



## OBJECTIVE

This method can be used to determine the residual permanganate in water using standard spectrophotometric methods.

## NOTE

If the instrument is being used for the first time, a calibration curve needs to be stored in the instrument. The absorbance is measured at 520 nm. A minimum of three standards should be used to generate this curve. (See instructions in the DR 890 instruction manual).

## PROCEDURE

1. Obtain a water sample of unknown permanganate concentration and filter through a 0.45 um oxidant-resistant syringe filter (recommended examples are Whatman 0.45 um syringe filters or Millipore Millex GV syringe filters). This is to remove any turbidity and  $MnO_2$  that may be present.
2. The sample may need to be diluted at this time. The acceptable range for reading residual permanganate on the DR 890 is approximately 1-50 mg/L. The sample should be diluted with deionized water to read within this range.
3. Enter program number 102 for the stored program on the instrument.
4. Zero the colorimeter using either deionized water or filtered, untreated groundwater. Fill the vial to the 25 mL mark and face the diamond shape on the sample cell towards the keypad. Note: Be sure to wipe the vial so it is clean, free of streaks, and dry. Place the light shield over the sample cell and press zero on the instrument.
5. Fill a second vial to the 25 mL mark with filtered groundwater containing an unknown concentration of permanganate. Note: Be sure to wipe the vial so it is clean, free of streaks, and dry. Place the light shield over the sample cell and press read on the instrument. The program will give the result in mg/L as either  $KMnO_4$  or  $NaMnO_4$ . All Carus rental units read the results as  $KMnO_4$ . If a dilution was used, multiply the colorimeter reading by the dilution factor.

## CALCULATION

If analyzing for RemOx® L ISCO reagent (sodium permanganate) use the following equation to convert:  $mg/L KMnO_4 \times 0.895 = mg/L NaMnO_4$

## RETURN INFORMATION

Please be sure all vials are empty and clean before shipping the kit back to Carus. No liquids should be shipped. Please send colorimeter back to the address listed below and insure shipment for \$1,500. Thank you!

Carus Corporation  
Attention: Dylan Kemmerer- Bldg 45  
1500 8th Street  
LaSalle, IL 61301