	PHARMA DEVILS		
	ENGINEERING DEPARTMENT		

Title: Operation of Online TOC Analyzer

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1.0   OBJECTIVE:

To lay down the procedure for Operation of Online TOC analyzer.

2.0   SCOPE:

This SOP is applicable for the operation of Online TOC Analyzer Make: HACH, Brand: ANATEL, Model No.: PAT700 WFI distribution return loop.

3.0   RESPONSIBILITY:

- ➢ Operator/Officer/Executive-Engineering: For execution and supervision.

- ➢ Officer/Executive QA: For verification

4.0   ACCOUNTABILITY:

Head-Engineering

5.0   ABBREVIATION:

ºC	Degree Celsius
ER	Engineering
LCD	Liquid Crystal Display
Ltd	Limited
NA	Not Applicable
NMT	Not More Than
Ppb	Part Per Billion
QA	Quality Assurance
SOP	Standard Operating Procedure
TOC	Total organic carbon
UV	Ultra Violet
WFI	Water for Injection

6.0   PROCEDURE:

6.1   PRE STARTUP CHECKS:

6.1.1   Ensure that the electrical supply is ON.

6.1.2   Ensure that WFI distribution loop is running.

6.1.3   Ensure that there is no leakage in inlet and outlet connections.

6.1.4   There are two no's of UV lamps in TOC analyzer. 1st UV lamps automatically switch over to 2nd UV lamp when 1st UV lamp burning hours reading reaches to 4300 hrs. The total life for

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both UV lamps is 8600 hrs. Both UV lamps shall be replaced on/before 8600 hrs. or whenever required if both lamps get Exhausted Alarm will be given by the analyzer.

6.2 PRINCIPLE OF OPERATION:

The HACH ANATEL PAT700 online TOC analyzer measure total organic carbon in WFI, is based on differential conductivity. These values are represented on LCD display.

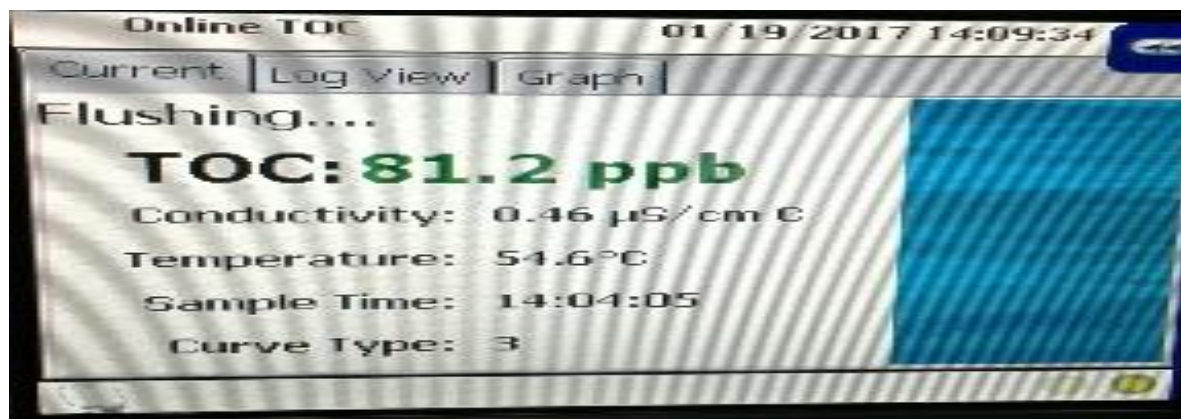**6.2.1** Ensure that the display is showing following parameters:

- Conductivity: µs/cm C
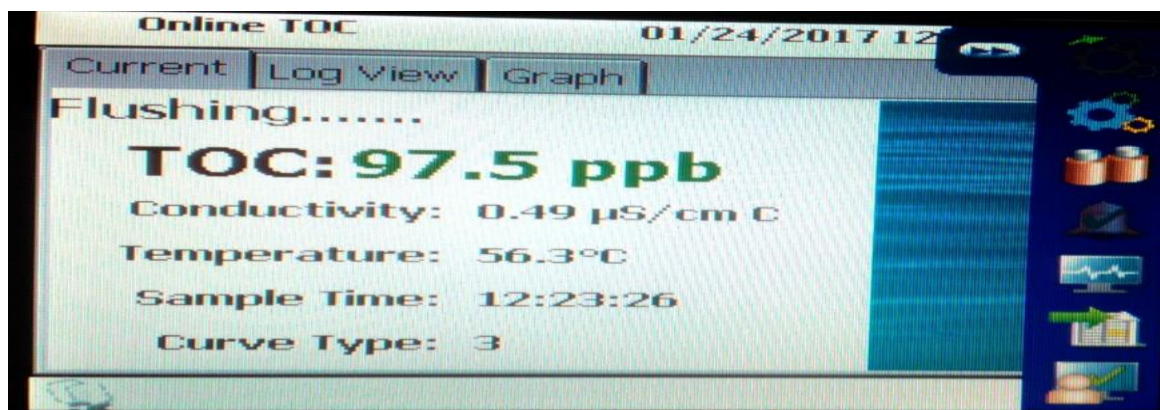- Temperature: °C
- TOC: ppb

6.3 PARAMETER:

TOC: NMT 500 ppb

6.4 OPERATION OF TOC:

6.4.1 After switch ON the TOC the following Home screen shall appear.

6.4.2 Press (Sliding Toolbar) icon to open the main functions of the instrument shown as per given Screen Sort.
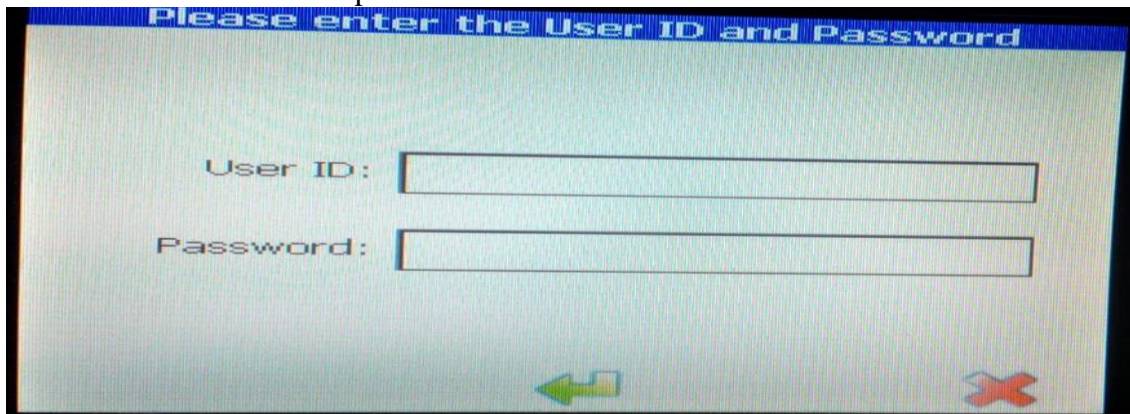
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6.4.3 Press [icon] (sign off and on) icon Bar for account operation i.e. screen will appear which will ask for user name and password.
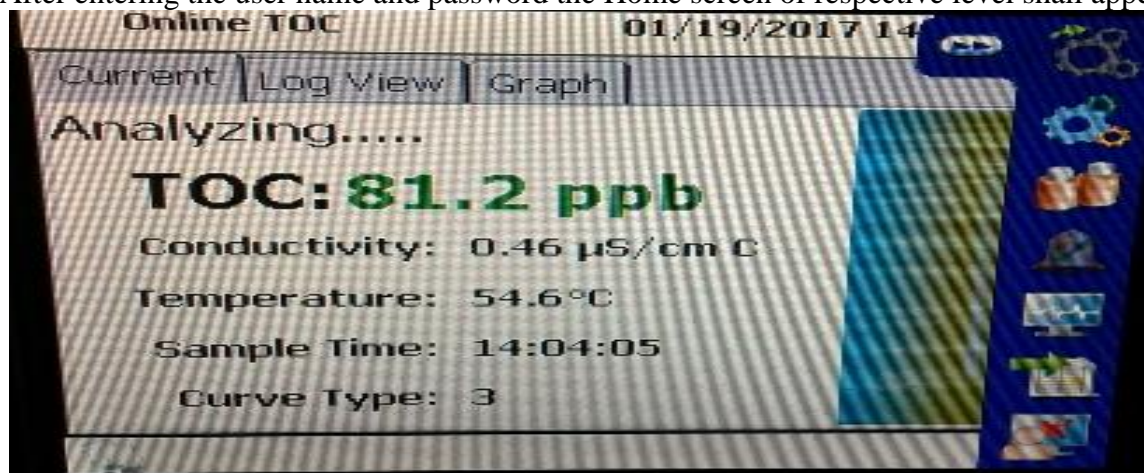

6.4.4 There are two level passwords one is operator and second is Administrator Level for login.

6.4.5 Operator has right to view TOC operation.

6.4.6 Admin have rights to view TOC operations, Audit trail and create new user ID and password.

6.4.7 After entering the user name and password the Home screen of respective level shall appear.
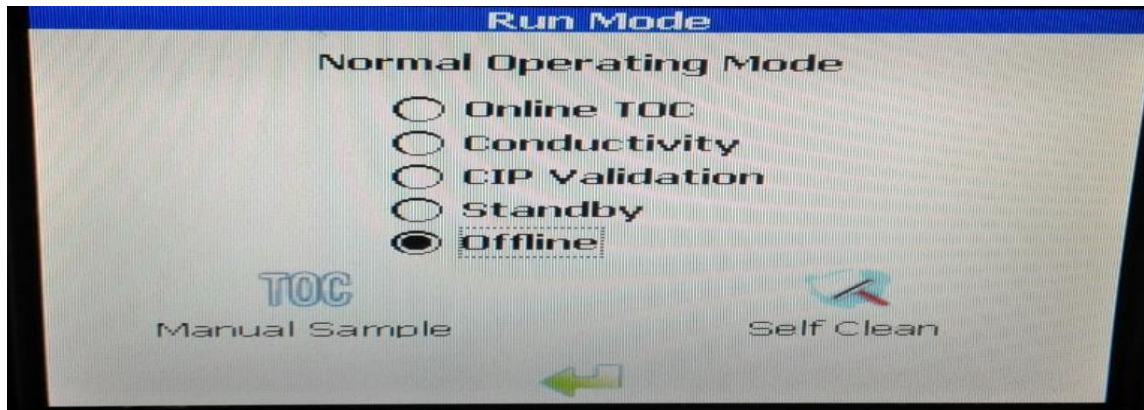

6.4.8 Press [icon] (Run mode) as per step 6.4.7"Run Mode" icon for Setting or changing the operation mode as per given in following screen sort.

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6.4.9 Select the "TOC Manual Sample" icon. Verify the "Manual TOC" screen is displayed.

6.4.10 For verifying the online, offline TOC, conductivity, CIP Validation & stand by click on the icon as per step no. 6.4.8and verify the reading.

6.4.11 For self-cleaning mode. Put the system in Offline mode and then press self-clean icon following screen will appear and enter the time and press at centre . Self cleaning of the equipment starts automatically. Press the icon for previous screen.

6.4.12 Touch the (Sliding toolbar) icon as per step no. 6.4.2, Home screen shall appear for display the online TOC.

6.4.13 Touch the setup icon as per step no. 6.4.7 then Setup screen shall appear.

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6.4.14 Touch the "Alarms" icon. Verify the "Alarm Setup" screen appears.

6.4.15 TOC Calibration: TOC calibration shall be performed with the help of external agency.

6.5   MAINTENANCE:

6.5.1 In case of any maintenance in TOC analyzer inform to user department and Engineering Head.

6.5.2 If the TOC observed high in any case, put the system in self-cleaning mode for removal of any contamination.

6.5.3 For replacement of water sample pipe, use only Teflon pipe.

6.5.4 Before installation of new pipe, put the system in offline mode and close the inlet sample water valve to TOC analyzer. Connect the one end of pipe to outlet of water sample valve and Flush out the water from the pipe for 30 minutes. After flushing, close the valve and connect the other end to TOC inlet sample.

6.6   CALIBRATION FREQUENCY:

6.6.1 Yearly$\pm$ 30 days

6.7 Log of operation is recorded in our system & we take the print of operation log from our online system when we required.

7.0   ANNEXURES:

Not Applicable.

ENCLOSURE: SOP raining Record

8.0   DISTRIBUTION:

- Controlled Copy No. 01   Quality Assurance
- Controlled Copy No. 02   Engineering
- Master Copy   Quality Assurance

9.0   REFERENCES:

Anatel 700-4 manual

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10.0 REVISION HISTORY :

<div align="center">

CHANGE HISTORY LOG

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Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By