 Discovery Labs	STANDARD OPERATING PROCEDURE			
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TITLE: CALIBRATION OF STORAGE TANKS, MEASURING TANKS , RECEIVERS & BUCKETS				

1.0 **PURPOSE:**

To provide a procedure for the calibration of the tanks and buckets used in Discovery.

2.0 **SCOPE:**

This procedure is applies to all Storage tanks, Measuring tanks, Receivers and Buckets used in Discovery.

3.0 **RESPONSIBILITY:**

It is the responsibility of the concerned personnel in the Production and Warehouse departments to ensure that the procedure mentioned in this SOP is being implemented at the time of calibration of tanks, receivers and buckets.

4.0 **DEFINITIONS:** Nil.

5.0 **PROCEDURE :**

5.1 All tanks should be calibrated at the time of installation and mark the readings with the paint by the side of the view glass. Re-calibrate the tanks for every five years or whenever the markings are damaged.

5.2 Perform the calibration of large volume tanks by external agencies, below the 2 KL volume tanks will be calibrated with flow meter.

5.3 The calibration should be done by the Concerned authorized personnel of the department.

5.4 Clean the equipment (inside and outside) properly. Close the bottom valve(s) and open the top vent.

5.5 **Cleaning procedure prior to calibration:**


5.5.1 Ensure that the equipment Storage tank/Measuring tank/Receiver is empty.

5.5.2 Disconnect the connected lines of the equipment.

5.5.3 Open the manhole and wash the equipment thoroughly with water and drain it.

5.5.4 Calibrate the equipment as per the procedure mentioned below.

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5.5.5 After completion of the calibration, wash the equipment with concerned solvent and allow the equipment to dry.

5.5.6 Reconnect all lines of the equipment and close the manhole.

5.6 Tanks with view glass:

5.6.1 For the tanks equipped with view glass follow the following procedure.

5.6.2 Fill the equipment with water to the top of the view glass. Unload the pre determined quantity (varies with the size of the equipment) with the help of the standard pre-calibrated measuring cans or pre-calibrated water flow meter or pre-calibrated gauge rod (depending on the size of the equipment).

5.6.3 Calibrate the tanks up to the bottom of the view glass by the above procedure.

5.6.4 Unload the remaining quantity, measure and mark it with paint below the view glass.

5.6.5 Once the tank is empty, mark the readings from the bottom to top. Mark by the side of the view glass with paint.

5.7 Tanks without view glass:


5.7.1 For the tanks not having view glass follow the following procedure:

5.7.1.1 Fill the equipment with known quantity of water with the help of a pre Calibrated measuring can. Insert the dip rod into the tank or receiver, mark the level of water on the dip rod and measure the length with the help of a scale. In the same manner, fill the tank or receiver to the maximum level.

5.8 Tanks with float:

5.8.1 Get the calibration done by the external agency and based on the reports, mark the readings on the tank.

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5.9 Calibration Of Buckets:


- 5.9.1 Take a empty bucket, which has level marking for each liter.
- 5.9.2 Take a calibrated measuring jar.
- 5.9.3 Take 1 liter of water in measuring jar and charge in bucket.
- 5.9.4 Check the level marking for every one liter of water charging and repeat the above procedure upto 10 liters of bucket volume and mark the bucket.
Allowed Range ± 100 ml
- 5.9.5 Bucket calibration shall be done for every two years.

Acceptance Criteria: Marked Level Should Match With Calibrated Level, If Not Matched Discard The Bucket.

6.0 FORMATS / ANNEXURE(S):

S. No	Details	Format No. (Current version)
01	Tank/Receiver Calibration Record	PD018-FM023
02	Bucket Calibration Record	PD018-FM045

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7.0 CHANGE HISTORY:

Revision No.	Effective Date	Details of Revision	Ref. CCF No.
00	01.01.2009	New SOP is introduced	----
01	01.06.2014	Revised as per current SOP No system & more clear and clarity	----
02	01.01.2017	SOPs PD-013-02, PD-017-02 and PD-037-02 are merged in this SOP.	PD-CRF-024/16
03	01.01.2018	SOP format changed make to inline with SOP-QA-001-05.	CCF/GEN/17035
04		Bucket Calibration Procedure have been incorporated.	

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