

# STEP Process Operations Training Program

8 Sessions equaling 10.0 training hours

Training presenters include:

Dave Brunkow, PE Jacobs Engineering

Kristen Jackson, PE Jacobs Engineering

Don Watson, PE Jacobs Engineering

Mark Walter, Ops Specialist Waterdude Solutions

## Program Outline

**Session 1                      Overview                      Duration 1.0 hour.**

### STEP Project Overview

- Project Drivers; NPDES permit, Additional Secondary Capacity, Resiliency , NFPA 820 compliance,
- Additional Secondary Capacity, Resiliency, STEP includes Secondary and Solids processing improvements.
- Drawings Diagrams; plan views, 3D renderings

### Liquids Unit Process Overview

- Liquids System Design Intent, big picture, flows, loads, flow splits
- Mixed Liquor Pumping
  - Design Data
  - Operational intent
  - Process impacts
- SECL9 SECL10
  - Design Data
  - Operational intent
  - Process impacts
  - Settling tool (SETL)
- RAS Pumping
  - Design Data
  - Operational intent
  - Process impacts
- Hypo Disinfection
  - Design Data
  - Operational intent
  - Process impacts
- Water Quality
  - Design Data
  - Operational intent
  - Process impacts

## STEP Process Training Outline

### Session 2

### Liquids Process - Clarification System Part 1

Duration 1.5 hours

- Liquids Unit Process - SECL 9 & 10
  - Facility Unit Process Sizing and Expected Performance
  - Design Criteria
  - Redundancy Provisions
  - Operations During Major Maintenance
  - Control Features
- Liquids Process - SECL 9 and 10 Dewatering Pump
  - Control Features
  - Ops Strategy SECL 9 and 10 Dewatering
- Liquids Process - Return Activated Sludge Pumps
  - Ops Strategy RAS pumping
  - Control Features
- Liquids Process - Mixed Liquor Pumping
  - Ops Strategy Mixed Liquor Pumping
  - Control Features
- Liquids Process - Waste Activated Sludge
  - Summary of WAS process as it applies to SECL 9 & 10
- Liquids Process - Scum Pumping
  - Ops Strategy SSC Pumping
  - Control Features
- Operating Strategy Clarifiers
  - Clarifier Process Monitoring and Control
  - SETL and Hydraulic Profile Tool
  - Ops Strategy Dry Weather Flow (May-September)
  - OPs Strategy Wet Weather Flow (October-April)
  - Ops Strategy Shoulder Season Flow (Mar-May/Sep-Nov)

## **STEP Process Training Outline**

<b>Session 3</b>	<b>Liquids Process - Clarification System Part 2</b>	<b>Duration 1.5 hours</b>
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- Water Quality Monitoring
  - Control Features
  - Sensors
- Secondary Influent Flow
  - Control Features
  - Flow Measurement
- HVAC Operational Strategy
  - Scope
  - Control Features
- SECL 9 and SECL 10 Disinfection
  - Control Features
  - Ops Strategy Disinfection
- Review Liquids Processes - Discussion

<b>Session 4</b>	<b>SCADA Training</b>	<b>Duration 2.0 hour</b>
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- SCADA Liquids
  - Monitoring points
  - Operator functions
  - Data trending

<b>Session 5</b>	<b>Field Walkthrough #1- Review and Q&amp;A</b>	<b>Duration 1.0 hour</b>
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- On site system operational review and discussion

<b>Session 6</b>	<b>Field Walkthrough #2- Review and Q&amp;A</b>	<b>Duration 1.0 hour</b>
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- On site system operational review and discussion

## **STEP Process Training Outline**

### **Session 7                      Liquids Process – SOP review Part 1                      Duration 1.0 hour**

- Review and walkthrough of standard operating procedures for startup and shutdown.
  - Secondary Clarifier
  - Secondary Clarifier - Scum pumping
  - Clarifier Dewatering
  - Return activated sludge pumping

### **Session 8                      Liquids Process – SOP review Part 2                      Duration 1.0 hour**

- Review and walkthrough standard operating procedures for startup and shut down.
  - Mixed liquor pumping
  - Secondary scum pumping
  - Clarifier effluent disinfection