

Allie Dunn

From: Allie Dunn
Sent: Friday, 8 August 2025 4:58 pm
To: [REDACTED]
Subject: CM: Response to request for information re Dannevirke Impound Supply Reports
Attachments: bay dynamics report rov drone submersible - dannevirke impounded water supply laws rd ~ water survey report 24 august 2021 (002)(d22_14830).pdf

Kia ora

I refer to your official information request dated 6 August 2025 seeking a copy of the Rationale report mentioned in an October 2024 media release, along with a copy of the report done in 2020/21 by Bay Dynamics underwater drone on the Dannevirke Impound Supply.

Following is a link to our resource page on our website that provides access to information related to the Dannevirke Impound Supply:

<https://www.tararua.govt.nz/services/projects/current-projects/dannevirke-impounded-water-supply>

The Rationale report – Dannevirke Impounded Water Supply Assessment of Options – referenced in the report the Council meeting held 25 September 2024, is available to download from that page, along with the agenda, minutes and video recording of that meeting. Also shared through that resource page are many other documents and reports relating to the Dannevirke Impound Supply.

A copy of the Bay Dynamics report dated August 2021 is attached for your information.

Ngā mihi



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Laws Rd Reservoir In Water Survey

24 August 2021



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Survey Brief

Bay Dynamics was contracted initially to conduct a leak identification survey to identify the location of the water leak which TDC Engineers had identified as existing in the Laws Rd Reservoir.

Bay Dynamics utilised one of its own ROVs with some modifications for the job. The Oculus Multibeam Sonar was fitted to enable easy navigation of the reservoir and also to identify objects beyond the camera's line of sight. This sonar has a resolution of 4mm and a range of 120m. The ROV was also fitted with 36,000 lumens of light and a grabber for retrieving objects.



ROV used during the survey.

At each of the following stages, visual inspection was conducted followed by a sediment flow path observation task. This involved disturbing the floor sediment then disabling the ROV thrusters to check where the sediment would flow while settling.

Survey was conducted in the following stages:

Stage 1: Survey of the Concrete sump at the centre of the reservoir floor. No water flow detected.

Stage 2: Complete reservoir floor survey. No water flow detected

Stage 3: Reservoir wall inclines survey. No water flow detected.

Stage 4: Water line survey. No water flow detected.

Stage 5: Reservoir cover trough inspection. Minor flow detected at one tear location only.



Reservoir as observed at time of survey.

During the survey the water depth ranged from 4.5m to 4.3m. In some places of the reservoir the water depth was measured as low as 3.9m, due to variances in the floor level.

Items of Interest (IOI) Report

Items of Interest (IOI) in the reservoir are broken down in to 3 categories.

Category A: Debris

IOI in this category are identified with a **RED** colour.



Category B: Geological

IOI in this category are identified with a **GREEN** colour.



Category C: Marine Life

IOI in this category are identified with a **BLUE** colour.

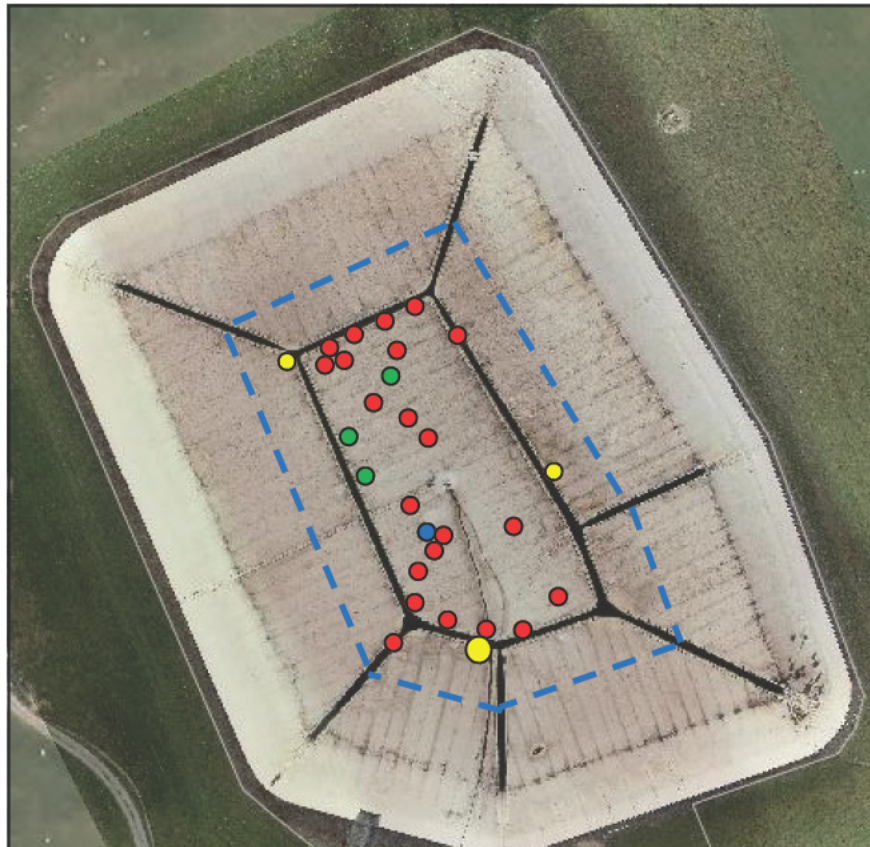


Category D: Anomalies & Observations

IOI in this category are identified with a **ORANGE** colour.



Summary Map:

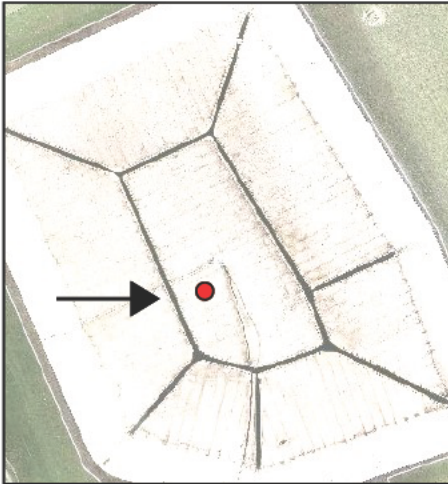


IOI Category A: Debris

These Items of Interest (IOI) are typically foreign items to the reservoir and are typically deemed not to be there. Often these can be left over from construction or may have been introduced at a later date.

Debris Item 01

Approximate Location:



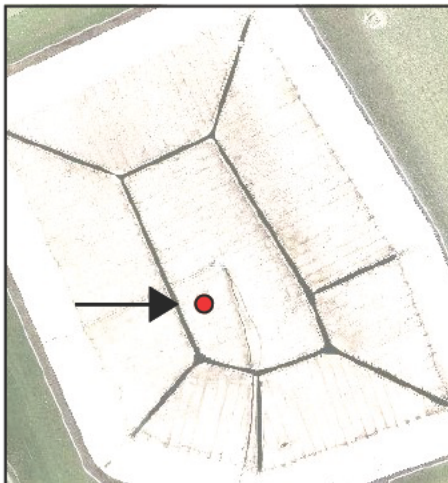
Item is on the reservoir floor.



Description: It appears to be some kind of thin plastic film wrapper

Debris Item 02

Approximate Location:



Item is on the reservoir floor.

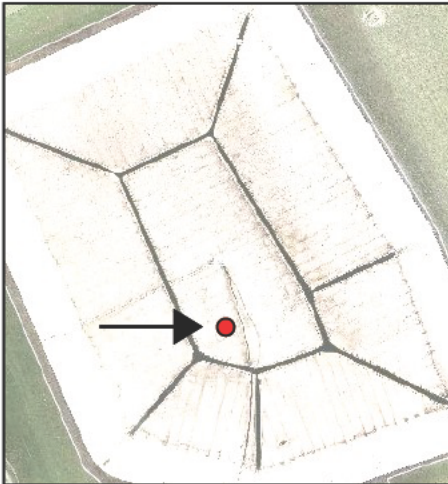


Description: It appears to be offcuts from the cover membrane.

IOI Category A: Debris

Debris Item 03

Approximate Location:



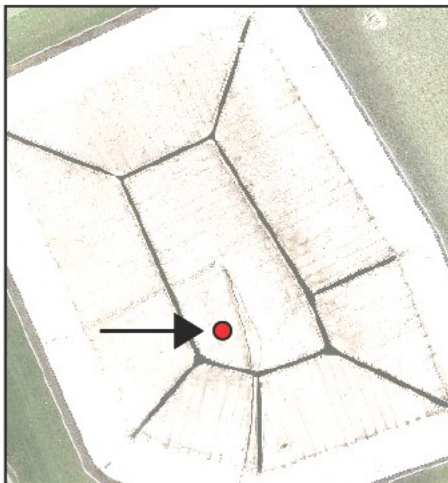
Item is on the reservoir floor.



Description: It appears to be offcuts from the cover membrane.

Debris Item 04

Approximate Location:



Item is on the reservoir floor.

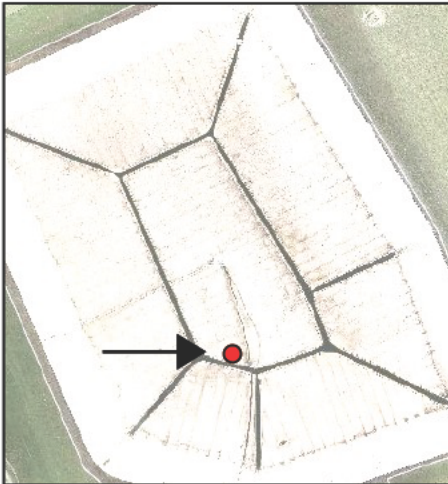


Description: It appears to be a piece of soft fabric cloth, approximate size 1m long.

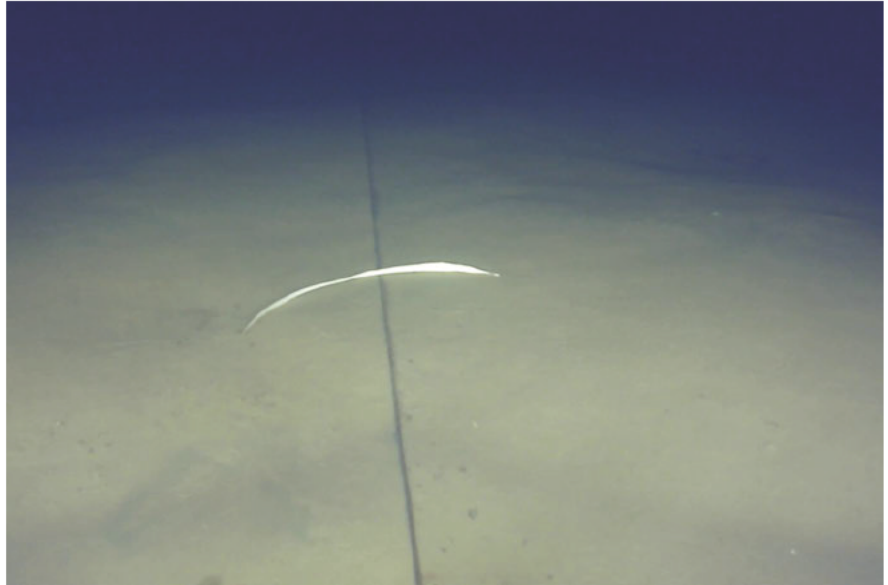
IOI Category A: Debris

Debris Item 05

Approximate Location:



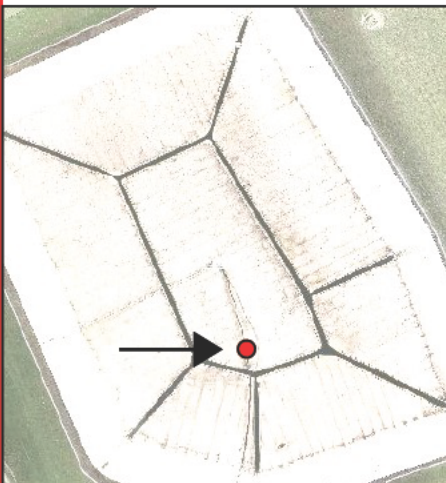
Item is on the reservoir floor.



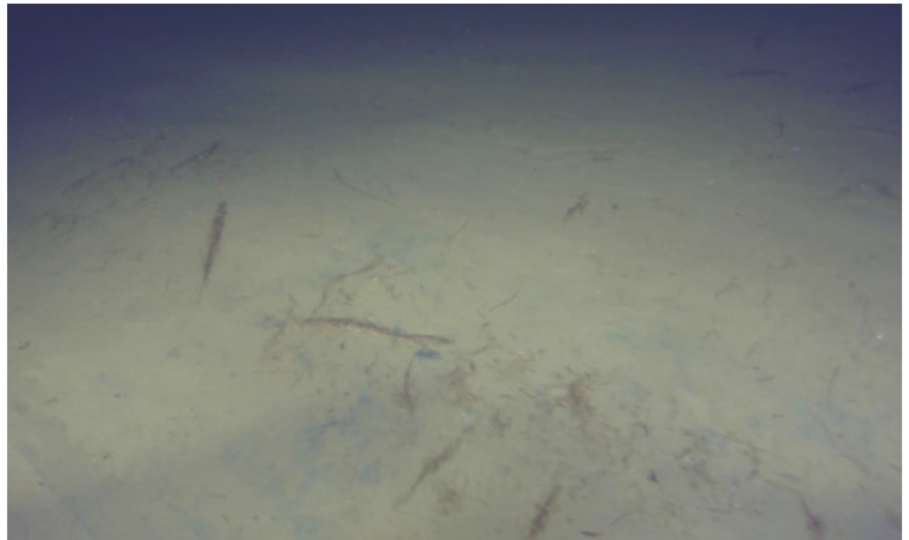
Description: It appears to be offcuts from the cover membrane.

Debris Item 06

Approximate Location:



Item is on the reservoir floor.

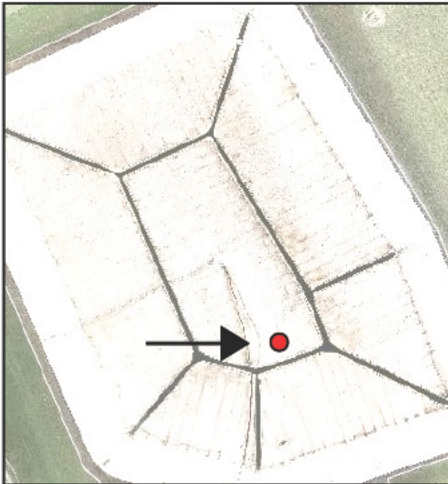


Description: It appears to be various items of foliage, covering an area approx. 5m x 5m.

IOI Category A: Debris

Debris Item 07

Approximate Location:



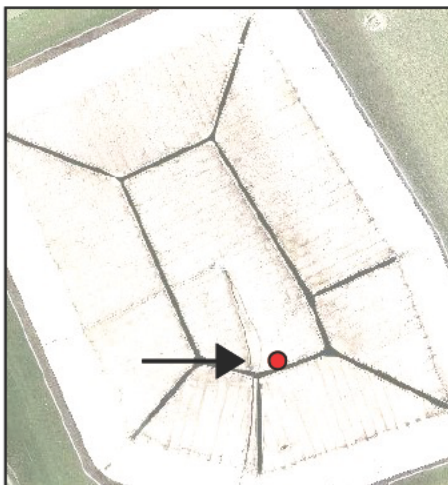
Item is on the reservoir floor.



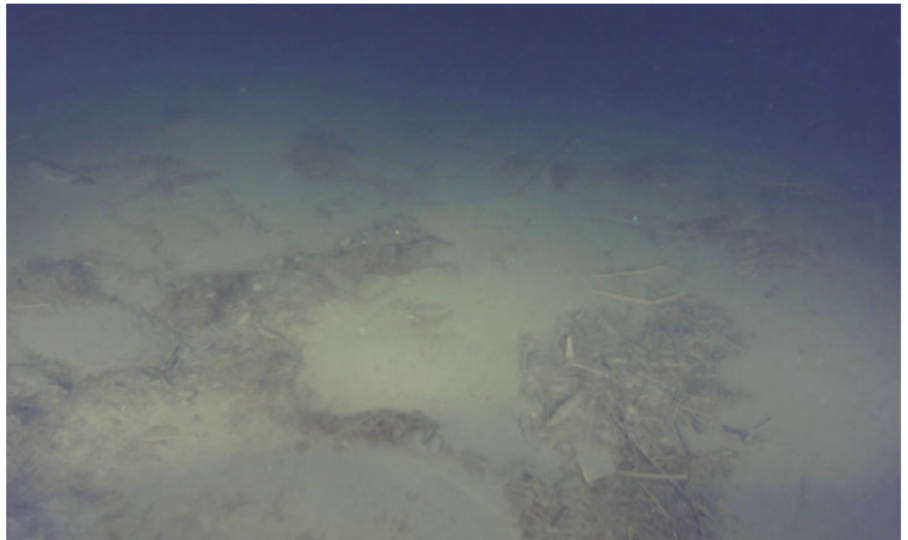
Description: It appears to be offcut / tag from the cover membrane.

Debris Item 08

Approximate Location:



Item is on the reservoir floor.

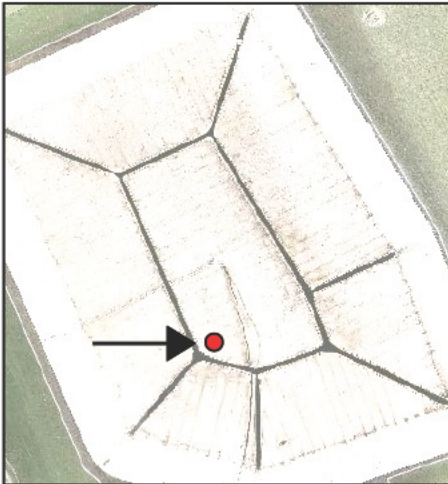


Description: It appears to be various items of foliage, covering an area approx. 10m x 10m.

IOI Category A: Debris

Debris Item 09

Approximate Location:



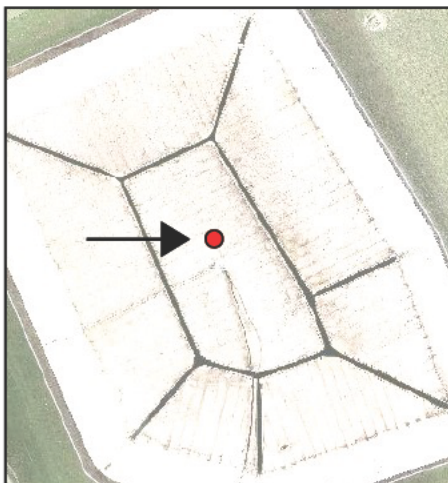
Item is on the reservoir floor.



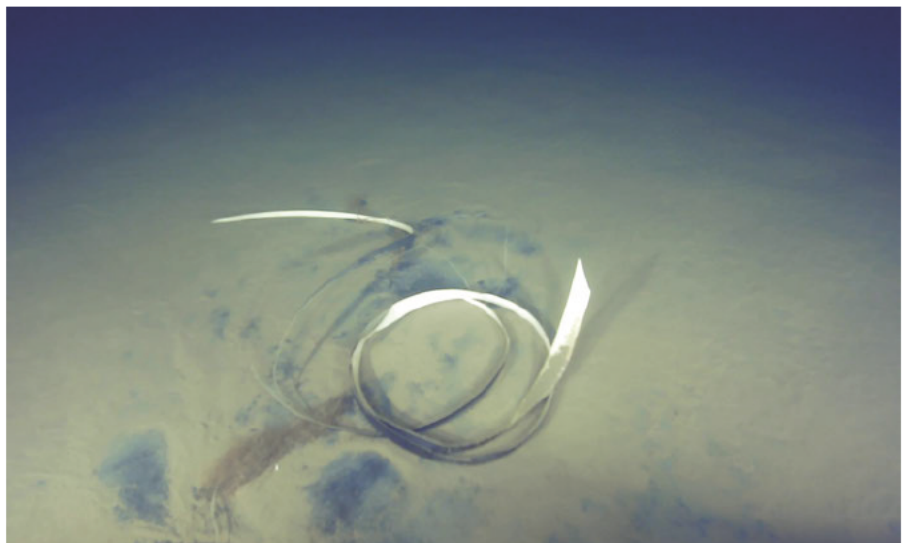
Description: It appears to be an offcut from the cover membrane.

Debris Item 10

Approximate Location:



Item is on the reservoir floor.

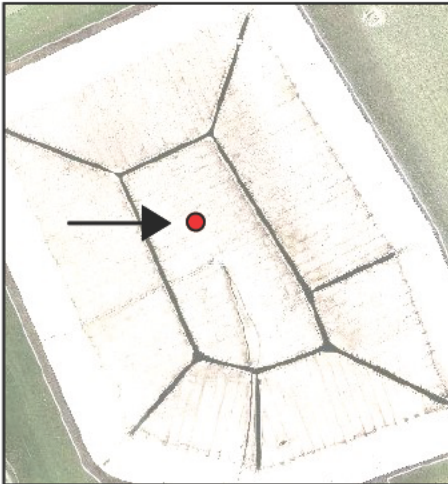


Description: It appears to a coil of offcuts from the cover membrane.

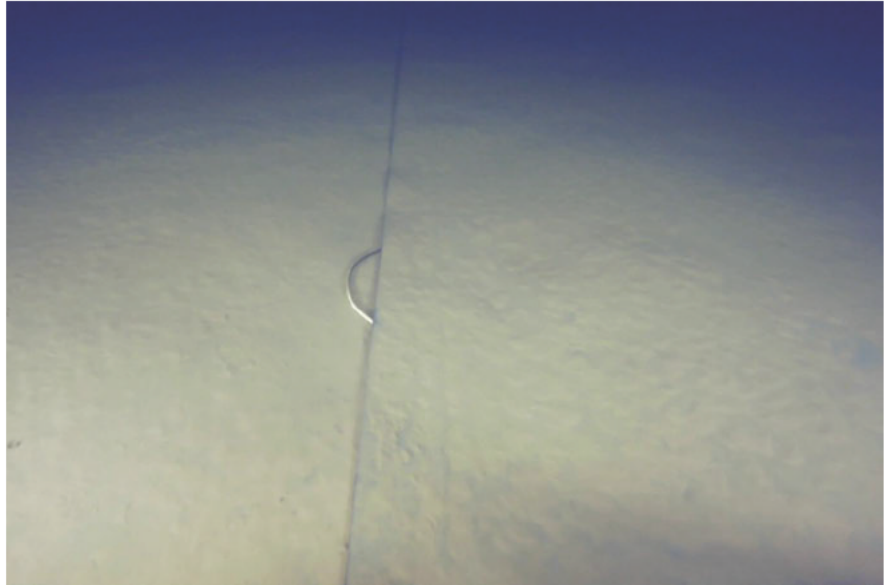
IOI Category A: Debris

Debris Item 11

Approximate Location:



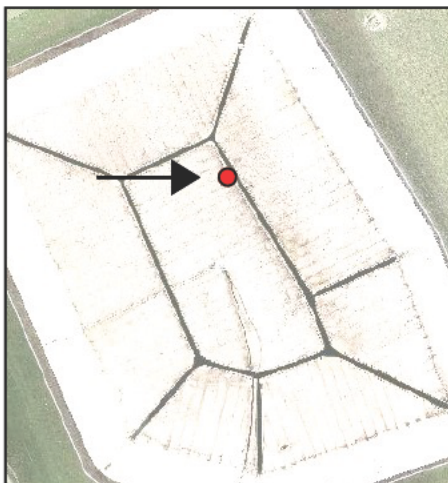
Item is on the reservoir floor.



Description: It appears to be an offcut from the cover membrane.

Debris Item 12

Approximate Location:



Item is on the reservoir floor.

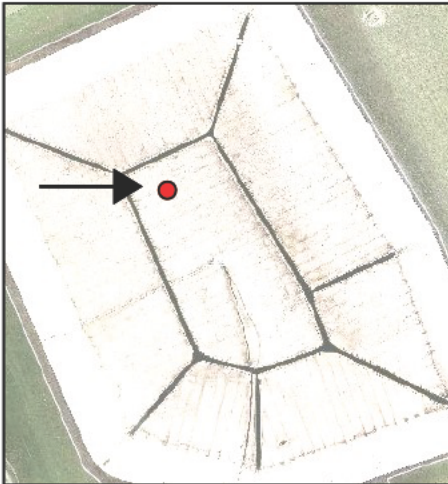


Description: It appears to be solidified sediment which has become dislodged from the inclines.

IOI Category A: Debris

Debris Item 13

Approximate Location:



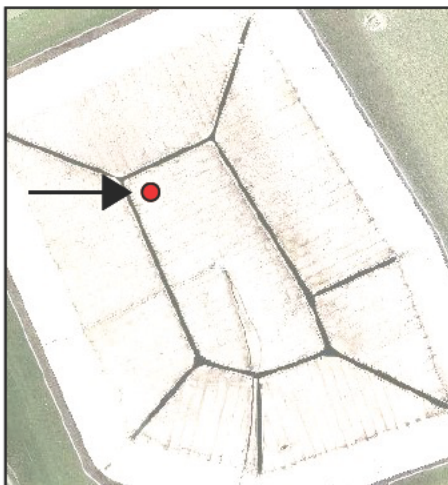
Item is on the reservoir floor.



Description: It appears to be an offcut from the cover membrane.

Debris Item 14

Approximate Location:



Item is on the reservoir floor.

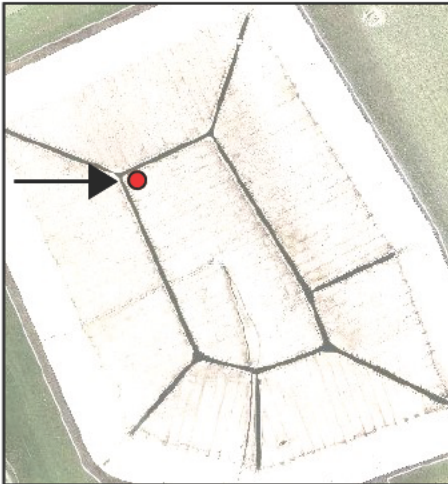


Description: It appears to be multiple slivers of membrane offcuts

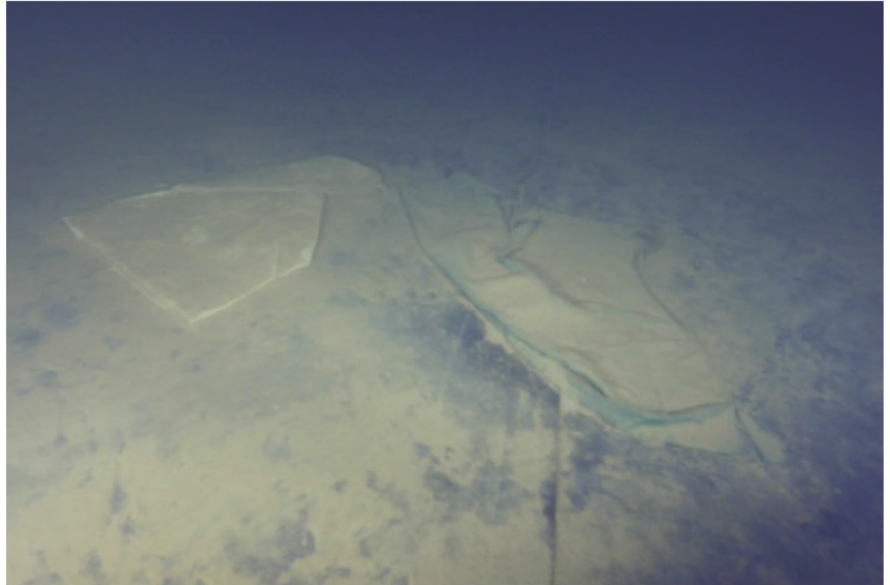
IOI Category A: Debris

Debris Item 15

Approximate Location:



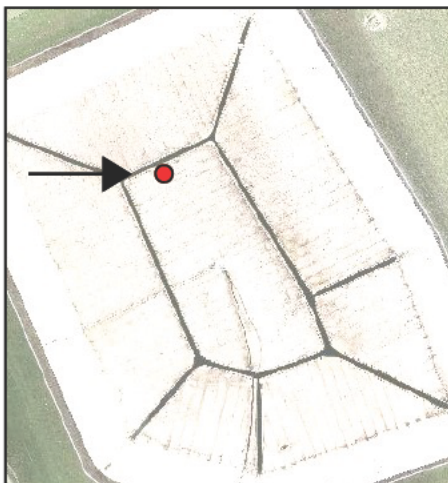
Item is on the reservoir floor.



Description: It appears to two different pieces of soft fabric cloth.

Debris Item 16

Approximate Location:



Item is on the reservoir floor.

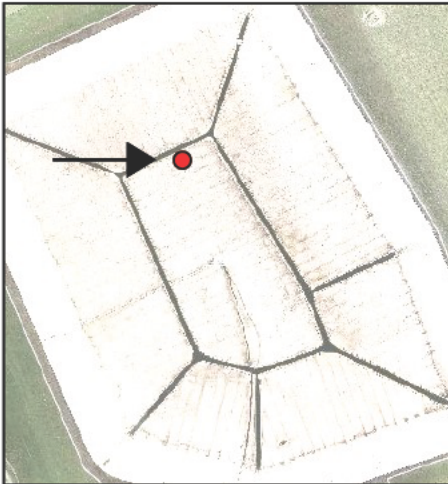


Description: It appears to be fabric tie from a possible carry bag.

IOI Category A: Debris

Debris Item 17

Approximate Location:



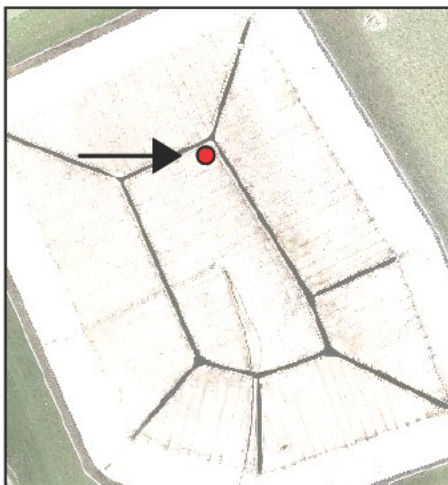
Item is on the reservoir floor.



Description: It appears to a fabric carry bag, closed at one end, open at the other.

Debris Item 18

Approximate Location:



Item is on the reservoir floor.

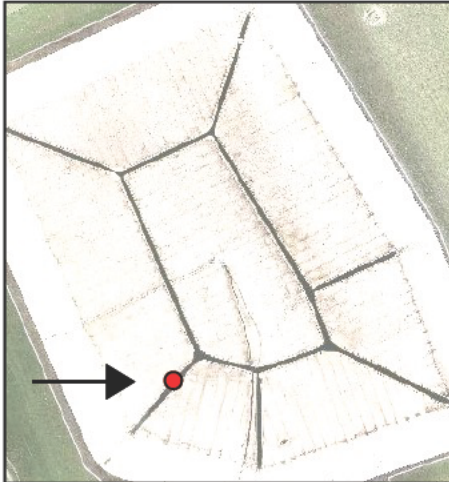


Description: It appears to sliver of membrane offcut

IOI Category A: Debris

Debris Item 19

Approximate Location:



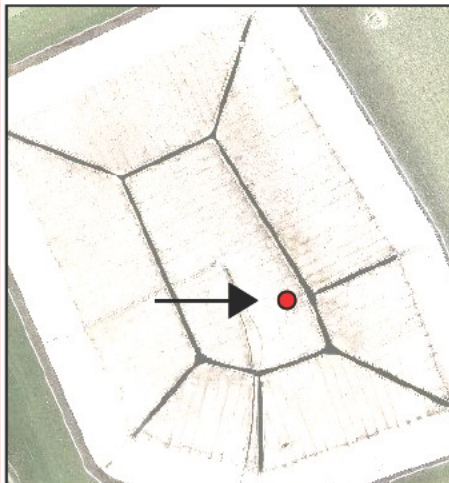
Item is floating under the cover



Description: It appears to be offcut membrane which is floating up against the cover.

Debris Item 20

Approximate Location:



Item is on the reservoir floor.



Description: It appears to be a pair of scissors.



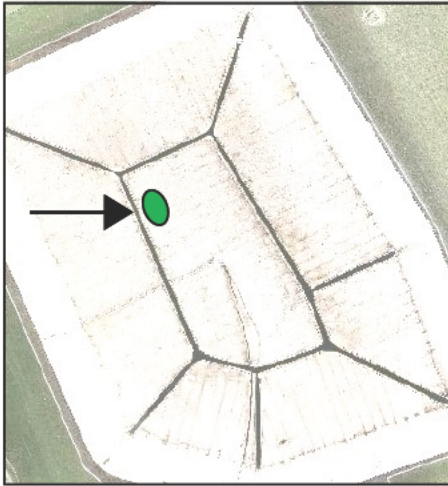
These Scissors were removed from the reservoir by the ROV at the time of the survey due to the potential cutting hazard they presented.

IOI Category B: Geological

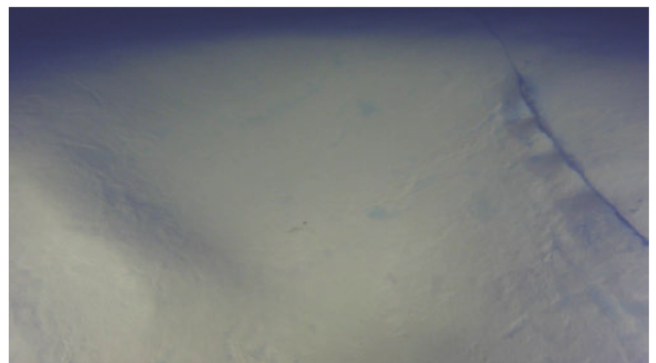
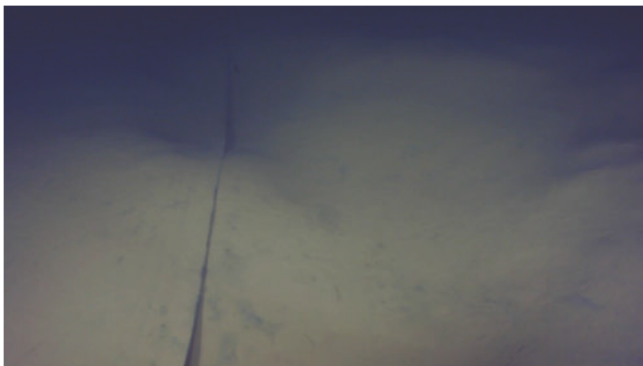
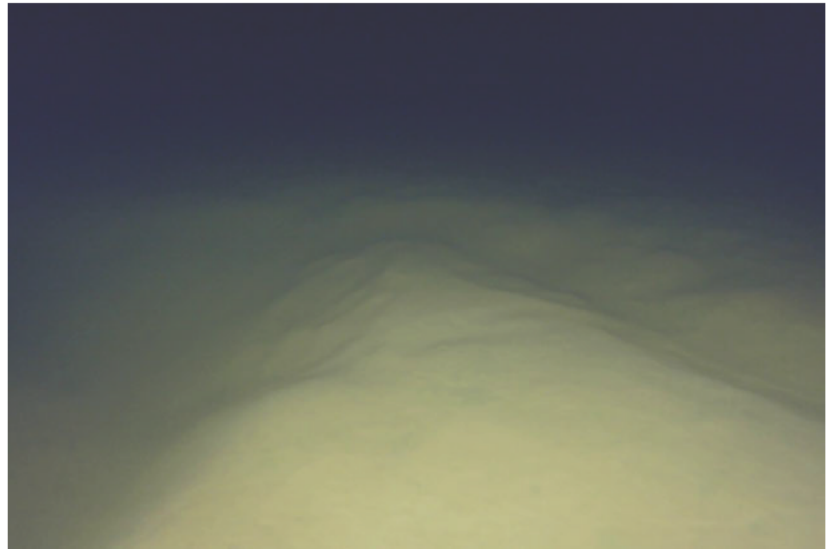
These Items of Interest (IOI) are typically naturally occurring and cause deviations from the original state of the reservoir after initial construction.

Geological Item 01

Approximate Location:



Area is on the reservoir floor.

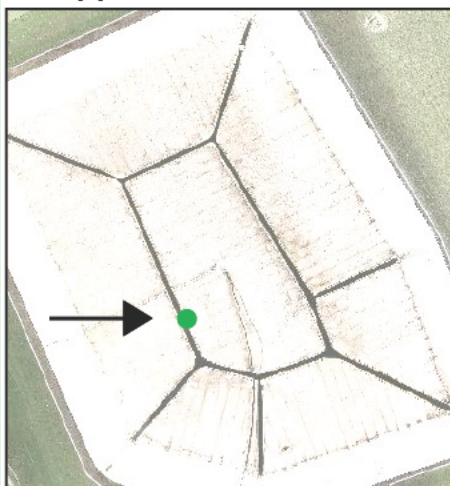


Description: Large area of multiple depressions and sediment build up. Seam is exposed at multiple locations in this area. Approximately 10mx10m coverage, multiple depths down to estimated 300mm deep, and build up of heights above the normal ground levels.

IOI Category B: Geological

Geological Item 02

Approximate Location:



Area is on the reservoir floor.



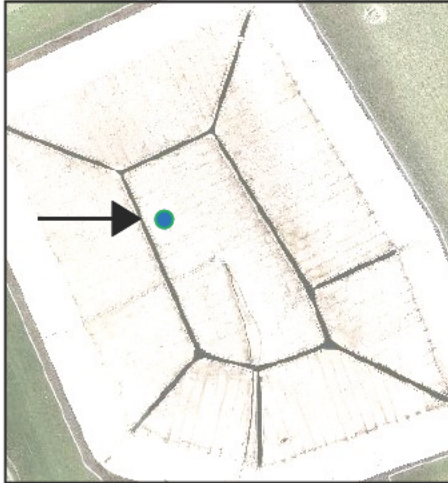
Description: A depression was observed which is approx. 2m x 2m in area and 200mm deep. The seam at this location appears to be raised more than usual.

IOI Category C: Marine Life

Items of Interest (IOI) in this category are typically biological in nature and living.

Marine Life Item 01

Approximate Location:



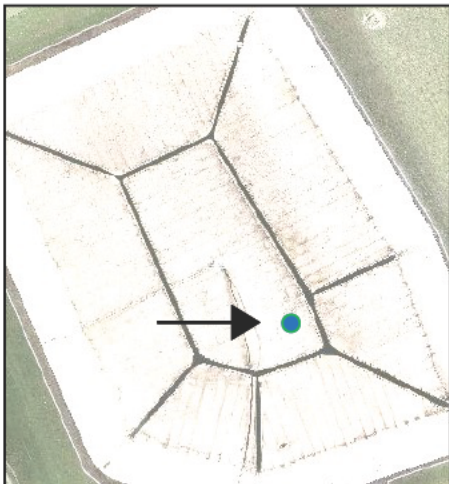
Area is on the reservoir floor.



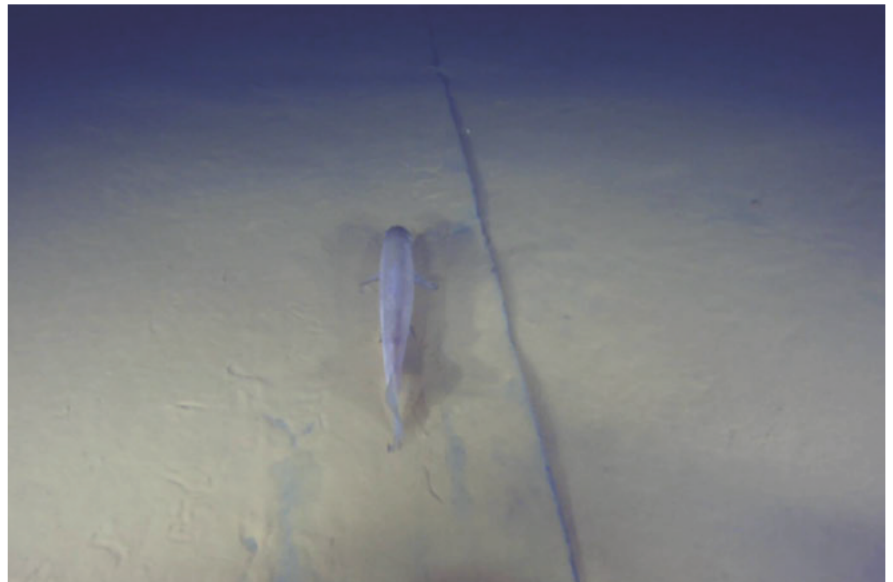
Description: Fish, unknown species, observed. Approximate length 100mm - 120mm long.

Marine Life Item 02

Approximate Location:



Area is on the reservoir floor.



Description: Fish, unknown species, observed. Approximate length 100mm - 120mm long.



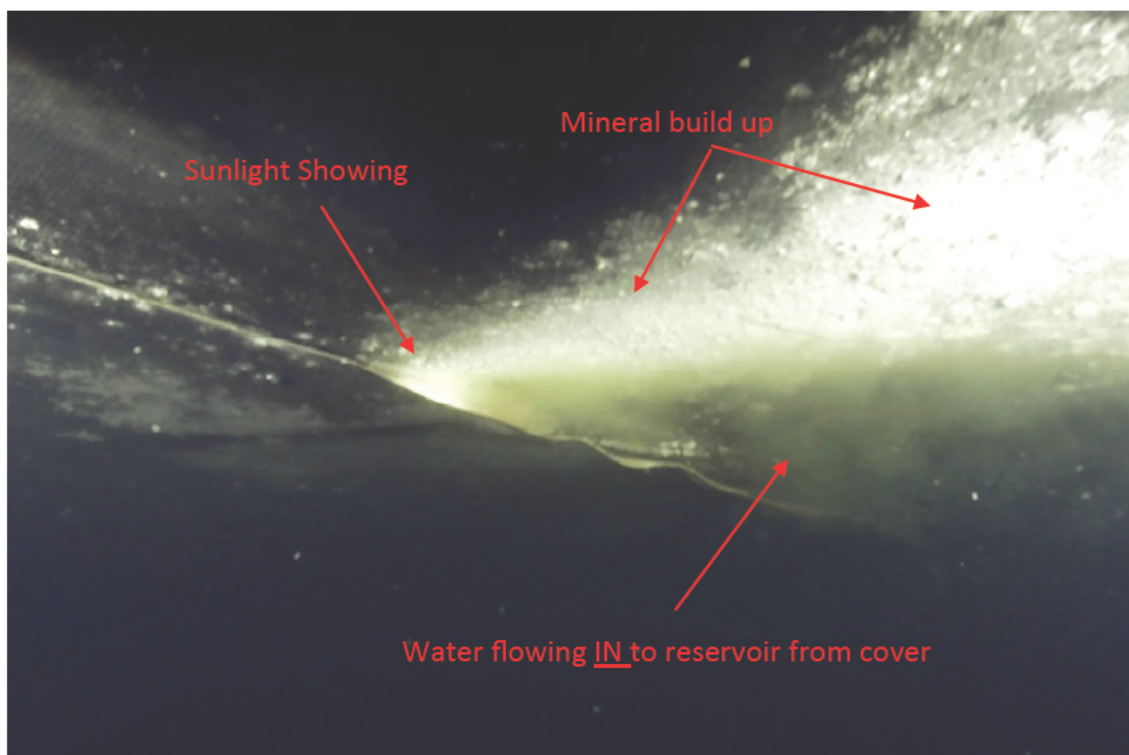
Its possible the same fish was observed twice at two different locations and time. This could not be ruled out at the time of survey.

IOI Category D: Anomalies & Observations

Items of Interest (IOI) in this category are typically abnormal observations which are deemed as different to the normal expected state of the reservoir.

Anomaly 01 : Tear in Cover Seam

Exact Location:



Description: Tear in Cover. The seam has parted at this location, water was clearly flowing IN to the reservoir from the cover. Tear appears to be approx. 100mm long

Anomaly 02 : Hole In Cover

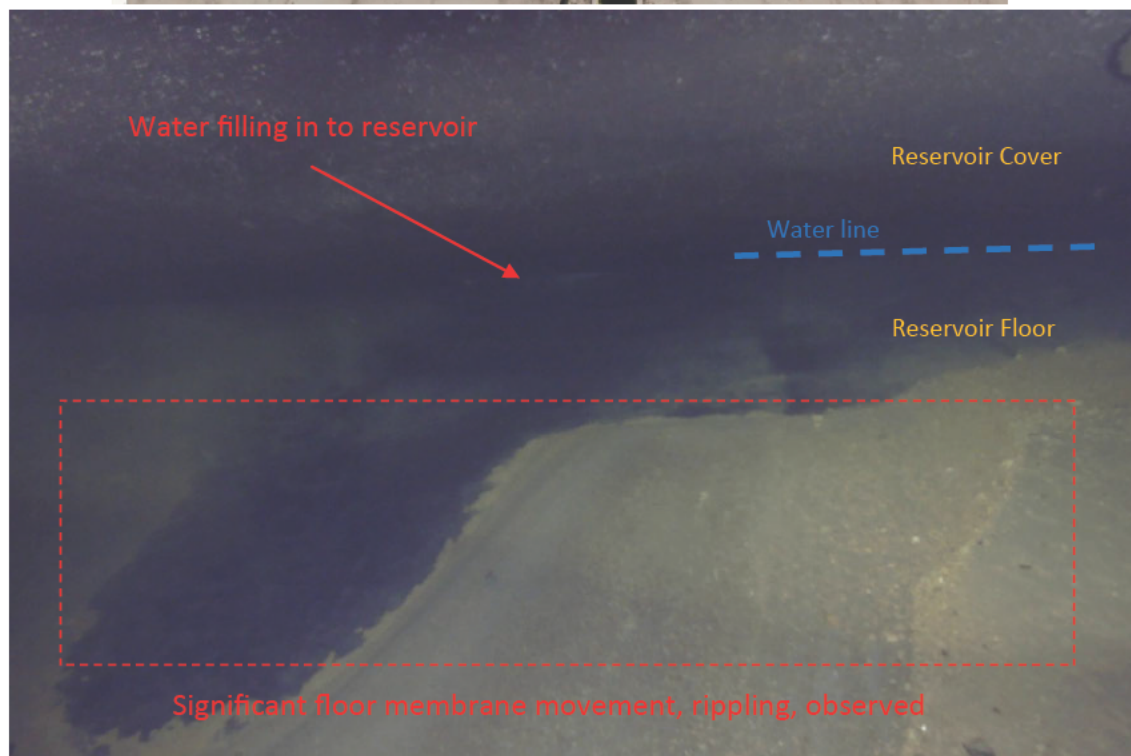
Exact Location:



Description: Hole in Cover. A hole was observed at this location. Approximately the size of a finger. No water flow was visually detected.

Anomaly 03 : Ripples in Floor Membrane

Exact Location:



Description: Significant movement, rippling, was observed on the floor membrane. This is under the filling location. This is indicating that either air pockets or water flow is occurring under the floor membrane.



End of Survey Report

