

Operator Training Update



Water Workshop

March 29, 2023

Operator Certification Update

Curtis L. Truss Jr, OTCO Executive Director

Is there an operator shortage?

If so, why is there a shortage?

What about OEPA ORC Requirements?

Operator Training Update



Superior Water Starts Here



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We Are WPI:

We ensure the expertise of water and wastewater treatment professionals through testing and certification.

Water and wastewater treatment professionals are on the front lines of protecting public health and the environment. Since 1972, Water Professionals International (formerly known as the Association of Boards of Certification) has been the central water industry authority that ensures these women and men are prepared to meet the standards that their communities can trust in through our testing and certification services.

WPI membership spans 49 U.S. states/territories, 12 Canadian provinces/territories, many Canadian First Nations and U.S. tribal entities, as well as many Eastern European, Caribbean, and Middle Eastern countries/territories. WPI has assisted in the certification of more than 500,000 water and wastewater treatment professionals, including those who have earned a WPI Certification or Professional Operator (PO) Certification.

iC23
INNOVATION CERTIFICATION
POWERED BY WPI

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Member Login

Username:

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Volunteer Opportunities

Volunteering with ABC and C₂EP offers numerous valuable personal and professional benefits.

Get Certified

Our Certification Program certifies water & wastewater industry professionals internationally.

Please find us on our new website at:
<https://www.gowpi.org>

Operator Training Update



WPI Conference January 29, 2023



Outstanding Certification Program of the Year



Operator Training Update



Water Workshop March 29, 2023

Operator Certification Update



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Ohio Department of Health

First written exams were given on November 3, 1939 (83 yrs)

136 Water Works Applicants

136 Sewage Works Applicants

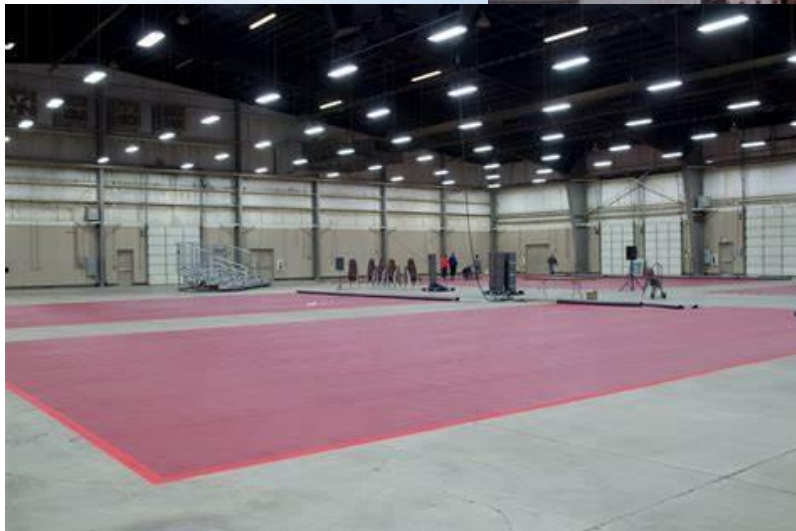
Five locations throughout Ohio

Class “D” certificates were given orally.
Written Examinations – 1 hour to take.

Operator Training Update



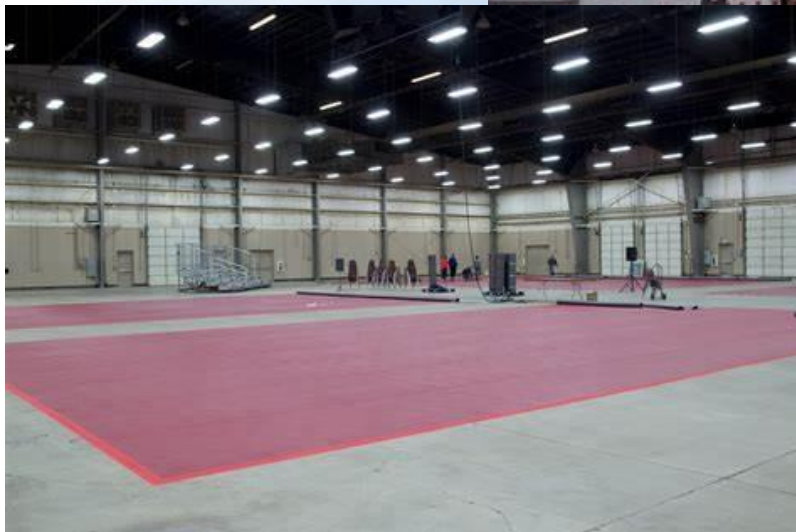
1964 Ohio EPA Advisory Board Held Exams



Operator Training Update



1964 Ohio EPA Advisory Board Held Exams
May of 2023 Last Paper & Pencil Exam (59 years)



WSA- 3

WS1 - 12

WS2 - 3

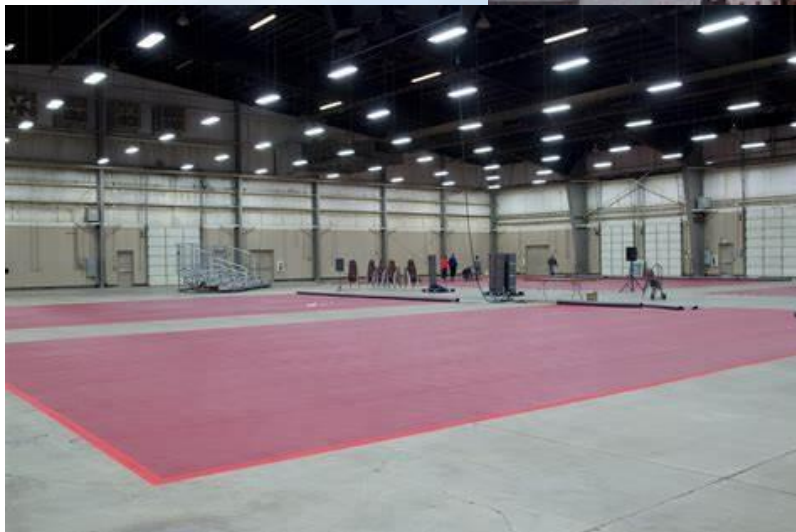
WS3 - 7

25

Operator Training Update



1964 Ohio EPA Advisory Board Held Exams
May of 2023 Last Paper & Pencil Exam (59 years)



WSA- 3	WWA- 1
WS1 - 12	WW1 - 52
WS2 - 3	WW2 - 41
<u>WS3 - 7</u>	<u>WW3 - 40</u>
25	134

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About Water Professionals International



As an alternative to Ohio EPA's paper and pencil examination, Ohio EPA has approved the Association of Boards of Certification (ABC) as an approved examination provider. Operators may now choose to take ABC examinations and then seek Ohio certification for all levels of certification except Class IV.

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About Water Professionals International



WPI Exams in 2022 – 2,000

WPI Exams Jan-Feb 2023 - 450

As an alternative to Ohio EPA's paper and pencil examination, Ohio EPA has approved the Association of Boards of Certification (ABC) as an approved examination provider. Operators may now choose to take ABC examinations and then seek Ohio certification for all levels of certification except Class IV.



Study Guide

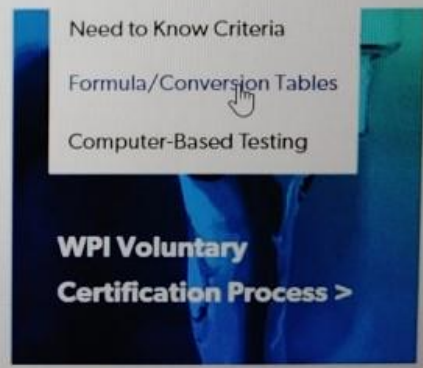
- Information For Testing Clients ▾
 - ABC Testing Services by WPI ▾
 - Certification Program Contacts
 - FAQ
- ABC Testing Services by WPI
- Standardized Exams ▾
- Examination Resources ▾
- Information for Examinees
 - Study Guides
 - Exam References ▾
 - Need to Know Criteria
 - Formula/Conversion Tables
 - Computer-Based Testing

Study materials to help you succeed.

WPI works with AWWA and WEF to develop guides to help operators prepare for taking a certification exam. These guides are available for purchase from:

Water Treatment and Distribution Operators

- [American Water Works Association](#) Bookstore
Phone (800) 926-7337
- [WSO Water Treatment, Grade 1](#)
- [WSO Water Treatment, Grade 2](#)



Operator Training Update



Formula/Conversion Tables

Study materials to help you succeed

ABC standardized exams include an ABC Formula/Conversion Table to assist examinees. These tables contain mathematical formulas and define common abbreviations that may be present on an ABC certification exam.

Please contact the [certifying authority](#) for your state, province, or geopolitical region to determine which exam preparation materials are appropriate for your jurisdiction and exam date.

The following ABC Formula/Conversion Tables are available in PDF format by selecting the links below. *Formula/Conversion Tables* may be reproduced with written permission from testing@gowpi.org

Water Treatment, Distribution, Water Laboratory Analyst:

- [2017 Edition Serving the United States & Canada](#)
- [2013 Edition Serving the United States](#)
- [2009 Edition Serving Canada](#)

Wastewater Treatment, Collection, Industrial Waste, Wastewater Laboratory Analyst:

- [2017 Edition Serving the United States & Canada](#)
- [2013 Edition Serving the United States](#)
- [2009 Edition Serving Canada](#)

Plant Maintenance

- [United States](#)

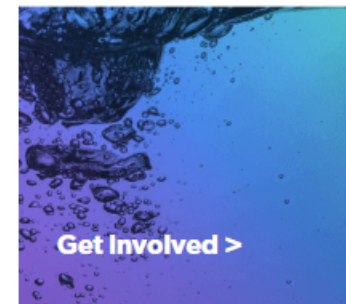
Biosolids Land Application

- [United States](#)

credibility and public reputation of the organizations you represent. In certain municipalities and union contracts operators may receive additional compensation for acquiring and maintaining multiple certificates. Obtaining a professional operator (PO) designation and WPI certification may qualify an individual for additional compensation. Please check with your supervisor and/or union representative to see if you are eligible for additional compensation.



WPI Voluntary
Certification Process >



Get Involved >



Formula/Conversion Table

Water Treatment, Distribution, & Water Laboratory Exams



$$\text{Alkalinity, mg/L as CaCO}_3 = \frac{(\text{Titrant Volume, mL})(\text{Acid Normality})(50,000)}{\text{Sample Volume, mL}}$$

$$\text{Amps} = \frac{\text{Volts}}{\text{Ohms}}$$

$$\text{Area of Circle*} = (0.785)(\text{Diameter}^2)$$

$$\text{Area of Circle} = (3.14)(\text{Radius}^2)$$

$$\text{Area of Cone (lateral area)} = (3.14)(\text{Radius})\sqrt{\text{Radius}^2 + \text{Height}^2}$$

$$\text{Area of Cone (total surface area)} = (3.14)(\text{Radius})(\text{Radius} + \sqrt{\text{Radius}^2 + \text{Height}^2})$$

$$\text{Area of Cylinder (total exterior surface area)} = [\text{End \#1 SA}] + [\text{End \#2 SA}] + [(3.14)(\text{Diameter})(\text{Height or Depth})]$$

Where SA = surface area

$$\text{Area of Rectangle*} = (\text{Length})(\text{Width})$$



Ohio EPA Formula/Conversion Table for Water Supply and Distribution Exams



$$\text{Alkalinity, as mg CaCO}_3/\text{L} = \frac{(\text{Titrant Volume, mL})(\text{Acid Normality})(50,000)}{\text{Sample Volume, mL}}$$

$$\text{Amps} = \frac{\text{Volts}}{\text{Ohms}}$$

$$\text{*Area of Circle} = (.785) (\text{Diameter}^2)$$

$$\text{Area of Circle} = (\pi) (\text{Radius}^2)$$

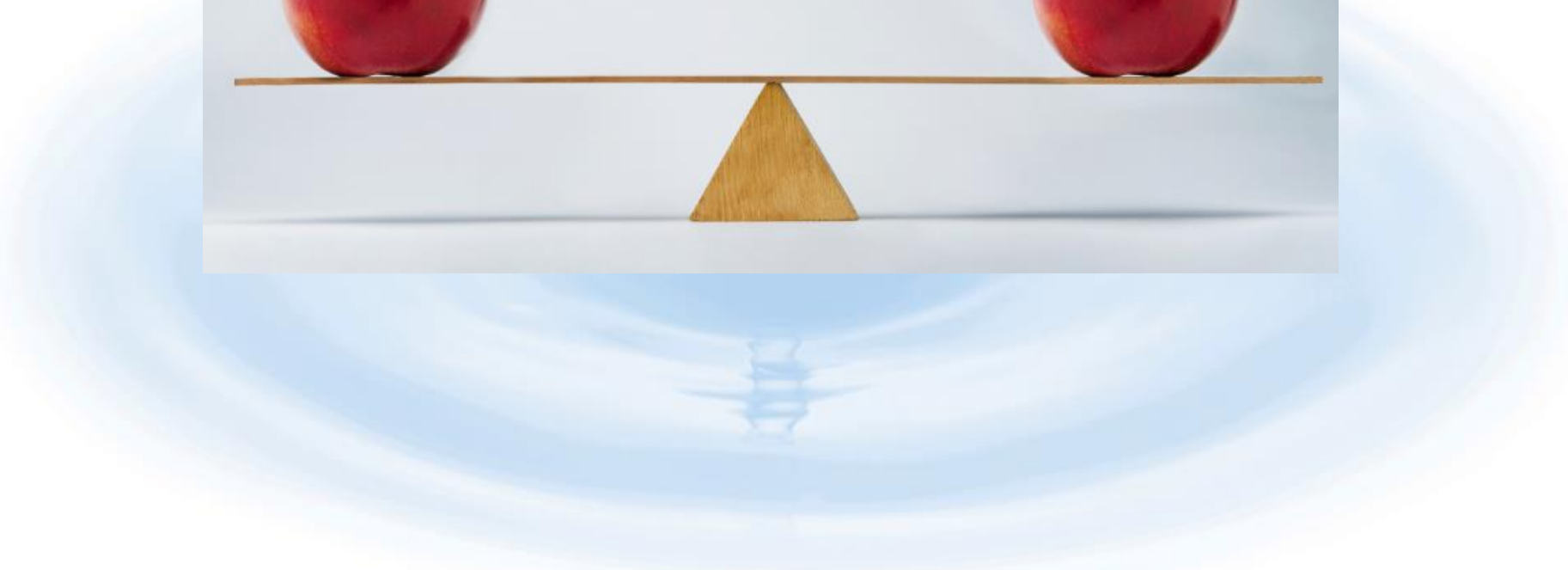
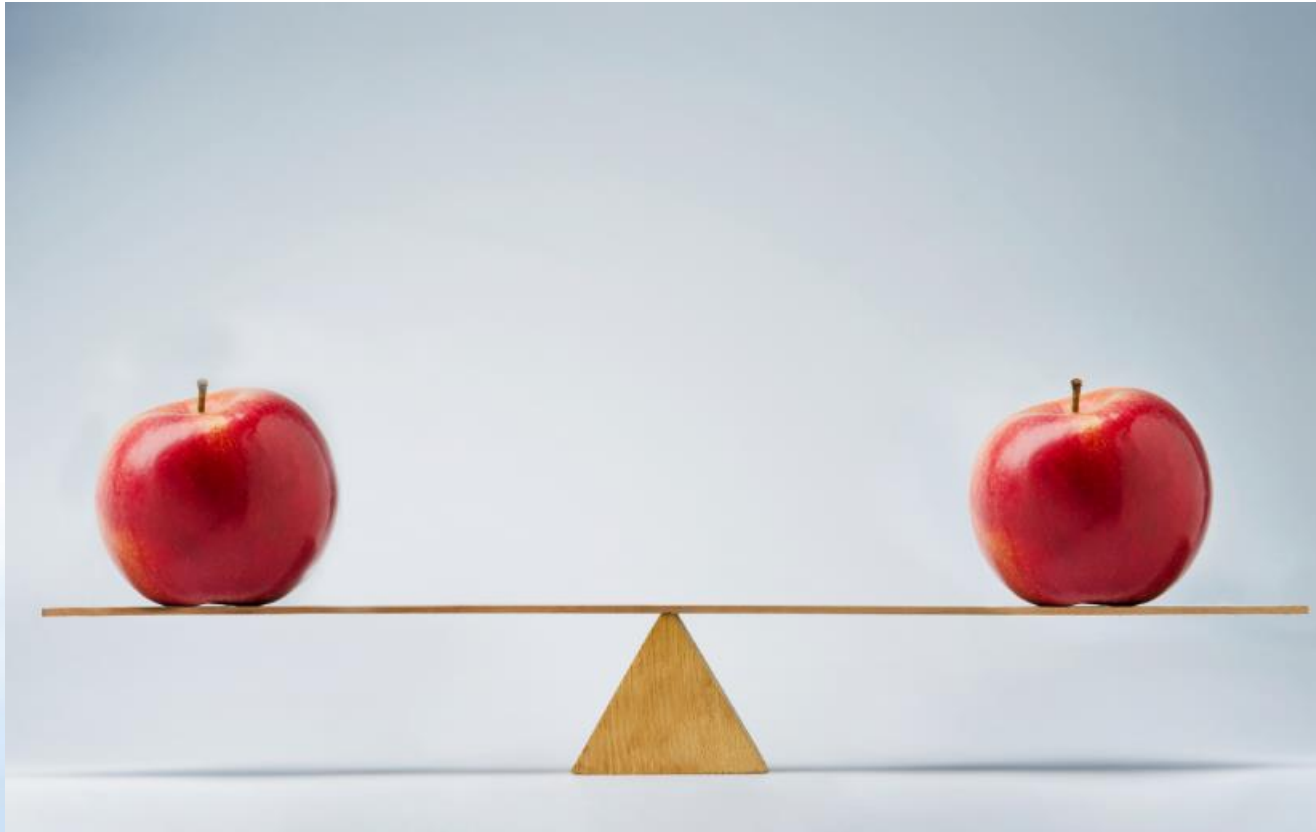
$$\text{Area of Cone (lateral area)} = (\pi) (\text{Radius})\sqrt{\text{Radius}^2 + \text{Height}^2}$$

$$\text{Area of Cone (total surface area)} = (\pi) (\text{Radius}) (\text{Radius} + \sqrt{\text{Radius}^2 + \text{Height}^2})$$

$$\text{Area of Cylinder (total exterior surface area)} = [\text{Surface Area of End \#1}] + [\text{Surface Area of End \#2}] + [(\pi) (\text{Diameter}) (\text{Height or Depth})]$$

$$\text{*Area of Rectangle} = (\text{Length}) (\text{Width})$$

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Ohio EPA/ABC Professional Operator Exam Equivalency Chart*

Ohio EPA Certificate			ABC Examination		
Distribution					
Water Distribution	1	=	Water Distribution	1	
Water Distribution	2	=	Water Distribution	3	
Water Supply					
Water Supply	A	=	Very Small Water System	VSWS	
Water Supply	1	=	Water Supply	1	
Water Supply	2	=	Water Supply	3	
Water Supply	3	=	Water Supply	4	
Wastewater Collection					
Wastewater Collection	1	=	Wastewater Collection	2	
Wastewater Collection	2	=	Wastewater Collection	4	
Wastewater Treatment					
Wastewater Treatment	A	=	Small Wastewater Treatment	A	
Wastewater Treatment	1	=	Wastewater Treatment	2	
Wastewater Treatment	2	=	Wastewater Treatment	3	
Wastewater Treatment	3	=	Wastewater Treatment	4	

*When signing up for exams through ABC, a candidate is asked to select a program (Water/Wastewater) and then a program (Ohio EPA). Once the candidate has chosen Ohio EPA, the examination choices are automatically aligned with the above reference chart so the candidate should select the Ohio EPA examination they wish to take. (e.g. Ohio EPA Water Supply Class 1 examination).

Is there an operator shortage?

LABOR SHORTAGES



Operator Training Update



Is there an operator shortage?

If so, why is there a shortage?



Is there an operator shortage?

If so, why is there a shortage?

What about OEPA ORC Requirements?

How Many Public Water Supplies In Ohio?



3,800

4,800

5,800

6,800

How Many Public Water Supplies In Ohio?

3,800

4,800

5,800

6,800

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA			
WDS1			
WDS2			
WS1			
WS2			
WS3			
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1			
WDS2			
WS1			
WS2			
WS3			
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2			
WS1			
WS2			
WS3			
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2	659		
WS1			
WS2			
WS3			
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2	659		
WS1	1,457		
WS2			
WS3			
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2	659		
WS1	1,457		
WS2	639		
WS3			
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2	659		
WS1	1,457		
WS2	639		
WS3	1,068		
WS4			
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2	659		
WS1	1,457		
WS2	639		
WS3	1,068		
WS4	154		
TOTAL			

Operator Training Update



TYPE	VALID	INVALID	WS ONLY
WSA	287		
WDS1	340		
WDS2	659		
WS1	1,457		
WS2	639		
WS3	1,068		
WS4	154		
TOTAL	4,750		

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TYPE	VALID	INVALID	WS ONLY
WSA	287	29	
WDS1	340	47	
WDS2	659	57	
WS1	1,457	96	
WS2	639	33	
WS3	1,068	58	
WS4	154	7	
TOTAL	4,750	327	

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TYPE	VALID	INVALID	WS ONLY
WSA	287	29	259
WDS1	340	47	-----
WDS2	659	57	-----
WS1	1,457	96	1,349
WS2	639	33	606
WS3	1,068	58	1,010
WS4	154	7	147
TOTAL	4,750	327	3,827

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