Attachment F

Attachment F.1: Treatment, Abatement and Control Systems

The major emission sources with treatment, abatement and control systems in place are detailed in the relevant sections of the accompanying EIS (attachment B3) and summarised in this section.

Air Emissions

Two air emission point sources are identified a) Boiler A1 and b) Pollution Abatement Device A2. Emissions control is discussed in section 4 of the accompanying EIS (attachment B3). The major systems in place include:

The boiler used for the generation of heat/steam will have an electrostatic precipitator installed (ESP).

A pollution abatement device such as a Thermal Oxidiser or a Biofilter will ensure efficient removal of gaseous organic compounds from the various emission streams of the entire waste management facility.

Enclosure and containment against fugitive emissions - All materials recovery operations will be conducted indoors and all access points will be covered. The sludge drying facility is a closed system and is further contained within the sludge drying building. There will be a two-meter buffer zone around the perimeter of the site planted with trees and bushes or with a 2m high wall to prevent the transfer of material off site. The wall and planting will also serve to reduce the propagation of noise.

Effluent Emissions

There will be no direct discharge to surface waters. All foul and process wastewater will be collected and directed to the wastewater treatment plant (WWTP). Storm water and fire water will be collected in retention tanks and discharged via the sewer to the outfall, only if free of potential pollutants or treated in the WWTP. The effluent from the WWTP will be discharged to the Youghal Town Council via the sewer to outfall following treatment.

Table F.1 presents the abatement /treatment control measures for Air Emissions from the boiler (A1), the Pollution Abatement Device (A2) and the Sewer Discharge (SE1). Schematics of all abatement system are included.

TABLE F.1: ABATEMENT / TREATMENT CONTROL

Emission point reference number : **A1**

Control[1] parameter	Equipment[2]	Equipment maintenance	Equipment calibration	Equipment back-up
Particulates	ESP	As per manufacturers recommendations		

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
Particulates	Visual checks for smoke	As per manufacturers recommendations	

[1] List the operating parameters of the treatment / abatement system which control its function.
[2] List the equipment necessary for the proper function of the abatement / treatment system.
[3] List the monitoring of the control parameter to be carried out.

TABLE F.1: ABATEMENT / TREATMENT CONTROL

Emission point reference number: **A2**

Control[1] parameter	Equipment[2]	Equipment maintenance	Equipment calibration	Equipment back-up
Odours	Biofilter or Thermal Oxidiser	As per manufacturers recommendations		
Gaseous Emissions	Biofilter or Thermal Oxidiser	As per manufacturers recommendations		

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
Odours Gaseous Emissions	Olfactory checks VOC by manual sampling e.g. Dreager tube	- As per manufacturers recommendations	

[1] List the operating parameters of the treatment / abatement system which control its function.
[2] List the equipment necessary for the proper function of the abatement / treatment system.
[3] List the monitoring of the control parameter to be carried out.

TABLE F.1: ABATEMENT / TREATMENT CONTROL

Emission point reference number: **SE1**

Control[1] parameter	Equipment[2]	Equipment maintenance	Equipment calibration	Equipment back-up
Effluent Quality	Waste Water Treatment Plant & Interceptors Units	As per manufacturers recommendations		

Control[1] parameter	Monitoring to be carried out[3]	Monitoring equipment	Monitoring equipment calibration
Effluent Quality	pH, TOC, flow rate, conductivity, temperature, DO	As per manufacturers recommendations	

[1] List the operating parameters of the treatment / abatement system which control its function.
[2] List the equipment necessary for the proper function of the abatement / treatment system.
[3] List the monitoring of the control parameter to be carried out.

Attachment F.2 – F.9: Monitoring and Sampling Points

F.2: Air - to include Dust and Odour.

It is proposed to conduct dust deposition monitoring at the boundary of the facility as indicated on Fig F.2. AVR - Environmental Solutions Ltd propose that dust monitoring be conducted 3 times/year at locations marked D1, D2 and D3. AVR - Environmental Solutions does not propose to conduct further routine air quality monitoring at the site. Due to the control measures in place, it is anticipated that odour nuisance will not be an issue. Regular inspections at the boundaries of the site will be conducted to identify any potential problems and a log of inspections and any complaints will be maintained at the facility.

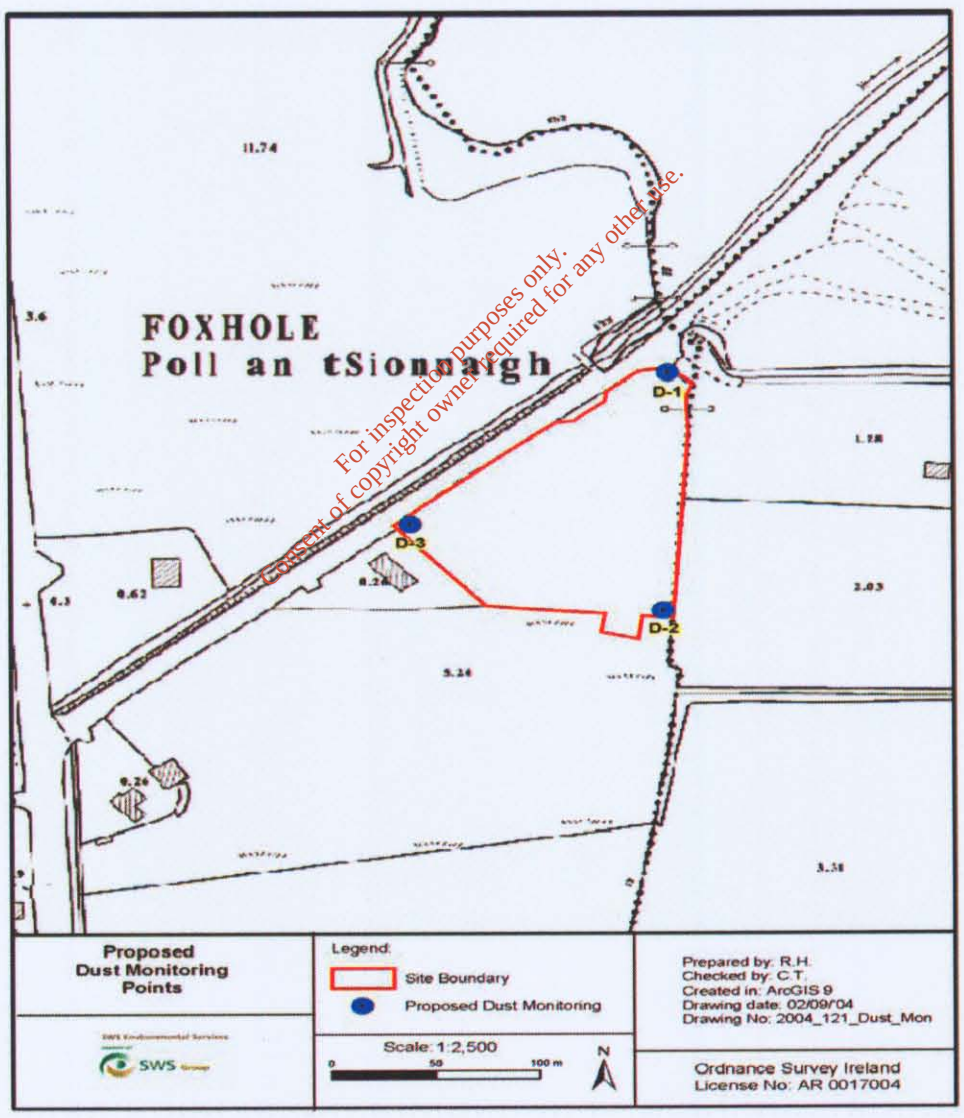

Fig F.1: Proposed Dust Monitoring Locations

TABLE F.2 to F.8: EMISSIONS MONITORING AND SAMPLING POINTS FOR AIR

Emission Point Reference No(s). : A1

Parameter	Monitoring frequency	Accessibility of Sampling Points
Particulates	Bi- annually	Accessible
NO_X	Bi- annually	Accessible
Carbon Monoxide	Bi- annually	Accessible
SO_X	Bi- annually	Accessible
Oxygen	Bi- annually	Accessible

TABLE F.2 to F.8: EMISSIONS MONITORING AND SAMPLING POINTS FOR AIR

Emission Point Reference No(s). : A2

Parameter	Monitoring frequency	Accessibility of Sampling Points
Particulates	Bi- annually	Accessible
NO_X	Bi- annually	Accessible
Carbon Monoxide	Bi- annually	Accessible
SO_X	Bi- annually	Accessible
VOC	Bi- annually	Accessible
Dioxins	Annually	Accessible

TABLE Ff: Fugitive ENVIRONMENT MONITORING AND SAMPLING LOCATIONS FOR AIR.

Monitoring Point Reference No :_**D1, D2, D3 (Boundary Points)**_____

Parameter	Monitoring frequency	Accessibility of Sampling point
Dust Deposition Rate	3 times per annum	Accessible

F.3: Surface Water

AVR-Environmental Solutions does not propose to conduct surface water monitoring as there will be no emissions to surface water. The facility will be completely hard surfaced with all surface water collected and treated in the on-site wastewater treatment plant.

F.4: Sewer Discharge

It is proposed that the sewer discharge point, SE1 will be monitored twice per annum for the following parameters:

- Biochemical Oxygen Demand,
- Chemical Oxygen Demand,
- Suspended Solids,
- Heavy metals,
- Ammonia,
- Nitrogen,
- Cyanide,
- TDS,
- Nitrogen,
- Toxicity,
- Oils, Fats and Greases,
- Phosphate.

Continuous monitoring of effluent will include temperature, flow rate, pH, TOC and conductivity.

TABLE F.4: EMISSIONS MONITORING AND SAMPLING POINTS FOR SEWER DISCHARGE

Emission Point Reference No(s). : SE1

Parameter	Monitoring frequency	Accessibility of Sampling Points
Flow rate	Continuous	Monitoring well
TDS	Bi-annually	Monitoring well
Heavy Metals	Bi-annually	Monitoring well
Nitrogen	Bi-annually	Monitoring well
Cyanide	Bi-annually	Monitoring well
Toxicity	annually	Monitoring well
Phosphate	Bi-annually	Monitoring well
pH	Continuous	Monitoring well
Conductivity	Continuous	Monitoring well
Temperature	Continuous	Monitoring well
Biochemical Oxygen Demand	monthly	Monitoring well
Chemical Oxygen Demand	Bi-annually	Monitoring well
Suspended Solids	Bi-annually	Monitoring well
Oils, Fats and greases	Bi-annually	Monitoring well
Phosphate	Bi-annually	Monitoring well

F.5: Groundwater

AVR-Environmental Solutions do not propose to conduct groundwater monitoring on the site as there are no direct or indirect emissions to groundwater from the facility.

F.6: Noise

Baseline noise monitoring data is included in the EIS (Attachment B.3). AVR - Environmental Solutions Ltd. proposes to conduct a noise survey annually at the locations shown on Fig F.6 overleaf. The scope of the noise monitoring report will be agreed in advance with the Agency.

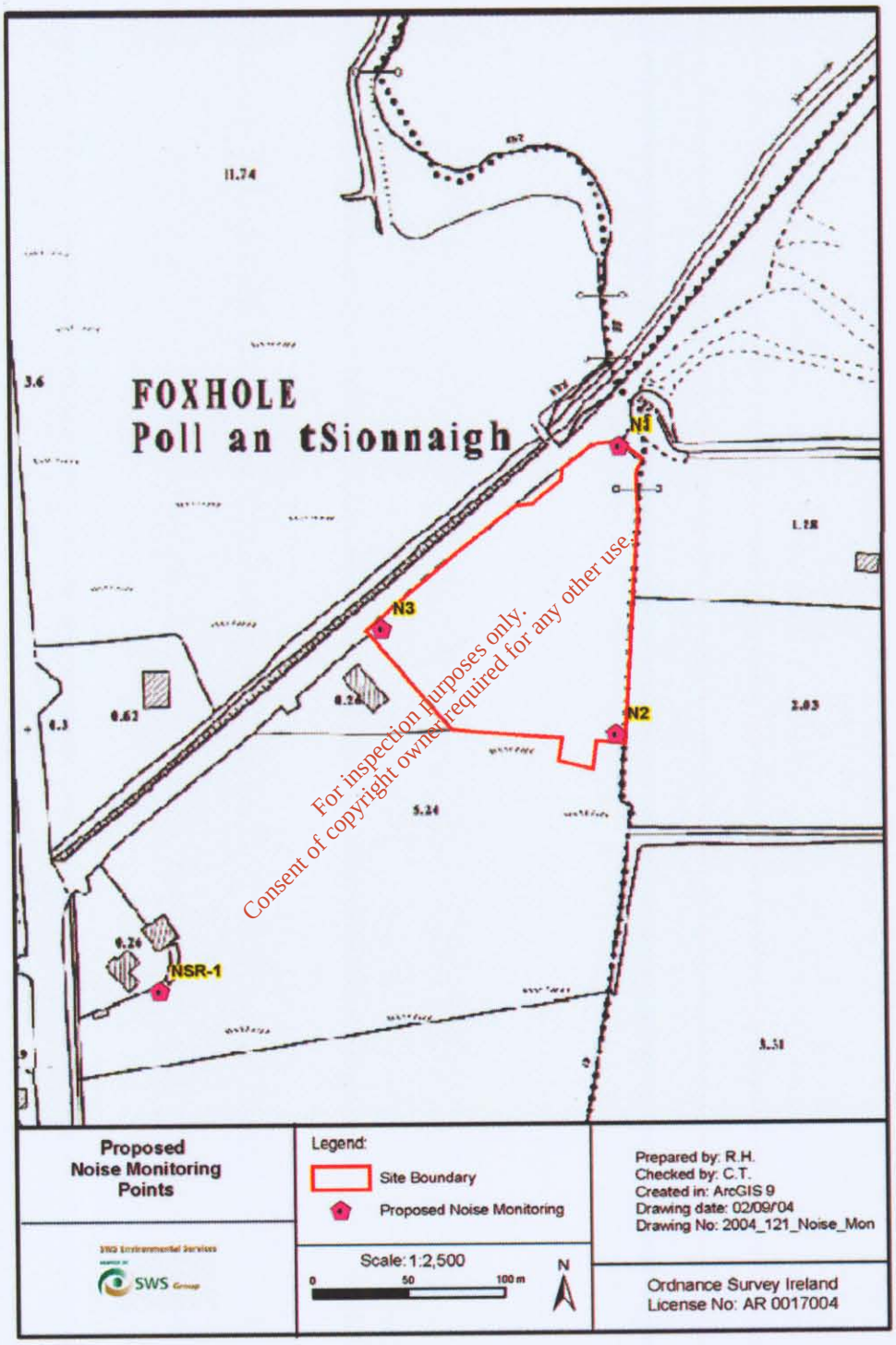

Figure F.2: Noise Monitoring Locations

F.7: Meteorological Data

Meteorological data will be acquired from Met Éireann when required and will be based on the recording stations at Cork Airport and Roches Point.