

Ventilation and Extraction Statement

In accordance with Redcar and Cleveland Borough Council (RCBC) Validation Requirements a Ventilation and Extraction Statement is required

Where ventilation or extraction equipment is to be installed, including proposals for the sale or preparation of cooked food, and commercial premises requiring dust and/or odour extraction, cooling or air handling equipment.

What is required?

Details of the position and design of ventilation and extraction equipment. This may include technical specification including predicted noise levels, noise mitigation measures and odour abatement techniques where required.

Elevation drawings showing the size, location and external appearance of plant and equipment will also be required.

Details and Position of the Ventilation and Extraction System

The Proposed Development comprises a purpose-built lithium monohydrate refining and production facility that has been designed in compliance with all applicable Environment Agency Environmental Permitting and Pollution Prevention Guidance requirements.

By necessity and in accordance with the regulations, the plant has been designed with a sealed process plant with all activities carried out under controlled extraction.

There are 7 main emission points from the proposed development, with the most significant being the emissions stacks (A4A – A4C) associated with the calcination plant, located in the south-eastern portion of the facility.

All other emissions points relate to scrubber discharges, vent discharges and filters.

The table below provides a summary of the discharge emissions points as they relate to the full design of the process.

Table 1: Stack Emission Points	
Identity	Description
Emission Point 1	Analcime Storage Ventilation Building
Emission Point 2	Vapours from Nitrogen Gas Scrubber
Emission Point 3	Vapours Autoclave Gas Scrubber
Emission Point 4	Calcination Stack CO ₂ and Vapours
Emission Point 5	Vapours from CO ₂ scrubber
Emission Point 6	Vapours from Crystallisation to vent scrubber
Emission Point 7	Dust filter from Salt cake storage area
Emission Point 8	Vent stack from ZLD
Emission Point 9	Combustion Products from Steam Boiler
Emission Point 10	Dust from Spodumene Storage Silo

Figure 1 attached provides a detailed schematic of all emissions location points and their respective locations.

Extraction and Abatement Systems

In accordance with the EA sector Inorganic Chemical Processing guidance and horizontal guidance notes, all local extraction and ventilation systems are designed to comply with the ‘Best Available Techniques’ (BAT) emission limit values.

All emissions from combustion and vent systems are treated through the use of hot gas treatment system, scrubbers and filtration plant that utilise sorbents and reagents to clean all contaminants from the combustion systems prior to combustion. All combustion emissions are cleans to the emissions limit values prescribed by the sector Best Available Techniques.

In accordance with the Environmental Permitting Regulations, all air emissions have been modelled using the h1 Guidance and the impacts assessed. The impact assessment confirmed that the impacts associated with air quality are acceptable in terms of human, ecological and environmental impact. The Air Quality Impact Assessment is provided within Volume 1 and Volume 2 of the EIA.

Noise and Odour Abatement Techniques

All material unloading, handling and management is carried out under controlled conditions and within dedicated buildings and structures.

The process neither uses odourous materials nor generates odour emissions, so therefore will not give rise to odour emissions and impacts.

The site has been designed with best practice acoustic abatement measures incorporated into the extractions and combustion systems.

The following measures have been incorporated into the design of the plant:

- Location of all major fan plant within the main building;
- The building fabric of the building to provide significant a sound reduction index (insertion loss);
- Acoustic enclosures fitted around all major fan plant; and
- In duct intake and discharge silencers located on all major combustion and fan plant.

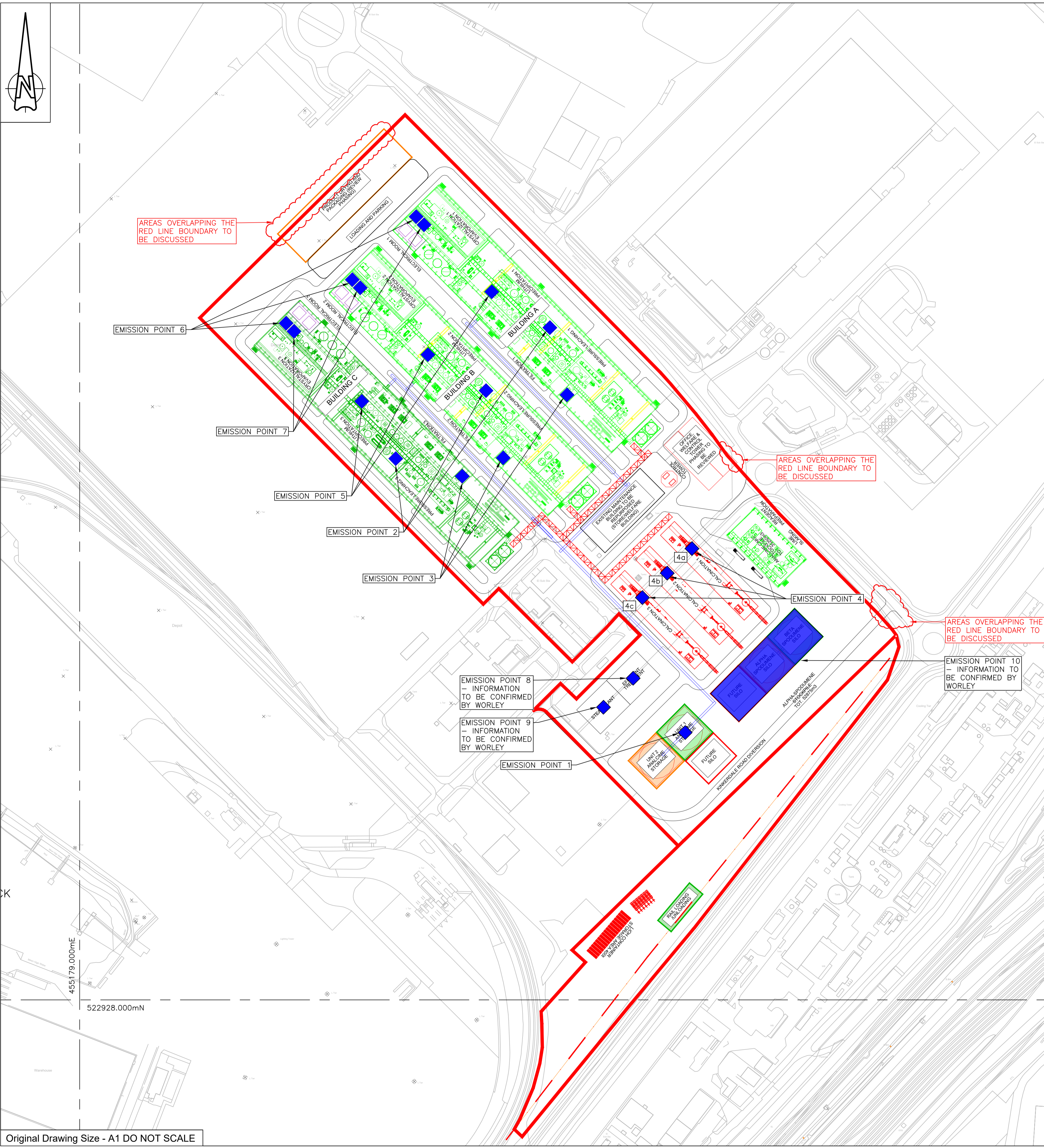
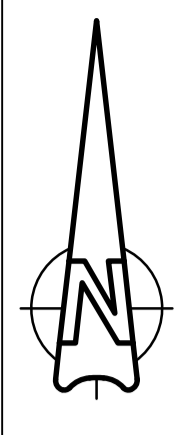
As part of the planning a detailed acoustic assessment has been carried out in accordance with the methodology prescribed in relevant Standards and guidance (i.e. British Standard BS4142: 2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’).

The acoustic assessment report also provides an indicative acoustic assessment of the environmental noise impact that is expected to arise from the anticipated operation of key plant and processes associated with the proposed Facility at the nearest noise sensitive residential housing (i.e. receptors).

The conclusion of the environmental noise assessment is that the site will result in a ‘Low Impact’ at the worst affected Noise Sensitive Receptor during both daytime and night time periods.

All aspects of the plant emissions including air, water, odour and noise will be strictly regulated by the Environment Agency as part of the Environmental Permitting Regulations.

ANNEX 1: SITE EMISSIONS PLAN



EMISSION POINTS			
LOCATION	CENTRE POINT EASTING (mE)	CENTRE POINT NORTHING (mN)	DESCRIPTION
EMISSION POINT 1			
ANALCIME STORAGE	455787.042	523196.504	ANALCIME CAKE FROM FILTER TO STOCKPILE/DISPOSAL
EMISSION POINT 2			
BUILDING A	455651.097	523603.160	VAPOURS FROM NITROGEN GAS SCRUBBER TO ATM
BUILDING B	455587.055	523539.978	
BUILDING C	455496.385	523471.646	
EMISSION POINT 3			
BUILDING A	455668.367	523535.682	VAPOURS FROM AUTOCLAVE GAS SCRUBBER TO ATM
BUILDING B	455604.301	523472.472	
BUILDING C	455563.118	523453.921	
EMISSION POINT 4			
4a (CALCINATION 1)	455793.782	523381.240	FROM CALCINATION STACK CO2 AND VAPOURS TO ATM
4b (CALCINATION 2)	455768.917	523356.714	
4c (CALCINATION 3)	455744.002	523332.132	
EMISSION POINT 5			
BUILDING A	455592.735	523639.154	VAPOURS FROM CO2 SCRUBBER TO ATM
BUILDING B	455528.693	523575.972	
BUILDING C	455462.302	523529.188	
EMISSION POINT 6			
BUILDING A	455516.904	523714.633	VAPOURS FROM CRYSTALLIZATION VENT SCRUBBER TO ATM
BUILDING B	455452.814	523651.395	
BUILDING C	455386.235	523607.596	
EMISSION POINT 7			
BUILDING A	455524.813	523706.461	SALT CAKE FROM FILTER TO DISPOSAL (NaCl)
BUILDING B	455460.747	523643.251	
BUILDING C	455394.192	523599.480	
EMISSION POINT 8			
ZERO LIQUID DISCHARGE VENT	455734.772	523251.023	EMISSIONS FROM ZERO LIQUID DISCHARGE VENT
EMISSION POINT 9			
STEAM PLANT	455704.920	523221.926	EMISSIONS FROM STEAM GENERATOR PLANT - 3No. EACH
EMISSION POINT 10			
SPODUMENE SILO	455868.913	523264.305	SPODUMENE DUST (DIFFUSED SOURCE) CONVEYORS, STORAGE BUILDINGS ETC

- NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE
 2. ALL COORDINATE ARE IN METRES AND RELATE TO THE NATIONAL GRID COORDINATE SYSTEM
 3. DRAWING TO BE READ IN CONJUNCTION WITH EMISSIONS SUMMARY SPREADSHEET, DOCUMENT No. XXXX (GREEN LITHIUM TO CONFIRM)

LEGEND

— SITE BOUNDARY

■ INDICATIVE EMISSION POINT

REV	DATE	DWN	CHK	APP
REVISIONS				
REV P01	31/01/2023	EDG	HM	EGA

SCALES: 1:2000 @ A1

PURPOSE OF ISSUE: S2 - ISSUE FOR INFORMATION

PROJECT TITLE:
GREEN LITHIUM REFINERY PROJECT

DRAWING TITLE:
GREEN LITHIUM GENERAL ARRANGEMENT INDICATIVE EMISSION POINTS OPTION 1

CLIENT:



FLOOR 3,
11 WESTFERRY CIRCUS,
LONDON,
E14 4HA
TEL: (0203) 2151610

