Infrastructure and Environment

PFAS Islander Meeting Minutes

7 August 2025

Government of Jersey

Contents

1. Welcome and Introductions – Kelly Whitehead

- Thanks were given to attendees and to the Panel.
- Agenda set out: brief updates, Panel presentation, then Q&A.
- Peter Bradley (Director of Public Health) and Helier Smith (CEO, Jersey Water) also introduced.
- Focus confirmed as Report 4; interim draft published at 15:00 on the day of the meeting.
- Printed presentation copies were made available; an online version was signposted.
- A feedback form was provided for written comments.
- Contact details for the Panel and the Regulation Enquiries mailbox were provided: pfaspanel@gov.je and RegulationEnquiries@gov.je
- Q&A materials were noted as updated and available online.
- No sign-in sheet was used; attendees were invited to provide an email address (to staff at the event or via email) to receive future updates.
- The floor was passed to the Panel for the presentation.

2. Panel Presentation – Overview (Presenter: Steve Hajioff)

- Introduced his background in translating scientific evidence into policy and in advising multiple governments across environmental and other domains.
- Panel members introduced:
    - Tony Fletcher - epidemiologist; contributions on health impacts.
    - Ian - environmental chemist with 26 years' experience, including research on exposure pathways.

3. Report 4 – Staging and Scope

- The Panel's commission is to synthesise evidence and provide recommendations to Government and stakeholders on PFAS management.
- The commission comprises five reports:
    1. Blood PFAS reduction interventions.
    2. Overview of health evidence.
    3. Approaches to lower PFAS in the body; testing of conditions potentially associated with PFAS.
    4. Environmental pathways and management.
    5. (Potential) Update on implementation to date.
- Report 4 delivery plan:
    - Interim 1 (this meeting): treatment of freshwater at scale for potable supply.
    - Interim 2 (before Christmas): additional topics considered amenable to regulation.

    - Final (early 2026): remaining exposure pathways and completion of the environmental scope.

4. Interim Focus – Topics Covered

- The presentation covered:
    - Bio-solids and their use in agriculture.
    - Soils (general considerations).
    - Small-scale water treatment, including private boreholes.
    - Food.
- An international assessment was cited indicating that approximately 80% of PFAS intake is from food, with the remainder primarily from water.

5. Working Principles and Engagement

- Agreed principles: evidence-led and consensus-seeking.
- Two categories of contributors:
    - Experts by experience (islanders with relevant lived experience, including health effects they may attribute to PFAS).
    - Subject matter experts (SMEs) (researchers and specialists with international expertise).
- Regular public involvement, including presenting drafts for comment and inviting queries on the developing Report 4 strategy (e.g., identification of any omissions).
- Meetings are predominantly in public. A small proportion may be held privately to respect medical confidentiality or contractual restrictions on certain external experts.
- Estimated private proportion: ~2% of total activity.
- "No surprises" principle: the process is open to observation (meetings, materials), leading to transparent recommendations.

6. Methods and Evidence Handling

- Three-stage approach:
    1. Analysis of scientific literature.
    2. Critical appraisal (assessment of what the evidence does and does not show; identification of gaps).
    3. Oral evidence from experts by experience and SMEs.

7. Public Comment and Publication Handling

- Public comments on the draft are invited.

- Comments will be read and (where appropriate) published in anonymised form; material may be excluded only where confidentiality requires.
- For this cycle: submitted comments may result in changes to the interim, but the consolidated comments/response table will appear with the final Report 4, not the next interim.

8. External Inputs and Local Context

- Engagement with 11 SMEs on Report 4 topics (treatment and regulation internationally).
- Presentations received from Jersey Water and Arcadis to understand local context and applicability of options.

9. Recommendations – Direction of Travel

- The Panel considered whether new guidance/arrangements are required.
- The Panel's discussion indicated that new arrangements are required (details to be developed through the staged Report 4 process).

10. Proposed Drinking Water Level – Rationale

- The Panel stated that any level adopted should be as low as reasonably practicable.
- On enforceability, the Panel noted options range from advisory guidance to legally/contractually enforceable limits. While legal mechanisms depend on Jersey's constitutional arrangements, the Panel's view was that the level should be enforceable (e.g., by law or contract).
- For basis-setting, the Panel used the European Food Safety Authority (EFSA) tolerable weekly intake as a starting point.
- Using international assessments indicating an ~80% (food) / 20% (water) contribution split (WHO, EU and others), the implied drinking-water level calculated to 4 ng/L.
- The Panel noted that Sweden has adopted 4 ng/L in law (effective from January), and that Denmark previously derived a level based on a 90/10 food/water split before the current consensus.
- The Panel indicated that, as more is learned about food contributions, the level may be revisited; however, it would not be raised above 4 ng/L.
- For reference, the Panel noted the UK advisory Tier 1 value of 10 ng/L.

11. Technology Options and Phasing

- The Panel discussed treatment technologies and how to achieve the proposed level.
- A three-stage approach was outlined:

1. Bridging (near-term) measures while permanent infrastructure is designed and delivered.
    - Powdered Activated Carbon (PAC) was cited as a potential interim option capable of lowering PFAS.
    - Trade-off noted: increased solids generation requiring disposal.
    - The Panel suggested the water utility consider PAC as an interim measure.
2. Infrastructure build phase with recognition that new plant takes time to deliver and commission.
3. Longer-term steady state using permanent solutions.

- Multiple technologies were reviewed; the Panel concluded there are two options that could be suitable for Jersey and are proven at water-treatment-plant scale. (Detailed option appraisal to be set out in the written materials.)

12. Technology Options – Appraisal Outcomes

- Granular Activated Carbon (GAC) and Ion Exchange (IX) were identified as the two practicable options for Jersey.
- Reverse Osmosis (RO) was considered and discounted due to:
    - ~20% water loss,
    - generation of liquid PFAS waste requiring management, and
    - high energy use.

13. Technology Considerations – Jersey Water Characteristics and Disposal

- Performance sensitivities:
    - GAC service life can be reduced by high organic matter.
    - Certain metals can reduce IX resin performance.
    - Conclusion: performance must be validated on Jersey source waters.
- Configuration: sequencing (GAC then IX, IX then GAC, or single-technology solutions) requires evidence from testing.
- Residuals management:
    - Consider regeneration options; assess feasibility on-island versus overseas.
    - Evaluate costs, logistics, and acceptance in destination jurisdictions.

14. Testing and Costing Approach

- Recommendation: conduct bench-scale tests on Jersey waters for GAC and IX.
- Undertake whole-life cost-effectiveness analysis (capital, operating, residuals, logistics).
- Bench tests and cost analysis can proceed in parallel.

15. Proposed Standard and Implementation Timing

- Recommended regulated (enforceable) drinking-water level: 4 ng/L.
- Proposed compliance period: 5 years.
  - Rationale included: potential land acquisition needs; bespoke plant design due to road/transport constraints (e.g., standard pressure vessels not fitting Jersey roads); and design, build, and commissioning time.
  - Characterised as the minimum feasible period given local constraints.

16. Public Comment and Lived-Experience Input – Next Stages of Report 4

- Comments on the interim draft were invited; submissions will be read and handled per the stated publication/confidentiality approach.
- For the next stage of Report 4, the Panel invited experts by experience to contribute in private, in writing, or at a public meeting.
  - Contributors must consent to public use of information for it to be included.
- Priority areas for input:
  1. Small-scale treatment of borehole/domestic water (in-home technologies and practices).
  2. Use of borehole water for irrigation (agricultural contexts and potential source pathways in Jersey).
  3. Application of bio-solids/solids from treatment (and sea lettuce, where relevant): methods of application, rates/volume per area, and incorporation depth.

17. Q&A

Q1. Why not set a maximum (zero) level for PFAS in drinking water like the US EPA's goal?

Panel response:

- The US framework distinguishes between a goal (MCLG), which for certain PFAS is 0, and an enforceable limit (MCL), set at 4 ng/L for practicality and measurability.
- The Panel's proposed 4 ng/L is derived from EFSA's tolerable weekly intake and an ~80% food / 20% water contribution split; it is intended to be enforceable.
- The recommended expression is as a sum across target PFAS, with details set out in the draft; the draft also discusses per-compound considerations.
- The Panel indicated the level may be revisited downward as food exposure understanding improves; it would not be raised above 4 ng/L.

Q2. How do measurement limits affect the practicality of very low standards?

Panel response:

- Public health frameworks often set an ideal goal that can be below current quantitation limits; enforceable limits reflect what is measurable and achievable in routine monitoring.
- The 4 ng/L value is positioned as achievable and enforceable, with monitoring methods available to support compliance.

Q3. For individuals with historically high PFAS body burdens, do "acceptable" water levels still matter?

Panel response:

- With ongoing intake, the body approaches a steady state between intake and excretion.
- Reducing PFAS in drinking water lowers intake and therefore lowers steady-state body burden over time, even if it does not reach zero.
- Food remains a substantial exposure source; reducing water exposure is controllable, while food exposure is harder to modify quickly.

Q4. Why is land application of sludge/bio-solids occurring, and what about incineration?

Panel response:

- Management options for treatment solids are being examined in the next phase of Report 4 (to December).
- If land application is changed or curtailed, an alternative disposal route is required; options and trade-offs (including energy use, residues, and logistics) are under review.
- No recommendation was made at this meeting pending completion of the analysis.

Q5. What are current PFAS levels in mains water in the east?

Panel response:

- The most recent figure cited for the sum of the four target PFAS was ~15 ng/L (previously ~35 ng/L).
- The Panel's proposed enforceable level is 4 ng/L; further reduction is required to reach this.

Q6. Is irrigation with mains water affecting crops?

Panel response:

- Food testing is underway or planned, including vegetables, dairy, eggs, fish, meat, soil, and shellfish.

- Results will inform the assessment of potential agricultural impacts.

Q7. Practicality, costs, and whether recommendations will be acted on.

Panel response:

- The interim is draft; formal responses from the Government of Jersey and Jersey Water are expected following publication of the interim and the final report.
- The publication schedule is intended to allow time for consideration and response.

Q8. Use of seaweed on land and potential entry to the food chain.

Panel response:

- Seaweed sampling/analysis is included in the work.
- Food results for Jersey will be compared with external reference data to provide context.
- Fish and oyster samples are also being collected.

Q9. Is the proposed timeframe sufficient, and are recommendations area-specific?

Panel response:

- Recommendations are island-wide, not restricted to specific areas.
- The adequacy of the 5-year compliance period reflects practical constraints (design, land, build, commissioning) and will be informed by ongoing data collection.
- Extent of contamination is being assessed; conclusions will be based on results, not assumptions.

Q10. Is "everywhere" contaminated, and is Jersey different?

Panel response:

- PFAS are globally widespread; presence has been recorded internationally (e.g., soils, rainfall, sea spray).
- Whether Jersey differs in degree will be determined by analysis of food, soil, private water supplies, and related datasets.

Q11. Cancer clusters and PFAS: what does the evidence show?

Panel response:

- Potential clusters require investigation; causes may be genetic, environmental, or other factors.
- The Panel's earlier review found strong evidence for associations with kidney and testicular cancer; evidence for other cancers is insufficient at present.
- No assumptions should be made beyond the available evidence.

Q12. Will Report 4 be peer-reviewed?

Panel response:

- Yes. As with earlier reports, the Panel will seek expert review of the draft.
- This is a policy-report peer review (consultation with relevant experts), not anonymous academic journal review.
- The process may add ~2 months to timelines and is more rigorous than typical policy papers.

Q13. Clarification on livestock (cows) and other pending topics

Panel response:

- Topics relating to livestock and agriculture will be covered through the food and soil testing workstreams and addressed in subsequent stages of Report 4 once results are available.

Q14. How does the Panel handle disagreement—why use "consensus"?

Panel response:

- The Panel seeks positions all members can support, rather than majority votes overruling a minority. This is the Panel's operating practice for developing recommendations.

Q15. Why does the Arcadis plume threshold (e.g., ~150 ng/L for environmental waters) differ from the Panel's 4 ng/L?

Panel response:

- The 4 ng/L figure relates to drinking water supplied for human consumption.
- The Arcadis figure cited pertains to environmental waters within a study/plume context. Different uses and contexts require different reference levels.

Q16. Should interim powdered activated carbon (PAC) be used, and should an airport operator implement treatment (e.g., reed beds) for environmental discharges?

Panel response:

- For drinking water, PAC was identified as an interim option to consider while permanent infrastructure is delivered, subject to lab/bench testing and whole-life cost assessment. It is not standard PFAS practice in potable treatment, hence the recommendation is to consider, not mandate.
- For site-specific environmental discharges, options are being explored in the Steering Group. Nature-based or sorbent approaches (e.g., carbon in remediation contexts) exist, but the Panel made no site-specific prescription at this meeting.

Q17. What should be done about contaminated soil near the airport?

Panel response:

- The Panel has not yet formally evaluated soil remediation options. Potential approaches (subject to feasibility studies) include sorbent barriers (e.g., carbon) and soil washing. Formal appraisal is pending.

Q18. Will delay increase costs and reputational risk?

Panel response:

- The Panel acknowledged the concern. Options involve trade-offs (cost, longevity, residuals, logistics). A formal options evaluation is required before recommendations on specific remediation measures.

Q19. The situation feels urgent; how will immediate exposure be reduced?

Panel response:

- Priority is to reduce exposure via drinking water first; subsequent stages will address wider environmental pathways.
- Recommendations are focused on forward actions to reduce intake as quickly as feasible.

Q20. Why didn't Jersey remove soil as reportedly done elsewhere (e.g., Guernsey), and were past decisions subject to undisclosed agreements?

Panel response:

- The Panel's remit is prospective: to assess current evidence and recommend actions from now.
- Historic decisions and any alleged agreements are outside scope of this meeting; soil and solids management options will be addressed in Report 4 work to December.

Q21. Does the water utility accept the recommendations and can it meet the 4 ng/L target?

Jersey Water response:

- Welcomes the proposed standard and associated recommendations; recognises the five-year implementation period.
- Will examine interim measures and longer-term solutions; logistics and deployment constraints acknowledged.

Q22. What actions have been taken since 2020?

Jersey Water response:

- Operational changes to reduce intake from more contaminated sources (e.g., selective use/withdrawal of certain boreholes, including during dry periods).
- Treatment options investigated (including work in 2022); clarity on a regulatory target is viewed as essential for design and investment decisions.
- A plan is being developed to progress near-term measures and long-term infrastructure.

Q23. Advance notice and meeting format; can individuals meet a single Panel member?

Panel response:

- Future visits will include pre-scheduled appointments; online meetings are also possible.
- The Panel provides collective responses; meetings are with the Chair (on behalf of the Panel) or with all Panel members, not one-to-one with an individual member.

Q24. Borehole water contains a "cocktail" of chemicals; are mixture effects being considered?

Panel response:

- The health focus of Report 4 is PFAS; broader mixture toxicology is noted but remains an emerging science.
- Three mixture scenarios were outlined: additive, no additional effect, or synergistic (> additive). Evidence is currently limited.
- Recommendation: run pilot treatment studies on local waters to confirm performance against PFAS and co-contaminants, and select filtration technologies accordingly.
- Funding for mixture-effect studies is acknowledged as challenging.

Q25. Monitoring and governance: will the Panel recommend how water is monitored and whether to create an independent regulator?

Panel response:

- The Panel can advise on monitoring approaches (e.g., methods, scope, frequency) where within its expertise.
- Decisions about institutional arrangements (e.g., creating an EPA-like body) are matters for government and ministers.
- Public concerns about independence of monitoring were noted for consideration in the government response.

Q26. Will the Panel recommend a specific regulatory body or structure?

Panel response:

- No. The Panel does not have the mandate or specialist expertise to design institutional structures or advise who should employ whom.
- The Panel can recommend what monitoring should be done and how, but organisational design is for government.

Q27. Food testing: whose guidelines are followed (what to test, when, how often)?

Panel response:

- Testing follows laboratory and industry standards where these exist.
- Where no precedent exists (e.g., sea foam), the Panel provides case-specific guidance based on scientific rationale.
- For foods typically eaten raw, the default is to test raw samples.

Q28. Has the Panel "made up" its approach where standards are lacking?

Panel response:

- No. The approach adopts lab/industry guidance where available; where absent, explicit, documented rationale is used to guide sampling and analysis.

Q29. Background PFAS levels in people beyond the plume; can the Panel press government to act?

Panel response:

- The Panel has proposed two approaches to assess background population levels (e.g., using existing clinical samples or structured volunteer sampling), noting pros and cons for each.
- A parish-based assessment has been recommended. Conducting the study is for government/health services; the Panel does not directly collect samples.
- In the absence of human biomonitoring data for this report cycle, the Panel modelled likely body burdens using drinking-water levels as an interim indicator and stands by the recommendation to carry out background assessment.

Q30. Governance context raised from the floor (Environmental Protection Team / reporting lines).

Record:

- A government attendee noted the Target Operating Model arrangements, including the Environmental Protection Team and responsibilities spanning Regulation and Environment. *(No Panel recommendation given on organisational design.)*

Q32. Closing remarks and next steps for input.

Panel note:

- Written questions and comments on the Report 4 interim are invited.
- The Panel reiterated its call for experts by experience to contribute (in writing, privately, or at public sessions) for the next stage of Report 4.

Close