# Certificate of Calibration - Wind Monitoring Station

| | |
|---|---|
| Description: | Yau Lai Estate, Bik Lai House |
| Manufacturer: | Davis Instruments |
| Model No.: | Davis7440 |
| Serial No.: | MC01010A44 |
| Equipment No.: | SA-03-04 |
| Date of Calibration | 20-Feb-2021 |
| Next Due Date | 20-Aug-2021 |

### 1. Performance check of Wind Speed

| Wind Speed, m/s | | Difference D (m/s) |
|---|---|---|
| Wind Speed Reading (V1) | Anemometer Value (V2) | $D = V1 - V2$ |
| 0.0 | 0.0 | 0.0 |
| 1.5 | 1.6 | -0.1 |
| 2.5 | 2.5 | 0.0 |
| 3.5 | 3.4 | 0.1 |

### 2. Performance check of Wind Direction
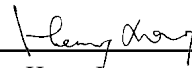
| Wind Direction ($^o$) | | Difference D ($^o$) |
|---|---|---|
| Wind Direction Reading (W1) | Marine Compass Value (W2) | $D = W1 - W2$ |
| 0 | 0 | 0.0 |
| 90 | 90 | 0.0 |
| 180 | 180 | 0.0 |
| 270 | 270 | 0.0 |

**Test Specification:**

**1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer**

**2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction**

Calibrated by: _____    Approved by: _____

Wong Shing Kwai                                               Henry Leung

# TISCH Environmental

# Certificate of Calibration

## Calibration Certification Information

| | | | |
| --- | --- | --- | --- |
| **Cal. Date:** January 11, 2021 | **Rootsmeter S/N:** 438320 | **Ta:** 297 | °K |
| **Operator:** Jim Tisch | | **Pa:** 750.1 | mm Hg |
| **Calibration Model #:** TE-5025A | **Calibrator S/N: 3864** | | |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 2 | 1 | 1.4470 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0210 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.9140 | 8.0 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8670 | 8.8 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7140 | 12.9 | 8.00 |

## Data Tabulation

| Vstd (m3) | Qstd (x-axis) | $\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis) | Va | Qa (x-axis) | $\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis) |
| --- | --- | --- | --- | --- | --- |
| 0.9860 | 0.6814 | 1.4073 | 0.9957 | 0.6881 | 0.8899 |
| 0.9818 | 0.9616 | 1.9902 | 0.9915 | 0.9711 | 1.2585 |
| 0.9797 | 1.0719 | 2.2251 | 0.9893 | 1.0824 | 1.4071 |
| 0.9786 | 1.1288 | 2.3337 | 0.9883 | 1.1399 | 1.4757 |
| 0.9732 | 1.3630 | 2.8146 | 0.9828 | 1.3765 | 1.7798 |
| **QSTD** m= | 2.06566 | | **QA** m= | 1.29348 | |
| b= | 0.00315 | | b= | 0.00199 | |
| r= | 0.99996 | | r= | 0.99996 | |

## Calculations

| | |
| --- | --- |
| **Vstd=** ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | **Va=** ΔVol((Pa-ΔP)/Pa) |
| **Qstd=** Vstd/ΔTime | **Qa=** Va/ΔTime |

### For subsequent flow rate calculations:

$$Qstd = \frac{1}{m}\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$$

$$Qa = \frac{1}{m}\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$$

| Standard Conditions | |
| --- | --- |
| Tstd: | 298.15 °K |
| Pstd: | 760 mm Hg |
| **Key** | |
| ΔH: calibrator manometer reading (in H2O) | |
| ΔP: rootsmeter manometer reading (mm Hg) | |
| Ta: actual absolute temperature (°K) | |
| Pa: actual barometric pressure (mm Hg) | |
| b: intercept | |
| m: slope | |

### RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

# High-Volume TSP Sampler
## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

Project No. KTD 2D - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

| Date: | 26-Jul-21 | Next Due Date: | 26-Sep-21 | Operator: | SK |
|---|---|---|---|---|---|
| Equipment No.: | A-01-41 | Model No.: | TE 5170 | Serial No. | 5280 |

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 302 | Pressure, Pa (mmHg) | 751 |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ |

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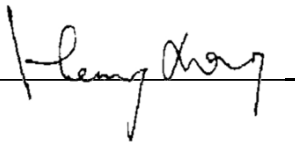| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orifce | | | HVS | |
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) **X - axis** | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis** |
| 1 | 13.7 | 3.65 | 62.57 | 8.8 | 2.93 |
| 2 | 11.5 | 3.35 | 57.33 | 7.0 | 2.61 |
| 3 | 8.2 | 2.83 | 48.42 | 5.5 | 2.32 |
| 4 | 5.8 | 2.38 | 40.73 | 4.1 | 2.00 |
| 5 | 2.9 | 1.68 | 28.82 | 2.3 | 1.50 |

**By Linear Regression of Y on X**

Slope , mw = 0.0412      Intercept, bw = 0.3131

Correlation coefficient* = 0.9978

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation |
|---|

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = ( mw x Qstd + bw )$^2$ x ( 760 / Pa ) x ( Ta / 298 ) =    4.45

Remarks: _____

| Conducted by: | Wong Shing Kwai | Signature: | | Date: | 26-Jul-21 |
|---|---|---|---|---|---|
| Checked by: | Henry Leung | Signature: | | Date: | 26-Jul-21 |

# High-Volume TSP Sampler
## 5-POINT CALIBRATION DATA SHEET

Project No.     CKL 2 - Flat 103 Cha Kwo Ling Village

Date:     6-Jul-21          Next Due Date:     6-Sep-21          Operator:     SK

Equipment No.:     A-01-55          Model No.:     TE 5170          Serial No.     1956

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 302.4 | Pressure, Pa (mmHg) | 754.7 |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

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| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orfice | | | HVS | |
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) **X - axis** | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis** |
| 1 | 13.5 | 3.63 | 62.23 | 9.6 | 3.07 |
| 2 | 11.3 | 3.33 | 56.94 | 7.5 | 2.71 |
| 3 | 8.3 | 2.85 | 48.80 | 5.9 | 2.40 |
| 4 | 5.2 | 2.26 | 38.64 | 3.5 | 1.85 |
| 5 | 3.0 | 1.71 | 29.36 | 1.9 | 1.36 |

**By Linear Regression of Y on X**

Slope , mw =     0.0506          Intercept, bw =     -0.1120

Correlation coefficient* =     0.9982

*If Correlation Coefficient < 0.990, check and recalibrate.

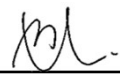| Set Point Calculation |
|---|

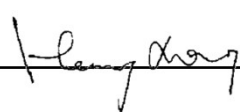From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = ( mw x Qstd + bw )$^2$ x ( 760 / Pa ) x ( Ta / 298 ) =     4.36

Remarks:

Conducted by:     Wong Shing Kwai          Signature:          Date:     6-Jul-21

Checked by:     Henry Leung          Signature:          Date:     6-Jul-21

# High-Volume TSP Sampler
## 5-POINT CALIBRATION DATA SHEET

**CINOTECH**

Project No.    CKL 1 - Flat 121 Cha Kwo Ling Village

Date:    6-Jul-21          Next Due Date:    6-Sep-21          Operator:    SK

Equipment No.:    A-01-18          Model No.:    TE 5170          Serial No.    0723

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 302.4 | Pressure, Pa (mmHg) | 754.7 |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

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| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orifice | | | HVS | |
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) **X - axis** | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis** |
| 1 | 13.2 | 3.59 | 61.53 | 10.6 | 3.22 |
| 2 | 11.2 | 3.31 | 56.68 | 8.0 | 2.80 |
| 3 | 8.3 | 2.85 | 48.80 | 6.1 | 2.44 |
| 4 | 6.2 | 2.46 | 42.19 | 3.9 | 1.95 |
| 5 | 3.4 | 1.82 | 31.26 | 1.9 | 1.36 |

**By Linear Regression of Y on X**

  Slope , mw =    0.0603          Intercept, bw =    -0.5439

  Correlation coefficient* =    0.9968

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation |
|---|

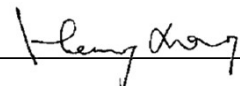From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $( mw \times Qstd + bw )^2 \times ( 760 / Pa ) \times ( Ta / 298 )$ =    4.29

Remarks:

Conducted by:    Wong Shing Kwai          Signature:          Date:    6-Jul-21

Checked by:    Henry Leung          Signature:          Date:    6-Jul-21

# High-Volume TSP Sampler
## 5-POINT CALIBRATION DATA SHEET

File No. MA20003/44/0007

Project No. KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)

Date: 1-Jun-21  Next Due Date: 1-Aug-21  Operator: SK

Equipment No.: A-01-44  Model No.: TE-5170  Serial No. 1316

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 299.5 | Pressure, Pa (mmHg) | 754.8 |

| Orifice Transfer Standard Information | | | | |
|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | mc x Qstd + bc = [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ | | |
| Next Calibration Date: | 11-Jan-22 | Qstd = {[ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ -bc} / mc | | |

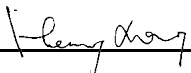| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orifice | | | HVS | |
| | ΔH (orifice), in. of water | [ΔH x (Pa/760) x (298/Ta)]$^{1/2}$ | Qstd (CFM) X - axis | ΔW (HVS), in. of water | [ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ Y-axis |
| 1 | 13.7 | 3.68 | 62.99 | 9.0 | 2.98 |
| 2 | 11.0 | 3.30 | 56.45 | 6.8 | 2.59 |
| 3 | 8.3 | 2.86 | 49.04 | 5.3 | 2.29 |
| 4 | 6.2 | 2.48 | 42.39 | 3.4 | 1.83 |
| 5 | 3.2 | 1.78 | 30.47 | 1.8 | 1.33 |

**By Linear Regression of Y on X**

Slope , mw = 0.0509  Intercept, bw = -0.2524

Correlation coefficient* = 0.9970

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation |
|---|

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \ x \ Qstd + bw = [\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$$

Therefore, Set Point; W = ( mw x Qstd + bw )$^2$ x ( 760 / Pa ) x ( Ta / 298 ) = 3.80

Remarks: 

Conducted by: SK Wong  Signature:  Date: 1 June 2021

Checked by: Henry Leung  Signature:  Date: 1 June 2021

# High-Volume TSP Sampler
## 5-POINT CALIBRATION DATA SHEET

<div align="right">File No.   MA20003/04/0006</div>

| | | | | | |
|---|---|---|---|---|---|
| Project No. | KER 1 - Future Residential Development at Kerry Godown | | | | |
| Date: | 1-Jun-21 | Next Due Date: | 1-Aug-21 | Operator: | SK |
| Equipment No.: | A-01-04 | Model No.: | TE 5170 | Serial No. | 10595 |

### Ambient Condition

| Temperature, Ta (K) | 299.5 | Pressure, Pa (mmHg) | 754.8 |
|---|---|---|---|

### Orifice Transfer Standard Information

| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
|---|---|---|---|---|---|
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

### Calibration of TSP Sampler

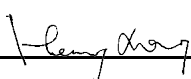| Calibration Point | Orifice | | | HVS | |
|---|---|---|---|---|---|
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | 13.8 | 3.69 | 63.22 | 8.8 | 2.95 |
| 2 | 11.3 | 3.34 | 57.21 | 6.9 | 2.61 |
| 3 | 8.6 | 2.92 | 49.92 | 5.3 | 2.29 |
| 4 | 5.0 | 2.22 | 38.08 | 3.1 | 1.75 |
| 5 | 3.0 | 1.72 | 29.51 | 2.1 | 1.44 |

**By Linear Regression of Y on X**

  **Slope , mw =**    0.0446          **Intercept, bw =**      0.0861

  **Correlation coefficient\* =**      0.9981

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$      **4.06**

Remarks: _____

_____

| | | | | | |
|---|---|---|---|---|---|
| Conducted by: | SK Wong | Signature: | | Date: | 1 June 2021 |
| Checked by: | Henry Leung | Signature: | | Date: | 1 June 2021 |

# High-Volume TSP Sampler
## 5-POINT CALIBRATION DATA SHEET

File No.   MA20003/41/0006

Project No.   KTD 2D - Next to the SOR Office of Trunk Road T2 in Kai Tak Area

| Date: | 26-May-21 | Next Due Date: | 26-Jul-21 | Operator: | SK |
|---|---|---|---|---|---|
| Equipment No.: | A-01-41 | Model No.: | TE 5170 | Serial No. | 5280 |

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 299.3 | Pressure, Pa (mmHg) | 755 |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orfice | | | HVS | |
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | 13.9 | 3.71 | 63.48 | 8.7 | 2.93 |
| 2 | 11.3 | 3.34 | 57.24 | 6.9 | 2.61 |
| 3 | 8.1 | 2.83 | 48.47 | 5.4 | 2.31 |
| 4 | 5.7 | 2.37 | 40.67 | 4.1 | 2.01 |
| 5 | 2.7 | 1.63 | 28.01 | 2.3 | 1.51 |

**By Linear Regression of Y on X**

Slope , mw = 0.0393        Intercept, bw = 0.4057

Correlation coefficient* = 0.9987

*If Correlation Coefficient < 0.990, check and recalibrate.
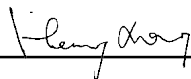
| Set Point Calculation |
|---|

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = ( mw x Qstd + bw )$^2$ x ( 760 / Pa ) x ( Ta / 298 ) =      4.44

Remarks:

| Conducted by: | SK Wong | Signature: | | Date: | 1 June 2021 |
|---|---|---|---|---|---|
| Checked by: | Henry Leung | Signature: | | Date: | 1 June 2021 |

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

Project No.    CKL 2 - Flat 103 Cha Kwo Ling Village

Date:    6-May-21    Next Due Date:    6-Jul-21    Operator:    SK

Equipment No.:    A-01-55    Model No.:    TE 5170    Serial No.    1956

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 298.2 | Pressure, Pa (mmHg) | 761.4 |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orfice | | | HVS | |
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) **X - axis** | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ **Y-axis** |
| 1 | 13.6 | 3.69 | 63.17 | 9.6 | 3.10 |
| 2 | 11.4 | 3.38 | 57.84 | 7.5 | 2.74 |
| 3 | 8.4 | 2.90 | 49.66 | 5.9 | 2.43 |
| 4 | 5.2 | 2.28 | 39.08 | 3.5 | 1.87 |
| 5 | 2.8 | 1.67 | 28.69 | 1.9 | 1.38 |

**By Linear Regression of Y on X**

 Slope , mw =    0.0490    Intercept, bw =    -0.0320

  Correlation coefficient* =    0.9984

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation |
|---|

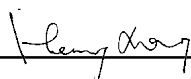From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

 Therefore, Set Point; $W = (mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$    4.30

Remarks:

Conducted by:    SK Wong    Signature:    _____    Date:    6 May 2021

Checked by:    Henry Leung    Signature:    _____    Date:    6 May 2021

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET

Project No.   CKL 1 - Flat 121 Cha Kwo Ling Village

Date:   6-May-21        Next Due Date:   6-Jul-21        Operator:   SK

Equipment No.:   A-01-18        Model No.:   TE 5170        Serial No.   0723

| Ambient Condition | | | |
|---|---|---|---|
| Temperature, Ta (K) | 298.2 | Pressure, Pa (mmHg) | 761.4 |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Serial No. | 3864 | Slope, mc | 0.05846 | Intercept, bc | -0.00313 |
| Last Calibration Date: | 11-Jan-21 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 11-Jan-22 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|---|---|---|---|---|---|
| Calibration Point | Orifice | | | HVS | |
| | $\Delta H$ (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X - axis | $\Delta W$ (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | 13.4 | 3.66 | 62.71 | 10.3 | 3.21 |
| 2 | 11.3 | 3.36 | 57.59 | 7.8 | 2.79 |
| 3 | 8.4 | 2.90 | 49.66 | 6.1 | 2.47 |
| 4 | 5.4 | 2.33 | 39.83 | 3.3 | 1.82 |
| 5 | 3.1 | 1.76 | 30.19 | 1.8 | 1.34 |

**By Linear Regression of Y on X**

Slope , mw = **0.0567**        Intercept, bw = **-0.3951**

Correlation coefficient* = **0.9970**

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation |
|---|

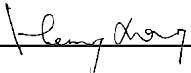From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = ( mw x Qstd + bw )$^2$ x ( 760 / Pa ) x ( Ta / 298 ) =        **4.17**

Remarks: _____

_____

Conducted by:   SK Wong        Signature: _____        Date:   6 May 2021

Checked by:   Henry Leung        Signature: _____        Date:   6 May 2021