## 5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0025

| Project No.  | AM1 - Tin Hau              | Temple            |  |   |                           |                                   |  |
|--|----------------------------|-------------------|--|---|---------------------------|-----------------------------------|--|
| Date:  | 10-A                       | Aug-20            | Next Due Date: 10-0  |   | -Oct-20 Operator:         |                                   | SK   |
| Equipment No.:   | : <u>A-01-05</u>           |                   | Model No.:   | G   | S2310                     | Serial No.                        | 10599  |
|  |                            |                   | Ambient C  | ondition  |                           |                                   |  |
| Temperatur   | re, Ta (K)                 | 304               | Pressure, Pa   | (mmHg)  |                           | 760                               |  |
|  |                            |                   |  |   | _                         |                                   |  |
| Serial   | Na                         | 3746              | Slope, mc  | 0.0592  |                           | . 1                               | -0.02740   |
|  |                            | 17-Jan-20         | _ ·  | Slope, mc   0.0592   Intercept, bc   -0.0274<br>mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |                           |                                   |  |
| Last Calibration Date: 17-Jan-20  Next Calibration Date: 17-Jan-21 |                            |                   | 4  |   | $(Pa/760) \times (298/7)$ |                                   |  |
| TVEXT CUITOR   | ation Bute.                |                   |  | <u> </u>  | (14,700) 11 (250)         | - w <sub>j</sub>   w <sub>e</sub> |  |
|  |                            |                   | Calibration of   | ΓSP Sampler   |                           |                                   |  |
| Calibration  |                            | Or                | fice   |   |                           | HVS                               |  |
| Point  | ΔH (orifice), in. of water | [ΔH x (Pa/76      | [ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>                        |   | ΔW (HVS), in. of water    | 1                                 | 760) x (298/Ta)] <sup>1/2</sup><br><b>Y-axis</b> |
| 1  | 12.9                       |                   | 3.56   |   | 8.5                       |                                   | 2.89   |
| 2  | 9.4                        | 3.04              |  | 51.74   | 6.3                       |                                   | 2.49   |
| 3  | 7.5                        |                   | 2.71   |   | 4.8                       |                                   | 2.17   |
| 4  | 4.8                        |                   | 2.17   |   | 3.2                       |                                   | 1.77   |
| 5  | 2.6                        |                   | 1.60 27.43 1.8   |   |                           |                                   | 1.33   |
|  |                            |                   |  |   |                           |                                   |  |
| By Linear Regr   |                            | X                 |  |   | 0.020                     |                                   |  |
| Slope, mw =  |                            | _                 |  | ntercept, bw  | 0.020                     | 6                                 |  |
|  | coefficient* =             | 90, check and red | .9993  |   |                           |                                   |  |
| 'II Correlation C  | defficient < 0.9           | 90, check and rec | cantifate.   |   |                           |                                   |  |
|  |                            |                   | Set Point Ca   | lculation   |                           |                                   |  |
| From the TSP Fi  | eld Calibration            | Curve, take Qstd  | = 43 CFM   |   |                           |                                   |  |
| From the Regres  | sion Equation, t           | he "Y" value acco | ording to  |   |                           |                                   |  |
|  |                            | _                 |  | (T) (T) (T)   | 20 m × 1/2                |                                   |  |
|  |                            | mw x (            | $\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29  | 98/Ta)] <sup>112</sup>    |                                   |  |
| Therefore, Se  | et Point; W = ( n          | nw x Qstd + bw )  | <sup>2</sup> x ( 760 / Pa ) x ( 7                                | Ta / 298 ) =  | 4,29                      |                                   |  |
|  |                            |                   |  |   |                           |                                   |  |
| Remarks:   |                            |                   |  |   |                           |                                   |  |
| Conducted by:  | SK Wong                    | Signatura         |  |   |                           | Datas                             | 10 August 2020                                   |
| Conducted by:  | DIX WONE                   | Signature:        |  | <u>, '</u>  | •                         | Date:                             | 10 August 2020                                   |
| Checked by:  | Henry Leung                | Signature:        | \lang X  | ~~7   |                           | Date:                             | 10 August 2020                                   |

## 5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0025

| Project No.                 | AM2 - Sai Tso              | Wan Recreation                            | Ground                                    |   |                           |                         |  |
|-----------------------------|----------------------------|---|---|---|---------------------------|-------------------------|--|
| Date:                       | 10-A                       | aug-20                                    | Next Due Date: 10-0                       |   | Oct-20                    | Operator:               | SK   |
| Equipment No.:              | .: <u>A-01-08</u>          |   | Model No.:                                | GS  | S2310                     | Serial No.              | 1287   |
|                             |                            |   | Ambient C                                 | ondition  |                           |                         |  |
| Temperatu                   | re, Ta (K)                 | 304                                       | Pressure, Pa                              | (mmHg)  |                           | 760                     |  |
|                             |                            |   |   |   |                           |                         |  |
| 0 : 1                       | 137                        |   | ifice Transfer Star                       |   |                           | , 1                     | 0.02740  |
| Serial                      |                            | 3746                                      | Slope, mc                                 | pe, mc   0.0592   Intercept, bc   -0.027<br>mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |                           |                         | -0.02740                                       |
| Last Calibra Next Calibr    |                            | 17-Jan-20<br>17-Jan-21                    | •   |   | $(Pa/760) \times (298/7)$ |                         |  |
| Next Callor                 | ation Date:                | 1/-Jan-21                                 |   | Qstu – <sub>ξ[ΔΠ λ</sub>  | (1 a/ /00) x (290/ )      | rajj -bc <sub>s</sub> / | <u>mc</u>                                      |
|                             |                            |   | Calibration of T                          | ΓSP Sampler   |                           |                         |  |
| Calibration                 |                            | Oı  | fice                                      |   |                           | HVS                     |  |
| Point                       | ΔH (orifice), in. of water | [ΔH x (Pa/76                              | [ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup> |   | ΔW (HVS), in. of water    | [ΔW x (Pa/              | (760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b> |
| 1                           | 12.9                       |   | 3.56                                      |   | 8.5                       |                         | 2.89   |
| 2                           | 9.8                        |   | 3.10                                      |   | 6.1                       |                         | 2.45   |
| 3                           | 7.8                        |   | 2.77                                      |   | 4.8                       |                         | 2.17   |
| 4                           | 4.8                        |   | 2.17                                      |   | 3.0                       |                         | 1.71   |
| 5                           | 2.8                        |   | 1.66                                      | 28.45   | 1.9                       |                         | 1.36   |
| Slope , mw =<br>Correlation | coefficient* =             | _   | .9977<br>calibrate.                       |   | -0.011                    | 2                       |  |
|                             |                            |   | Set Point Ca                              | lculation   |                           |                         |  |
|                             |                            | Curve, take Qstd he "Y" value acco mw x ( |   | (Pa/760) x (29  | 98/Ta)  <sup>1/2</sup>    |                         |  |
| Therefore, So               | et Point; W = ( n          | nw x Qstd + bw)                           | <sup>2</sup> x ( 760 / Pa ) x ( 7         | Γa / 298 ) =  | 4.13                      |                         |  |
| Remarks:                    |                            |   |   |   |                           |                         |  |
| Conducted by:               | SK Wong                    | Signature:                                | 6/  | <u></u>   |                           | Date:                   | 10 August 2020                                 |
| Checked by:                 | Henry Leung                | Signature:                                | -lemy X                                   | ,<br>m  |                           | Date:                   | 10 August 2020                                 |

## 5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0025

| Project No.                    | AM3 - Yau Lai              | Estate, Bik Lai I |  |                               |                                  |                            |  |  |
|--------------------------------|----------------------------|-------------------|--|-------------------------------|----------------------------------|----------------------------|--|--|
| Date:                          | 10-A                       | ug-20             | Next Due Date: 10-Oct  |                               | Oct-20                           | Operator:                  | SK   |  |
| Equipment No.:                 | A-0                        | 1-03              | Model No.:   | G                             | S2310                            | Serial No.                 | 10379  |  |
|                                |                            |                   | Ambient C  | ondition                      |                                  |                            |  |  |
| Temperatur                     | re, Ta (K)                 | 304               | Pressure, Pa   |                               |                                  | 760                        |  |  |
| •                              | · · · · · · · · ·          |                   | ,  | ·                             |                                  |                            |  |  |
|                                |                            | Or                | ifice Transfer Star  | ndard Informa                 | ation                            |                            |  |  |
| Serial                         | No.                        | 3746              | Slope, mc  | 0.0592 Intercept, bc -0.02740 |                                  |                            |  |  |
| Last Calibra                   | ntion Date:                | 17-Jan-20         | ļ ,  | mc x Qstd + bo                | $c = [\Delta H \times (Pa/760)]$ | ) x (298/Ta)               | l <sup>1/2</sup>                               |  |
| Next Calibra                   | ation Date:                | 17-Jan-21         |  | $Qstd = \{ [\Delta H \ x]$    | (Pa/760) x (298/7                | Γa)] <sup>1/2</sup> -bc} / | mc   |  |
|                                |                            |                   |  |                               |                                  |                            |  |  |
|                                |                            |                   | Calibration of   | TSP Sampler                   |                                  |                            |  |  |
| Calibration                    | tion Orfice                |                   |  | Qstd (CFM)                    |                                  | HVS                        | 1/0  |  |
| Point                          | ΔH (orifice), in. of water | [ΔH x (Pa/76      | [ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>                        |                               | ΔW (HVS), in. of water           | [ΔW x (Pa                  | /760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b> |  |
| 1                              | 13.0                       | 3.57              |  | 60.76                         | 8.6                              |                            | 2.90   |  |
| 2                              | 9.4                        | 3.04              |  | 51.74                         | 6.4                              |                            | 2.50   |  |
| 3                              | 7.7                        | 2.75              |  | 46.87                         | 5.1                              |                            | 2.24   |  |
| 4                              | 5.1                        | 2.24              |  | 38.23                         | 3.3                              |                            | 1.80   |  |
| 5                              | 2.5                        |                   | 1.57   | 26.91                         | 2.0                              | 1.39                       |  |  |
| By Linear Regr<br>Slope , mw = | 0.0455                     | _                 |  | Intercept, bw                 | 0.124                            | 1                          |  |  |
|                                | coefficient* =             |                   | .9973  | •                             |                                  |                            |  |  |
| *If Correlation C              | Coefficient < 0.99         | 00, check and red | calibrate.   |                               |                                  |                            |  |  |
|                                |                            |                   | Set Point Ca   | alculation                    |                                  |                            |  |  |
| From the TSP Fi                | eld Calibration C          | Curve, take Qstd  |  |                               |                                  |                            |  |  |
| From the Regres                | sion Equation, th          | e "Y" value acc   | ording to  |                               |                                  |                            |  |  |
| ٥                              | 1 ,                        |                   | -  |                               | 1/2                              |                            |  |  |
|                                |                            | mw x (            | $\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29                | 98/Ta)] <sup>1/2</sup>           |                            |  |  |
| Therefore, Se                  | et Point; W = ( m          | w x Qstd + bw )   | <sup>2</sup> x ( 760 / Pa ) x ( 7                                | Γa / 298 ) =                  | 4.42                             |                            |  |  |
| Remarks:                       |                            |                   |  |                               |                                  |                            |  |  |
|                                |                            |                   | L21  |                               |                                  |                            | 40.4   |  |
| Conducted by:                  | SK Wong                    | Signature:        |  | <u>, '</u>                    |                                  | Date:                      | 10 August 2020                                 |  |
| Checked by:                    | Henry Leung                | Signature:        | -lem, a  | Xoz                           |                                  | Date:                      | 10 August 2020                                 |  |

## 5-POINT CALIBRATION DATA SHEET



File No. MA16034/54/0025

| Project No.                      | AM4(A) - Cha               | Kwo Ling Public   | Cargo Working A  | rea Administra                               | tive Office                      |                              |  |
|----------------------------------|----------------------------|-------------------|--|--|----------------------------------|------------------------------|--|
| Date:                            | 10-A                       | aug-20            | Next Due Date:   | 10-  | Oct-20                           | Operator:                    | SK   |
| Equipment No.:                   | A-0                        | )1-54             | Model No.:   | TE-5170                                      |                                  | Serial No.                   | 1536   |
|                                  |                            |                   |  |  |                                  |                              |  |
|                                  |                            |                   | Ambient C  |  |                                  |                              |  |
| Temperatur                       | re, Ta (K)                 | 304               | Pressure, Pa   | (mmHg)                                       |                                  | 760                          |  |
|                                  |                            | Or                | ifice Transfer Star  | ndard Informa                                | ation                            |                              |  |
| Serial                           | No.                        | 3746              | Slope, mc  | 0.0592                                       | Intercept                        | t, bc                        | -0.02740   |
| Last Calibration Date: 17-Jan-20 |                            |                   | 1  | mc x Qstd + bo                               | $c = [\Delta H \times (Pa/760)]$ | ) x (298/Ta)]                | 1/2  |
| Next Calibra                     | ation Date:                | 17-Jan-21         | (  | $Qstd = \{ [\Delta H \ x]$                   | (Pa/760) x (298/7                | Γa)] <sup>1/2</sup> -bc} / 1 | mc   |
|                                  |                            |                   |  |  |                                  |                              |  |
|                                  |                            |                   | Calibration of   | TSP Sampler                                  |                                  |                              |  |
| Calibration                      | AH (amiffers)              |                   | fice   | Qstd (CFM)                                   | AM (HING)                        | HVS                          | 7(0) (200/E )31/2                                |
| Point                            | ΔH (orifice), in. of water | [ΔH x (Pa/76      | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$   |  | ΔW (HVS), in. of water           |                              | 760) x (298/Ta)] <sup>1/2</sup><br><b>Y-axis</b> |
| 1                                | 12.8                       |                   | 3.54   |  | 8.6                              |                              | 2.90   |
| 2                                | 9.8                        | 3.10              |  | 52.82  | 6.3                              |                              | 2.49   |
| 3                                | 7.4                        | 2.69              |  | 45.96  | 5.0                              |                              | 2.21   |
| 4                                | 5.2                        |                   | 2.26   |  | 3.2                              |                              | 1.77   |
| 5                                | 2.9                        |                   | 1.69 28.94 1.8   |  | 1.8                              |                              | 1.33   |
| By Linear Regr<br>Slope , mw =   | 0.0502                     | _                 |  | Intercept, bw                                | -0.135                           | 54                           |  |
| Correlation                      |                            |                   | .9987  |  |                                  |                              |  |
| *If Correlation C                | Coefficient < 0.9          | 90, check and rec | calibrate.   |  |                                  |                              |  |
|                                  |                            |                   | Set Point Ca   | alculation                                   |                                  |                              |  |
| From the TSP Fi                  | eld Calibration (          | Curve, take Qstd  | = 43 CFM   |  |                                  |                              |  |
| From the Regres                  | sion Equation, tl          | he "Y" value acco | ording to  |  |                                  |                              |  |
|                                  |                            |                   |  | (D. /5(0) (2)                                | NO/TE \11/2                      |                              |  |
|                                  |                            | mw x Ç            | $\mathbf{D}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w} = [\mathbf{\Delta}\mathbf{W} \ \mathbf{x}]$ | (Pa//60) X (2)                               | 98/1a)]                          |                              |  |
| Therefore, Se                    | et Point; W = ( n          | nw x Qstd + bw )  | <sup>2</sup> x ( 760 / Pa ) x ( 7  | Га / 298) =                                  | 4.18                             |                              |  |
| Remarks:                         |                            |                   |  |  |                                  |                              |  |
|                                  |                            |                   | د ا  |  |                                  |                              |  |
| Conducted by:                    | SK Wong                    | Signature:        |  | <u>.                                    </u> |                                  | Date:                        | 10 August 2020                                   |
| Checked by:                      | Henry Leung                | Signature:        | - leng a   | Long   |                                  | Date:                        | 10 August 2020                                   |

## 5-POINT CALIBRATION DATA SHEET



File No. MA16034/37/0025

| Project No.  | AM5(A) - Tseur             | ng Kwan O DSD     |   |                               |                                  |                            |   |
|--|----------------------------|-------------------|---|-------------------------------|----------------------------------|----------------------------|---|
| Date:  | 10-A                       | ug-20             | Next Due Date: 10-C                       |                               | Oct-20                           | Operator:                  | SK  |
| Equipment No.:   | A-0                        | 1-37              | Model No.:                                | GS                            | S2310                            | Serial No.                 | 1704  |
|  |                            |                   | Ambient C                                 | ondition                      |                                  |                            |   |
| Temperatur   | re, Ta (K)                 | 304               | Pressure, Pa                              |                               |                                  | 760                        |   |
|  | •                          |                   |   |                               |                                  |                            |   |
|  |                            | Or                | ifice Transfer Star                       | ndard Informa                 | ation                            |                            |   |
| Serial   | No.                        | 3746              | Slope, mc                                 | 0.0592 Intercept, bc -0.02740 |                                  |                            |   |
| Last Calibra   | ntion Date:                | 17-Jan-20         | 1   | nc x Qstd + bo                | $c = [\Delta H \times (Pa/760)]$ | ) x (298/Ta)               | 1/2   |
| Next Calibra   | ation Date:                | 17-Jan-21         | (   | $Qstd = \{ [\Delta H \ x]$    | (Pa/760) x (298/7                | Γa)] <sup>1/2</sup> -bc} / | mc  |
|  |                            |                   |   |                               |                                  |                            |   |
|  |                            |                   | Calibration of 7                          | <b>FSP Sampler</b>            |                                  |                            |   |
| Calibration  | ATL (- :: C )              | 1                 | fice                                      | Qstd (CFM)                    | ANI (HING)                       | HVS                        | 7.(0) (200/5) 31/2                            |
| Point  | ΔH (orifice), in. of water | [ΔH x (Pa/76      | [ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup> |                               | ΔW (HVS), in. of water           | [ΔW x (Pa/                 | 760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b> |
| 1  | 12.9                       |                   | 3.56                                      |                               | 8.5                              |                            | 2.89  |
| 2  | 9.5                        |                   | 3.05                                      |                               | 6.2                              |                            | 2.47  |
| 3  | 7.9                        |                   | 2.78                                      |                               | 5.2                              |                            | 2.26  |
| 4  | 5.2                        | 2.26              |   | 38.60                         | 3.2                              |                            | 1.77  |
| 5  | 2.9                        |                   | 1.69 28.94 1.9                            |                               | 1.9                              |                            | 1.36  |
| By Linear Regr<br>Slope, mw =<br>Correlation (***<br>*If Correlation C | 0.0487<br>coefficient* =   | 0                 | .9991                                     | Intercept, bw                 | -0.069                           | 14                         |   |
|  |                            |                   | Set Point Ca                              | lculation                     |                                  |                            |   |
| From the TSP Fi  |                            | ne "Y" value acco | = 43 CFM                                  |                               | 98/Ta)] <sup>1/2</sup>           |                            |   |
| Therefore, Se  | et Point; W = ( m          | nw x Qstd + bw )  | <sup>2</sup> x ( 760 / Pa ) x ( 7         | Γa / 298 ) =                  | 4.19                             |                            |   |
| Remarks:   |                            |                   |   |                               |                                  |                            |   |
| Conducted by:  | SK Wong                    | Signature:        | to/                                       | J'                            |                                  | Date:                      | 10 August 2020                                |
| Checked by:  | Henry Leung                | Signature:        | -le 0                                     | haz                           |                                  | Date:                      | 10 August 2020                                |

#### 5-POINT CALIBRATION DATA SHEET



5 September 2020

Date:

File No. MA16034/07/0025 Project No. AM6 - Park Central 5-Sep-20 Next Due Date: 5-Nov-20 Operator: SK Date: Equipment No.: \_\_\_\_\_ A-01-07 GS2310 Serial No. 10592 Model No.: **Ambient Condition** 301.4 755.5 Temperature, Ta (K) Pressure, Pa (mmHg) **Orifice Transfer Standard Information** Serial No. 3746 Slope, mc 0.0592 Intercept, bc -0.02740 mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ 17-Jan-20 Last Calibration Date: Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Next Calibration Date: 17-Jan-21 **Calibration of TSP Sampler** Orfice HVS Calibration  $\Delta H$  (orifice),  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Qstd (CFM)  $\Delta W$  (HVS), in. Point  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ in. of water X - axis of water Y-axis 7.6 1 12.8 3.55 60.38 2.73 2 9.0 2.97 50.70 5.7 2.37 7.3 45.71 4.6 2.13 3 2.68 4.7 2.15 3.0 1.72 4 36.77 5 3.1 1.75 29.95 1.9 1.37 By Linear Regression of Y on X Slope, mw = 0.0451Intercept, bw : 0.0457 Correlation coefficient\* = \*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 =  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.01 Remarks: Conducted by: SK Wong Signature: 5 September 2020 Date:

## 5-POINT CALIBRATION DATA SHEET

CIN@TECH & File No. MA16034/05/0026

10 October 2020

Date:

| Project No.                                  | AM1 - Tin Hau              | Temple             |  |                                |  |                            |  |
|--|----------------------------|--------------------|--|--------------------------------|--|----------------------------|--|
| Date:  | 10-O                       | oct-20             | Next Due Date:   | Next Due Date: 10-Dec-20       |  | Operator:                  | SK   |
|  |                            | A-01-05 Model No.: |  | G                              | GS2310                                       |                            | 10599  |
|  |                            |                    |  |                                |  | •                          |  |
|  |                            |                    | Ambient C  | ondition                       |  |                            |  |
| Temperatu                                    | re, Ta (K)                 | 299.5              | Pressure, Pa   | (mmHg)                         |  | 759.5                      |  |
|  |                            | Ori                | fice Transfer Star   | ndard Informa                  | ation  |                            |  |
| Serial                                       | l No.                      | 3746               | Slope, mc  | 0.0592                         | Intercept                                    | •                          | -0.02740                                       |
| Last Calibra                                 | ation Date:                | 17-Jan-20          |  |                                | $c = [\Delta H \times (Pa/760)]$             |                            |  |
| Next Calibr                                  | ation Date:                | 17-Jan-21          | (  | $Qstd = \{ [\Delta H \ x ] \}$ | (Pa/760) x (298/7                            | Γa)] <sup>1/2</sup> -bc} / | mc   |
|  |                            |                    |  |                                |  |                            |  |
|  | I                          |                    | Calibration of   | <b>ΓSP Sampler</b>             |  |                            |  |
| Calibration                                  | ATL ( 'C' )                |                    | fice   | 0.41/0755                      | ANI (TTTIC)                                  | HVS                        | /7.co) (222/m >1/2                             |
| Point  | ΔH (orifice), in. of water | [ΔH x (Pa/76       | 0) x (298/Ta)] <sup>1/2</sup>                                    | Qstd (CFM) X - axis            | ΔW (HVS), in. of water                       | [ΔW x (Pa                  | /760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b> |
| 1  | 13.0                       | 3                  | 3.60   | 61.19                          | 8.6  |                            | 2.92   |
| 2  | 9.5                        | 3.07               |  | 52.38                          | 6.4  |                            | 2.52   |
| 3  | 7.6                        | 2.75               |  | 46.90                          | 4.8  |                            | 2.18   |
| 4  | 4.8                        |                    | 2.18   |                                | 3.2  |                            | 1.78   |
| 5  | 2.6                        |                    | 1.61   | 27.62                          | 1.8  |                            | 1.34   |
| By Linear Regression of Y on X  Slope , mw = |                            |                    |  |                                |  |                            |  |
|  | coefficient* =             |                    | 9988   |                                |  |                            |  |
| *If Correlation C                            | Coefficient < 0.99         | 90, check and rec  | alibrate.  |                                |  |                            |  |
|  |                            |                    | Set Point Ca   | alaulatian                     |  |                            |  |
| From the TSP Fi                              | ield Calibration C         | Surve_take Ostd :  |  | ilculation                     |  |                            |  |
|  | sion Equation, th          | _                  |  |                                |  |                            |  |
| Trom the regres                              | sion Equation, th          |                    | _  |                                |  |                            |  |
|  |                            | mw x Q             | $\mathbf{pstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29                 | 98/Ta)] <sup>1/2</sup>                       |                            |  |
| Therefore, Se                                | et Point: W = ( m          | w x Ostd + bw )    | <sup>2</sup> x ( 760 / Pa ) x ( 1                                | Γa / 298 ) =                   | 4.23   |                            |  |
| Therefore, St                                | 201 Omit, 11 ( m           | in a qua · on )    | n ( 700 / 14 ) n ( 1   | 200)                           | <b>—————————————————————————————————————</b> |                            | •  |
|  |                            |                    |  |                                |  |                            |  |
| Damanlage                                    |                            |                    |  |                                |  |                            |  |
| Remarks:                                     |                            |                    |  |                                |  |                            |  |
|  |                            |                    |  |                                |  |                            |  |
| Conducted by:                                | SK Wong                    | Signature:         | 例  |                                |  | Date:                      | 10 October 2020                                |
| CI L L                                       | TT T                       | <b>G</b> :         | j o  | ^/                             |  | ъ.                         | 10 October 2020                                |

| F:\Cinotech Solutions\Equipment\Calibration Cert\HVS\new\MA16034 20201010 AM1 (A | -01-05).xls |
|--|-------------|

#### 5-POINT CALIBRATION DATA SHEET



10 October 2020

Date:

File No. MA16034/08/0026 Project No. AM2 - Sai Tso Wan Recreation Ground 10-Oct-20 Next Due Date: 10-Dec-20 Operator: SK Date: Equipment No.: <u>A-01</u>-08 GS2310 Serial No. 1287 Model No.: **Ambient Condition** 299.5 759.5 Temperature, Ta (K) Pressure, Pa (mmHg) **Orifice Transfer Standard Information** Serial No. 3746 Slope, mc 0.0592 Intercept, bc -0.02740 mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ 17-Jan-20 Last Calibration Date: Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Next Calibration Date: 17-Jan-21 **Calibration of TSP Sampler** Orfice HVS Calibration  $\Delta H$  (orifice),  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Qstd (CFM)  $\Delta W$  (HVS), in. Point  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ in. of water X - axis of water Y-axis 2.92 1 13.0 3.60 61.19 8.6 2 9.9 3.14 53.46 6.2 2.48 7.9 2.80 47.81 4.8 2.18 3 4.8 3.0 1.73 4 2.18 37.37 5 2.8 1.67 28.65 1.9 1.37 By Linear Regression of Y on X Slope , mw = \_\_\_\_\_0.0472 Intercept, bw -0.0191 Correlation coefficient\* = \*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 =  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.07 Remarks: Conducted by: SK Wong Signature: 10 October 2020 Date:

## 5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0026

| Project No.                 | AM3 - Yau Lai              | Estate, Bik Lai I      | House  |  |  |            |   |
|-----------------------------|----------------------------|------------------------|--|--|--|------------|---|
| Date:                       | 10-0                       | Oct-20                 | Next Due Date: 10-D  |  | 10-Dec-20 Operator GS2310 Serial No    |            | SK  |
| Equipment No.:              | .: A-01-03                 |                        | Model No.:   | G  |  |            | 10379   |
|                             |                            |                        | Ambient C  | ondition   |  |            |   |
| Temperatu                   | re, Ta (K)                 | 299.5                  | Pressure, Pa   | (mmHg)   |  | 759.5      |   |
|                             |                            |                        |  |  |  |            |   |
| 0 :                         | 137                        |                        | ifice Transfer Star  |  | l                                      | . 1        | 0.02740   |
| Serial<br>Last Calibra      |                            | 3746                   | Slope, mc  | Slope, mc   0.0592   Intercept, bc   -0.027<br>mc x Qstd + bc = $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ |  |            | -0.02740  |
| Last Calibra Next Calibr    |                            | 17-Jan-20<br>17-Jan-21 | -  |  | с – [ДП х (Га/760<br>(Ра/760) х (298/7 |            |   |
| Next Callor                 | ation Date:                | 1 / -Jan-21            | ļ ·  | Qstu – <sub>{[</sub> ΔII x   | (1 a/ /00) X (290/                     | 1 a)       | inc .   |
|                             |                            | •                      | Calibration of T   | ΓSP Sampler  |  |            |   |
| Calibration                 |                            | Oı                     | fice   |  |  | HVS        |   |
| Point                       | ΔH (orifice), in. of water | [ΔH x (Pa/76           | [ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>                        |  | ΔW (HVS), in. of water                 | [ΔW x (Pa/ | (760) x (298/Ta)] <sup>1/2</sup><br><b>Y-axis</b> |
| 1                           | 13.1                       |                        | 3.61   |  | 8.7                                    |            | 2.94  |
| 2                           | 9.5                        | 3.07                   |  | 52.38  | 6.5                                    |            | 2.54  |
| 3                           | 7.7                        |                        | 2.77   |  | 5.2                                    |            | 2.27  |
| 4                           | 5.2                        |                        | 2.27   |  | 3.4                                    |            | 1.84  |
| 5                           | 2.6                        |                        | 1.61 27.62   |  | 2.0                                    |            | 1.40  |
| Slope , mw =<br>Correlation | coefficient* =             | _                      | .9984  | Intercept, bw =  | 0.091                                  | 5          |   |
|                             |                            |                        | Set Point Ca   | laulation  |  |            |   |
| From the TSP Fi             | ield Calibration           | Curve, take Qstd       |  | aculation  |  |            |   |
|                             |                            | he "Y" value acc       |  |  |  |            |   |
| 110111 1110 110 110         | seren zquanen, e           |                        | -  |  |  |            |   |
|                             |                            | mw x (                 | $\mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \ \mathbf{x}]$ | (Pa/760) x (29   | 98/Ta)] <sup>1/2</sup>                 |            |   |
| Therefore, So               | et Point; W = ( n          | nw x Qstd + bw)        | <sup>2</sup> x ( 760 / Pa ) x ( 7                                | Га / 298) =  | 4.37                                   |            |   |
| Remarks:                    |                            |                        |  |  |  |            |   |
| Conducted by:               | SK Wong                    | Signature:             | <u> </u>   |  | -                                      | Date:      | 10 October 2020                                   |
| Checked by:                 | Henry Leung                | Signature:             | -leng 0  | hon  | -                                      | Date:      | 10 October 2020                                   |

Equipment No.: <u>A-01</u>-54

Temperature, Ta (K)

Serial No.

Last Calibration Date:

Next Calibration Date:

Project No.

Date:

#### 5-POINT CALIBRATION DATA SHEET

10-Oct-20

299.5

3746

17-Jan-20

17-Jan-21



File No. MA16034/54/0026 AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office Next Due Date: 10-Dec-20 Operator: \_\_\_\_\_ SK TE-5170 Serial No. \_\_\_\_\_1536 Model No.: **Ambient Condition** Pressure, Pa (mmHg) 759.5 **Orifice Transfer Standard Information** 0.0592 Intercept, bc Slope, mc -0.02740 mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Calibration of TSP Sampler

| Calibration                 |  | Orfice  | HVS                    |                        |          |  |  |  |  |  |
|-----------------------------|--|---|------------------------|------------------------|----------|--|--|--|--|--|
| Point                       | ΔH (orifice), in. of water                                 | [ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>   | Qstd (CFM)<br>X - axis | ΔW (HVS), in. of water | [ΔW x (P | a/760) x (298/Ta)] <sup>1/2</sup><br><b>Y-axis</b> |  |  |  |  |
| 1                           | 12.9   | 3.58  | 60.96                  | 8.7                    |          | 2.94   |  |  |  |  |
| 2                           | 9.9  | 3.14  | 53.46                  | 6.4                    |          | 2.52   |  |  |  |  |
| 3                           | 7.5  | 2.73  | 46.59                  | 5.1                    |          | 2.25   |  |  |  |  |
| 4                           | 5.4  | 2.32  | 39.60                  | 3.3                    |          | 1.81   |  |  |  |  |
| 5                           | 3.0  | 1.73  | 29.64                  | 1.9                    |          | 1.37   |  |  |  |  |
| Slope , mw = Correlation of |  | 0.9982  | Intercept, bw =        | -0.130                 | )2       | _  |  |  |  |  |
| TI Correlation C            | If Correlation Coefficient < 0.990, check and recalibrate. |   |                        |                        |          |  |  |  |  |  |
| Set Point Calculation       |  |   |                        |                        |          |  |  |  |  |  |
| From the TSP Fi             | eld Calibration Co   | urve, take Qstd = 43 CFM  |                        |                        |          |  |  |  |  |  |
| From the Regress            | sion Equation, the   | "Y" value according to  |                        |                        |          |  |  |  |  |  |
|                             |  | $\mathbf{m}\mathbf{w} \times \mathbf{Q}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w} = [\Delta \mathbf{W}]$ | x (Pa/760) x (29       | 98/Ta)l <sup>1/2</sup> |          |  |  |  |  |  |
| Therefore, Se               | et Point; W = ( my   | $v \times Qstd + bw)^2 \times (760 / Pa) \times ($  |                        | 4.13                   |          | -  |  |  |  |  |
| Remarks:                    |  |   |                        |                        |          |  |  |  |  |  |
| Conducted by:               | SK Wong  | Signature: Signature:   |                        |                        | Date:    | 10 October 2020                                    |  |  |  |  |
| Checked by:                 | Henry Leung  | Signature: \length{\lefth{length}}  | Xoy                    |                        | Date:    | 10 October 2020                                    |  |  |  |  |
| F:\Cinotech Solution        | ns\Equipment\Calibration                                   | Cert\HVS\new\MA16034_20201010_AM4(A)  | _(A-01-54).xls         |                        |          |  |  |  |  |  |

#### 5-POINT CALIBRATION DATA SHEET



10 October 2020

Date:

File No. MA16034/37/0026 AM5(A) - Tseung Kwan O DSD Desilting Compound Project No. 10-Oct-20 Next Due Date: 10-Dec-20 Operator: SK Date: Equipment No.: A-01-37 Model No.: GS2310 Serial No. 1704 **Ambient Condition** 299.5 759.5 Temperature, Ta (K) Pressure, Pa (mmHg) **Orifice Transfer Standard Information** Serial No. 3746 Slope, mc 0.0592 Intercept, bc -0.02740 mc x Qstd + bc =  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ 17-Jan-20 Last Calibration Date: Qstd =  $\{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} -bc \} / mc$ Next Calibration Date: 17-Jan-21 **Calibration of TSP Sampler** Orfice HVS Calibration  $\Delta H$  (orifice),  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Qstd (CFM)  $\Delta W$  (HVS), in. Point  $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ in. of water X - axis of water Y-axis 2.96 1 13.2 3.62 61.66 8.8 2 9.7 3.11 52.92 6.4 2.52 8.1 2.84 48.40 5.4 2.32 3 2.30 5.3 3.3 1.81 4 39.24 5 3.0 1.73 29.64 2.0 1.41 By Linear Regression of Y on X Slope , mw = \_\_\_\_\_0.0489 Correlation coefficient\* = \*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 =  $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.18 Remarks: Conducted by: SK Wong Signature: 10 October 2020 Date:



Date of Calibration 5-Oct-20

# **Cerificate of Calibration**

Digital Dust Indicator

Description:

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

| Manufacturer:                                    | Sibata Scient                                      | ata Scientific Technology LTD.           |                  | Validity of Calibra                      | ntion Record      | 5-Dec-20             |  |  |
|--|--|--|------------------|--|-------------------|----------------------|--|--|
| Model No.:                                       | LD-5R  |  |                  |  |                   |                      |  |  |
| Serial No.:                                      | 972777   |  |                  |  |                   |                      |  |  |
| Equipment No.:                                   | SA-01-06   |  | Sensitivity      | 0.001 mg/m3                              |                   |                      |  |  |
| High Volume Sa                                   | High Volume Sampler No.: A-01-03                   |  | Before Sensit    | ivity Adjustment                         | 645               |                      |  |  |
| Tisch Calibration                                | n Orifice No.:                                     | 3607                                     | After Sensitiv   | rity Adjustment                          | 645               |                      |  |  |
|  |  | Ca                                       | libration of 1 l | nr TSP                                   |                   |                      |  |  |
| Calibration                                      |  | Laser Dust Monitor                       | ŗ                |  | HVS               |                      |  |  |
| Point  | M  | lass Concentration (μg/<br><b>X-axis</b> | (m3)             | Mass concentration (μg/m³) <b>Y-axis</b> |                   |                      |  |  |
| 1  |  | 43.0                                     |                  | 78.9                                     |                   |                      |  |  |
| 2  | 36.0   |  |                  |  | 75.2              |                      |  |  |
| 3  | 29.0   |  |                  |  | 70.8              |                      |  |  |
| Average  |  | 36.0                                     |                  |  | 75.0              |                      |  |  |
| By Linear Regr<br>Slope , mw =<br>Correlation co | 0.57   |  |                  | cept, bw =                               | 54.1381           |                      |  |  |
|  |  |  |                  |  |                   |                      |  |  |
|  |  |  | t Correlation 1  | Factor                                   |                   |                      |  |  |
|  |  | High Volume Sampler                      | (μg/m³)          |  | 75.0              |                      |  |  |
|  |  | Dust Meter (μg/m³)                       |                  |  | 36.0              |                      |  |  |
| Measureing time                                  |  |  |                  |  | 60.0              |                      |  |  |
| Set Correlation I                                | •  |  |                  |  |                   |                      |  |  |
| SCF = [ K=Hig                                    | SCF = [ K=High Volume Sampler / Dust Meter, (µg/m3 |  |                  | n3) ] <u>2.1</u>                         |                   |                      |  |  |
| In-house method                                  | l in according                                     | to the instruction manua                 | al:              |  |                   |                      |  |  |
| The Dust Monito                                  | or was compar                                      | ed with a calibrated His                 | h Volume Sam     | npler and The result v                   | was used to gener | rate the Correlation |  |  |

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Approved by: Vong Shing Kwai

Approved by: Henry Leung



Date of Calibration 5-Oct-20

# **Cerificate of Calibration**

Digital Dust Indicator

Description:

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

| Manufacturer:                                    | Sibata Scien   | tific Technology LTD.                   | Validity of Calib | 5-Dec-20                                 |                  |  |  |  |
|--|----------------|---|-------------------|--|------------------|--|--|--|
| Model No.:                                       | LD-5R          | _                                       |                   |  |                  |  |  |  |
| Serial No.:                                      | 972778         | _                                       |                   |  |                  |  |  |  |
| Equipment No.:                                   | SA-01-07       | _                                       | Sensitivity       | 0.001 mg/m3                              | _                |  |  |  |
| High Volume Sa                                   | mpler No.:     | A-01-01A                                | Before Sensit     | ivity Adjustment                         | 735 CPM          |  |  |  |
| Tisch Calibration                                | n Orifice No.: | 3607                                    | After Sensitiv    | vity Adjustment                          | 735 CPM          |  |  |  |
|  |                | Ca                                      | alibration of 1   | hr TSP                                   |                  |  |  |  |
| Calibration                                      |                | <b>Laser Dust Monito</b>                | r                 |  | HVS              |  |  |  |
| Point  | N              | Mass Concentration (μg<br><b>X-axis</b> | /m3)              | Mass concentration (μg/m³) <b>Y-axis</b> |                  |  |  |  |
| 1  |                | 45.0                                    |                   | 78.9                                     |                  |  |  |  |
| 2  | 34.0           |   |                   |  | 75.2             |  |  |  |
| 3  | 23.0           |   |                   |  | 70.8             |  |  |  |
| Average  |                | 34.0                                    |                   |  | 75.0             |  |  |  |
| By Linear Regr<br>Slope , mw =<br>Correlation co | 0.30           |   |                   | rcept, bw =<br>_                         | 62.4485          | <u>:                                    </u> |  |  |
|  |                | Se                                      | et Correlation    | Factor                                   |                  |  |  |  |
| Particaulate Con                                 | centration by  | High Volume Sampler                     | $(\mu g/m^3)$     |  | 75.0             |  |  |  |
| Particaulate Con                                 | centration by  | Dust Meter (μg/m <sup>3</sup> )         |                   |  | 34.0             |  |  |  |
| Measureing time                                  | e, (min)       |   |                   |  | 60.0             |  |  |  |
| Set Correlation I                                | Factor, SCF    |   |                   |  |                  |  |  |  |
| SCF = [ K=Higl                                   | h Volume Sa    | mpler / Dust Meter, (µ                  | ıg/m3) ]          | 2.2                                      |                  |  |  |  |
|  | _              | to the instruction manu                 |                   | npler and The result                     | was used to gene | rate the Correlation                         |  |  |

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Approved by: Very Leung

Wong Shing Kwai

Approved by: Henry Leung



Date of Calibration 5-Oct-20

# **Cerificate of Calibration**

Digital Dust Indicator

Description:

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

| Manufacturer:                                    | Sibata Scientific Technology LTD.                 | _ Validity of Calib           | Validity of Calibration Record 5-Dec-20 |                     |  |  |  |
|--|---|-------------------------------|---|---------------------|--|--|--|
| Model No.:                                       | LD-5R   |                               |   |                     |  |  |  |
| Serial No.:                                      | 972779  |                               |   |                     |  |  |  |
| Equipment No.:                                   | SA-01-08  | Sensitivity 0.001 mg/m3       | _                                       |                     |  |  |  |
| High Volume Sa                                   | mpler No.: <u>A-01-01A</u>                        | Before Sensitivity Adjustment | 744 CPM                                 |                     |  |  |  |
| Tisch Calibration                                | n Orifice No.: <u>3607</u>                        | After Sensitivity Adjustment  | 744 CPM                                 |                     |  |  |  |
|  | Cal   | libration of 1 hr TSP         |   |                     |  |  |  |
| Calibration                                      | Laser Dust Monitor                                |                               | HVS                                     |                     |  |  |  |
| Point  | Mass Concentration (μg/s<br><b>X-axis</b>         | m3) Ma                        | Mass concentration (μg/m³)  Y-axis      |                     |  |  |  |
| 1  | 49.0  |                               | 78.9                                    |                     |  |  |  |
| 2  | 38.0  |                               | 75.2                                    |                     |  |  |  |
| 3  | 28.0  |                               | 70.8                                    |                     |  |  |  |
| Average  | 38.3  |                               | 75.0                                    |                     |  |  |  |
| By Linear Regr<br>Slope , mw =<br>Correlation co | ression of Y on X                                 | Intercept, bw =               | 60.2124                                 |                     |  |  |  |
|  | Se  | t Correlation Factor          |   |                     |  |  |  |
|  | centration by High Volume Sampler (               | $(\mu g/m^3)$                 | 75.0                                    |                     |  |  |  |
| Particaulate Con                                 | centration by Dust Meter (μg/m <sup>3</sup> )     |                               | 38.3                                    |                     |  |  |  |
| Measureing time                                  | e, (min)  |                               | 60.0                                    |                     |  |  |  |
| Set Correlation I SCF = [ K=High                 | Factor , SCF<br>h Volume Sampler / Dust Meter, (μ | g/m3) ]                       |   |                     |  |  |  |
|  | in according to the instruction manual            |                               | t was used to genera                    | ate the Correlation |  |  |  |

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Approved by: Veny Kenry Leung

Wong Shing Kwai

Henry Leung



# **Cerificate of Calibration**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

| Description:                                     | Digital Dust Indicator   | Date                              | of Calibration                                  | 5-Oct-20             |
|--|--|-----------------------------------|---|----------------------|
| Manufacturer:                                    | Sibata Scientific Technology LTD.  | Validity of Calib                 | ration Record                                   | 5-Dec-20             |
| Model No.:                                       | LD-5R  |                                   |   |                      |
| Serial No.:                                      | 972780   |                                   |   |                      |
| Equipment No.:                                   | SA-01-09   | Sensitivity 0.001 mg/m3           | _   |                      |
| High Volume Sa                                   | mpler No.: <u>A-01-01A</u>   | Before Sensitivity Adjustment     | 739 CPM   |                      |
| Tisch Calibration                                | n Orifice No.: <u>3607</u>   | After Sensitivity Adjustment      | 739 CPM   |                      |
|  | C  | alibration of 1 hr TSP            |   |                      |
| Calibration                                      | Laser Dust Monito  | or                                | HVS   |                      |
| Point  | Mass Concentration (μ <sub>ξ</sub> <b>X-axis</b>   | g/m3) Ma                          | Tass concentration (μg/m <sup>3</sup> )  Y-axis |                      |
| 1  | 48.0   |                                   | 78.9  |                      |
| 2  | 41.0   |                                   | 75.2  |                      |
| 3  | 30.0   |                                   | 70.8  |                      |
| Average  | 39.7   |                                   | 75.0  |                      |
| By Linear Regr<br>Slope , mw =<br>Correlation co | ression of Y on X<br>  | Intercept, bw =                   | 57.2933   |                      |
|  | S  | et Correlation Factor             |   |                      |
| Particaulate Con                                 | centration by High Volume Sampler  | · (µg/m³)                         | 75.0  |                      |
| Particaulate Con                                 | centration by Dust Meter (μg/m³)   |                                   | 39.7  |                      |
| Measureing time                                  | e, (min)   |                                   | 60.0  |                      |
| Set Correlation I                                | Factor, SCF  |                                   |   |                      |
| SCF = [ K=Higl                                   | h Volume Sampler / Dust Meter, (   | μg/m3) ] 1.9                      |   |                      |
| The Dust Monito                                  | in according to the instruction man<br>or was compared with a calibrated H<br>ween the Dust Monitor and High Vol | igh Volume Sampler and The result | was used to gener                               | rate the Correlation |

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Wong Shing Kwai 



# **Cerificate of Calibration**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

| Description:                            | Digital Dust Indicator                 | Date                              | of Calibration                           | 5-Oct-20             |  |
|---|--|-----------------------------------|--|----------------------|--|
| Manufacturer:                           | Sibata Scientific Technology LTD.      | Validity of Calib                 | ration Record                            | 5-Dec-20             |  |
| Model No.:                              | LD-5R                                  |                                   |  |                      |  |
| Serial No.:                             | 972781                                 |                                   |  |                      |  |
| Equipment No.:                          | SA-01-10                               | Sensitivity 0.001 mg/m3           | _  |                      |  |
| High Volume Sa                          | ampler No.: <u>A-01-01A</u>            | Before Sensitivity Adjustment     | 734 CPM                                  |                      |  |
| Tisch Calibration                       | n Orifice No.: 3607                    | After Sensitivity Adjustment      | 734 CPM                                  |                      |  |
|   | C                                      | alibration of 1 hr TSP            |  |                      |  |
| Calibration                             | Laser Dust Monito                      | or                                | HVS                                      |                      |  |
| Point Mass Concentration (µg/<br>X-axis |  | z/m3) Ma                          | Mass concentration (μg/m³) <b>Y-axis</b> |                      |  |
| 1                                       | 48.0                                   |                                   | 78.9                                     |                      |  |
| 2                                       | 39.0                                   |                                   | 75.2                                     |                      |  |
| 3                                       | 30.0                                   |                                   | 70.8                                     | 70.8                 |  |
| Average                                 | 39.0                                   |                                   | 75.0                                     |                      |  |
| By Linear Regr                          | ression of Y on X                      |                                   |  |                      |  |
| Slope, mw =                             | 0.4500                                 | Intercept, bw =                   | 57.4167                                  |                      |  |
| Correlation co                          | oefficient* = 0.998                    | 8                                 |  |                      |  |
|   | S                                      | et Correlation Factor             |  |                      |  |
| Particaulate Con                        | ncentration by High Volume Sampler     | $(\mu g/m^3)$                     | 75.0                                     |                      |  |
| Particaulate Con                        | ncentration by Dust Meter (μg/m³)      |                                   | 39.0                                     |                      |  |
| Measureing time                         | e, (min)                               |                                   | 60.0                                     |                      |  |
| Set Correlation 1                       | Factor, SCF                            |                                   |  |                      |  |
| SCF = [ K=Hig                           | h Volume Sampler / Dust Meter, (       | ug/m3) ] 1.9                      |  |                      |  |
| In-house method                         | d in according to the instruction manu | ıal:                              |  |                      |  |
| The Dust Monito                         | or was compared with a calibrated H    | igh Volume Sampler and The result | was used to gener                        | rate the Correlation |  |

Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Approved by: \\ \left| \left|



## RECALIBRATION **DUE DATE:**

January 17, 2021

# ertificate o

**Calibration Certification Information** 

Cal. Date: January 17, 2020

Rootsmeter S/N: 438320

Ta: 295 Pa: 744.2 °K

Operator: Jim Tisch

mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 3746

| Run | Vol. Init<br>(m3) | Vol. Final<br>(m3) | ΔVol.<br>(m3) | ΔTime<br>(min) | ΔP<br>(mm Hg) | ΔH<br>(in H2O) |
|-----|-------------------|--------------------|---------------|----------------|---------------|----------------|
| 1   | 1                 | 2                  | 1             | 1.4340         | 3.2           | 2.00           |
| 2   | 3                 | 4                  | 1             | 1.0180         | 6.4           | 4.00           |
| 3   | 5                 | 6                  | 1             | 0.9080         | 7.9           | 5.00           |
| 4   | 7                 | 8                  | 1             | 0.8700         | 8.7           | 5.50           |
| 5   | 9                 | 10                 | 1             | 0.7150         | 12.6          | 8.00           |

|             | Data Tabulation |   |        |          |            |  |  |
|-------------|-----------------|---|--------|----------|------------|--|--|
| Vstd        | Qstd            | $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$ |        | Qa       | √∆H(Ta/Pa) |  |  |
| (m3)        | (x-axis)        | (y-axis)  | Va     | (x-axis) | (y-axis)   |  |  |
| 0.9849      | 0.6868          | 1.4066  | 0.9957 | 0.6944   | 0.8904     |  |  |
| 0.9807      | 0.9633          | 1.9892  | 0.9914 | 0.9739   | 1.2592     |  |  |
| 0.9787      | 1.0779          | 2.2240  | 0.9894 | 1.0896   | 1.4078     |  |  |
| 0.9776      | 1.1237          | 2.3325  | 0.9883 | 1.1360   | 1.4765     |  |  |
| 0.9724      | 1.3601          | 2.8131  | 0.9831 | 1.3749   | 1.7808     |  |  |
|             | m=              | 2.09221   |        | m=       | 1.31010    |  |  |
| <b>QSTD</b> | b=              | -0.02779  | QA     | b=       | -0.01759   |  |  |
|             | r=              | 0.99994   |        | r=       | 0.99994    |  |  |

| Calculations                           |  |     |  |  |  |
|--|--|-----|--|--|--|
| Vstd=                                  | ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)  | Va= | ΔVol((Pa-ΔP)/Pa)   |  |  |
| Qstd=                                  | <b>Qstd=</b> Vstd/ΔTime  |     | Va/ΔTime   |  |  |
| For subsequent flow rate calculations: |  |     |  |  |  |
| Qstd=                                  | $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$ | Qa= | $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$ |  |  |

| 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: clono                                  |           |  |  |  |  |

#### 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



## **Cerificate of Calibration - Wind Monitoring Station**

| Description: | Yau Lai Estate, Bik Lai House |
|--------------|-------------------------------|
|              |                               |

Manufacturer: <u>Davis Instruments</u>

Model No.: <u>Davis7440</u>

Serial No.: <u>MC01010A44</u>

Equipment No.: <u>SA-03-04</u>

Date of Calibration <u>21-Aug-2020</u>

Next Due Date <u>21-Feb-2021</u>

## 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                     | 1.5                   | 0.0                |
| 2.2                     | 2.3                   | -0.1               |
| 3.5                     | 3.4                   | 0.1                |

#### 2. Performance check of Wind Direction

| Wind Di                     | rection (°)               | Difference D (°) |
|-----------------------------|---------------------------|------------------|
| 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: | leng Man    |  |
|----------------|-----------------|--------------|-------------|--|
|                | Wong Shing Kwai | _            | Henry Leung |  |



0023001

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong |                          | Object 1 : B&K4231 sound calibrator Serial No. /Ref. No. : 2326353 / N-02-01 Object 2 : Serial No. /Ref. No. : |
|---|--------------------------|--|
| Customer Code: SVEC09005  |                          | Manufacturer: Bruel & Kjaer  |
| Date of calibration: Date of the recommended re-calibration:  | 19/12/2019<br>19/12/2020 | Certificate No.: 0023001<br>Handle by: E0002   |

**Measuring results** 

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 94.2dB           | +0.2dB    | +/- 0.2dB         | 1      |
| 114.0dB         | 114.1dB          | +0.1dB    | +/- 0.2dB         | 1      |

## **Measuring equipment**

| index | Calibrator / Master                 | Traceability |  |
|-------|-------------------------------------|--------------|--|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |  |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |  |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

## Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| weasured value(s) Within the allowable dev | nation.         |
|--|-----------------|
| Performed by                               | Approved by     |
|  |                 |
| Calibratión Technician                     | Quality Manager |



0023000

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong |                          | Object 1: SVAN957 SLM Serial No. /Ref. No.: 23852 / N-08-11 Object 2: Microphone Serial No. /Ref. No.: 35989 |
|---|--------------------------|--|
| Customer Code: SVEC09005  |                          | Manufacturer: Svantek  |
| Date of calibration: Date of the recommended re-calibration:  | 19/12/2019<br>19/12/2020 | Certificate No.: 0023000 Handle by: E0002  |

**Measuring results** 

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.4dB           | -0.6dB    | +/- 1.5dB         | 1      |
| 114.0dB         | 113.4dB          | -0.6dB    | +/- 1.5dB         | 1      |

#### **Measuring equipment**

| index Calibrator / Master |                                     | Traceability |  |
|---------------------------|-------------------------------------|--------------|--|
| 1                         | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |  |
| 2                         | Sound Calibrator, SV30A sn:32580    | IEC60942     |  |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | within      | the allowable deviation |
|-------------------|-------------|-------------------------|
| , ,               | TY A CAAAAA | 1                       |

Performed by

Calibration Technician

Approved by



0022999

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong |                          | Object 1 :<br>Serial No. /Ref. No. :<br>Object 2 :<br>Serial No. /Ref. No. : | Microphone       |
|---|--------------------------|--|------------------|
| Customer Code : SVEC09005   |                          | Manufacturer: Svar   | ntek             |
| Date of calibration: Date of the recommended re-calibration:  | 19/12/2019<br>19/12/2020 | Certificate No.:<br>Handle by:   | 0022999<br>E0002 |

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |  |
|-----------------|------------------|-----------|-------------------|--------|--|
| 94.0dB          | 94.0dB           | 0.0dB     | +/- 1.5dB         | 1      |  |
| 114.0dB         | 114.0dB          | 0.0dB     | +/- 1.5dB         | 1      |  |

#### **Measuring equipment**

|               | index | Calibrator / Master                 | Traceability |  |
|---------------|-------|-------------------------------------|--------------|--|
| C Description | 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |  |
|               | 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |  |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | within     | the allowable deviation. |
|-------------------|------------|--------------------------|
|                   | AA LCHATII |                          |

Performed by

Calibration Technician

Approved by



0023002

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong | Object 1: SV30A sound calibrator Serial No. /Ref. No.: 10965 / N-09-02 Object 2: Serial No. /Ref. No.: |
|---|--|
| Customer Code : SVEC09005   | Manufacturer: Svantek  |
| Date of calibration: 19/12/2 Date of the recommended re-calibration: 19/12/2                              | 002002   |

**Measuring results** 

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.9dB           | -0.1dB    | +/- 0.3dB         | 1      |
| 114.0dB         | 114.2dB          | +0.2dB    | +/- 0.3dB         | 1      |

#### Measuring equipment

| index |   | Calibrator / Master                 | Traceability |  |
|-------|---|-------------------------------------|--------------|--|
|       | 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |  |
|       | 2 | Sound Calibrator, SV30A sn:32580    | IEC60942     |  |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

## **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | within | the allowable deviation |
|-------------------|--------|-------------------------|
|-------------------|--------|-------------------------|

Performed by

Calibration Technician

Approved by



Equipment no.: N-12-01

# **Calibration Certificate**

0024993

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code: SVEC09005

Date of calibration: Date of the recommended re-calibration:

07/10/2020 07/10/2021

Object 1:

BSWA 308 SLM

Serial No. /Ref. No. :

570183 / 550233

Object 2:

Serial No. /Ref. No. :

Manufacturer:

**BSWAtech** 

Certificate No.:

Handle by:

0024993 E0002

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.4dB           | -0.6dB    | +/- 1.5dB         | 1      |
| 114.0dB         | 113.2dB          | -0.8dB    | +/- 1.5dB         | 1      |

#### **Measuring equipment**

| index | Calibrator / Master                 | Traceability |  |
|-------|-------------------------------------|--------------|--|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |  |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |  |

#### Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### **Uncertainty**

+/- 0.2dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)

within

the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by



Equipment no.: N-12-02

# **Calibration Certificate**

0024995

Customer :: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Object 1: Serial No. /Ref. No. :

BSWA 308 SLM 570187 / 550841

Object 2:

Serial No. /Ref. No.

Hong Kong

SVEC09005

Manufacturer:

**BSWAtech** 

Customer Code Date of calibration:

07/10/2020

Certificate No.:

0024995

Date of the recommended re-calibration:

07/10/2021

Handle by:

E0002

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.1dB           | -0.9dB    | +/- 1.5dB         | 1      |
| 114.0dB         | 113.1dB          | -0.9dB    | +/- 1.5dB         | 1      |

#### Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

## **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### Uncertainty

+/- 0.2dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

Measured value(s)

the allowable deviation.

Performed by

Mr. K.L. Ng

Approved by

Mr. K.S. Na

Calibration Technician



Equipment no.: N-12-03

# **Calibration Certificate**

0024996

Customer:

Cinotech Consultants Limited

RM 1710, Technology Park,

18 On Lai Street, Shatin, N.T.

Hong Kong

Customer Code: SVEC09005

Date of calibration:

Date of the recommended re-calibration:

Object 1:

BSWA 308 SLM

Serial No. /Ref. No. : 570188 / 550850

Object 2:

Serial No. /Ref. No. :

Manufacturer: **BSWAtech** 

Certificate No.:

0024996

Handle by:

E0002

#### **Measuring results**

| <br>Reference value | Indication value | Deviation | Allowed deviation | Object |
|---------------------|------------------|-----------|-------------------|--------|
| 94.0dB              | 92.9dB           | -1.1dB    | +/- 1.5dB         | 1      |
| 114.0dB             | 112.8dB          | -1.2dB    | +/- 1.5dB         | 1      |

07/10/2020

07/10/2021

#### Measuring equipment

| index |   | Calibrator / Master                 | Traceability |
|-------|---|-------------------------------------|--------------|
|       | 1 | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
|       | 2 | Sound Calibrator, SV30A sn:32580    | IEC60942     |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measu | ıred | val | luei | (s) |
|-------|------|-----|------|-----|

(s) within

the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager

Appleone Calibration Laboratory Ltd.

Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR



0022673

| Customer:                               |            | Object 1: ST-120 sound calibrator |
|---|------------|-----------------------------------|
| Cinotech Consultants Limited            |            | Serial No. /Ref. No.: 181001608   |
| RM 1710, Technology Park,               |            | Object 2:                         |
| 18 On Lai Street, Shatin, N.T.          |            | Serial No. /Ref. No. :            |
| Hong Kong                               |            |                                   |
|   |            |                                   |
| Customer Code: SVEC09005                |            | Manufacturer : Soundtek           |
| Date of calibration:                    | 24/10/2019 | Certificate No.: 0022673          |
| Date of the recommended re-calibration: | 24/10/2020 | Handle by: F0002                  |

## Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 94.0dB           | 0.0dB     | +/- 0.3dB         | 1      |
| 114.0dB         | 114.1dB          | +0.1dB    | +/- 0.5dB         | 1      |

## Measuring equipment

| index | Calibrator / Master                 | Traceability |  |
|-------|-------------------------------------|--------------|--|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |  |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |  |

## **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) within | the allowable deviation. |                 |
|--------------------------|--------------------------|-----------------|
| Performed by             |                          | Approved by     |
| Calibration Technician   |                          | Overlin Manager |
| Calibration Technician   |                          | Quality Manager |

Appleone Calibration Laboratory Ltd.

Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR



0022676

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong |                          | Object 1: ST-120 sound calibrator Serial No. /Ref. No.: 181001636 Object 2: Serial No. /Ref. No.: |
|---|--------------------------|---|
| Customer Code : SVEC09005   |                          | Manufacturer: Soundtek  |
| Date of calibration: Date of the recommended re-calibration:  | 24/10/2019<br>24/10/2020 | Certificate No.:         0022676           Handle by:         E0002                               |

#### Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 93.7dB           | -0.3dB    | +/- 0.3dB         | 1      |
| 114.0dB         | 113.7dB          | -0.3dB    | +/- 0.5dB         | 1      |

## **Measuring equipment**

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | within | the allowable deviation. |
|-------------------|--------|--------------------------|
|-------------------|--------|--------------------------|

Performed by

Calibration Technician

Quality Manager

Approved by

Appleone Calibration Laboratory Ltd. Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR



0022675

| Customer:                               |            | Object 1: ST-120 sound calibrator |
|---|------------|-----------------------------------|
| Cinotech Consultants Limited            |            | Serial No. /Ref. No. : 181001637  |
| RM 1710, Technology Park,               |            | Object 2:                         |
| 18 On Lai Street, Shatin, N.T.          |            | Serial No. /Ref. No. :            |
| Hong Kong                               |            |                                   |
| Customer Code : SVEC09005               |            | Manufacturer : Soundtek           |
| Date of calibration:                    | 24/10/2019 | Certificate No.: 0022675          |
| Date of the recommended re-calibration: | 24/10/2020 | Handle by: F0002                  |

Measuring results

| Reference value | Indication value | Deviation | Allowed deviation | Object |
|-----------------|------------------|-----------|-------------------|--------|
| 94.0dB          | 94.0dB           | 0.0dB     | +/- 0.3dB         | 1      |
| 114.0dB         | 114.0dB          | 0.0dB     | +/- 0.5dB         | 1      |

#### Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

## **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source ..

## **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | vithin | the allowable deviation. |
|-------------------|--------|--------------------------|
|-------------------|--------|--------------------------|

Performed by

Approved by

Calibration Technician

Quality Manager

Appleone Calibration Laboratory Ltd.

Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR



0023155

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong | Object 1: SVAN979 SLM Serial No. /Ref. No.: 27189 / SN-01-01 Object 2: Microphone Serial No. /Ref. No.: 25204 |
|---|---|
| Customer Code: SVEC09005  | Manufacturer: BSWAtech  |
| Date of calibration: 08/01/2020 Date of the recommended re-calibration: 08/01/2021                        | Certificate No.: 0023155 Handle by: E0002   |

#### **Measuring results**

| Reference va | lue Indication value | ue Deviation | Allowed deviation | on Object |
|--------------|----------------------|--------------|-------------------|-----------|
| 94.0dB       | 93.7dB               | -0.3dB       | +/- 1.5dB         | 1         |
| 114.0dE      | 3 113.6dB            | -0.4dB       | +/- 1.5dB         | 1         |

## Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

## **Conformity**

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | within | the allowable | deviation. |
|-------------------|--------|---------------|------------|
|                   |        |               |            |

Performed by

Approved by

Calibration Technician



0023156

| Customer: Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong | Object 1: SVAN979 SLM Serial No. /Ref. No.: 27190 / SN-01-02 Object 2: Microphone Serial No. /Ref. No.: 25202 |
|---|---|
| Customer Code: SVEC09005  | Manufacturer: BSWAtech  |
| Date of calibration: 08/01/2020 Date of the recommended re-calibration: 08/01/2021                        | Certificate No.: 0023156 Handle by: E0002   |

#### Measuring results

| 1 | Reference value | Indication value | Deviation | Allowed deviation | Object |
|---|-----------------|------------------|-----------|-------------------|--------|
|   | 94.0dB          | 94.0dB           | 0.0dB     | +/- 1.5dB         | 1      |
|   | 114.0dB         | 113.9dB          | -0.1dB    | +/- 1.5dB         | 1      |

#### Measuring equipment

| index | Calibrator / Master                 | Traceability |
|-------|-------------------------------------|--------------|
| 1     | Master Sound Meter, SVAN949,sn:8571 | IEC61672     |
| 2     | Sound Calibrator, SV30A sn:32580    | IEC60942     |

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### Conformity

- 1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5. The calibrations certificate may not be reproduced.

| Measured value(s) | within | the allowable deviation |
|-------------------|--------|-------------------------|

Performed by

Calibration Technician

Approved by



WELLAB LIMITED Room 1701, Technology Park, 18 On Lai Street, Shatin, N.T., Hong Kong.

Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

## TEST REPORT

**APPLICANT: Cinotech Consultants Limited** 

RM 1710, Technology Park,

18 On Lai Street,

Shatin, N.T., Hong Kong

Test Report No.: 33981 Date of Issue:

2020-09-01

Date Received: Date Tested:

2020-08-27 2020-08-27 to

2020-09-01

Date Completed:

2020-09-01

ATTN:

Mr. Henry Leung

Page:

1 of 2

#### **Certificate of Calibration**

#### Item for calibrati

| YSI EXO1 Multiparameter Sondes                | Equipment No.:         | SW-08-06   |
|---|------------------------|------------|
| Manufacturer:                                 | YSI Incorporated, a Xy | ylem brand |
| Description:                                  | Model No.              | Serial No. |
| - EXO1 Sonde, 100 meter Depth, 4 Sensor ports | 599501-02              | 16J100680  |
| - EXO Optical DO Sensor, Ti                   | 599100-01              | 16H102985  |
| - EXO conductivity/Temperature Sensor, Ti     | 599870                 | 16G102307  |
| - EXO Turbidity Sensor, Ti                    | 599101-01              | 16H102463  |
| - EXO pH Sensor Assembly, Guarded, Ti         | 599701                 | 17B103615  |

#### **Test conditions:**

Room Temperature

: 17-22 degree Celsius

Relative Humidity

: 40-70%

#### **Test Specifications:**

Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.)

and Turbidity

#### Methodology:

According to manufacturer instruction manual, APHA 20e 4500-O C

\*

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

General Manager



WELLAB LIMITED
Room 1701, Technology Park,
18 On Lai Street, Shatin,
N.T., Hong Kong.

Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

## TEST REPORT

Test Report No.: Date of Issue:

33981 2020-09-01

Date Received:

2020-08-27

Date Tested:

2020-08-27 to

Date Completed:

2020-09-01 2020-09-01

Page:

2 of 2

#### **Certificate of Calibration**

#### **Results:**

## Conductivity performance checking

|         |             | Instrument Readings (µS/cm) | Accetance Criteria | Comment |
|---------|-------------|-----------------------------|--------------------|---------|
| KCl sto | ck solution | 13000                       | 12246-13534        | Pass    |
| (1289   | 0 μS/cm)    |                             |                    |         |

#### Temperature performance checking

| Ref | ference thermometer- | Instrument Readings (°C) | Correction (°C) | Comment |
|-----|----------------------|--------------------------|-----------------|---------|
| E   | E431 Readings (°C)   |                          |                 |         |
|     | 20.0                 | 20.001                   | -0.001          | N/A     |

#### pH performance checking

|                   | Instrument Readings | Accetance Criteria | Comment |
|-------------------|---------------------|--------------------|---------|
|                   | (pH unit)           |                    |         |
| pH QC buffer 4.00 | 4.06                | 4.00 <u>+</u> 0.10 | Pass    |
| pH QC buffer 6.86 | 6.84                | 6.86 <u>+</u> 0.10 | Pass    |
| pH QC buffer 9.18 | 9.16                | 9.18 <u>+</u> 0.10 | Pass    |

#### D.O. performance checking

|                  | Instrument Readings (mg/L) | Accetance Criteria | Comment |
|------------------|----------------------------|--------------------|---------|
| Zero DO soultion | 0.09                       | <0.1mg/L           | Pass    |

| Winkler Titration value | Instrument Readings (mg/L) | Accetance Criteria  | Comment |
|-------------------------|----------------------------|---------------------|---------|
| (mg/L)                  |                            |                     |         |
| 8.00                    | 8.12                       | Difference between  | Pass    |
|                         |                            | Titration value and |         |
|                         |                            | instrument reading  |         |
|                         |                            | <0.2mg/L            |         |

## **Turbidity performance checking**

| Turbidity stock solution | Instrument Readings (NTU) | Accetance Criteria | Comment |
|--------------------------|---------------------------|--------------------|---------|
| 10 NTU                   | 10.08                     | 9.0-11.0           | Pass    |
| 50 NTU                   | 49.67                     | 45.0-55.0          | Pass    |
| 100 NTU                  | 100.6                     | 90.0-110.0         | Pass    |

## Depth performance checking

| Water Depth | Instrument Readings (m) | Accetance Criteria | Comment |
|-------------|-------------------------|--------------------|---------|
| 0.5 meter   | 0.50                    | 0.45-0.55          | Pass    |

Calibration Item: Minimate Plus Unit (Calibration with Geophone

12 March 2021

BG14852)

Model No.: 716A0403

Serial No.: BE15890

Calibration Date: 12 March 2020

Method Used: In-house Method B3-001

In-house Testing Procedure No.: B3-001

Next Calibration Date:

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with

main unit BE15890)

Part Number:

714A9701

Serial No.:

BG14852

Calibration Date:

12 March 2020

Next Calibration Date:

12 March 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.: B3-001

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Linear Microphone (Calibration with main unit

BE15890)

Model No.: 714A9801

Serial No.: BH11455

Galibration Date: 12 March 2020

ext Calibration Date: 12 March 2021

Method Used: In-house Method MM-002

In-house Testing Procedure No.: MM-002

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| Linear Microphone                    | 714A9801 | BH11561    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| P Distortion Meter*                  | 339A     | 810699     |
| Bruel & Kjaer Microphone*            | 4193     | 2677340    |
| ow Frequency Calibrator*             | 42AE     | 105366     |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| XIII                                 |          |            |

References are traceable to NIST or equivalent.

STANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized ervice center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Minimate Plus Unit (Calibration with Geophone

BG16955)

Model No.: 716A0403

Serial No.: BE16223

Calibration Date: 12 March 2020

Next Calibration Date: 12 March 2021

Method Used: In-house Method B3-001

In-house Testing Procedure No.: B3-001

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with

main unit BE16223)

Part Number: 714A9701

Serial No.: BG16955

Calibration Date: 12 March 2020

Next Calibration Date: 12 March 2021

Method Used: In-house Method B3-001

In-house Testing Procedure No.: B3-001

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Date: 12 March 2020

Calibration Item:

Linear Microphone (Calibration with main unit

BE16223)

Model No.:

714A9801

Serial No.:

BH11458

Calibration Date:

12 March 2020

Next Calibration Date:

12 March 2021

Method Used:

In-house Method MM-002

In-house Testing Procedure No.:

MM-002

| Test References   | Model    | Serial No. |
|---|----------|------------|
| Blastmate III   | 714A0801 | BA15521    |
| inear Microphone  | 714A9801 | BH11561    |
| GLOBAL SPECIALISTS 3MHz*  | 2030     | 256812     |
| Stanford Spectrum Analyzer                                      | SR760    | 41550      |
| Aglient Multimeter*   | 34410A   | MY47011119 |
| HP Distortion Meter*  | 339A     | 810699     |
| Bruel & Kjaer Microphone*                                       | 4193     | 2677340    |
| Low Frequency Calibrator*                                       | 42AE     | 105366     |
| Bruel & Kjaer Conditional Amplifier*                            | 269      | 2152173    |
| Fow Frequency Calibrator*  Bruel & Kjaer Conditional Amplifier* |          |            |

References are traceable to NIST or equivalent.

NSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized ervice center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Date: 12 March 2020

Calibration Item: Minimate Plus Unit (Calibration with Geophone

BG15353)

Model No.:

716A0403

Serial No.:

BE15891

Calibration Date:

26 February 2020

Next Calibration Date:

26 February 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.: B3-001

| 亞  | Test References                      | Model    | Serial No. |
|----|--------------------------------------|----------|------------|
| I  | Blastmate III                        | 714A0801 | BA15521    |
| 類  | SEE Triaxial Geophone                | 714A9701 | BG14463    |
| X  | LOBAL SPECIALISTS 3MHz*              | 2030     | 256812     |
|    | tanford Spectrum Analyzer            | SR760    | 41550      |
|    | glient Multimeter*                   | 34410A   | MY47011119 |
| ŀ  | IP Distortion Meter*                 | 339A     | 810699     |
| Ž. | Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| XE | Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Ì  | Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| I  | DS Air Cooled Vibrator               | V556     | 92794/1    |
| 類  | DS Field Power Supply                | FPS10L   | ARA 04/05  |
| Ø  | DS Power Amplifier                   | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main

unit BE15891)

Part Number:

714A9701

Serial No.:

BG15353

Calibration Date:

26 February 2020

Next Calibration Date:

26 February 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.: B3-001

|           | est References                      | Model    | Serial No. |
|-----------|-------------------------------------|----------|------------|
| E         | lastmate III                        | 714A0801 | BA15521    |
| 現         | SEE Triaxial Geophone               | 714A9701 | BG14463    |
| X         | LOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
|           | tanford Spectrum Analyzer           | SR760    | 41550      |
| 1         | glient Multimeter*                  | 34410A   | MY47011119 |
| ŀ         | IP Distortion Meter*                | 339A     | 810699     |
| Ä         | ruel & Kjaer Accelerometer*         | 4370     | 30323      |
| (E        | ruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| E         | ruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| L         | DS Air Cooled Vibrator              | V556     | 92794/1    |
| Ä         | DS Field Power Supply               | FPS10L   | ARA 04/05  |
| $\langle$ | DS Power Amplifier                  | PA1000L  | ARA 07/06  |

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is

sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to

INSTANTEL or an authorized service center for regular calibration.

References are traceable to NIST or equivalent.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Minimate Plus Unit (Calibration with Geophone

BG15180)

Model No.: 716A0403

Serial No.: BE15894

Calibration Date: 24 February 2020 Next Calibration Date: 24 February 2021

Method Used: In-house Method B3-001

In-house Testing Procedure No.: B3-001

| H   | lest References                     | Model    | Serial No. |
|-----|-------------------------------------|----------|------------|
| I   | Blastmate III                       | 714A0801 | BA15521    |
| #   | SEE Triaxial Geophone               | 714A9701 | BG14463    |
| X   | LOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| X   | tanford Spectrum Analyzer           | SR760    | 41550      |
| 7   | Aglient Multimeter*                 | 34410A   | MY47011119 |
| //1 | IP Distortion Meter*                | 339A     | 810699     |
| K.  | ruel & Kjaer Accelerometer*         | 4370     | 30323      |
| X   | ruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| E   | ruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| L   | DS Air Cooled Vibrator              | V556     | 92794/1    |
| #   | DS Field Power Supply               | FPS10L   | ARA 04/05  |
|     | DS Power Amplifier                  | PA1000L  | ARA 07/06  |
|     |                                     |          |            |

\*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main

unit BE15894)

Part Number:

714A9701

Serial No.:

BG15180

Calibration Date:

24 February 2020

Next Calibration Date:

24 February 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.:

B3-001

| #            | Test References                      | Model    | Serial No. |
|--------------|--------------------------------------|----------|------------|
|              | Blastmate III                        | 714A0801 | BA15521    |
| #            | ISEE Triaxial Geophone               | 714A9701 | BG14463    |
|              | GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| B            | Stanford Spectrum Analyzer           | SR760    | 41550      |
|              | Aglient Multimeter*                  | 34410A   | MY47011119 |
|              | HP Distortion Meter*                 | 339A     | 810699     |
| #            | Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
|              | Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| H            | Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
|              | LDS Air Cooled Vibrator              | V556     | 92794/1    |
| #            | LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| $\mathbb{R}$ | LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Minimate Plus Unit (Calibration with Geophone

BG20673)

Model No.: 716A0403

Serial No.: BE13849

Calibration Date: 26 February 2020 Next Calibration Date: 26 February 2021

Method Used: In-house Method B3-001

In-house Testing Procedure No.: B3-001

| H | Test References                      | Model    | Serial No. |
|---|--------------------------------------|----------|------------|
|   | Blastmate III                        | 714A0801 | BA15521    |
| 現 | SEE Triaxial Geophone                | 714A9701 | BG14463    |
| X | GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| X | Stanford Spectrum Analyzer           | SR760    | 41550      |
|   | Aglient Multimeter*                  | 34410A   | MY47011119 |
| Į | IP Distortion Meter*                 | 339A     | 810699     |
| A | Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| 8 | Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
|   | Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| I | DS Air Cooled Vibrator               | V556     | 92794/1    |
| 猫 | DS Field Power Supply                | FPS10L   | ARA 04/05  |
| Ø | DS Power Amplifier                   | PA1000L  | ARA 07/06  |

\*References are traceable to NIST or equivalent.

NSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item:

Linear Microphone (Calibration with main unit

BE13849)

Model No.:

714A9801

Serial No.:

BH13154

Calibration Date:

26 February 2020

Next Calibration Date:

26 February 2021

Method Used:

In-house Method MM-002

In-house Testing Procedure No.:

MM-002

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| Linear Microphone                    | 714A9801 | BH11561    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Microphone*            | 4193     | 2677340    |
| Low Frequency Calibrator*            | 42AE     | 105366     |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

Au

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main

unit BE13849)

Part Number:

714A9701

Serial No.:

BG20673

Calibration Date:

26 February 2020

Next Calibration Date:

26 February 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.: B3-001

|              | lest References                     | Model    | Serial No. |
|--------------|-------------------------------------|----------|------------|
|              | Blastmate III                       | 714A0801 | BA15521    |
| 現            | SEE Triaxial Geophone               | 714A9701 | BG14463    |
| A            | SLOBAL SPECIALISTS 3MHz*            | 2030     | 256812     |
| $\mathbb{X}$ | tanford Spectrum Analyzer           | SR760    | 41550      |
|              | Aglient Multimeter*                 | 34410A   | MY47011119 |
| ДĮ           | IP Distortion Meter*                | 339A     | 810699     |
| A            | Bruel & Kjaer Accelerometer*        | 4370     | 30323      |
| 8            | Bruel & Kjaer Charge Amplifier*     | 2647     | 2518810    |
|              | ruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| į            | DS Air Cooled Vibrator              | V556     | 92794/1    |
| 類            | DS Field Power Supply               | FPS10L   | ARA 04/05  |
| Á            | DS Power Amplifier                  | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Minimate Plus Unit (Calibration with Geophone

BG16512)

Model No.: 716A0403

Serial No.: BE13853

Calibration Date: 24 February 2020 Next Calibration Date: 24 February 2021

Next Calibration Date: 24 February 2021
Method Used: In-house Method B3-001

In-house Testing Procedure No.: B3-001

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main

unit BE13853)

Part Number:

714A9701

Serial No.:

BG16512

Calibration Date:

24 February 2020

Next Calibration Date:

24 February 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.: B3-001

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Minimate Plus Unit (Calibration with Geophone

BG17240)

Model No.: 716A0403

Serial No.: BE20015

Calibration Date: 26 February 2020
Next Calibration Date: 26 February 2021

Method Used: In-house Method B3-001

n-house Testing Procedure No.: B3-001

| H   | Test References                      | Model    | Serial No. |
|---|--------------------------------------|----------|------------|
|   | Blastmate III                        | 714A0801 | BA15521    |
| #   | ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| $\langle \! \rangle$  | GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| P   | Stanford Spectrum Analyzer           | SR760    | 41550      |
|   | Aglient Multimeter*                  | 34410A   | MY47011119 |
| $\hat{X}_{\mu}$   | HP Distortion Meter*                 | 339A     | 810699     |
| THE REPORT OF THE PROPERTY OF | Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| X   | Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| #   | Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
|   | LDS Air Cooled Vibrator              | V556     | 92794/1    |
| 4   | DS Field Power Supply                | FPS10L   | ARA 04/05  |
| $\frac{1}{2}$   | LDS Power Amplifier                  | PA1000L  | ARA 07/06  |
|   |                                      |          |            |

\*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main

unit BE20015)

Part Number:

714A9701

Serial No.:

BG17240

Calibration Date:

26 February 2020

Next Calibration Date:

26 February 2021

Method Used:

In-house Method B3-001

In-house Testing Procedure No.: B3-001

| j                | est References                      | Model    | Serial No. |
|------------------|-------------------------------------|----------|------------|
| В                | lastmate III                        | 714A0801 | BA15521    |
| 費                | SEE Triaxial Geophone               | 714A9701 | BG14463    |
| K                | LOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| X                | tanford Spectrum Analyzer           | SR760    | 41550      |
| A                | glient Multimeter*                  | 34410A   | MY47011119 |
| / <sub>L</sub> H | P Distortion Meter*                 | 339A     | 810699     |
| 43               | ruel & Kjaer Accelerometer*         | 4370     | 30323      |
| (B               | ruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| В                | ruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| L                | DS Air Cooled Vibrator              | V556     | 92794/1    |
| 先                | DS Field Power Supply               | FPS10L   | ARA 04/05  |
| Ø.               | DS Power Amplifier                  | PA1000L  | ARA 07/06  |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Calibration Item: Linear Microphone (Calibration with main unit

BE20015)

Model No.:

714A9801

Serial No.:

BH12658

Calibration Date:

26 February 2020

Next Calibration Date:

26 February 2021

Method Used:

In-house Method MM-002

In-house Testing Procedure No.:

MM-002

| est References                     | Model  | Serial No.  |
|------------------------------------|--|---|
| astmate III                        | 714A0801   | BA15521   |
| near Microphone                    | 714A9801   | BH11561   |
| LOBAL SPECIALISTS 3MHz*            | 2030   | 256812  |
| anford Spectrum Analyzer           | SR760  | 41550   |
| glient Multimeter*                 | 34410A   | MY47011119  |
| P Distortion Meter*                | 339A   | 810699  |
| ruel & Kjaer Microphone*           | 4193   | 2677340   |
| ow Frequency Calibrator*           | 42AE   | 105366  |
| uel & Kjaer Conditional Amplifier* | 269  | 2152173   |
|                                    | est References  Idastmate III Inear Microphone  LOBAL SPECIALISTS 3MHz*  Idanford Spectrum Analyzer  Iglient Multimeter*  P Distortion Meter*  Iruel & Kjaer Microphone*  Iruel & Kjaer Conditional Amplifier* | lastmate III 714A0801 near Microphone 714A9801 LOBAL SPECIALISTS 3MHz* 2030 anford Spectrum Analyzer SR760 glient Multimeter* 34410A P Distortion Meter* 339A ruel & Kjaer Microphone* 4193 ow Frequency Calibrator* 42AE |

<sup>\*</sup>References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Au Yeung Hang Chuen, Isaac )

Date: 26 February 2020

R:\Service Dept\Calibration\Instantel\BH12658 (26-02-20)

Calibration Item: TRIAXIAL GEOPHONE (Calibration with main

unit UM12907)

Part Number: 721A2901

Serial No.: UM12907

Calibration Date: 24 February 2020 Next Calibration Date: 24 February 2021

Method Used: In-house Method MM-001

In-house Testing Procedure No.: MM-001

| 1         | est References                      | Model    | Serial No. |
|-----------|-------------------------------------|----------|------------|
| В         | lastmate III                        | 714A0801 | BA15521    |
| 現         | SEE Triaxial Geophone               | 714A9701 | BG14463    |
| XG        | LOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| S         | tanford Spectrum Analyzer           | SR760    | 41550      |
| A         | glient Multimeter*                  | 34410A   | MY47011119 |
| Н         | P Distortion Meter*                 | 339A     | 810699     |
| <b>13</b> | ruel & Kjaer Accelerometer*         | 4370     | 30323      |
| В         | ruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| В         | ruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| L         | DS Air Cooled Vibrator              | V556     | 92794/1    |
| 類         | DS Field Power Supply               | FPS10L   | ARA 04/05  |
| į         | DS Power Amplifier                  | PA1000L  | ARA 07/06  |

\*References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Leung Man Hin, Eric )

Calibration Item: Micromate Linear Microphone (Calibration with

main unit UM12907)

Model No.:

721A0201

Serial No.:

UL3398

Calibration Date:

24 February 2020

Next Calibration Date:

24 February 2021

Method Used:

In-house Method MM-002

in-house Testing Procedure No.:

MM-002

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| Linear Microphone                    | 714A9801 | BH11561    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Microphone*            | 4193     | 2677340    |
| Low Frequency Calibrator*            | 42AE     | 105366     |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
|                                      |          |            |

References are traceable to NIST or equivalent.

STANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Leung Man Hin, Eric )

Calibration Item: Micromate Unit (Calibration with Geophone

UM12907)

Model No.:

721A2501

Serial No.:

UM12907

Calibration Date:

24 February 2020

Next Calibration Date:

24 February 2021

Method Used:

In-house Method MM-001

In-house Testing Procedure No.:

MM-001

| Test References                      | Model    | Serial No. |
|--------------------------------------|----------|------------|
| Blastmate III                        | 714A0801 | BA15521    |
| ISEE Triaxial Geophone               | 714A9701 | BG14463    |
| GLOBAL SPECIALISTS 3MHz*             | 2030     | 256812     |
| Stanford Spectrum Analyzer           | SR760    | 41550      |
| Aglient Multimeter*                  | 34410A   | MY47011119 |
| HP Distortion Meter*                 | 339A     | 810699     |
| Bruel & Kjaer Accelerometer*         | 4370     | 30323      |
| Bruel & Kjaer Charge Amplifier*      | 2647     | 2518810    |
| Bruel & Kjaer Conditional Amplifier* | 269      | 2152173    |
| LDS Air Cooled Vibrator              | V556     | 92794/1    |
| LDS Field Power Supply               | FPS10L   | ARA 04/05  |
| LDS Power Amplifier                  | PA1000L  | ARA 07/06  |

References are traceable to NIST or equivalent.

INSTANTEL INC. hereby certifies that this unit has been calibrated and that the results are consistent with the specifications published regarding this instrument. The SENSORCHECK feature of the unit is sufficiently reliable to indicate proper operation, although it is recommended that this unit be sent to INSTANTEL or an authorized service center for regular calibration.

Authorized by:

( Leung Man Hin, Eric )