

Understanding Basic Pump Hydraulics and their Impacts on Pump Performance and Longevity

Presented by Municipal Maintenance Co., South Jersey Water Professional Association, and New Jersey Water Association

This course is designed to provide operators with a foundational understanding of pump theory and hydraulics. Through this training, operators will gain the knowledge necessary to diagnose pump problems effectively, ensure optimal performance, and make informed decisions when replacing or maintaining pumps in their plants.

8:00am – 8:30am

Check – In

8:30am – 12:00pm

1. Introduction to Pumps

(2 x 15 min Breaks)

- a. Fundamental characteristics of all centrifugal pumps
- b. Defining the different styles of centrifugal pumps and their uses
 - i. Raw water supply
 - ii. Finished water pressure boosting
 - iii. Wastewater

2. The Pump Curve – How to Read it

- a. Hydraulics – Flow & Head/Pressure
- b. Pumping Efficiency
- c. Variable Speed Pumping

3. Using Hydraulics (The Pump Curve) to Measure Performance

- a. Preferred Operating Zone (POR)
- b. Running off the Curve

4. NEMA Pump Motors

- a. Motor Loading, Service Factor, and Motor Sizing
- b. Variable Speed Motors - Inverter Ready vs. Inverter Duty
- c. Enclosure classes

5. Pump Maintenance Considerations for the Operator

- a. When to perform maintenance
- b. Spare Parts Stocking
- c. Seals vs. Packing

6. Advanced Topics – Lessons Learned

12:00pm

Closing Paperwork

Instructor:

Jack Wallace, PE, LEED AP – Municipal Maintenance - Jack is a licensed professional engineer in NJ, PA, and DE. He has 12 years of experience specializing in the sale and installation of pumps.

January 21st, 2025- The Gibson House Community Center, 535 E. Main Street, Marlton, NJ 08053

3.0 Water and Wastewater TCHs, Course Number: **04-122402-30**

3.0 Technical credits for CPWM, Course Number: **DLGS-NJWA-277**

Registration is required and available at www.njwater.org. Please plan to arrive at 8:00 am. No more than 4 registrants per employer