

WQMS Data Review

Huntly Bauxite Mine

APRIL 2026



Document Control

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a	Wendy Spinner	Chris Blockley	3/6/26
b	Wendy Spinner	Nick O'Reily	24/6/26
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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 April 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:** Thirty (30) turbidity exceedances were identified as false, commonly caused by debris, sensor obstruction, or hydraulic disturbances.
- **Further Investigation:** Four (4) events were flagged for further investigation.
- **True Events:** Four (4) "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 April 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 April 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 April 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 showing the sharp incline and gradual return to background levels.

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

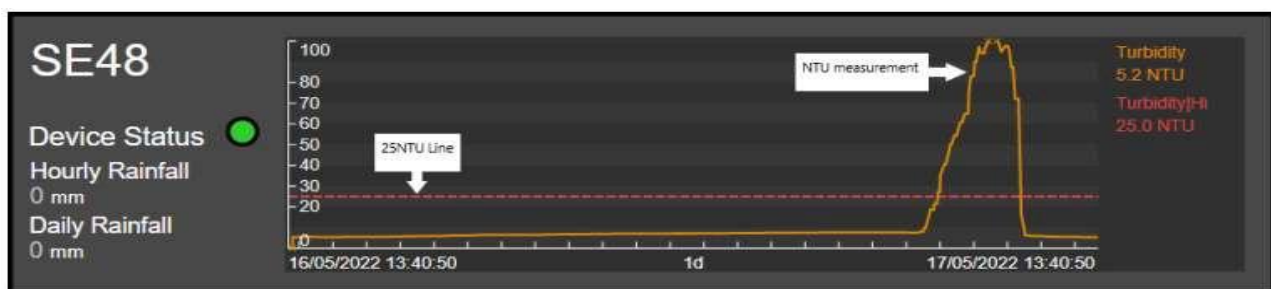


Figure 2 Typical 'false' exceedance event showing both a sharp incline and decline

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	34
Flagged for further investigation	4
False events	30
True events	4
Caused by mining related activity	0

It was found that:

- a) There were thirty-four (34) total events recorded.
- b) There were four (4) events flagged for further investigation. Of these four events, all four were true events. Zero (0) of these were directly caused by mining related activity.
- c) Twenty-five (25) units remained dry with no presence of water.
- d) Eighteen (18) 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	Event Assessment (Additional Investigation Required / False)	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	ND06T	FALSE	31/03/2026	5:12:00 PM	1/04/2026	10:54:00 AM	1062	17:42	39.57	66.02
HUN-2605-002	SE05T	FALSE	31/03/2026	10:06:00 PM	1/04/2026	3:30:00 AM	324	5:24	32.20	60.91
HUN-2605-003	SE05T	FALSE	1/04/2026	4:06:00 AM	1/04/2026	10:24:00 AM	378	6:18	31.62	44.80
HUN-2605-004	SE02T	FALSE	2/04/2026	3:38:00 PM	2/04/2026	6:34:00 PM	176	2:56	28.48	31.40
HUN-2605-005	SE02T	FALSE	2/04/2026	9:17:00 PM	3/04/2026	3:03:00 AM	346	5:46	34.53	40.40
HUN-2605-006	SE02T	FALSE	3/04/2026	3:39:00 AM	4/04/2026	3:31:00 PM	2152	11:52	97.67	276.92
HUN-2605-007	SE06T	FALSE	3/04/2026	3:18:00 PM	5/04/2026	2:27:00 PM	2829	23:09	56.49	102.36
HUN-2605-008	SE51T	FALSE	3/04/2026	5:21:00 PM	3/04/2026	7:46:00 PM	145	2:25	45.15	64.72
HUN-2605-009	SE51T	FALSE	4/04/2026	5:05:00 PM	4/04/2026	7:49:00 PM	164	2:44	41.07	51.13
HUN-2605-010	SE03INV1	FALSE	5/04/2026	10:06:00 PM	8/04/2026	2:30:00 PM	3864	16:24	103.3	220.02
HUN-2605-011	SE52T	FALSE	10/04/2026	7:48:00 AM	10/04/2026	9:18:00 AM	90	1:30	35.00	41.50

HUN-2605-012	SE52T	FALSE	11/04/2026	3:00:00 AM	11/04/2026	4:54:00 AM	114	1:54	29.45	31.85
HUN-2605-013	SE52T	FALSE	11/04/2026	6:12:00 AM	11/04/2026	8:00:00 PM	828	13:48	39.94	71.19
HUN-2605-014	SE06T	FALSE	11/04/2026	8:40:00 PM	11/04/2026	10:54:00 PM	134	2:14	48.41	129.15
HUN-2605-015	SE06T	FALSE	11/04/2026	11:06:00 PM	12/04/2026	12:31:00 AM	85	1:25	35.48	42.60
HUN-2605-016	SE06T	FALSE	12/04/2026	5:09:00 AM	12/04/2026	1:13:00 PM	484	8:04	54.42	95.87
HUN-2605-017	SE52T	FALSE	12/04/2026	7:36:00 AM	12/04/2026	3:06:00 PM	450	7:30	56.39	134.54
HUN-2605-018	SE52T	FALSE	13/04/2026	1:06:00 AM	13/04/2026	2:30:00 AM	84	1:24	27.49	28.88
HUN-2605-019	SE52T	FALSE	13/04/2026	4:06:00 AM	19/04/2026	12:00:00 AM	8394	19:54	94.18	350.83
HUN-2605-020	SE05T	FALSE	15/04/2026	7:36:00 AM	15/04/2026	9:54:00 AM	138	2:18	41.22	57.95
HUN-2605-021	SE06T	FALSE	16/04/2026	12:53:00 AM	16/04/2026	2:48:00 AM	115	1:55	31.16	44.28
HUN-2605-022	SE06T	FALSE	16/04/2026	5:38:00 AM	16/04/2026	7:33:00 AM	115	1:55	38.59	44.30
HUN-2605-023	SE06T	FALSE	16/04/2026	12:06:00 PM	16/04/2026	3:00:00 PM	174	2:54	31.69	39.04
HUN-2605-024	SE05T	Additional Investigation Required	17/04/2026	10:48:00 PM	18/04/2026	2:24:00 AM	216	3:36	41.15	70.15
HUN-2605-025	SE06T	FALSE	20/04/2026	7:12:00 PM	20/04/2026	11:12:00 PM	240	4:00	48.93	112.82

HUN-2605-026	SE05T	Additional Investigation Required	20/04/2026	9:42:00 PM	21/04/2026	2:30:00 AM	288	4:48	43.98	74.27
HUN-2605-027	SE59T	Additional Investigation Required	21/04/2026	12:30:00 AM	21/04/2026	2:36:00 AM	126	2:06	27.64	29.43
HUN-2605-028	SE03INV1	FALSE	23/04/2026	6:36:00 PM	25/04/2026	9:18:00 PM	3042	2:42	54.24	145.41
HUN-2605-029	SE06T	FALSE	24/04/2026	1:36:00 AM	24/04/2026	6:12:00 PM	996	16:36	68.31	110.54
HUN-2605-030	SE06T	FALSE	24/04/2026	7:06:00 PM	25/04/2026	12:24:00 AM	318	5:18	54.73	112.61
HUN-2605-031	SE06T	FALSE	25/04/2026	1:18:00 AM	26/04/2026	6:06:00 AM	1728	4:48	133.40	432.44
HUN-2605-032	SE06T	FALSE	26/04/2026	6:54:00 AM	26/04/2026	11:48:00 PM	1014	16:54	149.11	777.05
HUN-2605-033	SE06T	FALSE	27/04/2026	8:36:00 AM	27/04/2026	10:36:00 AM	120	2:00	77.05	145.31
HUN-2605-034	SE05T	Additional Investigation Required	27/04/2026	11:00:00 AM	27/04/2026	12:24:00 PM	84	1:24	26.99	28.40

5.2 Additional Investigation

5.2.1 HUN-2605-024

SE05T

The turbidity exceedance event occurred between 10:48 PM on 17 April 2026 and 02:24 AM on 18 April 2026 at monitoring location SE05T. Trend analysis of the monitoring data (Figure 3) indicates a response pattern consistent with a genuine turbidity exceedance event, characterised by progressively increasing turbidity levels followed by a gradual return toward baseline conditions.

Trend analysis indicates a correlation between turbidity response and preceding rainfall conditions. A total of 8.2 mm of rainfall was recorded in the 24 hours preceding the event. While this rainfall amount is relatively low, it is considered sufficient to have generated localized surface runoff, particularly in areas with antecedent moisture conditions.

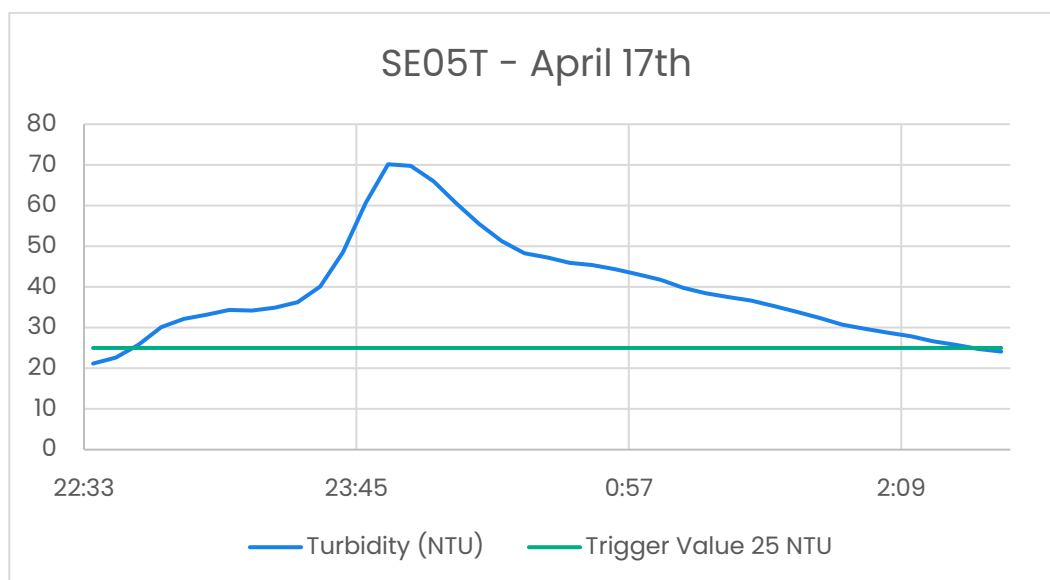


Figure 3 SE05T - April 17th

Field notes provided by Alcoa are included below.

Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 17 April 2026. The event was recorded from 10:48 PM 27 to 2:24 AM, with a duration of 3 hours and 36 minutes. The average turbidity value during the event was 41.15 NTU, with a peak of 70.15 NTU. There was 8.2mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a steady rise in turbidity coinciding with a period of sustained rainfall, with approximately 12 mm recorded over a two-hour period. Turbidity values gradually declined in the hours following the rainfall event, returning to background levels.

The SE05T monitoring site was inspected on 19 April 2026, during which significant algae and natural stream sediments were observed settled on organic debris within the stream bed, as well as on the equipment. The turbidity value recorded during the inspection was 12.9 NTU and remained consistent following lens cleaning.

The SE05T catchment area was inspected, no evidence of mining related contribution to the turbidity exceedance was found.”

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

5.2.2 HUN-2605-026

SE05T

The turbidity exceedance event occurred between approximately 9:42PM on 20 April 2026 and 2:30AM on 21 April 2026 at monitoring location SE05T. Trend analysis of the monitoring data (Figure 4) indicates a response pattern consistent with a genuine turbidity exceedance event.

The turbidity profile shows a progressive initial increase, followed by a more rapid increase to a primary peak. After this peak, turbidity levels decrease slightly before exhibiting a secondary elevated plateau/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 4.2 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.

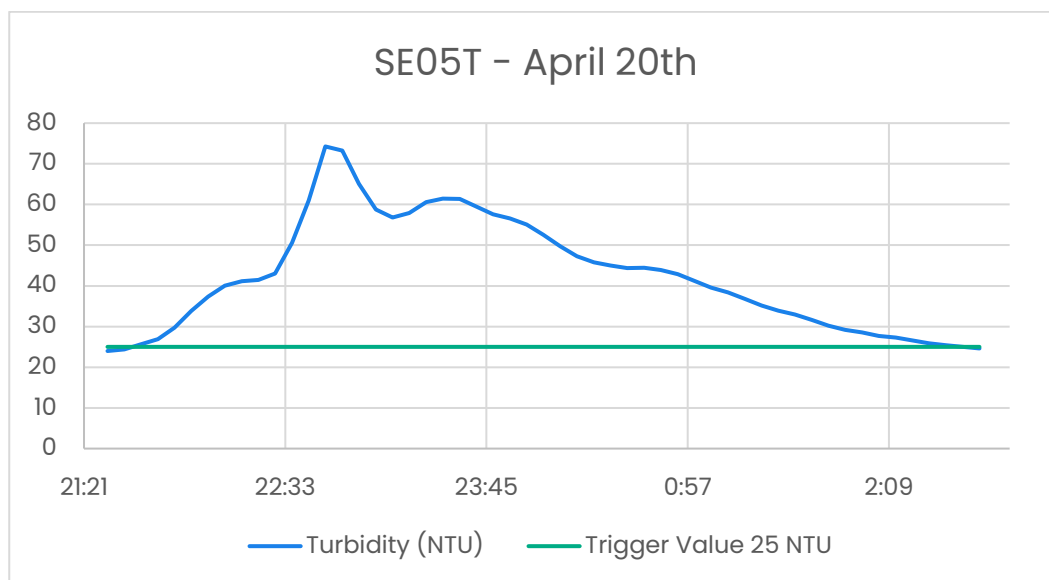


Figure 4 SE05T - April 20th

Field notes provided by Alcoa are included below.

“Compliance turbidity monitoring site SE05T recorded a turbidity event exceeding 25 NTU for >1 hour on 20 April 2026. The event was recorded from 20/04/2026 9:42 PM to 21/04/2026 2:30 AM, with a duration of 4 hours and 48 minutes. The average turbidity value during the event was 43.98 NTU, with a peak of 74.27 NTU. There was 4.2mm of rainfall in the 24 hours preceding the event. Data analysis shows an increase in turbidity coinciding with rainfall and a subsequent rise in stream flow. As rainfall eased (total rainfall of approximately 10 mm), turbidity values gradually declined and returned to the pre-rainfall baseline of approximately 13 NTU. The monitoring site was inspected on 21 April 2026. Stream observations indicated slightly elevated background turbidity of approximately 13 NTU, which did not change following lens cleaning. These observations are consistent with previous inspections and are attributed to algal influence within the stream.

The SE05T catchment area was inspected, no evidence of mining related contribution to the turbidity event was found.”

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

5.2.3 HUN-2605-027

SE59T

The turbidity exceedance event occurred between approximately 12:30 AM and 2:36 AM on 21 April 2026 at monitoring location SE59T. Trend analysis of the monitoring data (Figure 5) indicates a response pattern consistent with a genuine turbidity exceedance event.

The turbidity profile shows a gradual rise, increasing steadily to a moderate peak. Following this peak, turbidity levels exhibit a consistent and gradual decline.

Trend analysis indicates a clear correlation between turbidity response and preceding rainfall conditions. A total of 10.2 mm of rainfall was recorded in the 24 hours prior to the event. While relatively modest, this rainfall is considered sufficient to have generated localized surface runoff, particularly under antecedent wet conditions.

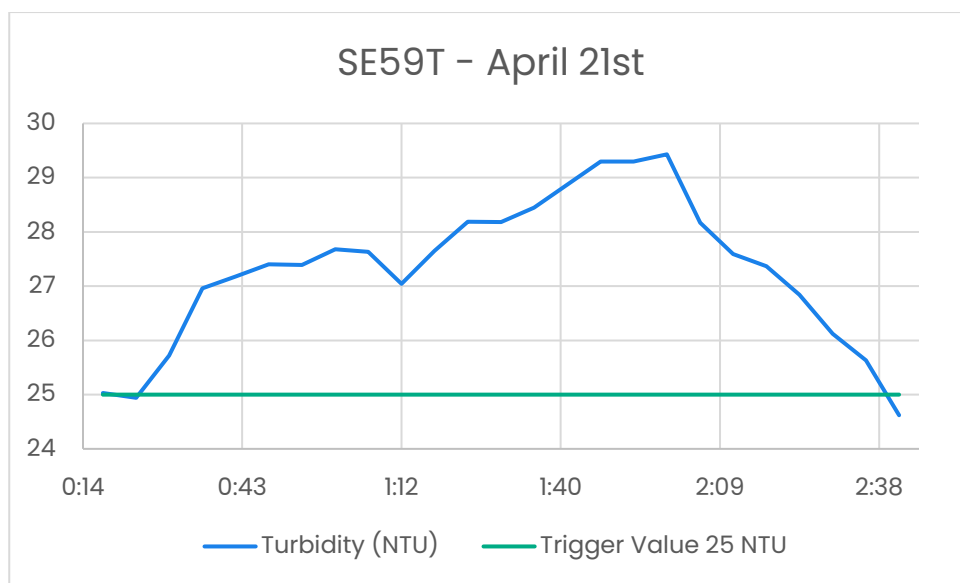


Figure 5 SE59T - April 21st

Field notes provided by Alcoa are included below.

“Compliance turbidity monitoring site SE59T recorded a turbidity event exceeding 25 NTU for >1 hour on 21 April 2026. The event was recorded on 21 April 2026 from 12:30 AM to 2:36 AM, with a duration of 2 hours and 6 minutes. The average turbidity value during the event was 27.64, with a peak of 29.43. There was 10.2mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity following an approximately three-hour period of sustained rainfall. In the hours following the rainfall event turbidity

values gradually declined to stable levels of 8-10 NTU. The SE59T monitoring site was inspected on 21 April 2026, during which elevated stream flow conditions were observed. Lens inspection during sensor cleaning identified slight biofilm accumulation, with turbidity readings decreasing from 8.3 to 2.7 NTU following cleaning. 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.

5.2.4 HUN-2605-034

SE05T

The turbidity exceedance event occurred between approximately 11:00 AM and 12:24 PM on 27 April 2026 at monitoring location SE05T. Trend analysis of the monitoring data (figure 6) indicates a response pattern consistent with a genuine turbidity exceedance event.

The turbidity profile shows an initial rise followed by a minor decline and fluctuation, before a secondary peak. After this point, turbidity levels steadily decline, falling below the trigger threshold.

Trend analysis indicates a clear correlation between turbidity response and preceding rainfall conditions. A total of 7.7 mm of rainfall was recorded in the 24 hours prior to the event. While relatively low, this rainfall is considered sufficient to have generated localized surface runoff, particularly under potentially wet antecedent conditions.

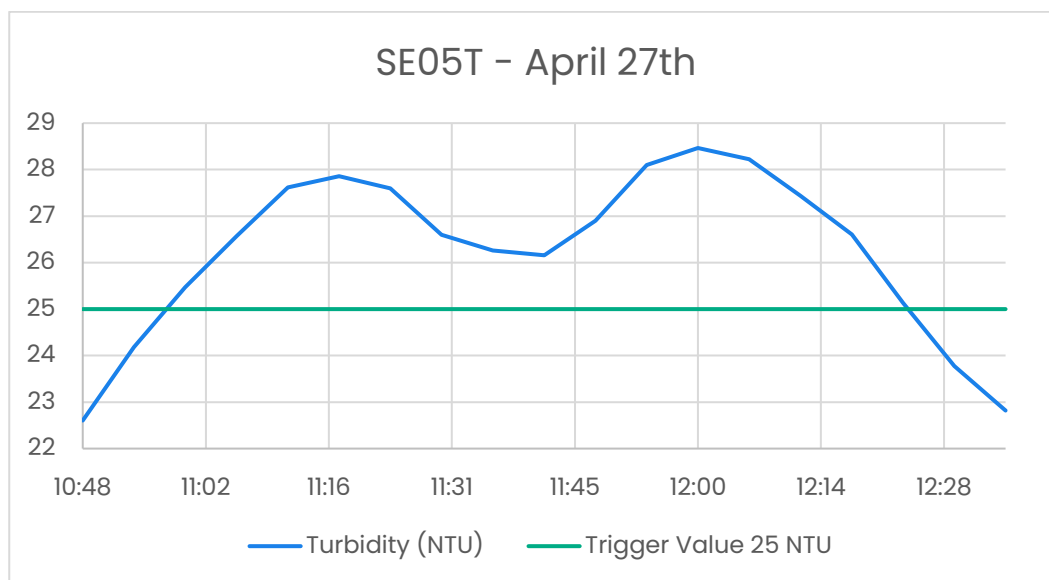


Figure 6 SE05T - April 27th

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 April 2026. The event was recorded on 27 April 2026 from 11:00 AM to 12:24 PM, with a duration of 1 hours and 24 minutes. The average turbidity value during the event was 26.99, with a peak of 28.4. There was 7.7mm of rainfall recorded in the 24 hours preceding the event.

The data trend indicates a gradual increase in turbidity following an approximately six-hour period of sustained rainfall. In the hours following the rainfall event turbidity values gradually declined to stable average levels of 12-13 NTU. The SE59T monitoring site was inspected on 28 April 2026. The stream was clear and flowing, with no visible debris impacting the turbidity sensor. Turbidity readings remained consistent at 13 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.

5.3 True Event(s)

Four ‘True’ turbidity events were identified during the period. Refer to section 5.2 for additional information.

5.4 False Event(s)

Thirty-four (34) '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	ND06T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The site was inspected on 28/03/2026 following 74mm of rainfall in the preceding 24 hours, at which time stream depth had increased significantly. The sensor had broken loose from the picket and was loosely swinging within the stream, however the sensor was submerged within the water column. The sensor was cleaned and repositioned. The site was inspected again on 2/04/2026, and the stream level had receded, and the sensor was positioned above the water level.
HUN-2605-002	SE05T	This event is marked by a gradual increase and decrease in turbidity with a sharp narrow spike. This is indicative of a false event.	The monitoring site was inspected on 1/04/2026. The stream level had dropped slightly, and the sensor lens was partially out of water. Turbidity value on arrival was 40.0 NTU, which dropped to 13.8 NTU after the lens was cleaned and repositioned within the stream.
HUN-2605-003	SE05T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 1/04/2026. The stream level had dropped slightly, and the sensor lens was partially out of water. Turbidity value on arrival was 40.0 NTU, which dropped to 13.8 NTU after the lens was cleaned and repositioned within the stream.
HUN-2605-004	SE02T	This event is marked by a gradual increase and rapid decrease in turbidity. This is indicative of a false event.	Site inspected 5/04/2026. The stream was flowing, had a low depth and the sensor was heavily impacted with algae. The sensor was also partially positioned above the stream water level. The sensor was cleaned and repositioned under the water level. Trend analysis shows an erratic turbidity reading that is consistently spiking and dropping, likely due to the sensor wipers shifting built up algae.
HUN-2605-005	SE02T	This event is marked by a gradual increase and rapid decrease in turbidity. This is indicative of a false event.	Site inspected 5/04/2026. The stream was flowing, had a low depth and the sensor was heavily impacted with algae. The sensor was also partially positioned above the stream water level. The sensor was cleaned and repositioned under the water level. Trend analysis shows an erratic turbidity reading that is consistently spiking and dropping, likely due to the sensor wipers shifting built up algae.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-006	SE02T	This event is marked by an increase and rapid decrease in turbidity with multiple dips and peaks. This is indicative of a false event.	Site inspected 5/04/2026. The stream was flowing, had a low depth and the sensor was heavily impacted with algae. The sensor was also partially positioned above the stream water level. The sensor was cleaned and repositioned under the water level. Trend analysis shows an erratic turbidity reading that is consistently spiking and dropping, likely due to the sensor wipers shifting built up algae.
HUN-2605-007	SE06T	This event is marked by a gradual increase and rapid decrease in turbidity. This is indicative of a false event.	Site inspected 5/04/2026. The stream is very low, with the sensor affected by algae and natural sediment. Trend Analysis shows a gradual rise in turbidity to 92.2 NTU which dropped when the sensor was cleaned to 1.2 NTU. The rapid trend drop after cleaning supports a false event.
HUN-2605-008	SE51T	This event is marked by a gradual increase and decrease in turbidity. This is indicative of a false event.	Site inspected 5/04/2026. The stream level is low, slowly flowing and has thick vegetation (reeds). Trend analysis indicates the sensor was likely temporarily impacted by vegetation and is a false event. Prior to and post the event, the turbidity trend is consistently reading a low <2 NTU.
HUN-2605-009	SE51T	This event is marked by a rapid initial increase and rapid decrease in turbidity. This is indicative of a false event.	Site inspected 5/04/2026. The stream level is low, slowly flowing and has thick vegetation (reeds). Trend analysis indicates the sensor was likely temporarily impacted by vegetation and is a false event. Prior to and post the event, the turbidity trend is consistently reading a low <2 NTU.
HUN-2605-010	SE03INV1	This event is marked by a gradual and continues increase and a rapid decrease in turbidity. This is indicative of a false event.	SE03INV1 site inspected on the 08/04/2026. The stream depth was very low, and the stream was impacted with algae. The sensor picket was observed skewed on arrival, likely impacted by fauna or pigs. The sensor was heavily impacted by algae and stream sediment and once cleaned reduced from turbidity value 167.7729 NTU to 1.7654 NTU.
HUN-2605-011	SE52T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 19/04/2026. The stream was clear, with a low level and is flowing. The sensor was positioned just under water level and close to stream bed, resulting in the sensor being impacted by sediment, organic debris and algae. The sensor was cleaned and returned to stream which significantly dropped turbidity reading from 84.47 NTU to 1.11 NTU.
HUN-2605-012	SE52T	This event is marked by a rapid increase and decrease in turbidity. This is indicative of a false event.	The monitoring site was inspected on 19/04/2026. The stream was clear, with a low level and is flowing. The sensor was positioned just under water level and close to stream bed, resulting in the sensor being impacted by sediment, organic debris and algae. The sensor was cleaned and returned to stream which significantly dropped turbidity reading from 84.47 NTU to 1.11 NTU.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-013	SE52T	This event is marked by a rapid increase and gradual decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 19/04/2026. The stream was clear, with a low level and is flowing. The sensor was positioned just under water level and close to stream bed, resulting in the sensor being impacted by sediment, organic debris and algae. The sensor was cleaned and returned to stream which significantly dropped turbidity reading from 84.47 NTU to 1.11 NTU.
HUN-2605-014	SE06T	This event is marked by a rapid increase and decrease in turbidity with sharp spike. This is indicative of a false event.	Site inspected 12/04/2026. Stream level is low with minimal flow and built up debris/algae on stream bed that is impacting the Sensor. The sensor was cleaned which significantly dropped turbidity reading from 86.99 NTU to 0.34 NTU. A rapid decline in the turbidity trend after cleaning the sensor supports a false event.
HUN-2605-015	SE06T	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 12/04/2026. Stream level is low with minimal flow and built up debris/algae on stream bed that is impacting the Sensor. The sensor was cleaned which significantly dropped turbidity reading from 86.99 NTU to 0.34 NTU. A rapid decline in the turbidity trend after cleaning the sensor supports a false event.
HUN-2605-016	SE06T	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 12/04/2026. Stream level is low with minimal flow and built up debris/algae on stream bed that is impacting the Sensor. The sensor was cleaned which significantly dropped turbidity reading from 86.99 NTU to 0.34 NTU. A rapid decline in the turbidity trend after cleaning the sensor supports a false event.
HUN-2605-017	SE52T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 19/04/2026. The stream was clear, with a low level and is flowing. The sensor was positioned just under water level and close to stream bed, resulting in the sensor being impacted by sediment, organic debris and algae. The sensor was cleaned and returned to stream which significantly dropped turbidity reading from 84.47 NTU to 1.11 NTU.
HUN-2605-018	SE52T	This event is marked by an increase and rapid decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 19/04/2026. The stream was clear, with a low level and is flowing. The sensor was positioned just under water level and close to stream bed, resulting in the sensor being impacted by sediment, organic debris and algae. The sensor was cleaned and returned to stream which significantly dropped turbidity reading from 84.47 NTU to 1.11 NTU.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-019	SE52T	This event is marked by a rapid increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 19/04/2026. The stream was clear, with a low level and is flowing. The sensor was positioned just under water level and close to stream bed, resulting in the sensor being impacted by sediment, organic debris and algae. The sensor was cleaned and returned to stream which significantly dropped turbidity reading from 84.47 NTU to 1.11 NTU.
HUN-2605-020	SE05T	This event is marked by a rapid increase in turbidity with multiple sporadic peaks. This is indicative of a false event.	The data trend indicates the event was false and likely caused by biofouling on the lens. Background turbidity levels were approximately 13 NTU prior to rainfall, with the onset of minor rainfall event (~0.2 mm) triggering a sharp but short-lived increase in turbidity. Following a further 1.4 mm of rainfall, turbidity values declined below 25NTU and returned to background levels of 13–16 NTU as rainfall continued. Stream flow was low, and background turbidity readings were slightly elevated due to algal influence within the stream.
HUN-2605-021	SE06T	This event is marked by an increase and decrease in turbidity with a sharp narrow spike. This is indicative of a false event.	Site inspected 16/04/2026. The stream is very low, and the sensor is affected by algae and natural sediment. On arrival the sensor was partially submerged in water due to the dropping water level. The sensor was cleaned and repositioned under the water level. Trend Analysis shows a gradual rise in turbidity to 44.28 NTU which dropped when the sensor was cleaned to 1.06 NTU. The rapid trend drop after cleaning supports a false event.
HUN-2605-022	SE06T	This event is marked by an increase and decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	Site inspected 16/04/2026. The stream is very low, and the sensor is affected by algae and natural sediment. On arrival the sensor was partially submerged in water due to the dropping water level. The sensor was cleaned and repositioned under the water level. Trend Analysis shows a gradual rise in turbidity to 44.3 NTU which dropped when the sensor was cleaned to 1.06 NTU. The rapid trend drop after cleaning supports a false event.
HUN-2605-023	SE06T	This event is marked by an increase and decrease in turbidity with a sharp spike. This is indicative of a false event.	Site inspected 16/04/2026. The stream is very low, and the sensor is affected by algae and natural sediment. On arrival the sensor was partially submerged in water due to the dropping water level. The sensor was cleaned and repositioned under the water level. Trend Analysis shows a gradual rise in turbidity to 39.04 NTU which dropped when the sensor was cleaned to 1.06 NTU. The rapid trend drop after cleaning supports a false event.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-025	SE06T	This event is marked by an increase and rapid decrease in turbidity with multiple sporadic peaks. This is indicative of a false event.	The monitoring site was inspected on 22.04.2026. The stream is very low, and the sensor is sitting in the natural sediment in the stream bed. The data trend indicates the event was false, showing sharp inclines and declines with erratic fluctuation. Following approximately 10 mm of rainfall, turbidity values decreased to below 6 NTU as fresh water flushed through the system, clearing natural sediment from the sensor.
HUN-2605-028	SE03INV1	The event is marked by continues step increase and rapid decrease in turbidity. This is indicative of a false event	During previous inspections, stream levels were consistently very low, resulting in intermittent readings from the level float sensor fluctuating between 1 (flow) and 0 (dry) due to insufficient water depth. Following 5.5 mm of rainfall, a turbidity event was recorded from the 23/04/2026 to 25/04/2026 and a site inspection was conducted on 27/04/2026. At the time of inspection, the stream was flowing at a low depth, and the sensor was positioned on the stream bed and fully submerged. A significant accumulation of organic debris was observed on the stream bed & on the sensor. After the lens was cleaned, turbidity readings remained consistently below 25 NTU during a subsequent 12.6 mm rainfall event, indicating normal sensor performance and supporting the conclusion that the earlier elevated readings were a false positive caused by first-flush mobilisation of organic debris associated with increased stream flow following rainfall.
HUN-2605-029	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 data trend shows a series of false events between 24-27/06/2026, with sharp inclines and declines, extreme peaks and erratic fluctuation indicating lens interference. The monitoring site was inspected on 27/04/2026. The stream is very low, and the sensor is sitting in the natural sediment in the stream bed. Turbidity value on arrival was 82.25 NTU which dropped to 1.32 NTU after the lens was cleaned.
HUN-2605-030	SE06T	This event is marked by a rapid increase in turbidity with multiple sporadic peaks while turbidity levels gradual decrease. This is indicative of a false event.	The data trend shows a series of false events between 24-27/06/2026, with sharp inclines and declines, extreme peaks and erratic fluctuation indicating lens interference. The monitoring site was inspected on 27/04/2026. The stream is very low and the sensor is sitting in the natural sediment in the stream bed. Turbidity value on arrival was 82.25 NTU which dropped to 1.32 NTU after the lens was cleaned.

Event ID	Monitor	SciDev Rationale	Alcoa Field Comments
HUN-2605-031	SE06T	This event is marked by an initial increase in turbidity that continued in step increases as well as multiple sporadic peaks followed by a rapid decrease. This is indicative of a false event.	The data trend shows a series of false events between 24-27/06/2026, with sharp inclines and declines, extreme peaks and erratic fluctuation indicating lens interference. The monitoring site was inspected on 27/04/2026. The stream is very low and the sensor is sitting in the natural sediment in the stream bed. Turbidity value on arrival was 82.25 NTU which dropped to 1.32 NTU after the lens was cleaned.
HUN-2605-032	SE06T	This event is marked by a gradual and continues increase and a rapid decrease in turbidity. This is indicative of a false event.	The data trend shows a series of false events between 24-27/06/2026, with sharp inclines and declines, extreme peaks and erratic fluctuation indicating lens interference. The monitoring site was inspected on 27/04/2026. The stream is very low and the sensor is sitting in the natural sediment in the stream bed. Turbidity value on arrival was 82.25 NTU which dropped to 1.32 NTU after the lens was cleaned.
HUN-2605-033	SE06T	This event is marked by a gradual increase and a rapid decrease in turbidity with a few sporadic peaks. This is indicative of a false event.	The data trend shows a series of false events between 24-27/06/2026, with sharp inclines and declines, extreme peaks and erratic fluctuation indicating lens interference. The monitoring site was inspected on 27/04/2026. The stream is very low and the sensor is sitting in the natural sediment in the stream bed. Turbidity value on arrival was 82.25 NTU which dropped to 1.32 NTU after the lens was cleaned.

5.5 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.
SE08T	Stream commenced flowing on 28/03/2026. The level float status returned to 0 (dry) on 30/03/2026, and it was confirmed in the field on 2/04/2026 that the stream had dried up again.
SE09T	Stream dry as of 4/01/2026
SE10T	Stream dry as of 1/01/2026
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.
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

5.6 Missing Data

Periods of missing data are detailed in Table 5.

Table 5: Missing Data Summary

WQMS ID	Data Notes
ND06T	Data gap from 08/04/2026 12:12 AM to 23/04/2026 10:06 AM and 28/04/2026 3:30AM to 30/4/2026 11:54PM due to system power loss.
SE52T	Data gap 30/3/2026 12:38 PM to 2/4/2026 9:06:00 PM due to equipment fault

Appendix A Huntly Raw WQMS Data

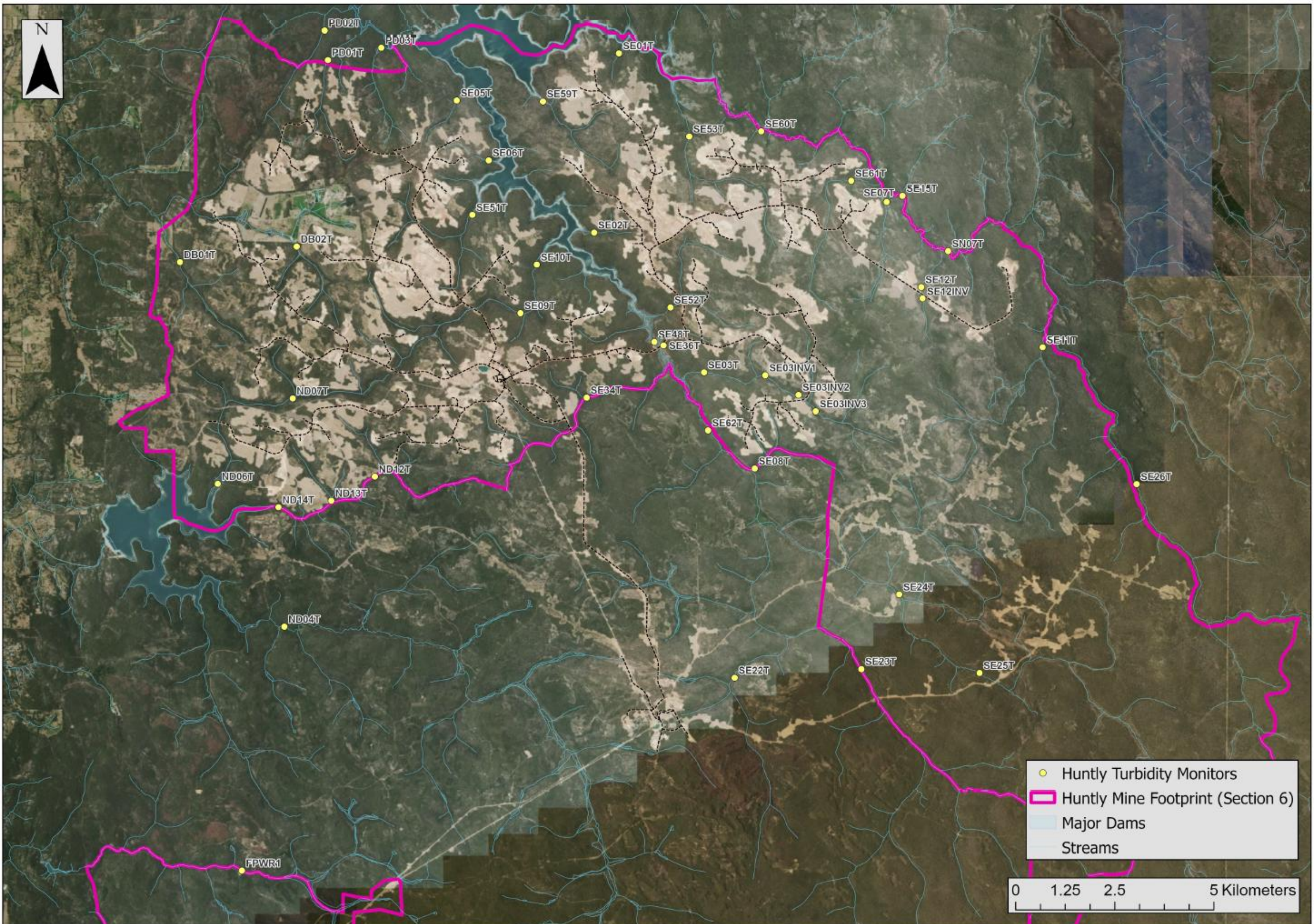
Huntly WQMS Data – April 2026 - Events with turbidity > 25 NTU for an hour or more												
Date	DB01T	DB02T	DB03T	FPWR1	ND06T	ND07T	ND12T	ND13T	ND14T	PD01T	PD02T	PD03T
1/04/2026					1 x False							
2/04/2026												
3/04/2026												
4/04/2026												
5/04/2026												
6/04/2026												
7/04/2026												
8/04/2026												
9/04/2026												
10/04/2026												
11/04/2026												
12/04/2026												
13/04/2026												
14/04/2026												
15/04/2026												
16/04/2026												
17/04/2026												
18/04/2026												
19/04/2026												
20/04/2026												
21/04/2026												
22/04/2026												
23/04/2026												
24/04/2026												
25/04/2026												
26/04/2026												
27/04/2026												
28/04/2026												
29/04/2026												
30/04/2026												

Huntly WQMS Data – April 2026 - Events with turbidity > 25 NTU for an hour or more												
Date	SE01T	SE02T	SE03INV1	SE03INV3	SE03T	SE04T	SE05T	SE06T	SE07T	SE08T	SE09T	SE10T
1/04/2026							2 x False					
2/04/2026		2 x False										
3/04/2026		1 x False						1 x False				
4/04/2026												
5/04/2026			1 x False									
6/04/2026												
7/04/2026												
8/04/2026												
9/04/2026												
10/04/2026												
11/04/2026								2 x False				
12/04/2026								1 x False				
13/04/2026												
14/04/2026												
15/04/2026							1 x False					
16/04/2026								3 x False				
17/04/2026							1 x True					
18/04/2026												
19/04/2026												
20/04/2026							1 x True	1 x False				
21/04/2026												
22/04/2026												
23/04/2026			1 x False									
24/04/2026								2 x False				
25/04/2026								1 x False				
26/04/2026								1 x False				
27/04/2026							1 x True	1 x False				
28/04/2026												
29/04/2026												
30/04/2026												

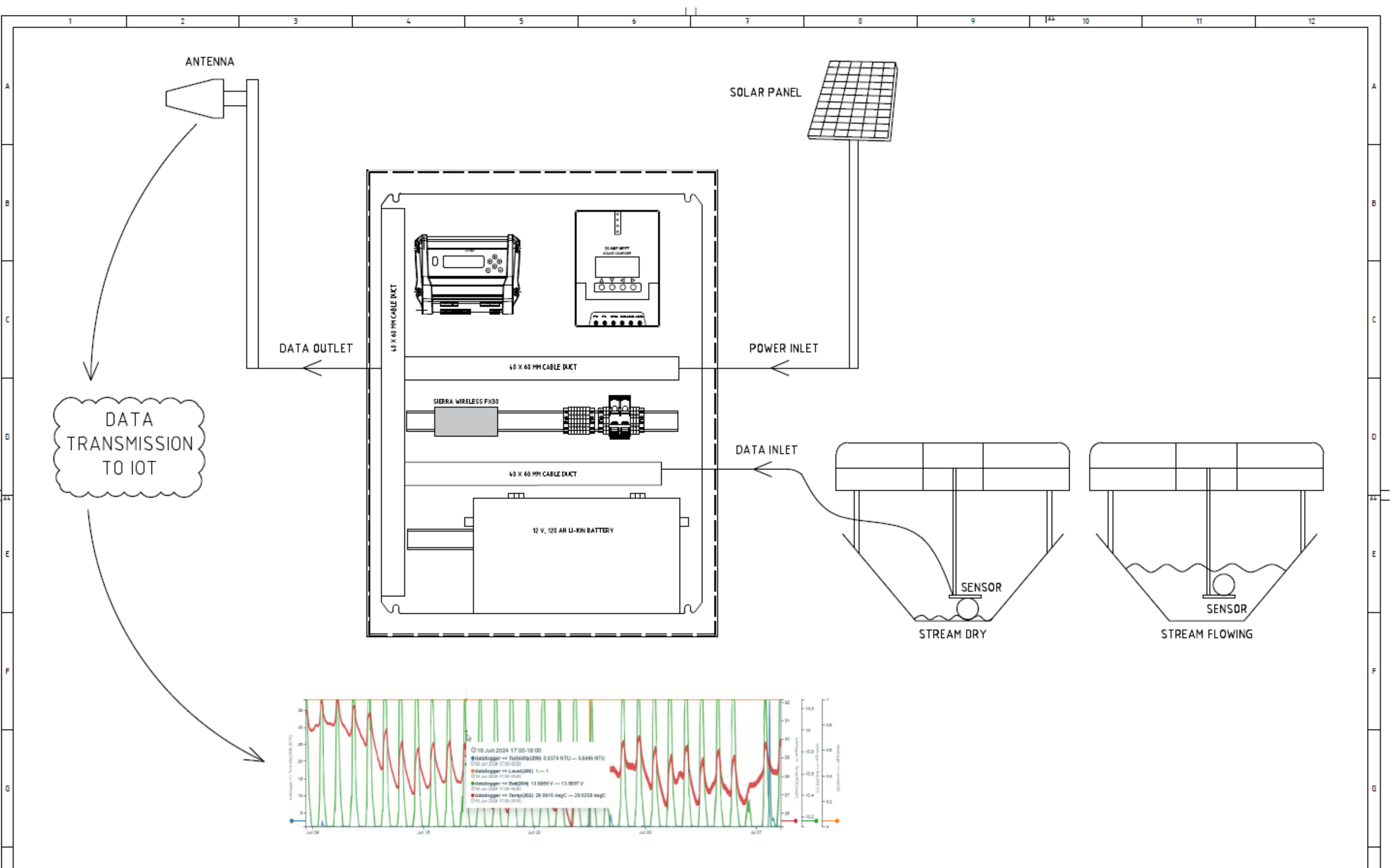
Huntly WQMS Data – April 2026 - Events with turbidity > 25 NTU for an hour or more												
Date	SE11T	SE12T	SE12INV	SE15T	SE23T	SE24T	SE25T	SE26T	SE34T	SE36T	SE48T	SE51T
1/04/2026												
2/04/2026												
3/04/2026												1 x False
4/04/2026												1 x False
5/04/2026												
6/04/2026												
7/04/2026												
8/04/2026												
9/04/2026												
10/04/2026												
11/04/2026												
12/04/2026												
13/04/2026												
14/04/2026												
15/04/2026												
16/04/2026												
17/04/2026												
18/04/2026												
19/04/2026												
20/04/2026												
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22/04/2026												
23/04/2026												
24/04/2026												
25/04/2026												
26/04/2026												
27/04/2026												
28/04/2026												
29/04/2026												
30/04/2026												

Huntly WQMS Data – April 2026 - Events with turbidity > 25 NTU for an hour or more							
Date	SE52T	SE53T	SE59T	SE60T	SE61T	SE62T	SN07T
1/04/2026							
2/04/2026							
3/04/2026							
4/04/2026							
5/04/2026							
6/04/2026							
7/04/2026							
8/04/2026							
9/04/2026							
10/04/2026	1 x False						
11/04/2026	2 x False						
12/04/2026	2 x False						
13/04/2026	2 x False						
14/04/2026							
15/04/2026							
16/04/2026							
17/04/2026							
18/04/2026							
19/04/2026							
20/04/2026							
21/04/2026	1 x True						
22/04/2026							
23/04/2026							
24/04/2026							
25/04/2026							
26/04/2026							
27/04/2026							
28/04/2026							
29/04/2026							
30/04/2026							

Appendix B Huntly WQMS Locations



Appendix C WQMS General Arrangement



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WQMS Data Review

Willowdale Bauxite Mine

APRIL 2026



Document Control

Document Control			
Rev.	Data Analysis	Approved By	Date
a	Wendy Spinner	Chris Blockley	3/06/26
b	Wendy Spinner	Nick O'Reily	24/6/26
0	Wendy Spinner	Nick O'Reily	2/7/26

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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 April 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:** Three (3) turbidity exceedances were identified as false, commonly caused by debris, sensor obstruction, or hydraulic disturbances.
- **Further Investigation:** Zero (0) event was flagged for further investigation.
- **True Events:** Zero (0) "True" turbidity exceedance event was identified.

The 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 April 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 April 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 April 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.

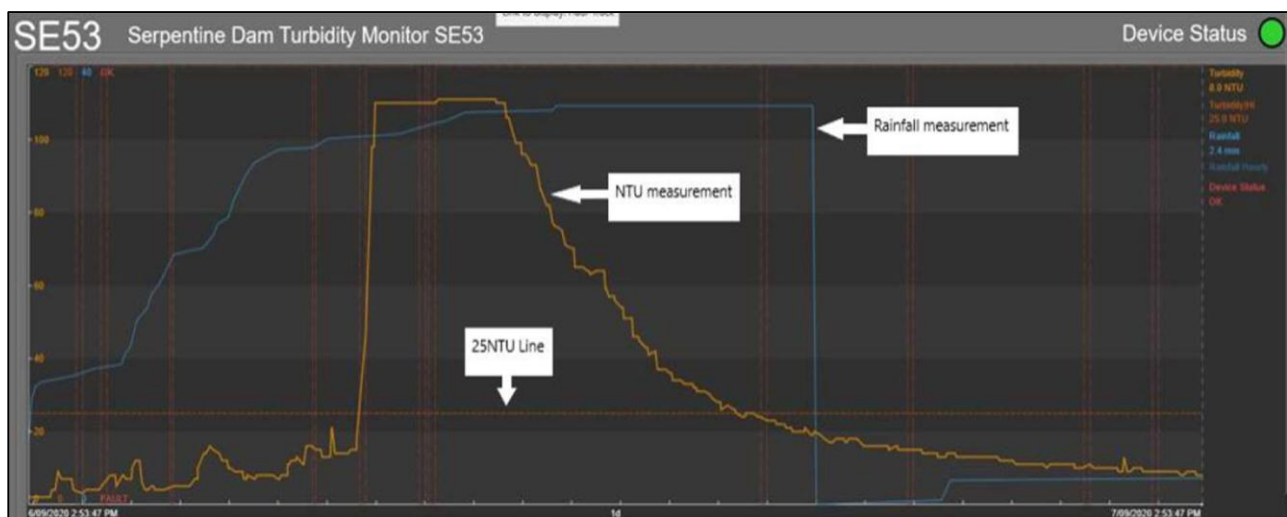


Figure 1 Typical 'true' exceedance event showing the sharp incline and gradual return to background levels.

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

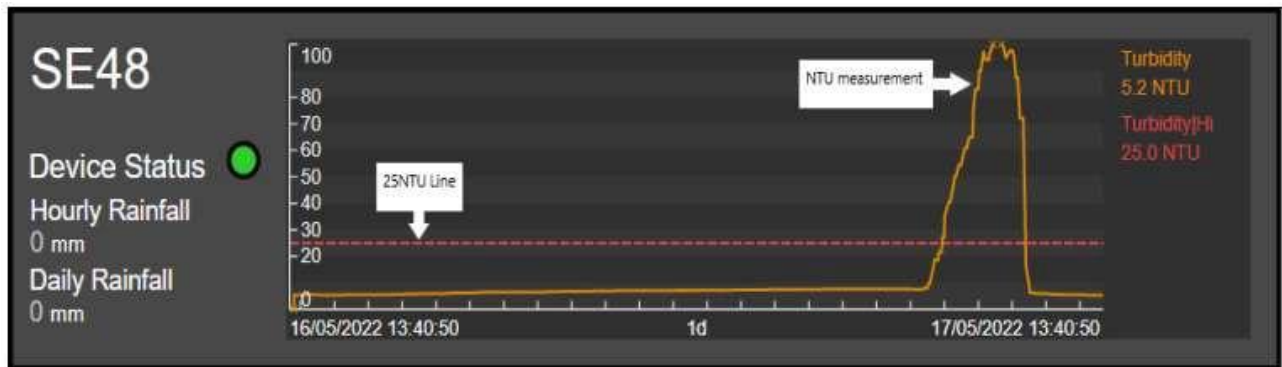


Figure 2 Typical 'false' exceedance event showing both a sharp incline and decline

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	3
Flagged for further investigation	0
False events	3
Caused by mining related activity	0

It was found that:

- c. There was Zero (0) event flagged for further investigation.
- d. Two (2) units remained dry with no presence of water.
- e. 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	Event Assessment (Additional Investigation Required /FALSE)	Event Start Date	Event Start Time	Event End Date	Event End Time	Event Duration	Ave. Turbidity (NTU)	Peak Turbidity (NTU)
WDL-2605-001	RHB3	FALSE	3/04/2026	18:31	4/04/2026	6:20	11 hours 49 min	1384.2	47776.6
WDL-2605-002	RHB2	FALSE	23/04/2026	12:42	23/04/2026	14:00	1 hour 18 min	31.706	49.641
WDL-2605-003	RHB2	FALSE	24/04/2026	2:08	24/04/2026	4:39	2 hours 31 min	52.367	70.482

5.2 Additional Investigation

Zero (0) events were flagged for additional Investigation during the period.

5.3 True Event(s)

Zero (0) 'True' turbidity event was identified during the period.

5.4 False Event(s)

Three (3) '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 04/04/2026 at 07:30am. Water clear and flowing, fair amount of algae on probe as well as small leaf. Probe was cleaned and repositioned in stream. Turbidity recorded at 1.8829 NTU. No sign of turbid water or sediment at monitor location. Stream flowing with gusto and water is extremely clear. Reduction in accumulated vegetation debris on stream. Event classified as a false event.
WDL-2605-002	RHB2	This event is marked by a rapid increase and gradual decrease in turbidity. This is indicative of a false event.	Stream inspected on 25/04/2026 at 1:30pm. The stream was clear and flowing at the time of the inspection however the water was very low and there was only just enough to submerge the probe. Turbidity was 3 NTU. There was some debris and leaves caught in the probe cap. This was removed and the probe returned to the stream. Turbidity dropped to 1 NTU. There was 9.8mm of rainfall in the 24 hours leading up to the turbidity event. Based on the shape of the turbidity readings, sharp and sudden increases and decreases, this event is not indicative of a true event. These events were likely caused by leaves caught in the probe cap coming into contact with the sensor. Events classified as false events.
WDL-2605-003	RHB2	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 25/04/2026 at 1:30pm. The stream was clear and flowing at the time of the inspection however the water was very low and there was only just enough to submerge the probe. Turbidity was 3 NTU. There was some debris and leaves caught in the probe cap. This was removed and the probe returned to the stream. Turbidity dropped to 1 NTU. There was 9.8mm of rainfall in the 24 hours leading up to the turbidity event. Based on the shape of the turbidity readings, sharp and sudden increases and decreases, this event is not indicative of a true event. These events were likely caused by leaves caught in the probe cap coming into contact with the sensor. Events classified as false events.

5.5 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. Probe installed in bucket of deionised water 15/11/2025.
HV49T	Dry	Stream dry. Probe installed in a bucket of deionised water 03/03/2026.

5.6 Missing Data

Periods of missing data are detailed in Table 5.

Table 5: Missing Data Summary

WQMS ID	Data Notes
RHB2	Data gap from 05/04/2026 1:18 PM to 07/04/2026 11:21 AM and 11/04/2026 11:44AM to 14/4/2026 1:07PM

Appendix A Willowdale Raw WQMS Data

Willowdale WQMS Data – April 2026 - Events with turbidity > 25 NTU for an hour or more				
Date	HV07T	HV49T	RHB2	RHB3
1/04/2026				
2/04/2026				1x False
3/04/2026				
4/04/2026				
5/04/2026				
6/04/2026				
7/04/2026				
8/04/2026				
9/04/2026				
10/04/2026				
11/04/2026				
12/04/2026				
13/04/2026				
14/04/2026				
15/04/2026				
16/04/2026				
17/04/2026				
18/04/2026				
19/04/2026				
20/04/2026				
21/04/2026				
22/04/2026				
23/04/2026			1x False	
24/04/2026			1x False	
25/04/2026				
26/04/2026				
27/04/2026				
28/04/2026				
29/04/2026				
30/04/2026				

Appendix B Willowdale WQMS Locations



RHB2●

RHB3●

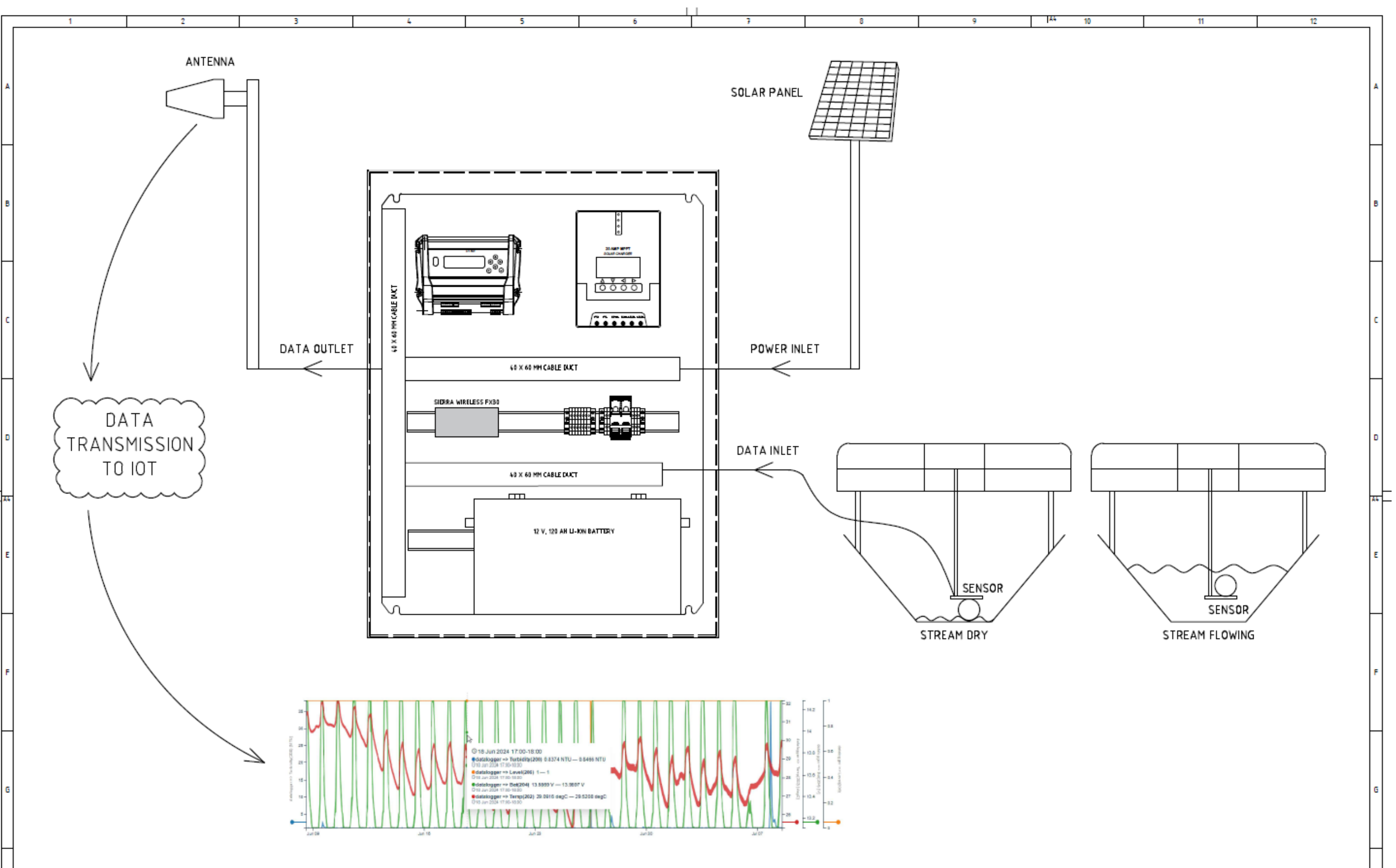
HV07T●

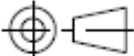
HV49T●

- 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) 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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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