# Algal bloom wildlife post-mortem report

Government of South Australia
Department for Environment and Water

**Species - Common dolphin**

**Date collected – 30 June 2025**

**Location – Semaphore Beach**

History relating to the animal

One adult male common dolphin (*Delphinus delphis*) was found deceased on Tennyson Beach on 28 June 2025. It disappeared into the water and was found again the morning of 30 June 2025 at Semaphore Beach.

Clinical examination

The animal was already dead and so could not be examined prior to death.

Necropsy

The necropsy (looking at the whole body) revealed the dolphin had already started decomposing when examined in the laboratory, causing changes to the skin and underlying layers of tissue. No inflammation was associated with these changes indicating they occurred after the animal's death. The animal had ventral (on the underside) and dorsal (along its back) fat pads present. The brain was liquifying due to the decomposing state. In the trachea (wind-pipe) and the pericardial sac (the tissue that envelops the heart) there was some discoloured fluid present. The valves of the heart (that open and close to allow blood flow) were normal. There were lesions (abnormal tissue) present in the lungs which were likely due to decomposition. The gastrointestinal tract was empty, and the liver had multiple white lesions (unusual tissue) present (this is usually indicative of some disease process).

Tissues were collected to test for avian influenza (which can infect marine mammals) and for histopathology (looking at tissues under the microscope for more detailed information). Testing for brevetoxins and other algal biotoxins, a possibility due to the algal bloom, was requested. Samples were collected for other testing that might be indicated after these tests were performed.

Histopathology

Samples from every major body system were examined under the microscope. There was moderate post-mortem decomposition of all tissues. There were no remarkable findings that could explain the cause of death in this animal.

Brevetoxins

No samples were above limits of reporting.

Other algal biotoxins

No samples were above limits of reporting.

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Avian influenza

Results were negative.

Summary

The animal was found deceased on a suburban beach, which is not unusual. Laboratory examination (necropsy and histopathology) could not identify the cause of death. Laboratory testing for avian influenza was negative and there was no evidence of the presence of brevetoxins or other algal biotoxins.

# PIIMS Laboratory Results Viewer

## Result Details Page

Submission No: [redacted]
Lab No. - Test: [redacted]
Animal/Batch Id:
Unknown*
Owner:
Submitter:

PIC: Unknown*
Species: Unknown*
Age: Unknown* Unknown*
Submitter Id:
Clinic Phone:
Submitted: Unknown*

* Note: No CNF records have been received for this submission.

Test: GP - GROSS PATHOLOGY
Reported: 02/07/2025 15:53

Validated by [redacted]

Test: GP - GROSS PATHOLOGY
Reported: 02/07/2025 15:53

[redacted]

CLINICAL HISTORY
1 dolphin was seen washed up on Tennyson beach on Saturday, 28th June 2025. It disappeared into the water and found this morning 30th June 2025 at Semaphore Beach

SAMPLES SUBMITTED
One dead male dolphin, 70kg.

NECROPSY FINDINGS
There are moderate post-mortem autolytic changes. The dolphin weighs 70kg.

Multifocally the skin is eroded, exposing the underlying pink subcutaneous layer (likely post-mortem changes). There are also numerous linear 'slash' marks on the skin, especially around the ventral abdominal region (likely post-mortem changes). No inflammation is associated with the skin changes.

The ventral fat is approximately 2cm thick; the dorsal fat pad (close to dorsal fin) is approximately 1.5cm thick.

Both eyes are sunken into their sockets and are dried (likely post-mortem changes). The soft tissue of the caudal mandible is missing. The tongue is markedly autolysed, with some missing parts. The caudal pharynx and larynx is covered with sand.

The caudal brain (especially the cerebellum) is green. The ventral brain is mildly liquefied.

The caudal 1/3 trachea contains \R\5ml opaque serosanguinous fluid. The same fluid is seen within the pericardial sac.
The heart is 300g. Both valves are grossly normal.
There are multifocal, flat, irregular, dark red depressions throughout both lungs (likely post-mortem changes).

The stomach and intestines are empty, with only scant amounts of green opaque fluid. No faeces were present in the colon or rectum.
The liver contains multiple pinpoint white nodules.
The kidneys are approximately 15cm in length and are bilaterally symmetrical.
The testes are present and are grossly normal.

GROSS DIAGNOSIS
Moderate autolysis

SAMPLES COLLECTED & TESTING
Tracheal swab in VTM -AI PCR

Fresh lung, liver, spleen, heart, brain - AI PCR

Fresh liver, spleen, kidney - Bio and Brevetoxin testing

Fresh tissues in 50 mL pots (lymph node, abdominal fat, heart, stomach, trachea, intestine, stomach content, adrenals, trachea, testes, skeletal muscle, brain, oesophagus, eye, kidney, liver, intestine, lung, spleen, faeces) - stored in -80

Fresh tissue in 5 mL tubes (heart, kidney, brain, lung) - stored in -80

Validated by [redacted]

This request has other tests in progress at the time of reporting

# PIIMS Laboratory Results Viewer

## Result Details Page

Submission No: [redacted]
Lab No. - Test: [redacted]
Animal/Batch Id: Unknown*
Owner:
Submitter:
PIC: Unknown*
Species: Unknown*
Age: Unknown* Unknown*
Submitter Id:
Clinic Phone:
Submitted: Unknown*

* Note: No CNF records have been received for this submission.

Test: SUP - VET SUPPLEMENTARY
Reported: 12/07/2025 16:07

SUMMARY COMMENTS
No diagnosis is concluded

COMMENTS
There are no gross findings to determined the cause of death. The dolphins is negative for Avian influenza.

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]

This request has other tests in progress at the time of reporting

Test: SUP - VET SUPPLEMENTARY
Reported: 12/07/2025 16:07

Validated by [redacted].

Outlook

**PATH RESULTS: DOLPHIN, (Ma)** [redacted]

**From** [redacted]
**Date** Fri 8/08/2025 1:00 PM
**To** [redacted]

[redacted]

**Tested on** 01/08/25
**Reported on** 08/08/25 13:30
**Referred on** 30/06/25 **by:**
[redacted]

[redacted]

**Owner:**
DOLPHIN

SEMAPHORE 5019

**Animal/s:**
Marine Mammal

**DOB:** N/A

**Collected:** 30/06/25 00:25 **Subm.No:** [redacted] **Lab No.:** [redacted]

**Samples tested as received** All Tests Complete

HISTOPATHOLOGY

REF: [redacted]
CLINICAL HISTORY
1 dolphin was seen washed up on Tennyson beach on Saturday, 28th June 2025. It disappeared into the water and found this morning 30th June 2025 at Semaphore Beach

MACROSCOPY
Pot 1 = brain.
A + B = brainstem
C = cerebellum
D = caudal cortex
E = Lateral ventricle
F+ G = cavitation at cortex at level of lateral ventricle

2A = spleen, oesophagus, vessel (aorta)
2B = kidney, pancreas, lung
2C = colon
2D = skin, trachea, stomach
2E = jejunum, colon, lymph node
2F = skeletal muscle, diaphragm, liver, colon
2G = colon, adrenal gland
2H = heart, liver

MICROSCOPY
There is moderate autolysis of most tissues, including brain, pancreas, alimentary section, kidney and moderate numbers of short rod bacteria within the vessels of multiple organs including the brain (post mortem bacterial overgrowth). The cavitation in one section of the brain is likely post mortem putrefaction.

The spleen, oesophagus, aorta, lung, colon, skin, trachea, stomach, jejunum, lymph node, skeletal muscle, diaphragm, liver, adrenal gland and heart are histologically unremarkable.

DIAGNOSIS
Unremarkable histological findings

COMMENTS
There are no histological findings to explain the cause of death for this animal.

[redacted]

**Tested on** 01/08/25
**Reported on** 08/08/25 13:30
**Referred on** 30/06/25 **by:**
[redacted]

E
[redacted]

**Owner:**
DOLPHIN

SEMAPHORE 5019

**Animal/s:**
Marine Mammal

**DOB:** N/A

**Collected:** 30/06/25 00:25 **Subm.No:** [redacted] **Lab No.:** [redacted]

**Samples tested as received** All Tests Complete

Could decreased food abundance have contributed to the chronic weight loss ?

[redacted]
Specialist Veterinary Anatomic Pathologist
[redacted]

Validated by [redacted]Veterinary Anatomic PathologyDiagnostician.

Tasmanian Government

**ANALYTICAL SERVICES TASMANIA**

18 St Johns Avenue New Town 7008 TAS
03 6165 3300
enquiries@ast.tas.gov.au
www.analyticalservices.tas.gov.au

Submission Number: [redacted]
Report Number:
Issue Date: 25/07/2025
Status: Final

*This report is a reissue, replacing report number: [redacted]*
*Reissue Reason: Finalised since last issue.*

# CERTIFICATE OF ANALYSIS

Customer: [redacted]
Address:

Submission Description: Common Dolphin Biotoxins [redacted]
Sample Received Date: 16/07/2025
Contract Number:
Client Order Number: [redacted]
Program/Quote Reference: [redacted]

*Sample(s) analysed as received. Sampling date and time data supplied by the client. The document shall not be reproduced except in full.*
*Additional information relating to this submission can be found in the sample receipt notification.*
*This report supersedes any previous reports with this submission number.*
*Many tests specify a holding time which gives the recommended timeframe by which a sample should be preserved/extracted and/or analysed after the sample is taken.*
*Holding time information can be found on the AST website https://analyticalservices.tas.gov.au/our-services/containers-samples-and-submissions .*
*Whilst every effort is made to analyse samples within these timeframes, situations can occur where this is not possible.*
*Where a test has been conducted outside the recommended sample holding time this should be taken into account when interpreting results.*

## The results in this report were authorised by:

| *Name* | *Position* |
|---|---|
| [redacted] | Chemist |

## Test Information:

| *Method ID* | *Test Description* | *Date Commenced:* |
|---|---|---|
| 3411 | Lipophilic Toxins in Shellfish by LC-MS/MS | 22-07-2025 |
| 3411A | Brevetoxins in Biota by LC-MS/MS | 22-07-2025 |
| 3416 | PST in Biota by LC-MS/MS (Boundy Method) | 22-07-2025 |

## Chemistry Test Results (Biota - Food)

| | | Sample Description | [redacted] Lung | [redacted] Kidney | [redacted] Liver | [redacted] Brain |
|---|---|---|---|---|---|---|
| | | Sampled Date/ Time | 30/06/25 0:00 | 30/06/25 0:00 | 30/06/25 0:00 | 30/06/25 0:00 |
| Method ID | Analyte | Units | 324447 | 324448 | 324449 | 324450 |
| | AZA1 | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | AZA2 | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | AZA3 | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | Domoic Acid | mg/kg WMB | <0.05 | <0.05 | <0.05 | <0.05 |
| | DTX1 Free | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | DTX1 Total | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | DTX2 Free | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | DTX2 Total | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| 3411 | GYM | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | Homo-YTX | mg/kg WMB | <0.02 | <0.02 | <0.02 | <0.02 |
| | OA Free | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | OA Total | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | PnTx-G | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | PTX2 | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | SPX1 | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| | Total DST | OA eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | YTX | mg/kg WMB | <0.01 | <0.01 | <0.01 | <0.01 |
| 3411A | Brevetoxin 2 | mg/kg WMB | <0.01* | <0.01* | <0.01* | <0.01* |
| | Brevetoxin 3 | mg/kg WMB | <0.01* | <0.01* | <0.01* | <0.01* |
| | C1 | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | C2 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | C3 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | C4 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| 3416 | dcGTX1 | STX.2HCl eq. mg/kg | <0.02* | <0.02* | <0.02* | <0.02* |
| | dcGTX2 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | dcGTX3 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | dcGTX4 | STX.2HCl eq. mg/kg | <0.02* | <0.02* | <0.02* | <0.02* |
| | dcNEO | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |

* NATA accreditation does not cover this result

## Chemistry Test Results (Biota - Food)

| | | Sample Description | [redacted] Lung | [redacted] Kidney | [redacted] Liver | [redacted] Brain |
|---|---|---|---|---|---|---|
| | | Sampled Date/ Time | 30/06/25 0:00 | 30/06/25 0:00 | 30/06/25 0:00 | 30/06/25 0:00 |
| Method ID | Analyte | Units | 324447 | 324448 | 324449 | 324450 |
| | dcSTX | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | doSTX | STX.2HCl eq. mg/kg | <0.01* | <0.01* | <0.01* | <0.01* |
| | GTX1 | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | GTX2 | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | GTX3 | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| 3416 | GTX4 | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | GTX5 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | GTX6 | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | NEO | STX.2HCl eq. mg/kg | <0.02 | <0.02 | <0.02 | <0.02 |
| | STX | STX.2HCl eq. mg/kg | <0.01 | <0.01 | <0.01 | <0.01 |
| | Total PST | STX.2HCl eq. mg/kg | <0.10 | <0.10 | <0.10 | <0.10 |

* NATA accreditation does not cover this result