AMWOP
AMERICA'S MUNICIPAL WATER OPERATOR PIPELINE

Pipeline Aptitude Assessment

For applicants to Join The AMWOP Pipeline

DRAFT - For owner review. Do not distribute to applicants until approved.

What this is

This is AMWOP's pipeline aptitude assessment, used for vetting purposes only as part of the AMWOP Pipeline application process. It includes technical proficiency and credential verification questions to help AMWOP understand your current knowledge, experience, and readiness.

What this is not

This assessment is exam preparation / aptitude screening only. It is **NOT** EGLE-approved training, it is **NOT** the Michigan EGLE certification exam, and it does **NOT** guarantee certification, employment, or placement. No pass mark or minimum score is stated in this document.

How to complete and return it

1. Complete **all sections (A-F)** and the closing attestation.
2. For multiple-choice questions, select **one** answer for each question.
3. For math questions, enter your answer **and** show your work, including units.
4. Save the completed PDF with your answers filled in.
5. Email the saved PDF to **sales@amwop.com** with the subject line:
AMWOP Pipeline Aptitude Assessment - [Your Name]
Replace [Your Name] with your full name.

Questions? Contact AMWOP at **sales@amwop.com** or **586-846-7765**.

Please answer on your own, without assistance. Your answers help AMWOP place and develop operators appropriately - there is no benefit to overstating experience or knowledge.

Sections: A - Applicant Information | B - Wastewater Fundamentals (10 questions) | C - Operator Math (6 questions) | D - Safety and Procedures (8 + SOP exercise) | E - Work Readiness and Judgment (6 + 2 written) | F - Short Written Answers (3 questions)

Section A - Applicant Information and Credential Verification

Complete every field. Write 'None' or 'N/A' where a field does not apply.

First Name *

Last Name *

Email Address *

Phone Number *

Current Role / Experience Level - select one:

- ○ Entry Level
- ○ Junior Operator
- ○ Senior Operator
- ○ Management
- ○ Other

If 'Other', please explain:

Preferred Location (city / area where you want to work):

Current Michigan EGLE wastewater license level held, if any (or write 'None'):

EGLE exams taken and results, if any (exam, date, result - or write 'None'):

Relevant water / wastewater work experience (employer, role, dates for each - use additional lines as needed):

Availability

Municipal wastewater work regularly includes shift work, weekends, and on-call rotation. Indicate your availability for each:

Available for shift work (including nights)? ☐ Yes ☐ No

Explain (if needed):

Available for weekends? ☐ Yes ☐ No

Explain (if needed):

Available for on-call rotation? ☐ Yes ☐ No

Explain (if needed):

Section B - Wastewater Fundamentals

10 multiple-choice questions. Select one answer per question. General aptitude - entry to intermediate level. This is not a certification exam.

B1. What is the primary purpose of preliminary treatment (headworks) at a wastewater plant?

- ○ A. To disinfect the effluent before discharge
- ○ B. To remove large solids, rags, and grit that could damage or clog downstream equipment
- ○ C. To remove dissolved nutrients such as nitrogen and phosphorus
- ○ D. To thicken waste activated sludge

B2. In primary clarification, what is mainly removed from wastewater?

- ○ A. Dissolved ammonia
- ○ B. Settleable solids and floating material such as grease and scum
- ○ C. All pathogenic bacteria
- ○ D. Dissolved salts and minerals

B3. In an aeration basin / activated sludge process, why is air supplied?

- ○ A. To dry the sludge for disposal
- ○ B. To provide oxygen so microorganisms can break down organic material
- ○ C. To raise the pH of the wastewater to 10 or higher
- ○ D. To disinfect the mixed liquor

B4. What happens in secondary clarification after aeration?

- ○ A. Chlorine is added for final disinfection
- ○ B. Biological solids (biomass) settle out, producing a clarified effluent and return / waste sludge
- ○ C. Grit is screened from the influent
- ○ D. Sludge is burned to ash

B5. What is the main purpose of disinfection (for example, chlorine or UV) near the end of treatment?

- ○ A. To remove sand and grit
- ○ B. To settle primary solids
- ○ C. To inactivate pathogenic organisms before discharge
- ○ D. To increase biochemical oxygen demand (BOD)

B6. Which statement best describes solids / biosolids handling?

- ○ A. Solids removed during treatment are returned untreated to the head of the plant in all cases
- ○ B. Solids are typically thickened, stabilized / digested, and dewatered before approved disposal or beneficial use
- ○ C. Solids handling is not regulated in Michigan
- ○ D. Biosolids can be discharged directly to a river if the effluent looks clear

B7. Under Michigan EGLE requirements for wastewater operators, which statement is most accurate?

- A. Anyone may operate a municipal wastewater facility with no certification considerations
- B. Operators should work within the certification and duties appropriate to their license level and facility, and follow EGLE rules and permit conditions
- C. EGLE permits allow an operator to change discharge limits on their own if flows are high
- D. Certification, once earned, never needs to be maintained

B8. Why are sampling and recordkeeping important in wastewater operations?

- A. They are optional if the plant appears to be running well
- B. They provide evidence of permit compliance, show process performance, and help operators spot problems early
- C. Samples should only be taken when a regulator visits
- D. Records may be estimated later from memory if a day is missed

B9. A plant's effluent BOD is rising over several days. What is the best first interpretation?

- A. It proves disinfection should be stopped
- B. It may indicate a process upset, overload, or loss of biological treatment performance that needs investigation
- C. It means the influent has become cleaner
- D. BOD has no relationship to treatment performance

B10. What does 'detention time' in a treatment tank generally describe?

- A. How long an operator's shift lasts
- B. The average length of time wastewater stays in a tank or basin
- C. How long sludge can be stored before hauling
- D. The time between state certification exams

Section C - Operator Math

6 questions. Enter your numeric answer with units, and show your work for each question. Standard wastewater operator formulas apply.

Useful relationships: 1 MGD = 1,000,000 gal/day; Detention time = Volume / Flow; Dose (lb/day) = Flow (MGD) x Dose (mg/L) x 8.34; Percent removal = [(In - Out) / In] x 100.

C1. Flow conversion: A plant flow is 0.75 MGD. How many gallons per day (gal/day) is this, and how many gallons per minute (gpm) is this (rounded)? Show both in your answer.

Answer (with units):

Show your work:

C2. Detention time: A tank holds 120,000 gallons. Flow through the tank is 0.60 MGD. What is the detention time in hours?

Answer (with units):

Show your work:

C3. Detention time: An aeration basin has a volume of 0.25 million gallons (MG). If flow is 1.0 MGD, what is the detention time in hours?

Answer (with units):

Show your work:

C4. Chemical dosing: Using Dose (lb/day) = Flow (MGD) x Dose (mg/L) x 8.34, how many lb/day of chemical are needed at a flow of 2.0 MGD and a dose of 10 mg/L?

Answer (with units):

Show your work:

C5. Percent removal: Influent BOD is 200 mg/L and effluent BOD is 20 mg/L. What is the percent removal (%)?

Answer (with units):

Show your work:

C6. Loading: Using Loading (lb/day) = Flow (MGD) x Concentration (mg/L) x 8.34, what is the BOD loading in lb/day at a flow of 1.5 MGD and an influent BOD of 180 mg/L?

Answer (with units):

Show your work:

Section D - Safety and Procedures

8 scenario multiple-choice questions. Select the safest / most correct response. Then complete the SOP exercise that follows.

D1. Before repairing a pump, what must you do first regarding energy sources?

- A. Turn the pump switch off at the panel and start work
- B. Apply lockout/tagout to isolate and lock the energy sources, verify zero energy, and follow the facility procedure
- C. Ask a coworker to watch the switch while you work
- D. Drain the pump only - electrical isolation is not needed for a small pump

D2. You need to enter a wet well / manhole that may be a confined space. What should you do?

- A. Enter quickly if you cannot smell anything unusual
- B. Follow the facility confined-space procedure: do not enter without required permit, atmospheric testing, ventilation, attendant, and rescue provisions as applicable
- C. Enter alone as long as you have a flashlight
- D. Hold your breath and complete the task as fast as possible

D3. You are handling a treatment chemical and the label / SDS calls for specific PPE. What do you do?

- A. Wear the required PPE for that chemical, follow the label and Safety Data Sheet (SDS), and ask a supervisor if anything is unclear
- B. Wear gloves only, regardless of what the SDS requires
- C. Skip PPE if you have handled the chemical before without a problem
- D. Mix chemicals together to finish the job faster

D4. An SOP for a task lists steps in a specific order. You remember doing it differently at another plant. What should you do?

- A. Follow your memory - experience overrides any written SOP
- B. Follow this facility's SOP as written, and raise any concern or suggested change to your supervisor through proper channels
- C. Skip steps that seem unnecessary to save time
- D. Change the SOP yourself and tell no one

D5. Alarms sound and you see wastewater rising / a possible overflow developing. What is your best first response?

- A. Wait to see if it clears on its own and say nothing
- B. Respond promptly per facility procedure, assess the situation safely, notify your supervisor / operator in charge, and document what happened
- C. Turn off all alarms so you can concentrate
- D. Leave the area and let the next shift handle it

D6. You notice a damaged railing and a chemical leak from a fitting. What should you do?

- A. Ignore both - maintenance will eventually notice
- B. Report the safety concerns promptly to your supervisor, make the area as safe as you reasonably can without putting yourself at risk, and follow reporting procedures
- C. Try to hide the leak so the plant does not get in trouble
- D. Post about it on social media before telling anyone at the plant

D7. What is the purpose of daily rounds and checks?

- A. To fill time between other tasks
- B. To inspect equipment and process conditions, record readings, catch abnormalities early, and communicate issues before they become failures or permit problems
- C. Only to record numbers for a file no one reads
- D. To check only the equipment you personally like working on

D8. A coworker is about to lift / operate equipment in a way you believe is unsafe. What should you do?

- A. Say nothing - it is not your job
- B. Speak up respectfully and promptly, and notify a supervisor if the unsafe act continues
- C. Record a video and do nothing else
- D. Join in so the task finishes sooner

SOP Exercise - Read the excerpt, then answer D9 and D10

SAMPLE SOP EXCERPT - SOP-104: Starting a Standby Blower (EXAMPLE - for this exercise only)
1. Notify the Operator in Charge (OIC) before starting any standby blower.
2. Check oil level, belt guard, and intake filter. If oil is low or a guard is missing, STOP - do not start the blower.
3. Confirm the discharge valve position matches the posted valve lineup.
4. Obtain approval from the OIC before starting the blower.
5. Start the blower, listen for unusual noise, record the start time and readings in the daily log, and report any abnormal condition to the OIC immediately.

D9. Based on SOP-104, what must you do FIRST before starting the standby blower?

- A. Start the blower and then tell the OIC it is running
- B. Notify the Operator in Charge before starting any standby blower
- C. Change the oil whether it needs it or not
- D. Open every valve in the blower room

D10. Based on SOP-104, who must approve before you proceed to start the blower, and what must you do if the oil is low?

- A. No approval is needed; add oil and start anyway
- B. The Operator in Charge (OIC) must approve; if oil is low, STOP and do not start the blower
- C. A coworker on break must approve; keep running the blower if oil is low
- D. The chemical supplier must approve; ignore a low oil level if the blower sounds fine

Section E - Work Readiness and Judgment

6 scenario multiple-choice questions, plus 2 short written answers. Select the response that best reflects reliable, professional conduct.

E1. Your shift starts at 6:00 a.m. and bad weather is forecast. What is the most reliable approach?

- A. Wait and see - if you are late, the plant will manage
- B. Plan ahead, leave earlier, arrive on time, and communicate promptly to your supervisor if a genuine emergency will delay you
- C. Call off for any forecast of snow or rain
- D. Arrive late without calling, as long as you eventually show up

E2. Your supervisor gives you an instruction you do not fully understand. What should you do?

- A. Guess and hope it works out
- B. Ask a clarifying question respectfully before starting, and confirm you understood correctly
- C. Ignore the instruction
- D. Ask a coworker to do it without telling the supervisor

E3. You are on a difficult night shift, a piece of equipment keeps alarming, and you are tired. What is the best course of action?

- A. Silence the alarm and rest until morning
- B. Stay engaged, follow procedure, troubleshoot within your training and authority, communicate with the operator in charge, and log events accurately
- C. Leave the plant early
- D. Do work you are not trained or authorized to do to try to fix it alone

E4. You make a mistake that causes a sample to be missed. No one saw it happen. What should you do?

- A. Say nothing and hope it is not noticed
- B. Tell your supervisor promptly and honestly, document what happened, and help correct or reschedule as directed
- C. Blame another operator
- D. Falsify the record to show the sample was taken

E5. AMWOP's pipeline includes a structured 12-month operator development program after placement. How should an applicant view that commitment?

- A. As optional - attend only when convenient
- B. As a core part of the role: show up, complete assigned learning, ask questions, and apply feedback over the full program
- C. As something to quit as soon as a license is earned
- D. As the employer's problem, not the operator's

E6. Which statement best reflects a long-term commitment to municipal wastewater operations?

- ○ A. I want any job until something unrelated comes along
- ○ B. I understand plants run 24/7 to protect public health and the environment, and I want to build a dependable career serving a community
- ○ C. I only want weekday daytime work with no on-call, ever, and will not discuss alternatives
- ○ D. I plan to job-hop every few months regardless of the impact on the plant

Short written answers

E7. Describe how you stay reliable when work is repetitive, physically demanding, or the weather is poor. Give a real example if you can:

E8. Describe how you would communicate with a supervisor if you disagreed with an instruction or saw a better way to do a task:

Section F - Short Written Answers

Answer in your own words. A few sentences to a short paragraph for each question is enough.

F1. Why do you want to become a wastewater operator, or grow as one? What interests you about this work?

F2. Describe a time you solved a hands-on or technical problem. What was the problem, what did you do, and what was the result?

F3. If you started in a new plant, what would you do in your first 90 days to learn the facility, earn trust, and become a reliable member of the team?

Closing - Attestation and Return Instructions

Applicant attestation

By signing below, I attest that the answers in this assessment are my own work, that the information I provided about my experience, licenses, and exam history is true and complete to the best of my knowledge, and that I understand this assessment is for AMWOP vetting / aptitude screening only and does not guarantee certification, employment, or placement.

Full legal name (printed):

Signature (type your full name as your electronic signature, or sign after printing):

Date:

How to return this assessment

Save this completed PDF (keep your filled-in answers), then email it to **sales@amwop.com** with the subject line:
AMWOP Pipeline Aptitude Assessment - [Your Name]

Questions? Contact AMWOP at **sales@amwop.com** or **586-846-7765**. Thank you for completing the AMWOP Pipeline Aptitude Assessment.