Deadline 3 - Interested Party Reference number: 20048684

Written Representation - Ridgeway Users

Glossary

CCS - Carbon Capture And Storage

CCF - Carbon Capture Facility

Cory - The Applicant

ExA - Examining Authority

ExQ1 - Examining Authority Question 1

PFAS - Per- and poly-fluoroalkyl substances

PFHxS - Per- and poly-fluoroalkyl substances (PFAS) which are included under Persistent Organic Pollutant (POP) regulation.

PFOAs - Per- and poly-fluoroalkyl substances (PFAS) which are included under Persistent Organic Pollutant (POP) regulation.

PFOS - Per- and poly-fluoroalkyl substances (PFAS) which are included under Persistent Organic Pollutant (POP) regulation.

POPs - Persistent Organic Pollutants

SVOCs - Semi-Volatile Organic Compounds

VOCs - Volatile Organic Compounds

WLC - Whole Life Carbon

Executive Summary

As part of this written representation, Ridgeway Users will make the following points:

1. **Answering and Expanding On PFAS Testing & Pollution In Relation to ExA Q1.10.0.3 & Q1.10.0.4 And Calls For Further Testing**

Upon conducting testing on the actual correct roof and surface discharge site from Cory Riverside 1, which runs down the side of the nature reserve itself, we found PFAS concentrations of around 240ng/l - the highest in a water sample we could find reported in London. In light of this, Ridgeway Users rejects Cory's promise in their most recent revised version of Document 7.4, section 9.2.16. to undergo PFAS testing on their land after the granting of a DCO. We call for urgent independent PFAS testing on flue-gas, discharge water and local environs to be conducted with both party's supervision as soon as possible, before the conclusion of the ExA.

We raise the potential consequences of these results including land remediation which we believe to be incompatible with the development on the functioning of both Cory's current plant, and its relation to the future of their facilities. We also highlight that in light of these results, evidence is mounting that Cory are unsuitable custodians for the nature reserve and thus call for any plans which use the nature reserve site to be rejected.

2. **Expanding On Cory's Failure To Engage With Romani Communities**

We note that Cory has completely failed to respond to the details of our last written representation regarding both local and wider Romani civic society interests in Deadline 2 - we find that this indicates they are not taking this issue seriously enough. This is not a simple fix that can be addressed with minimal effort and believe that contrary to The Applicant's claims, the land is used for a traditional way of Romani life. This is not included in site weighting analysis and thus we believe this adds to mounting evidence the nature reserve site is a worse choice than several others and thus should be rejected.

We also make tentative recommendations of better accommodation for Romani needs.

3. Additional Concerns Regarding Cory's Potential Failure To Achieve 95% CCS Capture Rates

We note that Cory have also not addressed our previously set-out written representation in which we asked them to provide adequate evidence of their Carbon Capture scheme achieving 95% efficiency as the guidance recommends. The guidance states they must explain why they cannot achieve this percentage if it is unattainable. Since then we have found additional evidence that calls into question the accuracy of Cory's Carbon Accounting - specifically the lack of clarity as to the amount and makeup of recyclates they burn - especially given the current local authority recycling facility deficit. We are seeking clarification of data.

Written Representation

1. Answering and Expanding On PFAS Testing & Pollution In Relation To ExA Questions Q1.10.0.3 & Q1.10.0.4 And Calls For Further Testing

1.1 Further Evidence Of Pollution Found

1.1.1 In response to the question laid out by the ExA, we sought to gain greater clarity on whether Cory's discharge ditches contain PFAS by conducting an additional test.

Cory had initially informed us they discharged into a different, incorrect ditch, which we then tested in (which re-affirms our previous statements regarding the poor quality of data and site management we have noted from the applicant in the DCO so far). As a result of this, we wanted to make sure our test site was correct. In correspondence with us, Cory stated:

> *'We do discharge into the ditch on the west side of the road.'*

We also cross-referenced planning document 6.3 table 5-1 & Figure 10-1, as well as document 5.2 from the previous Riverside 2 application. Document 6.3 identifies the ditch as

> *MR4 - Located between the Carbon Capture Facility and Norman Road, the watercourse receives surface water runoff from Riverside 1 and Riverside 2*

1.1.2 We sampled in ditch MR4, which Cory describes as the stream which 'uncontaminated' roof and surface water discharges into. Sampling was supervised by a bioengineering PhD from Imperial College London. We found a new lab with accreditation this time - Marchwood. Proof of location, results and accreditation are below (See Figures 1,2 & 3). Due to road access limits and terrain, we could not get as close to the discharge point as we wanted to (150 feet away) where we posit that concentrations could be even higher. This highlights the need for additional testing which we recommend later.

Figure 1: Photos of supervised testing - attending horse from East Paddock demonstrates relation to nature reserve - sample was sealed before horse interaction

Figure 2: Map of Site - Cory Riverside 1 is the large building to the North, red pin (coordinates 51.50355768091269, 0.15467593212868708) indicates new testing site. Blue arrow points to old testing site

CERTIFICATE OF ANALYSIS

MSSL reference: 25-82159

Report date: 15-01-2025

Customer [redacted]

Customer contact(s): Dr Uy Hoang

Customer reference: -
Customer PO: -
Customer sampling date: 04-01-2025
Date received: 07-01-2025

Analysis started: 09-01-2025
Analysis complete: 15-01-2025
Conforming: YES

Accreditation Key:
Y : ISO/IEC 17025 M : MCERTS
N : Non Accredited (S) : Subcontracted

Notes: (1): Please note: Results in brackets are indicative, as they are outside of instrument calibration range

Reported by: Thomas Walmsley
Position: Team Leader

Approved by: Giuseppe Reitano
Position: Technical Laboratory Manager
For/on behalf of Marchwood Scientific Services Ltd

[redacted]

UKAS TESTING
1668

t: 02380 786979 w: [redacted]
Marchwood, 371 Millbrook Road West, Southampton SO15 0HW

[redacted]

488778 PFAS ANALYSIS

Results Key:

Conc Concentration
LOQ Limit of Quantitation

Sample Identifier : Norman Road, West Ditch Water
Sample No: 488778
Sample Type: Water

Test Method : WI 009
Instrument : LC/MS

Compound	Conc ng/L	LOD ng/L	Accreditation
10:2 FTS	< 1	1.00	Y
11Cl-PF3OUdS	< 1	1.00	Y
4:2 FTS	< 1	1.00	Y
6:2 FTS	7.36	1.00	Y
8:2 FTS	< 1	1.00	Y
8:2-diPAP	< 1	1.00	Y
9Cl-PF3ONS	< 1	1.00	Y
ADONA	< 1	1.00	Y
EtFOSA	< 5	5.00	N
EtFOSAA	< 1	1.00	Y
EtFOSE	< 1	1.00	N
FBSA	2.18	1.00	Y
FHpPA	< 5	5.00	Y
FHxSA	< 1	1.00	Y
FOSA	< 1	1.00	Y
FPePA	< 5	5.00	Y
FPrPA	< 1	1.00	Y
HFPO-DA	< 1	1.00	Y
HFPO-TA	< 1	1.00	Y
MeFOSA	< 1	1.00	N
MeFOSAA	< 1	1.00	Y
MeFOSE	< 1	1.00	N
NFDHA	< 1	1.00	Y
PFBA	>20 (26.1)	5.00	N
PFBS	12.8	1.00	Y
PFDA	8.06	1.00	Y
PFDoA	2.11	1.00	Y
PFDoS	< 1	1.00	Y
PFDS	< 1	1.00	Y
PFECHS	1.05	1.00	Y
PFEESA	< 1	1.00	Y
PFHpA	>20 (22.2)	1.00	Y
PFHpS	< 1	1.00	Y
PFHxA	>20 (32.5)	1.00	Y
PFHxDA	< 1	1.00	Y
PFHxS	1.83	1.00	Y
PFMOBA	< 1	1.00	Y
PFMOPrA	< 1	1.00	Y
PFNA	4.33	1.00	Y
PFNS	< 1	1.00	Y
PFOA	>20 (39.0)	0.65	Y
PFODA	< 1	1.00	N
PFOS	6.80	0.65	Y
PFPeA	>20 (74.2)	1.00	Y
PFPeS	< 1	1.00	Y
PFTeDA	< 1	1.00	Y
PFTrDA	< 1	1.00	Y
PFUdA	< 1	1.00	Y
PFUdS	< 1	1.00	Y

Figure 3: Test results for PFAS

1.1.3 At 240.52ng/l total PFAS, the results show concentrations of PFAS over four times higher than the East Ditch sample of 59.1 ng/l we took last time, which we are now treating as a control test given their proximity and similarity of environment. Both are road-side ditches on the same road, both have reed beds and are only 20-25m apart, however they are separated by concrete and thus contained away from one another. Their principal difference is that Cory discharges into one and not the other. For further site context, surface water from near the comparable sewage facility to Crossness, North of the river, was found to contain 12.1ng/l. This result is the highest we could find from a water sample in the urban area of London when cross-referencing data from Le Monde & 17 affiliates.[1]

1.1.4 Three PFAS were found that fall under POPS regulation (PFOA, PFOS & PFHxS), with a combined estimated concentration of 47.73 ng/l. In the East Ditch/control sample, they were 13 ng/l, roughly 3.5 times lower. Levels of PFOS are around 10 times higher than the EQS set out by The Environment Agency of 0.65ng/l.[2] The other chemicals do not have a fixed EQS yet.

1.1.5 Concentrations for five separate PFAS were so high, that it was beyond the upper calibrated limit of the machine, which is only calibrated to a maximum of 20 ng/l per individual PFAS compound. Whilst we can be almost certain that they are above 20 ng/l due to machine saturation, this does impact confidence intervals for concentrations. We received this statement from David Elo of Marchwood to give context for the results.

> *The analysis provided in the water sample is UKAS accredited, and each determinand will have an uncertainty of measurement. Without checking with the lab an estimate for the accredited determinands will be approx. 15-25%.*
>
> *The calibration applied to this analytical run is between 1ng/l to 20ng/l, therefore determinands and results outside of this range won't be accredited, and will have a different uncertainty of measurement. As all results provided are in the same order of magnitude, the uncertainty of measurement won't be too different, but I would expect*

[1] Dagorn, G., Aubert, R., Horel, S., & Martinon, L. (2023). *'Forever pollution': Explore the map of Europe's PFAS contamination*. Le Monde. Retrieved November 25, 2024, from https://www.lemonde.fr/en/les-decodeurs/article/2023/02/23/forever-pollution-explore-the-map-of-europe-s-pfas-contamination_6016905_8.html

[2] Environment Agency (2019) *Perfluorooctane sulfonate (PFOS) and related substances: sources, pathways and environmental data* Environment Agency. Retrieved 15th Jan 2024, from https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices/user_uploads/perfluorooctane-sulfonate-and-related-substances-pressure-rbmp-2021.pdf

something around 30- 60%. Without doing further calculations it's impossible to give accuracies.

If you wanted to carry out further work, we could dilute the sample (we would lose accreditation at this point) and repeat the analysis at £275, or carry out additional validation to cover the range that would be required – this could run into thousands of pounds. From our perspective, the data provided is good and defensible.

You have permission to use Marchwood in your report as a reference lab. We have provided analytical services of the highest order to yourself and Uy Hoang.

1.1.6 In summary, the results are high, but we do admit there is room for error in just how high these results are above this threshold once they have reached it - these results could be higher or lower but are still good and significant. We recommend that any future tests must be done under the more expensive method, which allows for accurate readings at higher concentrations between 1-100ng/l.

1.1.7 We note that the applicant has, in rebuttal to our previous representation, claimed in *Appendix 17-1: Preliminary Risk Assessment of the Environmental Statement (Volume 1)* that the potential source might be the use of fire-fighting foams in 2005, but we note that the site in question is not only around half a kilometre away and some of the PFAS found are not in firefighting foams. Our previous test only 20-25 metres away which has far lower results, acts as a decent environmental baseline for PFAS in the localised area. Likewise, in this same appendix, Riverside 1 is listed as a potential source of VOCs & SVOCs. PFOA and PFOS are both VOCs, many other PFAS are SVOCs. These volatile and semi-volatile compounds, which have already been found recently in flue gases from another EfW plant after a pioneering test[3], could be spread widely across an enormous area. A PFAS flue gas test is essential.

1.1.8 We conclude that in line with statutory guidance for The Environment Act of 1990, we believe we have demonstrated that there is at the very least a significant possibility of such pollution and argue that we may have already demonstrated that there is significant pollution with the potential for significant harm.

[3] Björklund, S., Weidemann, E., & Jansson, S. (2023). Emission of Per- and Polyfluoroalkyl Substances from a Waste-to-Energy Plant—Occurrence in Ashes, Treated Process Water, and First Observation in Flue Gas. Environmental science & technology, 57(27), 10089–10095.

1.2 Legislative Background/Obligations

1.2.1 The ExA asked in Q1.10.0.3 Ridgeway Users Chemicals in Watercourse (1)

> *'What they consider any implications for the Proposed Development would be in the light of their comments about chemicals in the vicinity?'*

In light of this, we wish to set out the relevant legislative background that underpins our stance.

1.2.2 As mentioned in our previous written representation, POPs are regulated internationally under the Stockholm Convention and the Aarhus Protocol. Breaches of this law are enforced under The Persistent Organic Pollutants Regulations 2007 (POPs Regulations). There are several strands to their obligations under this legislation here.

This legislation states that waste management operations that fail to meet paragraphs 1, 2 or 3 of Article 7 [F15Regulation (EU) 2019/1021] *'are guilty of an offence'.* These paragraphs are as follows:

> *Paragraph 1: Producers and holders of waste* ***shall undertake all reasonable efforts to avoid, where feasible****, contamination of this waste with substances listed in Annex IV.*
>
> *Paragraph 2: Notwithstanding [F15 the PCB Regulations], waste consisting of, containing or contaminated by any substance listed in Annex IV to this Regulation shall be disposed of or recovered, without undue delay and in accordance with Part 1 of Annex V to this Regulation, in such a way as to ensure that the POP content is destroyed or irreversibly transformed so that the remaining waste and releases do not exhibit the characteristics of POPs.*
>
> *In carrying out such a disposal or recovery, any substance listed in Annex IV may be isolated from the waste, provided that this substance is subsequently disposed of in accordance with the first subparagraph.*
>
> *Paragraph 3: Disposal or recovery operations that may lead to recovery, recycling, reclamation or re-use on their own of the substances listed in Annex IV shall be prohibited.*

Annex V: The following disposal and recovery operations, as provided for in Annexes I and II of Directive 2008/98/EC, are permitted for the purposes of Article 7(2), when applied in such a way ***as to ensure that the persistent organic pollutant content is destroyed or irreversibly transformed***

1. *Physico-chemical treatment.*
2. *Incineration On Land*
3. *Use principally as a fuel or other means to generate energy, excluding waste containing PCBs.*
4. *Recycling/reclamation of metals and metal compounds, under the following conditions*

To summarise, to prevent the leaching of POPS (in this case we are focusing on PFOAs, PFOS & PFHxS which fall under this legislation) into the environment, precautions such as sorting waste, and ensuring the irreversable destruction/transformation of these substances must be undertaken.

1.2.3 Ridgeway users believe that contrary to this legislation, Cory cannot claim they use 'all reasonable efforts' as they are obligated to. 'All' is a key term here, especially given we understand that Cory doesn't test for PFAS at present, which indicates a lack of targeted removal. There are several plausible techniques below that according to our best understanding they do not use:

1. Cory does not currently sort the waste they incinerate to avoid burning plastics, which are known to commonly contain PFAS. They have confirmed this in email correspondence with us (See Figure 4). They also admit to burning recyclates in correspondence but have avoided commenting on the quantities of this recyclate (both rejected for quality reasons and that which London lack's capacity to recycle), which is not surprising given this is well-reported[4] and capacity shortages are set to increase.[5] We

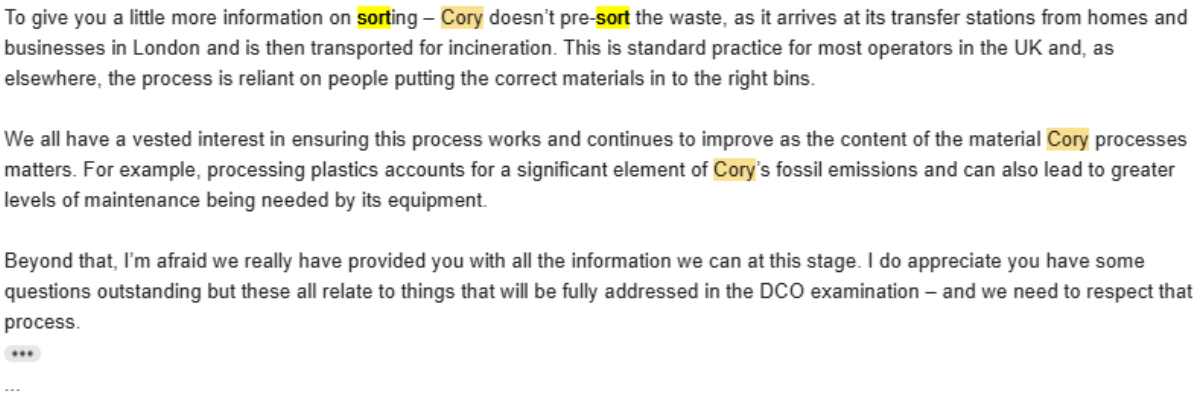
[4] Toussaint Straus, J. et al. (2022) *Why are we burning our recycling?* The Guardian, Accessed on 16th Jan 2024 from: [redacted]

[5] Templeman, J. (2023) *Household plastic film: UK recycling capacity faces shortfall* resource,co, accessed 16th Jan 2024 from [redacted]

note that one of the most common recyclates, food packaging, contains the highest levels of any common source material of PFAS, 16x higher than other pathways.[6]

2. Cory does not incinerate waste at a hot enough temperature to destroy PFAS. Data from the *International Journal of Environmental Research and Public Health* indicates that EfW incinerators operate at temperatures which do not destroy PFAS, but instead release and spread them more widely - increasing their potential for harm to locals.[7] According to Cory's own documentation, the temperatures used in Riverside 1 are 850 degrees + which is not very hot for an EfW incinerator.[8]

3. We could have found no evidence so far that Cory use specific PFAS-targeted methods such as Electrochemical Oxidation that have been proven to help remove these substances.


To give you a little more information on sorting – Cory doesn't pre-sort the waste, as it arrives at its transfer stations from homes and businesses in London and is then transported for incineration. This is standard practice for most operators in the UK and, as elsewhere, the process is reliant on people putting the correct materials in to the right bins.

We all have a vested interest in ensuring this process works and continues to improve as the content of the material Cory processes matters. For example, processing plastics accounts for a significant element of Cory's fossil emissions and can also lead to greater levels of maintenance being needed by its equipment.

Beyond that, I'm afraid we really have provided you with all the information we can at this stage. I do appreciate you have some questions outstanding but these all relate to things that will be fully addressed in the DCO examination – and we need to respect that process.

Figure 4. Cory confirms they do not sort their waste.

1.2.4 We also wish to highlight relevant parts of The Environment act of 1990 and accompanying statutory guidance that will be useful to consider later.[9] The legislation states that enforcing agencies should:

[6] Solid Waste Association of North America (2022) *Understanding PFAS in Landfill Leachate Relative to Common Exposure Sources and Pathways* Solid Waste Association of North America
[7] Meegoda, J. N., Bezerra de Souza, B., Casarini, M. M., & Kewalramani, J. A. (2022). *A Review of PFAS Destruction Technologies*. International journal of environmental research and public health, 19(24)

[8] Cory (2017) *Annual Performance Report* Retrieved 5th January 2025: [redacted]

[9] UK GOV. (2021). Part IIA of the Environmental Protection Act 1990. Environmental Protection Act 1990. Retrieved November 25, 2024, from https://www.legislation.gov.uk/ukpga/1990/43/part/IIA

'assume that a significant possibility of significant harm exists in any case where it considers there is an unacceptably high probability, supported by robust science-based evidence, that significant harm would occur if no action is taken to stop it'

Additionally, statutory guidance states that:

'In deciding whether the possibility of significant pollution of controlled waters is significant the local authority should bear in mind that Part 2A (of the Environment Act) makes the decision a positive legal test. In other words, for particular land to meet the test the authority needs reasonably to believe that there is a significant possibility of such pollution, rather than to demonstrate that there is not.'

As laid out in our tests in section 1.1, we believe we have in fact already more than demonstrated that there is a significant possibility of such pollution. We have found pollution to be defnitively present. The guidance also states a need to identify plausible harm.

'There are four possible grounds for the determination of land as contaminated land (with regard to non-radioactive contamination):

(a) Significant harm is being caused to a human, or relevant non-human, receptor.

(b) There is a significant possibility of significant harm being caused to a human, or relevant non-human, receptor.

(c) Significant pollution of controlled waters is being caused.

(d) There is a significant possibility of significant pollution of controlled waters being caused.'

Elevated levels of PFAS are associated with cancers, kidney issues, developmental issues, behavioural issues, thyroid damage, fertility and liver damage. Chemicals such as PFOA are Group 1 carcinogens. We believe this falls under the significant possibility of major potential harms to human and non-human receptors and we have we are gue proved that significant pollution of controlled waters is being caused - given that these chemicals have been found already.[10]

[10] Panieri, E., Baralic, K., Djukic-Cosic, D., Buha Djordjevic, A., & Saso, L. (2022). PFAS Molecules: A Major Concern for the Human Health and the Environment. Toxics, 10(2), 44.

Controlled waters include:

> *'any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.'*

Crossness Nature Reserve falls under this category.

1.2.5 Once land is identified as contaminated, it then comes down to identifying liable parties, the guidance states that ideally they find one or multiple Class A parties, namely groups that have:

> *'Caused or knowingly permitted the contaminant in question to be in, on or under the land. Any such persons constitute a "Class A liability group" for the significant contaminant linkage.'*

If they fail to identify a Class A group, the guidance states:

> *In any other case where no Class A persons can be found for a significant contaminant, the enforcing authority should identify all of the current owners or occupiers of the contaminated land in question. These persons then constitute a "Class B liability group" for the significant contaminant linkage.*

In other words, any occupier or owner of the contaminated land with few exceptions can be classified as liable if there is potential for major harm. Once these parties have been identified, a remediation package should be identified and delivered by those liable.

1.2.6 We believe that the evidence we lay out in this section demonstrates a possibility that Cory could be found by an enforcing body to be a Class A persons and forced to remediate the land and that this might have potential follow-on consequences for the construction of the decarbonisation plant.

1.3 Potential Implications

1.3.1 Our latest tests concern the operations of Riverside 1, but Ridgeway Users wish to highlight in this subsection the potential knock-on effects to the proposed CCF. We do not believe a possible PFAS remediation process is compatible with building a decarbonisation plant which uses PFAS on the same site.

1.3.2 As demonstrated in section 1.2, if a serious breach of POPS regulation is found, this could lead to mandated remediation packages. This could also include an extensive mandated refurbishment/supply chain change. Ridgeway Users believe that building a facility which makes use of PFAS on the very land which might need to be remediated from PFAS contradicts any potential PFAS remediation plan that may be agreed upon in the future. We do not believe these two processes are remotely compatible and could potentially undermine compliance with the Water Environment Regulations 2017.

We note that this further evidences the unsuitability of building Cory's proposed scheme on the nature reserve due to mounting evidence that they might not only destroy the part of the nature reserve they wish to build on, but also pollute the rest of it. As the potential for PFAS pollution appears to be new information to them, as proven by their amendments to their DCO documentation (7.4, Section 9.2.16), we believe Cory & the ExA need to review their site choice weighting given an elevated pollution risk. This also highlights issues with Cory relying on permitting regimes to prevent harm to the nature reserve. It is process rather than permitting which creates clean environments.

1.3.3 Cory's response to our question concerning the use of PFAS in the CCF states that the process will not release any PFAS into the environment. Ridgeway Users argues that this is an untested and unproven assertion - maintaining this level of unproven risk on controlled land is not acceptable.

After careful research, we are not aware of any independent PFAS testing which has directly investigated the impact of CCFs or other storage infrastructure and thus we seek clarity from the applicant on what real-world evidence backs up this assertion.

To give more texture as to why we believe land remediation is not compatible with building a CCF over the affected land, we need to understand the role of PFAS in the carbon capture process.

Based on documents from IOGP[11] (International Oil & Gas Producers) to the EU, asking for exemptions from PFAS legislation specifically for Carbon Capture, we can assert that not only do other CCS users predict PFAS might constitute a highly probable environmental hazard (hence their asking for an exemption), but that PFAS will most likely be used in a huge number of parts in the process including (but not limited to):

1. Containment & Transport of captured carbon - Polytetrafluoroethylene (PTFE), a PFAS, is the only available material that can withstand corrosion and/or extreme conditions (temperature/ pressure) to prevent fugitive emissions
2. Flexible pipes
3. Compressors
4. Packaging Vents
5. Capacitive Sensors
6. Vessels
7. Actuators
8. Vibration Dampeners
9. Heat dampening
10. Pump Liners
11. Valves
12. Drilling

The IOGP argue in this report that there are often no viable or comparable alternatives to these chemicals. Some of these activities such as vents appear to be externally facing and thus particularly vulnerable to causing environmental contamination. There is also the question of disruption/displacement of these chemicals during assembly, maintenance and use of the facility. It is hard to know how the elements (including flood events), paired with a wide variety of instruments containing PFAS will react with one another and whether it is feasible to stop all

[11] IOGP. (2023). *IOGP Europe statement on the ECHA proposed PFAS restriction proposal related to the Carbon Capture, Transport and Storage (CCS)*. IOGP Europe. Retrieved November 25, 2024, from [redacted]

leaks given the minute quantities needed to do serious harm. Additionally, there have been two substantial leaks in 2024 alone from CCFs[12] [13].

It is of particular note that containment and transport of captured carbon - the part of the process typically identified as the most hazardous and prone to leaks, relies the most heavily on PFAS. One of the largest manufacturers in the world of valves used in CCS, DuPont, has recently been sued for PFAS contamination in the US for over $1.1billion.[14] [15]

This is of particular concern not just to the merit of the nature reserve site, but to the merit of the scheme as a whole, especially due to the use of boats to transport the carbon to the North Sea. PFAS in ocean water at concentrations as low as 1ng/l has been found to severely reduce the capacity of phytoplankton to sequester CO2, which in effect could plausibly negate the net sequestration of a CCS facility.[16]

This risk is not dealt with in Cory's documentation, we have no idea of the volume of PFAS they will be bringing on-site and thus we are unclear as to how they can so confidently assert that contamination will not happen. In their O*UTLINE CODE OF CONSTRUCTION PRACTICE: 7.4* document, it only states to

> *ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems;*

We believe that to best avoid contamination, given the volatility of PFAS, all pipes, valves, vessels, packaging vents, compressors and other PFAS containing items could also need to be stored in such a way to minimise PFAS pollution, which would constitute most parts that arrive

[12] Gladstone, S. (2024) *Underground Leakage at CCS Injection Site* Food and water watch [redacted]

[13] Lakhani, N. (2024) *'Wake-up call': pipeline leak exposes carbon capture safety gaps, advocates say* Guardian, Accessed 16th Jan 2024, From: [redacted]

[14] Katz, J. (2024) *DuPont Loses Bid to Seal PFAS Contamination Lawsuit Documents* [redacted]

[15] Perkins, T. (2023) *Chemical companies' PFAS payouts are huge – but the problem is even bigger* Guardian, Accessed on 16th Jan 2024, from: [redacted]

[16] Mahmoudnia, A. The role of PFAS in unsettling ocean carbon sequestration. Environ Monit Assess 195, 310 (2023). [redacted]

on site. This also would not necessarily guarantee that the site would not become contaminated by PFAS but would massively complicate operations.This re-iterates our stance that remediation would not be compatible with constructing this facility on controlled land.

1.3.4 To reduce further risk of PFAS pollution, Cory may need to build a facility that sorts the waste that they incinerate alongside additional flue gas treatment capabilities to undertake all reasonable efforts to avoid contamination from POPs, as are their obligations. Any remediation or adjustment work could seriously disrupt operations, thus rendering the Carbon Capture plant obsolete. If the breach is serious enough and cannot be rectified, this could eventually lead to a wholesale revoking of their Environment Agency permit. One plant does not work without the other and thus any interference to the running of Riverside 1 & 2 has knock-on effects.

1.3.5 Refurbishments and additional costs might make the building of a Carbon Capture Plant and its maintenance, unsustainable in the long term. This might lead to the closure of the facility after its construction as happened with Cory's cited example of successful CCS - Petra Nova in Appendix 4.2.1.2 document 9.2. We know that rising costs can be a risk to the longevity of CCS facilities and we believe that in light of our new findings, Cory has not adequately costed the potential impact of PFAS pollution breaches, nor future environmental legislation on all PFAS under Rule 6, Annex C, points 10 & 12.

1.3.6 Angus Fire Factory, the worst recorded UK offender for PFAS (which has now stopped using these chemicals) are facing legal action over PFAS pollution filed in November 2024, the first case of its kind in the UK.[17] A considerable number could follow. In the US, where regulation has progressed faster and has been around for longer, 10,000 such lawsuits have been filed.[18] The EU has also seen a rapidly increasing number of high-profile lawsuits. Cory has not factored in potential litigation from PFAS pollution which might emanate from both their existing and future developments and how they could weather this.

1.3.7 We also raise supply-chain concerns for CCS, given that the process uses PFAS, how will the applicant adapt to a potential supply-chain issue if their manufacture is banned? 3M, one of

[17] Scheer, V. (2024) *Town brings legal case over 'forever chemicals'* BBC, Accessed on 16th Jan 2024, from: [redacted]
[18] Neil, P (2024) *Yorkshire town may bring first 'forever chemicals' legal case in UK* The Guardian, Accessed 16th Jan 2024, from [redacted]

the largest manufacturers of PFAS is due to exit their manufacture in 2025 after loosing a $12.5billion lawsuit in the US.[19] How adaptable is the proposed facility to adopting methods which do not use PFAS if these changes come into effect and can they weather increased material expense?

1.3.8 When paired with Flood Risk (something that the Environmental Agency has still not agreed upon with the applicant in REP1-035 - Section 5), this exacerbates the already substantial risk of early decommissioning and risks POPS from both the existing Cory plants and those used in the decarbonisation plant being spread widely in the environment. This needs to be adequately addressed in Cory's application. We ask the ExA to mandate that Cory provides this additional information regarding the very real potential for early decommissioning and how this might impact their previous economic cases.[20]

1.3.9 Additionally, we have been asking Cory as to the amount of recyclates they burn at their facility. Whilst some of this volume is rejected recyclates, it appears a portion constitutes recycling that wider London Authorities do not have the capacity to recycle. Burning plastic waste is a key contributor to air pollution. Cory themselves have remarked that 65% of their emissions come from recyclable plastics in non-recyclable streams.[21] If they eliminated the incineration of this waste stream, their proposed capacity and site would not need to be so large.

Many recyclates, especially food packaging, contain PFAS. This data is critical to better understanding the pollution risks, carbon accounting and assessing the value of the scheme. Cory have refused to directly answer our questions regarding the volume & makeup of recyclate they burn in our correspondence, despite us highlighting its importance for this deadline. The ExA must ask Cory to respond to us and publish this data. If they do not have this data, they must tell us that this is the case.

[19] Perkins, T. (2023) *Chemical companies' PFAS payouts are huge – but the problem is even bigger* Guardian, Accessed on 16th Jan 2024, from: [redacted]

[20] Morton, B. (2023). Coverage of PFAS chemicals – Defra in the media. Defra in the media. Retrieved November 25, 2024, from [redacted]

[21] Lang, A. (2022) *Cory urges Government action on recyclables entering residual waste streams* Resource Co., Accessed 13th Jan 2025: [redacted]

1.4 Recommendations

1.4.1 In the context of the potential for PFAS pollution to already be emanating from Riverside 1, the choice of the nature reserve as part of the site is completely unsuitable, especially given the use of additional PFAS in the carbon capture process. This leaves the nature reserve open to permanent pollution from these works and renders remediation impossible. Any draft DCO from Cory that chooses a site which covers, or is in very close proximity to the nature reserve, must be refused.

1.4.2 If Cory are not willing to accept liability as Class A persons, we call for the commencement of comprehensive independent testing to be conducted with both parties' supervision, reporting to the relevant enforcing authorities and ExA as soon as possible, to identify whether POPS are indeed being released into the environment from Riverside 1.

Ridgeway Users dismisses Cory's promise in submission 7.4, 9.2.16 to undergo PFAS testing on their land after the granting of a DCO as part of a future ground investigation. We believe this attempt to delay could lead to crucial evidence in the evaluation of the DCO submission being left out.

We ask that both parties agree/consult on the number/location/type of samples - and that ideally this includes a mix of wastewater, groundwater, sediment and flue gas (across different weather conditions) and that ideally they use the same accredited supplier that we used to standardise testing methodology/conditions. This cannot be delayed if we are to meet the deadlines set out by the DCO.

1.4.3 Given that Cory currently needs to conduct an urgent independent review as to whether they might in fact be a source of PFAS in the environment, we ask them to demonstrate that they have the resources to financially manage a worst-case scenario - a potential comprehensive refit of their plant in line with POPS regulation, potential costs of land remediation, supply-chain/CCS method changes, managing flood risks and even litigation. These are all possible disruptions. Otherwise, this could lead to a half-built or closed white-elephant which destroys the nature reserve for no benefit.

1.4.4 Cory must publish data (if available) on recyclate processing at Riverside 1 - both rejected due to unsuitability and lack of capacity across various boroughs. If it is not available, they must tell us.

1.4.5 Cory's poor handling of our PFAS inquiries, directing us to the incorrect ditch and their poor handling of recyclate data questions, we argue, indicates that they are inadequate site managers who are not suited to handling a pioneering project of such magnitude and would prove inadequate custodians of the nature reserve. They should not be allowed to purchase it.

2. Expanding On Cory's Failure To Engage With Romani Communities

2.1 Challenging That The Nature Reserve Is Not Used As Part Of A Traditional Way Of Life.

2.1.1 We note Cory's failure to respond to our Written Representation on the lack of adequate adjustment for Romani communities at the last deadline. This failure to engage with our earlier points demonstrates that Cory is not taking this issue (and our belief that Romani equality obligations must be met) seriously enough.

It is this which acts as further evidence as to why this site is extremely unsuitable as a location for the CCF. Cory have so far not demonstrated that they looked closely enough at the Romani ties to this land before choosing the site. These concerns could be mitigated by choosing the Iron Mountain site, but Romani community ties to the land appear not to be adequately included in their site adjudication.

2.1.2 Traditional ways of life are protected under law. *Paragraph 12 Circular 1/06 PLANNING FOR GYPSY AND TRAVELLER CARAVAN SITES* states an obligation to:

> *Recognise, protect and facilitate the traditional travelling way of life of gypsies and travellers, whilst respecting the interests of the settled community;*

The applicants' initial documentation argues that the Romani Graziers' use of the land is a hobby and thus does not constitute an equalities issue and thus offers no fair compensation i.e additional marshland space created/restored for grazing and/or traveller sites. However, we call into question the quality of this evidence due to substantial factual inaccuracies throughout.

We note that in document 9.2 Section 4.1.41, Cory states:'

> *Engagement with the graziers, Peabody and TWUL has confirmed that the grazing has always operated under some form of formal agreement, and it is understood that the graziers do not use the land as part of a gypsy way of life – the horses are grazed on the land as a hobby, not for use in travelling or for sale.*

We reiterate that this is not only demonstrably untrue given the well-documented and century-long Romani history on the site that is now the nature reserve, but it seeks to unfairly

limit mandated engagement with the Romani community to a very narrow group and risks depriving the wider community of their right to partake in their traditional way of life.

When we spoke to one grazier along with members from Save Crossness Nature Reserve, which we have recorded on video (we have not attached this because of anonymity and a lack of provision for attaching video, but we can provide if needed to prove the accuracy of our claims). The answers we got were very different. Some particular highlights from this conversation include:

1. *(Grazier) You ain't going to stop it, mate. You're just not going to stop it are ya. The money and all that, it all comes down to money. And however you want to scream, I don't think you're going to stop it, to be honest with ya. It's just going to keep going. I've grown around here all my life.(...) As a kid, I used to play all through these fields. Right the way through to West Street was all fields. Do you know what I mean? Yeah, yeah. I used to walk home from school from the lower road and I never had to cross one road. Do you know what I mean? I could walk through fields. Do you know what I mean? I'm [redacted age]. I've been here all my life. Do you know what I mean? My grandad is [redacted age] and he's been here all his life.*
2. *(Grazier) To be honest with you, its all gone downhill, mate.*

   (Friend of Crossness): But we must try and stop it.

   (Grazier) 100% mate, yeah.

3. *It's the same thing, isn't it? It's the same thing. Listen,(...) I've lived around here, all my family's lived around here, generations of my lot live around here. Both sides, my mum's family and my dad's family.(...) But we've had enough, we're moving. We're going to Devon, yeah. We're going to Devon. My mum and dad's down in Devon. My mum and dad moved down here, they've just had enough around here.*
4. *(Ridgeway Users) So is that like being enforced more around here? (In regards to the Police, Courts & Sentencing Act which has now been found to be partially unlawful due to a case brought with the help of Marc Willers)*

   (Grazier) Just to be honest with you, you was allowed to put your horse on tether overnight, on bits of land around here. Now, as soon as they go down, 24 hours, if it ain't

off, bang they take it. It's mad, do you know what I mean? And we're trying to put it into our kids, like I've got a young boy, I want to carry it on with horses and bits and bobs.

5. *(Friend of Crossness) Is this all kept here?*

   (Grazier) Yeah, he's kept here. He's in the stable. He's a stallion. He's a bit of a sod, mate. Don't make me laugh.

6. *(Grazier) And it smells like a bonfire's been around.*

   (Friend Of Crossness) Yeah, really?

   (Grazier) Yeah, yeah. And I ain't lying either. You can ask every… it must be that, it must be that (Pointing at chimney of Riverside 1)

Figure 6: Video stills of a Cob pulling a traditional cart from the interview

To summarise, this testimony includes accounts of passing on tradition of using horses, storing the horse being used in a traditional Romani way of life on the reserve, a disdain for pollution from Riverside 1, a lack of trust in the planning process, a feeling of a lack of agency over the land in comparison to what they once had and the feeling of being pushed out by cumulative effects of marshland depletion.

We note that this contradicts the idea that these horses are not used for traditional ways of life and puts forward what we would expect in such a situation: that the graziers are against the repeated depletion of the marshes and their increasing lack of agency on these lands to the extent that it is pushing them out.

In light of this, we argue that the applicant should provide some clarity on how exactly they got this insight from the local Romani community as it appears this does not match our records.

We also argue that given we have good evidence that this would constitute part of a traditional way of life, that Cory needs to tackle this as an equalities issue and at the very least provide some fmor of according mitigation in the way of additional grazing marshes, pitches, transit sites

or other Romani infrastructure to compensate for potential damage to and depletion of sites relevant to cultural history and ongoing tradition.

2.2 Potential Impacts & Necessary Mitigation

2.2.1 In light of further pollution found in the water course and comments given by the grazier, we wish to reiterate what we said in our last representation. The site at Jenningtree Way, which sits close to the proposed site is at risk of pollution. The Traveller Movement in 2024 submitted a report to the Committee on the Elimination of Racial Discrimination at the UN[22] outlining the right to public health and the UK's failure to address health issues in their communities in line with their legal obligations.

One source states that life expectancy of Romani communities could be as low as 50[23]. The European Environmental Bureau lists that one of the contributing factors to this life expectancy gap, is that Romani communities are exposed to heightened air, water and ground pollution.[24]

Only 14% were above the age of 50. These poor health outcomes were noted during traveller site visits we conducted. Only two or three people we met were alive at the time of the violent removal by the local council from the land in the 50s and 60s, some were very young. When I asked why, we were told that most who could remember these events had died already. We also met a woman at one site who was finding it very difficult to access care due to the cessation of mail.

Any consideration of potential pollution and its effects outlined in section 1 must also take into account the potential impacts of said pollution on a community with pronounced health vulnerabilities. We believe a failure to do this would contract Section 149 of the 2010 Equalities Act. In particular the obligations to:

---

[22] The Traveller Movement. (2024) *Report to the Committee on the Elimination of Racial Discrimination (CERD) on the rights of Romani, Roma and Irish Traveller communities in the United Kingdom* The Traveller Movement. Retrieved November 25, 2024, from [redacted]

[23] Bristol NHS (2021) *JSNA health and wellbeing profile* Bristol NHS Accessed on 13th Jan 2024, from www.bristol.gov.uk/files/documents/1697-jsna-2021-22-grt-finalac/file#:~:text=Gypsy%2C%20Roma%20and%20Travellers%20have,for%20both%20men%20and%20women.&text=There%20are%20various%20reason%20for,a

[24] Marin, D. (2024) *Bearing the brunt: Roma and traveller experiences of environmental racism* European Environmental Bureau [redacted]

(a) remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;

(b) take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it;

(c) encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.

This also links to what we stated in our previous submission around there being no evidence of direct and targeted outreach to Romani communities and their affiliated civic organisations such as Friends Families, Travellers, Traveller Movement, Pride of Romany, London Gypsies & Travellers or any other relevant groups. We ask that the applicant begins consultation with these groups.

2.2.2 A 2021 report by Bexley Council found the need for a minimum of four new pitches by 2038 alongside additional transit spaces as there are none currently in the borough, but that the need could be greater, given that:

'Many Gypsies and Travellers in bricks and mortar accommodation have expressed to me that they would move back into caravans if there were additional sites provided. Planning inspectors have recognised that Gypsies and Travellers have 'an aversion to living in bricks and mortar' and this can lead to mental health issues for individuals and families. More pitches would provide greater choice for the Travelling community.[25]

Thamesmead/Erith was one of the areas proposed for pitches. The study did not take into account many have had to leave the area historically due to the historic forced removal. However, there was some discussion of a wider South East network of sites. The former director

[25] Bullock, M. (2021) *Gypsy and Traveller and Travelling Showperson Accommodation Assessment* London Borough of Bexley Accessed on 16th Jan 2024, from: https://www.bexley.gov.uk/sites/default/files/2021-12/SD7-gypsy-and-traveller-accomodation-assessment.pdf

of ‘The Gypsy Council’ has reported a chronic shortage in neighbouring Kent.[26] This needs to be addressed.

2.2.3 Given the violent evictions of the 1950s & 60s by the local council and the 2004 & 2010 refusals of the re-establishment of caravan sites laid out along the Norman Road in 09/01717/FUL and by testimony given in Document 7.9 Section 1.7.2. Which describes ‘travellers’ as a ‘problem’ (one that Cory dealt with via the installation of gates), we believe that there has been both a nation-wide and local failure to meet their obligations to maintaining a traditional way of life for local Romani and whilst Cory is in no way solely to blame, their application contributes a small amount to its cumulative effects.[27]

2.2.4 By not choosing any nearby Romani sites off the reserve as part of Cory’s proposed draft site visit route, we believe the applicant’s route means that the ExA will be unable to understand their importance as Category 3 persons and the potential future and current risks of pollutant exposure. We ask that these sites be included so that the ExA can better understand the proximity and conditions of these sites.

2.2.5 We would also like to reiterate the potential ‘Cultural Heritage’ and ‘Social & Economic Effects’ of the DCO on Romani people. Cory has overlooked the site’s archaeological significance as the largest Romani grazing marsh in Europe at one point. In Vattenfall’s 2022 submission 22/00728/FUL, they note the Northern paddocks are part of an area of archaeological significance. Similarly, we see that in Cory’s Document 6.1, subsection 9.4.2, unknown remains and assets are identified as a potentially significant effect. Due to the history of the site, we posit that a significant portion of these unknown assets would likely be Romani.

Romani archaeology is still a very new field in this country with the first dig ongoing.[28] Romani Archaeology is an underappreciated area of study, but it is an expanding one and this site is

[26] Esson, D. (2024)
Gypsy and traveller pitches could be expanded on the green belt across Dartford as former Gypsy council director blasts wider Kent
[redacted]

[27] Smith, D. M., & Greenfields, M. (2013). Gypsies and Travellers in Housing: The Decline of Nomadism. Policy Press.

[28] Henry-Phillips, J. (2024, September 25th). *first-ever archaeological excavation of a Romany site in Britain*. first-ever archaeological excavation of a Romany site in Britain.
[redacted]

likely to be of significance given its provenance. We would like some clarity on how the applicant will take this into account.

2.2.6 Realistically we believe that the loss of this land is near on impossible to replace like for like. Much of the importance of this land is its cohesiveness as one entity. Although it is better than nothing, we do not believe that land such as this can be adequately provided on an alternate site due to the need for horses to roam widely. We do not believe The Applicant has effectively included analysis of the impact of the proposal on traditional Romani ways of life when evaluating site options. On balance, it adds to a growing body of evidence that points to alternate sites being preferable. Any scheme building on The Nature Reserve should be refused.

3. Additional Concerns Regarding Cory's Potential Failure To Achieve 95% CCS Capture Rates

3.1 95% Guideline Unanswered

3.1.1 In our last representation, we stated that we had doubts as to whether Cory's plans would achieve 95% CCS rates and that they would need to provide an explanation if it is likely that they cannot, noting that the guidance states:

> *You should aim to design your plant to achieve a CO2 capture rate of at least 95% during normal operating conditions, although operationally this can vary, up or down.*
>
> *You will need to justify proposing a design CO2 capture rate of less than 95% as an annual average of all normal operating conditions. You can submit a cost-benefit analysis as part of your application.*

Cory have not answered this concern but they need to follow this guidance to be granted a DCO. Since then new information has re-affirmed old concerns and created additional ones over their carbon accounting touched upon in section 1.

3.1.2 As previously mentioned, it has since then come to our attention that recyclate, rejected either for quality or capacity issues could be part of incineration and contributes a significant proportion of their emissions (65%). Cory reported in 2024

> *240,000 tonnes of carbon saved by diverting waste from landfill*[29]

However, we are uncertain as to whether this accounts for burning recyclable plastics where it would otherwise be recycled or simply remain unburnt and comparatively inert in landfill. In 2022, The Guardian claimed that not only is 60% of this waste incinerated recyclable, but that emissions reporting only has to include plastic.[30]

[29] Cory (2024) *Cory reports strong financial performance and advances decarbonisation plans in 2023* Cory, Accessed On 17th Jan 2024, from: [redacted]

[30] Toussaint Straus, J. et al. (2022) *Why are we burning our recycling?* The Guardian, Accessed on 16th Jan 2024 from:

We want clarity on this to better understand their carbon accounting in relation to their waste streams.

3.1.3 We also ask whether Carbon Capture percentages include WLC (Whole Life Carbon) such as construction, maintenance, energy use, transport etc. and what methodology they are using. There is no standardised methodology in the UK but RICS (Royal Institute of Chartered Surveyors) has laid out a framework that is increasingly widely adopted. We would like to know if this is being included in Cory's carbon calculations.

3.1.4 We wish to reiterate that according to a 2023 study by IEEFA (Institute for Energy Economics and Financial Analysis), no commercially operational facility they could find has achieved greater efficiency than 78%[31]. The technology Cory is proposing to use contains no radical departure from previous methodologies - in fact, some of the schemes within IEEFA's research such as Petra Nova are even cited by Cory in appendix 4.2.1.2 of document 9.2. Whilst it is possible that the planning guidance in question is ill-advised in requiring unattainable targets, we once again state that Cory must follow the guidance that exists to be considered as having met the requirements to be granted a DCO.

[31] IEEFA. (2023, December 5th). *Carbon Capture and Storage*. IEEFA. [redacted]