Solids Class Case Study

You have been asked by a former colleague (who is now a city manager) to develop a solids processing operation. A new plant is being designed for a town in rural Delaware. The liquid process has already been decided. You are to develop a solids processing train. Be prepared to discuss why you have selected the particular process.

Assumptions:
Liquid Process will have:

- Grit and screenings
- Rectangular Primary Clarifiers with Ferric chloride or alum addition (with anionic polymer)
- Secondary Activated Sludge (Aeration) with Nitrification followed by circular clarifiers
- Filtration to remove solids
- Disinfection with sodium hypochlorite and dechlorination with sodium bisulfite

Raw Influent

- TSS = 300 mg/l
- BOD = 250 mg/l
- Total Phosphorus = 6 mg/l
- Total Nitrogen = 35 mg/l

Effluent Limits

- TSS and BOD = 10 mg/l
- Total Phosphorus = 1.0 mg/l
- Ammonia = 3.0 mg/l

Calculate the average daily sludge production.
Draw the process chosen
Decide on a final disposal option/s