



S.T.I.G.

St.Dennis Incinerator Group

June 2008

Air Quality

Consultee Response to CERC Planning Application

Consultee
St.Dennis Incinerator Group (S.T.I.G.)

Applicant
Sita Cornwall Ltd.

Application Reference
08/00203/WAS

Address of Proposal
Land at
Rostowrack Farm
St.Dennis
St.Austell
Cornwall
PL26 8DX

Proposal
Construct and Manage a
240,000 TPA Energy Recovery Centre
(Mass Burn Incinerator)

Air Quality

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Air Quality

Air Quality and Climate

STIG Response

This chapter fails to consider that St. Dennis's ozone is poor.

Ozone is a dangerous pollutant at ground level.

Ozone irritates the lungs and makes them more vulnerable to other chemicals.

The relative calm of a heat wave allows PM 10, PM 2.5 and nano-particles of heavy metals, sulphates, nitrates, dioxins, furans and other substances to accumulate in the air.

After focusing on other pollutants for years, scientists have only recently learned how deadly ozone and fine particulates can be.

The World Health Organization (WHO) has estimated that mortality increases by up to 0.3% during low level ozone episodes.

The WHO's Global Burden of Disease project estimates that 100,000 deaths a year in Europe may be related to fine particulates, with U.S. fatalities estimated in the tens of thousands annually.

Several studies have linked a substantial portion of 2003's heat wave deaths to ozone and particulates. A group of British epidemiologists and atmosphere scientists concluded that up to 38% of the U.K. deaths classified as heat related could instead be attributed to ozone and PM 10's and below.

Analysts at the Universities of Basel and Bern connected ozone to 13-30% of Switzerland's 2003 heat fatalities. Three scientists with the Dutch government suggest that around 40% of that country's heat attributed deaths were triggered in roughly equal numbers by ozone and particulates.

These are all significant numbers and suggest that we should in no way encourage any increase in fine particulate matter released into our air, as will be the case if a Mass Burn Incinerator is built.

Air Quality

Legislation and Policy

7.3

STIG Response

The “modelled incremental ground level concentrations produced as a result of the emissions from the CERC” are based on incorrect data. By treating the 120m twin stacks as only one emission source, SITA are halving the actual ground level concentrations.

Waste Incineration Directive Limits

7.5

STIG Response

TABLE 7.2 “assumes all dust to be PM 10 for this assessment”, this is completely irresponsible. It is a fact that the Mass Burn Incineration process emits PM 2.5's and nano-particles and it is these that are damaging to health and should therefore be an integral part of the assessment.

TABLE 7.3 states that there are two chimneys that are modelled as one 'effective' source; this is wholly misleading and the actual figures for all air emissions in this table should in fact be doubled.

TABLE 7.4 ignores the existence of PM 2.5's and nano-particles.

Exhausts of Construction Vehicles

7.13

STIG Response

Ignores the emissions of PM 2.5's and CO₂.

7.15

STIG Response

Quotes an almost 30 year old study - the general public are now far more aware of the dangers inherent in exposure to dust.

Air Quality

Emission Data

7.18

STIG Response

The data is inaccurate as the twin stacks are treated as one emission source and not two as it should be.

Meteorological Data

7.19

STIG Response

As the weather at St. Dennis is the actual weather that the Mass Burn Incinerator will actually encounter, to disregard it in favour of the data from Camborne is illogical.

Terrain

7.20

STIG Response

No allowances have been made for St. Dennis's changing landscape.

Percentage Oxidation of Nitric Oxide to Nitrogen Dioxide

7.23

STIG Response

If only "assumed" this cannot be guaranteed.

Assessment of Plume Visibility

7.29

STIG Response

Therefore visible plumes may be far in excess of a "maximum" 221 metres.

Air Quality

Methodology for Estimating Exposure to Emissions

7.42

STIG Response

This will be inaccurate as PM 2.5's and nano-particles are ignored.

Exposure Pathways Considered In the Assessment

7.46

STIG Response

Ignores the water sources utilised by local flora and fauna.

Compounds of Potential Concern

7.47

STIG Response

Dioxins are highly carcinogenic.

As a signatory of the Stockholm Convention, the UK has pledged to ensure a reduction of Dioxin production.

Assessment of Health Effects from Exposure to So₂, No₂ and Particulate Matter

7.49

STIG Response

As it is PM 2.5's and nano-particles that pose most threat to human health, this is a great source of concern.

7.50

STIG Response

As the majority of particulate matter will be PM2.5, why was THIS data NOT Imputed?

Air Quality

Soil Sampling

7.55

STIG Response

“Recommended range” - is this specific to St. Dennis and Cornwall or typical in relation to other rural areas in the UK?

7.57

STIG Response

Have the Arsenic levels of 110mg/kg been considered in relation to the farmer at maximum emission exposure?

Effects during Construction

7.62

STIG Response

As this is only an estimate the real effects have been under estimated. How long were current traffic streams monitored and did this take into account tourist season traffic? With the opening up of the trails on the moor there is likely to be an increase in visitors to the area and therefore an increase in traffic.

Dust Resulting From Construction Activity

7.65

STIG Response

If dust from the clay industry is dispersed all over the village, it is likely that the construction dust will follow suit.

Effects During Operation

7.67

STIG Response

As incomplete data was used the dispersion modelling is deeply flawed.

Air Quality

Assessment of Appropriate Chimney Height

7.70

STIG Response

Proves that stack emissions are potentially damaging.

Modelling Results for Nitrogen Dioxide

7.71

STIG Response

The proposed site is in a NITRATE VULNERABLE ZONE.

7.72

STIG Response

Does this take into account changing weather patterns?

Modelling Results From All Pollutants

7.74

STIG Response

These should be calculated over 11 months not 12 (i.e. 8,000hrs) for a more accurate level. Again imputed data is half the actual figure - modelling flawed.

TABLE 7.13 ignores the existence of PM 2.5's and nano-particles

Plant will be operational 24hrs Assumes 100% NO_x as NO₂

7.75

STIG Response

Predictions based on flawed modelling data.

7.77

STIG Response

Predictions based on flawed modelling data.

Air Quality

TABLE 7.14 what would the levels be using data from St. Dennis and not Camborne? (The actual weather the emissions will experience).

7.78

STIG Response

As exceedances are typical at Mass Burn Incinerators, this cannot be guaranteed.

TABLE 7.17 As data only uses one emission source this table is misleading.

7.89

STIG Response

Data used is incomplete and therefore SAC integrity CANNOT be guaranteed.

7.92

STIG Response

As exceedances are typical, critical load could be breached at anytime.

Assessment of the Impacts of Deposition of Metals

7.93

STIG Response

Incorrect data imputed - therefore flawed.

TABLE 7.18 All figures should be doubled to take account of TWO emission sources.

Assumes no leaching.

Impact on Ambient Air from Operational Vehicles

7.94

STIG Response

Ignores PM 2.5's

1 HGV = 22 cars

19 HGVs can tip Air Quality OVER the limit.

Air Quality

Plume Visibility

TABLE 7.20

STIG Response

Modelling should have been for 8,000hrs. As stated at point 7.29 actual visible plumes will be longer than those predicted in this modelling.

7.98

STIG Response

“small plume” could be as much as 100mtrs.

Odour

7.101

STIG Response

There will be approximately 30,000 litres of fuel on site.

As deliveries will be from 7am to 5pm, will the doors be shut at any point during these hours?

What is meant by “periodic washing”?

7.103

STIG Response

Does not allow for system failures.

Roller doors open constantly between 7am and 5pm.

Assessment of Carcinogenic Effects

7.105

STIG Response

There should be no “acceptable” risk.

Air Quality

Comparison of Dioxin/Furan Exposure with Who Guidelines

7.107

STIG Response

How will it be assured that “average intake over long periods is not exceeded?”

7.108

STIG Response

These are known carcinogens.

The Stockholm Convention - the UK is required to reduce the amount of dioxin exposure NOT increase it.

Infant Breast Milk Exposure to Dioxins and Furans

7.110

STIG Response

Based on flawed modelling data.

Many babies are breast-fed well beyond 1 year.

Dioxin levels from pre-existing pollution sources are already high.

Results of the Assessment of Health Effects from Exposure to So₂, No₂ and Particulate Matter

7.111

STIG Response

Based on incorrect data.

Does not take into account the synergistic effect of these chemicals or their interaction with pre-existing pollutants.

Air Quality**Particulate Matter****7.112****STIG Response**

Therefore we should not permit any increases in PM 2.5 production.

7.113**STIG Response**

Ignores PM 2.5's

TABLE 7.21**STIG Response**

Ignores PM 2.5's.

7.114**STIG Response**

Once again IGNORES PM 2.5's.

NO₂**7.115****STIG Response**

Based on inaccurate modelling data.

SO₂**7.117****STIG Response**

Based on inaccurate modelling data.

Air Quality

Conclusion

7.119

STIG Response

As our existing exposure puts us at risk, we should not have to tolerate an increase in that risk, especially as other risk free EfW technologies exist.

Anaerobic Digestion is such a technology AND is the preferred method of recovering energy from waste as per the Waste Strategy 2007.

Carbon Balance

7.120

STIG Response

There is no 'do-nothing' scenario. EfW is not exclusive to incineration.

Operational Phase

7.125

STIG Response

The Mass Burn Incinerator will generate at least 190,000 tpa of CO₂.

Landfill will still be needed for residuals and in the event of a prolonged shut-down where the Mass Burn Incinerator is non-operational.

Air Quality**Mitigation****Construction Dust****7.126****STIG Response**

How effective will these measures be?

Will PM 2.5's be monitored?

7.127**STIG Response**

This cannot be guaranteed

Residual Effects**7.128****STIG Response**

As SITA ignores PM 2.5's and nano-particles completely AND treat a twin stack as one emission source, thereby HALVING the actual amounts of emission data AND use meteorological data not specific to the actual build site, ALL assertions in this chapter are wrong. Therefore the significance of the effects on air quality CANNOT be judged.