Mining Process Data Dictionary

This dataset is about flotation testing at a mining plant, where the goal is to separate iron ore into its "pure" form (% Iron Concentrate) and its "impurity" (% Silica Concentrate) using chemicals like starch and amina to complete this process.

Column Name	Data Type	Description
Date	datetime64	Date-time stamp
% Iron Feed	float64	% of Iron that comes from the iron ore that is being fed into the flotation cells
% Silica Feed	float64	% of silica (impurity) that comes from the iron ore that is being fed into the flotation cells
Starch Flow	float64	Starch (reagent) Flow measured in m3/h; this is a chemical used for the flotation operation
Amina Flow	float64	Amina (reagent) Flow measured in m3/h; another chemical used for the flotation operation
Ore Pulp Flow	float64	You feed ore as pulp to the flotation operation
Ore Pulp pH	float64	pH scale from 0 to 14; You can accept it as a condition for chemical reactions to occur
Ore Pulp Density	float64	Flotation feed solid density; density scale from 1 to 3 kg/cm^3
Flotation Column 01 02 03 04 05 06 07 Air Flow	float64	These 7 columns show air flow that goes into the flotation cell measured in Nm^3/h; this is a condition required for flotation where air turns into bubbles in the pulp and the amount of air adjusts the surface area of these bubbles
Flotation Column 01 02 03 04 05 06 07 Level	float64	These 7 columns show froth level in the flotation cell measured in mm (millimeters); this gives us the thickness of the floats in the flotation, the lower the level, the higher the grade of concentration
% Iron Concentrate	float64	The product of the flotation process: % of Iron which represents how much iron is presented in the end of the flotation process (0-100%, lab measurement)
% Silica Concentrate	float64	The product of the flotation process: % of silica (impurity) which represents how much iron is presented in the end of the flotation process (0-100%, lab measurement)

Source: Kaggle

Additional explanation available in the "Discussion" section of this Kaggle Dataset here: https://www.kaggle.com/datasets/edumagalhaes/quality-prediction-in-a-mining-process/discussion/182482?resource=download