



innovation in  
geotechnical  
instrumentation

## Calibration Record

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### Vibrating Wire Piezometer

Customer: PT. Unggul Ejawantah Industri  
Model: VW2100-0.35  
Customer ID: PZ 14  
Serial Number: VW57089  
Mfg Number: P110303  
Range: 350.0 kPa  
Temperature: 23.0 °C  
Barometric Pressure: 1028.8 millibars  
Work Order Number: 220592  
Cable Length: 100 meters  
Cable Markings: 7144 m to 7244 m  
Cable Colour Code: Red / Black (Coil) Green / White (Thermistor)  
Cable Type: EL380004HDL  
Thermistor Type: 3 kΩ

| Applied Pressure (kPa) | First Reading (B units) | Second Reading (B units) | Average Reading (B units) | Calculated Linear (kPa) | Linearity Error (% FS) | Calculated Polynomial (kPa) | Polynomial Error (% FS) |
|------------------------|-------------------------|--------------------------|---------------------------|-------------------------|------------------------|-----------------------------|-------------------------|
| 0.0                    | 8756                    | 8759                     | 8757                      | 0.1                     | 0.04                   | 0.0                         | 0.00                    |
| 70.0                   | 8102                    | 8102                     | 8102                      | 70.0                    | -0.01                  | 70.0                        | 0.00                    |
| 140.0                  | 7446                    | 7446                     | 7446                      | 139.9                   | -0.04                  | 140.0                       | -0.01                   |
| 210.0                  | 6788                    | 6789                     | 6789                      | 209.9                   | -0.03                  | 210.0                       | 0.00                    |
| 280.0                  | 6131                    | 6131                     | 6131                      | 280.0                   | 0.00                   | 280.0                       | 0.01                    |
| 350.0                  | 5472                    | 5473                     | 5473                      | 350.1                   | 0.03                   | 350.0                       | -0.01                   |
| Max. Error (%):        |                         |                          |                           |                         | 0.04                   |                             | 0.01                    |

Linear Calibration Factor: CF = 1.0656E-01 kPa/B unit  
Temperature Correction Factor: Tk = 2.0032E-01 kPa/°C rise

Polynomial Gage Factors:

A = -9.7884E-08 kPa/(B unit)<sup>2</sup> B = -1.0516E-01 kPa/B unit C = \_\_\_\_\_ kPa

Pressure is calculated with the following equations:

Linear:  $P = CF(L_0 - L) - Tk(T_0 - T) + (S_0 - S)$

Polynomial:  $P = A(L^2) + B(L) + C - Tk(T_0 - T) + (S_0 - S)$

Users must establish site zero readings for calculation purposes

Polynomial C = - [A(L<sub>0</sub><sup>2</sup>) + B(L<sub>0</sub>)]

L<sub>0</sub>, L = initial (installation) and current readings, in B units

T<sub>0</sub>, T = initial (installation) and current temperature, in °C

S<sub>0</sub>, S = initial (installation) and current barometric pressure readings, in kPa

B units = B scale output of VW 2102, VW 2104, VW 2106 and DT 2011 readouts

B units = Hz<sup>2</sup>/1000 ie: 1700 Hz = 2890 B units

|                        | Date (dd/mm/yy) | VW Reading (B units) | Temperature (°C) | Baro (mbar) |
|------------------------|-----------------|----------------------|------------------|-------------|
| Shipped Zero Readings: | 29-Mar-19       | 8762                 | 21.4             | 1027.5      |

This instrument has been calibrated using standards traceable to the NIST in compliance with ANSI Z540-1

Technician: M. Miftode

Date: 29-Mar-19



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