Department of Ecology EIM Environmental Information Management

EIM Help – Entering Dissolved Oxygen Data

Version 2.6
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Use the following guidance for entering your **Dissolved Oxygen** (DO) and **DO Percent Saturation** data into the Result Template or Time-Series Result Template. In addition, enter EIM's standard required fields described in the Result Help or Time-Series Result Help. These documents are found on the Templates & Guidance page.

If you measured DO concentration in the field (in-situ) with an instrument

- **Field Collection Type** (Column D in Result, E in Time-Series): **Measurement**
- **Result Parameter Name** (Column AM in Result, P in Time-Series): **Dissolved Oxygen**
- **Result Value Units, Result Units** (Column AN in Result, R in Time-Series): **mg/L**
- **Result Method** (Column AY in Result, T in Time-Series): In EIM, we use technology-based field methods instead of instrument or brand-specific methods. The most common methods for measuring DO are listed below. See your instrument manufacturer's tech info to determine the technology used by your instrument. Alternatively, if you followed a published method, use the published method.

  ***Note:** Manufacturers will sometimes indicate an instrument is "compliant" with a method, but this doesn't necessarily mean that you're following that method when you're using the instrument. Methods often contain additional QA checks and very specific techniques and procedures. Always read the method before submitting your data. If you were not actually following a published method, use the generic, technology-based method instead.*

Result Method Code (Measurement)	**Result Method Description**
Commonly used technology-based measurement methods	
DO-CLARK	Dissolved Oxygen (DO) by Electrochemical Polarographic (Clark) Cell Sensor with Fixed Membrane (Flow Dependent)
DO-OPTICAL	Dissolved Oxygen (DO) by Optical (Luminescent) Sensor (LDO)
Less common technology-based measurement methods	
DO-CLARK-PULSE	Dissolved Oxygen (DO) by Electrochemical Polarographic (Clark) Cell Sensor with Pulsing Membrane (Flow Independent)
DO-GALVANIC	Dissolved Oxygen (DO) by Electrochemical Galvanic Cell Sensor
Published measurement methods*	

SM4500OG	Dissolved Oxygen (DO) by Membrane Electrode Method (equivalent of Polarographic/Clark or Galvanic)

Don't see your method? Check the Method Valid Values or contact us and we can add it.

- **Result Lab Name** (Column BC): **Leave this field blank**.

If your DO samples were analyzed in a lab by Winkler Titration

Today, lab analyses for DO are less common and are primarily for verifying results obtained using field instruments.

- **Field Collection Type** (Column D): **Sample**
- **Result Parameter Name** (Column AM): **Dissolved Oxygen**
- **Result Value Units** (Column AN): **mg/L**
- **Result Method** (Column AY): The Winkler Titration methods are:

Result Method Code (Analysis)	**Result Method Description**
EPA360.2	Dissolved Oxygen (DO) by Modified Winkler Full Bottle
SM4500OC	Dissolved Oxygen (DO) by Winkler (Azide Modification)

- **Result Lab Name** (Column BC):
  - For Ecology staff doing Winkler titrations in the office, use one of the following:

Ecology Wet Labs
Dept of Ecology Wet Lab, Olympia WA
Dept of Ecology Marine Waters Lab, Olympia WA
Dept of Ecology Wet Lab, Union Gap WA
Dept of Ecology Wet Lab, Spokane WA
Dept of Ecology Wet Lab, Wenatchee WA

  - If the DO samples were sent to a commercial lab, find lab names in EIM's Labs Valid Values .
  - Non-ECY employees performing Winkler titrations at their office (mostly for historic data) should use "Wet lab at data collector's office/lab".
  - If you analyzed your DO sample on-site, but not in-situ (such as in a vehicle) use "Mobile lab at data collector field site." (rarely done)

If you are reporting DO Percent Saturation

DO Percent Saturation is calculated from a measured DO concentration using correction factors for water temperature, atmospheric pressure, and salinity (or conductivity). Sometimes your instrument calculates DO Percent Saturation for you. In other cases, you might have calculated it yourself.

- **Field Collection Type** (Column D in Result, E in Time-Series): **Measurement**

- **Result Parameter Name** (Column AM in Result, P in Time-Series): **Dissolved Oxygen Percent Saturation**
- **Result Value Units, Result Units** (Column AN in Result, R in Time-Series): **%**
- **Result Method** (Column AY in Result, T in Time-Series):
    - If your instrument calculated DO Percent Saturation for you, use the same measurement method you used for your measured DO (page 1).
    - If you calculated DO Percent Saturation yourself, enter the method you used to apply your correction factors. Search the Method Valid Values.
- **Result Lab Name** (Column BC in Result): **Leave this field blank**.

Document revision history

Revision Date	Revision No.	Summary of Changes	Reviser(s)
6/4/09	1.0	Original document	CN
11/6/09	1.1	Updated references to spreadsheet column headings per data model change	CL, CN
8/1/13	1.2	Updated references to spreadsheet column headings per data model change	CN
7/21/16	2.0	Removed reference to instrument-specific measurement methods HYDROLAB-DO-CLARK HYDROLAB-LDO-HACH, SBE43-DO, SBE13-DO, DOFM, SBE19BECK, SBE911P-13. Replaced with technology-based measurement methods. CALCDOSAT removed because it was not specific. Replaced with Owens&Millard85DOSAT and Garcia&Gordon92DOSAT. Replaced Dept of Ecology Wet Lab, Yakima WA with Dept of Ecology Wet Lab, Union Gap WA. Added guidance on DO Sat.	CN
7/26/16	2.1	Added ASTM-D888-12-A, B, & C for DO and Benson&Krause84DOSAT for DO Percent Saturation. Added "Percent" to heading for DO Saturation and column info for time-series data. Removed ASTM-D5543A (barely used in EIM). Added way to reference back to instrument when it calculates DO Percent Saturation for you.	CN
9/15/16	2.2	Added HACH-10360 methods for DO	CN
09/05/17	2.3	Updated links	KC
09/06/24	2.4	Added "in-situ" to the first heading. Updated lab name "Wet lab at data collector's site" to 'Wet lab at data collector's office/lab." Added bullet point about "Mobile lab at data collector field site."	KC
09/20/24	2.5	Added paragraph about published methods to page 1	MP, SR, KC
06/23/25	2.6	Removed ASTM-D888-12-A, ASTM-D888-12-B, DO-WT-CARPENTER65, DO-WT-GRASSHOFF99, DO-WT-STRICKLAND72, HACH-10360-1.2, Owens&Millard85DOSAT (inactivated, never used). Removed ASTM-D888-12-C (rarely used, but still active and available for use). Removed HACH-10360-1.1 because it's used for the determination of BOD. Removed table of methods for DO Percent Saturation. Text changes throughout.	KC