



[REDACTED]

7 September 2023

Dear [REDACTED],

Environmental Information Regulations request: EIR2023/00612

Thank you for your Environmental Information Regulations request received on the 5 August in which you requested the following:

Your request:

Rothera research station's sewage treatment plant is currently not working, such that only solids are screened out. All liquid sewage from the station is discharged into North Cove. I have the following questions about this situation:

- 1) *On what date did the malfunction causing this occur, and what is the malfunction?*
- 2) *What actions have been taken already to fix the plant?*
- 3) *Has the environmental impact of this malfunction been assessed?*
- 4) *Has the BAS Environment Office been notified in writing, and if so when was that done?*
- 5) *Has a plan been produced to mitigate the environmental impact of the malfunction and resulting discharge?*
- 6) *Has a plan been produced to fix the malfunction, and what is this plan if it exists?*

Our response:

I can confirm that UK Research and Innovation (UKRI) hold information relevant to your request. Please see the information below.

- 1) *On what date did the malfunction causing this occur, and what is the malfunction?*

The Sewage Treatment Plant (STP) at Rothera Research Station uses a process of maceration, filtering and biological treatment to break down the human waste produced on station. The biological treatment uses microorganisms (BioWISH Aqua Seed).

Degradation of the microorganisms led to the controlled shutdown of the biological treatment part of the sewage treatment system. Plans to reseed were delayed due to water damage inside the STP building which led to a failure in an electrical control panel in April 2022.

The maceration and filtering processes have remained functioning throughout.

- 2) *What actions have been taken already to fix the plant?*

Following the malfunction in April 2022, an examination of the full plant was undertaken during the 22/23 Antarctic Summer season (the first opportunity for engineers to visit station following the Antarctic Winter period).

During the 22/23 Antarctic Summer season the following were completed:

- Engineers conducted a full examination of the plant
- A new Reverse Osmosis plant was installed
- Repairs to the control panel were made

- An improved cleaning and maintenance schedule was put in place
- An updated microorganism seeding/dosing schedule was put in place.

3) Has the environmental impact of this malfunction been assessed?

The environmental impact of this malfunction has been assessed.

4) Has the BAS Environment Office been notified in writing, and if so when was that done?

The BAS Environment Office was verbally informed at the time of the malfunction. Written notification was subsequently undertaken in July 2023 following the system inspection.

5) Has a plan been produced to mitigate the environmental impact of the malfunction and resulting discharge?

Efforts are being focussed on repairing the STP rather than mitigating the effects of release of microbes and nutrients into the environment. BAS is committed to continuous improvement of its environmental performance and will continue to work with industry leaders to explore ways to maximise the performance of the Rothera STP and minimise impact on the local environment.

6) Has a plan been produced to fix the malfunction, and what is this plan if it exists?

The full Rothera STP will be recommissioned in the 2023/24 Antarctic summer season.

This work falls within normal procedures for the BAS Estates Team. In the 22/23 season, a new and additional Reverse Osmosis plant was installed in January 2023. This will allow the BAS Estates team to move Rothera station to potable water flushing in totality, creating much improved conditions for biological treatment using microorganisms (BioWISH Aqua Seed).

It was also identified that an increase in the number of people at Rothera during the Antarctic summer season placed an increased demand on the microorganisms within the STP. To minimise this, BAS have commissioned a second chamber within the system and will be introducing:

- A performance monitoring plan for the recommissioned STP
- An improved STP cleaning and maintenance schedule
- An improved microorganism seeding/dosing schedule
- An improved information campaign on station, educating staff and visitors on how the STP operates and what material should & should not be disposed of into the Rothera wastewater system.

If you have any queries regarding our response or you are unhappy with the outcome of your request and wish to seek an internal review of the decision, please contact within the next 40 working days:

Head of Information Governance

Email: foi@ukri.org

Please quote the reference number above in any future communications.

If you are still not content with the outcome of the internal review, you may apply to refer the matter to the Information Commissioner for a decision. Generally, the ICO cannot make a decision unless you have exhausted the review procedure provided by UKRI. The Information Commissioner can be contacted at: www.ico.org.uk.

If you wish to raise a complaint regarding the service you have received or the conduct of any UKRI staff in relation to your request, please see UKRI's complaints policy: <https://www.ukri.org/about-us/policies-and-standards/complaints-policy/>

Yours sincerely,



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