

WQMS Data Review

Huntly Bauxite Mine

MAY 2026



Document Control

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1. Executive Summary

SciDev conducted an analysis of turbidity data collected from Water Quality Monitoring Systems (WQMS) operating across Alcoa's Huntly bauxite mining operations for May 2026. The purpose of this assessment was to evaluate data quality, identify genuine turbidity exceedance events, and support compliance with the *Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023*.

The review focused on events where turbidity exceeded 25 NTU for at least one hour. Events were evaluated in accordance with Alcoa's Turbidity Event Classification Guidelines and classified as either "true" exceedances, representing genuine increases in turbidity, or "false" exceedances resulting from environmental or operational interferences.

Key outcomes of the analysis were:

- **Excluded Units:** Twenty-three (23) WQMS units were excluded from the analysis due to invalid data caused by equipment faults or environmental interference.
- **False Events:** Twenty-five (25) turbidity exceedances were identified as false, commonly caused by debris, sensor obstruction, or hydraulic disturbances.
- **True Events:** Fifteen (15) "True" turbidity exceedance event were recorded following detailed assessment; however, none were attributable to mining activities.

Data gaps were also identified due to system outages, maintenance, and unexpected shutdowns. These have been documented to maintain transparency in reporting.

Overall, while turbidity exceedance events were recorded during May 2026, the assessment found no evidence that any true turbidity exceedance event was caused by mining activities.

2. Scope

SciDev were engaged by Alcoa to analyse turbidity data collected from the Huntly Water Quality Monitoring Systems (WQMS). The primary objective of this engagement is to assess the quality of the collected data and identify potential “true” turbidity events. This analysis supports Alcoa’s reporting obligations under *Schedule 1, Division 2, Clause 6 of the Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023*.

3. Introduction

3.1 Background

Alcoa of Australia Ltd (Alcoa) operates two bauxite mines, Huntly and Willowdale, approximately 100 km southeast of Perth, Western Australia. These mining operations are subject to environmental controls mandated by the *Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023*.

Under this Exemption Order, Alcoa is required to implement drainage control measures and monitor effectiveness in water bodies within and downstream of mining operations. Turbidity, a critical water quality parameter, is monitored using Water Quality Monitoring Systems (WQMS), to detect deviations and identify high-turbidity events.

Alcoa is obligated to report monthly on-stream turbidity, including the identification and classification of any “true” high-turbidity exceedance events. (Refer to Appendix B for the site map showing WQMS locations.)

3.2 Monitoring Requirements

Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023 specifies that a drainage incident occurs when:

- a. Runoff from a disturbance area enters the surrounding environment, resulting in surface water turbidity of at least 25 NTU for a duration of at least one hour; or
- b. a discharge from containment infrastructure includes, or may include, environmentally hazardous material.

Trigger levels for drainage incidents are outlined in Schedule 1 of the Exemption Order. To meet these requirements, Alcoa has developed “Turbidity Event Classification Guidelines” which define a true turbidity exceedance event as a WQMS recording turbidity levels of at least 25 NTU for a period exceeding one hour.

3.3 Water Quality Management System (WQMS)

During the May 2026 monitoring period, forty-three (43) WQMS units were deployed to monitor turbidity levels in streams subject to surface water runoff within and downstream of Huntly mining operations.

Each WQMS unit consists of the following components:

Aquas SMR10 Turbidity Probe

Positioned at a 90-degree angle to water flow, each probe is equipped with an automatic lens wiper and a guard to protect against larger debris.

Data Taker DT82 Logger

Records data locally every six seconds, with six-minute averages transmitted via IoT-enabled modems to a cloud-based platform.

Float Switch

Detects whether the sensor is submerged, or the stream is dry.

3.4 Purpose

This report aims to analyse turbidity data collected during March 2026, focusing on the identification and classification of "true" turbidity exceedance events based on Alcoa's Turbidity Event Classification Guidelines.

3.5 Exclusions

This report is not intended as:

An assessment of the WQMS network or Alcoa's compliance with relevant legislation and requirements.

An evaluation of the suitability of the trigger levels or event classification procedures adopted by Alcoa.

3.6 Abbreviations

	Term
IoT	Internet of Things
NTU	Nephelometric Turbidity Units
WQMS	Water Quality Management System

4. Methodology

4.1 WQMS Locations

A site map showing the WQMS locations is provided in Appendix B.

4.2 Data Review

Data recorded by the WQMS Units was reviewed and potential events where turbidity levels exceeded 25 NTU for at least one hour. Each potential event was categorised as either 'true' or 'false'.

4.2.1 True Turbidity Exceedance Events

These events are caused by an actual increase in stream turbidity. Per Alcoa's "Turbidity Event Classification Guidelines" true exceedance events typically exhibit:

A sharp, sudden incline in turbidity levels.

A return to baseline turbidity levels in a pattern resembling a normal (Gaussian) distribution.



Figure 1 Typical 'true' exceedance event.

4.2.2 False Turbidity Exceedance Events

These events are caused by factors unrelated to actual turbidity increase, such as:

Organic debris (e.g., leaves, sticks, algae) obstructing the sensor

Air bubbles or water turbulence near the sensor

Fluctuating water levels intermittently covering and uncover the sensor lens.

False events typically exhibit sharp inclines and declines without the characteristic bell curve shape of true events

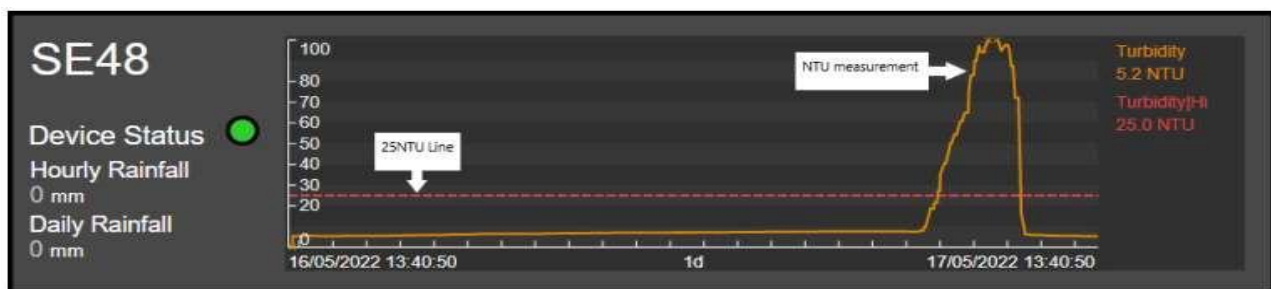


Figure 2 Typical 'false' exceedance event

4.2.3 Missing Data

Missing data occurs when a WQMS unit fails to record information, this can occur from unexpected system logoffs, equipment faults, or unplanned shutdowns.

5. Results and Discussion

5.1 Events

Table 1 provides a summary of identified events. Table 2 offers detailed information about each event.

Table 1: Events Summary

Category	# of events
Total events	40
True events	15
False events	25
Caused by mining related activity	0

It was found that:

- a) There were forty (40) total events recorded.
- b) There were fifteen (15) true events. Zero (0) of these were directly caused by mining related activity.
- c) Two (2) units that were previously dry, now had water present.
- d) Nineteen (19) units remained dry with no presence of water.
- e) Seventeen (17) units remained flowing throughout the month.

Note:

A True event is recorded when there is water present within the water way, and, that the probe has not been affected by any external sources.

Table 2: Events Details

Event ID	Monitor	False Event (Y/N)	Event Start Date	Event Start Time	Event End Date	Event End Time	Event Duration Minutes	Event Duration Hrs/Mins	Ave. Turbidity (NTU)	Peak Turbidity (NTU)
HUN-2605-001	PD01T	Y	15/05/2026	3:18:00 AM	15/05/2026	11:24:00 PM	1206	20:06	32.8	39.65
HUN-2605-002	SE02T	Y	2/05/2026	1:00:00 AM	2/05/2026	3:00:00 AM	120	2:00	322.12	596.09
HUN-2605-003	SE02T	Y	13/05/2026	11:18:00 AM	13/05/2026	1:54:00 PM	156	2:36	44.15	91.64
HUN-2605-004	SE02T	Y	13/05/2026	9:49:00 PM	13/05/2026	11:20:00 PM	91	1:31	40.54	59.43
HUN-2605-005	SE02T	N	27/05/2026	10:45:00 PM	28/05/2026	12:10:00 AM	88	1:28	37.47	46.81
HUN-2605-006	SE03INV1	Y	13/05/2026	11:53:00 AM	14/05/2026	2:21:00 PM	148	2:28	33.98	56.09
HUN-2605-007	SE03INV1	Y	23/05/2026	12:18:00 AM	24/05/2026	2:00:00 PM	821	13:41	38.77	52.71
HUN-2605-008	SE03INV1	Y	30/05/2026	10:02:00 PM	31/05/2026	1:40:00 AM	943	15:43	30.82	40.64
HUN-2605-009	SE03INV1	N	31/05/2026	12:33:00 PM	1/06/2026	3:43:00 AM	909	15:09	46.93	365.62
HUN-2605-010	SE05T	N	27/05/2026	10:17:00 PM	28/05/2026	4:20:00 AM	363	6:03	66.16	141.9
HUN-2605-011	SE05T	N	28/05/2026	4:45:00 AM	28/05/2026	9:36:00 AM	290	4:50	35.16	56.89

HUN-2605-012	SE05T	N	31/05/2026	1:02:00 AM	31/05/2026	5:23:00 AM	261	4:21	55.57	95.41
HUN-2605-013	SE05T	N	31/05/2026	11:08:00 AM	31/05/2026	1:46:00 PM	158	2:38	29.29	35.87
HUN-2605-014	SE05T	N	31/05/2026	10:15:00 PM	1/06/2026	5:07:00 AM	412	6:52	46.82	79.7
HUN-2605-015	SE06T	Y	3/05/2026	9:59:00 PM	4/05/2026	4:33:00 AM	393	6:33	38.37	79.25
HUN-2605-016	SE06T	Y	4/05/2026	6:36:00 PM	4/05/2026	7:36:00 PM	60	1:00	30.33	36.41
HUN-2605-017	SE06T	Y	6/05/2026	10:06:00 AM	6/05/2026	11:06:00 AM	60	1:00	25.44	25.85
HUN-2605-018	SE06T	Y	6/05/2026	11:18:00 AM	7/05/2026	6:19:00 PM	420	7:00	138.24	293.07
HUN-2605-019	SE06T	Y	9/05/2026	3:36:00 AM	12/05/2026	5:42:00 AM	126	2:06	118.75	292.45
HUN-2605-020	SE06T	Y	12/05/2026	1:42:00 PM	12/05/2026	10:54:00 PM	552	9:12	31.59	41.71
HUN-2605-021	SE06T	Y	13/05/2026	9:00:00 AM	13/05/2026	10:06:00 AM	66	1:06	27.57	35.91
HUN-2605-022	SE06T	Y	13/05/2026	6:06:00 PM	14/05/2026	11:12:00 AM	1026	17:06	37.44	141.19
HUN-2605-023	SE06T	Y	19/05/2026	5:54:00 PM	20/05/2026	5:30:00 AM	696	11:36	49.04	63.64
HUN-2605-024	SE06T	N	27/05/2026	9:49:00 PM	28/05/2026	12:21:00 AM	152	2:32	56.13	144.78
HUN-2605-025	SE06T	Y	31/05/2026	11:30:00 PM	1/06/2026	12:37:00 AM	66	1:06	73.55	125.7
HUN-2605-026	SE10T	Y	21/05/2026	10:07:00 AM	21/05/2026	1:09:00 PM	181	3:01	56.1	84.96

HUN-2605-027	SE52T	Y	13/05/2026	7:01:00 AM	13/05/2026	8:32:00 AM	91	1:31	30.88	43.65
HUN-2605-028	SE52T	Y	14/05/2026	7:41:00 PM	14/05/2026	9:06:00 PM	85	1:25	28.4	31.73
HUN-2605-029	SE52T	Y	27/05/2026	1:07:00 PM	28/05/2026	6:07:00 AM	1020	17:00	132.65	319.05
HUN-2605-030	SE52T	Y	28/05/2026	7:39:00 AM	28/05/2026	8:46:00 AM	67	1:07	266.61	394.53
HUN-2605-031	SE52T	Y	28/05/2026	9:05:00 AM	28/05/2026	10:12:00 AM	67	1:07	60.63	85.74
HUN-2605-032	SE52T	Y	29/05/2026	4:14:00 PM	29/05/2026	5:50:00 PM	86	1:26	32.47	37.72
HUN-2605-033	SE52T	Y	31/05/2026	7:14:00 AM	1/06/2026	9:24:00 AM	130	2:10	235.14	1480.92
HUN-2605-034	SE53T	N	31/05/2026	11:20:00 PM	1/06/2026	1:58:00 AM	158	2:38	28.7	34.62
HUN-2605-035	SE59T	N	27/05/2026	10:37:00 PM	28/05/2026	10:28:00 AM	711	11:51	36.5	65.75
HUN-2605-036	SE59T	N	31/05/2026	2:23:00 AM	31/05/2026	4:06:00 AM	103	1:43	30.68	35.9
HUN-2605-037	SE59T	N	31/05/2026	5:00:00 AM	3/06/2026	7:39:00 AM	159	2:39	1027.1	3118.51
HUN-2605-038	SE61T	N	28/05/2026	1:27:00 AM	28/05/2026	2:28:00 AM	61	1:01	30.03	32.93
HUN-2605-039	SE61T	N	28/05/2026	5:35:00 AM	28/05/2026	8:31:00 AM	176	2:56	29.48	31.91
HUN-2605-040	SE61T	N	31/05/2026	1:35:00 AM	31/05/2026	6:56:00 AM	321	5:21	45	55.19

5.2 Even Assessment Outcomes

5.2.1 True Events

5.2.1.1 HUN-2605-005

SE02T

The turbidity exceedance event occurred between 10:42 PM on 27 May 2026 and 12:10 AM on 28 May 2026 at monitoring location SE02T. The turbidity graph (Figure 3) displays a response pattern characteristic of a true turbidity exceedance event, with progressively increasing turbidity followed by a gradual return toward.

Trend analysis indicates a gradual rise and subsequent decline in turbidity values, which correlates with recorded rainfall data. A total of 8.3 mm of rainfall was recorded during the 24 hours preceding the event. This rainfall is considered to have contributed to increased surface runoff and the mobilisation of fine sediments and organic particulates within the catchment.

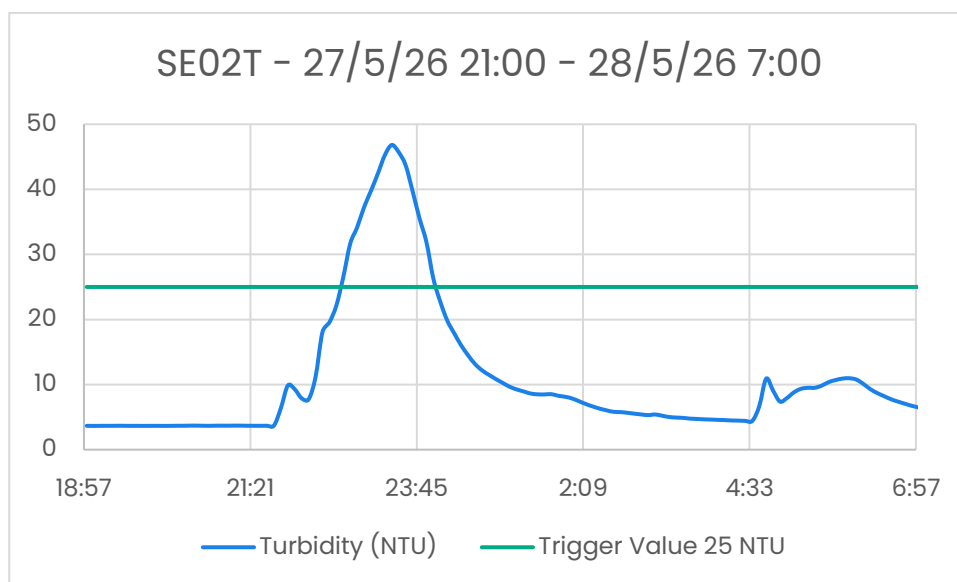


Figure 3- SE02T - May 27th

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE02T recorded a turbidity event exceeding 25 NTU for >1 hour on 27 May 2026. The event was recorded on 27 May 2026 from 10:45PM to 28

May 2026 12:10 AM, with a duration of 1 hour and 25 minutes. The average turbidity value during the event was 37.47, with a peak of 46.81. There was 8.3mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a rapid increase in turbidity values after receiving 7.9 mm of rainfall within a 70 minute period. During the event, the data trend continues to rapidly spike then decline, indicating the sensor may have been temporarily impacted by passing organic debris during the first rapid flush of rain. In the hours following the rainfall event turbidity values consistently stabilise on average <4 NTU.

The SE02T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered ‘True’, but not mining related.

5.2.1.2 HUN-2605-009

SE03INV1

The turbidity exceedance event occurred between 12:33 PM on 31 May 2026 and 3:43 AM on 1 June 2026 at monitoring location SE03INV1

Trend analysis of the monitoring data (Figure 4) indicates a prolonged and highly variable response, characterised by a gradual build-up followed by a pronounced spike. Turbidity levels initially increased slowly from the trigger threshold, followed by a further increase.

A sharp and isolated spike then occurred at approximately 12:10 AM, with turbidity rapidly increasing to a peak of around 360–370 NTU. This spike was short-lived, with turbidity levels dropping quickly back to approximately 60 NTU within a short period.

Following this peak, turbidity levels continued to decline with minor fluctuations, forming a gradual recession limb and returning below the trigger threshold.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 17.6 mm of rainfall was recorded in the 24 hours preceding the event, which is sufficient to generate sustained runoff and sediment mobilisation. However, the magnitude and abrupt nature of the peak suggest a localised or discrete input of highly turbid water, such as a concentrated inflow, resuspension event, or disturbance within the channel. This indicates a complex response involving both gradual catchment runoff and a short-duration, high-intensity turbidity pulse.

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Figure 4- SE03INV1 – May 31st

Field notes provided by Alcoa are included below.

Site visit of SE03INV1 was carried out on the 03 June 2026. The stream was flowing, shallow and clear. Sensor is very close to the stream bed due to depth and was being impacted by organic matter, stream bed sediment and algae. Turbidity NTU pre clean was 96.1 and post clean 3.6 NTU.

Data trend of gradual incline mid rain event and declining gradually with some spikes in data likely indicating organic debris clearing.

SE03INV1 catchment area was inspected and no evidence of mining related drainage concerns were observed.

Based on the comments provided by Alcoa this event is considered ‘True’, but not mining related

5.2.1.3 HUN-2605-010

SE05T

The turbidity exceedance event occurred between 10:17 PM on 27 May 2026 and 4:20 AM on 28 May 2026 at monitoring location SE05T.

The turbidity profile (Figure 5) shows a rapid initial increase, followed by a second peak. Following this secondary peak, turbidity levels show a consistent and gradual decline over several hours, returning to below the trigger threshold of 25 NTU.

Trend analysis indicates a clear correlation between turbidity response and preceding rainfall conditions. A total of 5 mm of rainfall was recorded in the 24 hours prior to the event. While relatively moderate, this rainfall is considered sufficient to have generated surface runoff, particularly under potentially wet antecedent conditions.

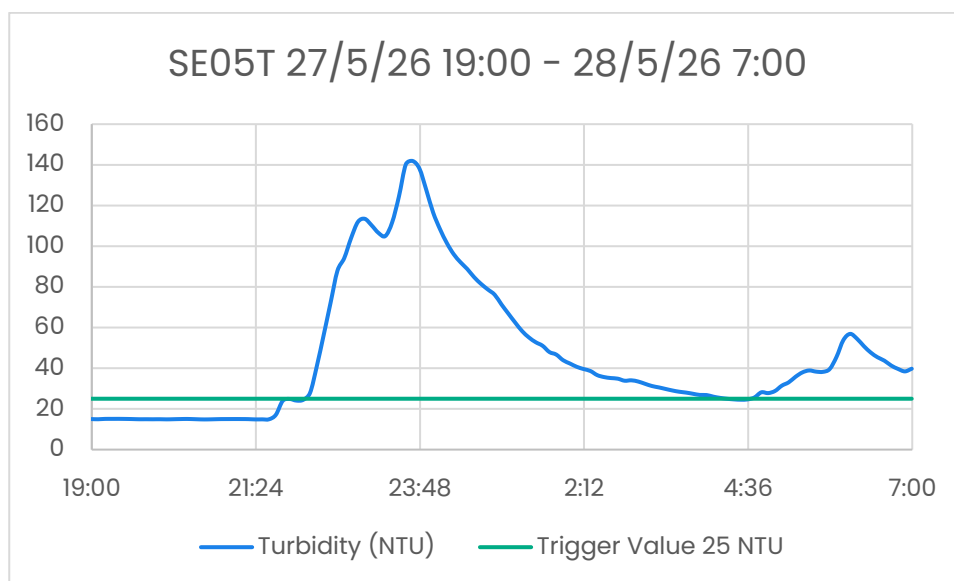


Figure 5- SE05T – May 27th

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 27 May 2026. The event was recorded on 27 May 2026 from 10:17 PM to 28 May 2026 4:20 AM, with a duration of 6 hours and 3 minutes. The average turbidity value during the event was 66.16, with a peak of 141.9. There was 5mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity following an approximately eleven-hour period of sustained rainfall. In the hours following the rainfall event turbidity values gradually declined to stable average levels of 13 NTU.

The SE05T monitoring site was inspected on 28 May 2026. The stream was clear and flowing, with visible algae built up around the sensor and on the stream bed. Turbidity readings remained consistent between 18-19 NTU both before and after cleaning the sensor.

The SE05T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.4 HUN-2605-011

SE05T

The turbidity exceedance event occurred between 4:45 PM and 9:36 AM on 28 May 2026 at monitoring location SE05T.

The turbidity profile (Figure 6) shows a progressive initial increase, followed by a more rapid increase to a primary peak. Subsequent to this peak, turbidity levels show a consistent and gradual decline over several hours, returning to below the trigger threshold of 25 NTU.

This response pattern is consistent with a runoff-driven turbidity event. A rainfall total of 22.6 mm recorded in the preceding 24 hours is considered sufficient to generate surface runoff, particularly under potentially wet antecedent conditions, resulting in the mobilisation and transport of suspended sediments to the monitoring location. The presence of both a primary peak and secondary elevated phase suggests an initial flush of sediments followed by continued or delayed contributions from the catchment.

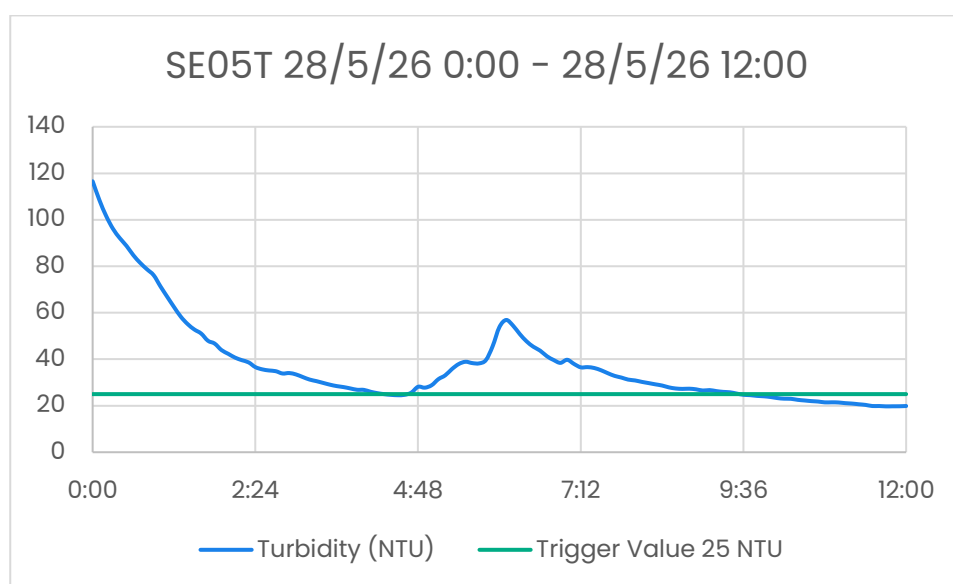


Figure 6- SE05T- May 28th

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 28 May 2026. The event was recorded on 28 May 2026 from 4:45 AM to 9:36 AM, with a duration of 4 hours and 50 minutes. The average turbidity value during the event was 35.16, with a peak of 56.89. There was 22.6mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity following an approximately eleven-hour period of sustained rainfall. In the hours following the rainfall event turbidity values gradually declined to stable average levels of 13 NTU.

The SE05T monitoring site was inspected on 28 May 2026. The stream was clear and flowing, with visible algae built up around the sensor and on the stream bed. Turbidity readings remained consistent between 18-19 NTU both before and after cleaning the sensor.

The SE05T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.5 HUN-2605-012

SE05T

The turbidity exceedance event occurred between 1:02 AM and 5:23 AM on 27 May 2026 at monitoring location SE05T.

Trend analysis of the monitoring data (Figure 7) indicates a dynamic response characterised by multiple peaks. Turbidity levels increased rapidly to an initial peak, followed by a short-lived decline to before a secondary peak.

Following the secondary peak, turbidity levels decreased in a steady and continuous manner, with a well-defined recession limb. Concentrations progressively declined until returning below the trigger threshold.

The observed turbidity response demonstrates a clear relationship with preceding rainfall conditions. A total of 8.7 mm of rainfall was recorded in the 24 hours prior to the event. Although relatively low, this rainfall is considered sufficient to generate localised surface runoff, particularly under potentially wet antecedent conditions. The presence of two distinct peaks suggests an initial mobilisation of readily available fine sediments followed by a secondary contribution, potentially due to delayed runoff pathways or continued sediment transport within the catchment.

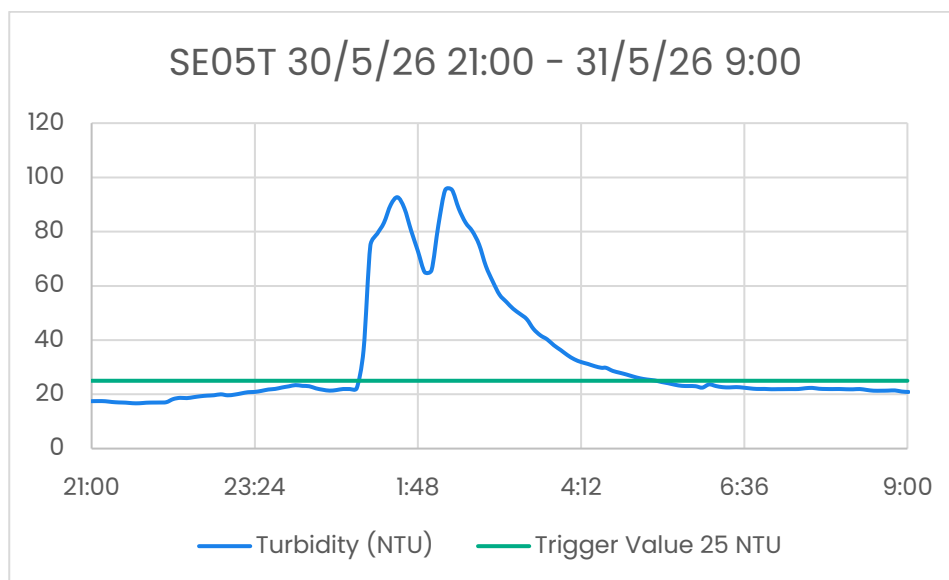


Figure 7- SE05T - May 31st

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026.

The event was recorded on 31 May 2026 from 1:02 AM to 5:23 AM, with a duration of 4 hours and 21 minutes. The average turbidity value during the event was 55.57, with a peak of 95.41. There was 8.7mm of rainfall recorded in the 24 hours preceding the event. The data trend indicates a rapid increase in turbidity with spikes to then gradually declined down to 20 NTU.

The SE05T monitoring site was inspected on 02 June 2026, the stream was fast flowing. The SE05T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.6 HUN-2605-013

SE05T

The turbidity exceedance event occurred between 11:08 AM and 1:46 PM on 28 May 2026 at monitoring location SE05T.

Trend analysis of the monitoring data (Figure 8) indicates a moderate, multi-phase response. Turbidity initially increased followed by a slight decline and brief fluctuation, before rising

again to a secondary peak. Following this secondary peak, turbidity levels showed a steady and continuous decline.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 16.5 mm of rainfall was recorded in the 24 hours preceding the event. While moderate, this rainfall is sufficient to generate localised surface runoff, particularly under potentially wet antecedent conditions. The presence of a secondary peak suggests either staggered runoff inputs or delayed mobilisation of sediments within the catchment.

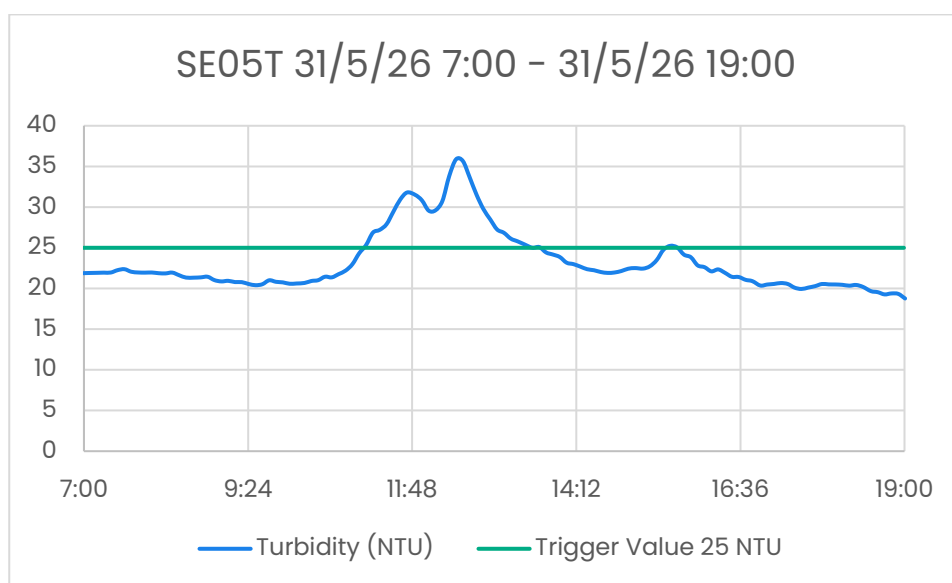


Figure 8- SE05T - May 31st

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026. The event was recorded on 31 May 2026 from 11:08 AM to 1:46 PM, with a duration of 2 hours and 38 minutes. The average turbidity value during the event was 29.29, with a peak of 35.87. There was 16.5mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity with rainfall then gradually declined down to 20 NTU.

The SE05T monitoring site was inspected on 02 June 2026, the stream was fast flowing. The SE05T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.7 HUN-2605-014

SE05T

The turbidity exceedance event occurred between 10:15 PM on 31 May 2026 and 5:07 AM on 1 June 2026 at monitoring location SE05T.

Trend analysis of the monitoring data (Figure 9) indicates a moderate, multi-phase response. Turbidity initially increased, before briefly plateauing. This was followed by a rapid increase to a primary peak. A sharp decline then occurred, followed by a short-lived fluctuation and subsequent rise to a secondary peak.

Following this secondary peak, turbidity levels exhibited a steady and continuous decline, forming a well-defined recession limb. Concentrations progressively decreased over several hours.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 20.6 mm of rainfall was recorded in the 24 hours preceding the event. This rainfall is sufficient to generate localised surface runoff, particularly under potentially wet antecedent conditions. The presence of multiple peaks suggests staggered runoff inputs and/or delayed mobilisation of sediments within the catchment.

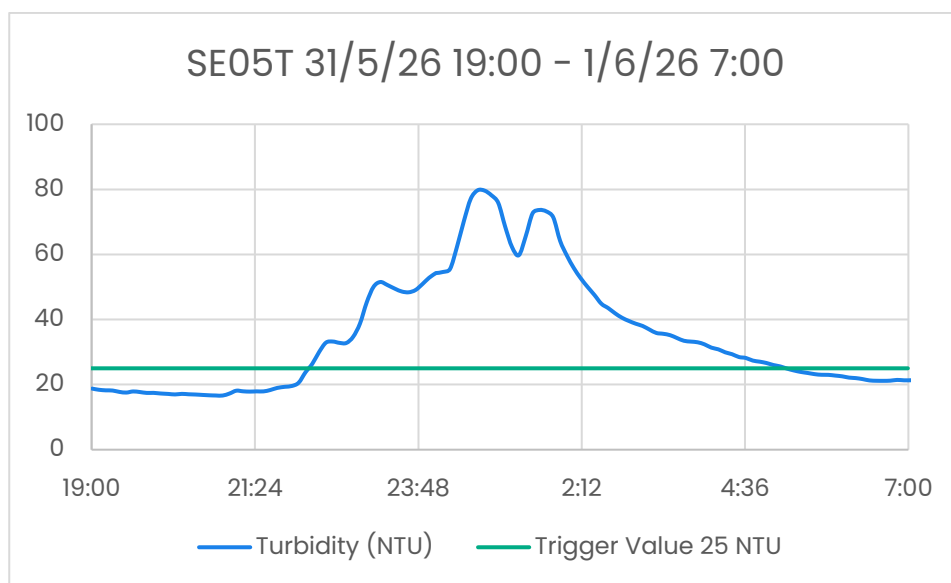


Figure 9- SE05T - May 31st

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026.

The event was recorded on 31 May 2026 from 10:15 PM to 01 June 2026 at 5:07 AM, with a duration of 6 hours and 52 minutes. The average turbidity value during the event was 46.82, with a peak of 79.7. There was 20.6mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity with rainfall then gradually declined down to below 15 NTU.

The SE05T monitoring site was inspected on 02 June 2026, the stream was fast flowing. Sensor face was impacted with a film of algae.

The SE05T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered ‘True’, but not mining related

5.2.1.8 HUN-2605-024

SE06T

The turbidity exceedance event occurred between 9:49 PM on 27 May 2026 and 12:21 AM on 28 May 2026 at monitoring location SE06T.

Trend analysis of the monitoring data (Figure 10) indicates a highly dynamic, multi-peaked response. Turbidity increased rapidly from below the trigger threshold (25 NTU) to approximately 50 NTU, followed by a brief decline before a sharp rise to a primary peak of approximately 145–150 NTU. This was followed by a rapid decrease and subsequent fluctuations, including secondary and tertiary peaks of approximately 100 NTU and 70–75 NTU, respectively. After this series of peaks, turbidity levels steadily declined, returning toward baseline conditions by the end of the monitoring period.

A total of 3.5 mm of rainfall was recorded in the 24 hours prior to the event; however, this rainfall occurred over a short duration of approximately 20 minutes, representing a relatively high-intensity rainfall burst. Despite the low total rainfall volume, the intensity is considered sufficient to generate rapid surface runoff and mobilise fine sediments.

The pronounced and rapid turbidity peaks are therefore consistent with an intense, short-duration runoff event. The multi-peaked response suggests successive pulses of sediment-laden inflow, likely reflecting rapid catchment connectivity, localised flow pathways, and/or remobilisation of previously deposited sediments. This behaviour indicates a system that is highly sensitive to short-duration, high-intensity rainfall events.

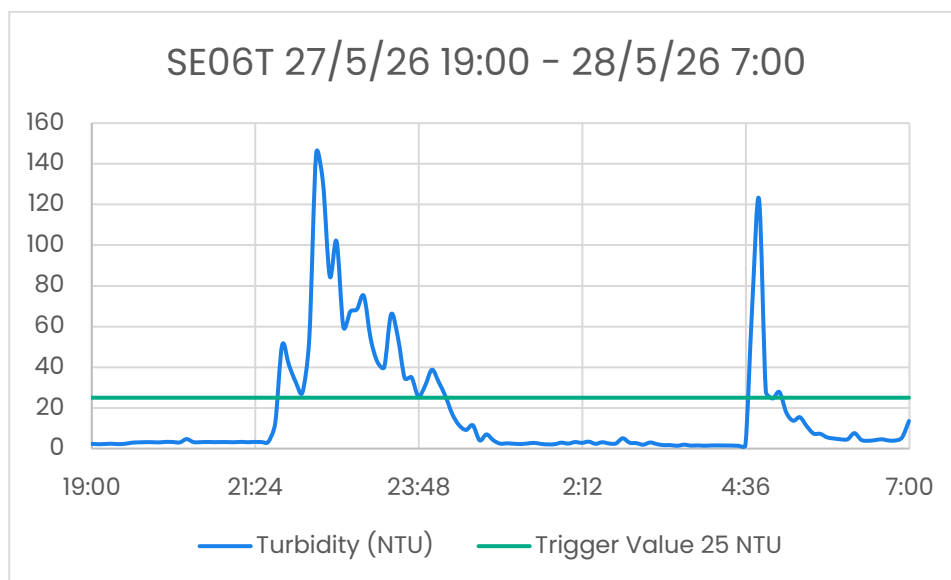


Figure 10- SE06T - May 27th

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE06T recorded a turbidity event exceeding 25 NTU for >1 hour on 27 May 2026.

The event was recorded on 27 May 2026 from 9:49 AM to 28 May 2026 12:21 AM, with a duration of 2 hours and 32 minutes. The average turbidity value during the event was 56.13, with a peak of 114.78. There was 3.5mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a rapid increase in turbidity values after receiving 3.5 mm of rainfall within a 20 minute period. During the event, the data trend continues to rapidly spike then decline, indicating the sensor may have been temporarily impacted by passing organic debris during the first rapid flush of rain.

In the hours following the rainfall event turbidity values consistently stabilise on average <2 NTU.

The SE06T monitoring site was inspected on 28 May 2026. The stream was clear and flowing, with visible algae built up around the sensor and on the stream bed. Turbidity readings remained consistent <2 NTU both before and after cleaning the sensor.

The SE06T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.9 HUN-2605-034

SE053T

The turbidity exceedance event occurred between 11:20 PM on 31 May 2026 and 1:58 AM on 1 June 2026 at monitoring location SE53T.

Trend analysis (Figure 11) indicates a moderate, single-peaked response with minor secondary fluctuations. Turbidity initially increased, this was followed by a more pronounced rise to a primary peak.

Following the primary peak, turbidity levels gradually declined, with minor fluctuations observed during the recession phase. Concentrations then continued to decrease steadily, returning to below the trigger threshold.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 29.3 mm of rainfall was recorded in the 24 hours preceding the event. This relatively high rainfall volume is sufficient to generate sustained surface runoff and sediment mobilisation across the catchment.

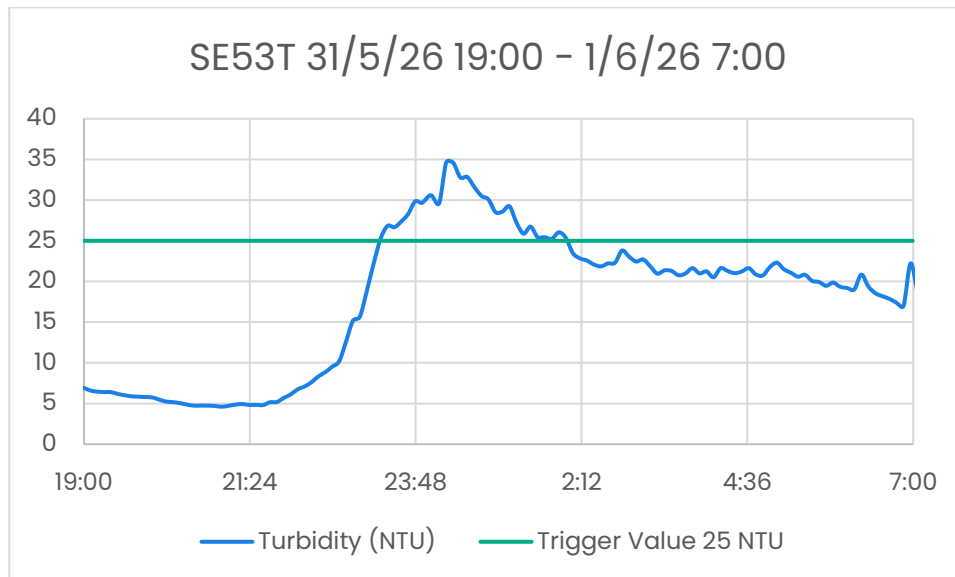


Figure 11- SE053T - May 31st

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE53T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026.

The event was recorded on 31 May 2026 from 11:20 PM to 01 June 2026 01:58 AM, with a duration of 2 hours and 38 minutes. The average turbidity value during the event was

28.7, with a peak of 34.62. There was 29.6 mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual incline in turbidity NTU commencing midway through the rain event and a gradual decline post rainfall. SE53T monitoring site was inspected on 03 June 2026, stream was clear and flowing with vegetation surrounding the sensor location. On arrival, the sensor pole was observed to have vertically dropped and therefore the sensor appeared to be sitting close to the stream bed. The sensor face was covered in a light film of algae.

The SE53T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.10 HUN-2605-035

SE59T

The turbidity exceedance event occurred between 10:37 PM on 27 May 2026 and 10:28 AM on 28 May 2026 at monitoring location SE59T.

Trend analysis of the monitoring data (Figure 12) indicates a rapid initial response followed by a prolonged recession phase. Turbidity increased sharply, followed by a brief fluctuation before a pronounced peak.

Following the peak, turbidity levels declined steadily, with a gradual. Minor fluctuations were observed during the recession phase, including a small secondary rise. Turbidity levels continued to decrease thereafter, reaching and remaining below the trigger threshold for the latter part of the monitoring period.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 6.9 mm of rainfall was recorded in the 24 hours preceding the event. While relatively low, this rainfall is considered sufficient to generate localised surface runoff, particularly under potentially wet antecedent conditions. The sharp initial increase and distinct peak suggest rapid mobilisation of fine sediments, while the extended recession indicates gradual settling and dilution within the system.

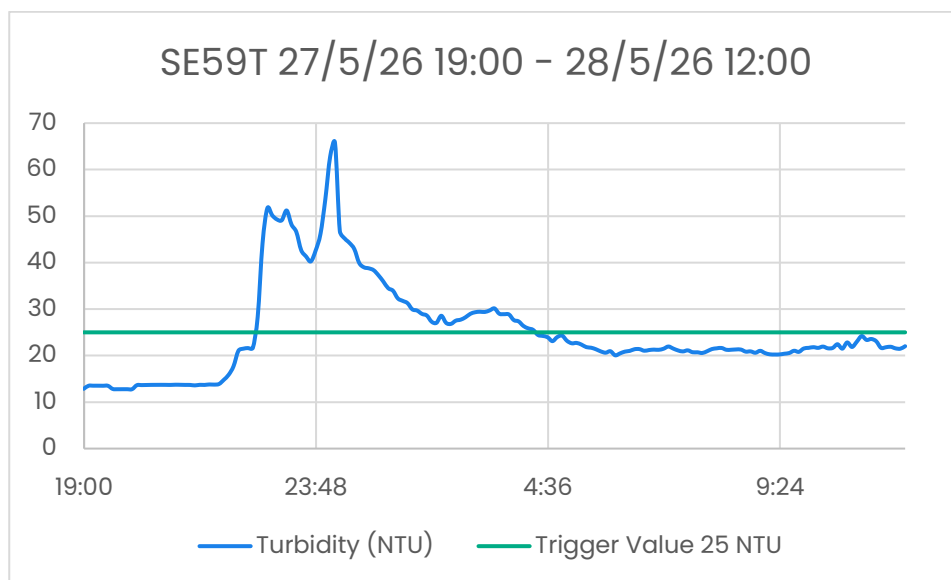


Figure 12- SE59T - May 27th

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE59T recorded a turbidity event exceeding 25 NTU for >1 hour on 27 May 2026.

The event was recorded on 27 May 2026 from 10:37 PM to 28 May 2026 10:28 AM, with a duration of 11 hours and 51 minutes. The average turbidity value during the event was 36.5, with a peak of 65.75. There was 6.9 mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity following a eight-hour period of sustained rainfall. In the hours following the rainfall, turbidity values rapidly declined to consistent readings <7 NTU. The SE59T monitoring site was inspected on 28 May 2026, during which elevated stream flow conditions and built-up organic debris were observed. The sensor was cleaned, resulting in turbidity readings rapidly decreasing from 21 to 8 NTU.

The SE59T catchment area was inspected, no evidence of mining related contribution was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.11 HUN-2605-036

SE59T

The turbidity exceedance event occurred between 2:23 AM and 4:06 AM on 31 May 2026 at monitoring location SE59T.

Trend analysis of the monitoring data (Figure 13) indicates a moderate, multi-phase response. Turbidity increased followed by a broad primary peak. After the peak, turbidity levels declined sharply, followed by minor fluctuations, including a brief secondary rise. Subsequently, turbidity levels decreased steadily, with a well-defined recession limb, returning to below the trigger threshold.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 9 mm of rainfall was recorded in the 24 hours preceding the event. While relatively modest, this rainfall is sufficient to generate localised surface runoff, particularly under potentially wet antecedent conditions.

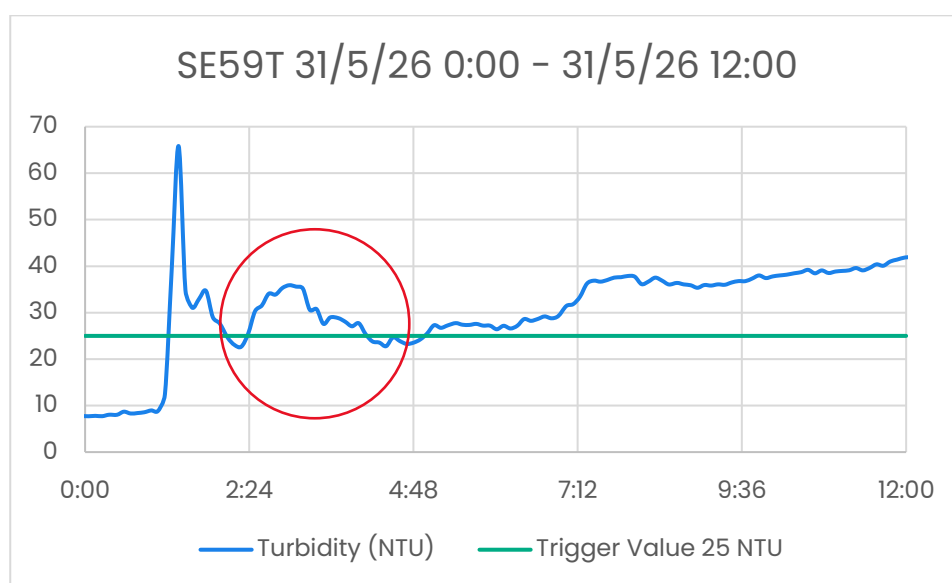


Figure 13- SE59T - May 31st

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE59T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026.

The event was recorded on 31 May 2026 from 02:23 AM to 31 May 2026 04:06 AM, with a duration of 1 hours and 43 minutes. The average turbidity value during the event was 30.68, with a peak of 35.9. There was 9 mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a rapid incline in NTU, with erratic data until rapid decline during rainfall. SE59T monitoring site was inspected on 03 June 2026, stream was clear and flowing with slight cascading flow immediately upstream of sensor. The sensor and

sensor cage was heavily impacted with sediment on inspection potentially impacted from stream bank adjacent which had evidence of animal activity and erosion of bank. The sensor was cleaned and returned into flow cell in the stream. The turbidity NTU pre clean was 19.94 rapidly decreased to turbidity 3.12 NTU post clean. The SE59T catchment area has been inspected and no evidence of mining related drainage concerns observed.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.12 HUN-2605-037

SE59T

The turbidity exceedance event occurred between 5:00 AM on 31 May 2026 and 7:39 AM on 3 June 2026 at monitoring location SE59T.

Trend analysis of the monitoring data (Figure 14) indicates an atypical and highly elevated turbidity response compared to standard rainfall-driven events. Turbidity levels initially increased from near the trigger threshold (25 NTU) to several hundred NTU, followed by a rapid escalation to sustained concentrations generally ranging between approximately 1,000 and 1,500 NTU. A pronounced isolated spike exceeding 3,000 NTU was also recorded. These elevated levels persisted for an extended period exceeding 24 hours before rapidly declining back to near baseline conditions toward the end of the monitoring period.

A total of 10.6 mm of rainfall was recorded in the 24 hours preceding the event. While this rainfall is sufficient to generate surface runoff, the magnitude, duration, and variability of the turbidity response are disproportionate to typical rainfall-driven behaviour observed at this site.

Instead, the sustained high turbidity levels, extreme peak values, and highly erratic fluctuations strongly indicate significant localised disturbance within close proximity to the monitoring location. The observed pattern is most consistent with animals (as noted by Alcoa) entering and disturbing the waterbody or channel bed, resulting in prolonged resuspension of fine sediments. The abrupt return to baseline conditions further supports this interpretation, indicating cessation of the disturbance rather than gradual attenuation typical of runoff-driven events.

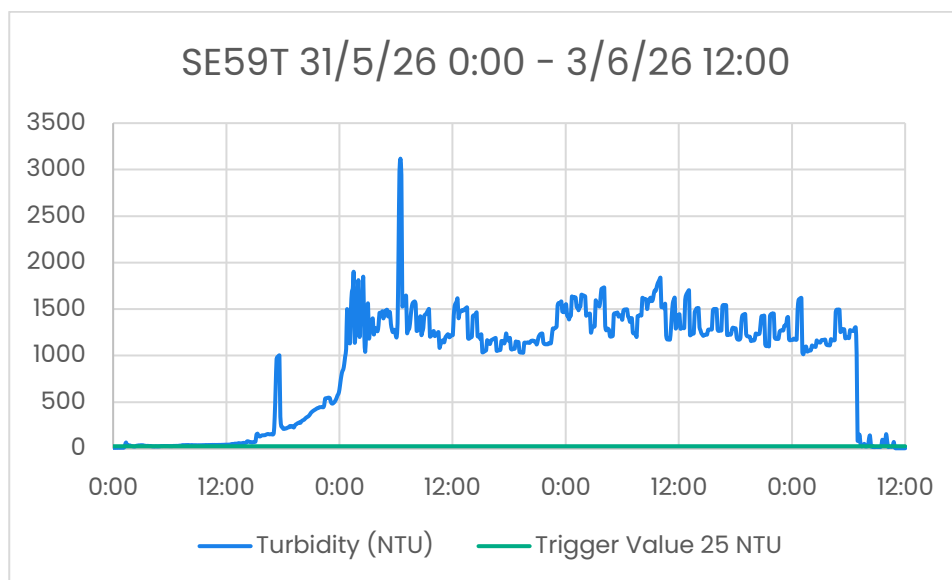


Figure 14- SE59T - May 31st

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE59T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026.

The event was recorded on 31 May 2026 from 05:00 AM to 31 May 2026 07:39 AM, with a duration of 2 hours and 39 minutes. The average turbidity value during the event was 1027.10, with a peak of 3118.51. There was 10.6 mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a rapid incline in turbidity NTU with the NTU stabilising over 1000 NTU for several hours beyond rainfall and rapidly declined to 3.06 NTU post clean. SE59T monitoring site was inspected on 03 June 2026, stream was clear and flowing with slight cascading flow immediately upstream of sensor. The sensor and sensor cage was heavily impacted with sediment on inspection potentially impacted from stream bank adjacent which had evidence of animal activity and erosion of bank. The sensor was cleaned and returned into flow cell in the stream.

The SE59T catchment area has been inspected and no evidence of mining related drainage concerns observed.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.13 HUN-2605-038

SE61T

The turbidity exceedance event occurred between 1:27 AM and 2:28 AM on 28 May 2026 at monitoring location SE61T.

Trend analysis of the monitoring data (Figure 15) indicates a short-duration, single-peaked response. Turbidity increased rapidly from below the trigger threshold (25 NTU) to approximately 32–33 NTU by around 1:40 AM, forming a broad and relatively stable peak.

Following this peak, turbidity levels declined gradually, with a smooth and continuous recession limb. Concentrations fell below the trigger threshold by approximately 2:25 AM and continued decreasing toward baseline levels thereafter.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 13.2 mm of rainfall was recorded in the 24 hours preceding the event. This rainfall is sufficient to generate localised surface runoff and sediment mobilisation.

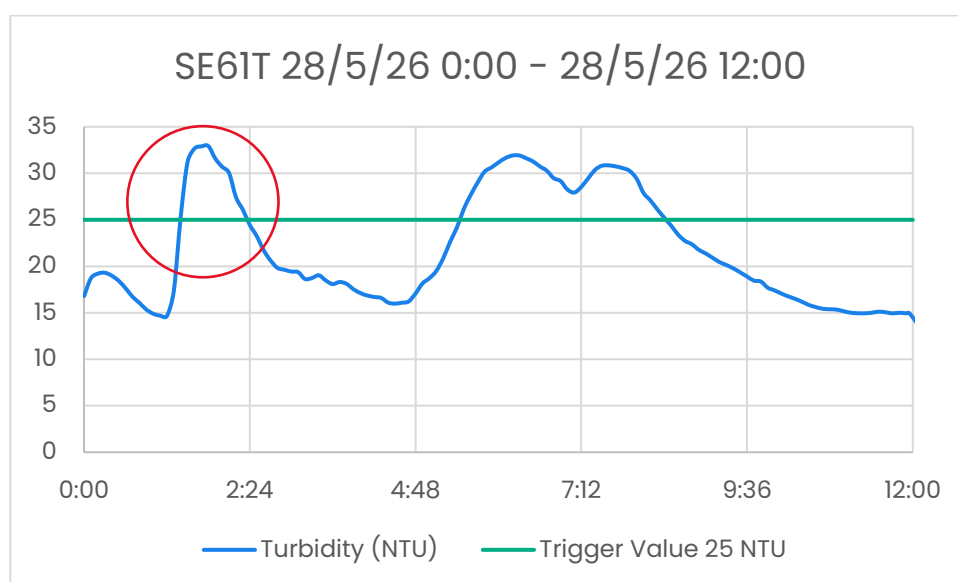


Figure 15- SE61T - May 28th

Field notes provided by Alcoa are included below.

Local turbidity monitoring site SE61T recorded a turbidity event exceeding 25 NTU for >1 hour on 28 May 2026, with a duration of 1 hour and 1 minute. A total of 13.2mm of rainfall was recorded in the preceding 24 hours.

The SE61T monitoring site was inspected on 28 May 2026. Stream flow velocity had increased significantly, resulting in turbulent conditions around the sensor and the accumulation of organic debris and algae.

Trend analysis indicates a gradual rise and subsequent decline in turbidity values, which correlates with recorded rainfall.

An inspection of the SE61T catchment area was completed, no evidence of mining contribution to the turbidity exceedance was found

Based on the comments provided by Alcoa this event is considered ‘True’, but not mining related

5.2.1.14 HUN-2605-039

SE61T

The turbidity exceedance event occurred between 5:35 AM and 8:31AM on 28 May 2026 at monitoring location SE61T.

The turbidity trend (Figure 16) indicates a moderate, multi-phase response. Turbidity initially increased, followed by a slight decline and brief fluctuation, before rising again to a secondary peak. Following this secondary peak, turbidity levels exhibited a steady and continuous decline toward baseline conditions.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 27.2 mm of rainfall was recorded in the 24 hours preceding the event. This rainfall is sufficient to generate localised surface runoff, particularly under potentially wet antecedent conditions. The presence of a secondary peak suggests either staggered runoff inputs or delayed mobilisation of sediments within the catchment.

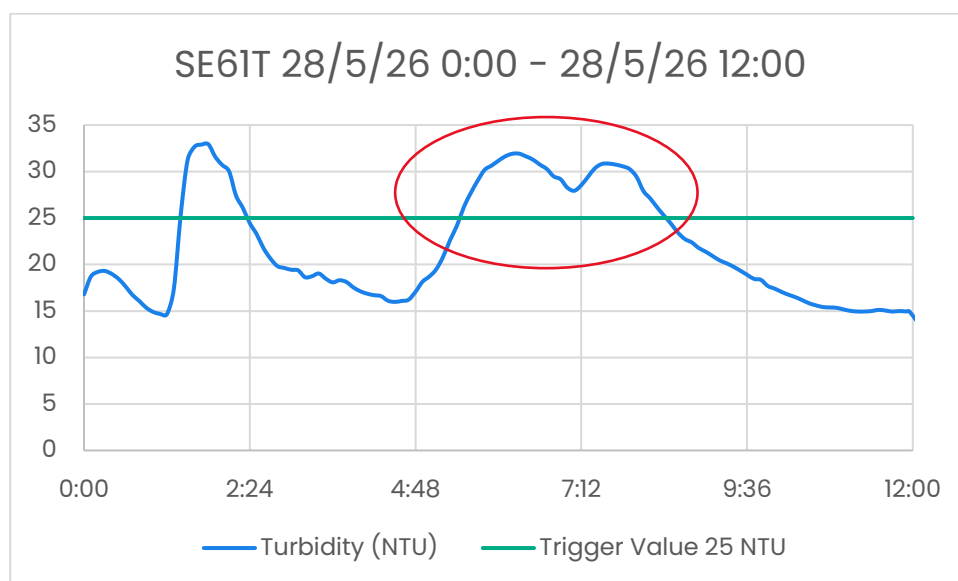


Figure 16- SE61T - May 28th

Field notes provided by Alcoa are included below.

Local turbidity monitoring site SE61T recorded a turbidity event exceeding 25 NTU for >1 hour on 28 May 2026, with a duration of 2 hours and 56 minutes. A total of 27.2mm of rainfall was recorded in the preceding 24 hours.

The SE61T monitoring site was inspected on 28 May 2026. Stream flow velocity had increased significantly, resulting in turbulent conditions around the sensor and the accumulation of organic debris and algae.

Trend analysis indicates a gradual rise and subsequent decline in turbidity values, which correlates with recorded rainfall.

An inspection of the SE61T catchment area was completed, no evidence of mining contribution to the turbidity exceedance was found.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.1.15 HUN-2605-040

SE61T

The turbidity exceedance event occurred between 1:35 AM and 6:56 AM on 31 May at monitoring location SE61T. Datataker battery went flat during event.

The turbidity trend (Figure 17) indicates a complex, multi-phase response. Turbidity initially increased rapidly following a slight decline, reaching a primary peak. This was followed by a decrease, before rising again to a secondary peak. After the secondary peak, turbidity levels showed a steady decline, with a brief minor increase observed prior to a continued and consistent downward trend until the data logger ceased recording.

The observed turbidity response is consistent with rainfall-driven runoff processes. A total of 8.8 mm of rainfall was recorded in the 24 hours preceding the event. While relatively moderate, this rainfall is sufficient to generate localised surface runoff, potentially mobilising sediments into the monitored system. The presence of multiple peaks suggests staggered inflows or delayed sediment transport within the catchment.

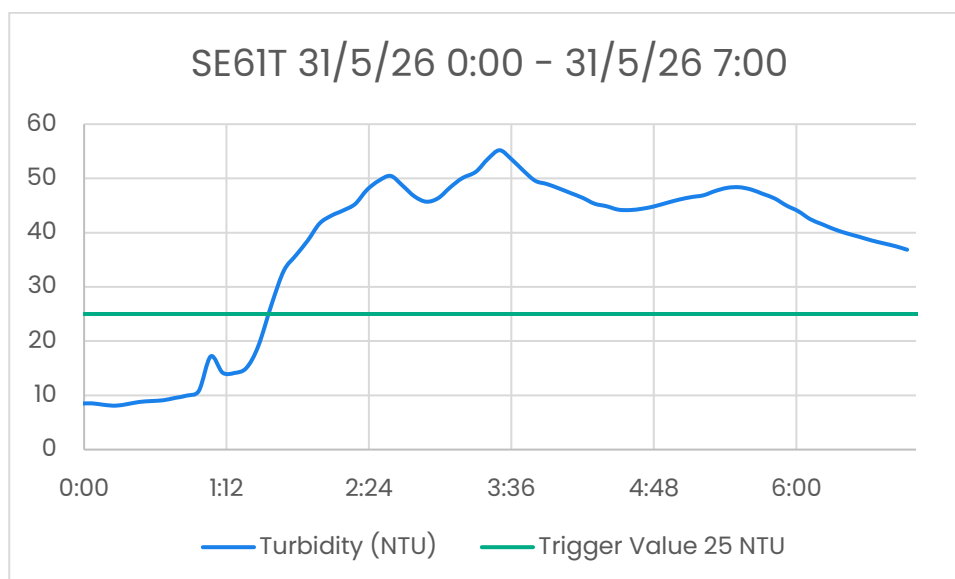


Figure 17- SE61T - May 31st

Field notes provided by Alcoa are included below.

Local turbidity monitoring SE61T recorded a turbidity event exceeding 25 NTU for >1 hour on 31 May 2026, with a duration of 5 hours and 21 minutes. A total of 8.8 mm of rainfall was recorded in the preceding 24 hours.

The SE61T monitoring site was inspected on 03 June 2026. Stream was flowing clear and sensor face was impacted with a light film of algae and heavily stained. The forest track running parallel with the stream is impacted with groundwater and heavily eroded upstream of sensor. During the rain event it is possible water flow from the forest track is deviating towards the stream through vegetation.

Trend analysis indicates a gradual increase in turbidity NTU and indicating a gradual decline until the battery to the datataker went flat during the turbidity event.

An inspection of the SE61T catchment area has been inspected and no evidence of mining related drainage concerns observed.

Based on the comments provided by Alcoa this event is considered 'True', but not mining related

5.2.2 False Event(s)

Twenty-five (25) 'False' events were identified during the reporting period. Rationale on potential causes is summarised below.

Table 3: False Events Rationale

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-001	PD01T	The event is marked with a rapid decrease in turbidity. This is indicative of a false event	The data trend indicates the event was false, with a very gradual increase in turbidity values occurring over the 24 hours prior to the event. The monitoring site was inspected on 16/05/2026, algal growth and natural stream bed sediment was impacting the sensor lens. Turbidity value on arrival was 25.63 NTU which dropped to 1.1 NTU after the lens was cleaned.
HUN-2605-002	SE02T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The data trend shows a sharp incline to an extreme peak, followed by a rapid decline. Erratic values were observed prior to the event, with multiple short, sharp spikes occurring immediately afterwards. Turbidity levels subsequently returned to background levels. Analysis of the overall trend indicates this was a false event, likely caused by debris impacting the sensor lens.
HUN-2605-003	SE02T	This event is marked by a rapid increase in turbidity with multiple sporadic peaks. This is indicative of a false event.	Site inspected 14/05/2026. The stream is flowing and clear. The sensor was cleaned which slightly reduced turbidity from 6.37 NTU to 5.22 NTU. Review of the turbidity data showed an erratic NTU trend, reading 7.54 NTU then jumping to 51.29 within 5 minutes, indicating the sensor was likely impacted by passing debris. No rain was received in the 24 hours proceeding this event.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-004	SE02T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Site inspected 14/05/2026. The stream is flowing and clear. The sensor was cleaned which slightly reduced turbidity from 6.37 NTU to 5.22 NTU. Review of the turbidity data showed an erratic NTU trend, reading 7.54 NTU then jumping to 51.29 within 5 minutes, indicating the sensor was likely impacted by passing debris. No rain was received in the 24 hours proceeding this event.
HUN-2605-006	SE03INV1	The event is marked by gradual increase and rapid decrease in turbidity. This is indicative of a false event.	SE03INV1 site was inspected on the 14/05/2026. The stream was clear, flowing with visible built up algae on the stream bed and around the sensor. The sensor was cleaned which dropped turbidity from 47.89 NTU to 3.28 NTU. Turbidity is averaging 2 NTU over the proceeding 48hrs.
HUN-2605-007	SE03INV1	The event is marked by gradual increase and rapid decrease in turbidity. This is indicative of a false event.	The monitoring site was inspected on 24/05/2025, and the sensor was heavily impacted by algae. Turbidity value on arrival was 53.07 NTU, which dropped to 2.35 NTU after the sensor lens was cleaned.
HUN-2605-008	SE03INV1	The event is marked by gradual increase and rapid decrease in turbidity. This is indicative of a false event.	Site visit of SE03INV1 was carried out on the 03 June 2026. The stream was flowing, shallow and clear. Sensor is very close to the stream bed due to depth and was being impacted by organic matter, stream bed sediment and algae. Turbidity NTU pre clean was 96.1 and post clean 3.6 NTU. Data trend of gradual incline trending during the rain event and then rapidly declining mid rain event indicating organic debris clearing.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-015	SE06T	This event is marked by a gradual increase and rapid decrease in turbidity after a large sporadic peak. This is indicative of a false event.	The stream level is very low and the sensor is positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.
HUN-2605-016	SE06T	This event is marked by a rapid increase and decrease in turbidity. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.
HUN-2605-017	SE06T	This event is marked by an increase and decrease in turbidity. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.
HUN-2605-018	SE06T	This event is marked by a gradual increase and rapid decrease in turbidity. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-019	SE06T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.
HUN-2605-020	SE06T	The event is marked by a gradual increase in turbidity followed by a rapid decrease with multiple sporadic peaks. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.
HUN-2605-021	SE06T	The event is marked by a mild change in turbidity with multiple sporadic peaks. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.
HUN-2605-022	SE06T	The event is marked by a gradual increase in turbidity followed by a rapid decrease with multiple sporadic peaks. This is indicative of a false event.	The stream level is currently very low, with the sensor positioned close to the stream bed. As a result, the sensor is frequently impacted by algae and natural sediment. Data analysis shows repeated events displaying erratic behaviour and, at times, extreme turbidity values that are not representative of true stream conditions.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-023	SE06T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Data analysis shows the event is false and attributed to the low stream flow conditions and poor water quality, which is consistent with field inspection observations. The data trend shows a very gradual increase in turbidity over the 24 hours preceding the event. Measurements then spike to 41.44 NTU and remain above 25 NTU for a period, followed by a sharp decrease below 25 NTU. Erratic measurements persist in the hours following the event before a further sharp decline to <1 NTU
HUN-2605-025	SE06T	This event is marked by a gradual increase and rapid decrease in turbidity. This is indicative of a false event.	SE06T site was visited on 06 June 2026 and the stream is very shallow and flowing clear. The sensor is being impacted by stream bed sediment and organic matter due to the very shallow water depth. Data trend has data spikes whilst inclining with a rapid decline, indicating likely organic matter impacted the sensor.
HUN-2605-026	SE10T	The event is marked by a gradual increase and decrease in turbidity. This is indicative of a false event.	The level float sensor changed from 0 (dry) to 1 (flow) on 20/05/2026 at 6:54 PM. The monitoring site was inspected on 21/05/2026, at which time the stream had begun flowing and the sensor was partially out of the water. The data trend shows a gradual incline and decline, which is consistent with field observations of the sensor lens being partially submerged.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-027	SE52T	This event is marked by a gradual increase and rapid decrease in turbidity. This is indicative of a false event.	Data analysis indicates that the event was false and is consistent with interference caused by debris. Turbidity levels showed fluctuations in the hours leading up to the event, intermittently returning to background levels. This was followed by a gradual increase, reaching a prominent peak, after which readings showed multiple sharp drops before returning to background levels.
HUN-2605-028	SE52T	This event is marked by an increase and decrease in turbidity. This is indicative of a false event.	Data trend indicates false event, showing erratic turbidity values prior to the event, followed by a gradual incline and sharp decline. Further fluctuating turbidity values occurred following the event. The trend is consistent interference caused by debris.
HUN-2605-029	SE52T	This event is marked by a rapid initial increase with a continues climb over hours. A rapid decrease and increase to a second peak before a decrease in turbidity. This is indicative of a false event.	Data trend indicates false event, showing erratic turbidity values (sharp inclines and declines) through the duration of the event. The site inspected 28/05/2026 confirmed built up organic debris was surrounding the sensor. The turbidity trend is consistent with interference caused by debris.
HUN-2605-030	SE52T	This event is marked by a rapid increase and decrease in turbidity. This is indicative of a false event.	Data trend indicates a false event, showing erratic turbidity values with a sharp incline (16 NTU to 120 NTU within 2 minutes) and declines. The site inspection 28/05/2026 confirmed built up organic debris was surrounding the sensor. The turbidity trend is consistent with interference caused by debris. Due to the heavy rainfall in the 24 hours proceeding the event (27.2mm), a catchment inspection was completed on the 29 May 2026. No drainage issues were identified.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-031	SE52T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Data trend indicates a false event, showing erratic turbidity values with a sharp incline (17 NTU to 66 NTU within 10 minutes) and declines. The site inspection 28/05/2026 confirmed built up organic debris was surrounding the sensor. The turbidity trend is consistent with interference caused by debris. Due to the heavy rainfall in the 24 hours proceeding the event (27.6), a catchment inspection was completed on the 29 May 2026. No drainage issues were identified.
HUN-2605-032	SE52T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Data trend indicates a false event, showing erratic turbidity values with an erratic inclines and declines. The site inspection 01/06/2026 confirmed built up organic debris was surrounding the sensor. NTU immediately dropped from 250 to 9 post clean. The turbidity trend is consistent with interference caused by debris. A catchment inspection was completed (01/06/2026) following another event confirmed no drainage issues within the catchment.
HUN-2605-033	SE52T	The event is marked by a gradual increase in turbidity followed by a rapid decrease with multiple sporadic peaks. This is indicative of a false event.	Data trend indicates false event, showing erratic turbidity values prior to the event, followed by a gradual incline and sharp decline. Further fluctuating turbidity values occurred following the event. The trend is consistent interference caused by debris. Data trends indicate false event, showing erratic turbidity values prior and during the event, followed by a sharp decline after a field visit and clean (01/06/2026). The high max NTU and fluctuating jumps in NTU during the event further clarify false event, caused by debris build on the lens.

5.2.3 Excluded WQMS Units

Twenty-three WQMS Units were excluded from analysis due to inaccurate data. Alcoa confirmed the invalidity of data recorded from these units and provided commentary on the condition of each.

Table 4: Excluded WQMS Units

WQMS ID	Comment
FPWR1	Stream dry as of 12/11/2025
ND12T	Stream dry as of 15/12/2025. Unit removed from the field 19/03/2026 for planned DBCA prescribed burn.
ND13T	Stream dry as of 13/01/2026. Unit removed from the field 19/03/2026 for planned DBCA prescribed burn.
SE03INV3	Stream dry as of 1/12/2025
SE04T	New monitoring site installed 20/11/2025, stream dry at time of installation.
SE07T	Equipment reinstated on 5/03/2026, the stream was dry at the time of installation.
SE09T	Stream observed flowing on 21/05/2026 during an inspection, but the level float sensor was still reading 0 (dry). Stream flow estimated to have commenced around 20/05/2026 when the downstream turbidity monitor SE10T recorded flow.
SE10T	Stream commenced flowing on 20/05/2026
SE11T	Stream dry as of 3/11/2025
SE12INV	Stream dry as of 12/11/2025
SE12T	Stream dry as of 3/12/2025
SE15T	Equipment reinstated on 12/02/2026, the stream was dry at the time of installation.
SE22T	Stream dry as of 1/12/2025
SE23T	Stream dry as of 3/10/2025
SE24T	Stream dry as of 12/11/2025
SE25T	Stream dry as of 12/11/2025
SE26T	Stream dry as of 28/09/2025
SE34T	Stream dry as of 15/12/2025
SE36T	Stream dry as of 19/12/2025
SE48T	Stream dry as of 21/12/2025
SE60T	Equipment reinstated on 5/02/2026, the stream was dry at the time of installation.
SE62T	Stream dry as of 17/12/2025
SN07T	Stream dry as of 31/01/2026

5.2.4 Missing Data

Periods of missing data are detailed in Table 5.

Table 5: Missing Data Summary

WQMS ID	Data Notes
DB01T	Unit removed from the field on 19/05/2026 due to a DBCA prescribed burn
ND06T	Data gap from 2/5/2026 12:18AM to 14/5/2026 Unit removed from the field on 19/05/2026 due to a DBCA prescribed burn
ND07T	Unit removed from the field on 19/05/2026 due to a DBCA prescribed burn
ND14T	Unit removed from the field on 19/05/2026 due to a DBCA prescribed burn
SE03T	Data gap from 20/5/2026 1:12PM to 20/5/2026 14:30 PM due to Maintenance
SE08T	Data gap from 27/5/2026 9:44AM to 27/5/2026 10:38 PM due to Maintenance
SE51T	Data gap 21/5/2026 2:00 AM to 21/5/2026 8:02AM Data gap 21/5/2026 11:36 PM to 22/5/2026 6:01AM
SE52T	Data gap from 15/5/2026 11:57AM to 15/5/2026 2:55 PM due to Maintenance
SE53T	Data gap from 15/5/2026 9:30AM to 15/5/2026 2:51 PM due to Maintenance
SE61T	Data gap from 31/5/2026 6:56AM to 1/6/2026 2:51 flat battery

Appendix A Huntly Raw WQMS Data

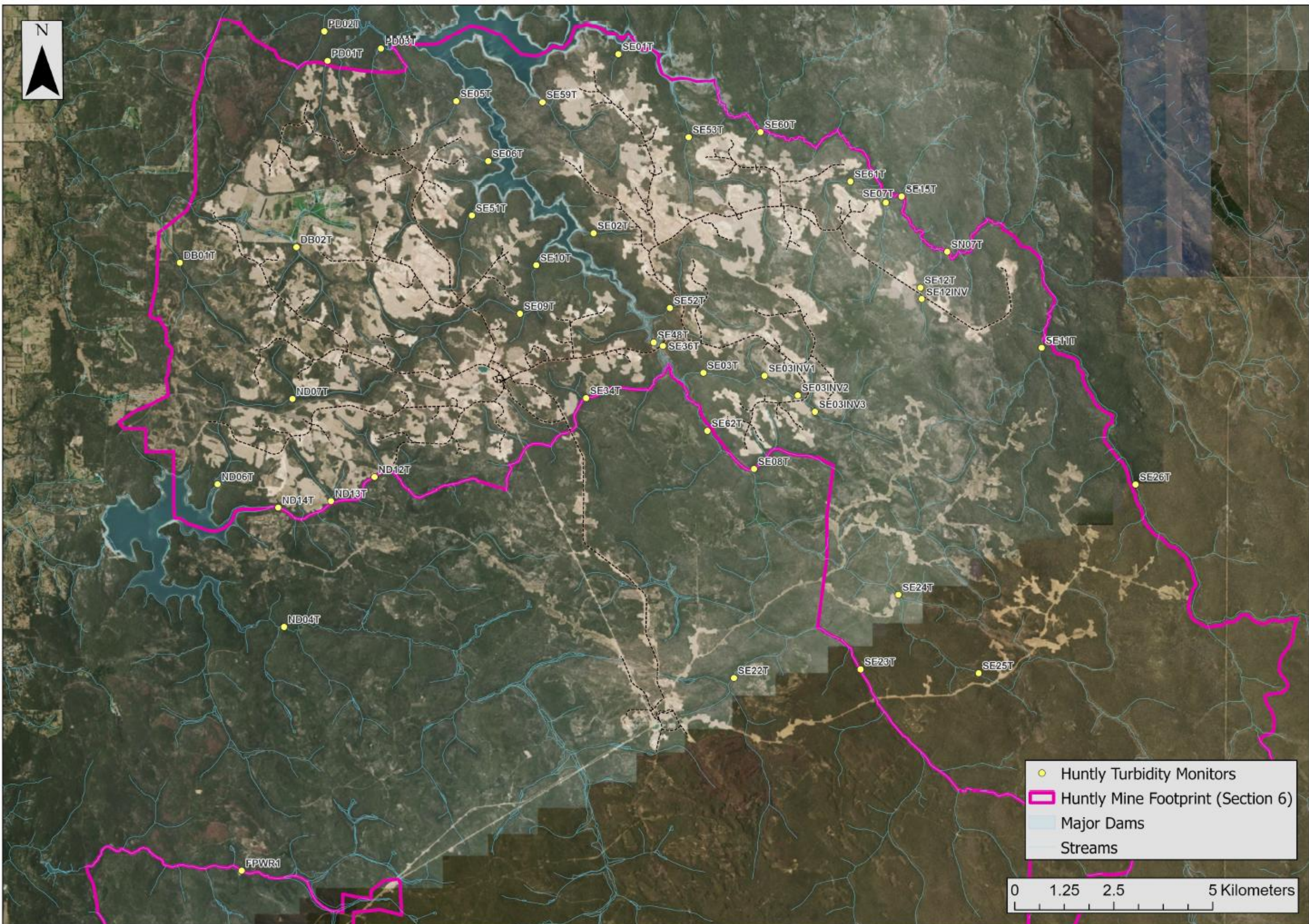
Date	Huntly WQMS Data – May 2026 - Events with turbidity > 25 NTU for an hour or more											
	DB01T	DB02T	DB03T	FPWR1	ND06T	ND07T	ND12T	ND13T	ND14T	PD01T	PD02T	PD03T
1/05/2026												
2/05/2026												
3/05/2026												
4/05/2026												
5/05/2026												
6/05/2026												
7/05/2026												
8/05/2026												
9/05/2026												
10/05/2026												
11/05/2026												
12/05/2026												
13/05/2026												
14/05/2026												
15/05/2026										1 x False		
16/05/2026												
17/05/2026												
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20/05/2026												
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26/05/2026												
27/05/2026												
28/05/2026												
29/05/2026												
30/05/2026												
31/05/2026												

Date	Huntly WQMS Data – May 2026 - Events with turbidity > 25 NTU for an hour or more											
	SE01T	SE02T	SE03INV1	SE03INV3	SE03T	SE04T	SE05T	SE06T	SE07T	SE08T	SE09T	SE10T
1/05/2026												
2/05/2026		1 x False										
3/05/2026								1 x False				
4/05/2026								1 x False				
5/05/2026												
6/05/2026								2 x False				
7/05/2026												
8/05/2026												
9/05/2026								1 x False				
10/05/2026												
11/05/2026												
12/05/2026								1 x False				
13/05/2026		2 x False	1 x False					2 x False				
14/05/2026												
15/05/2026												
16/05/2026												
17/05/2026												
18/05/2026												
19/05/2026								1 x False				
20/05/2026												
21/05/2026												1 x False
22/05/2026												
23/05/2026			1 x False									
24/05/2026												
25/05/2026												
26/05/2026												
27/05/2026		1x True					1x True	1x True				
28/05/2026							1x True					
29/05/2026												
30/05/2026			1 x False	1 x False								
31/05/2026				1x True			3x True	1x True				

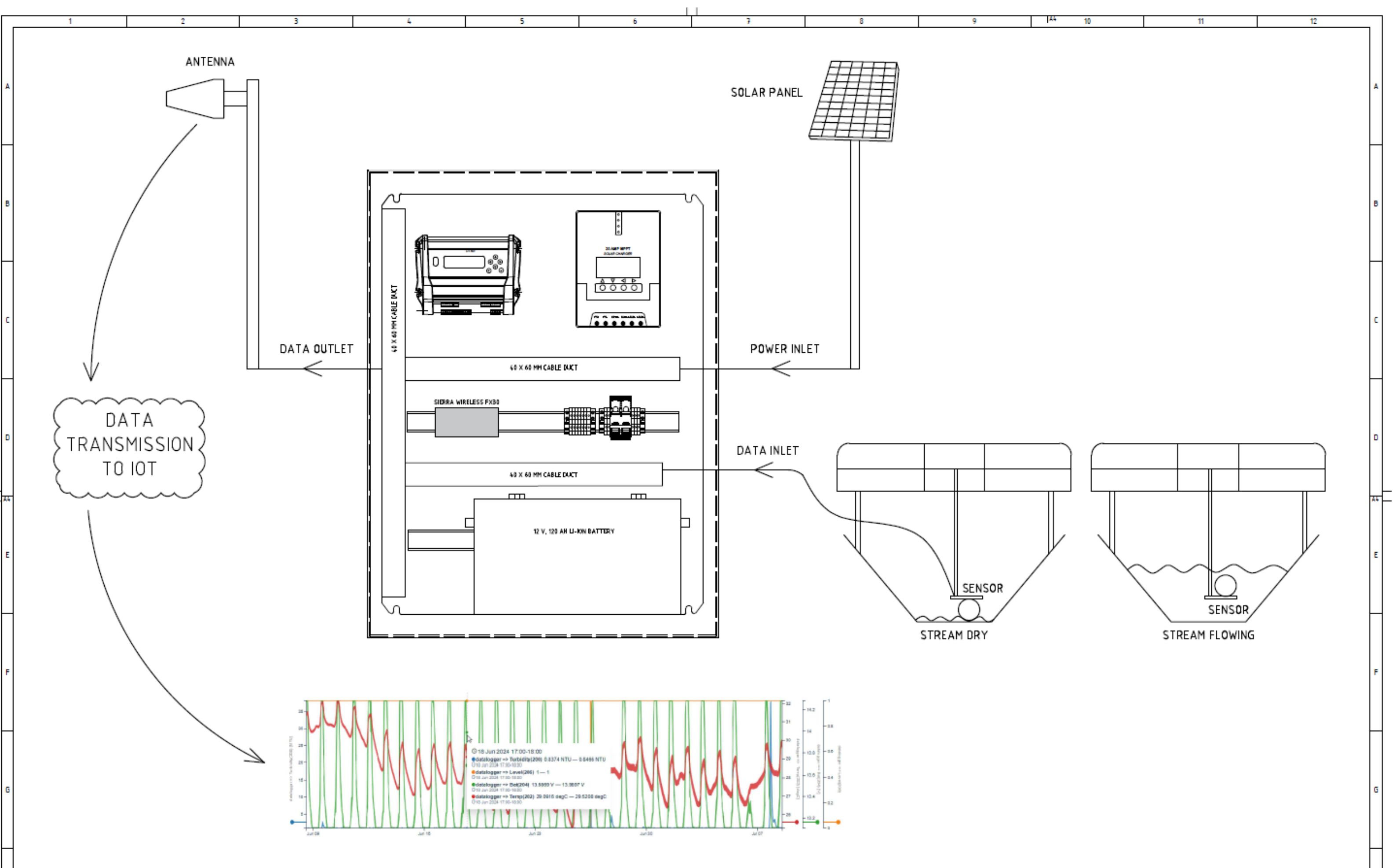
Date	Huntly WQMS Data – May 2026 - Events with turbidity > 25 NTU for an hour or more											
	SE11T	SE12T	SE12INV	SE15T	SE23T	SE24T	SE25T	SE26T	SE34T	SE36T	SE48T	SE51T
1/05/2026												
2/05/2026												
3/05/2026												
4/05/2026												
5/05/2026												
6/05/2026												
7/05/2026												
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30/05/2026												
31/05/2026												

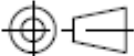
Huntly WQMS Data – May 2026 - Events with turbidity > 25 NTU for an hour or more							
Date	SE52T	SE53T	SE59T	SE60T	SE61T	SE62T	SN07T
1/05/2026							
2/05/2026							
3/05/2026							
4/05/2026							
5/05/2026							
6/05/2026							
7/05/2026							
8/05/2026							
9/05/2026							
10/05/2026							
11/05/2026							
12/05/2026							
13/05/2026	1 x False						
14/05/2026	1 x False						
15/05/2026							
16/05/2026							
17/05/2026							
18/05/2026							
19/05/2026							
20/05/2026							
21/05/2026							
22/05/2026							
23/05/2026							
24/05/2026							
25/05/2026							
26/05/2026							
27/05/2026	1 x False		1 x True				
28/05/2026	2 x False				2 x True		
29/05/2026	1 x False						
30/05/2026							
31/05/2026	1 x False	1 x True	2 x True		1 x True		

Appendix B Huntly WQMS Locations



Appendix C WQMS General Arrangement



								 ALL DIMENSIONS IN MILLIMETRES UNO. LEVELS ARE IN METRES ON AHD UNO. DO NOT SCALE DRAWING IF IN DOUBT - ASK TOLERANCES ISO2768-m UNO. © SCIDEV	CLIENT	NSW - BUILDING G, 22 POWERS RD, SEVEN HILLS, NSW 2147 (02) 0305 5357 WA - 512, 1A QUEEN ST FREEMANTLE WA 6160 (08) 6245 9043 waterservices@scidev.com.au www.scidev.com.au		TITLE IOT TURBIDITY MONITORING STATION SITE LAYOUT GENERAL ARRANGEMENT		SHEET SIZE A3	H								
REV. 1																							
0	ISSUE FOR APPROVAL	05.07.2024	A.K.	S.A.	A.K.	A.K.											SHEET 1 OF 2		DRAWING NO.	1			
REV.	REMARKS	DATE	DESIGNED	DRAWN	CHECKED	APPROVED	REFERENCE DRAWINGS										SCALE NTS OR AS SHOWN	HI0090 - ALCOA WQMS					
1		2		3		4						5		6		7		8		9		10	

WQMS Data Review

Willowdale Bauxite Mine

MAY 2026



Document Control

Document Control			
Rev.	Data Analysis	Approved By	Date
B	Wendy Spinner	Nick O'Reilly	16/07/2026
C	Wendy Spinner	Nick O'Reilly	22/07/2026
0	Wendy Spinner	Nick O'Reilly	22/07/2026

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1. Executive Summary

SciDev conducted an analysis of turbidity data collected from Water Quality Monitoring Systems (WQMS) operating across Alcoa's Willowdale bauxite mining operations for May 2026. The purpose of this assessment was to evaluate data quality, identify genuine turbidity exceedance events, and support compliance with the *Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023*.

The review focused on events where turbidity exceeded 25 NTU for at least one hour. Events were evaluated in accordance with Alcoa's Turbidity Event Classification Guidelines and classified as either "true" exceedances, representing genuine increases in turbidity, or "false" exceedances resulting from environmental or operational interferences.

Key outcomes of the analysis were:

- **Excluded Units:** Two (2) WQMS units were excluded from the analysis due to invalid data caused by equipment faults or environmental interference.
- **False Events:** Five (5) turbidity exceedances were identified as false, commonly caused by debris, sensor obstruction, or hydraulic disturbances.
- **True Events:** Two (2) "True" turbidity exceedance event were recorded following detailed assessment; however, none were attributable to mining activities.

Data gaps were also identified due to system outages, maintenance, and unexpected shutdowns. These have been documented to maintain transparency in reporting.

Overall, while turbidity exceedance events were recorded during May 2026, the assessment found no evidence that any true turbidity exceedance event was caused by mining activities.

2. Scope

SciDev were engaged by Alcoa to analyse turbidity data collected from the Willowdale Water Quality Monitoring Systems (WQMS). The primary objective of this engagement is to assess the quality of the collected data and identify potential “true” turbidity events. This analysis supports Alcoa’s reporting obligations under *Schedule 1, Division 2, Clause 6 of the Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023*.

3. Introduction

3.1 Background

Alcoa of Australia Ltd (Alcoa) operates two bauxite mines, Huntly and Willowdale, approximately 100 km southeast of Perth, Western Australia. These mining operations are subject to environmental controls mandated by the *Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023*.

Under this Exemption Order, Alcoa is required to implement drainage control measures and monitor effectiveness in water bodies within and downstream of mining operations. Turbidity, a critical water quality parameter, is monitored using Water Quality Monitoring Systems (WQMS), to detect deviations and identify high-turbidity events.

Alcoa is obligated to report monthly on-stream turbidity, including the identification and classification of any “true” high-turbidity exceedance events. (Refer to Appendix B for the site map showing WQMS locations.)

3.2 Monitoring Requirements

Environmental Protection (Darling Range Bauxite Mining Proposal) Exemption Order 2023 specifies that a drainage incident occurs when:

- a. Runoff from a disturbance area enters the surrounding environment, resulting in surface water turbidity of at least 25 NTU for a duration of at least one hour; or
- b. a discharge from containment infrastructure includes, or may include, environmentally hazardous material.

Trigger levels for drainage incidents are outlined in Schedule 1 of the Exemption Order. To meet these requirements, Alcoa has developed “Turbidity Event Classification Guidelines” which define a true turbidity exceedance event as a WQMS recording turbidity levels of at least 25 NTU for a period exceeding one hour.

3.3 Water Quality Management System (WQMS)

During the May 2026 monitoring period, four (4) WQMS units were deployed to monitor turbidity levels in streams subject to surface water runoff within and downstream of Willowdale mining operations.

Each WQMS unit consists of the following components:

Aquas SMR10 Turbidity Probe

Positioned at a 90-degree angle to water flow, each probe is equipped with an automatic lens wiper and a guard to protect against larger debris.

Data Taker DT82 Logger

Records data locally every six seconds, with six-minute averages transmitted via IoT-enabled modems to a cloud-based platform.

Float Switch

Detects whether the sensor is submerged, or the stream is dry.

3.4 Purpose

This report aims to analyse turbidity data collected during March 2026, focusing on the identification and classification of "true" turbidity exceedance events based on Alcoa's Turbidity Event Classification Guidelines.

3.5 Exclusions

This report is not intended as:

An assessment of the WQMS network or Alcoa's compliance with relevant legislation and requirements.

An evaluation of the suitability of the trigger levels or event classification procedures adopted by Alcoa.

3.6 Abbreviations

	Term
IoT	Internet of Things
NTU	Nephelometric Turbidity Units
WQMS	Water Quality Management System

4. Methodology

4.1 WQMS Locations

A site map showing the WQMS locations is provided in Appendix B.

4.2 Data Review

Data recorded by the WQMS Units was reviewed and potential events where turbidity levels exceeded 25 NTU for at least one hour. Each potential event was categorised as either 'true' or 'false'.

4.2.1 True Turbidity Exceedance Events

These events are caused by an actual increase in stream turbidity. Per Alcoa's "Turbidity Event Classification Guidelines" true exceedance events typically exhibit:

A sharp, sudden incline in turbidity levels.

A return to baseline turbidity levels in a pattern resembling a normal (Gaussian) distribution.



Figure 1 Typical 'True' exceedance event.

4.2.2 False Turbidity Exceedance Events

These events are caused by factors unrelated to actual turbidity increase, such as:

Organic debris (e.g., leaves, sticks, algae) obstructing the sensor

Air bubbles or water turbulence near the sensor

Fluctuating water levels intermittently covering and uncover the sensor lens.

False events typically exhibit sharp inclines and declines without the characteristic bell curve shape of true events

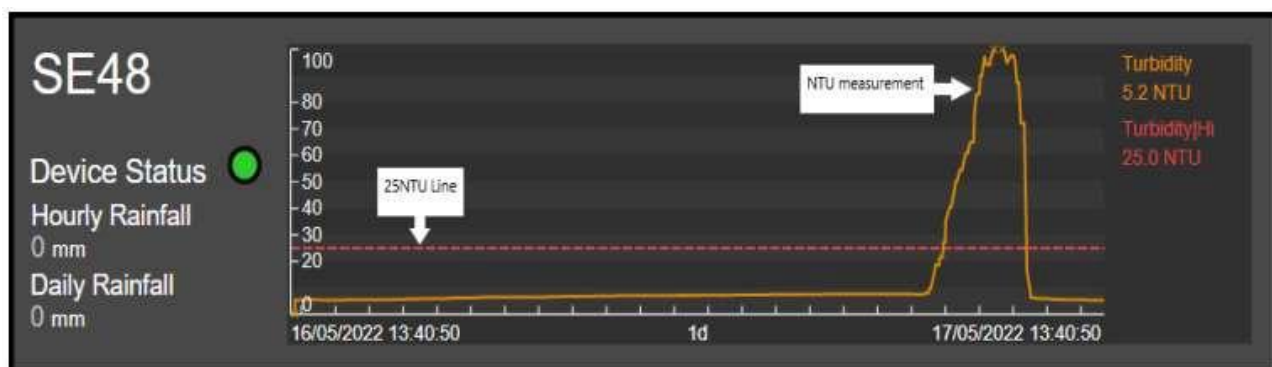


Figure 2 Typical 'false' exceedance event.

4.2.3 Missing Data

Missing data occurs when a WQMS unit fails to record information, this can occur from unexpected system logoffs, equipment faults, or unplanned shutdowns.

5. Results and Discussion

5.1 Events

Table 1 provides a summary of identified events. Table 2 offers detailed information about each event.

Table 1: Events Summary

Category	# of events
Total events	7
True events	2
False events	5
Caused by mining related activity	0

It was found that:

- a. There were two (2) True events. These events were not directly caused by mining related activity.
- b. Two (2) units remained dry with no presence of water.
- c. Two (2) units remained flowing throughout the month.

Note:

A True event is recorded when there is water present within the water way, and, that the probe has not been affected by any external sources.

Table 2: Events Details

Event ID	Monitor	False Event (Y/N)	Event Start Date	Event Start Time	Event End Date	Event End Time	Event Duration	Ave. Turbidity (NTU)	Peak Turbidity (NTU)
WDL-2605-001	RHB3	Y	19/05/2026	19:03	20/05/2026	20:40	1 hour 36 min	90.45	157.36
WDL-2605-002	RHB3	Y	19/05/2026	20:52	20/05/2026	0:06	3 hours 14 min	167.7	398.19
WDL-2605-003	RHB3	Y	20/05/2026	1:43	20/05/2026	3:08	1 hour 25 min	51.26	147.95
WDL-2605-004	RHB3	N	27/05/2026	22:09	27/05/2026	23:15	1 hour 6 min	26.85	28.44
WDL-2605-005	RHB3	N	27/05/2026	23:27	28/05/2026	1:11	1 hour 43 min	29.4	33.9
WDL-2605-006	HV49T	Y	30/05/2026	22:45	31/05/2026	2:53	4 hours 8 min	3034.1	4000
WDL-2605-007	HV49T	Y	31/05/2026	7:44	31/05/2026	10:03	2 hours 19 min	455.56	805.07

5.2 Event Assessment Outcomes

5.2.1 True Events

5.2.1.1 WDL-2605-005

RHB3

The turbidity exceedance event occurred between approximately 22:09 and 23:15 on 27 May 2026 at monitoring location RHB3. Trend analysis of the monitoring data (Figure 3) indicates a response pattern consistent with a genuine turbidity exceedance event.

The turbidity profile shows a rapid initial increase to a primary peak. Following this peak, turbidity levels exhibit a gradual decline, with minor fluctuations.

The smooth rise-and-fall pattern, with no abrupt spikes or erratic behaviour, is indicative of a natural, catchment-driven response.

Trend analysis indicates a strong correlation between turbidity response and preceding rainfall conditions. A total of 54.2 mm of rainfall was recorded in the 24 hours prior to the event, representing a substantial precipitation input. This rainfall is considered to have significantly increased surface runoff and stream flow velocity, resulting in turbulent conditions and the mobilisation of fine sediments, organic material, and suspended particulates within the catchment.

The moderate peak magnitude and short-duration exceedance, combined with the smooth and well-defined turbidity profile, support the interpretation that the event was driven by rainfall-induced runoff processes, rather than instrumentation issues or localised disturbance.

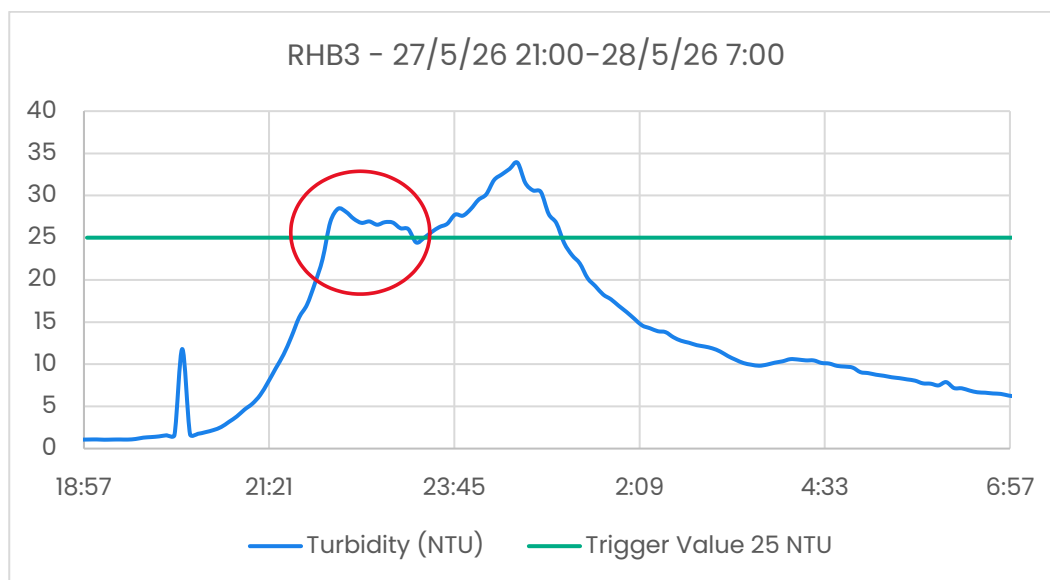


Figure 3 RHB3 27/05/2026 22:09-23:15

Field notes provided by Alcoa are included below.

'Compliance turbidity monitoring site RHB3T recorded two turbidity events exceeding 25 NTU for >1 hour on 27/05/2026 from 22:09 to 23:15 with a duration of 1 hour 6 minutes and again from 23:27 to 1:11 28/05/2026 with a duration of 1 hour 43 minutes. The average turbidity value during the events was 26.85 NTU and 29.4. NTU with peaks of 28.44 NTU and 33.9 NTU. There was 54.2mm of rainfall recorded in the 24 hours preceding the event. The data trend indicates a rapid increase aligned with the beginning of heavy rainfall. As the rainfall slowed down, so did the increase in turbidity levels. As the rain subsided the turbidity levels gradually declined over several hours back to a stable NTU of around 2. The RHB3 monitoring site was inspected on 28/05/2026. The stream was clear and flowing, with no visible debris impacting the turbidity sensor. Turbidity levels remained consistent both before and after cleaning the probe. The RHB3 catchment area was inspected, no evidence of mining related contribution was found. Drone flights of the catchment confirmed pit edges remained intact. In winter 2025, runoff from forest tracks has been attributed as the cause of turbidity events at this monitor during high rainfall events. Classified true, undetermined.'

Based on the comments provided by Alcoa this event is considered 'True', however no evidence of mining related contributions to the turbidity exceedance.

5.2.1.2 WDL-2605-005

RHB3

The turbidity exceedance event occurred between approximately 23:27 on 27 May 2026 and 01:11 on 28 May 2026 at monitoring location RHB3. Trend analysis of the monitoring data (Figure 4) indicates a response pattern consistent with a genuine turbidity exceedance event.

The turbidity profile shows a gradual and sustained increase over a prolonged period. Following the peak, turbidity levels show a progressive decline.

The smooth, well-defined rise and fall, without abrupt spikes or irregular fluctuations, indicates a sustained, catchment-driven hydrological response. The longer build-up period suggests a gradual influx of runoff.

Trend analysis indicates a strong correlation between turbidity response and preceding rainfall conditions. A total of 54.2 mm of rainfall was recorded in the 24 hours prior to the event, representing a significant precipitation input. This rainfall is considered to have substantially increased runoff volumes and stream flow velocity, leading to the mobilisation and transport of fine sediments, organic material, and suspended particulates into the monitoring location.

The moderate peak magnitude combined with the extended duration above the 25 NTU trigger threshold suggests a sustained but less intense turbidity response, consistent with prolonged runoff contributions rather than a short, high-intensity pulse.

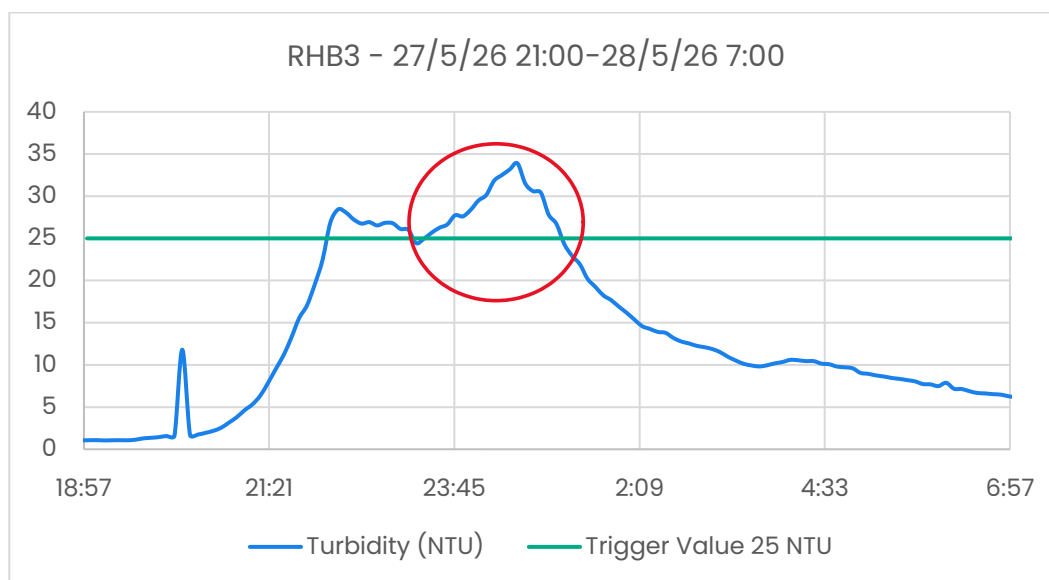


Figure 4 RHB3 27/05/2026 23:27- 28/05/2026 1:11

Field notes provided by Alcoa are included below.

'Compliance turbidity monitoring site RHB3T recorded two turbidity events exceeding 25 NTU for >1 hour on 27/05/2026 from 22:09 to 23:15 with a duration of 1 hour 6 minutes and again from 23:27 to 1:11 28/05/2026 with a duration of 1 hour 43 minutes. The average

turbidity value during the events was 26.85 NTU and 29.4. NTU with peaks of 28.44 NTU and 33.9 NTU. There was 54.2mm of rainfall recorded in the 24 hours preceding the event. The data trend indicates a rapid increase aligned with the beginning of heavy rainfall. As the rainfall slowed down, so did the increase in turbidity levels. As the rain subsided the turbidity levels gradually declined over several hours back to a stable NTU of around 2. The RHB3 monitoring site was inspected on 28/05/2026. The stream was clear and flowing, with no visible debris impacting the turbidity sensor. Turbidity levels remained consistent both before and after cleaning the probe. The RHB3 catchment area was inspected, no evidence of mining related contribution was found. Drone flights of the catchment confirmed pit edges remained intact. In winter 2025, runoff from forest tracks has been attributed as the cause of turbidity events at this monitor during high rainfall events. Classified true, undetermined.'

Based on the comments provided by Alcoa this event is considered 'True', however no evidence of mining related contributions to the turbidity exceedance.

5.2.2 False Event(s)

Five (5) 'False' events were identified during the reporting period. Rationale on potential causes is summarised below.

Table 3: False Events Rationale

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
WDL-2605-001	RHB3	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Stream inspected on 23/05/2026 at 11:35am. Turbidity reading on arrival was ~1.2NTU. The stream was flowing and clear at the time of inspection. Significant algae build-up was noted on the exterior of the probe and on the stream bed. The probe was removed, cleaned and returned to the stream. Minimal rainfall was recorded within the 24 hours preceding the event. The shape of the turbidity graph (sudden and extreme increases and decreases) is not indicative of a true turbidity event. Classified as false events.
WDL-2605-002	RHB3	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Stream inspected on 23/05/2026 at 11:35am. Turbidity reading on arrival was ~1.2NTU. The stream was flowing and clear at the time of inspection. Significant algae build-up was noted on the exterior of the probe and on the stream bed. The probe was removed, cleaned and returned to the stream. Minimal rainfall was recorded within the 24 hours preceding the event. The shape of the turbidity graph (sudden and extreme increases and decreases) is not indicative of a true turbidity event. Classified as false events.
WDL-2605-003	RHB3	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Stream inspected on 23/05/2026 at 11:35am. Turbidity reading on arrival was ~1.2NTU. The stream was flowing and clear at the time of inspection. Significant algae build-up was noted on the exterior of the probe and on the stream bed. The probe was removed, cleaned and returned to the stream. Minimal rainfall was recorded within the 24 hours preceding the event. The shape of the turbidity graph (sudden and extreme increases and decreases) is not indicative of a true turbidity event. Classified as false events.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
WDL-2605-006	HV49T	This event is marked by a rapid increase and decrease in turbidity. This is indicative of a false event.	Local monitoring site HV49T recorded 2 events exceeding 25NTU for > 1 hour between 30/05/2026 and 31/05/2026. Monitor was attended and inspected at 10:05am 31/05/2026 – stream is dry. Probe was cleaned and manual download taken. Classified as a false event.
WDL-2605-007	HV49T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Local monitoring site HV49T recorded 2 events exceeding 25NTU for > 1 hour between 30/05/2026 and 31/05/2026. Monitor was attended and inspected at 10:05am 31/05/2026 – stream is dry. Probe was cleaned and manual download taken. Classified as a false event.

5.2.3 Excluded WQMS Units

Two (2) WQMS Units were excluded from analysis due to inaccurate data. Alcoa confirmed the invalidity of data recorded from these units and provided commentary on the condition of each.

Table 4: Excluded WQMS Units

WQMS ID	Status	Comment
HV07T	Dry	Stream dry.
HV49T	Dry	Stream dry.

5.2.4 Missing Data

Periods of missing data are detailed in Table 5.

Table 5: Missing Data Summary

WQMS ID	Data Notes
RHB3	Equipment fault between 23/05/2026 21:26 and 25/05/2026 12:43. Data unavailable during this period.

Appendix A Willowdale Raw WQMS Data

Willowdale WQMS Data – May 2026 - Events with turbidity > 25 NTU for an hour or more				
Date	HV07T	HV49T	RHB2	RHB3
1/05/2026				
2/05/2026				
3/05/2026				
4/05/2026				
5/05/2026				
6/05/2026				
7/05/2026				
8/05/2026				
9/05/2026				
10/05/2026				
11/05/2026				
12/05/2026				
13/05/2026				
14/05/2026				
15/05/2026				
16/05/2026				
17/05/2026				
18/05/2026				
19/05/2026				2x False
20/05/2026				1x False
21/05/2026				
22/05/2026				
23/05/2026				
24/05/2026				
25/05/2026				
26/05/2026				
27/05/2026				2x True
28/05/2026				
30/05/2026		1x False		
31/05/2026		1x False		

Appendix B Willowdale WQMS Locations



RHB2●

RHB3●

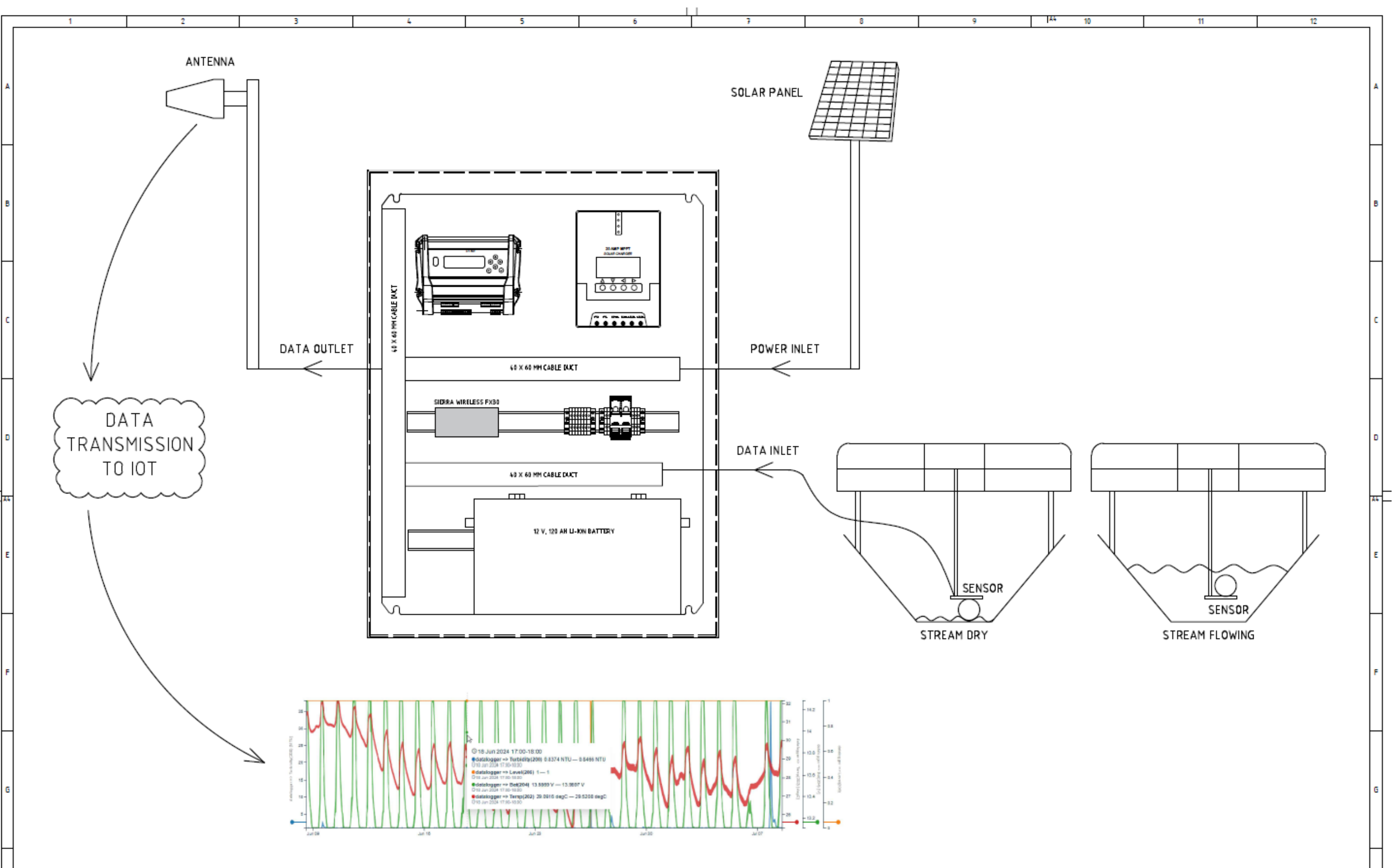
HV07T●

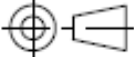
HV49T●

- Willowdale Turbidity Monitors
- Major Dams
- Streams
- Willowdale Mine Footprint (Section 6)

0 0.3 0.65 1.3 2 2.6
Kilometers

Appendix C WQMS General Arrangement



							 ALL DIMENSIONS IN MILLIMETRES UNO. LEVELS ARE IN METRES ON AHD UNO. DO NOT SCALE DRAWING IF IN DOUBT - ASK TOLERANCES ISO2768-m UNO. © SCIDEV	CLIENT	NSW - BUILDING G, 22 POWERS RD, SEVEN HILLS, NSW 2147 (02) 8305 5357 WA - 512, 1A QUEEN ST FREEMANTLE WA 6160 (08) 6245 9043 waterservices@scidev.com.au www.scidev.com.au		TITLE IOT TURBIDITY MONITORING STATION SITE LAYOUT GENERAL ARRANGEMENT	SHEET SIZE A3 REV. 1
0	ISSUE FOR APPROVAL	05.07.2024	A.K.	S.A.	A.K.	A.K.						
REV.	REMARKS	DATE	DESIGNED	DRAWN	CHECKED	APPROVED	REFERENCE DRAWINGS				SHEET 1 OF 2	DRAWING NO. HI0090 - ALCOA WQMS
1											SCALE NTS OR AS SHOWN	