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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



ALTILIUM METALS LTD

TECHNOLOGY CENTRE TAVISTOCK

NON-TECHNICAL SUMMARY

APRIL 2024

DATE ISSUED: APRIL 2024
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ALTIUM METALS LTD

TECHNOLOGY CENTRE TAVISTOCK

NON-TECHNICAL SUMMARY

APRIL 2024

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APPENDICES	TITLE
Appendix 1	Proposed EWC Codes
Appendix 2	EMS Summary

DRAWINGS	TITLE	SCALE
BM12752-001-P0	Permit Boundary Plan	1:1000

1 INTRODUCTION

- 1.1.1 Altium Metals Ltd have commissioned Wardell Armstrong LLP to prepare a permit application for the Technology Centre Facility (Unit 2, Plymouth Road Industrial Estate, Tavistock, Devon, PL19 9QN). The Site is currently operational under a Local Enforcement Position.
- 1.1.2 The site is currently utilised for the small-scale chemical treatment of waste black mass to recover critical minerals via sequential hydrometallurgical processes.
- 1.1.3 The site will also treat copper tailings and other metal rich waste streams using the same techniques to inform the potential for these waste streams to act as a source of metals.
- 1.1.4 The recovery of critical minerals such as lithium, graphite and cobalt fall within the scope of the Government's Critical Minerals Strategy, and the scheme will support a circular economy of critical minerals. Additionally, the processes also include minerals on the UK watch list, including manganese and nickel.
- 1.1.5 A high-level summary of the proposed activities is provided in Section 3.
- 1.1.6 An overview of the contents of the permit application is provided in Section 4.
- 1.1.7 A summary of the key environmental protection measures which will be put into place is provided in Section 5.

2 SITE LOCATION AND SETTING

- 2.1.1 The address of the site is Unit 20, Plymouth Road Industrial Estate, Tavistock, Devon, PL19 9QN. The National Grid Reference (NGR) for the site is SX 48156 73206.
- 2.1.2 The site comprises a building in which all operations are contained. The site is located on an industrial estate within a highly urbanised part of the town in Tavistock, approximately 15 km north of Plymouth. The nearest residential dwellings are located 50 m southeast of the site, off Willow Road. Further properties sit approximately 120m north and east of the site.

3 PROPOSED ACTIVITIES

3.1.1 The site operations are briefly described below, and further detail is provided in the Operating Techniques Report, including process flow schematics.

3.2 Waste Activity

3.2.1 The waste activity is treatment of hazardous wastes to recover raw materials.

3.2.2 The site specializes in the treatment of black mass. Black mass is classified as a hazardous waste, European Waste Catalogue(EWC) code 19 12 11*. Tailings from the mining of copper are classified as a hazardous waste, EWC 01 03 04*.

3.2.3 A variety of other metal containing wastes are proposed to be accepted at the site, these wastes contain metals that can be recovered and sold on the open market. The full list of EWC codes proposed to be accepted at the site is included in Appendix 1.

3.2.4 Black mass will undergo acid leaching using chemicals to sequentially separate the “reactive” contents of the waste black mass feedstock from the “inert” contents.

3.2.5 A maximum of 1,500kg of black mass will be stored on-site at any one time, similarly a maximum of 1,500kg of Copper Tailings will be stored on-site at any one time. Other wastes will be stored on site for research and will not exceed 1 tonne.

3.2.6 The chemical treatment of hazardous waste below the capacity thresholds as specified in Section 5.3 of the Environmental Permitting Regulations (England and Wales) 2016 would therefore require this element of the process to be permitted as a waste activity.

4 ENVIRONMENTAL PERMIT APPLICATION

4.1.1 A number of documents have been prepared to support the permit application and demonstrate that the environmental impact from the operations is minimised as far as possible. The permit application comprises of the following documentation:

- Application forms;
 - Part A
 - Part B2
 - Part B4
 - Part F1
- Non-Technical Summary;

- Operating Techniques Report;
- Environmental Management System summary;
- Amenity and Accident Risk Assessment;
- Habitats Risk Assessment;
- Site Condition Report;
- H1 Screening Tool outcome and summary note;
- Associated drawings.

4.1.2 The above listed documentation demonstrate that the site will be operated and managed in accordance with the relevant legislation and the Environment Agency guidance.

4.1.3 This supporting statement has been prepared in response to the following questions raised in Application Form A, Form B2 and Form B4, which have been completed in support of the permit variation application. These questions ask the Operator to provide the following:

- Form A Q5: Details of Directors;
- Form B2 Q2e: Treating Batteries;
- Form B4 Q2: Point source Emissions;
- Form B4 Q3a: Technical Standards;
- Form B4 Q3b: General Requirements;
- Form B4 Q4a: Monitoring Emissions.

4.2 Application Form A

Question 4 Applications form Companies or Corporate Bodies; Please give the date of birth details for all directors and company secretary

4.2.1 Please see the date of birth of company directors attached to this application on a separated document as this is confidential information.

4.3 Application Form B2

Question 2e Treating Batteries

4.3.1 Batteries will not be treated on site, only the arisings from batteries known as black mass.

4.4 Application Form B4

Question 2 Point Source Emissions

4.4.1 An H1 assessment for emissions to air has been completed for the site, please see the assessment and the Technical Summary Note TN001.

Question 3a Technical Standards

4.4.2 Please see the Operating Techniques.

Question 3b General Requirements

4.4.3 Please see the Operating Techniques.

Question 4a Monitoring Emissions

4.4.4 Please see the Operating Techniques.

5 ENVIRONMENTAL RISK AND MITIGATION MEASURES

5.1.1 The site is currently operational under a Local Enforcement Position and was operating prior to this under a Regulatory Position Statement

5.1.2 As part of the environmental permit application process, an Amenity and Accident Risk Assessment has been prepared to fully assess the risk to the environment from the site activities, and the control measures which will be implemented to minimise these risks.

5.1.3 The Habitats Risk Assessment has been prepared within the Environmental Risk Assessment assess the risk from the activities to nearby protected Habitats.

5.1.4 The site operates in laboratory conditions using state-of-the-art equipment, wholly inside a building. The building comprises of impermeable surfacing with a sealed drainage system.

5.1.5 The H1 Screening Tool has been completed to assess the emissions to air.

-
- 5.1.6 Stringent waste acceptance procedures will be in place. These are detailed in the Operating Techniques as well as the sites Environmental Management System.
- 5.1.7 Waste will arrive in secure bags, to minimise the risk of escape of particles. Nevertheless, the risk must be adequately controlled and a fugitive emissions have been considered within the Environmental Risk Assessment prepared as part of the permit application.
- 5.1.8 All chemicals and reagents used in the process will be stored appropriately in accordance with their safety data sheets.
- 5.1.9 Overall the innovative activities carried out by Altilium will enable the recovery of critical minerals. The hydrometallurgical recycling process can recovery over 95% of the technology metals, for direct use in new batteries or for sale on the open market, saving over 50% of carbon compared to mining virgin raw materials. Therefore, the activities have a far-reaching positive environmental impact.

APPENDICES

APPENDIX 1

EWC Codes

01	WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS
01 01	Wastes from Mineral Extraction
01 01 01	wastes from mineral metalliferous excavation
01 03	Wastes from physical and chemical processing of metalliferous minerals
01 03 04*	acid-generating tailings from processing of sulphide ore
01 03 05*	other tailings containing hazardous substances
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05
06	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 03	wastes from MFSU of salts and their solutions and metallic oxides
06 03 13*	solid salts and solutions containing heavy metals
06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13
06 03 15*	metallic oxides containing heavy metals
06 03 16	metallic oxides other than those mentioned in 06 03 15
06 04	metal containing wastes other than those mentioned in 06 03
06 04 03*	wastes containing arsenic
06 04 05*	wastes containing other heavy metals
06 04 99	wastes not otherwise specified
10	WASTES FROM THERMAL PROCESSES
10 01	Wastes from power stations and other combustion plants
10 01 02	Coal fly ash
10 01 03	fly ash from peat and untreated wood
10 01 13*	fly ash from emulsified hydrocarbons used as fuel
11	WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS, NON-FERROUS HYDROMETALLURGY
11 02	Wastes from non-ferrous hydrometallurgy
11 02 05*	wastes from copper hydrometallurgical processes containing hazardous substances
11 02 06	wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05
11 02 07*	other wastes containing hazardous substances
11 02 99	wastes not otherwise specified
12	WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS
12 01	wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01 01	ferrous metal filings and turnings
12 01 03	non-ferrous metal filings and turnings
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01	end of life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)
16 01 12	brake pads other than those mentioned in 16 01 11
16 01 17	ferrous metal
16 01 18	non-ferrous metal
16 01 22	components not otherwise specified
16 01 99	wastes not otherwise specified
16 03	Off-Specification Batches and unused products
16 03 03*	inorganic wastes containing hazardous substances
16 03 04	inorganic wastes other than those mentioned in 16 03 03
16 06	Batteries and Accumulators
16 06 02*	Ni-Cd batteries
16 06 04	Alkaline Batteries (except 16 06 03)
16 06 05	other batteries and accumulators

16 06 06*	separately collected electrolyte from batteries and accumulators
16 11	Waste linings and refractories
16 11 01	carbon-based linings and refractories from metallurgical processes containing hazardous substances
16 11 02	carbon-based linings and refractories from metallurgical processes other than those mentioned in 16 11 01
16 11 03	other linings and refractories from metallurgical processes containing hazardous substances
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03
16 11 05	linings and refractories from non-metallurgical processing containing hazardous substances
16 11 06	linings and refractories from non-metallurgical processing other than those mentioned in 16 11 05
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTEWATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 01	Wastes from Incineration of pyrolysis of waste
19 01 02	ferrous metals removed from bottom ash
19 01 11*	bottom ash and slag containing hazardous substances
19 01 12	bottom ash and slag other than those mentioned in 19 01 11
19 01 13	fly ash containing hazardous substances
19 01 14	fly ash other than those mentioned in 19 01 13
19 01 17*	pyrolysis wastes containing hazardous substances
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17
19 02	Wastes from Physio/chemical treatments of waste (including dechromation, decyanidation, neutralisation)
19 02 03	pre-mixed wastes composed only of non-hazardous wastes
19 02 04*	pre-mixed wastes composed of at least one hazardous waste
19 02 05*	sludges from physio/chemical treatment containing hazardous substances
19 02 06	sludges from physio/chemical treatment other than those mentioned in 19 02 05
19 10	Wastes from shredding of metal-containing wastes
19 10 02	non-ferrous waste
19 10 03*	fluff-light fraction and dust containing hazardous substances
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 05*	other fractions containing hazardous substances
19 10 06	other fractions other than those mentioned in 19 10 05
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 02	ferrous metals
19 12 03	non-ferrous metals
19 12 09	minerals (for example sand, stones)
19 12 11*	other wastes (including mixtures of materials) from mechanical treatment

APPENDIX 2

EMS Summary

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ALTILIUM METALS LIMITED

TECHNOLOGY CENTRE TAVISTOCK

ENVIRONMENTAL MANAGEMENT SYSTEM SUMMARY

APRIL 2024

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ALTIUM METALS LTD

ENVIRONMENTAL MANAGEMENT SYSTEM SUMMARY

APRIL 2024

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1 INTRODUCTION

- 1.1.1 Altilium Metals Limited have commissioned Wardell Armstrong in the preparation of an environmental permit application, for the treatment and processing of metal rich wastes, copper tailings and black mass arisings from batteries.
- 1.1.2 As part of the Environmental Permit Application, a summary of the Environmental Management System (EMS) is required to be submitted. This document provides that summary, and Altilium Metals will have a full EMS in place which will be in line with the Environment Agency's guidance on Developing a Management System¹.
- 1.1.3 This report provides an overview of how the EMS will comply with the Environment Agency's guidance by providing a summary on the systems that are or will be in place at the time of permit issue.
- 1.1.4 Waste storage and treatment activities will be carried out within a building, hereafter referred to as the 'Site'.
- 1.1.5 The address of the site is Plymouth Road Industrial Estate, Tavistock, Devon, PL19 9QN
The National Grid Reference (NGR) for the site is SX 48156 73206.

2 COMPLIANCE WITH ENVIRONMENT AGENCY GUIDANCE

2.1 Site Infrastructure

- 2.1.1 Plans will be available showing the layout of the site, including location of incoming black mass material, raw material storage, treatment areas and equipment associated with the processes within the Site, entrances and exits to be used by the emergency services and monitoring points.
- 2.1.2 These plans will be made available to relevant members of staff, visitors and the emergency services as necessary to assist in their role and reduce the potential for accidents and pollution events.
- 2.1.3 The site location plan will show the proximity of sensitive receptors, including residential receptors.

¹ [Develop a management system: environmental permits - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/guidance/develop-a-management-system-environmental-permits)

2.2 Water, Gas and Electricity

2.2.1 Records will be kept detailing the location of all services. This will include plans showing the location of mains water, gas and electricity supplies.

2.3 Site Operations

2.3.1 The site operations are described in the Operating Techniques report. The Site will operate in accordance with the measures set out in the Operating Techniques report, adhering to the Environment Agency's guidance on Appropriate Measures for waste storage and treatment, and Best Available Techniques for the production of inorganic chemicals.

2.4 Site and Equipment Maintenance Plan

2.4.1 The EMS will include procedures for planned maintenance of equipment in accordance with the manufacturer's instructions. All equipment will be inspected and serviced on a regular basis.

2.4.2 Records will be kept of all inspections, servicing, maintenance and repairs or remedial actions taken.

2.5 Contingency Plans

2.5.1 Should an equipment breakdown occur, which may lead to an impact on the environment, operation of that equipment will cease until repairs are made by an appropriately qualified and competent engineer.

2.5.2 All equipment is fitted with safety mechanisms.

2.6 Accident Prevention and Management Plan

2.6.1 An Accident Management Plan (AMP) will be in place to deal with any incidents or events that could result in a pollution incident or being unable to comply with the permit.

2.6.2 The AMP will include a list of up to date emergency contacts, including out of hours contacts.

2.6.3 All incidents will be investigated and suitable remedial actions taken as necessary. Should an accident or incident occur, records will be kept so that the occurrence of incidents can be reviewed and the procedures updated where necessary.

2.6.4 The AMP will be reviewed annually to ensure that it reflects the risk of accidents and incidents.

2.7 On-Line Security

2.7.1 Measures will be taken to manage on-line security. Back-up copies of records will be made to protect data and to ensure as far as possible that systems are working correctly and records are stored securely.

2.8 Resilience to Climate Change

2.8.1 The Site is not in a flood risk area and does not rely on water abstraction. The equipment (including abatement equipment) is contained within a facility with laboratory conditions, which is well equipped to contend with extreme fluctuations of temperature.

2.8.2 The impact of Climate Change should be minimal, and no specific measures are required at this current time.

2.9 Complaints Procedure

2.9.1 Should complaints be received, these will be recorded. Details of nature of the complaint and the time of the complaint will be recorded.

2.9.2 All complaints will be passed onto the management team, who will investigate the complaint as soon as possible. A record will be made of whether the complaint was substantiated, the likely cause and the mitigation put in place to prevent further issues.

2.9.3 The complainant will be informed of the outcome of the investigation and the measures taken, unless they have requested otherwise.

2.9.4 Records relating to complaints will be kept for a minimum of 2 years and will be made available to the Environment Agency upon request.

2.10 Managing Staff Competence and Training

2.10.1 All staff, including technicians involved with the treatment of black mass, will undergo an induction, including health and safety and environmental awareness. They will be made familiar with the environmental permit and procedures relevant to their role.

2.10.2 All staff will be competent in their role, for example having had appropriate training. Records will be kept regarding the qualifications required for each role.

2.10.3 The site will be under the control of a Technically Competent Manager (TCM) who holds the appropriate qualifications. The TCM will ensure that their site attendance will comply with the Environment Agency's requirements on TCM attendance.

2.11 Records

2.11.1 All records will be held securely and will be made available to staff or to the Environment Agency as required, either as hard copies or in digital format. Back-up copies will also be maintained and stored electronically.

2.11.2 Records will include:

- The Environmental Permit;
- Environmental Management System;
- Records of site inspections and audits;
- Records of complaints and subsequent actions;
- Plant servicing and maintenance;
- Abnormal conditions, including plant breakdown and the actions taken;
- Staff training records.

2.12 Review of the Management System

2.12.1 Procedures for checking compliance with the Environmental Permit, procedures and management system will be in place. Records will be kept of the checks carried out, who carried out the checks and what action was taken.

2.12.2 The management system will be reviewed, and updated where necessary, when the following apply:

- Changes are made to the site, the equipment used or the operations;
- If a permit variation application is made;
- Following any accident, complaint or breach to the permit;
- If a new environmental problem or issue is encountered, and any new control measures have been put into place to control it.

2.13 Site Closure

2.13.1 A Site Condition Report has been prepared as part of the environmental permit application, which will be updated as required during the lifetime of the permit.

2.13.2 Site closure and environmental permit surrender will take place in accordance with written procedures with due consideration for environmental issues.

2.13.3 A surrender report will be produced and submitted to the Environment Agency.

2.14 Understanding the Operations on Site

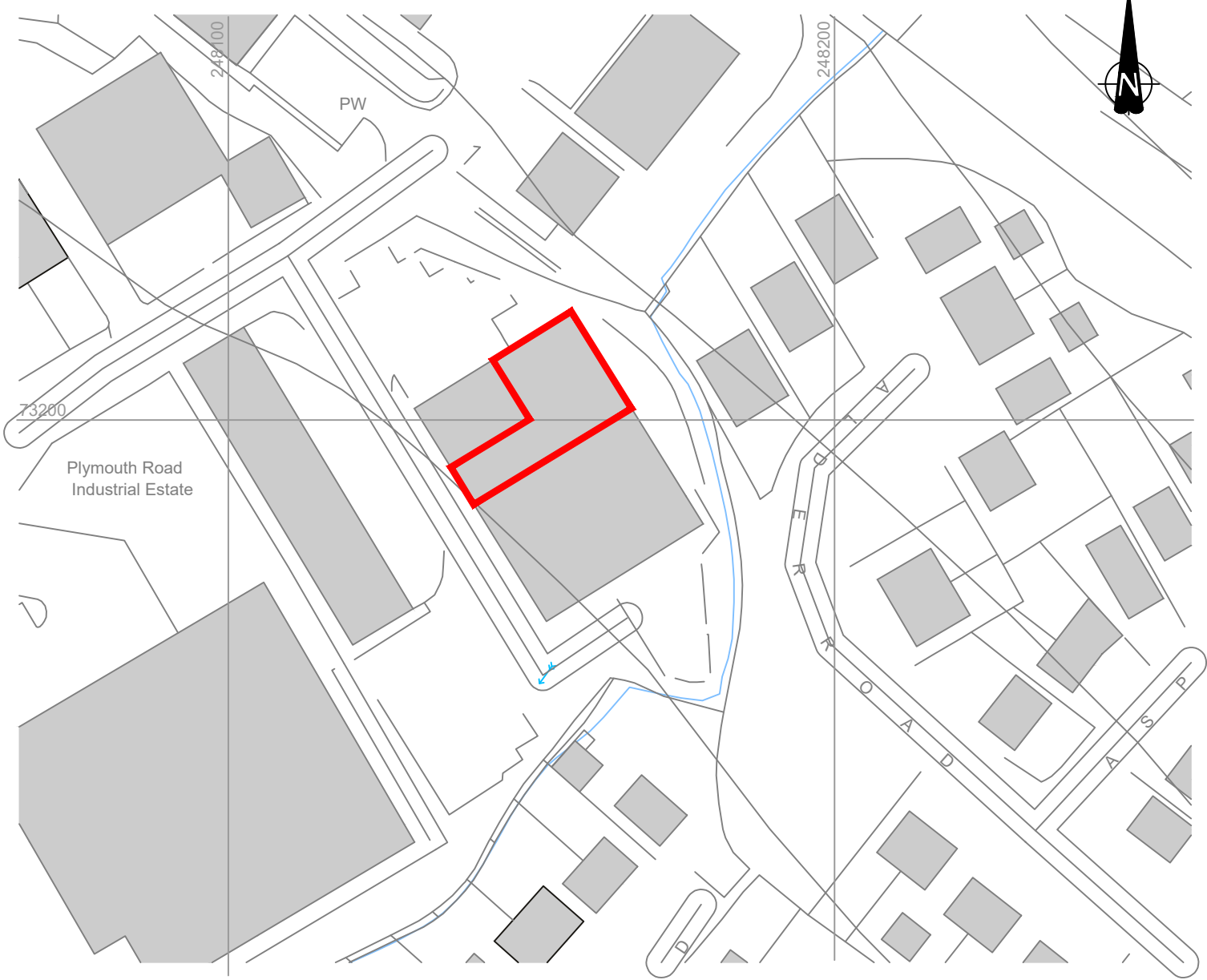
2.14.1 All staff will receive training which is appropriate to their role.

DRAWINGS

DO NOT SCALE FROM THIS DRAWING

KEY

 SITE BOUNDARY



REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
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CLIENT
ALTIUM METALS LIMITED

PROJECT
**TECHNOLOGY CENTRE FACILITY,
UNIT 2, PLYMOUTH ROAD INDUSTRIAL ESTATE,
TAVISTOCK, DEVON**

DRAWING TITLE
PERMIT BOUNDARY PLAN

DRG No	BM12752-001	REV	P0	SUIT.
SIZE	A4	SCALE	1:1000	DATE
				15-04-24
DRAWN BY	DR	CHECKED BY	APPROVED BY	




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