Ref No. 1

48(c)

TO; E.P.A. Headquarters,
Johnstown Castle,
Wexford.

18th Jan 2008

OH Sub No. 48(c)

FROM; James Rountree,
Sellar,
Nobber,
Co. Meath

Recd From: [redacted]
JAMES ROUNTREE

RE; Marco Salino and other's objection to Waste Licence No. W0232-01 – Dublin City Council/Poolbeg Incinerator Project at Pidgeon House Road Dublin 4.

Dear Sir/Madam,

I support this objection and I have something further to add to it re PARTICULAR MATTER PM10 – PM0.1.

1. J.S.Owens demonstrated the existence of this ultrafine dust in ambient air by microscope examination and photography in the early 1920s while researching the London Smog Problem.

2. The some examination quantified the amounts present in the air.

3. The human body is not able to deal with this dust e.g. The cough/sneeze is an imperfect reaction with a high risk of driving particulate matter through the lung air membrane into the blood and no medical authority has any ideas on how to prevent this other than the non-production of such particular matter.

   I suggest that E.P.A. provide funds to enable coroners to report on this matter, i.e. to conduct regular examination at a cellular level, because to do otherwise, now that it has been mentioned, would constitute a cover-up and a failure to maintain public confidence. Also veterinary sentinel post mortem results are similarly important. Toxicology too.

   These are legitimate and practical considerations, which must be relevant to licensing and monitoring arrangements and must not be overlooked. E.P.A. needs to talk to H.S.E about public health monitoring arrangements and these talks must not be frustrated by a lack of baseline information.

Yours

[redacted]
JAMES ROUNTREE

VETERINARY IRELAND VETERINARY PUBLIC HEALTH COMMITTEE

POLICY STATEMENT ON VETERINARY PUBLIC HEALTH IMPLICATIONS RELATING TO LANDFILL AND WASTE THERMAL DESTRUCTION SITES.

The use of landfill and thermal destruction sites for disposal / treatment of waste could potentially pose a health risk to local and distant human and animal populations but this risk may be avoided by biochemical, microbiological and toxicological monitoring of water, air, soil, vegetation, and effective bio-security and site management can be implemented. The surveillance of animals in the vicinity of such sites can offer additional valuable information in these regards.

However, there are also many alleged health risks associated with the use of incinerators and landfill sites, which cause public concern. Investigations of increased morbidity and mortality in humans and animals as a result of alleged environmental contamination may be controversial. Incontrovertible proof of cause and effect in these circumstances may be difficult to establish. The potential for bioaccumulation of chemicals / toxins in animal and human tissues and the latency period between exposure and possible side effects should be considered.

It is this Committee's contention that the use of animal surveillance systems to establish baseline data on animal health and productivity (including harvesting and storage of tissues) can provide scientific data to reassure the authorities and the public and may counter misinformation. Multidisciplinary animal health surveillance systems can allow for rapid access to reliable information in the event of industrial accidents or allegations of environmental / foodchain contamination. Potentially 1st source of alarm about environmental chemical pollution.

An example of the benefits of this concept was demonstrated recently when 11 years of stored milk samples (1991-2001) from County Cork were sent to Germany for dioxin analysis (dioxin is concentrated in milk). The results recorded a 60% decline in the level of dioxin over the ten-year period. (FSAI News Vol. 4, Issue 4, July 2002) — Problematic for legal enforcement of baseline.

8 July 2003

[redacted]

SUBMISSION

RE; POOLBEG INCINERATOR

I am a dairy farmer from North County Meath with no qualifications or expertise in any field. I am putting forward concerns as a member of the public for your consideration relating to environmental responsibility of the state and the incinerator company to the farming community. Also personal observations relevant to the consideration of particulate matter emissions and air quality. Please note comments in my earlier submission to Bord Pleanala about Chromium and Cadmium monitoring. Sentinel monitoring of birds and animals for toxins, etc, also, the licence must contain a direct reference to the formation of Dixon-like compounds, filtration failure, and their release.

1. In the unlikely event of a serious toxic emission release, there is a grey area of who is responsible when authorities restrict farmers on the basis of environmental concerns without the evidence of a conclusive test. It appears that this is deliberately dismissed as a civil matter. And if it ever arises it will be a horrendous sting for the affected member of the farming community, where the principal parties disown all responsibility and the restricted farmer is faced down. Restricted insurance will be operative here. Please refer to my comments to Bord Pleanala.
2. There is serious contention between all parties and resistance to the idea of testing for PM 2.5. PM 1 and PM 0.1 ultrafine dust. Please note that I mentioned the Owens System Jet Dust Collector to Bord Pleanala for collecting dust samples in ambient air. The reference to this is from the book "The Smoke Problem of Great Cities" by Sir Napier Shaw and J.S. Owens published by Constable 1925, available as a rare book reprint at www.umi.com I believe this book disappeared from public access in the lead up to the British Clean Air Act 1956 during the 1950s in a political quid pro quo with industry and I think historians need to look closely at this because of the important lessons that can be learned for future reference. Now, that is as far as I want to go on the subject of those events.
3. Relevant to particulate matter emissions, we need to look throughout industry at all processes where dust; particularly fine dust is removed from the process. I believe there are excellent measures in the electronics industry and they could teach us a lot.

There are natural sources of airborne dust in the PM10 to PM 0.1 range. Desert and volcanic dust that turns the midday sun red. (Particle size greater than PM1 ! will have a foggy grey effect) Associated respiratory problems require suitable dust masks. Also motor vehicle precautions are needed too.

e.g. Russian fuel filter paper elements are thought to be the highest standard in the world. The old-fashioned oil bath air filter is considered more effective from a volume of dust consideration and (most importantly for us) from a very fine dust perspective. And the oil centrifuge is the best engine oil filter.

I am only a farmer and not a scientist, but I am very curious about the possibility that we are overlooking something here that would be of benefit in monitoring city air quality on a continuous basis. What kind of result would we get if an oil bath air filter and a centrifuge were operated in combination 24hours/day and 365 days/year. Obviously, there would be pollutants dissolved in the oil and a caked deposit on the centrifuge wall. And what would the analysis show? It would certainly make everyone more appreciative of air quality. Now that I have said this (for what it's worth), can someone else suggest another apparatus and maybe we should have a citizen's city air pollution testing competition for a simple, practical 365-day test with I the ultimate goal of being able collect a good sample down to PM 0.1

The public would prefer to have a continually running environmental check on air quality. Spot checks are staccato information. There is nothing wrong with them but there is limitation, which should not be bolstered by arrogances. I am a concerned citizen and I want to be constructive about this

4. Finally I want to mention a suggested rule of thumb for estimating particle surface area for grided microscope photographs from glass slides. e.g. from the Owens System. This method really belongs in the bad old days of the Slide Rule and any consistent error needs to be spotted and corrected.

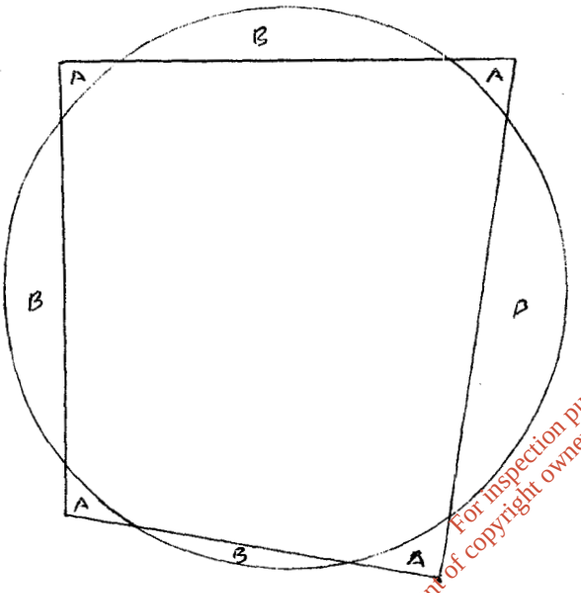
There is no reference for this. Basically the idea is to find the circle that can be put (altered) into the shape of the 2D outline image of the particle (as if it were a piece of string). Statistically we can expect that if the dust speck is rotated 90 degrees that we will have the same outline. This not true of ten specks but it true of 1000. We are presuming or anticipating that we are dealing with a statistically composite image. The corresponding sphere to this circle has the required surface area.

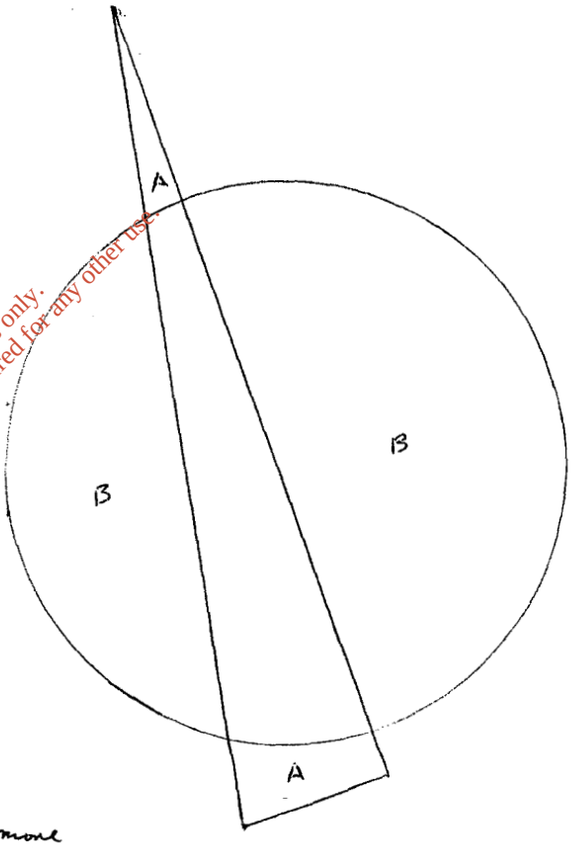
Fibres and flaky specks are difficulty cases. Surface tension and gravity may cause a speck of liquid dust to flattened somewhat on a glass surface. Activated carbon specks are a different case and must be observed and reported separately.

Indicative and comparative surface area estimates can be generated and this simple estimate should be evaluated for what role it could play in providing more information about fine dust samples. Empirical figures will only from a 3D electron microscope and computer examination.

NOTE – Microscope Perspective. The texture of the particle surface cannot be considered dure to the limitation of light. Only the general shape. This is a resolution limitation. There is a fine haze starting at 0.6 microns progressing to total invisibility in UV Photographs beyond 0.01 micron, where any particles would be dark matter that could only seen by an electron.micrscope. (Surface area estimation does help confirm measurement and so does coloured light testing except at the UV end of the scale, and the microscope operator's vision is critical and enlargement of photographs contributes nothing to clarity).

0.1 MICRON





Area B should be 3 times or more the Area of A.

Further information

I have been following developments in relation to incineration and industrial emissions for the past four years from a farming perspective and I am concerned about the guarantee of food quality that my produce (beef and milk) will have in the future. Particulate Matter and dioxin - like compounds are the major issue and also Baseline ambiguity.

I am very angry with industry and the "powers that be". Firstly I was told that it was not possible to test for particulate matter below PM 10 and I could see the need for this. My enquiries turned up a book called 'The Smoke Problem of Great Cities'. It is a 1925 report on the London Smog problem and details research of the time, which includes investigation of the particulate matter problem. Measurements were made down to the 0. 1 - 0. 2micron range of dust in ambient air. 50 years after the first U.K. Clean Air Act we are only now seriously resuming research.

I had a further question about the surface area of particulate matter because of the capacity to carry polluting chemicals. Again I was told that this was an impossible question. But the Owens System for Dust counting had an answer that would give guideline figures for particulate matter surface area and to show the relevance of this I have asked if there is a relationship between Activated Carbon surface area and particulate matter surface area and so the chemical carrying capacity could be similar.

This raises a serious question about the gravimetric system for quantifying the dust emissions and makes it irrelevant in my view. J.S. Owens (I believe he came from Wexford) research counted the number of specs of particulate matter in a cc of air and then he measured them under a high power microscope.

I found that the two so called impossible questions I have mentioned are not impossible. Now I must challenge E.P.A. Industry and the "powers that be " that the quantification of particulate matter by weight is an impossible system. We have computers and electron microscopes which should be organised to operate by counting specs of particulate matter per cc of air measuring them and also either estimating surface area or actually calculating it in a 3D basis.

So you see, I have a big grouse with the present system of particulate matter measurement and it's obviously inadequate. THE 1000 PARTICLE WEIGHT ARGUEMENT CLEARLY DEMONSTRATES THIS.

My next item is about carbon accounting. At the Bord Plenala Hearing. Dr Edward Porter presented three different sets of figures to represent the Climate Change impact of the proposed Poolbeg Incinerator and there was criticism each time. We all owe a debt to Mr Joe McCarthy for the work he did on this aspect of the E.I.S. and there really was something unsatisfactory with each set of figures. I believe that in the end E.P.A. was to resolve this and they went ahead and issued a provisional licence. And I for one am unaware of how the E.I.S. was amended. This is an important public document and matters should be cleared up.

In future, I want to see climate change figures produced from a carbon accounting spreadsheet (regard the carbon as money and use the principles of accountancy). The statistical chemical analysis of the refuse, the ash and fly ash and the exhaust gas and emissions need to be available and the contribution of the heat energy as a substitute for fossil fuel as a direct and uncomplicated figure. Transparency is needed and interested members of the public are entitled to be shown over a document with comprehensive figures for a major project.

Now at this stage, I have to confess to wearing two hats here On a another project I put forward a suggestion to the Department of Agriculture and others that Charcoal Production is a good means of dealing with the Meat and Bone Meal problem and I have a second reason for being concerned about carbon accounting and climate change. If the government accept climate change figures that are arbitrarily arrived at, how could my suggestion be properly compared with incineration?

EMERGENCY POWERS: -

I have been advocating a base-line study as a means of a guarantee on food safety and no one is interested. Policy is to measure against a standard of what is acceptable and this standard is irrelevant to Ireland because our dioxin levels in the countryside are so low. The politics of the day are involved here. If a dioxin problem arises and a milk sample fails a test the state will restrict farmers, produce will be dumped, the incinerator company will deny responsibility to the farmer and so will the state and the individual farmer will be left in a legal minefield. There is a grey area where the state can restrict a farmer purely out of concern and without evidence and the farmer has no one to pursue for justice and this is an emergency power.

This grey area is a very serious matter. For instance if an incineration company reports a mishap to the E.P.A. a burst water pipe possibly, the procedures are laid out and this must be reported. The E.P.A., official must follow procedures and contacts Department of Agriculture and F.S.A.I. and they then follow procedures and phone the dairies and stop milk collection etc. It takes a day or two to resolve the matter but milk has been dumped and the farmer has to suffer a loss and maybe there was not even any concern about pollution. The state acted out of concern for the public interest and there can be no liability and the incineration company will obviously claim they did nothing wrong and are not liable. Any investigation of an incident like that could be very interesting and would point out a need for a mutually agreed procedure for emergencies.

On Chromium monitoring, I think that the only satisfactory response is a regular monitoring of ambient air for Hexavalent Chromium and I gave Bord Pleanala details of a suitable test. (A copy of a question to Dr Edward Porter is attached).

On Cadmium monitoring, a baseline study is needed. I referred at the Bord Pleanala Hearing to the accumulation of Cadmium along major traffic thoroughfares. And for agricultural purposes there will have to be a baseline study to keep this under observation. Newly arrived deposits of Cadmium are thought to be more bio-available than natural or long studying old deposits. Incineration will give a much more blanket distribution of Cadmium.

I must criticise monitoring policy to date, as these two elements never had their full environmental impact evaluated. In fact the chemical pathway of Cadmium toxicity is not known and there is a mystery why healthy people can be very tolerant of it where unhealthy people are conversely more susceptible.

Please note the copy of the Veterinary Ireland public statement attached. I pointed this out to E.P.A. four years ago at the Duleek, Co Meath Oral Hearing and no weight was given to it. Veterinary Sentinel Surveillance is very important as an early warning and must be part of the environmental monitoring of the Poolbeg Incinerator.

Also, and in support of the Marco Salino objection, I commented that E.P.A. should provide money to the Coroner to enable him to report regularly on post mortem samples at a cellular level.

There is a need for a monitoring device to collect micro-sediment from air on a 365-day basis so that deposition on land and water can be monitored. I am a farmer and I am very interested in this and every time I have brought up the subject of agricultural baseline study there has been an official policy non-response which leaves me with only an option of trying to informally and with out permission and preserve forensic samples for future reference.

Now, Can I have permission to proceed with an outline suggestion for such a device?