considered as the point at which the corrected recovery curve is at 50%. While many factors affect this cut point the laws of physics dictate that cut size generally varies as a direct ratio of diameter whereas capacity varies as a square of the diameter. The implication of this is that reducing the cut size by a factor of 10 will require 100 times the number of cyclones to achieve the same capacity!



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