

Nebraska Standards Laboratory NESOP No. 5

Laboratory Customer and FSCP Staff Field Standard / Equipment Pre Calibration Procedure

1. Introduction

- 1.1. This procedure is to provide the NSL's customers and FSCP staff with the requirement that must be met before the NSL will accept artifacts for calibration work

2. Methodology

- 2.1 The laboratory handles, prepares and stores artifacts from both customers and FSCP field staff. Many of these artifacts come in contact with a variety of contaminants. These include chemicals, animal wastes, fuel and hazardous materials. It is the policy of the NSL that a clean environment be maintained within the laboratory. Proper preparation on artifacts is required to help manage this environment.

3. Responsibility and Authority

- 3.1 Standards laboratory responsibility and authority.

- 3.1.1 Trained metrology staff or trained designee will receive artifacts to be tested in the laboratory.
- 3.1.2 Trained metrology staff or trained designee will evaluate all incoming artifacts to determine if they are suitable and properly prepared in order to be brought into the Lab.
- 3.1.3 The laboratory staff is **not** responsible for the cleaning, painting or preparing of any artifacts that are scheduled for calibration.
- 3.1.4 The Laboratory manager reserves the right to reject and refuse services to any and all customers for artifacts that are determined not meeting the requirement in NEWAML-80 (NESOP-5).

- 3.2 Client responsibility and authority.

- 3.2.1 The laboratory client is responsible to make sure that all any artifacts, **regardless of ownership**, meet the requirements set forth in NEWAML-80 (NESOP-5).

- 3.3 FSCP staff responsibility and authority.

- 3.3.1 The FSCP staff is responsible for making sure that all State of Nebraska owned artifacts and/or related field equipment used in the scope of their normal respective duties, meet the requirements set forth in NEWAML-80 (SOP-5).

4. Procedures for Preparation of Artifacts Prior to Entry into the NSL

- 4.1. Mass Artifacts.

- 4.1.1. Cast iron NIST class-F artifacts;

- 4.1.1.1. All cast iron artifacts will be cleaned so that all loose paint and no foreign material is present on any surfaces especially underside of the artifacts.

- 4.1.1.1.1. **Do not sandblast or use harsh abrasives to clean the artifacts. This may alter the artifact in such a way that calibration time may be extended or not permitted due un-repairable damage to the artifact.**

Nebraska Standards Laboratory NESOP No. 5

Laboratory Customer and FSCP Staff Field Standard / Equipment Pre Calibration Procedure

- 4.1.1.2. **All** surfaces shall be painted with a **light** coat of **silver or aluminum** paint so that no bare metal surfaces are visible. This includes the bottom of the artifact.
- 4.1.1.3. If pressurized water is used, take care not to focus water stream on the sealing/adjustment area of the artifact. Doing so may result in extra time in the lab to let the artifact “dry out”.

4.1.2 Stainless steel artifacts;

- 4.1.2.1 All stainless steel artifacts shall be cleaned in such a way that no dirt, oil or other contaminants are present on the artifact.
- 4.1.2.2 NIST Class-F artifacts may be cleaned with Windex or simple green.
- 4.1.2.3 Highly polished artifacts are to be cleaned with **distilled water only**.
- 4.1.2.4 Weight cases are being in good condition with all hinges and locks operating properly and protecting the artifacts in a reasonable manner.

4.2 Volumetric Artifacts.

4.2.1 Test Measures, Stainless Steel Provers and LPG Provers;

4.2.1.1 Test Measures .

- 4.2.1.1.1 All test measures, i.e. 5 gallon, shall be cleaned and dried in such a manner that no fuel, chemical or other contaminants are present **on and inside** of the test measure.
- 4.2.1.1.2 All sight gauges and scale plate shall be intact and readable.
- 4.2.1.1.3 All mild steel test measures shall be painted Red in color.

4.2.1.2 Stainless Steel Provers.

- 4.2.1.2.1 Provers are shall be cleaned in such a manner that no fuel, chemical or other contaminants are present on and inside of the prover.
- 4.2.1.2.2 **Only FSCP staff** will be allowed to disassemble the prover from the storage tank on site, for proper cleaning of the **inside of the prover**.
- 4.2.1.2.3 All sight gauges and scale plates shall be intact and readable.
- 4.2.1.2.4 All leveling bubbles and means to level shall be intact and operational.
- 4.2.1.2.5 All prover trailers entering the lab shall be washed and cleaned of all fuel, oil or other contaminants prior to entering the facility.

4.2.1.3 LPG Provers.

- 4.2.1.3.1 All LPG provers shall be emptied and depressurized before entering the Lab.
- 4.2.1.3.2 Pop off valve shall be removed by the **customer**.
- 4.2.1.3.3 All sight gauges and scale plates shall be intact and readable.
- 4.2.1.2.4 All leveling bubbles and leveling means shall be intact and operational.
- 4.2.1.2.5 All trailers entering the lab shall be washed and cleaned of all foreign material before entering the facility.

Nebraska Standards Laboratory NESOP No. 5

Laboratory Customer and FSCP Staff Field Standard / Equipment Pre Calibration Procedure

- 4.3 Other artifacts not meeting the requirements set forth in NIST HB 150 series.
 - 4.3.1 All artifacts shall be evaluated to determine if the lab can properly perform a measurable and traceable calibration on such artifacts.
 - 4.3.2 Such artifacts **may not** be eligible for an official certificate of calibration.

5.0 FSCP vehicles, trailers and associated equipment.

- 5.1 All vehicles and trailers and associated equipment, will be evaluated by the lab staff for conditions of and/or signs of misuse. NEWAML-81 "Vehicle, Trailer and associated Equipment Condition Form" will be used and sent to the appropriate supervisor and the Director of FSCP.