Falmouth Docks dredging — sediment contamination briefing

Cornwall Wildlife Trust · analysis of the applicant's own Ground Investigation data (ES Vol 2, TA 8.1)

The developer proposes to dredge at least 643,000 m³ of sediment and to sort it into material bound for sea disposal and material sent to landfill. **We examined the applicant's own laboratory data — 81 depth-resolved samples from all 21 cores, 11 contaminants — against the Cefas Action Levels used to decide what may go to sea. Two findings undermine the disposal plan.**

1. Contamination is severe and widespread

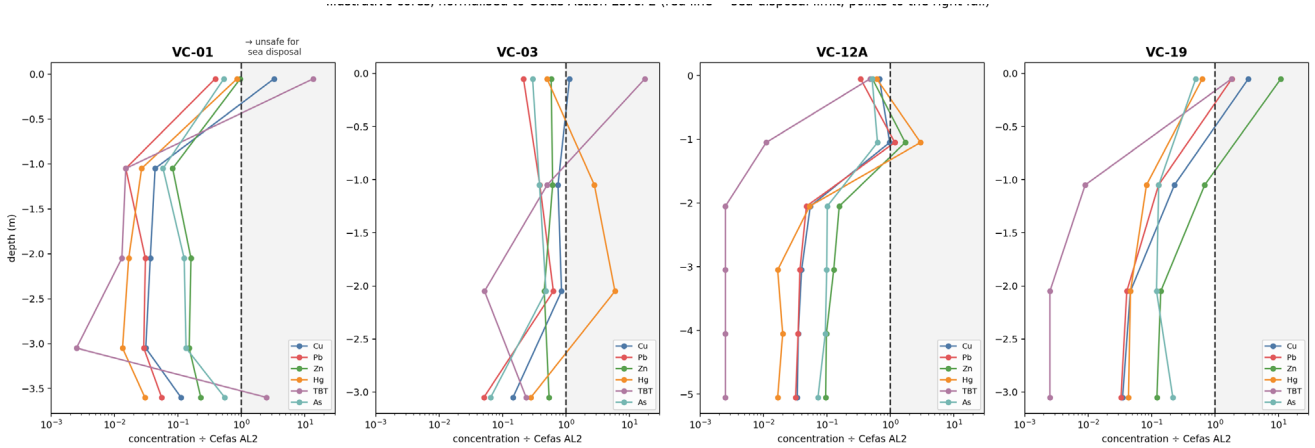
Of 81 samples, 21 exceed Cefas Action Level 2 — the level above which material is *generally unsuitable for sea disposal* — on at least one contaminant. These occur in 16 of the 21 cores. Peak concentrations reach many times the threshold:

Contaminant	Max (mg/kg)	× AL2	Samples over AL2	Where the worst sits
Zinc	8,784	11×	7 (2 below 0.5 m)	VC-19 surface
Lead	1,428	2.9×	6 (2 below 0.5 m)	VC-16 surface; VC-12A at 1 m
Copper	1,349	3.4×	7 (1 below 0.5 m)	VC-19 surface
TBT	17.6	17.6×	11 (1 at 3.6 m)	VC-03 surface; VC-01 rebounds at depth
Mercury	17.8	5.9×	9 (5 below 0.5 m)	VC-03 at 2 m — worst at depth

AL2 = Cefas Action Level 2. Zinc peaks at eleven times this limit; TBT and mercury at seventeen-plus times.

2. There is no depth at which the sediment can be assumed clean

- **Contamination does not reliably decrease with depth.** Mercury fails AL2 more often below 0.5 m than at the surface — worst of all at 2 m in VC-03 (5.9× the limit).
- **Buried hotspots exist.** VC-01 is heavily contaminated at the surface, clean through the middle, then TBT rebounds to 2.5× AL2 at 3.6 m depth.
- **Different contaminants peak at different depths** in the same core, so testing one layer — or one determinand — does not tell you about the others.



Four illustrative cores, each contaminant shown as a multiple of its Cefas AL2. Points right of the dashed line fail. Contamination appears at the surface, at 1 m, and at 3.6 m — with no consistent pattern.

Why it matters

Because contamination is unpredictable with depth and differs between contaminants, material cannot be reliably pre-sorted for disposal without testing every layer. **Yet the site was characterised with roughly one core per football pitch of seabed.** That sampling density cannot locate the buried hotspots the data already reveals — so the volume of contaminated material, and the risk of releasing it during dredging into the Fal SAC and its wild oyster fishery, are both likely understated.

Cefas Action Levels: AL1/AL2 (mg/kg dry wt) — As 20/100 · Cd 0.4/5 · Cr 40/400 · Cu 40/400 · Hg 0.3/3 · Ni 20/200 · Pb 50/500 · Zn 130/800 · TBT 0.1/1.0. Source: applicant's SOCOTEC certificates, ES Vol 2 TA 8.1 (reports MAR02246/48/49/52).