



# Monthly Environmental Monitoring Report

Yancoal Mount Thorley Warkworth

December 2025

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**Revision History**

Version No.	Version Details	Date
1.0	Final	30/04/2026

## 1.0 INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Mount Thorley Warkworth (MTW). This report includes all monitoring data collected for the period 1 December to 31 December 2025.

## 2.0 AIR QUALITY

### 2.1 Meteorological Monitoring

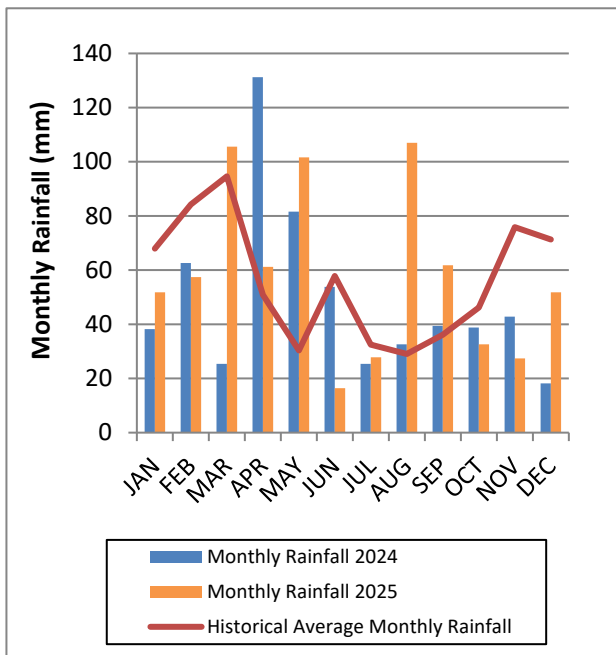
Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to **Figure 3**).

#### 2.1.1 Rainfall

Rainfall for the reporting period is summarised in **Table 1**. The year-to-date monthly rainfall totals, 2025 monthly rainfall totals and historical average monthly rainfall trend are shown in **Figure 1**.

**Table 1: Monthly Rainfall MTW**

2025	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
December	51.8	702.4

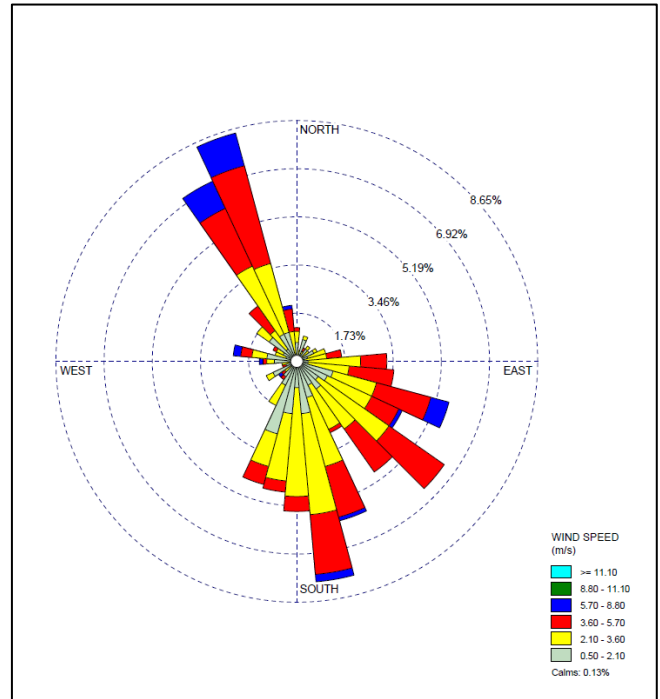


**Figure 1: Rainfall Trend YTD**

*Note: The historical average monthly rainfall is calculated from 2007 to 2024 monthly totals*

### 2.1.2 Wind Speed and Direction

Winds from the Southeast and Northwest were dominant during the reporting period as shown in **Figure 2**.



**Figure 2: Charlton Ridge Wind Rose – December 2025**

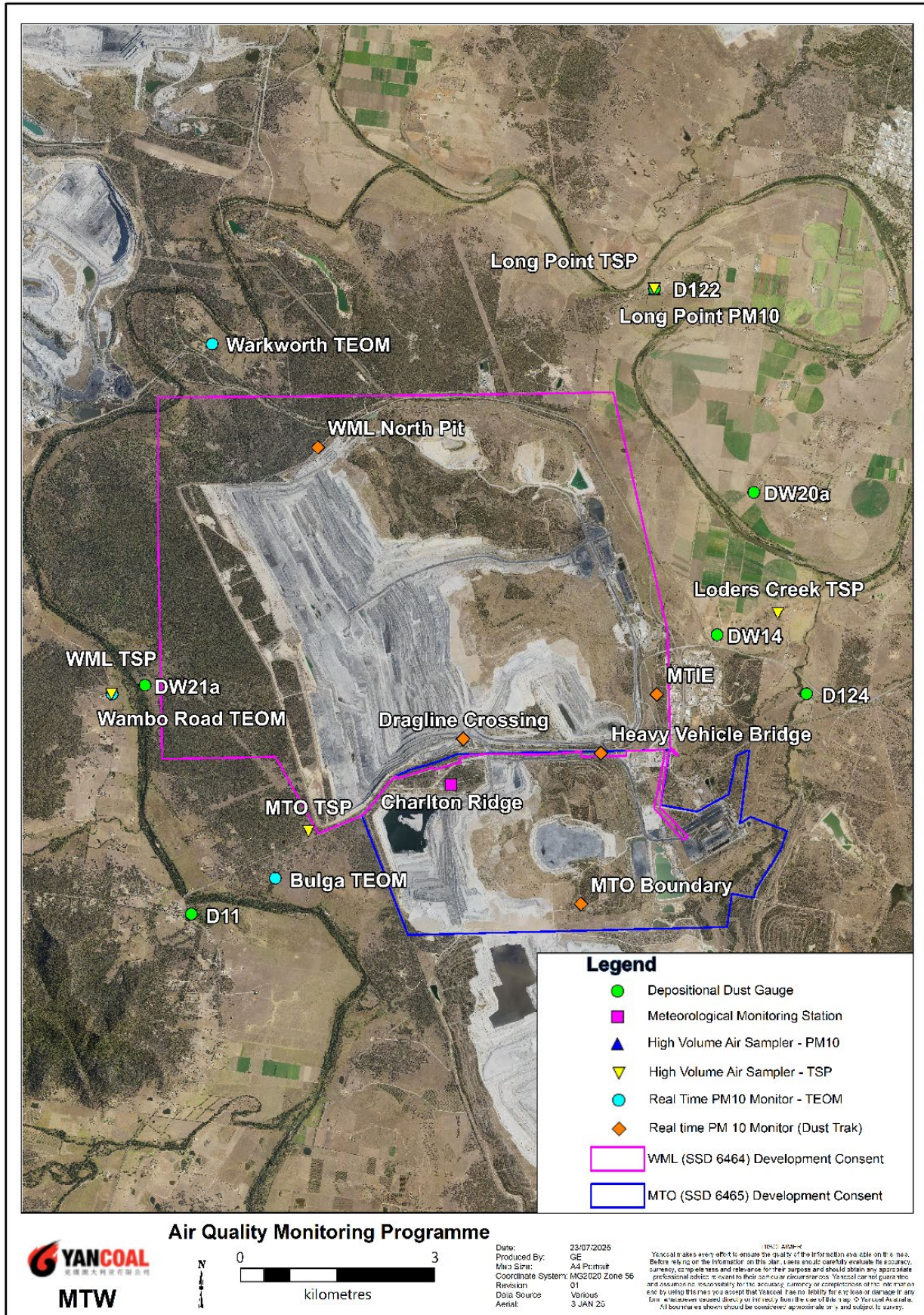


Figure 3: Air Quality Monitoring Locations

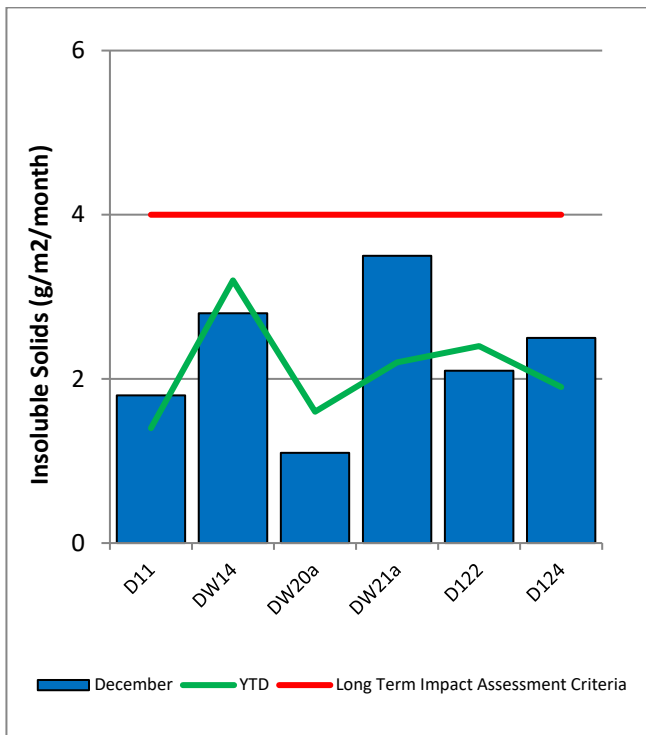
## 2.2 Depositional Dust

To monitor air quality, MTW operates and maintains a network of six depositional dust gauges, situated on private and mine owned land surrounding MTW.

On 3 November 2025, an updated Air Quality Management Plan was approved by Department of Planning, Housing and Infrastructure. The update included a change to the monitoring program which removed depositional dust monitoring for the Warkworth monitoring location (as there are no residences on privately owned land in Warkworth) and a TEOM PM<sub>10</sub> monitor is monitored at this location at this location. Accordingly, the Warkworth monitoring location will no longer be reported in the deposited dust monitoring results.

**Figure 4** displays insoluble solids results from depositional dust gauges during the reporting period compared against the year-to-date average and the annual impact assessment criteria.

An annual assessment of MTW’s compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 Annual Review Report.



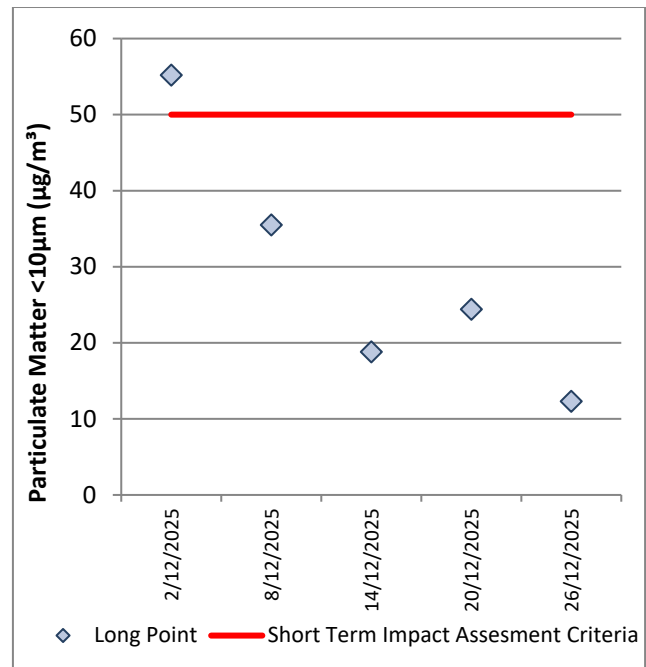
**Figure 4: Depositional Dust – December 2025**

## 2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM<sub>10</sub>). The location of these monitors can be found in **Figure 3**. Each HVAS was run for 24 hours on a six-day cycle in accordance with EPA requirements.

### 2.3.1 HVAS PM<sub>10</sub> Results

**Figure 5** shows the individual PM<sub>10</sub> results at each monitoring station against the short-term impact assessment criteria of 50µg/m<sup>3</sup>.



**Figure 5: Individual PM<sub>10</sub> Results – December 2025**

**Figure 6** shows the annual average PM<sub>10</sub> result against the long-term impact assessment criteria.

An assessment of MTW’s compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 Annual Review Report.

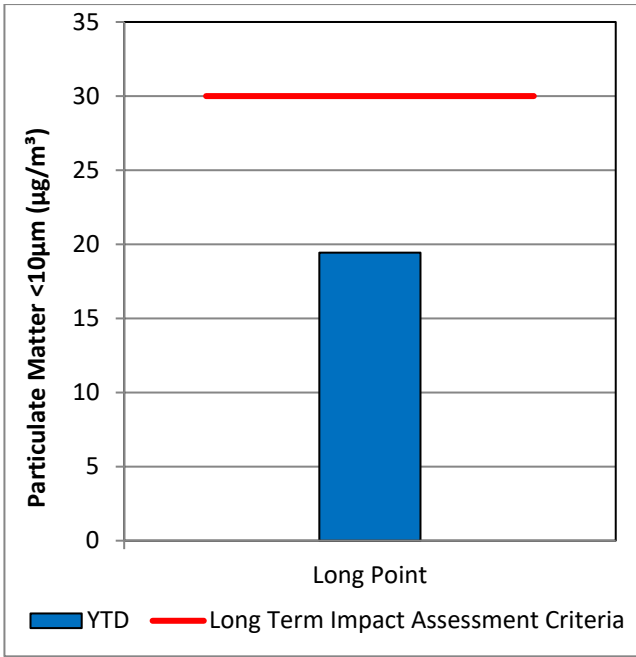


Figure 6: Annual Average PM<sub>10</sub> – December 2025

### 2.3.2 TSP Results

Figure 7 shows the annual average TSP results compared against the long-term impact assessment criteria of 90µg/m<sup>3</sup>.

On 3 November 2025, an updated Air Quality Management Plan was approved by Department of Planning, Housing and Infrastructure. The update included a change to the monitoring program which removed TSP monitoring for the Warkworth monitoring location (as there are no residences on privately owned land in Warkworth) and a TEOM PM10 monitor is monitored at this location. Accordingly, the Warkworth monitoring location will no longer be reported in the TSP monitoring results.

An assessment of MTW’s compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 Annual Review Report.

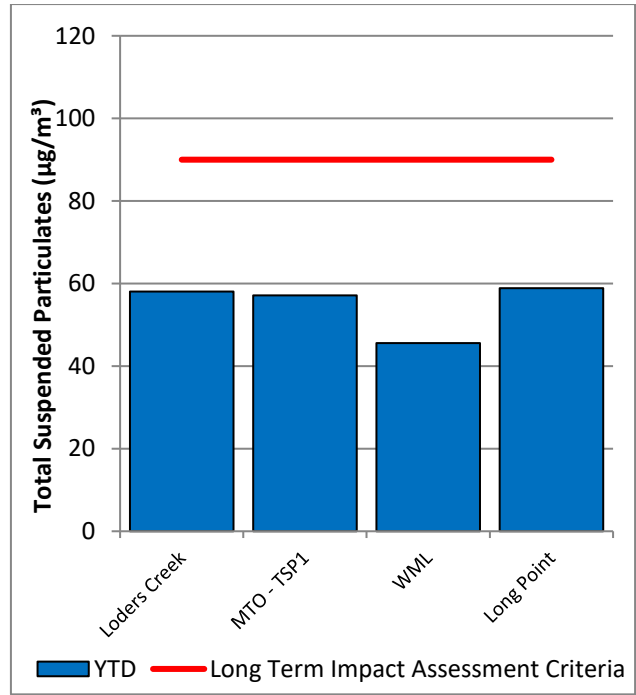


Figure 7: Annual Average Total Suspended Particulates – December 2025

### 2.3.3 Real Time PM<sub>10</sub> Results

MTW maintains a network of real time PM<sub>10</sub> monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating internal alerts when particulate matter levels exceed internal trigger limits.

Results for real time dust sampling are shown in Figure 8, including the daily 24-hour average PM<sub>10</sub> result and the annual PM<sub>10</sub> average.

On 1 December 2025, the Warkworth TEOM (59.4 ug/m3) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW’s potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 0.1 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 5 December 2025, the Warkworth TEOM (59.1 ug/m3) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW’s potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 4.8 ug/m3. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 6 December 2025, the Warkworth TEOM (91.3 ug/m<sup>3</sup>) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 9.7 ug/m<sup>3</sup>. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 7 December 2025, the Warkworth TEOM (57.7 ug/m<sup>3</sup>) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 16.0 ug/m<sup>3</sup>. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 9 December 2025, the Wambo TEOM (51.5 ug/m<sup>3</sup>) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 17.7 ug/m<sup>3</sup>. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 9 December 2025, the Warkworth TEOM (74.5 ug/m<sup>3</sup>) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on

meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 25.9 ug/m<sup>3</sup>. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 19 December 2025, the Warkworth TEOM (50.7 ug/m<sup>3</sup>) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 2.4 ug/m<sup>3</sup>. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

On 21 December 2025, the Warkworth TEOM (62.2 ug/m<sup>3</sup>) exceeded its short-term (24hr) criteria. The measurement was assessed for MTW's potential contribution based on meteorological conditions and background PM<sub>10</sub> levels on the day resulting in a maximum estimated contribution of 10.2 ug/m<sup>3</sup>. Accordingly, no further action is required (as per the approved Air Quality Monitoring Programme).

#### **2.3.4 Real Time Alarms for Air Quality**

During December, the real time monitoring system generated 333 automated air quality related alerts, including 8 alerts for adverse meteorological conditions and 192 alerts for elevated PM<sub>10</sub> levels.

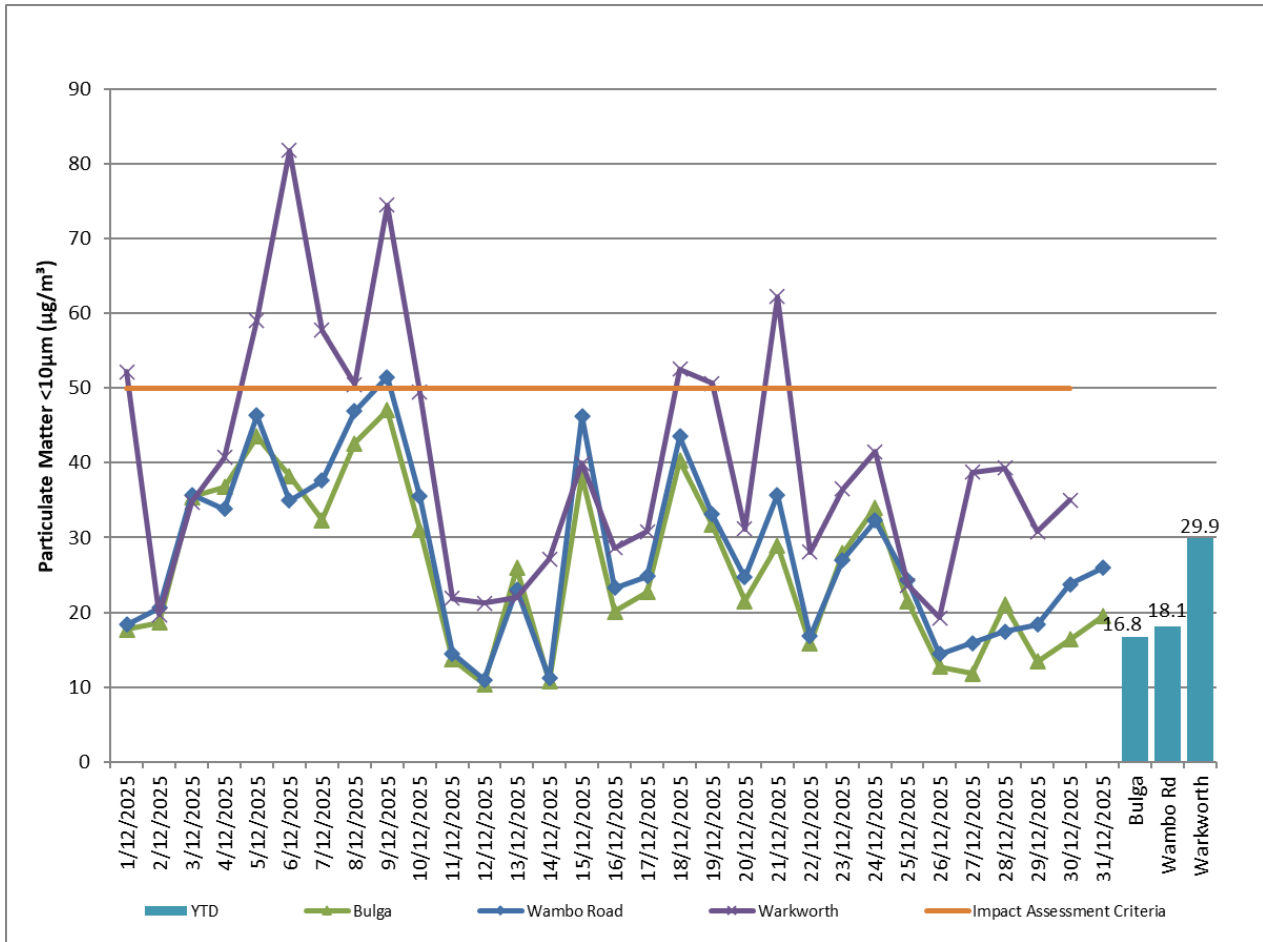


Figure 8: Real Time PM<sub>10</sub> daily 24hr average (line graphs) and YTD annual average (column graphs) – December 2025

### 3.0 WATER QUALITY

MTW maintains a network of surface water and groundwater monitoring sites.

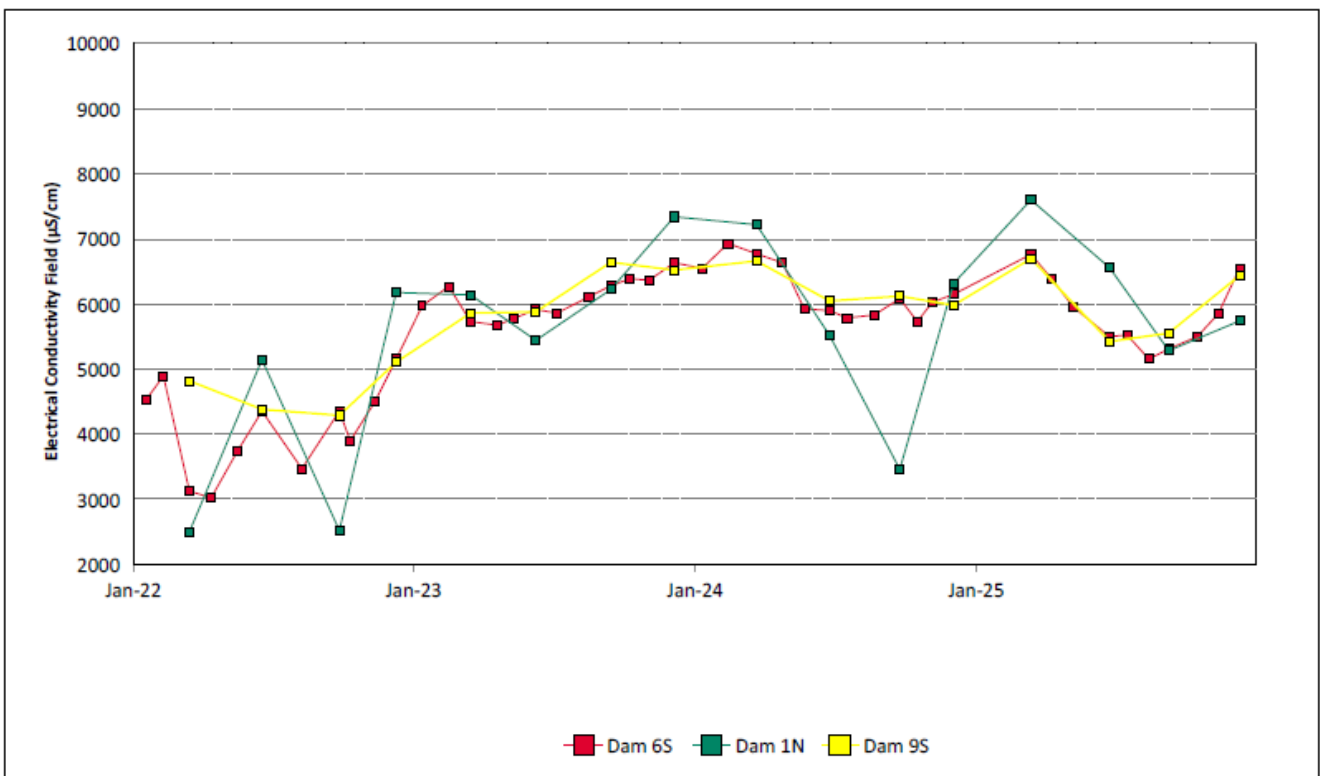
#### 3.1 Surface Water

Monitoring is conducted at mine site dams and surrounding natural watercourses. The surface water monitoring locations are outlined in **Figure 15**.

Surface water courses are sampled on a monthly or quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). The Hunter River and the Wollombi Brook are sampled both upstream and downstream of mining operations, to record background water quality and to monitor the potential impact of mining on the river system. Other Hunter River tributaries are also monitored.

##### 3.1.1 Surface Water Monitoring results

**Figure 9 to Figure 11** show the long-term surface waste trend (2022 – current) within MTW mine dams. **Figure 12 to Figure 14** show the long-term surface water trend (2022 – current) in surrounding watercourses.



**Figure 9: Site Dams Electrical Conductivity Field Trend – December 2025**



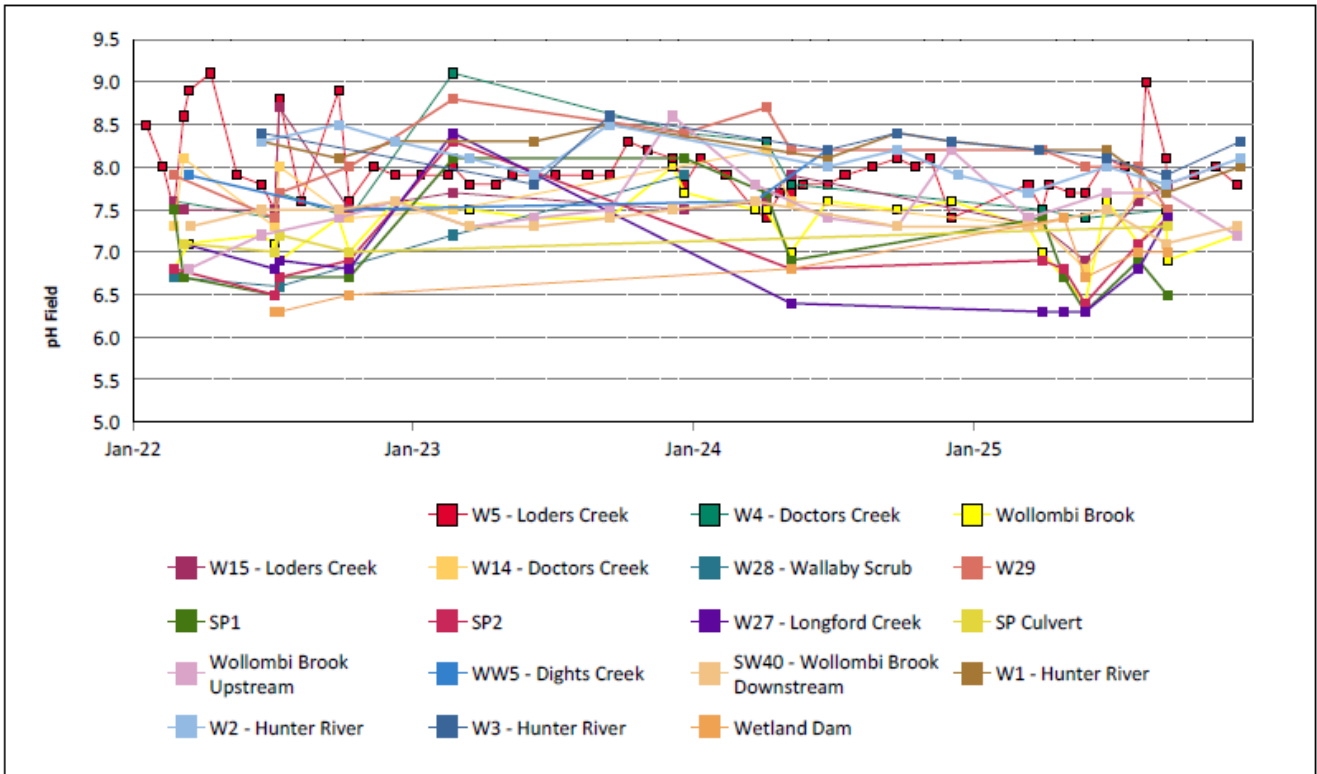


Figure 12: Watercourse pH Field Trend – December 2025

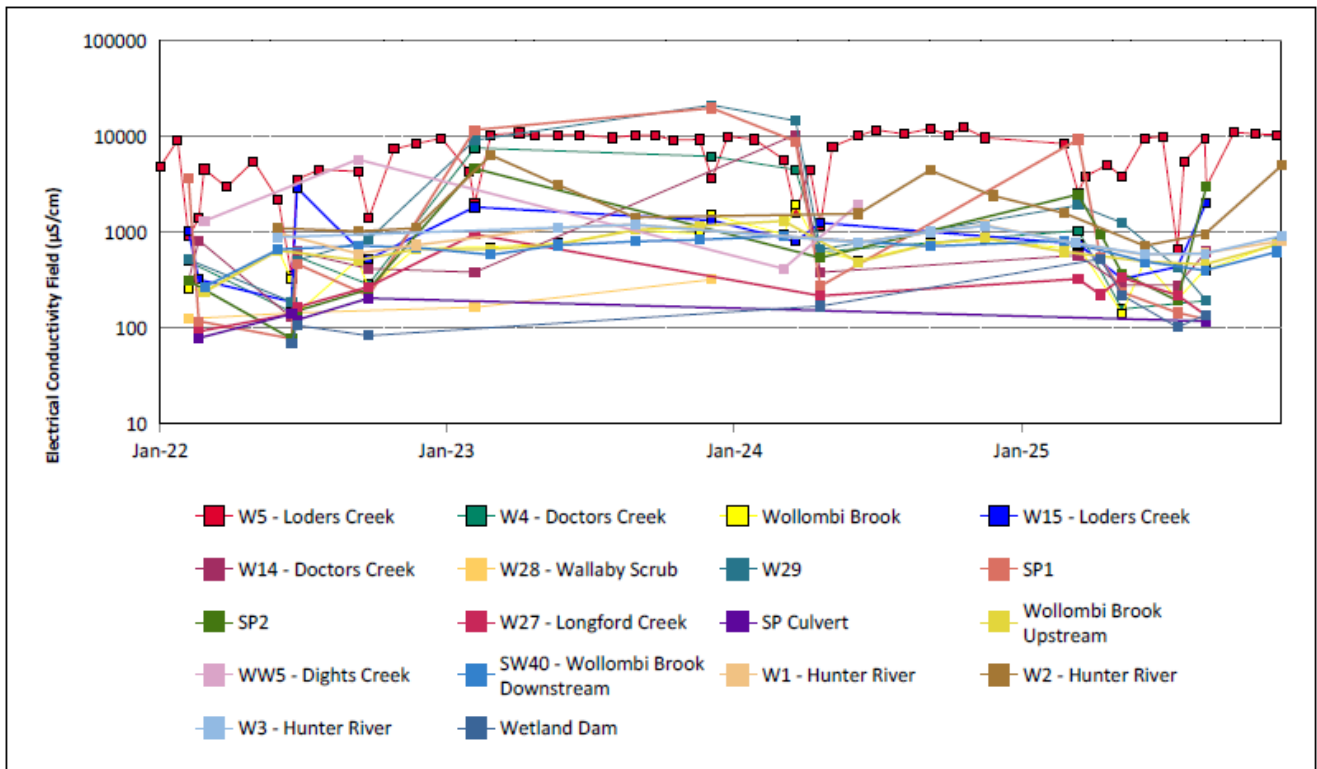


Figure 13: Watercourse Electrical Conductivity Field Trend – December 2025

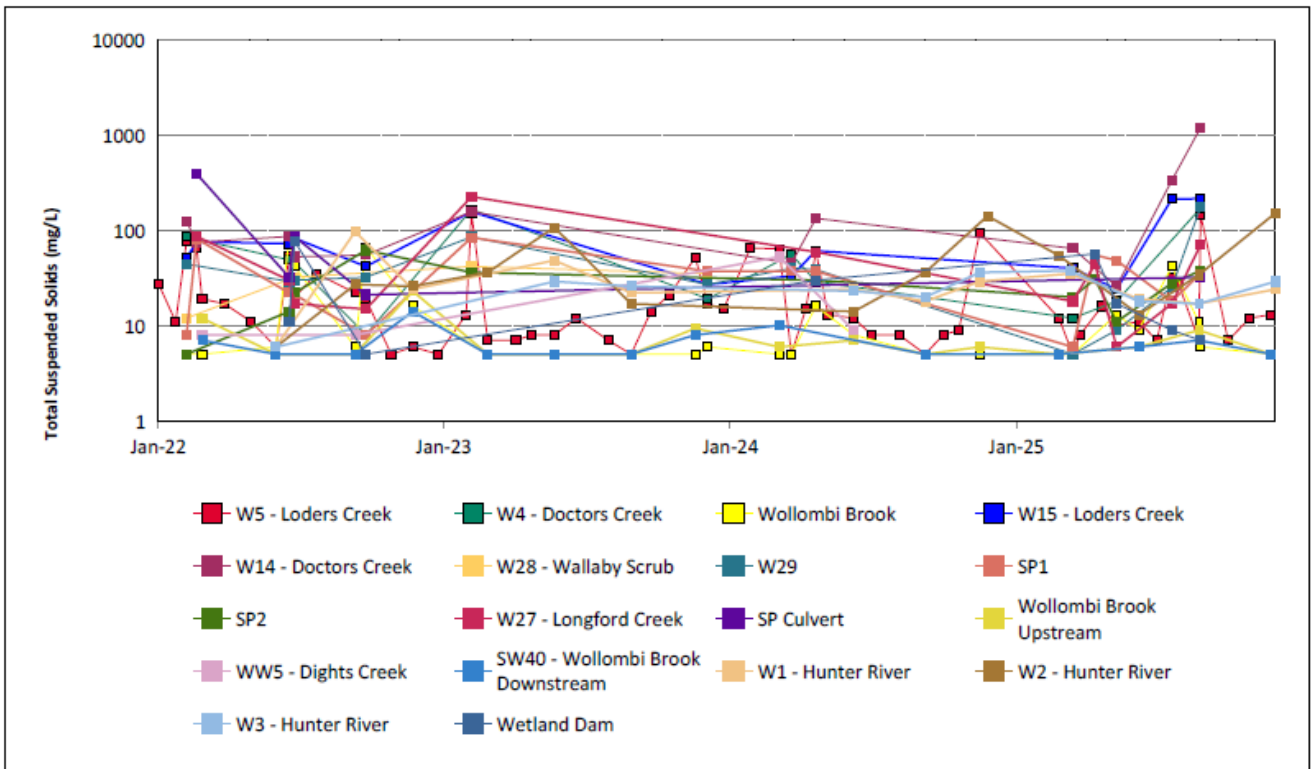


Figure 14: Watercourse Total Suspended Solids Trend – December 2025

### 3.1.2 Surface Water Trigger Tracking

Internal trigger limits have been developed to assess monitoring data on an on-going basis, and to highlight potentially adverse surface water impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the MTW Water Management Plan.

Current internal surface water trigger limit breaches are summarised in **Table 2**.

**Table 2: Surface Water Trigger Tracking – December 2025**

Site	Date	Trigger Limit Breached	Action Taken in Response
W2	13/03/2025 15/12/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 23/06/25. Sampling 15/12/2025 above trigger level, Watching Brief*
W4	10/09/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. Sampling completed in response to rain event greater than 30mm. Elevated TSS likely related to rainfall event.
W5	8/01/2025 10/09/2025	TSS – 50mg/L (ANZECC criteria)	Unlikely to be associated with MTW mining related impacts. Elevated TSS results most likely attributable to sampling from water with no flow (pool of water) and not considered to be a valid representation given that there was no flow at the time of sampling. TSS returned to within trigger level for 12 x subsequent routine and rain event sampling completed including September annual analysis on 8/09/2025. Sample 10/09/2025 above trigger level, All subsequent sampling below trigger level 15/10/2025, 12/11/2025 and 9/12/2025.
W14	31/03/2025, 28/04/2025 4/08/2025 10/09/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 26/05/25. Sampling 4/08/2025 and 10/09/2025 above trigger level, Watching Brief*
W27	10/09/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. Sampling completed in response to rain event greater than 30mm. Elevated TSS likely related to rainfall event.
W29	10/09/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. Sampling completed in response to rain event greater than 30mm. Elevated TSS likely related to rainfall event.
SP1	28/04/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 26/05/25.
Wetlands Dam	28/04/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 26/05/25.
W29	10/09/2025	pH – 5 <sup>th</sup> Percentile	Sampling completed in response to rain event greater than 30mm. Slightly lower pH likely related to rainfall event.
W2	15/12/2025	EC - 95 <sup>th</sup> Percentile	Watching Brief*

\* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.

### **3.2 HRSTS Discharge**

MTW participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points located at Dam 1N and Dam 9S. Discharges can only take place subject to HRSTS regulations.

MTW did not undertake HRSTS discharges during the reporting period.

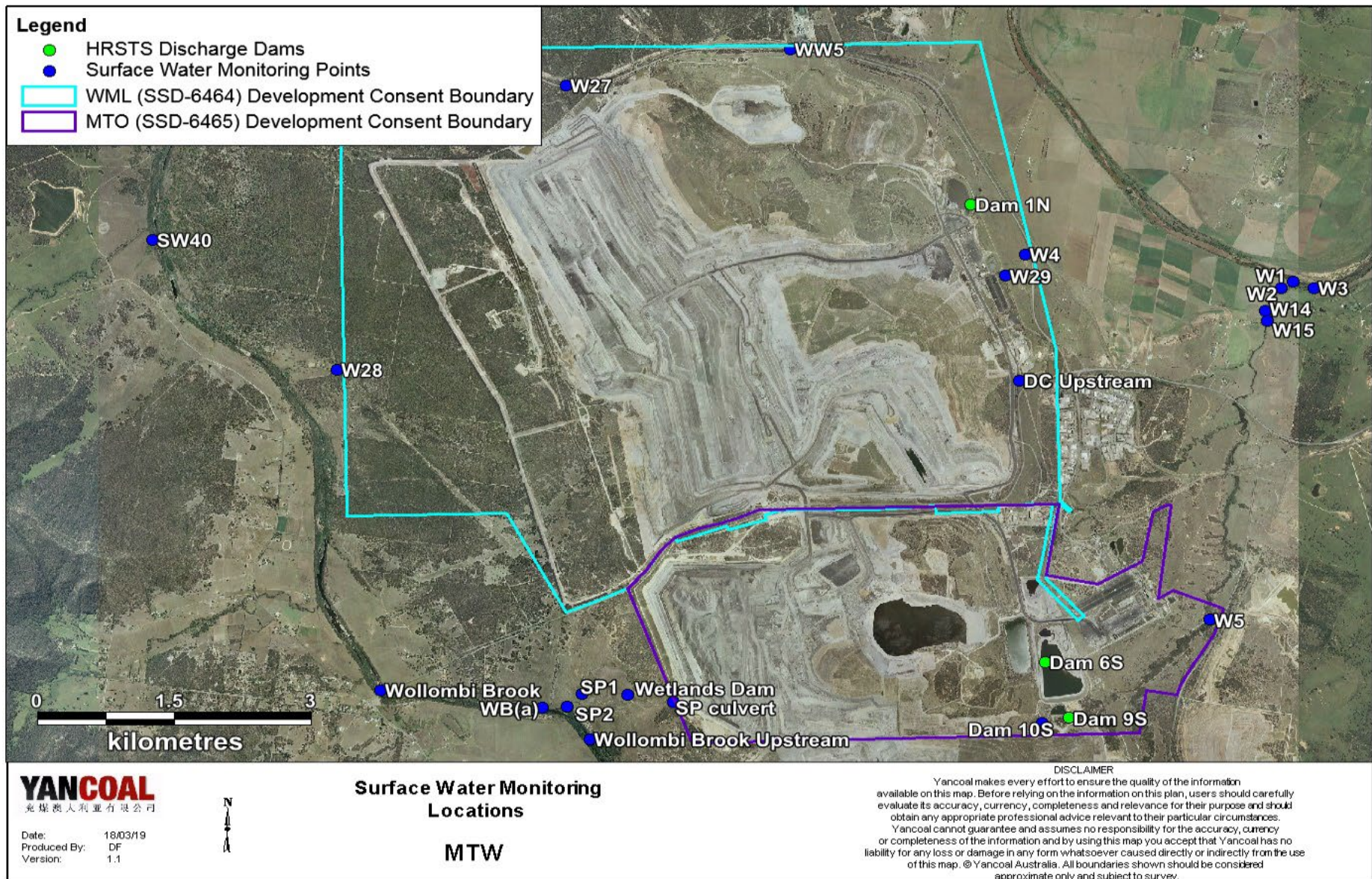


Figure 15: Surface Water Monitoring Location Plan

### 3.3 Groundwater Monitoring

Groundwater monitoring is undertaken on a quarterly basis in accordance with the MTW Groundwater Monitoring Programme.

Figure 16 to Figure 64 show the long-term water quality trends (2022 - current) for groundwater bores monitored at MTW.

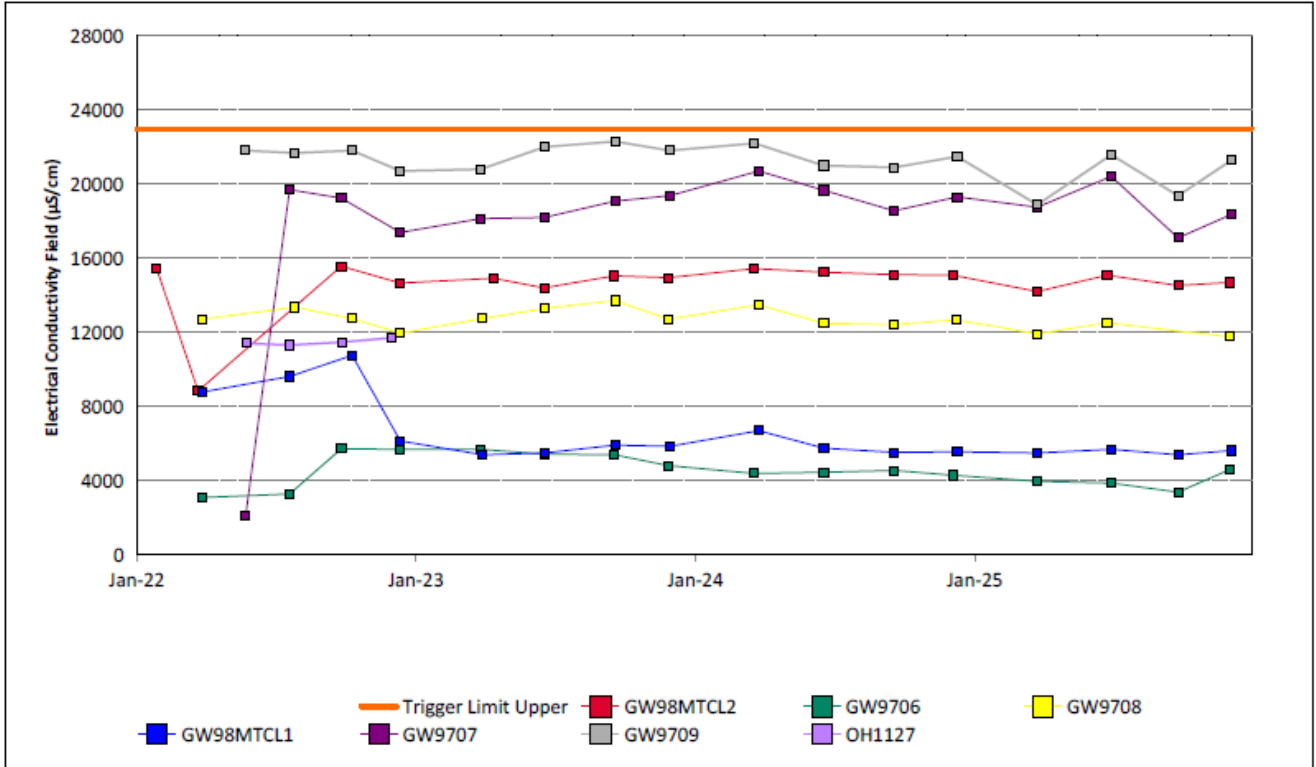


Figure 16: Bayswater Seam Electrical Conductivity Field Trend – December 2025

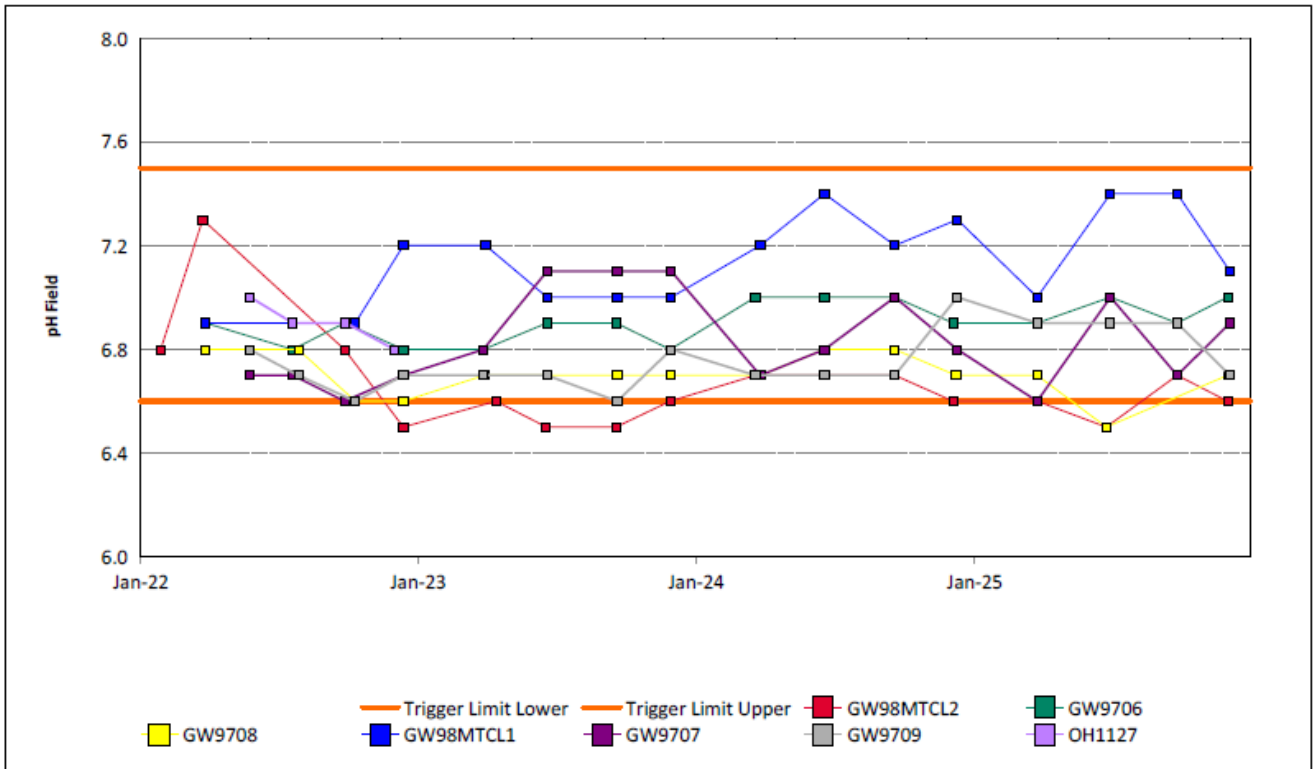


Figure 17: Bayswater Seam pH Field Trend – December 2025

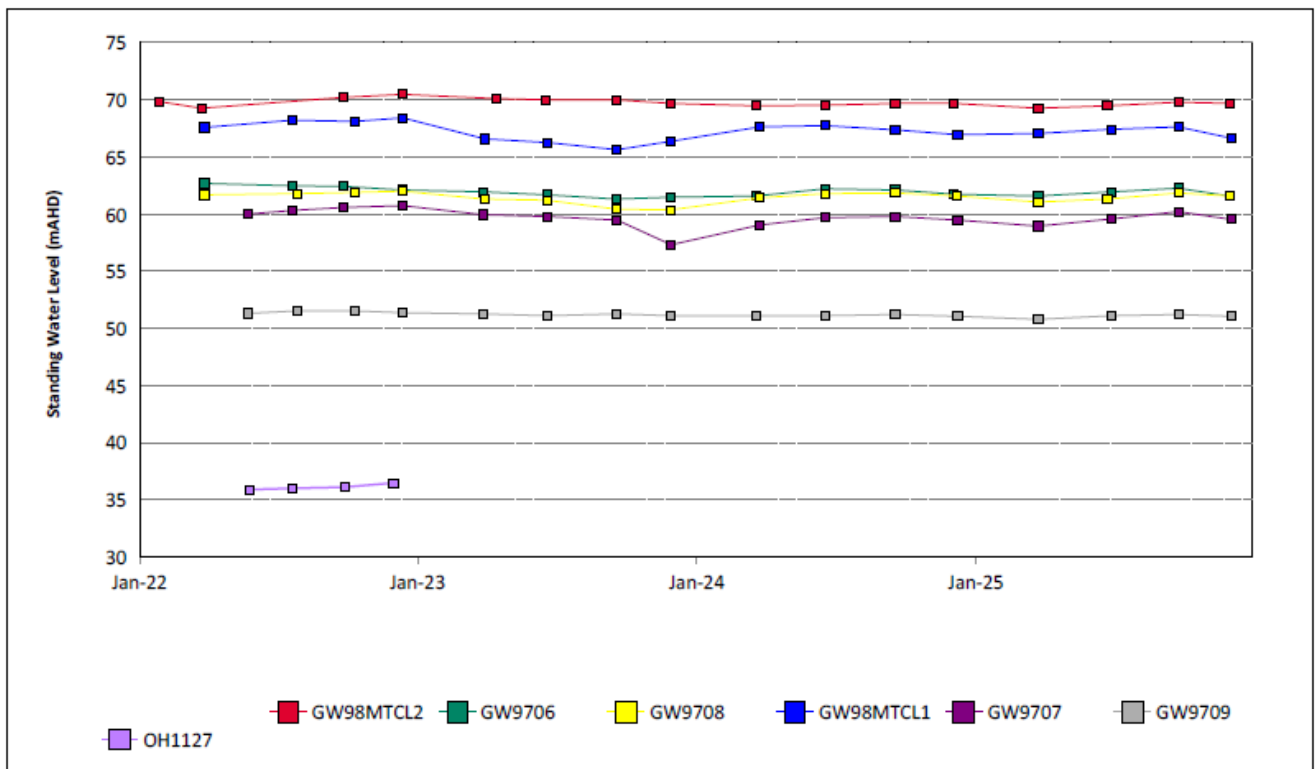


Figure 18: Bayswater Seam Standing Water Level Trend – December 2025

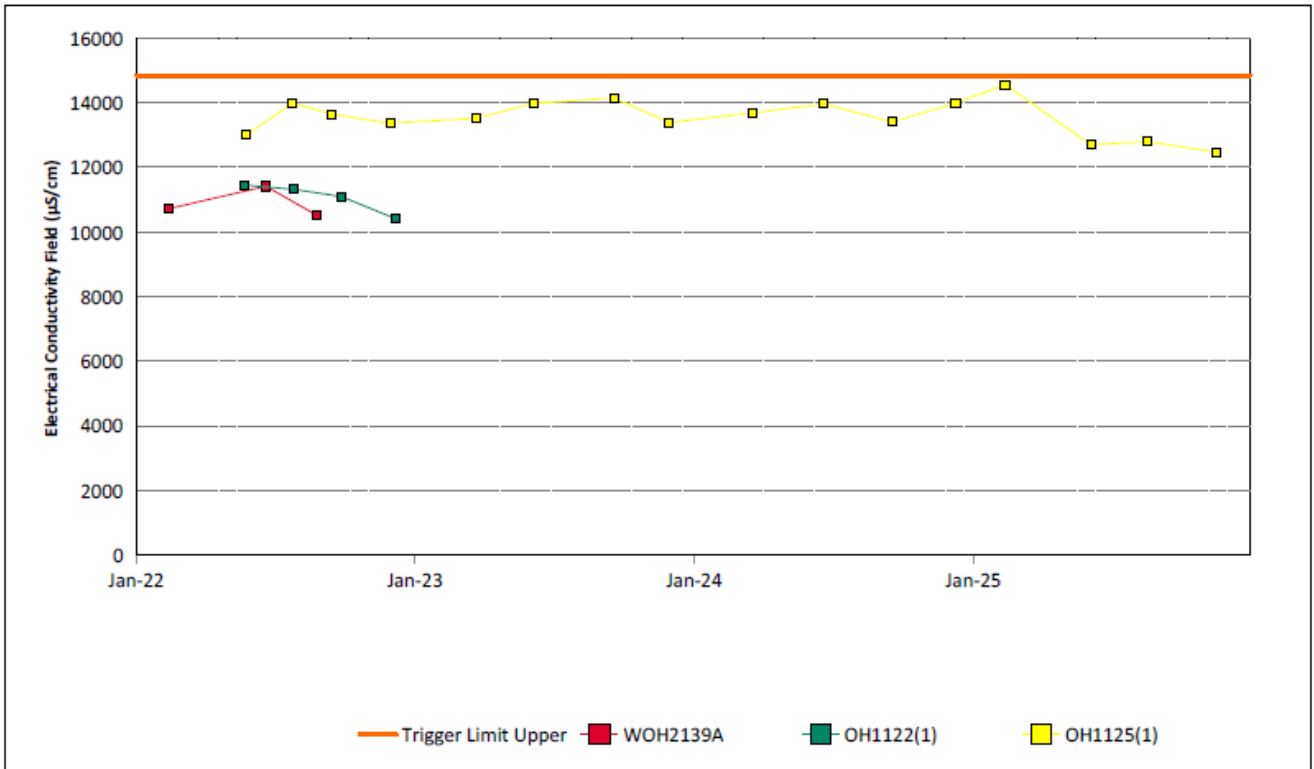


Figure 19: Blakefield Seam Electrical Conductivity Field Trend – December 2025

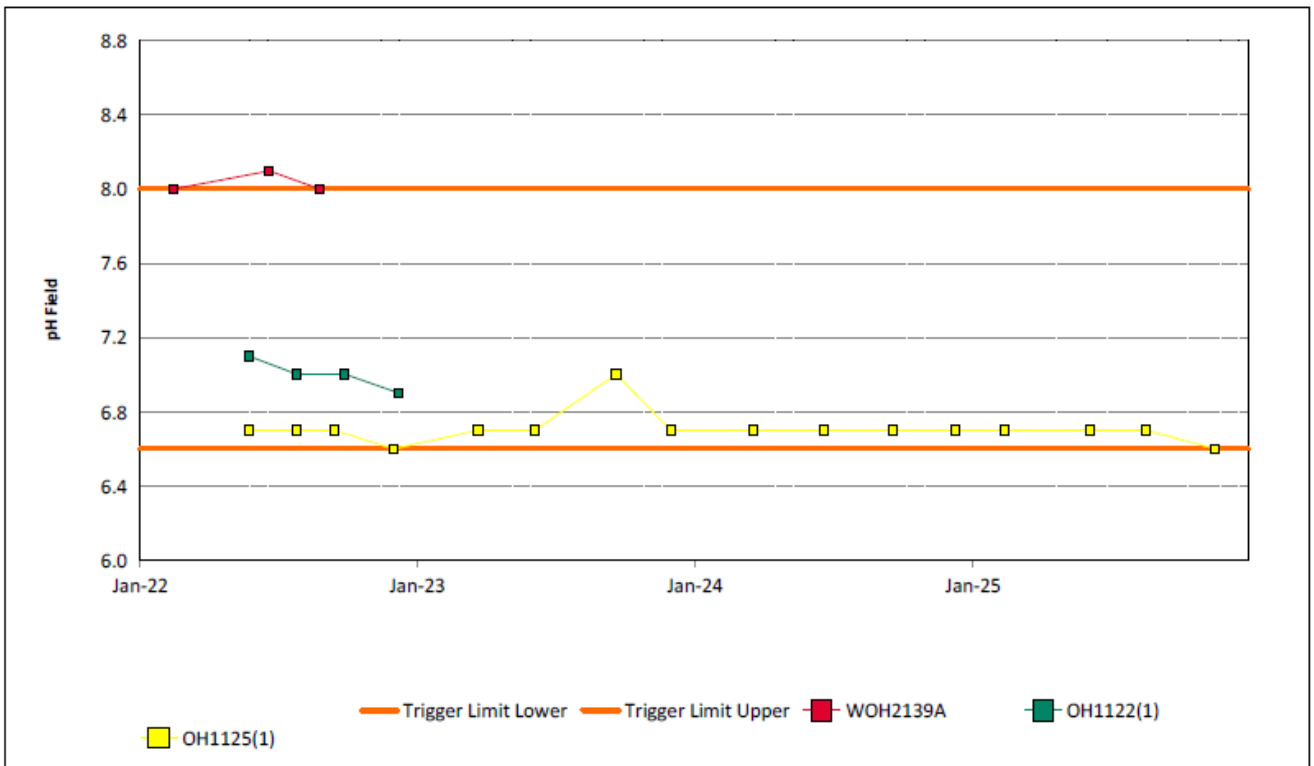


Figure 20: Blakefield Seam pH Field Trend – December 2025

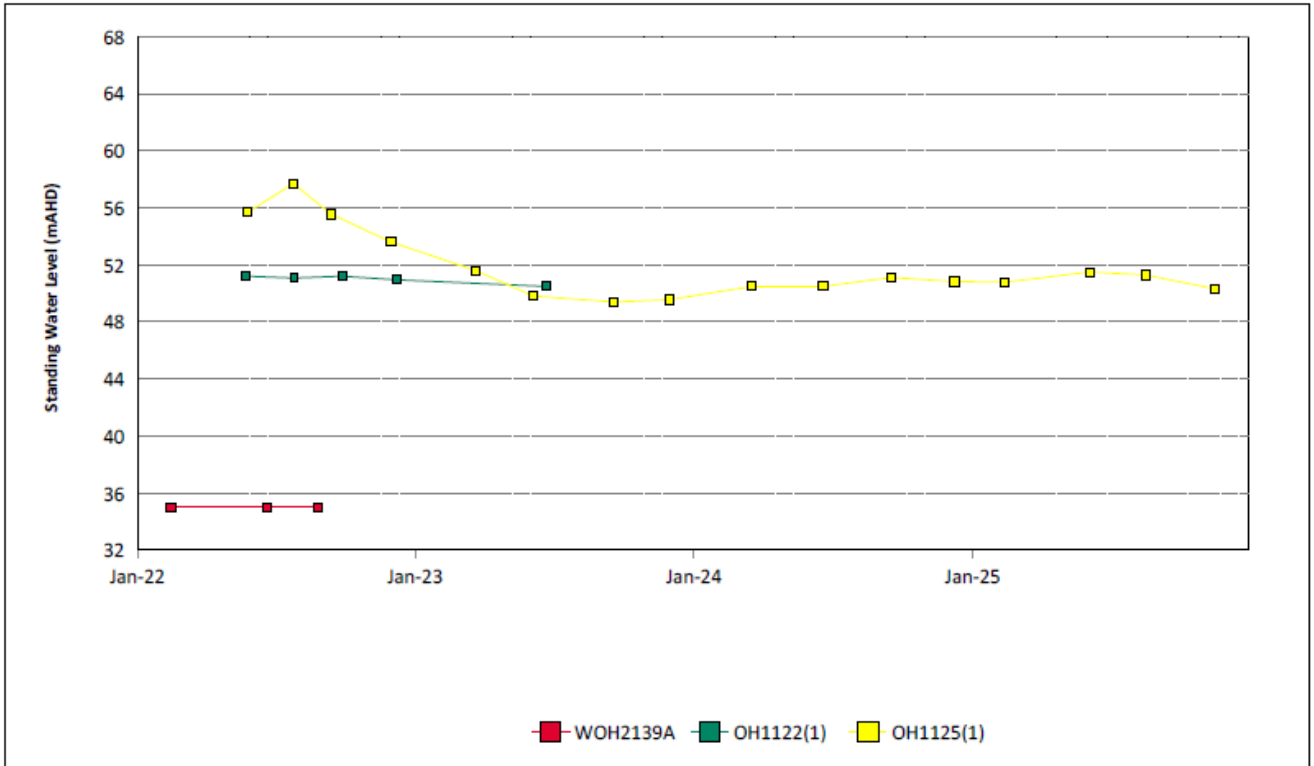


Figure 21: Blakefield Seam Standing Water Level Trend – December 2025

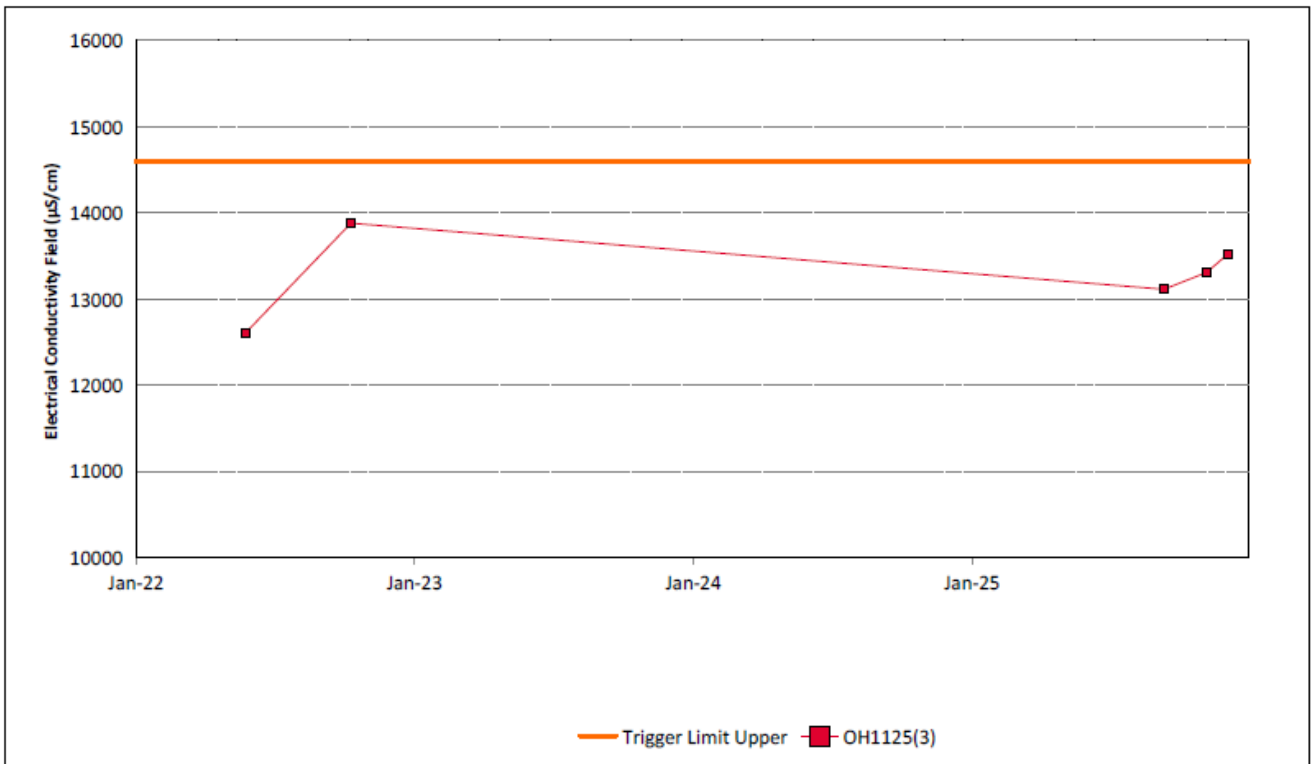


Figure 22: Bowfield Seam Electrical Conductivity Field Trend – December 2025

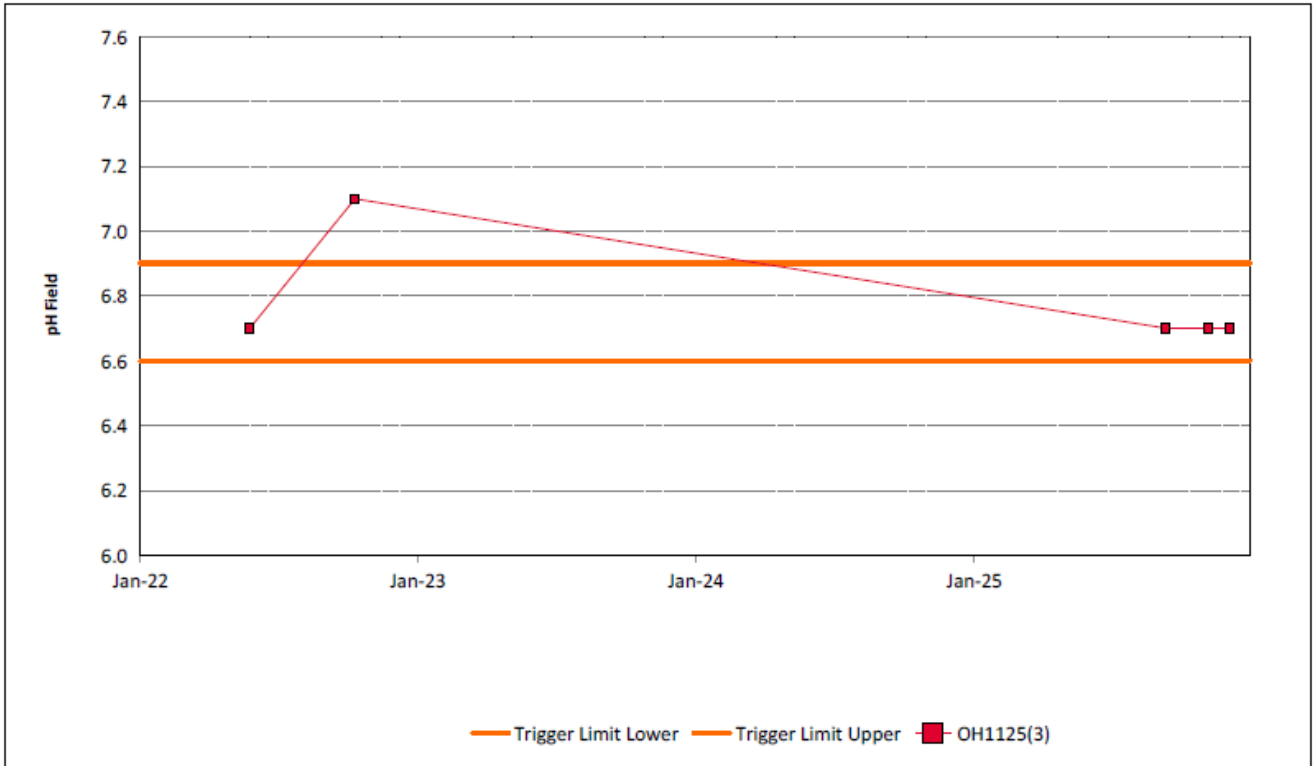


Figure 23: Bowfield Seam pH Field Trend - December 2025

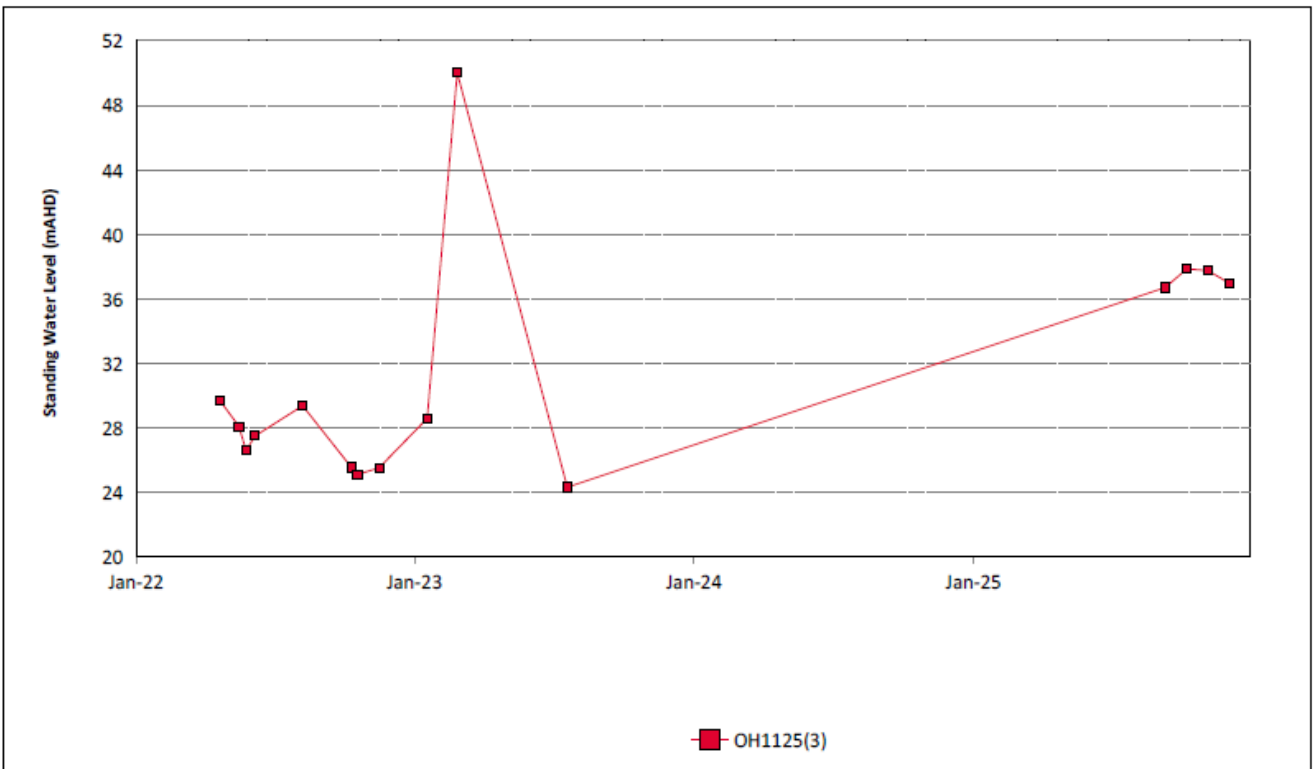


Figure 24: Bowfield Seam Standing Water Level Trend – December 2025

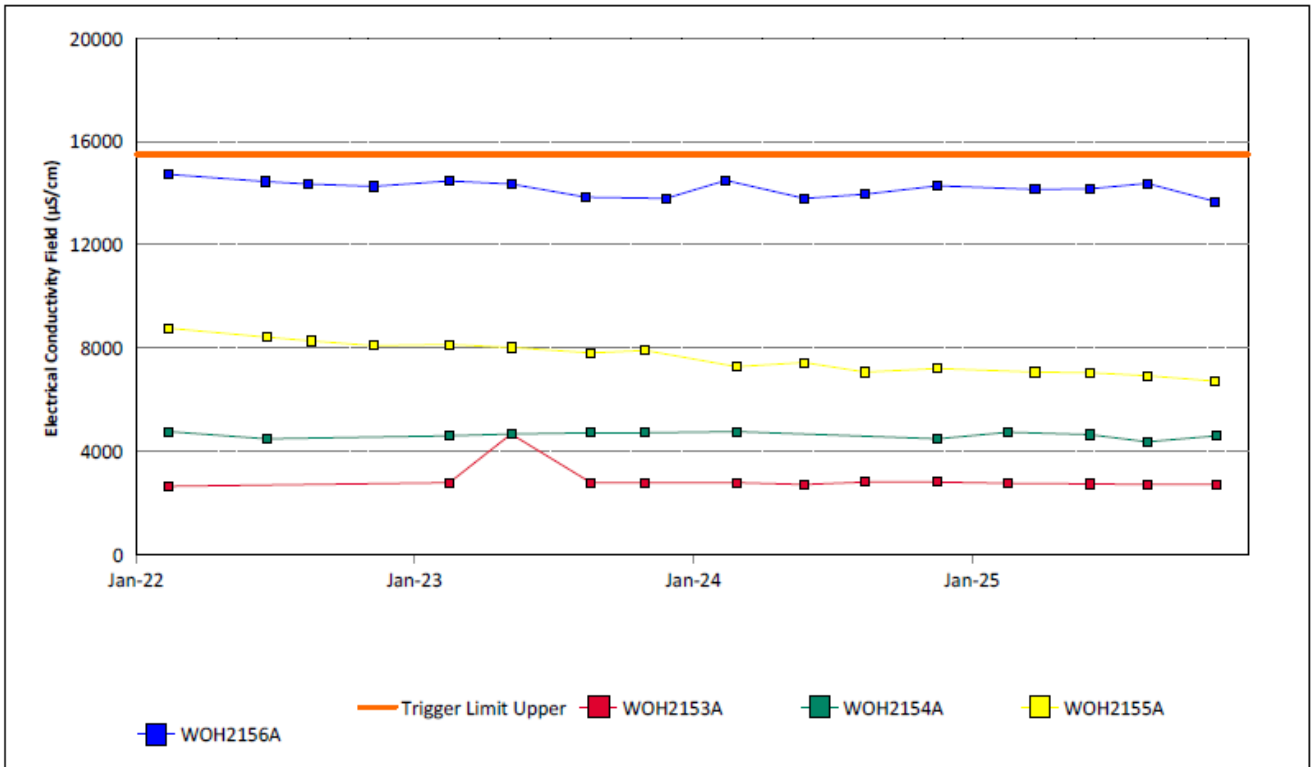


Figure 25: Redbank Seam Electrical Conductivity Field Trend – December 2025

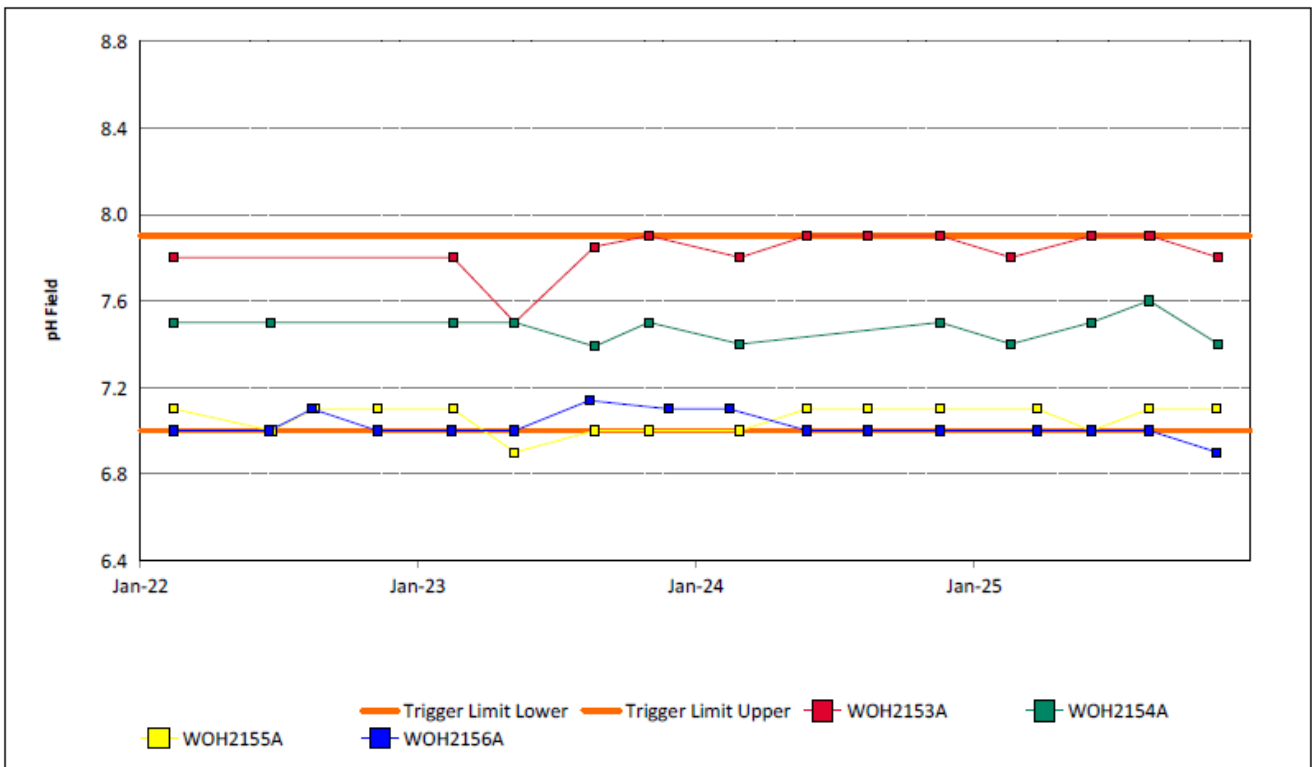


Figure 26: Redbank Seam pH Field Trend – December 2025

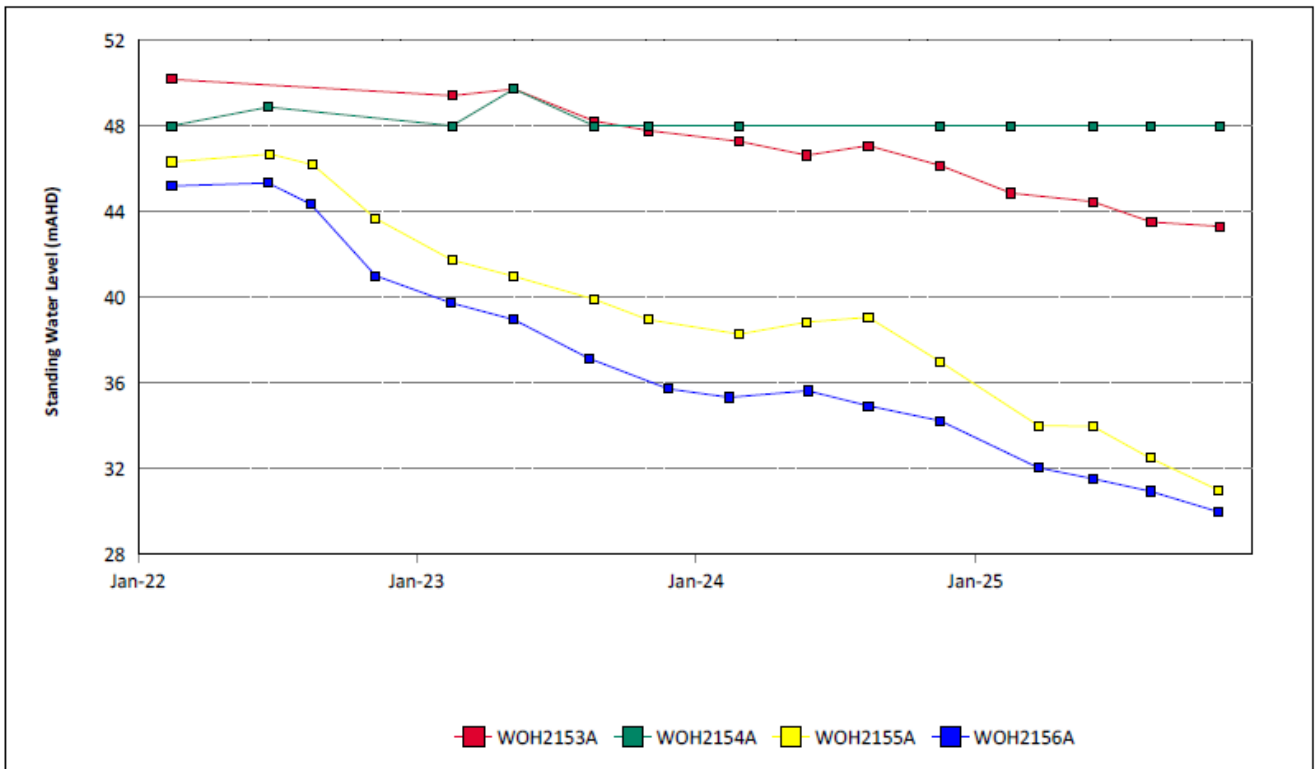


Figure 27: Redbank Seam Standing Water Level Trend – December 2025

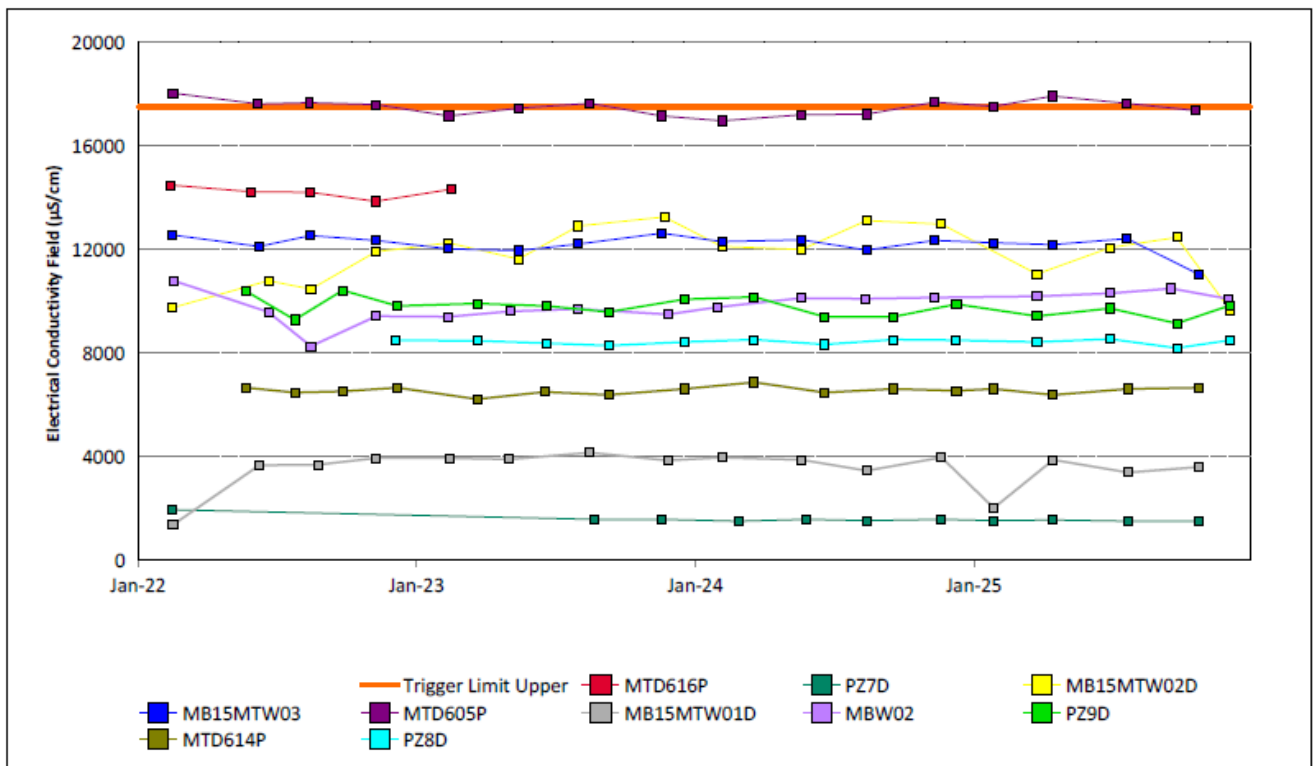


Figure 28: Shallow Overburden Electrical Conductivity Field Trend – December 2025

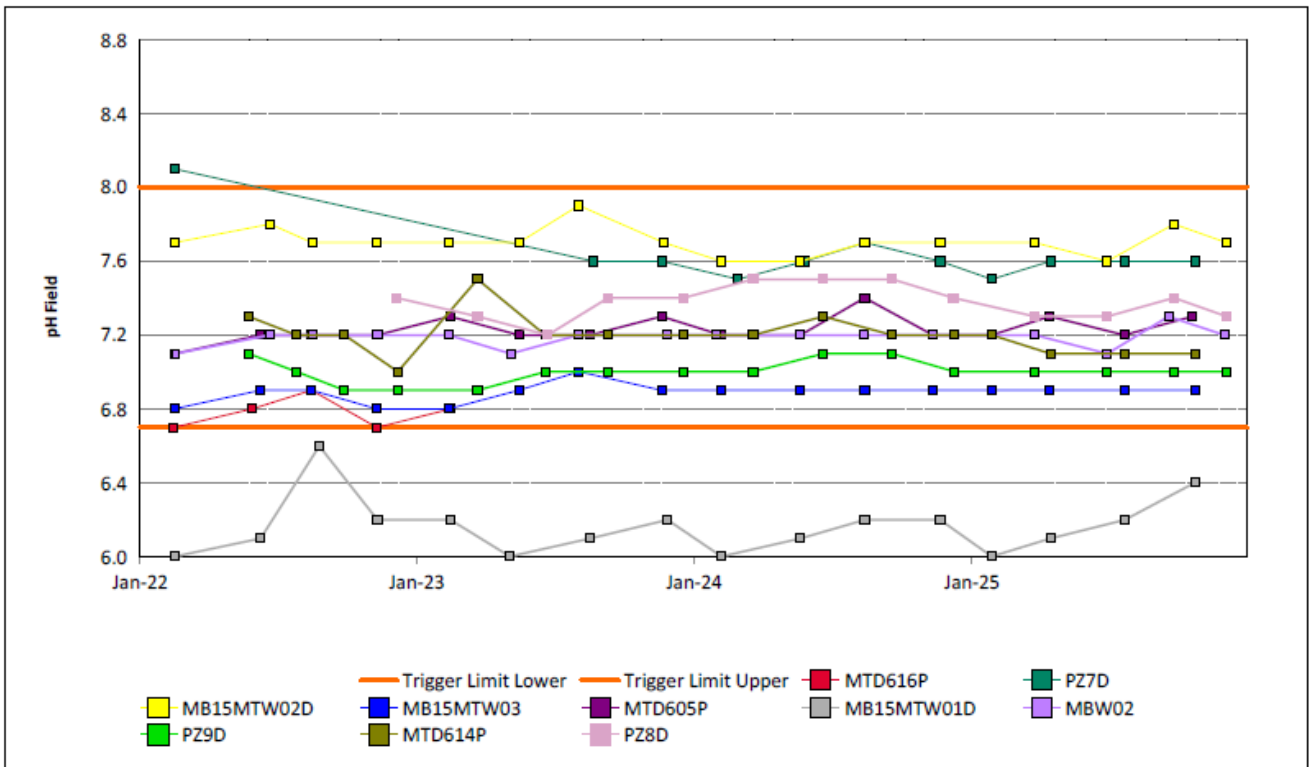


Figure 29: Shallow Overburden pH Field Trend – December 2025

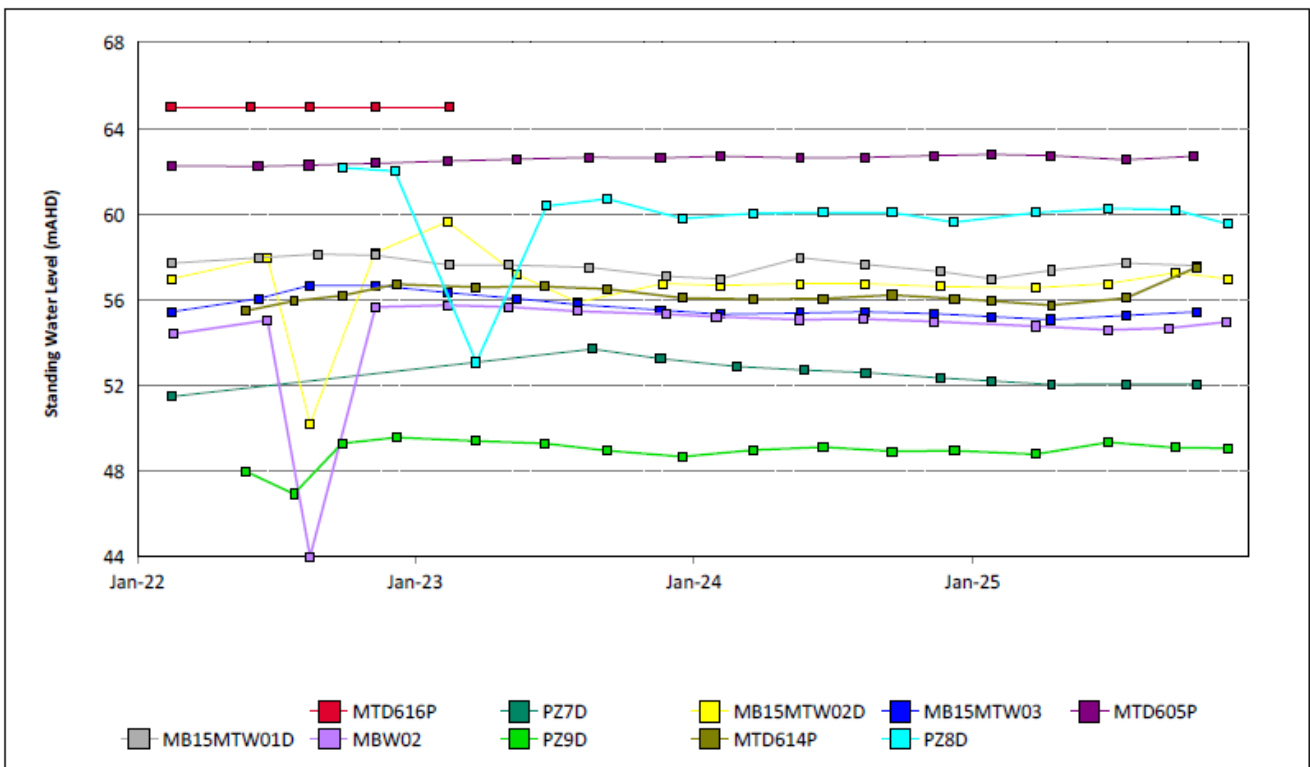


Figure 30: Shallow Overburden Standing Water Level Trend – December 2025

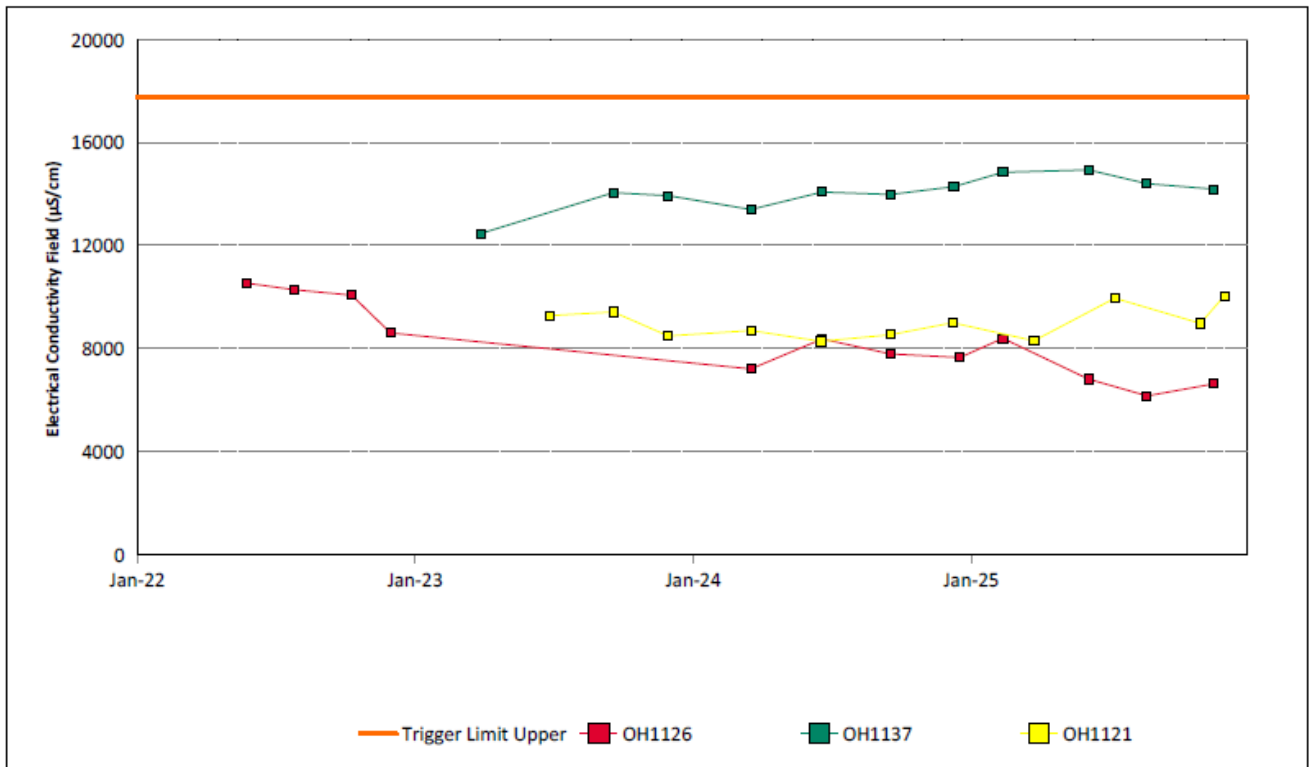


Figure 31: Vaux Seam Electrical Conductivity Field Trend – December 2025

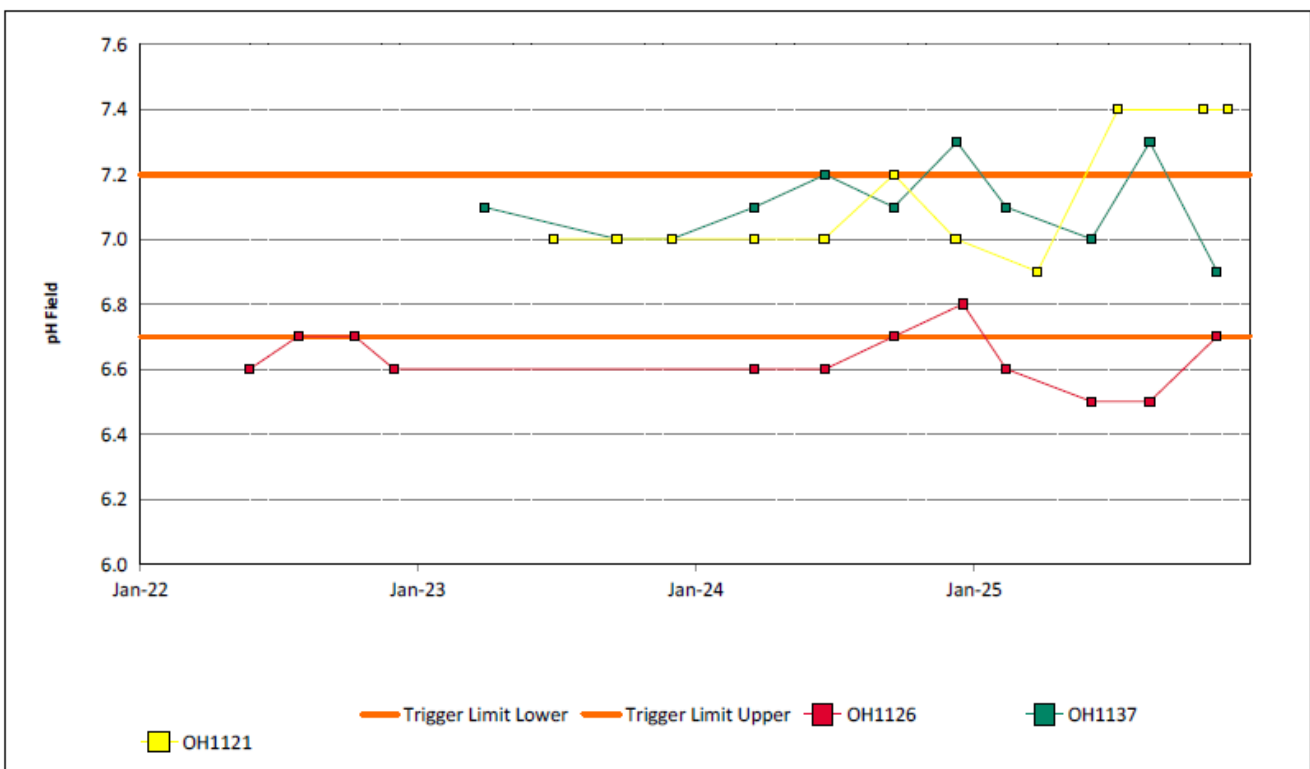


Figure 32: Vaux Seam pH Field Trend – December 2025

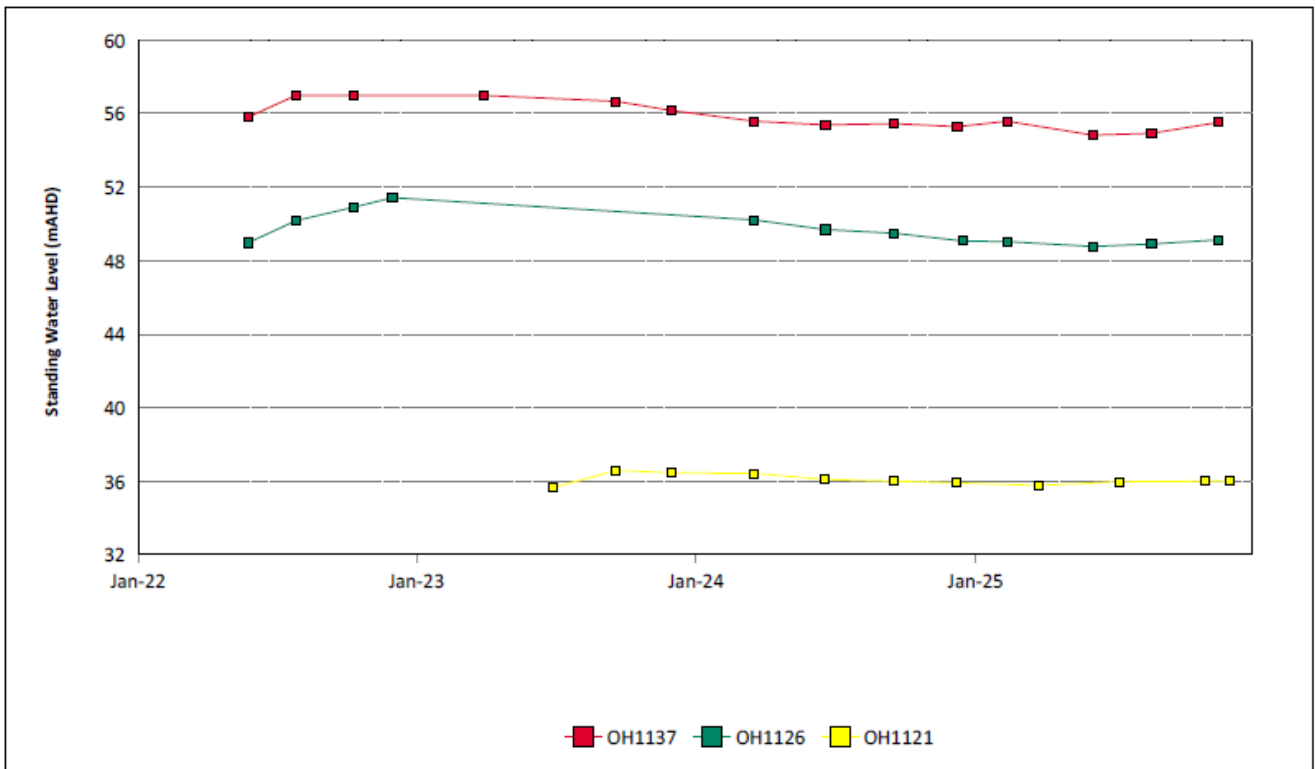


Figure 33: Vaux Seam Standing Water Level Trend – December 2025

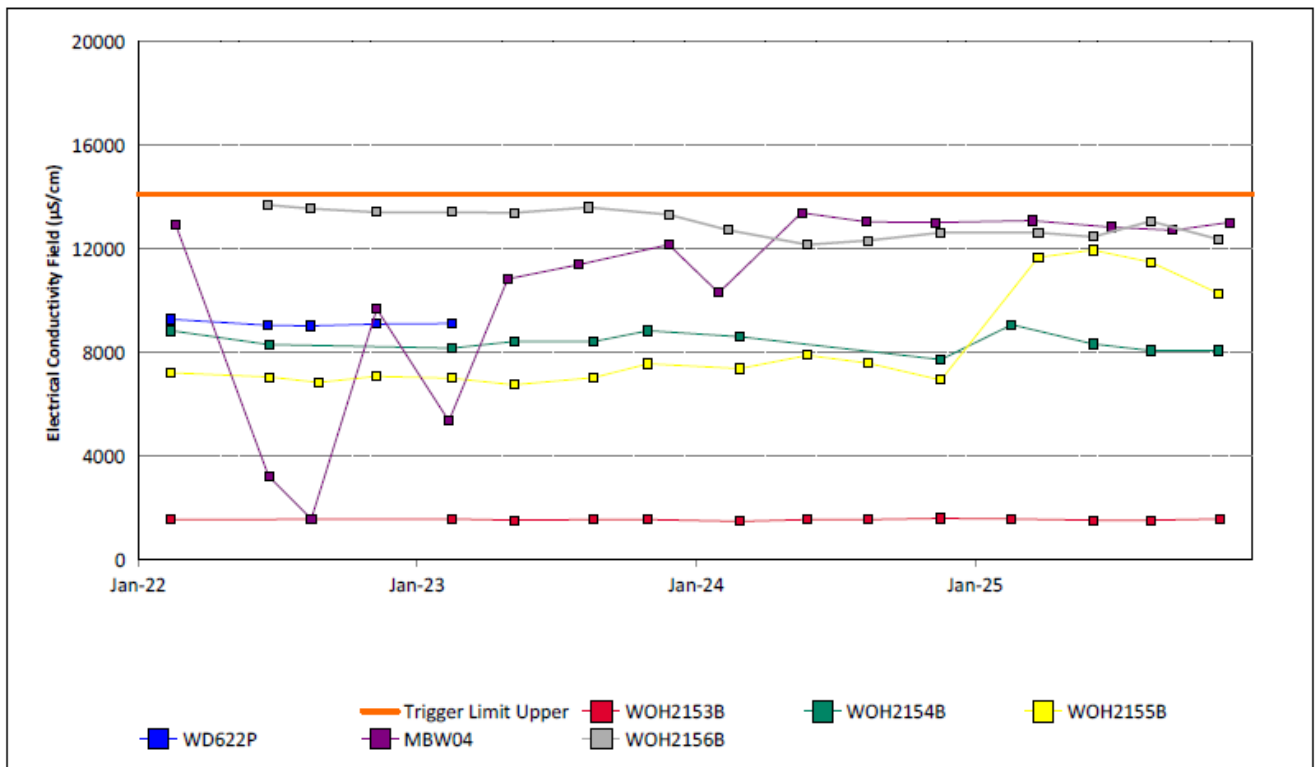


Figure 34: Wambo Seam Electrical Conductivity Field Trend – December 2025

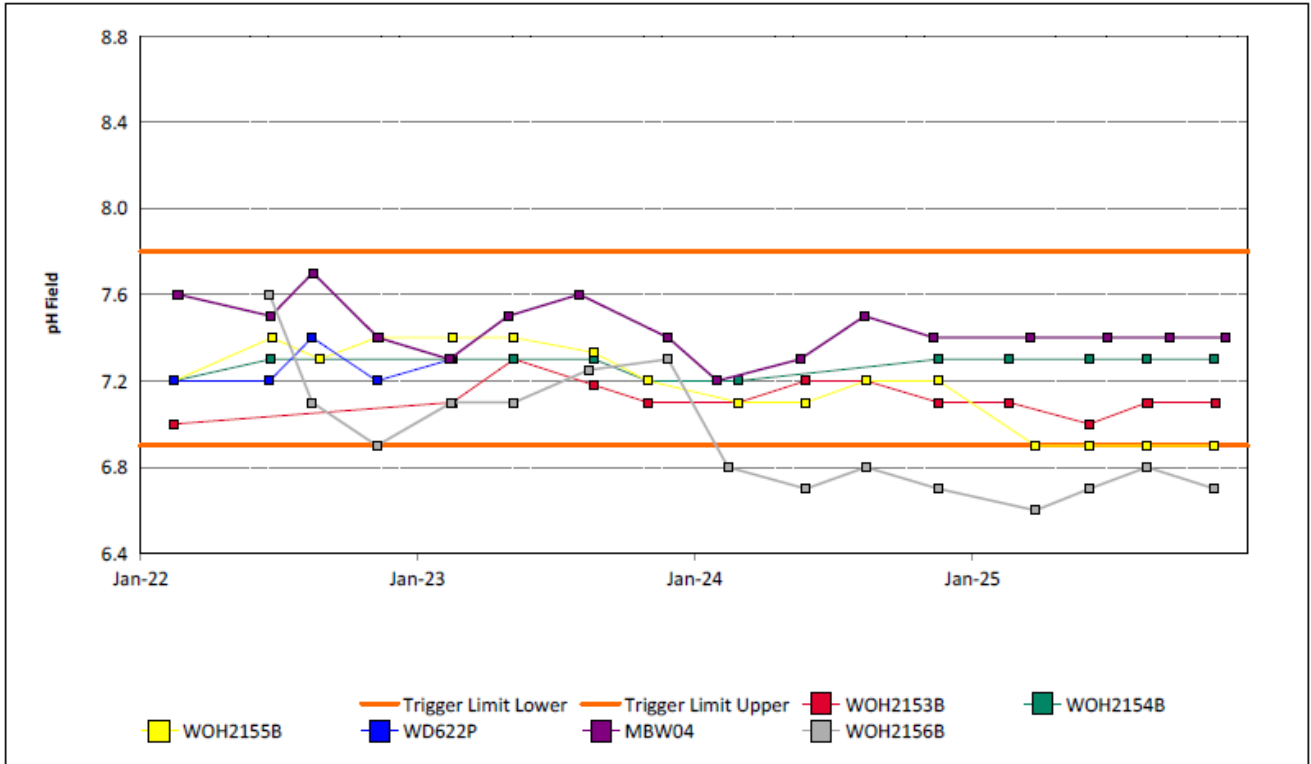


Figure 35: Wambo Seam pH Field Trend – December 2025

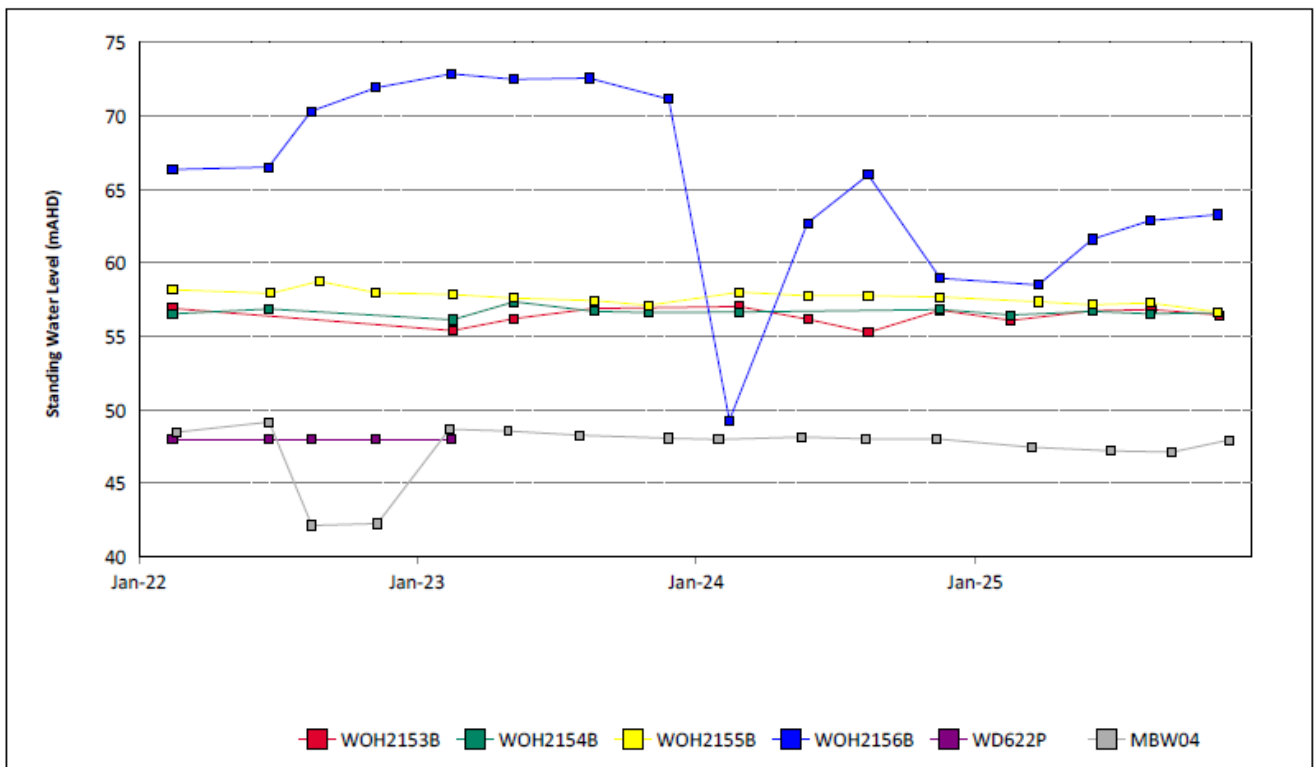


Figure 36: Wambo Seam Standing Water Level Trend – December 2025

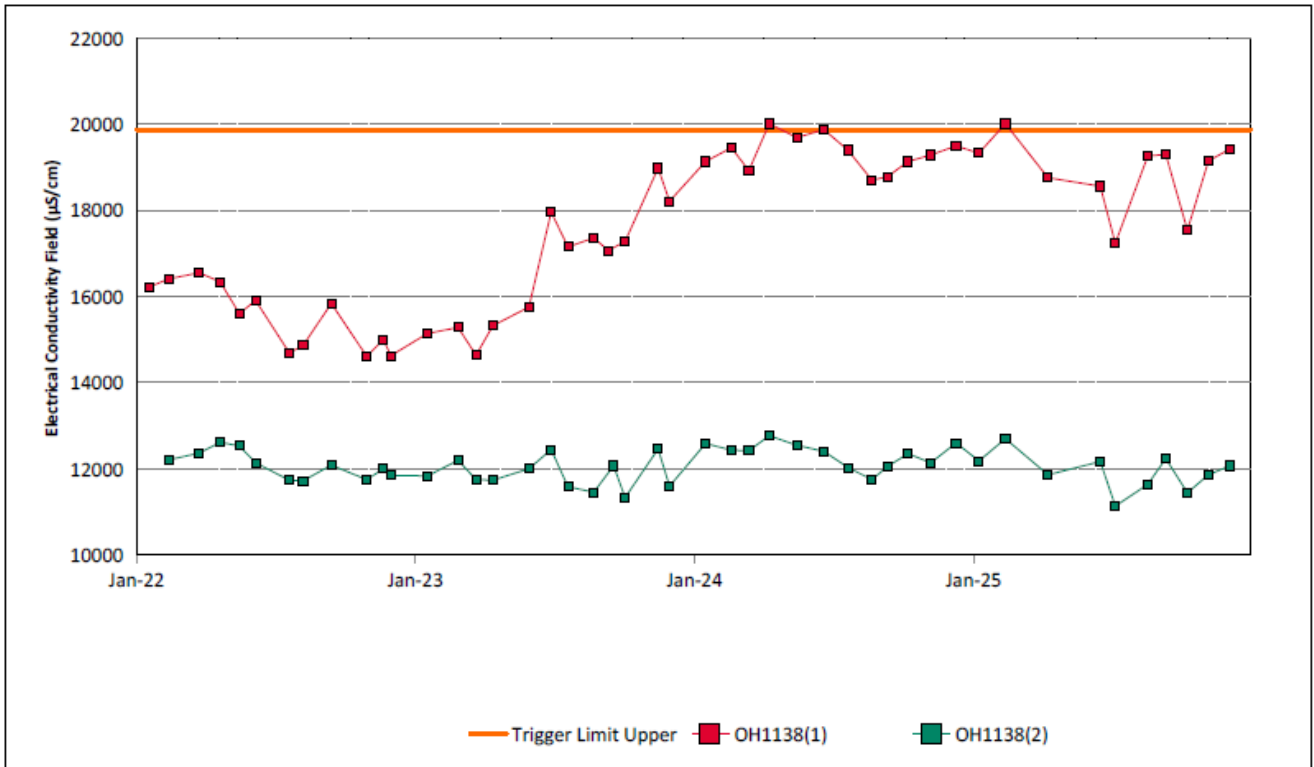


Figure 37: Warkworth Seam Electrical Conductivity Field Trend – December 2025

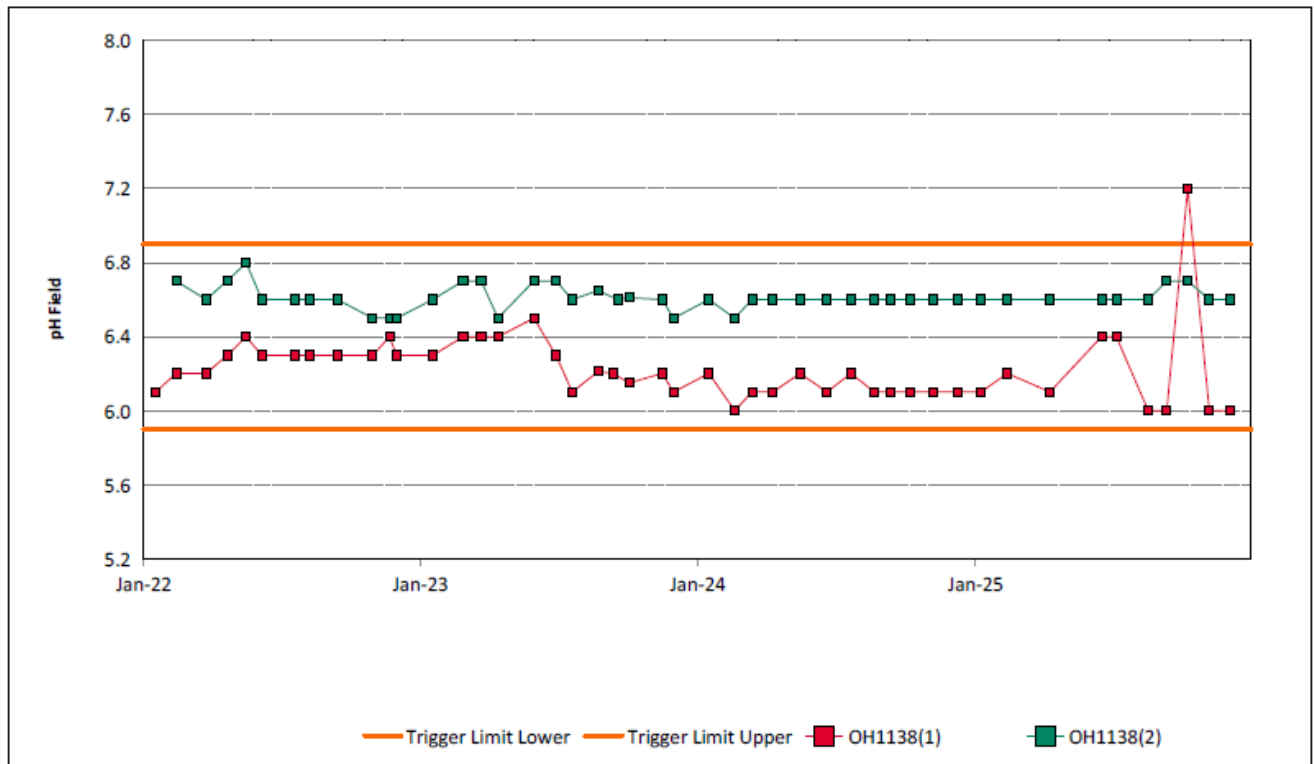


Figure 38: Warkworth Seam pH Field Trend – December 2025

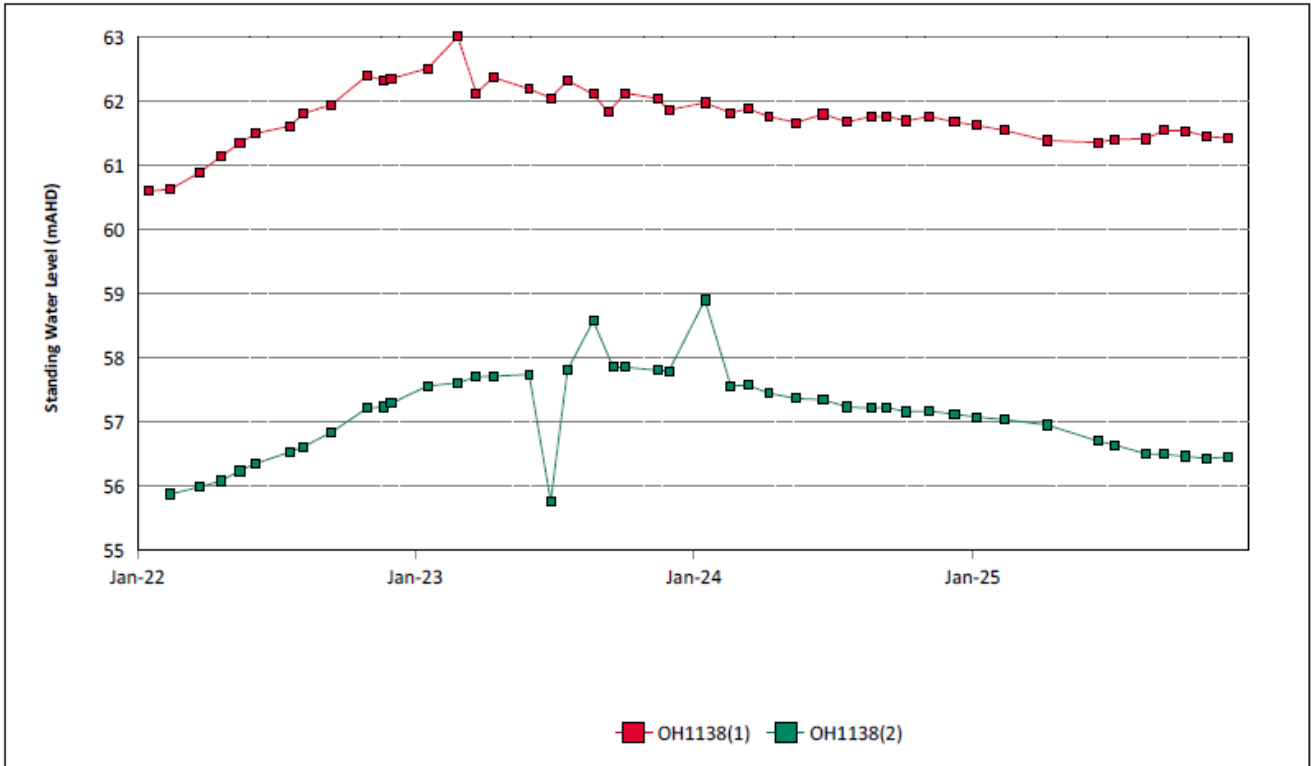


Figure 39: Warkworth Seam Standing Water Level Trend – December 2025

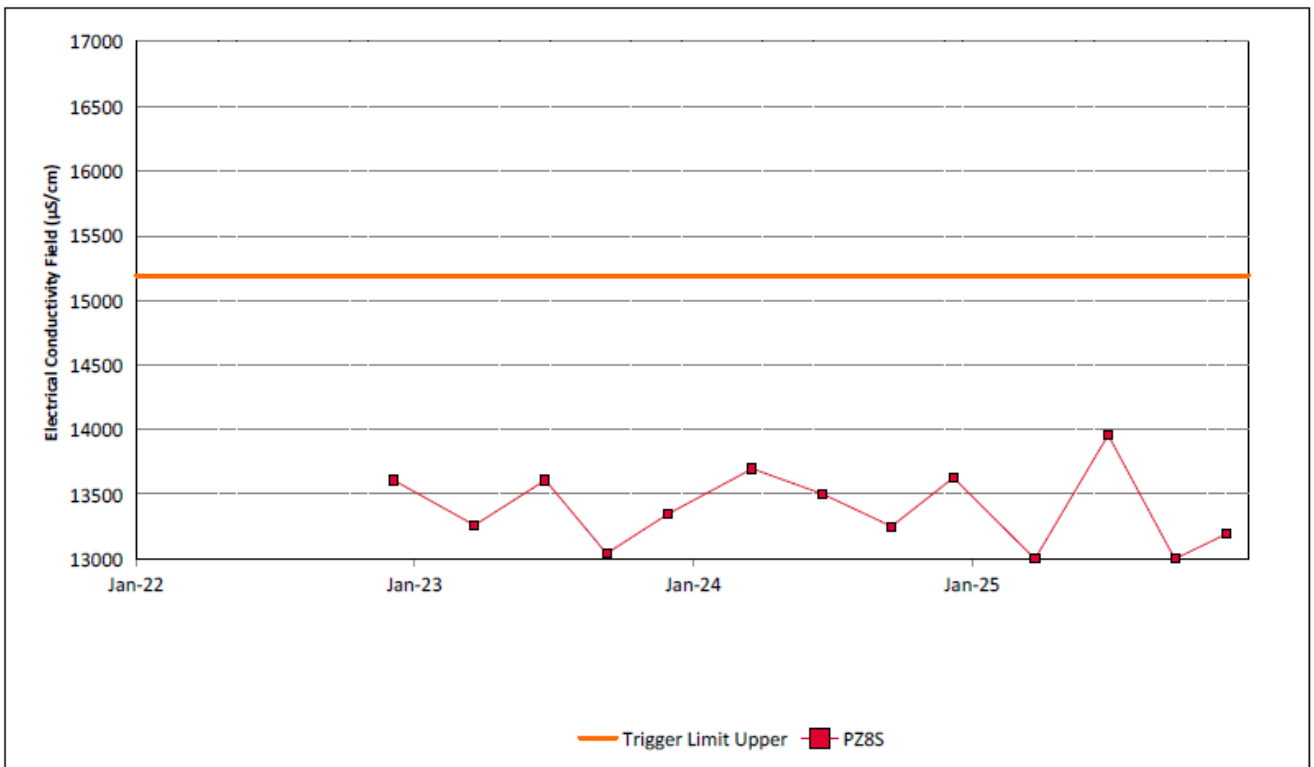


Figure 40: Wollombi Alluvium 1 Electrical Conductivity Field Trend – December 2025

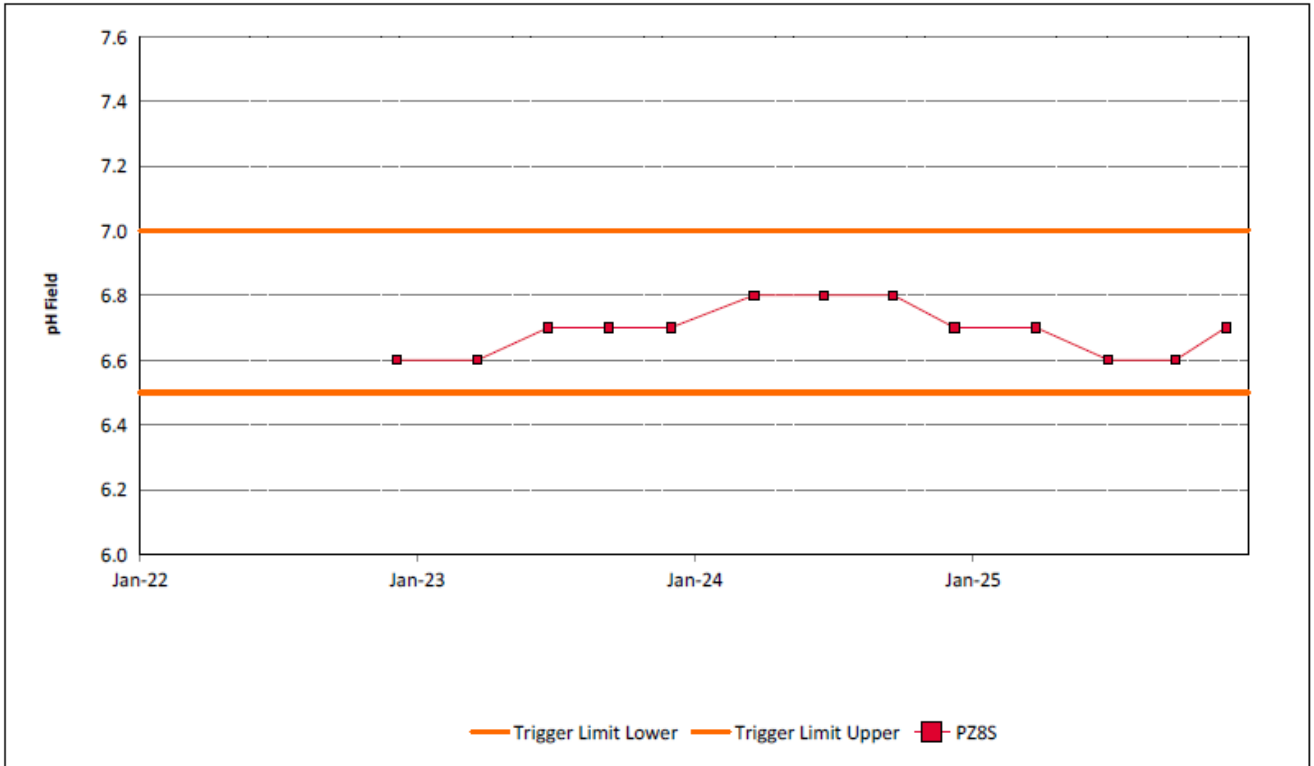


Figure 41: Wollombi Alluvium 1 pH Field Trend – December 2025

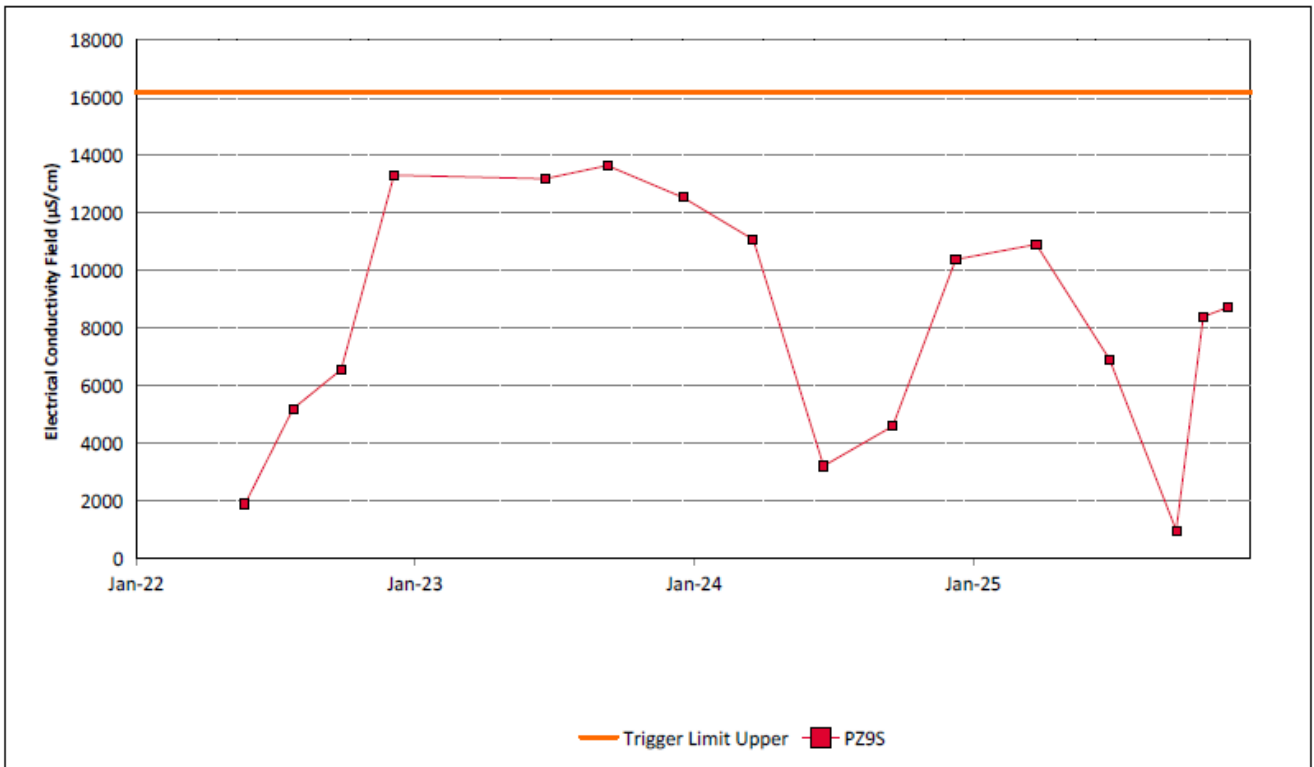


Figure 42: Wollombi Alluvium 2 Electrical Conductivity Field Trend – December 2025

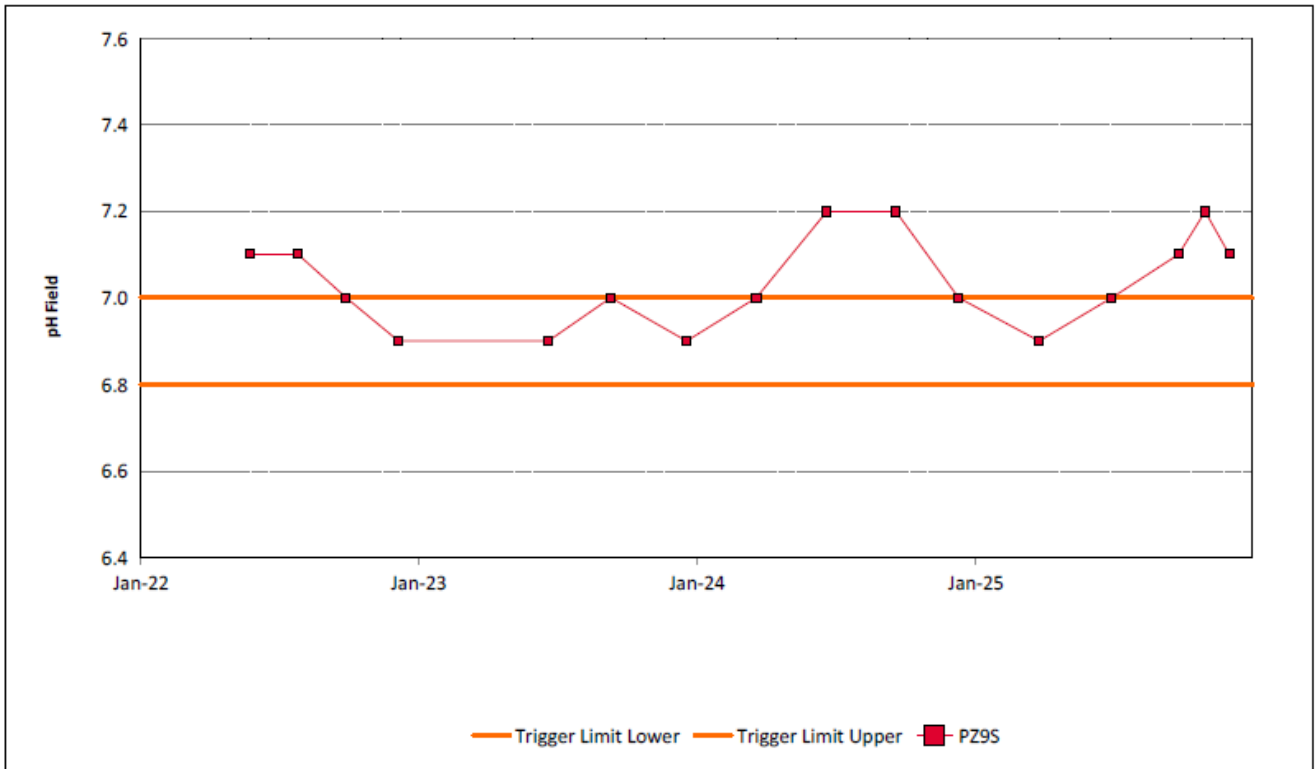


Figure 43: Wollombi Alluvium 2 pH Field Trend – December 2025

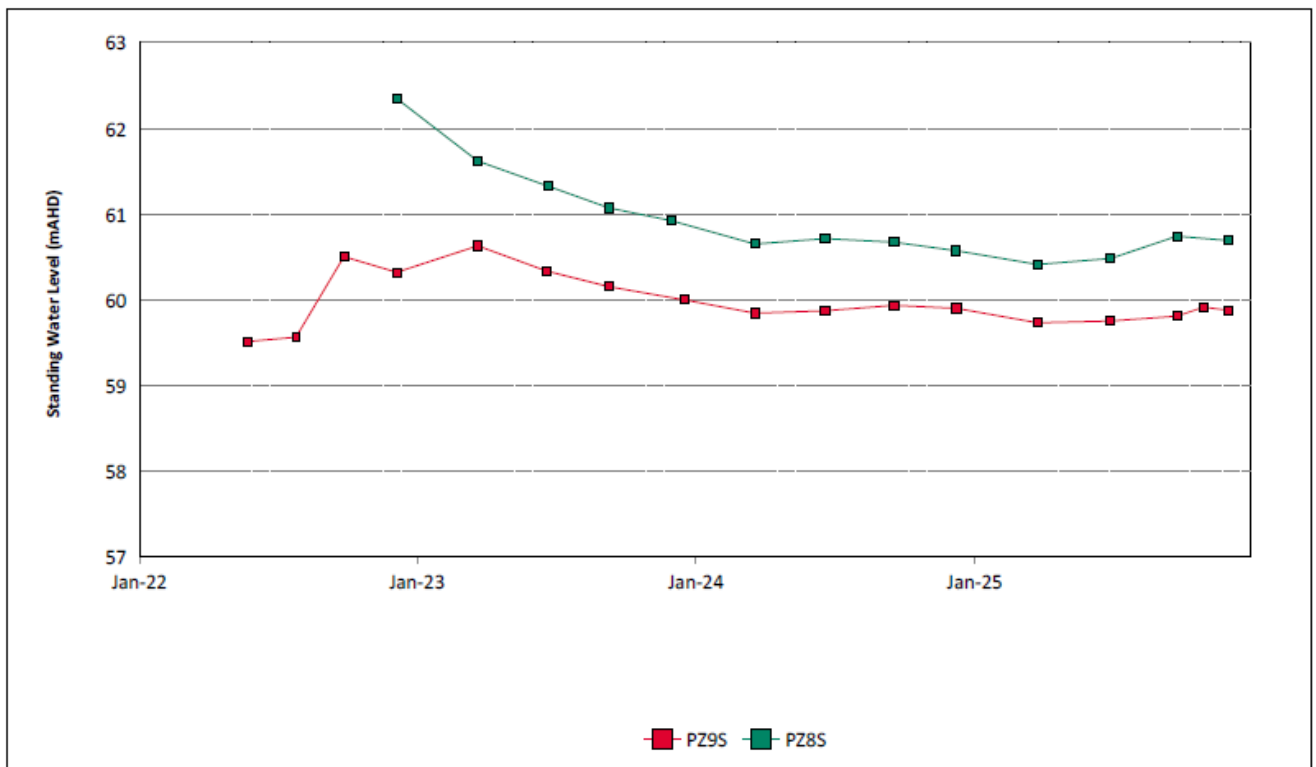


Figure 44: Wollombi Alluvium Standing Water Level Trend – December 2025

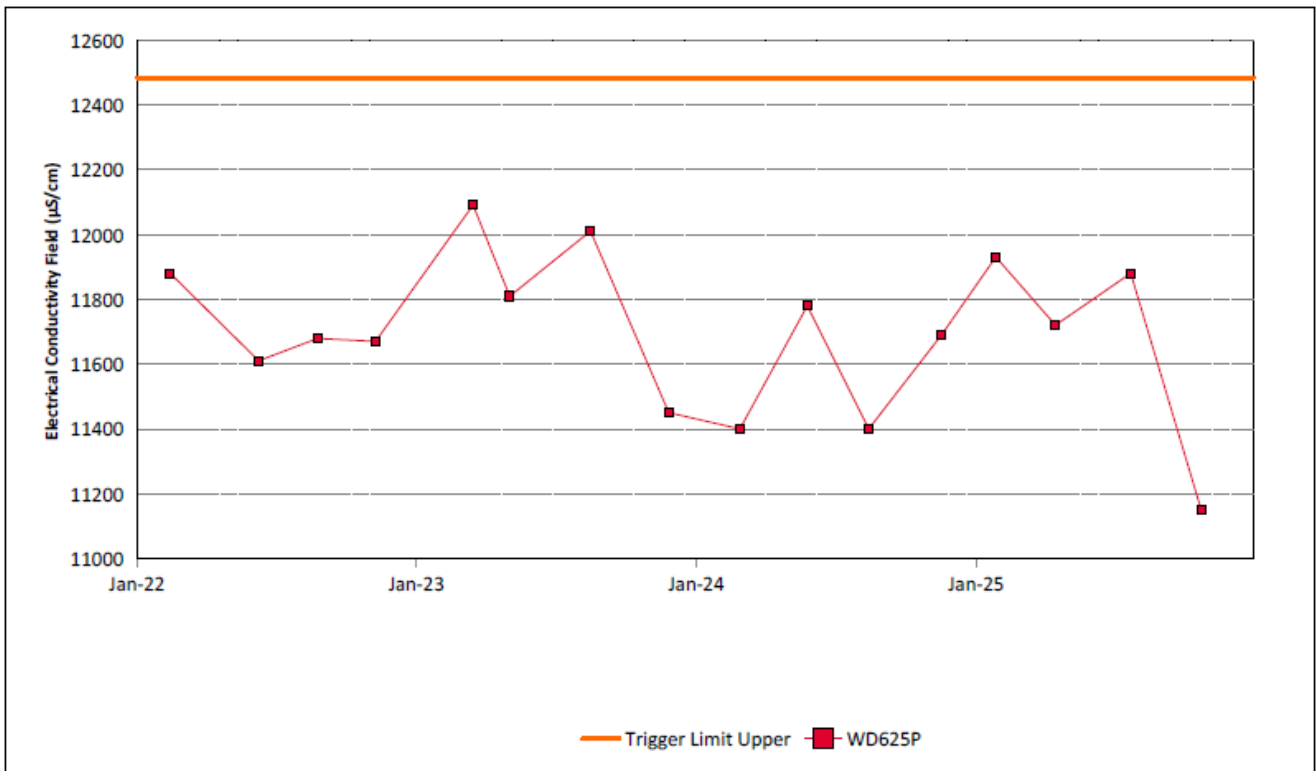


Figure 45: Woodlands Hill Seam Electrical Conductivity Field Trend – December 2025

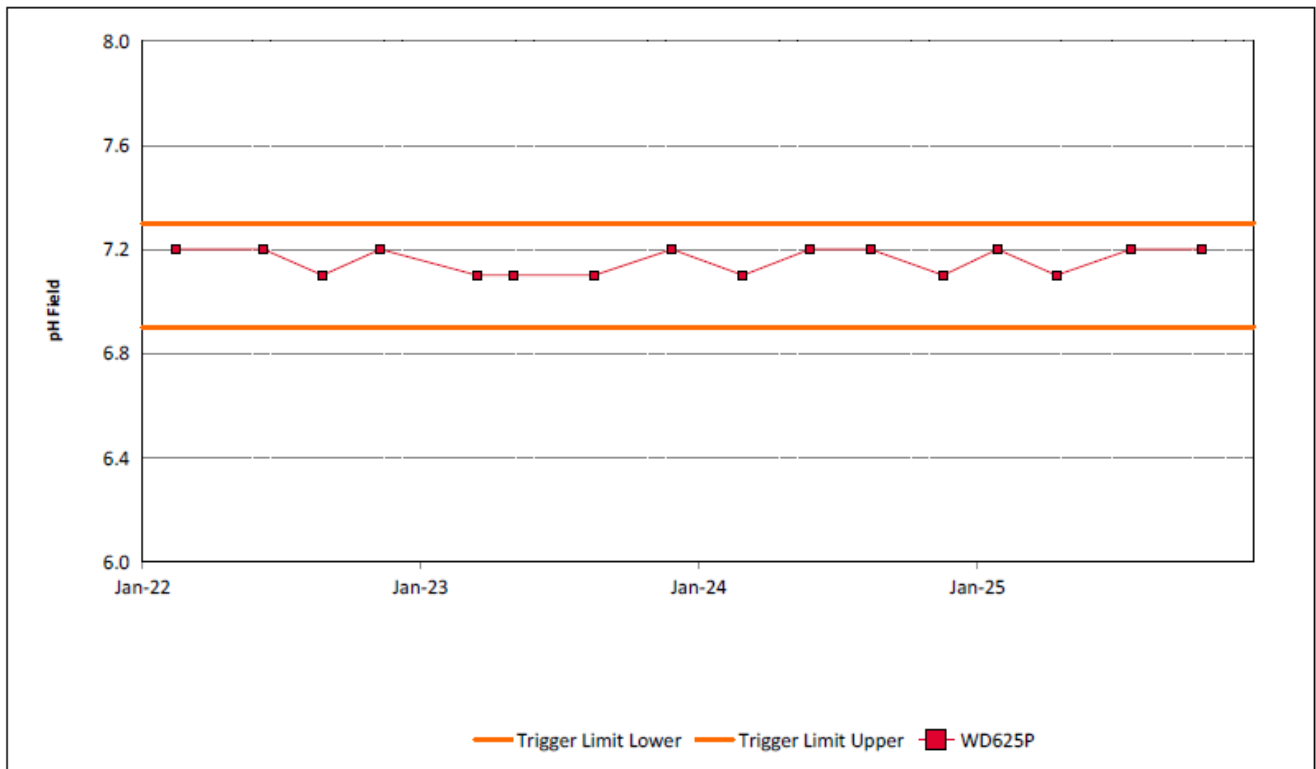


Figure 46: Woodlands Hill Seam pH Field Trend – December 2025

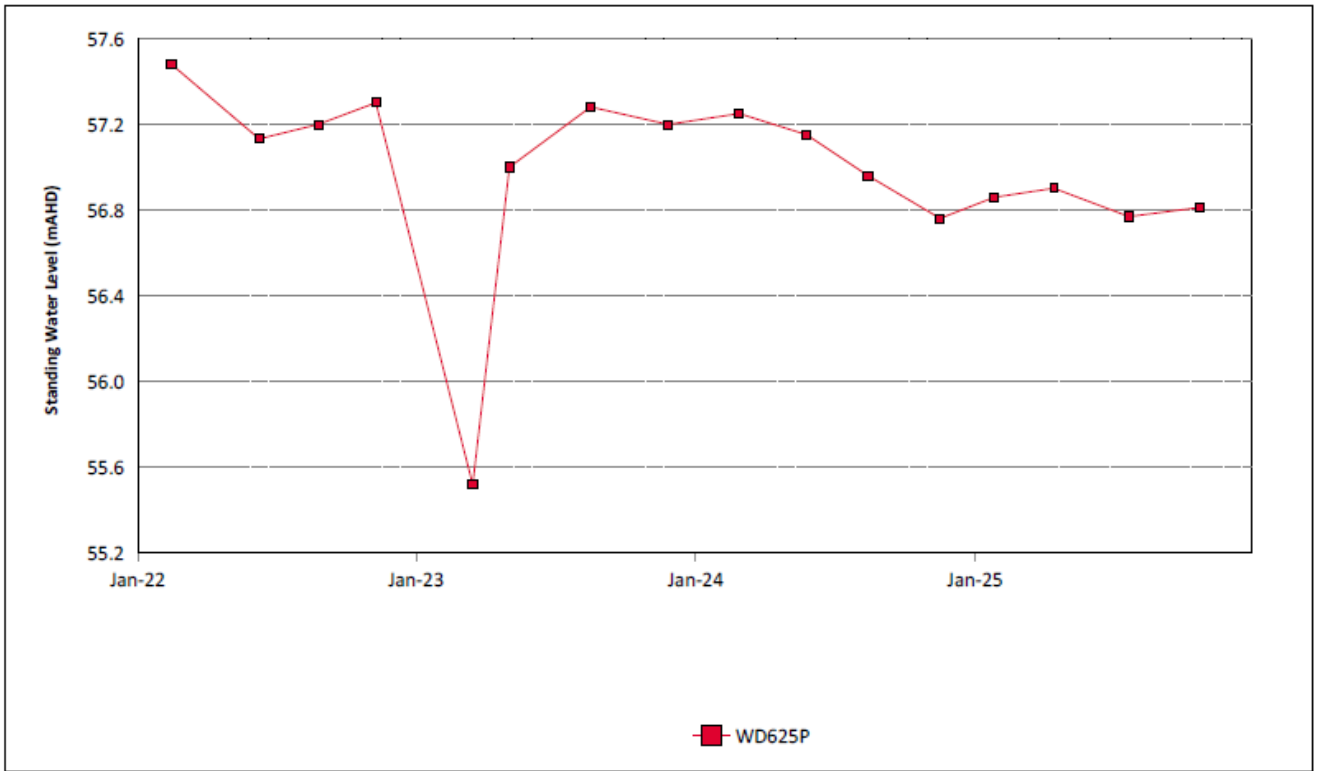


Figure 47: Woodlands Hill Seam Standing Water Level Trend - December 2025

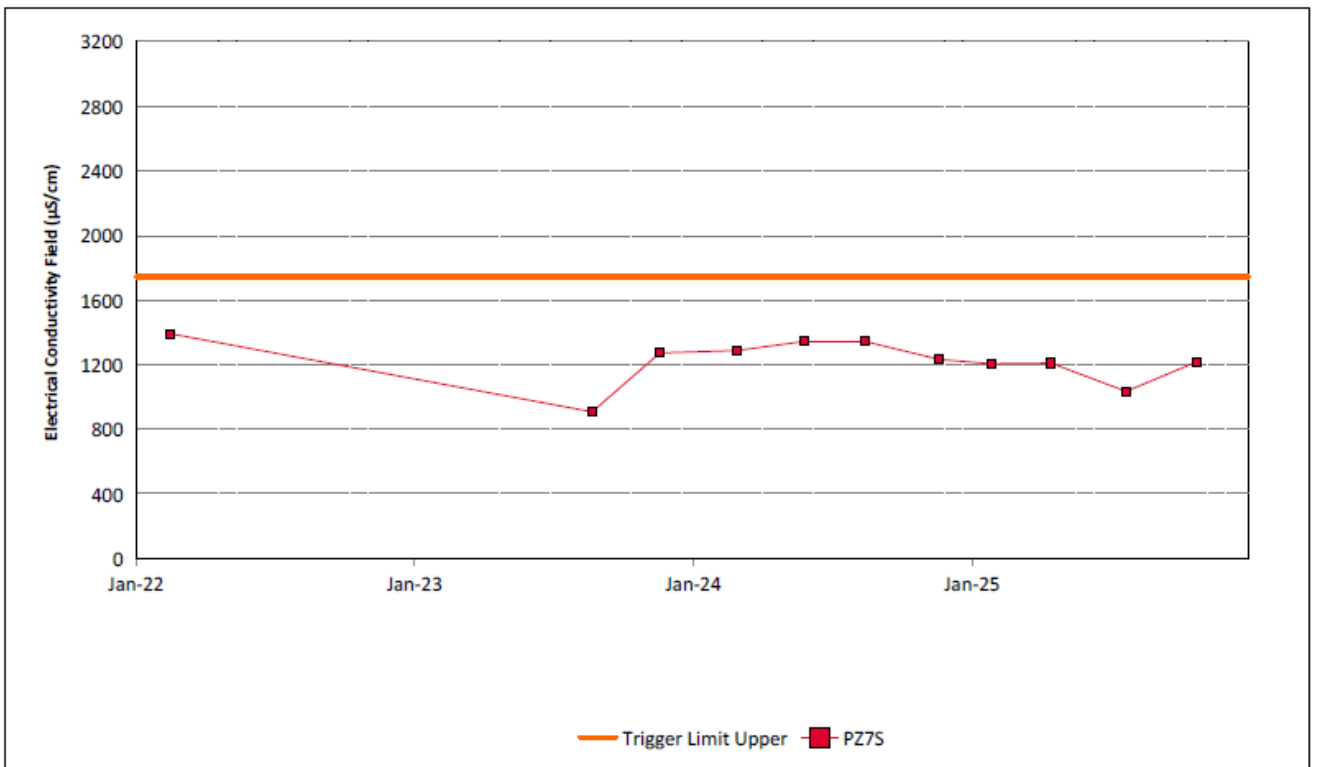


Figure 48: Aeolian Warkworth Sands Electrical Conductivity Field Trend – December 2025

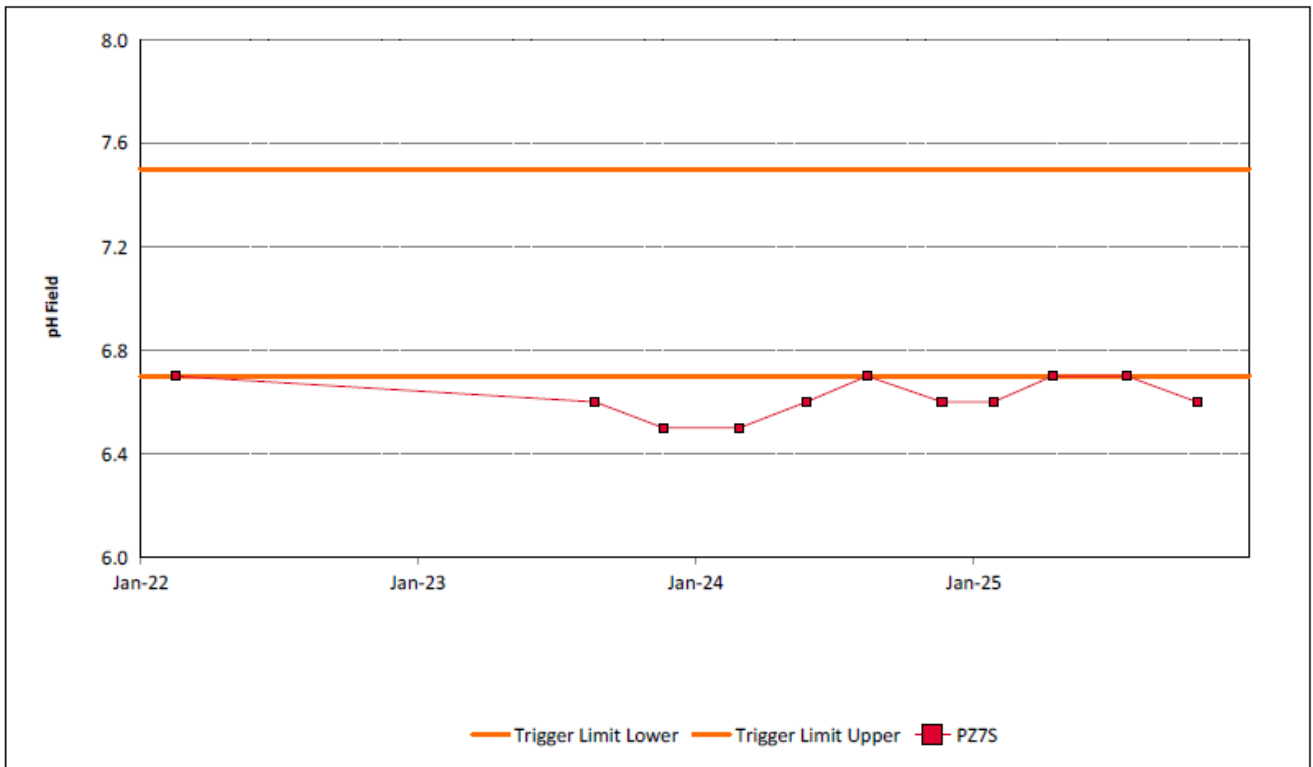


Figure 49: Aeolian Warkworth Sands pH Field Trend - December 2025

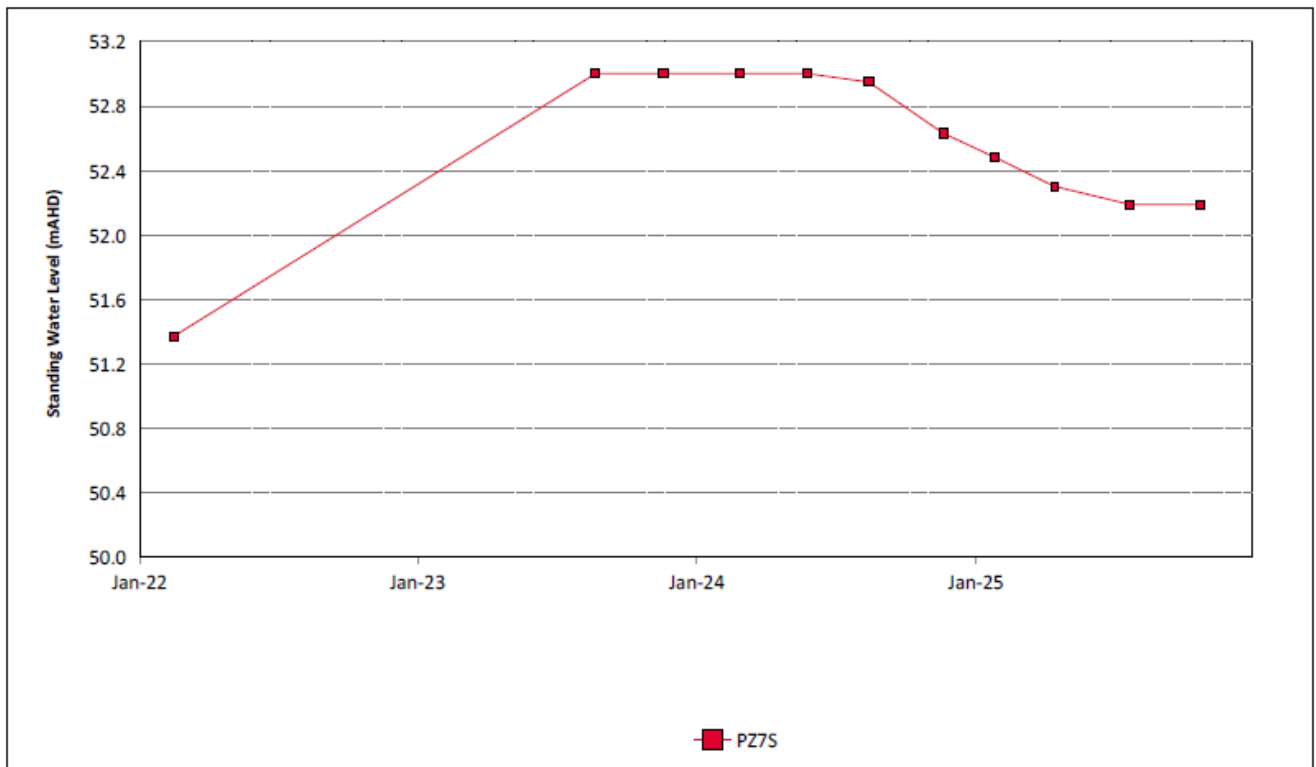


Figure 50: Aeolian Warkworth Sands Standing Water Level Trend – December 2025

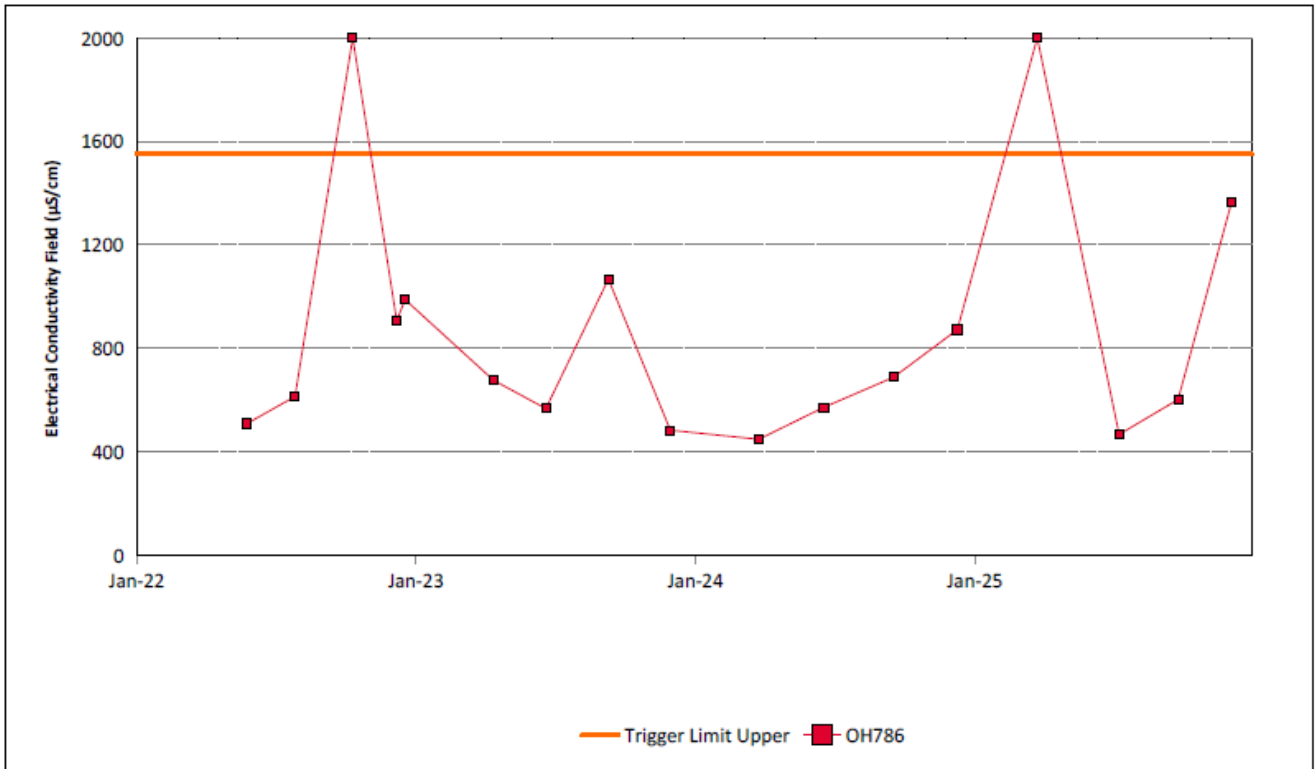


Figure 51: Hunter River Alluvium 1 Electrical Conductivity Field Trend – December 2025

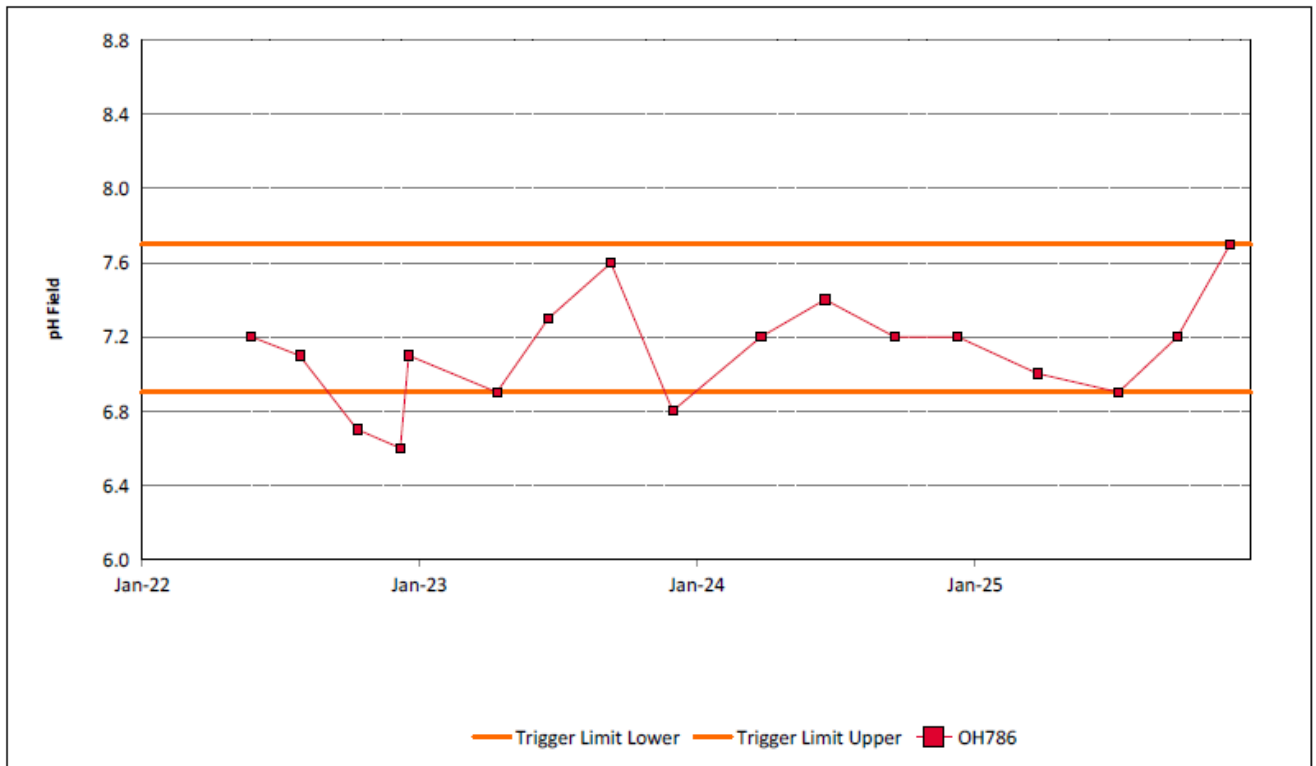


Figure 52: Hunter River Alluvium 1 pH Field Trend – December 2025

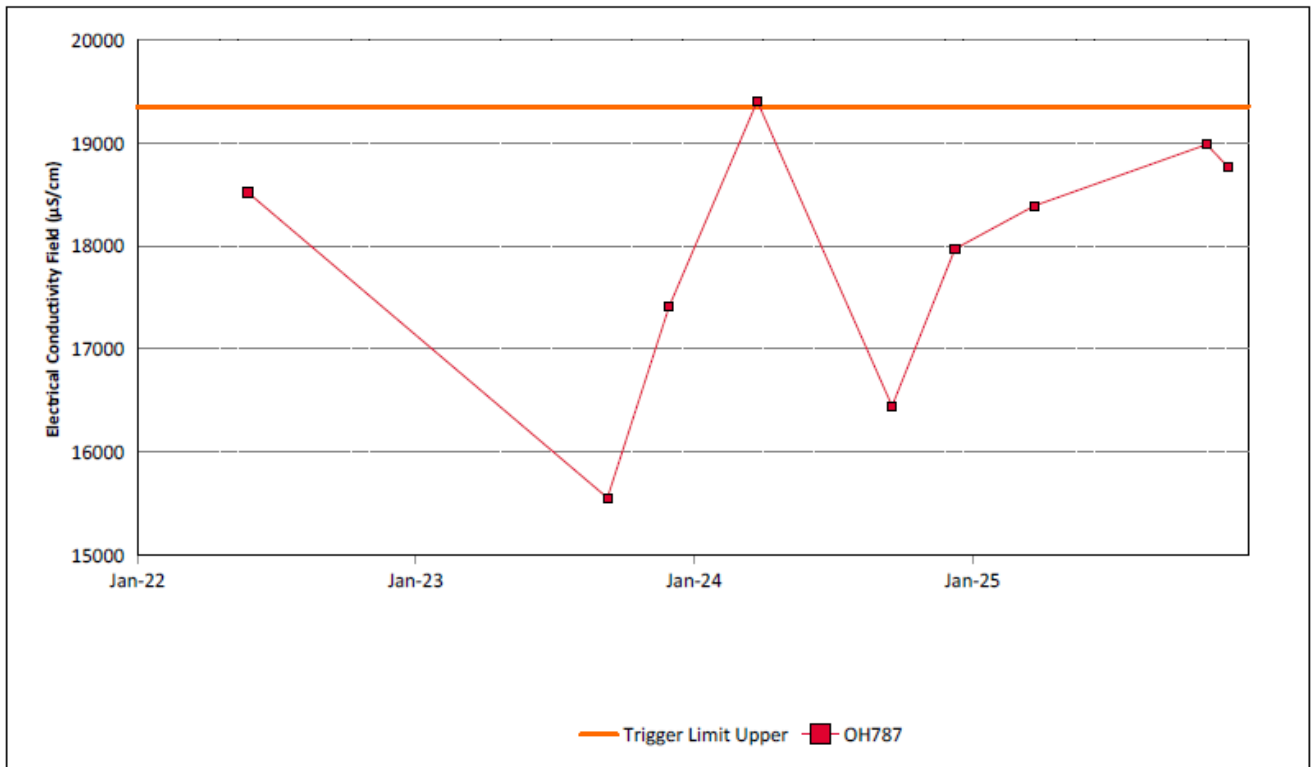


Figure 53: Hunter River Alluvium 2 Electrical Conductivity Field Trend - December 2025

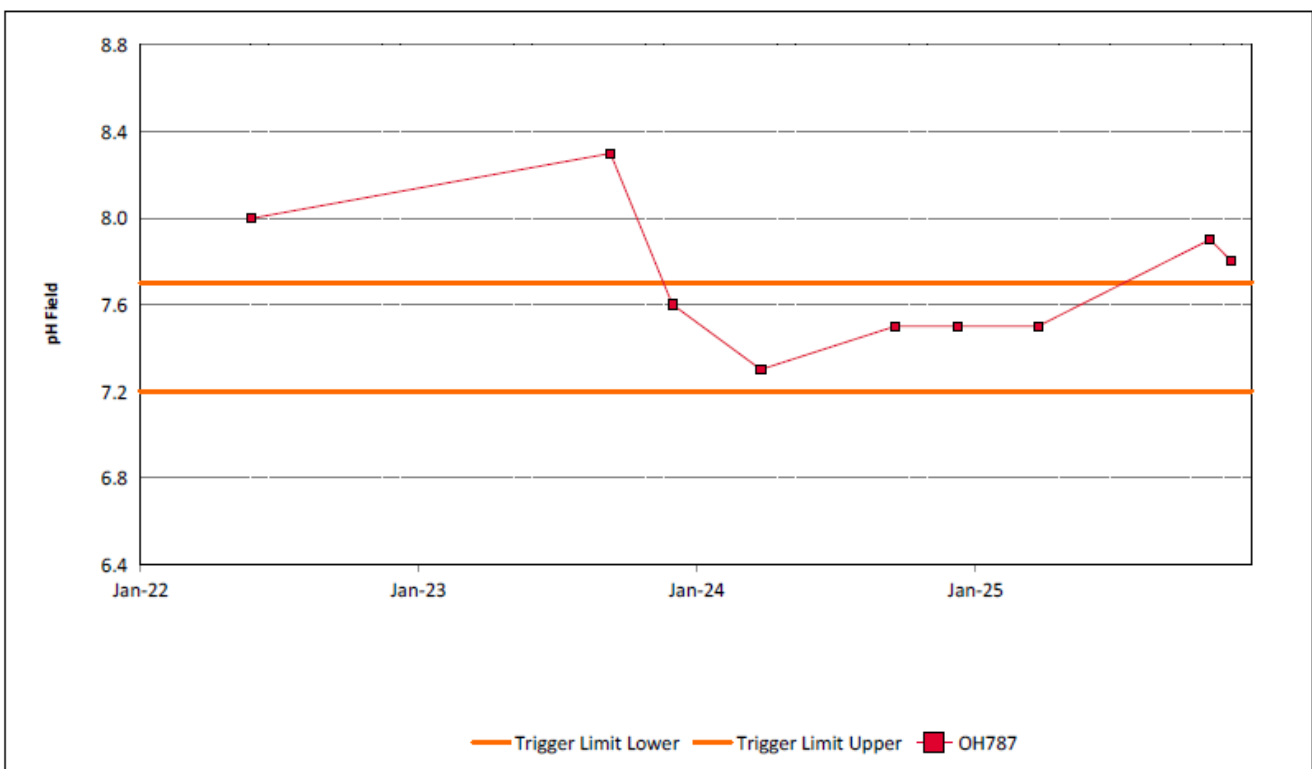


Figure 54: Hunter River Alluvium 2 pH Field Trend – December 2025

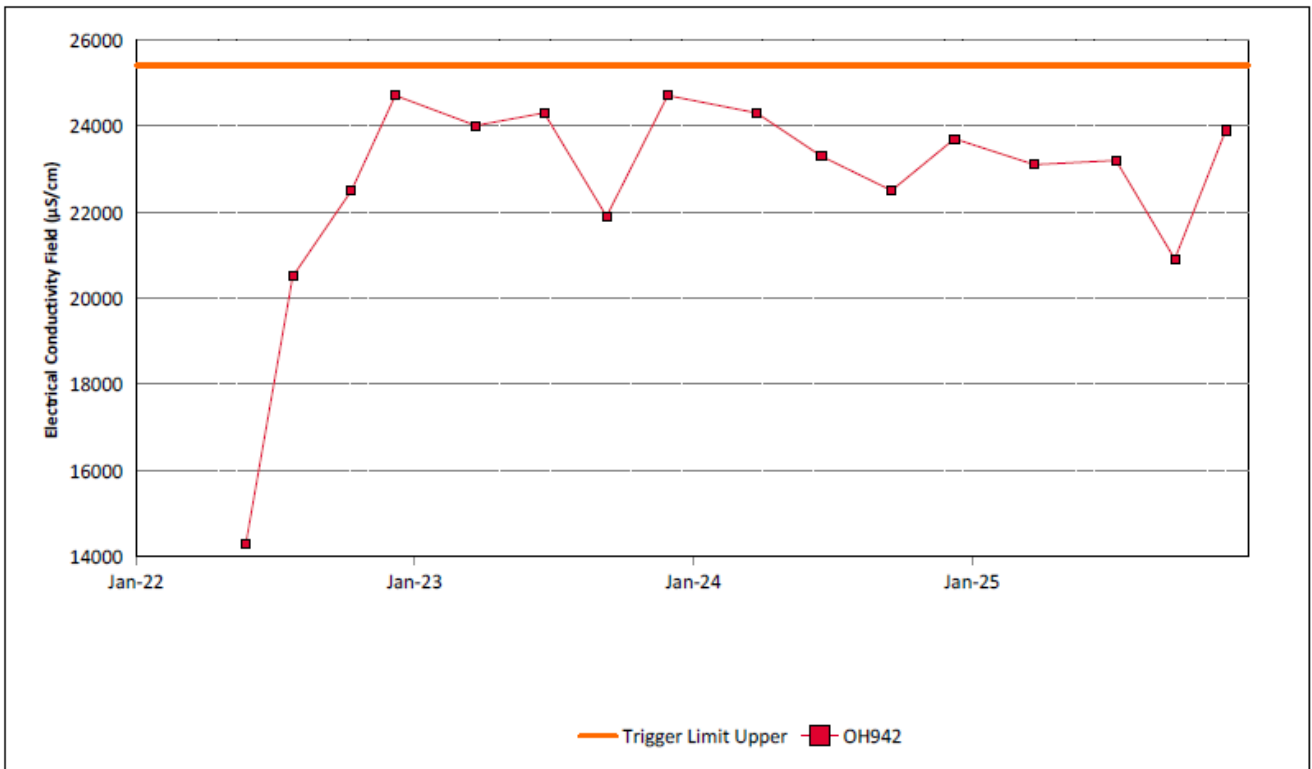


Figure 55: Hunter River Alluvium 3 Electrical Conductivity Field Trend – December 2025

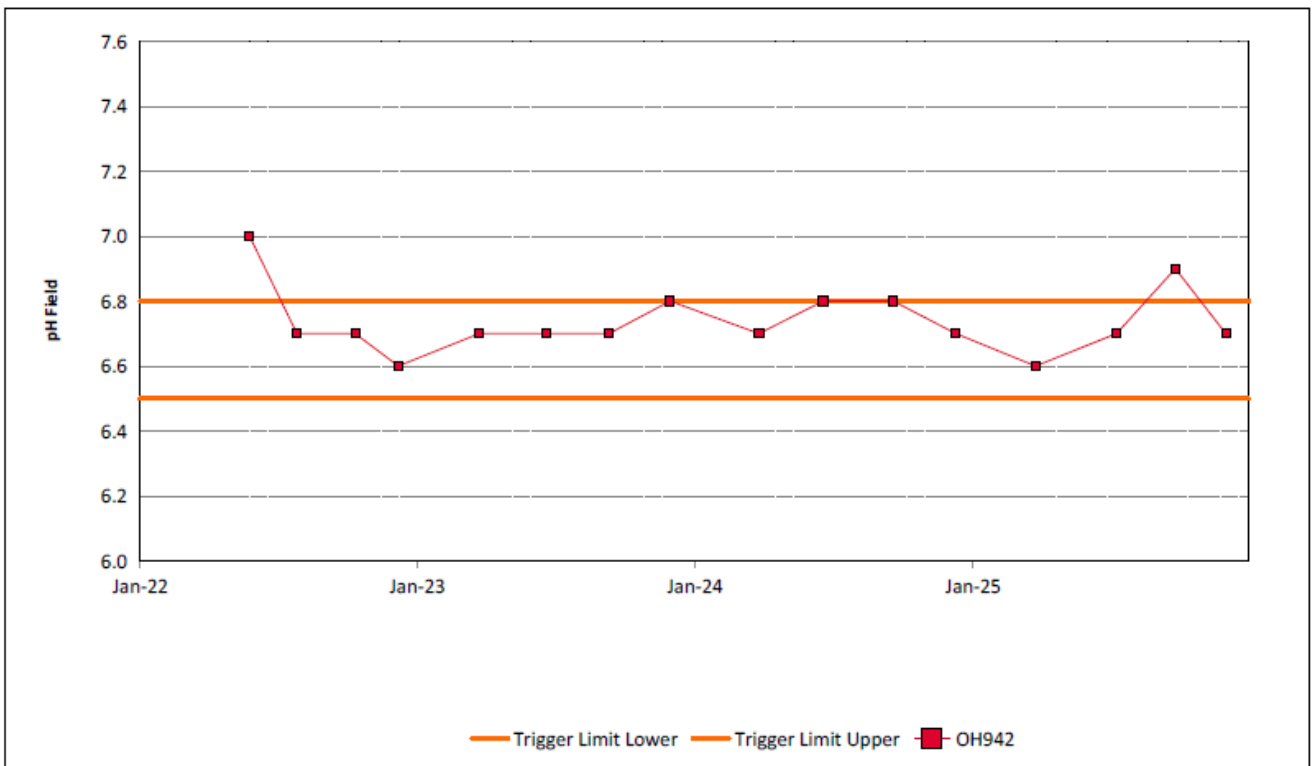


Figure 56: Hunter River Alluvium 3 pH Field Trend – December 2025

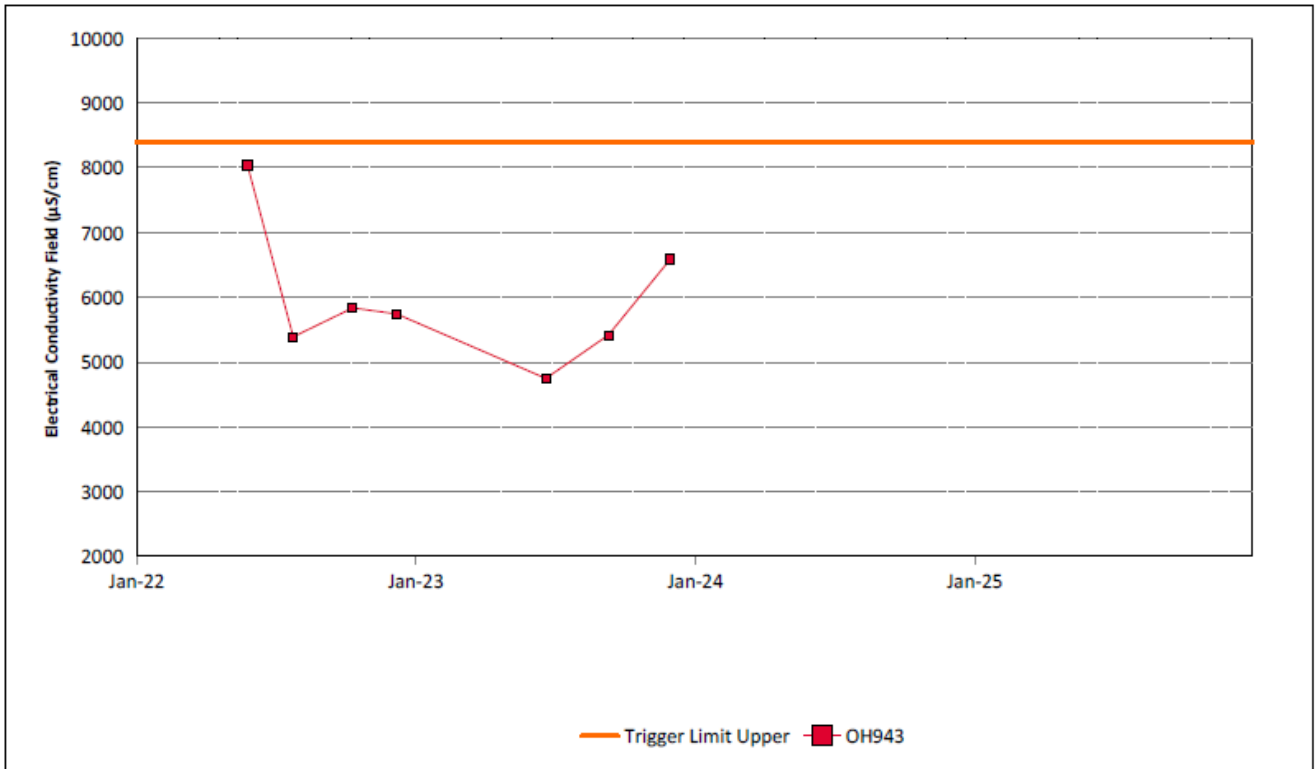


Figure 57: Hunter River Alluvium 4 Electrical Conductivity Field Trend – December 2025

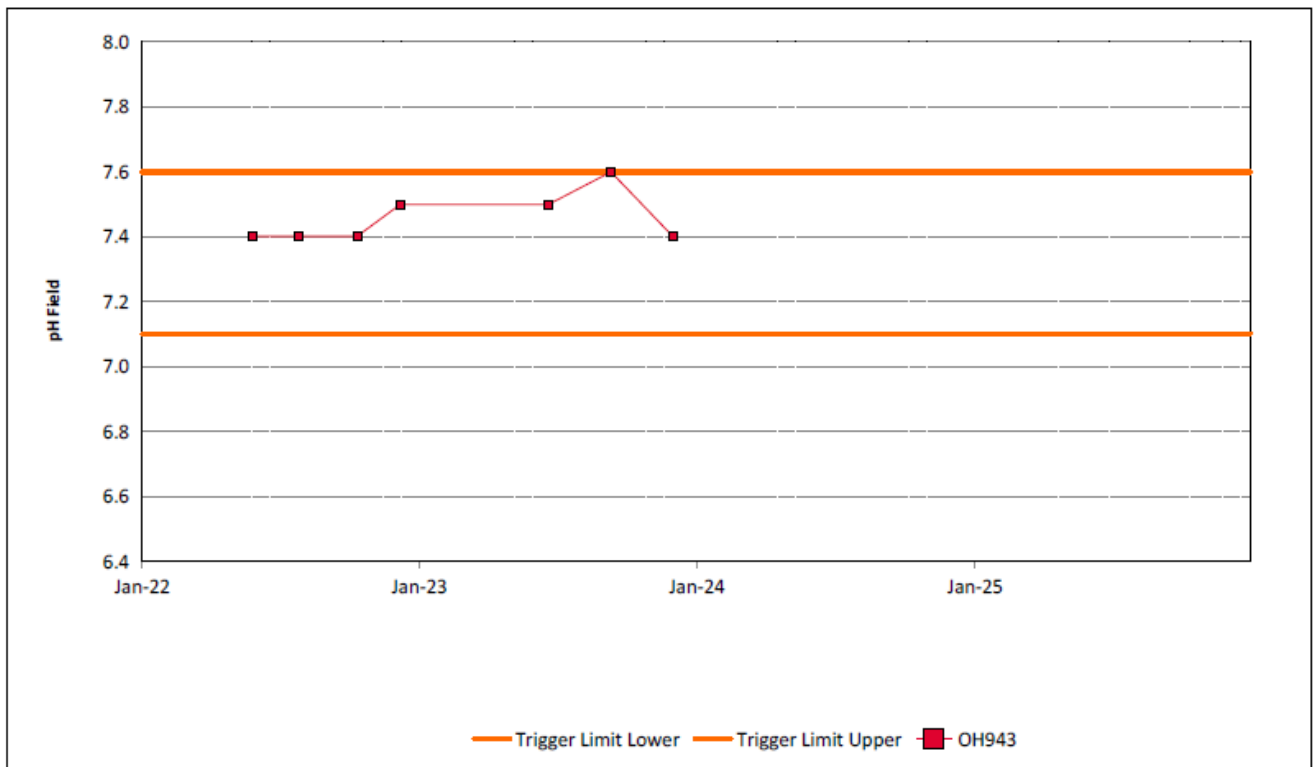


Figure 58: Hunter River Alluvium 4 pH Field Trend – December 2025

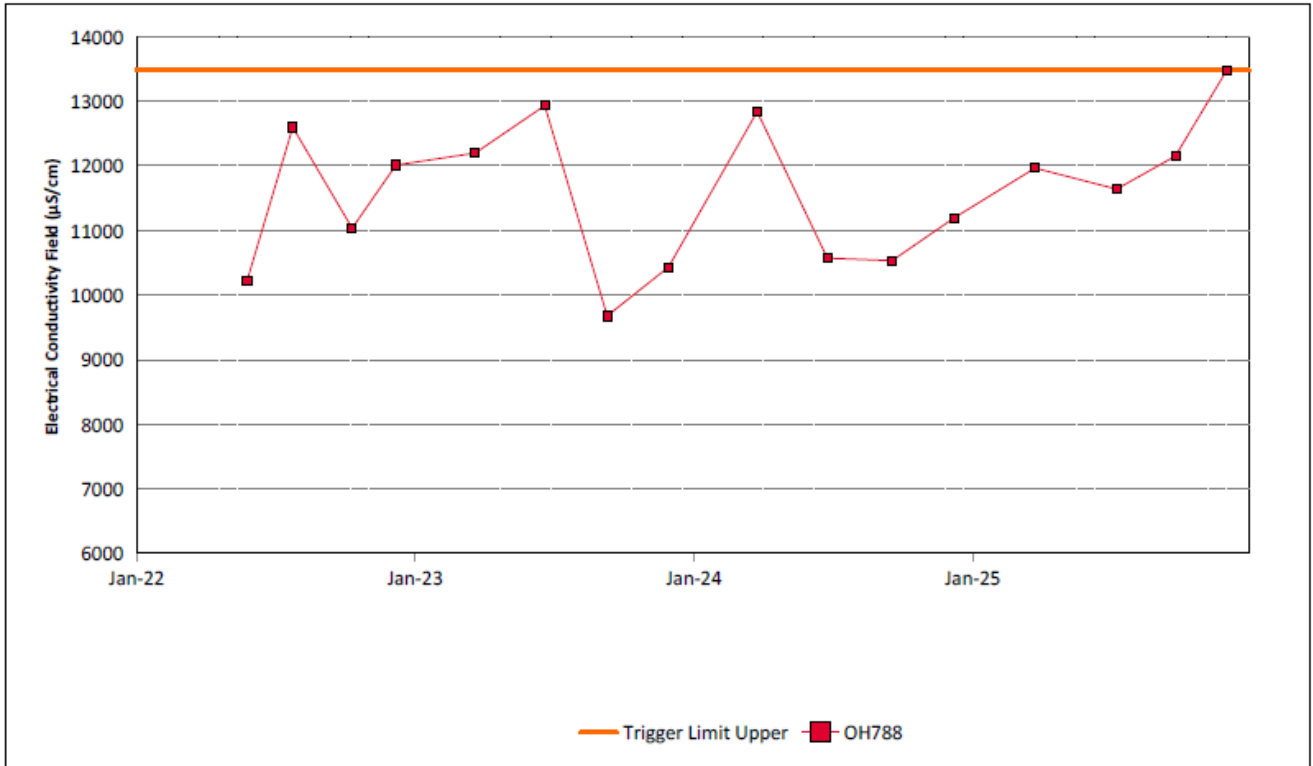


Figure 59: Hunter River Alluvium 5 Electrical Conductivity Field Trend – December 2025

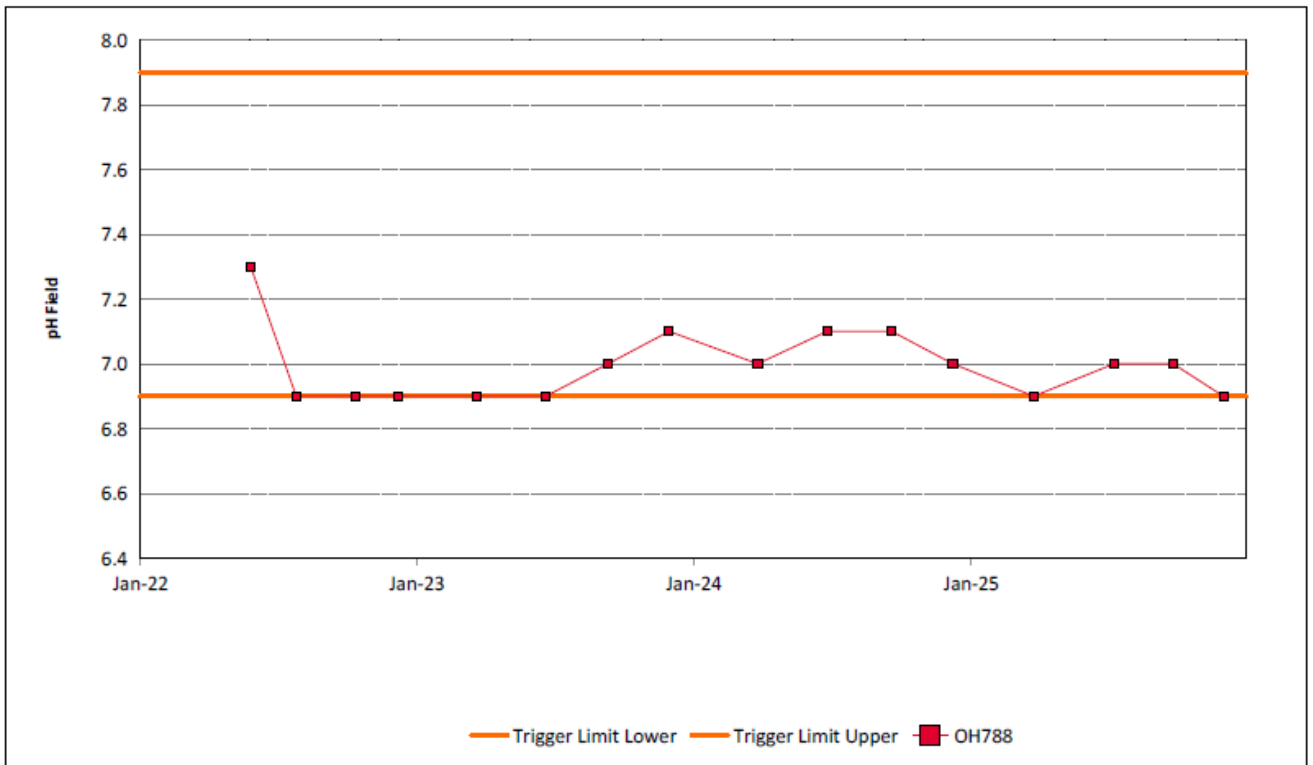


Figure 60: Hunter River Alluvium 5 pH Field Trend – December 2025

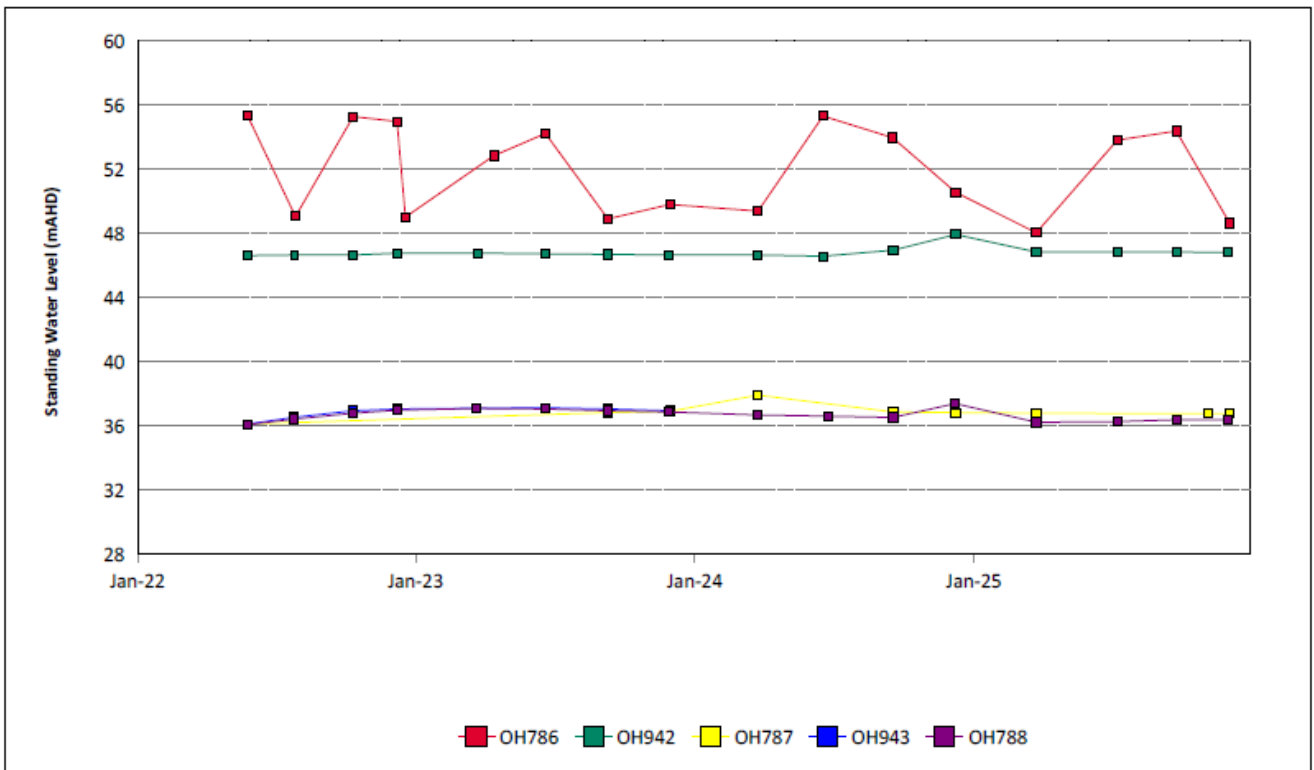


Figure 61: Hunter River Alluvium Standing Water Level Trend – December 2025

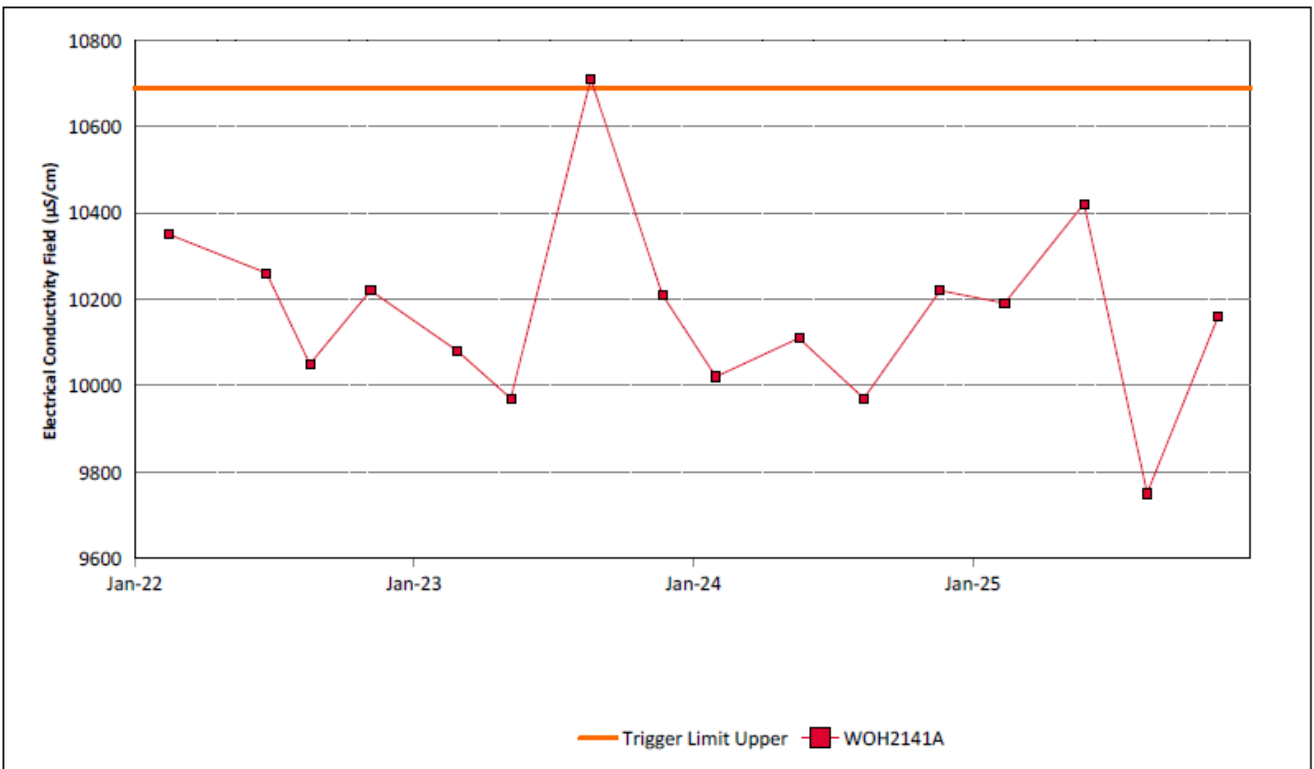


Figure 62: Whynot Seam Electrical Conductivity Field Trend – December 2025

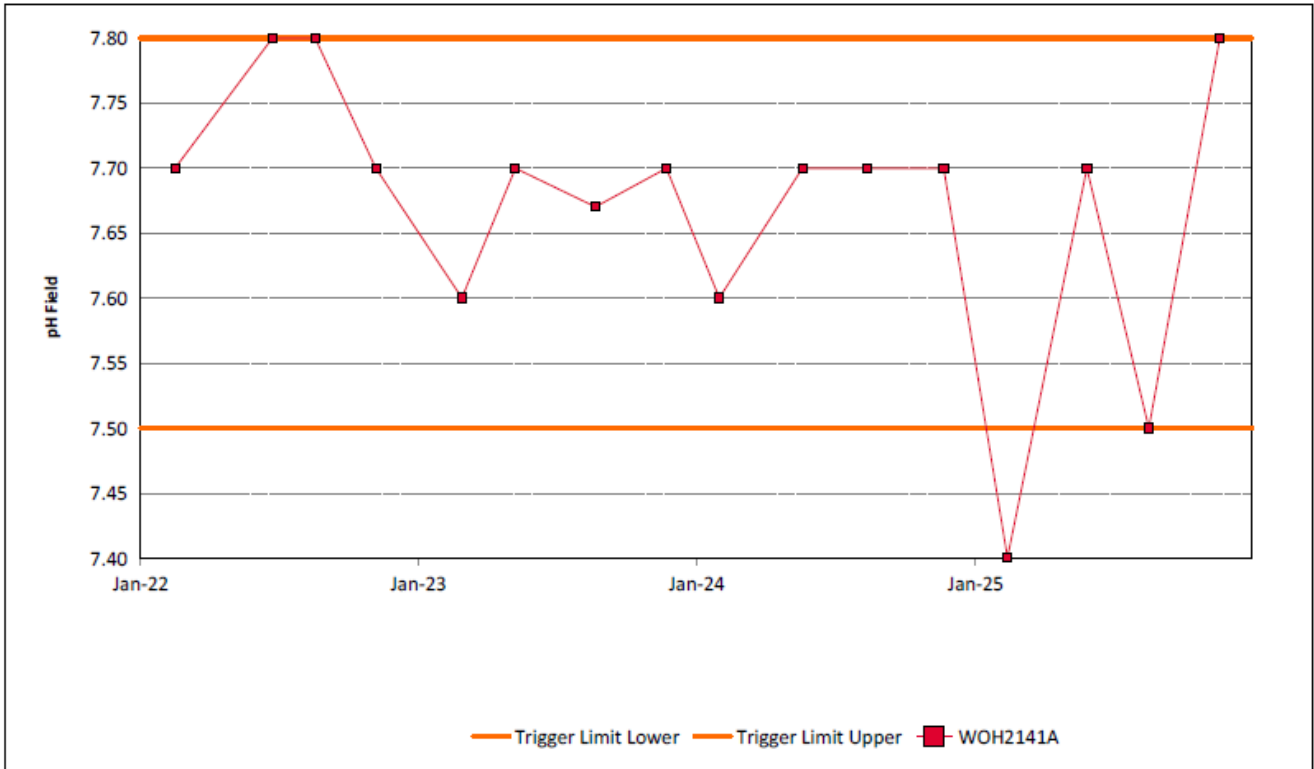


Figure 63: Whynot Seam pH Field Trend – December 2025

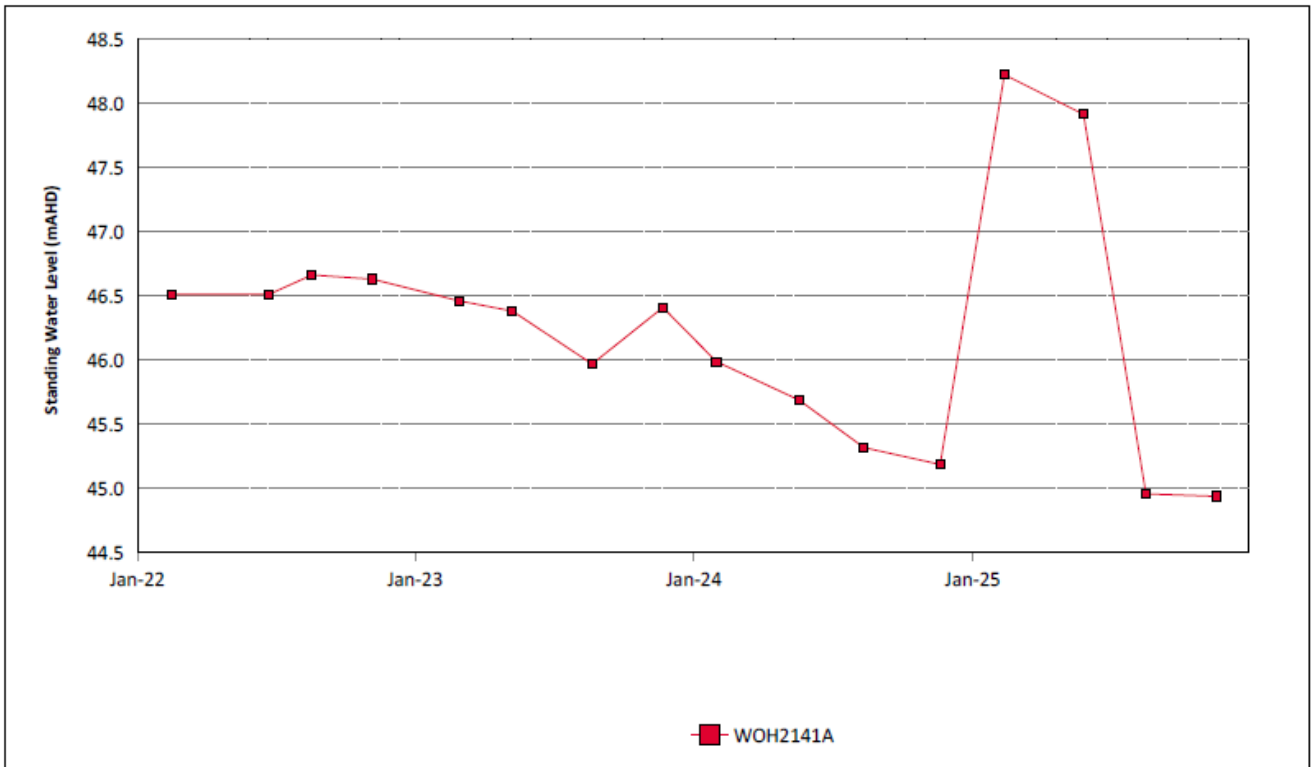


Figure 64: Whynot Seam Standing Water Level Trend – December 2025

### 3.3.1 Groundwater Trigger Tracking

Internal trigger limits have been developed to assess monitoring data on an on-going basis, and to highlight potentially adverse groundwater impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the MTW Water Management Plan. Locations of groundwater bores are shown in **Figure 65**.

Current internal groundwater trigger limit breaches are summarised in **Table 3**.

**Table 3: Groundwater Trigger Tracking – December 2025**

Site	Date	Trigger Limit Breached	Action Taken in Response
PZ7S	28/01/2025 23/10/2025	pH – 5 <sup>th</sup> percentile	Consultant has undertaken investigation. With the exception of one measurement in 2013, values for pH have been relatively consistent in PZ7S, remaining circum-neutral over the period of record. There has been no rapid change in pH, or any indication that reducing conditions will continue. Water chemistry analysis indicates groundwater composition at PZ7S is reflective of a rainfall dominant water source, and water type remains consistent over the period of record, indicative of a consistent water source. Groundwater levels were at historic highs during the time of the pH exceedances and are therefore not captured in the baseline data set used to derive triggers at this location. MTW has installed a secure cap and will review triggers. pH returned to within trigger level for subsequent sampling on 16/04/25.  Sampling above trigger level 23/10/2025. Watching brief*
MB15MTW01D	28/01/2025, 16/04/2025, 23/07/2025, 23/10/2025	pH – 5 <sup>th</sup> percentile	Investigation previously completed. The consultant identified in their report that “it is likely the trigger values derived for shallow overburden bores do not accurately represent in-situ groundwater water quality for MB15MTW01D”.  The result is consistent with previous results for this bore since 2021 and within sample location trigger levels. No further investigation required.
OH1126	13/02/2025, 5/06/2025, 21/08/2025	pH – 5 <sup>th</sup> percentile	After 3 x monitoring events marginally below 5 <sup>th</sup> percentile, pH returned to within trigger level for sampling on 17/11/2025.  Consultant engaged to undertake investigation.
WOH2141A	13/02/2025	pH – 5 <sup>th</sup> percentile	pH returned to within trigger level for subsequent sampling on 28/05/25.
WOH2156A	17/11/2025	pH – 5 <sup>th</sup> percentile	Watching brief*
WOH2156B	26/03/2025, 5/06/2025, 20/08/2025, 17/11/2025	pH – 5 <sup>th</sup> percentile	Consultant has undertaken investigation. A rapid increase in groundwater level (due to rainfall recharge) in this bore (located in the Wambo Seam) early 2024 coincided with decrease in pH. Groundwater level remained stable until a rapid decline by approx. 20m in Feb 2024. pH value decreased further with the groundwater decline. As the mining pit progresses further west, dewatering of monitoring bores is to be expected prior to their decommissioning. Prior to being decommissioned, a similar response was recorded in borehole WD622P in early 2023, which also monitors the Wambo Coal seam. Consultant recommended review of sampling techniques and borehole records for WOH series bores.
GW9708	24/06/2025	pH – 5 <sup>th</sup> percentile	Sampling in September unable to be completed due to blockage. Blockage removed and sampling 1/12/2025 below trigger level
GW98MTCL2	24/06/2025	pH – 5 <sup>th</sup> percentile	pH returned to within trigger level for subsequent sampling on 25/09/2025 and 1/12/2025.
OH787	6/11/2025, 4/12/2025	Ph – 95 <sup>th</sup> percentile	Watching brief*
OH1121	10/07/2025, 30/10/2025, 1/12/2025.	pH – 95 <sup>th</sup> percentile	Consultant engaged to undertake investigation.

Site	Date	Trigger Limit Breached	Action Taken in Response
OH1137	21/08/2025	pH – 95 <sup>th</sup> percentile	pH returned to within trigger level for sampling on 17/11/2025.
OH1138 (1)	9/10/2025	pH – 95 <sup>th</sup> percentile	pH returned to within trigger level for sampling on 6/11/2025.
PZ9S	25/09/2025, 30/10/2025, 1/12/2025	pH – 95 <sup>th</sup> percentile	pH levels exceeded the upper trigger limit during Q3, Q4, and the extra sampling in October. Consultant engaged to undertake investigation.
OH942	25/09/2025	pH – 95 <sup>th</sup> percentile	pH returned to within trigger level for sampling on 1/12/2025.
OH786	25/03/2025	EC – 95 <sup>th</sup> percentile	EC returned to within trigger level for subsequent sampling on 10/07/2025.
MTD605P	28/01/2025, 15/04/2025, 22/07/2025	EC – 95 <sup>th</sup> percentile	After 3 x monitoring events marginally above 95 <sup>th</sup> percentile, EC returned to within trigger level for subsequent sampling on 20/10/2025. Historically this bore consistently remains close to the prescribed trigger level so these marginal exceedances are likely attributable to natural variation. Consultant engaged to undertake investigation.
OH1138 (1)	13/02/2025, 4/12/2025	EC – 95 <sup>th</sup> percentile	EC returned to within trigger level for subsequent monthly sampling between March and November. EC above trigger level for sampling 4/12/2025. Watching brief*
* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.			

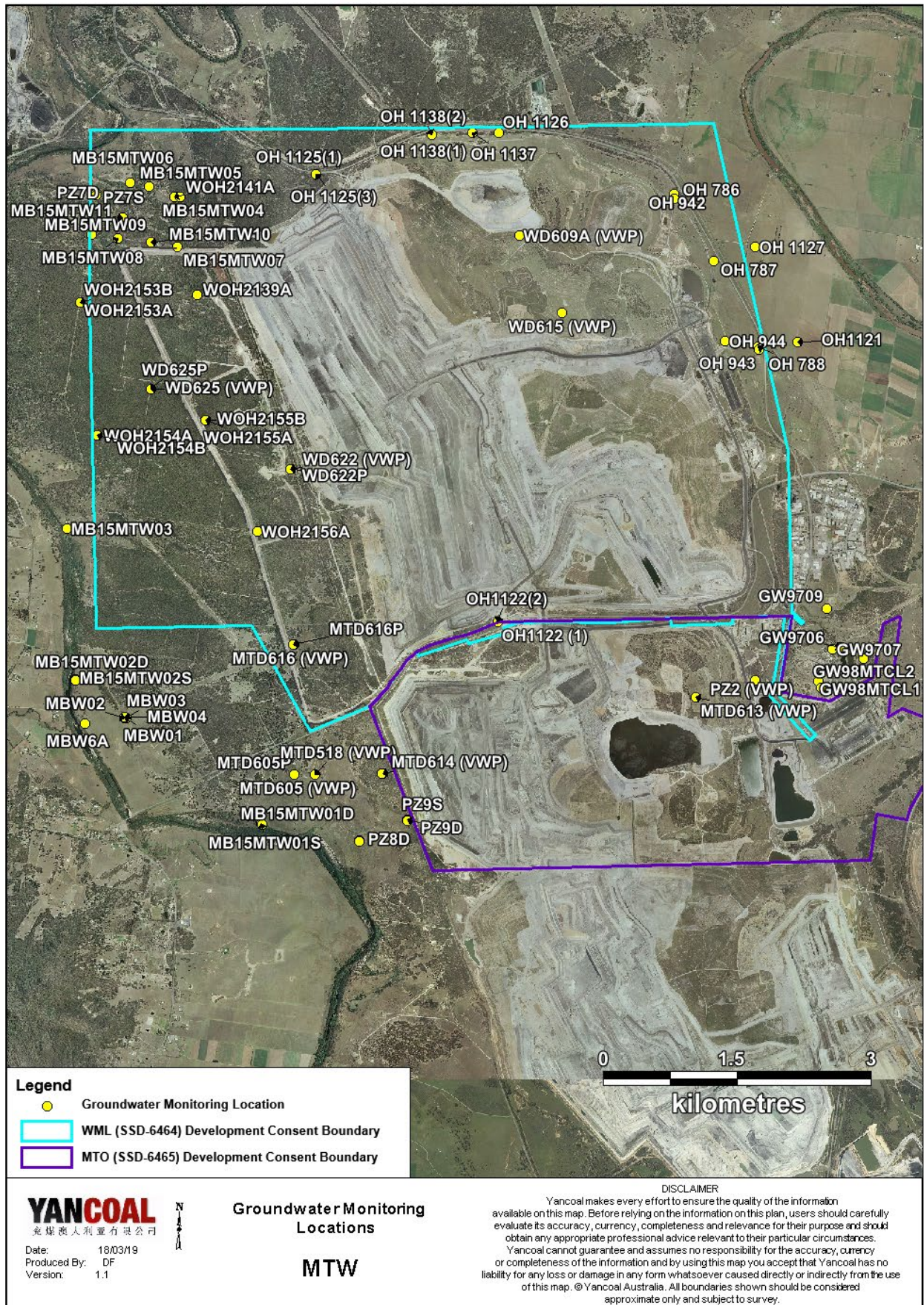


Figure 65: Groundwater Monitoring Location Plan

## 4.0 BLAST MONITORING

MTW have a network of six blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors.

The location of these monitors can be found in **Figure 72**.

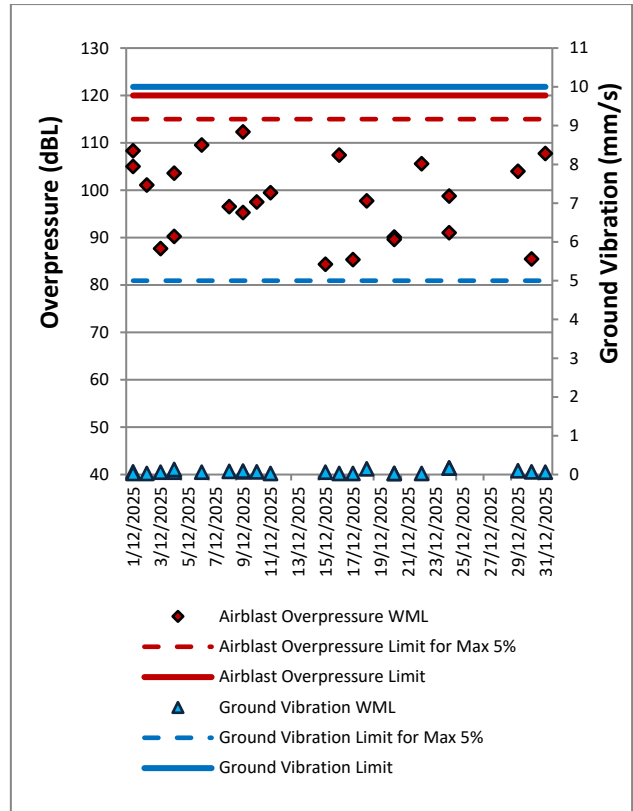
### 4.1 Blast Monitoring Results

During December 2025, 24 blasts were initiated at MTW. **Figure 66** to **Figure 71** show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in **Table 4**.

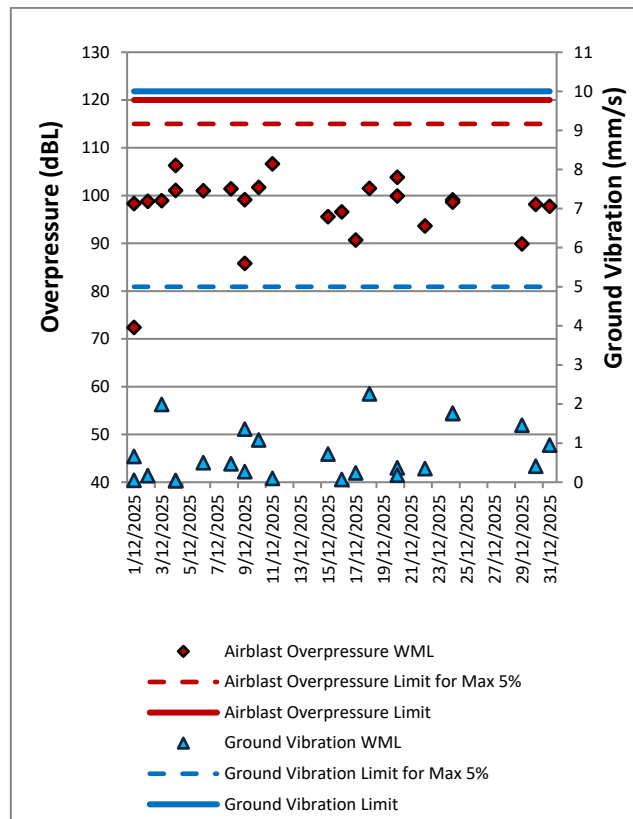
**Table 4: Blasting Limits**

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period at WML or MTO
120	0%
Ground Vibration (mm/s)	Comments
5	5% of the total number of blasts in a 12 month period at WML or MTO
10	0%

During the reporting period no blasts exceeded the 5mm/s criteria for ground vibration, or the 115dB(L) threshold for airblast overpressure.



**Figure 66: Abbey Green Blast Monitoring Results – December 2025**



**Figure 67: Bulga Village Blast Monitoring Results – December 2025**

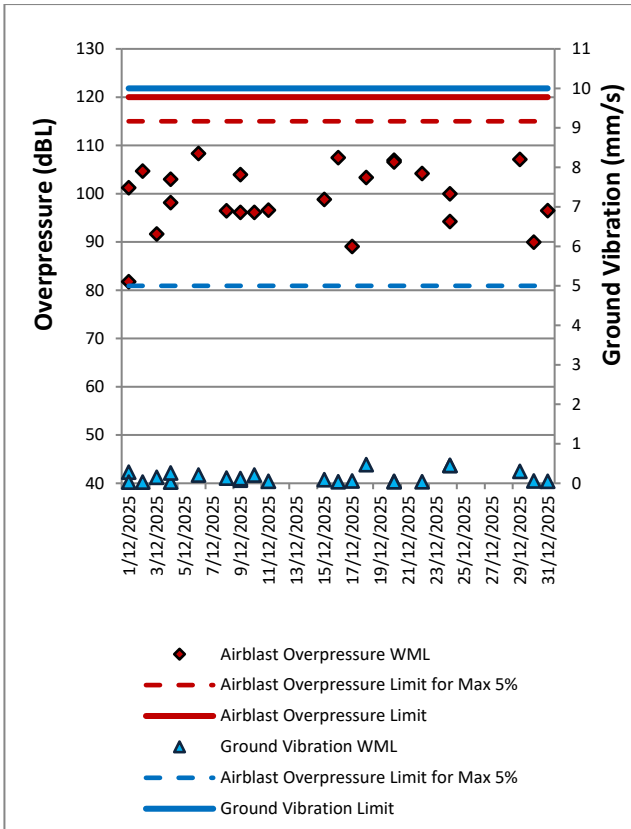


Figure 68: Putty Road MTIE Blast Monitoring Results – December 2025

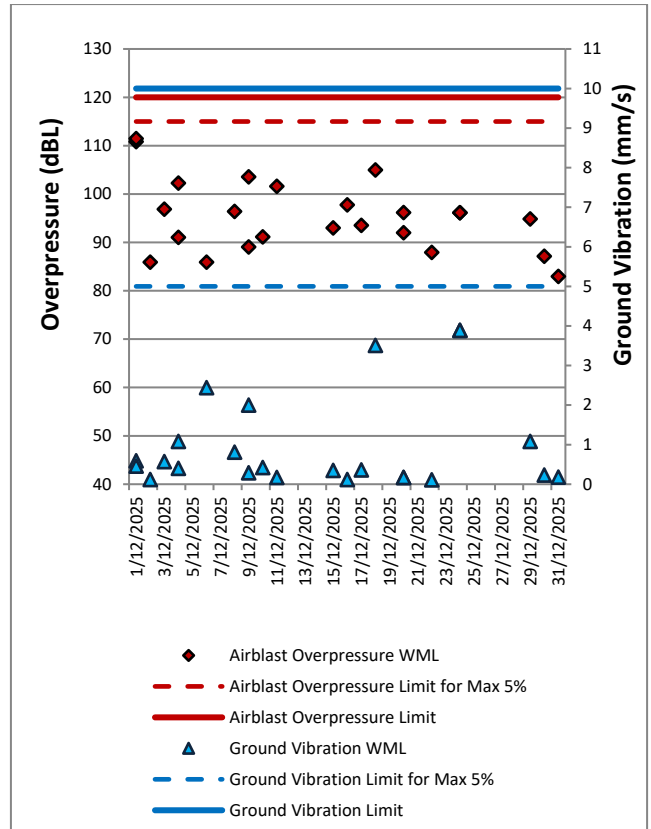


Figure 70: Warkworth Blast Monitoring Results – December 2025

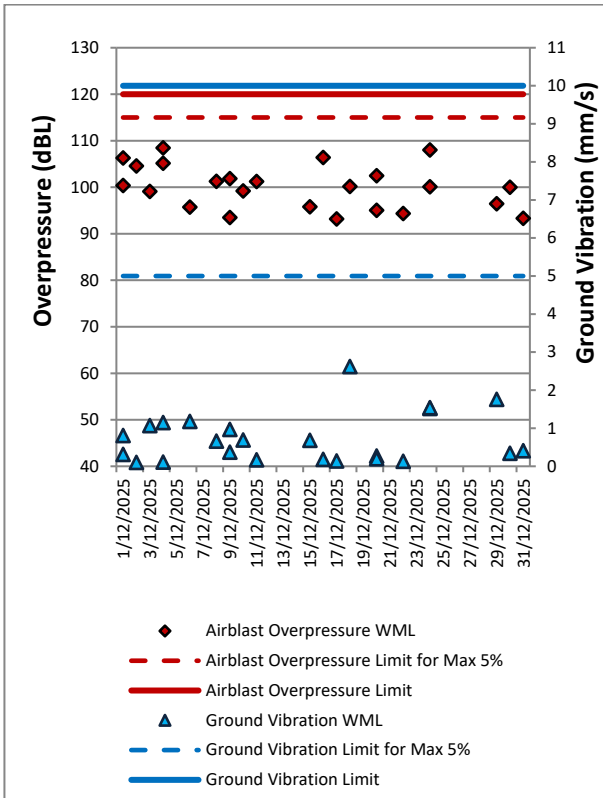


Figure 69: Wambo Road Blast Monitoring Results – December 2025

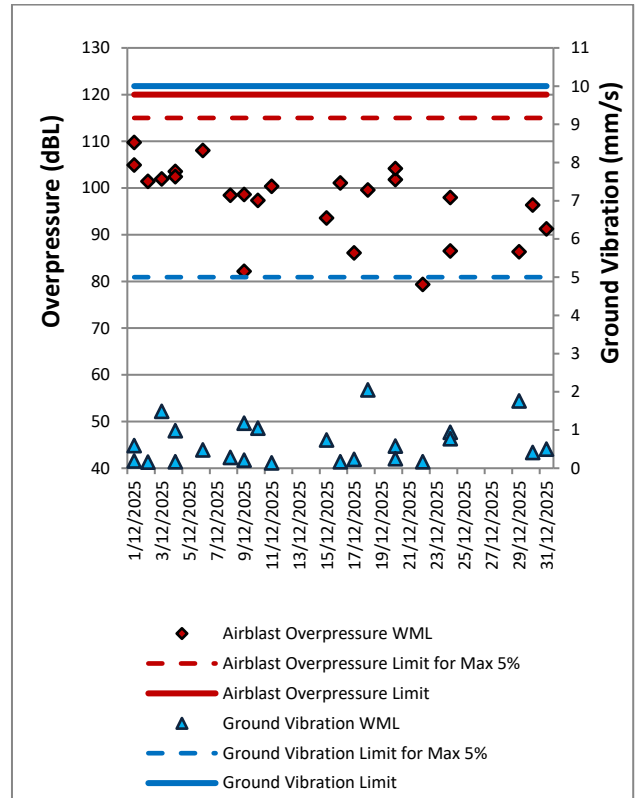


Figure 71: Wollemi Peak Road Blast Monitoring Results – December 2025



Figure 72: MTW Blast Monitoring Location Plan

## 5.0 NOISE

Routine attended noise monitoring is carried out in accordance with the MTW Noise Management Plan. A review against EIS predictions will be reported in the Annual Review. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Real time noise monitoring also occurs at five sites surrounding MTW. Noise monitoring locations are displayed in **Figure 73**.

### 5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the nights of 17 and 18 December 2025. All measurements complied with the relevant criteria. Results are detailed in **Table 5** to **Table 8**.

#### 5.1.1 WML Noise Assessment

Compliance assessments undertaken against the WML noise criteria are presented in **Table 5** and **Table 6**.

**Table 5: L<sub>Aeq, 15 minute</sub> Warkworth Impact Assessment Criteria – December 2025**

Location	Start Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies? <sup>1</sup>	WML	
						L <sub>Aeq,15minute</sub> dB <sup>2</sup>	Exceedances <sup>3</sup>
Bulga RFS	17/12/2025 23:41	2.1	F	37	No	26	N/A
Bulga Village	17/12/2025 22:59	3.5	D	38	No	31	N/A
Gouldsville	17/12/2025 21:30	1.8	F	38	Yes	IA	Nil
Inlet Road	17/12/2025 22:07	1.9	F	37	Yes	31	Nil
Inlet Road West	17/12/2025 21:44	2.0	F	35	Yes	32	Nil
Long Point	17/12/2025 21:00	1.8	F	35	Yes	IA	Nil
South Bulga	18/12/2025 00:22	2.4	F	35	No	<20	N/A
Wambo Road	17/12/2025 22:36	3.2	D	38	No	29	N/A

Notes:

1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only L<sub>Aeq,15minute</sub> includes modifying factor penalties if applicable.
3. Bold results in red indicate exceedance of relevant limit.

**Table 6: L<sub>A1, 1 minute</sub> Warkworth Impact Assessment Criteria – December 2025**

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies? <sup>1</sup>	WML	
						L <sub>A1,1minute</sub> dB <sup>2</sup>	Exceedances <sup>3</sup>
Bulga RFS	17/12/2025 23:41	2.1	F	47	No	31	N/A
Bulga Village	17/12/2025 22:59	3.5	D	48	No	33	N/A
Gouldsville	17/12/2025 21:30	1.8	F	48	Yes	IA	Nil
Inlet Road	17/12/2025 22:07	1.9	F	47	Yes	34	Nil
Inlet Road West	17/12/2025 21:44	2.0	F	45	Yes	37	Nil
Long Point	17/12/2025 21:00	1.8	F	45	Yes	IA	Nil
South Bulga	18/12/2025 00:22	2.4	F	45	No	<25	N/A
Wambo Road	17/12/2025 22:36	3.2	D	48	No	31	N/A

Notes:

1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only L<sub>Aeq,1minute</sub> based on measured site-only L<sub>amax</sub> as detailed in Section 3.2.
3. Bold results in red indicate exceedance of relevant limit.

## 5.1.2 MTO Noise Assessment

Compliance assessments undertaken against the MTO noise criteria are presented in **Table 7** and **Table 8**.

**Table 7: L<sub>Aeq, 15minute</sub> Mount Thorley Impact Assessment Criteria – December 2025**

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies? <sup>1</sup>	MTO L <sub>Aeq</sub> dB <sup>2,3,4</sup>	Exceedance <sup>3,4</sup>
Bulga RFS	17/12/2025 23:41	2.1	F	37	No	31	N/A
Bulga Village	17/12/2025 22:59	3.5	D	38	No	<20	N/A
Gouldsville	17/12/2025 21:30	1.8	F	35	Yes	IA	Nil
Inlet Road	17/12/2025 22:07	1.9	F	37	Yes	<25	Nil
Inlet Road West	17/12/2025 21:44	2.0	F	35	Yes	IA	Nil
Long Point	17/12/2025 21:00	1.8	F	35	Yes	IA	Nil
South Bulga	18/12/2025 00:22	2.4	F	36	No	<25	N/A
Wambo Road	17/12/2025 22:36	3.2	D	38	No	<20	N/A

Notes:

1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only L<sub>Aeq, 15minute</sub> includes modifying factor penalties if applicable.
3. Bold results in red indicate exceedance of relevant limit.

**Table 8: L<sub>A1, 1 minute</sub> Mt Thorley Impact Assessment Criteria – December 2025**

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies? <sup>1</sup>	MTO L <sub>A1, 1min</sub> dB <sup>2,3,4</sup>	Exceedance <sup>3,4</sup>
Bulga RFS	17/12/2025 23:41	2.1	F	47	No	40	N/A
Bulga Village	17/12/2025 22:59	3.5	D	48	No	<25	N/A
Gouldsville	17/12/2025 21:30	1.8	F	45	Yes	IA	Nil
Inlet Road	17/12/2025 22:07	1.9	F	47	Yes	28	Nil
Inlet Road West	17/12/2025 21:44	2.0	F	45	Yes	IA	Nil
Long Point	17/12/2025 21:00	1.8	F	45	Yes	IA	Nil
South Bulga	18/12/2025 00:22	2.4	F	46	No	29	N/A
Wambo Road	17/12/2025 22:36	3.2	D	48	No	<25	N/A

Notes:

1. Noise limits are applicable if weather conditions were within parameters specified in Section 2.4. Criterion may or may not apply due to rounding of meteorological data values.
2. Site-only L<sub>Aeq, 1minute</sub> based on measured site-only L<sub>amax</sub> as detailed in Section 3.2.
3. Bold results in red indicate exceedance of relevant limit.

### 5.1.3 NPfl Low Frequency Assessment

In accordance with the requirements of the EPA’s Noise Policy for Industry (NPfl), the applicability of the low frequency modification factor corrections has been assessed. There were no noise measurements taken during the reporting period which required the penalty to be applied. The WML assessment for low frequency noise is shown in **Table 9** and the MTO assessment for low frequency noise is shown in **Table 10**.

**Table 9: Warkworth Low Frequency Noise Assessment – December 2025**

Location	Date and Time	Measured WML LAeq dB	Criterion Applies?	Intermittency Modifying Factor? <sup>1</sup>	Tonality Modifying Factor? <sup>1</sup>	Frequency of Tonality <sup>1</sup>	Low-frequency Modifying Factor? <sup>1</sup>	Maximum Exceedance of Reference Spectrum <sup>1,2</sup>	Total Penalty dB <sup>2</sup>
Bulga RFS	17/12/2025 23:41	26	No	N/A	N/A	N/A	N/A	N/A	N/A
Bulga Village	17/12/2025 22:59	31	No	N/A	N/A	N/A	N/A	N/A	N/A
Gouldsville	17/12/2025 21:30	IA	Yes	No	No	N/A	No	N/A	Nil
Inlet Road	17/12/2025 22:07	31	Yes	No	No	N/A	No	N/A	Nil
Inlet Road West	17/12/2025 21:44	32	Yes	No	No	N/A	No	N/A	Nil
Long Point	17/12/2025 21:00	IA	Yes	No	No	N/A	No	N/A	Nil
South Bulga	18/12/2025 00:22	<20	No	N/A	N/A	N/A	N/A	N/A	N/A
Wambo Road	17/12/2025 22:36	29	No	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

1. Yes/No denote modifying factor was or was not applied. N/A denotes assessment was ‘not applicable’ due to meteorological conditions or further assessment was not required.

2. Bold results indicate that application of NPfl modifying factor/s is required.

**Table 10: Mount Thorley Operations Low Frequency Noise Assessment – December 2025**

Location	Date and Time	Measured MTO LAeq dB	Criterion Applies?	Intermittency Modifying Factor? <sup>1</sup>	Tonality Modifying Factor? <sup>1</sup>	Frequency of Tonality <sup>1</sup>	Low-frequency Modifying Factor? <sup>1</sup>	Maximum Exceedance of Reference Spectrum <sup>1,2</sup>	Total Penalty dB <sup>2</sup>
Bulga RFS	17/12/2025 23:41	31	No	N/A	N/A	N/A	N/A	NA	N/A
Bulga Village	17/12/2025 22:59	<20	No	N/A	N/A	N/A	N/A	NA	N/A
Gouldsville	17/12/2025 21:30	IA	Yes	No	No	N/A	No	NA	Nil
Inlet Road	17/12/2025 22:07	<25	Yes	No	No	N/A	No	NA	Nil
Inlet Road West	17/12/2025 21:44	IA	Yes	No	No	N/A	No	NA	Nil
Long Point	17/12/2025 21:00	IA	Yes	No	No	N/A	No	NA	Nil
South Bulga	18/12/2025 00:22	<25	No	N/A	N/A	N/A	N/A	NA	N/A
Wambo Road	17/12/2025 22:36	<20	No	N/A	N/A	N/A	N/A	NA	N/A

Notes:

1. Yes/No denote modifying factor was or was not applied. N/A denotes assessment was 'not applicable' due to meteorological conditions or further assessment was not required.
2. Bold results indicate that application of NPfI modifying factor/s is required.

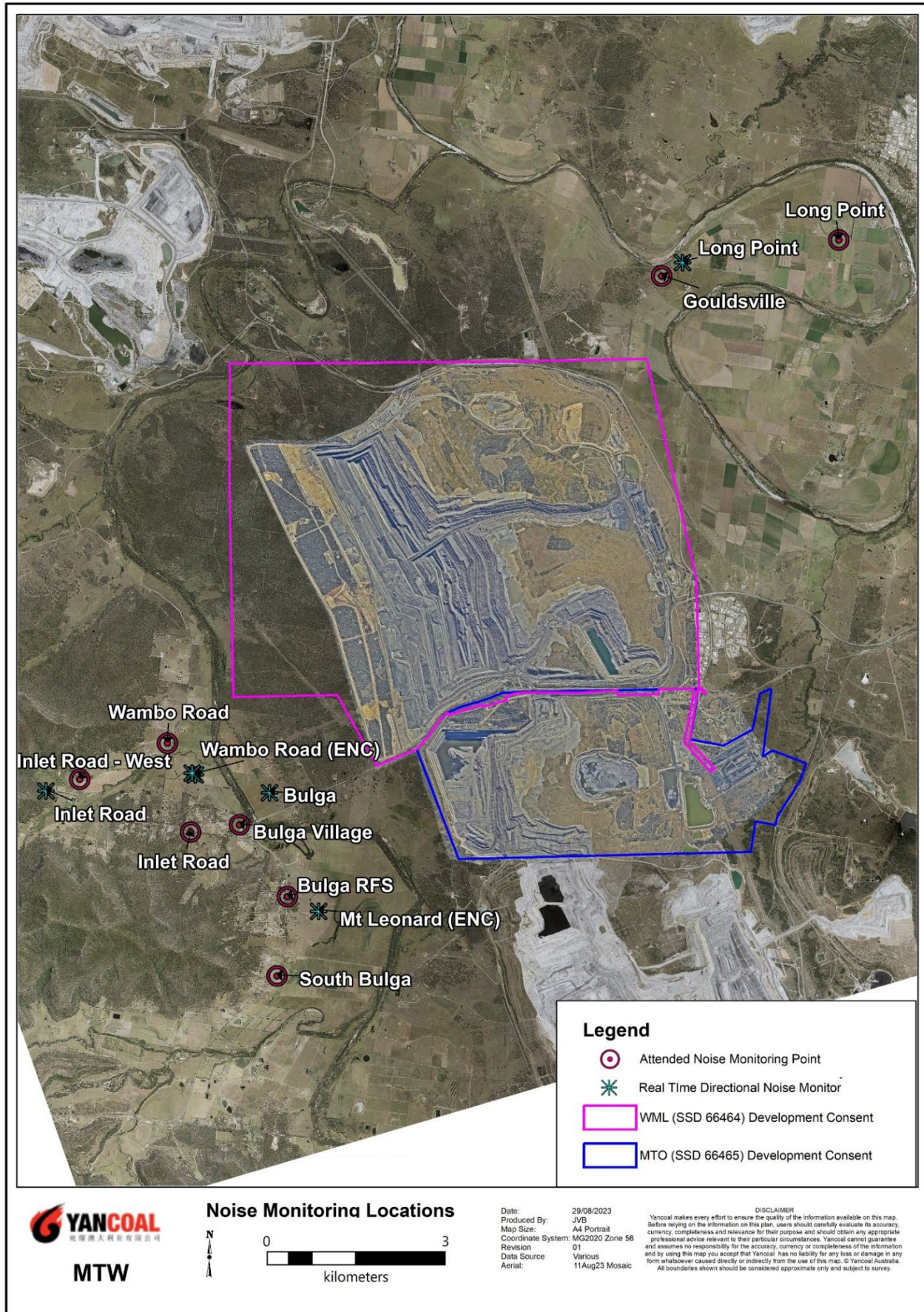


Figure 73: Noise Monitoring Location Plan

## 5.2 Noise Management Measures

A program of targeted supplementary attended noise monitoring is in place at MTW, supported by the real-time directional monitoring network and ensuring the highest level of noise management is maintained. The supplementary program is undertaken by MTW personnel and involves:

- Routine inspections from both inside and outside the mine boundary;
- Routine and as-required handheld noise assessments (undertaken in response to noise alarm and/or community complaint), comparing measured levels against consent noise limits; and
- Validation monitoring following operational modifications to assess the adequacy of the modifications.

Where a noise assessment identifies noise emissions which are exceeding the relevant noise limit(s) for any particular residence, modifications will be made to ensure that the noise event is resolved within 75 minutes of identification. The actions taken are commensurate with the nature and severity of the noise event, but can include:

- Changing the haul route to a less noise sensitive haul;
- Changing dump locations (in-pit or less exposed dump option);
- Reducing equipment numbers;
- Shut down of task; or
- Site shut down.

A summary of these assessments undertaken during the reporting period are provided in **Table 11**.

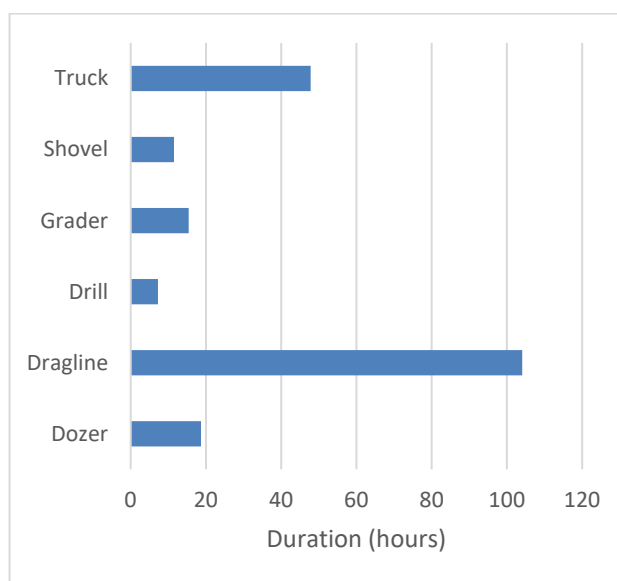
**Table 11: Supplementary Attended Noise Monitoring Data – December 2025**

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
559	1	1	0.18

Note: Measurements are taken under all meteorological conditions, including conditions under which the consent noise criteria do not apply.

## 6.0 OPERATIONAL DOWNTIME

During December, a total of 205 hours of equipment downtime was logged in response to environmental events such as dust, noise and adverse meteorological conditions. Operational downtime by equipment type is shown in **Figure 74**.



**Figure 74: Operational Downtime by Equipment Type – December 2025**

## 7.0 REHABILITATION

During December 2025, 1.7 Ha of land was released, 3.7 Ha was bulk shaped, no land was topsoiled and no land was composted. 11.0 Ha of land was rehabilitated.

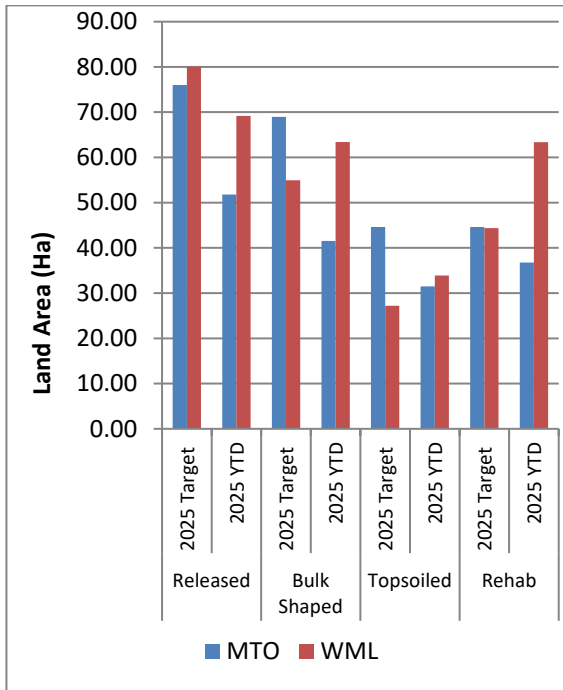


Figure 75: Rehabilitation YTD – December 2025

## 8.0 ENVIRONMENTAL INCIDENTS

There was one environmental incident recorded during the reporting period.

A spot fire at MTW’s Bowditch Biodiversity Area was alerted by a near neighbour of the operation. RFS personnel entered the Biodiversity Area to inspect the fire area. An RFS controlled helicopter was commissioned to water bomb the area, and the area was inspected the following day by a member of the MTW E&C team to confirm the fire had been extinguished. This incident will be reported in the EPBC Annual Compliance Report.

## 9.0 COMPLAINTS

Three complaints were received during the reporting period. Details of these complaints are shown in Table 12.

**Table 12: Complaints Summary YTD**

	Noise	Dust	Blast	Lighting	Other	Total
January	0	3	3	2	0	8
February	2	0	3	2	1	8
March	8	2	5	1	0	16
April	6	4	7	0	0	17
May	4	0	3	0	0	7
June	2	11	1	0	0	14
July	3	3	2	3	2	13
August	4	1	4	0	0	9
September	4	2	4	4	0	14
October	4	6	5	4	0	19
November	3	7	0	0	0	10
December	0	2	1	0	0	3
<b>Total</b>	<b>40</b>	<b>41</b>	<b>38</b>	<b>16</b>	<b>3</b>	<b>138</b>

## **Appendix A: Meteorological Data**

**Table 13: Meteorological Data – Charlton Ridge Meteorological Station – December 2025**

Date	Air Temperature		Relative Humidity		Wind Direction	Wind Speed	Rainfall
	Maximum (°C)	Minimum (°C)	Maximum (%)	Minimum (%)	Average (°)	Average (m/sec)	total (mm)
1/12/2025	27	12	56	16	272	3.6	0
2/12/2025	27	8	94	15	227	3.1	1
3/12/2025	30	8	91	18	191	2.3	0
4/12/2025	36	12	86	10	230	2.4	0
5/12/2025	38	15	61	9	229	2.9	0
6/12/2025	40	19	79	13	282	4.2	1.6
7/12/2025	30	16	83	34	177	3.1	0
8/12/2025	34	15	87	22	158	2.5	0
9/12/2025	39	15	93	11	196	3.2	0
10/12/2025	33	19	100	39	148	3.6	1.6
11/12/2025	24	17	100	58	173	3.9	0
12/12/2025	25	15	100	51	158	2.3	13.8
13/12/2025	32	14	100	30	186	1.9	10.2
14/12/2025	34	17	100	25	254	2.4	1.4
15/12/2025	29	16	93	33	130	3.3	0
16/12/2025	26	15	100	52	131	4.0	0
17/12/2025	32	16	88	35	134	2.2	0
18/12/2025	38	15	97	20	148	1.6	0
19/12/2025	42	22	71	16	224	3.2	0.6
20/12/2025	33	21	83	36	174	1.9	0.2
21/12/2025	43	22	78	14	256	4.0	0
22/12/2025	34	19	100	43	218	3.8	21.4
23/12/2025	36	16	99	11	192	3.0	0
24/12/2025	35	18	84	20	157	2.0	0
25/12/2025	29	15	82	28	151	3.4	0
26/12/2025	19	11	93	51	154	2.8	0
27/12/2025	26	9	88	26	148	3.0	0
28/12/2025	27	10	86	28	153	3.2	0
29/12/2025	27	11	85	30	145	3.0	0
30/12/2025	32	10	90	20	154	2.5	0
31/12/2025	25	13	83	31	144	2.5	0