

APPENDIX C

QUALITY ASSESSMENT & QUALITY CONTROL PROCESS

FLAGGING TYPE AND FREQUENCY

1. Identify the tier your dataset complies with. Flag the dataset for each error that needs to be tested for in that tier. Flags should be categorized in two categories: Type I flags (for Type I errors) and Type II flags (for Type II errors). (Chapter 7)
2. Type I flags must be assigned in near-real time with an automated QC process while Type II flags must be updated at least once a year.
3. A clear description of flagging type and frequency must be provided on the public facing website.

TIER III

No QA/QC required. Report data directly measured by the sensor.

TIER II

QA/QC has been carried out using the following tests. Details of each test are provided within this document in Chapter 5.

1. Range test or high/low range limit test
2. Constant value test
3. Spike test
4. Break test
5. Temperature test

TIER I

The following tests must be performed in addition to Tier II tests and should be conducted once a year. This exercise can coincide with the time of evaluating the data quality for a tier assignment. Details of each test are provided within this document in Chapter 7.

1. Correlations in temporal relationship of soil moisture with ancillary variables
2. Moisture redistribution in unsaturated flow process
3. Calibration shift or sensor fouling

Common causes of data errors:

- Instrument malfunction
- Personnel errors
- Transmission errors
- Data processing errors

Take appropriate corrective actions for flagged data as described in Chapter 7. Note that some data processing errors that pertain to producing Tier I datasets will require the services of a soil

moisture data expert. You can reach out to the program coordinator NCSMMN for recommendations on soil moisture data experts (soil.moisture@noaa.gov).