

Activated Sludge / BNR

Intermediate Level Operator Skill Set Survey

Student's Name _____

| Activate Sludge Concept | I use this on a regular basis | I know a good bit about this | I'm a little familiar with this concept | I'm not at all familiar with this concept |
|--|-------------------------------|------------------------------|---|---|
| Mixed Liquor Suspended Solids (MLSS) | | | | |
| Mixed Liquor Volatile Suspended Solids (MLVSS) | | | | |
| Food to Microorganisms (F/M) Ratio | | | | |
| Organic Loading Rate | | | | |
| Monitoring pH and Alkalinity for Process Control | | | | |
| Calculate Detention Time in Hours for Aeration Tanks, Selector Basins and Clarifiers | | | | |
| Step Feed and Complete Mix | | | | |
| Step Aeration | | | | |
| Contact Stabilization or Sludge Reaeration Processes | | | | |
| Oxic Solids Retention Time (SRT ^{Oxic}) | | | | |
| Mean Cell Resident Time (MCRT) | | | | |
| Sequencing Batch Reactors (SBR) and their Cycles and Phases | | | | |
| Using Sludge Judge Measurements as a process control tool | | | | |
| Settleometer Test and Sludge Volume Index (SVI) and how its used for Process Control | | | | |
| Centrifuge Test as a Process Control Tool | | | | |
| Microscopic Exam to Identify Microorganisms such as Stalked Ciliates, Free Swimming Ciliates, and Rotifers | | | | |
| Microscopic Exam to determine the abundance of filamentous bacteria | | | | |

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| Calculate Surface Overflow Rate (SOR) | | | | |
| Solids Loading Rate (SLR) on clarifiers | | | | |
| Term "Oxidation Reduction Potential" (ORP) | | | | |
| The Conversion of BOD to Solids | | | | |
| Typical Concentrations of BOD and TSS for Raw Domestic Wastewaters | | | | |
| Components that make up Total Nitrogen (TKN + NO ₂ + NO ₃) | | | | |
| Utilize Plant Design Criteria | | | | |
| Utilize 10 States Standards | | | | |
| Term "Selector" as in a basin or tank | | | | |
| Term "Anaerobic" | | | | |
| Term "Anoxic" | | | | |
| Biological Nutrient Removal (BNR) | | | | |
| Enhanced Nutrient Removal (ENR) | | | | |
| Modified Ludzak Ettinger (MLE) Process | | | | |
| Mixed Liquor Internal Recycle | | | | |
| Typical Mixed Liquor Internal Cycle Rates | | | | |
| 4 vs. 5 Stage Bardenpho Process | | | | |
| Integrated Fixed Film Activated Sludge Process | | | | |
| Term "Simultaneous Nitrification Denitrification" | | | | |
| Methaol and Micro-C for Carbon Addition | | | | |
| Knowledge of Permits, Rules, Regulations and the ability to apply Best Management Practices (BMPs) | | | | |