Shravani Amrut Sirsat.
Roll No: 8330
Rajdhani
DATE 11/12/25

Date : 11/12/2025

We visited the OJT [on job traning] Centre For/at x-metric Water testing lab, the lab is located at shiye MIDC Fxist, we were shown the lab by ma'am. then they told us about the rules, OJT timing, and what work is done in the lab. They explained how water testing is carried out, which instruments and machines are used, and which chemicals are required. they also told us about the precautions to be taken during testing. After, that they showed us the water testing process and explained which tests are perFormed in water Samples.

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on the second day, we performed Some water tests. These are included : COD [chemical oxygen Demand], TDS [Total Dissolved solid].

1. COD → This is method used to measure the amount of oxygen required to oxidized wastwater or oxidized substance present in water. In this test, $K_2Cr_2O_7$ is used an oxidizing agent, then H_2SO_4, FAS [Ferrous ammonium sulphate] and Ag_2SO_4 as a catalyst used. During the test, the sample is taken and $K_2Cr_2O_7$, H_2SO_4 and Ag_2SO_4 are added and then mixture is heated at about 150°C For 2 hrs. After that, titration is perFormed the colour changes From yellow-green to reddish brown at the end point. then calcul' are done to find the COD value.

Formula - $COD = \frac{[A-B] \times M \times 8000}{ml.of.sample.}$

2. TDS → this method measures the amount of organic and inorganic dissolved substance in water, it is a fast process that measure oxygen Consumption For oxidation. a water sample is taken & placed in platinum-catalyzed combustion chamber at about 900°C to 1000°C. At high temprecture, substance convert into

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CO_2, H_2O, N and NO_x.

Formula - $TDS = \frac{[B-A] \times 1000 \times 10ml}{ml \text{ of sample.}}$

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then on next day, we performed another test. the pH meter and Alkanility test.

1. pH meter → Switch the pH meter, calibrate using standard buffer solution. Rinse electrode with distilled water. dip the electrode in test sample solution, & Record the pH.
2. Alkanility test → 100 ml of sample in 250 ml conical Flask, 2-3 drops of phenolop indicator. if sample turns pink, it is titrated with a standard acid sol^n. until the pink colour just dissapper, including indicating the end point For phenopthalin alkanility next, 2-3 drops of methyl orange indicator are added are added to the same flask, and titration continues until the color changes from yellow to faint pink or orange. the total volume of acid used From the beginning of the titration until the methyl orange end point is used to calculate the total Alkanity of the sample.

Date : 14/12/2025

Then, on 4th day, the samples that come to the lab were tested at that time. tests such as chloride test, Calcium test.

1. Calcium test → 50 ml of sample with 20 ml NaOH and 100 - 200 mg of murexide indicator, titrate against 0.01 M EDTA. then the End point is the colour pink to purple.
2. chloride test → 50 ml of sample with 2ml of $K_2Cr_2O_7$ it titrate against 0.02 N $AgNO_3$ and the end point colour is Red ting [Persistant].

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Date : 16/12/2025.

On Fiveth day, we perforemed the oil & grease tests were th. the Remaining sample.

1. oil and Grease. →

the procedure begins by collecting a representative 1-lit wastewater Sample in a wide-mouth glass container, which must be prepared by adding 1:1 hydrochloric acid or sulfuric acid to reduce the pH 2 or lower, allowing for long-term storage or immediate analysis.

$$\text{oil \& grase [mg/L]} = \frac{\text{weight of Residue [mg]}}{\text{volume of Sample [L]}}$$

Date 17/12/2025.

on Sixth day, we perFormed turbidity testing and the sample treatment process.

1. Turbidity test →

the turbidity meter is calibrate according to manufacture instruction. collect a representative sample cell [vial] 3 times with the sample water. Fill the vial with the sample up to the mark. wipe the outside of the vial with a lint-Free cloth or silicone oil remove Fingerprint, dirt or moisture. Inert the vial into the meter, aligning the mark close the lid, and press to obtain the NTU value.

2. Sample treatment →

Take the wastewater sample to be treated cheak the pH of the water Sample. adjust the pH of the sample to around PH 11-12 by adding

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line, after adjusting the pH, add polymer add then allow it to settle. after settling clear water will Seprate and a Layer will Form at the bottom. Collect the clear treated water carefully in a sample Seprate container use this treated water for Further analysis such as TS, TDS, COD etc.

After that the Date 17, 18, 19 we used to test the water sample that come daily. Every day Conducted different tests. we gain a new experience and got to see many new laboratory process and techniques.

20/12/2025 :

Sir explained everything clearly, we filled the Form and Completed our 10 days OJT.

During these to days, we learned many new techniques, practicals things and on 20/12/2025 our OJT was Completed.

Shravani Amrut Sirsat

Examined
24-3-2026

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