TE-1000 Hi-Vol Calibration Data Sheet

Site Information

Full Site Name: Xact - NIPSCO

Site Abbreviation XAC Sampler Serial No. 49524619

Field Technician Name Scott Keller & Katie Healy Date 3/17/21 Time 9:35

Site Conditions

$T_{amb\ transfer\ standard}$ (°C) 10.0 T_{amb} (K) 283.0 $T_{amb\ transfer\ standard}$ (°C) + 273 = T_{amb} (K)

$P_{amb\ transfer\ standard}$ (mmHg) 744

Instructions: insert the temperature and pressure information into the TE-1000-PUF-Calibration-Worksheet.

Calibration Orifice Information

Make Graseby Model Regular Serial No. 584

Orifice Slope "$m_{orifice}$" 10.46067 Orifice Intercept "$b_{orifice}$" -0.16706

Instructions: insert the orifice slope and intercept information into TE-1000-PUF-Calibration-Worksheet in the Q_{std} Slope and Q_{std} Intercept cells.

Hi-Vol Calibration Information digital manometer

Test No.	Magnehelic Gauge Setting	**High** Manometer Pressure† (inH_2O)	**Low** Manometer Pressure† (inH_2O)	**Sum** of High & Low Pressures (inH_2O)	$Q_{Manometer}$ (m^3/min) from Tisch Calibration Worksheet	$Q_{Magnehelic}$ (m^3/min) from Tisch Calibration Worksheet
1	70.0	—	—	7.7	0.285	8.49
2	60.0	—	—	6.8	0.269	7.86
3	50.0	—	—	5.9	0.252	7.18
4	40.0	—	—	4.7	0.226	6.42
5	30.0	—	—	3.7	0.203	5.56

†If using a digital manometer, no need to fill out the **High** and **Low** columns, just the **Sum** column.

Instructions: (1) insert the data from "Sum of High & Low Pressures" column into the TE-1000-PUF-Calibration-Worksheet under the "Pressure (inH_2O)" column; (2) record the values from the "Q_{std} (m3/min)" column of the TE-1000-PUF-Calibration Worksheet under the "$Q_{Manometer}$" column in the table above; (3) record the values from the "Flow (corrected)" column of the TE-1000-PUF-Calibration Worksheet under the "$Q_{Magnehelic}$" column in the table above.

Hi-Vol Slope "m_{hivol}" 35.0115 Hi-Vol Intercept "b_{hivol}" -1.5447

Correction Coefficient "R" 0.9988 > 0.990? Yes No (circle one)

Instructions: record the values for from the "Slope", "Intercept", and "Corr. Coeff." cells found under "Linear Regression" in the TE-1000-PUF-Calibration Worksheet in the designated spaces above. If the Correction Coefficient is ≤0.990, repeat the calibration.

Magnehelic Gauge Setpoint 41.34 $= \left(\frac{P_{amb}}{T_{amb}} * \frac{298K}{760mmHg}\right) * \left[\left(m_{hivol} * 0.225\frac{m^3}{min}\right) + b_{hivol}\right]^2$

Instructions: calculate the magnehelic gauge setpoint using the equation above.

P_{amb} = Atmospheric pressure from transfer standard, mmHg

T_{amb} = Atmospheric temperature from transfer standard, K