

Submission to Planning hearing 26 March 2019

Edward Bourke B.Sc PhD FIFSTI, Dip IOB, Dip HACCP studies RIPHH.

Location

The tanks are variously described as Tolka Valley Park, Abbottstown but are in reality just off Mill Road only 200 metres from the Main street in Blanchardstown and a similar distance from Blanchardstown hospital.

Dismissal of biohazard

The medical aspect of the application addresses only Carbapenase producing Enterobacteria without mention of Clostridia (sporeformers) e.g. *Clostridium difficile*. Airborne viruses are particles about 100 times smaller e.g. polio, norovirus etc. and airborne spread of virus is well known as in the case of foot and mouth and *Escherichia coli* phage. It says that bacteria will not be present in TREATED effluent but the effluent released to the sea will undergo only secondary treatment and the stored effluent in Blanchardstown will be UNTREATED. There is assurance that odour limits will not be exceeded but paragraph 10.2.1 on the application states that there are no Irish limits.

The application emphasises that odour itself is not a health problem but does not assess the elements of the odour - ammonia, hydrogen sulphide, methane and the nauseating odours of butyric and isovaleric acids which will come from anaerobic conditions in 24-29 metre deep tanks. The effect of sewage gases and odours on sick, elderly, terminally ill and premature babies is not addressed. Hydrogen sulphide has a lower LD50 than hydrogen cyanide and in enclosed spaces has been deadly in multiple accidents. While the health effect of odours might be merely uncomfortable the individual gases are asphyxiating, toxic and flammable depending on concentration. The environment addressed in the planning application is for flora and fauna not humans.

Vents 815 mm diameter 7.6 metre height

Six passive vents are planned at Blanchardstown disguised as lighting columns and considerable evolution of methane and carbon dioxide will be emitted as decomposition occurs during storage. This will be quite vigorous at the surface as the tanks are up to 24-29 metres deep. The No 1 foul balancing tank is of most concern as the others are intended to contain storm overflow but might also be used as surge delay tanks e.g. during exceptional peak flows at nearby plants, abattoirs, fire fighting and spillages. The foul tank will have forced airflow which could lift droplet contamination and eject it through the vent. The vents at 7.6 metres will be just high enough to emit the contaminated air at a level with houses, Children's and adult hospitals, hospice, Edmund Rice school and the Main street in Blanchardstown. The proposal will leave the whole district contaminated with bacteria, viruses and smelling like a sewer.

The quantity of carboniferous gases emitted from the vent is not quantified in the planning application. The methane and carbon dioxide or air will actively lift odours and droplets vigorously up the vent exposing people nearby. The contents of 30 million litres held for two days would be likely to be substantially consumed unless

AN BORD PLEANÁLA	
TIME _____	BY _____
26 MAR 2019	
LTR DATED _____	FROM _____
PL _____	

huge amounts of air were bubbled through the contents of the tanks. Untreated sewage at 600 mg BOD/litre gives tanks a capability to emit 18,000 Kg (a loaded gas tanker) of gases (methane, ammonia and hydrogen sulphide)

The application presumes that coal-based odour control involves activated carbon whose performance is variable dependant on quantity, quality, saturation capacity, regeneration and interfering compounds. In the Balbriggan scheme the odour control units had to be replaced at twice the designed frequency. At Swords there were odour control problems during replacement of mussel shell deodourisation units. Even after "mistakes were made" the Ringsend plant odour issues are "by and large resolved" ten years later.

Odour control units would need to be enormous to adsorb the amount of gases efficiently and active adsorption would be rapidly blocked by droplets and bacterial growth. This would require frequent desorption causing bad odour, thermal regeneration which would drive off adsorbed odour and replacement at considerable cost.

The odour threshold for hydrogen sulphide (rotten egg stench) is as low 130 ppb the odour threshold for isovaleric acid (the classical odour of pig slurry) is 1.5 ppb which is 100 times lower. Overseas limits approach the level predicted for hydrogen sulphide but there is no mention at all of isovaleric acid or other compounds. Retention data on the vents is unclear (described as best practice). Particle spread considers settlement of PM 2.5 particles. Viruses would be 100 times smaller and would be carried further than considered in the models.

The system is focussed on prevention of build up of explosive sewer gas not maintenance of hygiene or control of odour.

Odour control systems have failed at Ringsend and Balbriggan. In the absence of Irish regulations no odour breach can be policed nor the operator sanctioned. There is no mention of analysis by gas chromatography mass spec to quantify odours.

Reliability

No guarantees of performance can be substantiated. Past performance in waste water handling and treatment is a reliable indicator of future problems in this area

- January to April 2005 new Swords plant 50 odour complaints
- Ringsend – State of the art plant – continuous odour perceptible in Sandymount area
- Blanchardstown – the author observed sewage odour problems on numerous occasions but recorded sewage odour problems possibly from Mulhuddart municipal plant and from industry in Clonée. These were unrelated to rainwater overflow.

15 August 2018

28 September 2016 but not noticed in Westmanstown Lucan area

Sunday 21 September 2016 9.30

Sunday 2 November 2016 9.00

Monday 26 January 2016 17.00

Monday 5 September 2016 09.00 – 24.00

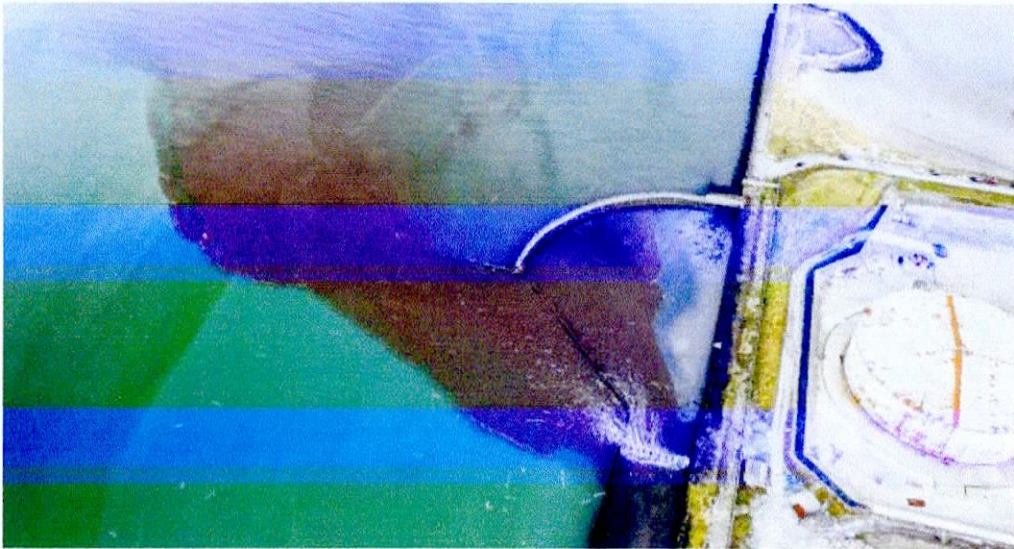
Thursday 16 April 2015 24.00

Friday 14 August 2015 10.30

Tuesday 15 September 11.00

- Mulhuddart – constant odour problem
- Leixlip – frequent odour problem.

- Ringsend – Sunday 24 February 2019 massive release into Dublin Bay only detected by a private drone aircraft operating from South Wall. A failure of a tank supposed to be cause but tanks of noxious material should be bunded.
- Hampton Cove Balbriggan 5 June 2016 pump failure ongoing for two days caused beach closures at Rush Balbriggan, Skerries and Loughshinny. Situation took two days to rectify over bank holiday weekend.
- Discharge of untreated sewage at Rush and Loughshinny in defiance of Council Directive 91/271/EEC implemented by SI 254/2001 and commenced from 2005. This causes a prohibition on bathing.



Ringsend Sunday 24 February 2019