

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

Western United Mines Limited

South Crofty Mine
Dudnance Lane
Pool, Redruth
Cornwall
TR15 3QT

Permit number

EPR/PP3936YU

South Crofty Mine

Permit number EPR/PP3936YU

Introductory note

This introductory note does not form a part of the permit

The main features of the permit are as follows.

This Permit allows the treatment and discharge of up to 25,000m³ per day of mine water from South Crofty mine and discharge into the Red River. This permit also incorporates the flood risk activities associated with the discharge into the Red River. The purpose is to dewater the mine in preparation for reopening and to maintain low water levels during operation of the mine. The dewatering process will be achieved by pumping the water out from within the mine which is anticipated to take 18-24 months.

The installation is located at Dudnance Lane, Pool, Redruth with a central grid reference of SW 66400 40650. The site is located within 300 meters of West Cornwall Bryophytes, a site of special scientific interest. The Red River Valley local nature reserve and Roskear local wildlife site are located within 10,000m of the downstream discharge into the Red River from the installation.

Treatment of mine water falls subject to; Section 5.4 Part A(1) (a) (ii) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physico-chemical treatment of the Environmental Permitting Regulations. The treatment of mine water is to improve the water quality prior to discharge into the Red River. A high density sludge process is used to treat the mine water to reduce heavy metal concentrations and peroxide is dosed to facilitate arsenic removal. Sludge produced from the treatment is temporarily stored onsite prior to removal for further treatment offsite.

The treated effluent is discharged into the Red River at two discharge locations; Tuckingmill and Dolcoath Adit. The operator has submitted an effluent treatment plant monitoring plan detailing proposed monitoring of the effluent and Red River to ensure that discharges from the treatment plant do not deteriorate the river quality when compared to current levels and to check that the mine water treatment remains effective.

The operator is working towards an ISO14001 certified environmental management system. A noise impact assessment, flood risk assessment and geomorphology survey have all been submitted and reviewed with the application for this permit.

This permit supersedes the previous discharge permit for South Crofty NRA-SW-5211.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

| Status log of the permit | | |
|--|--|---|
| Description | Date | Comments |
| Application EPR/PP3936YU/A001 | Duly made 08/06/17 | |
| Response to Schedule 5 Notice submitted 20/06/17. | Responses received 03/08/17 & 09/08/17 | Revised noise impact assessment submitted reflecting current proposals and standards. |
| Response to Schedule 5 Notice submitted 12/07/17. | Responses received 27/07/17 & 19/09/17 & 21/09/17 & 03/10/17 (v3) | Revised flood risk assessment submitted reflecting the current proposals. |
| Response to Schedule 5 Notice submitted 17/08/17. | Responses received 04/09/17, 25/09/17, 03/10/17 & 18/10/17 | Proposal for a Geomorphology survey and corresponding letter (04/09/17). |

| Status log of the permit | | |
|--|-------------|--|
| Description | Date | Comments |
| | | Monitoring plan for the effluent treatment plant (25/09/17 & 18/10/17). Geomorphology survey (03/10/17) |
| Permit determined EPR/PP3936YU PAS Billing ref. PP3936YU | 19/10/17 | Permit issued to Western United Mines Limited. |

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2016

Permit number

EPR/PP3936YU

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2016

Western United Mines Limited (“the operator”),

whose registered office is

Stephens Scown LLP

Osprey House

Malpas Road

Truro

Cornwall

TR1 1LT

company registration number 06242518

to operate an installation at

South Crofty Mine

Dudnace Lane

Pool, Redruth

Cornwall

TR15 3QT

to the extent authorised by and subject to the conditions of this permit.

| Name | Date |
|-----------|------------|
| M Bischer | 19/10/2017 |

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.
- 1.1.4 The operator shall comply with the requirements of an approved competence scheme [or other approval issued by the Environment Agency].

1.2 Energy efficiency

- 1.2.1 For the following activities references in schedule 1, table S1.1 (AR1, AR4 & AR5). The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
 - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

- 1.3.1 For the following activities references in schedule 1, table S1.1 (AR1, AR4 & AR5). The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
 - (b) maintain records of raw materials and water used in the activities;
 - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
 - (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
 - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.1.2 Waste authorised by this permit shall be clearly distinguished from any other waste on the site.

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan A at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 For the following activities references in schedule 1, table S1.1 (AR1, AR4 & AR5). The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

- (a) the nature of the process producing the waste;
- (b) the composition of the waste;
- (c) the handling requirements of the waste;
- (d) the hazardous property associated with the waste, if applicable; and
- (e) the waste code of the waste.

2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

Hazardous waste storage and treatment

2.3.6 Hazardous waste shall not be mixed, either with a different category of hazardous waste or with other waste, substances or materials, unless it is authorised by schedule 1 table S1.1 and appropriate measures are taken.

2.4 Improvement programme

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

- 2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 For the following activities references in schedule 1, table S1.1 (AR1, AR4 & AR5). Where a substance is specified in schedule 3 table S3.2 but no limit is set for it, the concentration of such substance in emissions to water from the relevant emission point shall be no greater than the background concentration.
- 3.1.4 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1, S3.2 and S3.3;

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

- (i) off-site environmental effects; and
- (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 For the following activities references in schedule 1, table S1.1 (AR1, AR4 & AR5). A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and

- (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
 - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1(a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
Where the operator is a registered company:
 - (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.Where the operator is a corporate body other than a registered company:
 - (a) any change in the operator's name or address; and
 - (b) any steps taken with a view to the dissolution of the operator.In any other case:
 - (a) the death of any of the named operators (where the operator consists of more than one named individual);
 - (b) any change in the operator's name(s) or address(es); and
 - (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.
- 4.3.4 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
 - (a) the Environment Agency shall be notified at least 14 days before making the change; and
 - (b) the notification shall contain a description of the proposed change in operation.
- 4.3.5 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

| Table S1.1 activities | | | |
|-------------------------------------|---|---|--|
| Activity reference | Activity listed in Schedule 1 of the EP Regulations | Description of specified activity | Limits of specified activity |
| AR1 | Section 5.4 Part A(1) (a) (ii) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physico-chemical treatment. | Physico-chemical treatment of mine water abstracted from South Crofty mine within an effluent treatment plant (ETP). | From abstraction of mine water to treatment and discharge into the Red River for quantities up to 25,000m ³ per day. |
| AR2 | - | Flood risk activity for discharge into Red River from AR1. 'activities likely to divert the flow of water or changing the level of water in a main river' | Limits as detailed within the Flood Risk Assessment Volume 3 referenced in table S1.2. |
| AR3 | - | Flood risk activity for discharge into Red River from AR1 'erecting any temporary or permanent structure in, over or under a main river' 'activities within 8m of a non-tidal main river' | The monitoring equipment, discharge location and discharge infrastructure to be finalised following completion of pre-operational condition 1 (PO1) as identified in table S1.4. |
| Directly Associated Activity | | | |
| AR4 | Temporary storage of sludge | Temporary storage of hazardous sludge produced from the effluent treatment plant (AR1) pending offsite removal. | Storage shall not exceed 50 tonnes at any one time. Wastes shall be stored on impermeable ground with sealed drainage. Liquid wastes shall be stored in appropriate containers with secondary containment. |
| AR5 | Storage and handling of chemicals | Handling and storage of chemicals for use in the effluent treatment plant (AR1). | Receipt, storage and use of chemicals within the installation. |

| Table S1.2 Operating techniques | | |
|----------------------------------|---|-----------------------|
| Description | Parts | Date Received |
| Application EPR/PP3936YU/A001 | Parts A, B3, & B3 and all referenced supporting information. Noise Impact Assessment (07/06/17) OPRA (07/06/17) Monitoring Data for Red River (08/06/17) | Duly Made 08/06/17 |

| Table S1.2 Operating techniques | | |
|--|---|--|
| Description | Parts | Date Received |
| Response to Schedule 5 Notice dated 20/06/17 | Revised noise impact assessment submitted reflecting current proposals and standards. Revised noise impact assessment (03/08/17) Noise input files (09/08/17) | Responses received 03/08/17 & 09/08/17 |
| Response to Schedule 5 Notice dated 12/07/17 | Revised flood risk assessment submitted reflecting the current proposals. | Responses received 27/07/17 & 19/09/17 |
| Response to Schedule 5 Notice dated 17/08/17 | Proposal for the Geomorphology survey and corresponding letter. | Response received 04/09/17 |
| | Monitoring plan for the effluent treatment plant | Response received 25/09/17, 05/10/17 & 18/10/17 |
| | Geomorphology Survey | Response received 03/10/17 |
| Application EPR/PP3936YU/A001 | Revised site plan showing installation boundary | 19/09/17 |
| Application EPR/PP3936YU/A001 | Revised plan with updated installation boundary | 27/09/17 & 19/10/17 |

| Table S1.3 Improvement programme requirements | | |
|--|--|---|
| Reference | Requirement | Date |
| IC1 | <p>a) The operator shall undertake a review of the effect of the treated effluent on the Red River at downstream monitoring locations from Tuckingmill and the Dolcoath Adit (SCM_MPRR2 & SCM_MPRR3). The reviews shall be completed at both 6 and 12 months after completion of commissioning of the effluent treatment plant (ETP). Comparisons of treated effluent quality shall be made with the pilot trial results. The operator shall provide a written report to the Environment Agency detailing the results of the review within 1 calendar month of that date. The review shall include all raw data collected. Samples shall be analysed within a UKAS accredited laboratory. Data for each parameters shall be quantifiable and not constrained by the limits of detection of the test methods.</p> <p>b) If the review indicates the discharge is causing deterioration to the water quality of the Red River the following shall be submitted in writing to the Environment Agency for written approval alongside the report detailed in a):</p> <ul style="list-style-type: none"> • Alternative mitigation proposals including timescales for implementation; • A review of the limits set in table S3.2, to propose limits that are protective of the Red River. | Within 7 months and 13 months of the completion of commissioning of the ETP |

| Table S1.3 Improvement programme requirements | | |
|--|--|-------------|
| Reference | Requirement | Date |
| | Following approval the operator shall implement the proposals to the timescales proposed in accordance with the Environment Agency's written approval. | |

| Table S1.4 Pre-operational measures | |
|--|--|
| Reference | Pre-operational measures |
| PO1 | <p>Environment Agency approval must be granted prior to commencement of constructing the flood risk management measures. Detailed proposals shall be submitted in writing to the Environment Agency for approval for the purpose of providing robust procedures to mitigate flood risk to properties, the environment and infrastructure as a direct result of proposed pumping regime.</p> <p>The proposals shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Location and design of proposed discharge points and infrastructure; • Location and proposed working and communication methods of water level monitoring points; • Proposed working and control methods of pumping equipment which we expect to include robust back-up procedures in event of primary system failure. |
| PO2 | <p>The operator shall not commence commissioning of the effluent treatment plant until a commissioning plan has been submitted in writing to the Environment Agency and approval from the Environment Agency has been granted in writing.</p> <p>The plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Step by step commissioning of each plant; • Detail the effluent quality to be achieved at each stage; • Contingencies for out of specification treated effluent. |

Schedule 2 – Waste types, raw materials and fuels

| Table S2.1 Raw materials and fuels | |
|------------------------------------|---------------|
| Raw materials and fuel description | Specification |
| -- | -- |

Schedule 3 – Emissions and monitoring

| Table S3.1 Point source emissions to air – emission limits and monitoring requirements | | | | | | |
|--|--------|-----------|------------------------|------------------|----------------------|-------------------------------|
| Emission point ref. & location | Source | Parameter | Limit (including unit) | Reference Period | Monitoring frequency | Monitoring standard or method |
| None | None | None | No limits set | None | None | None |

| Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements | | | | | | |
|--|--------------------------|---------------------------------|---|----------------------------------|----------------------|---|
| Emission point ref. & location | Source | Parameter | Limit (incl. unit) ^{Note 1, 2} | Reference Period | Monitoring frequency | Monitoring standard or method ^{Note 3} |
| Monitoring point MPMW2 on site plan B in schedule 7 emission into the Red River at: Outlet W1- Dolcoath Adit & Outlet W2- Tuckingmill. | Effluent Treatment Plant | Total daily volume of discharge | 25,000 m ³ /day | 24-hour total | Continuous | MCERTS self-monitoring of effluent flow scheme |
| | | pH | 6 – 9 | Instantaneous | Continuous | BS6068-2.50 |
| | | Arsenic | 50 µg/l | 24-hour flow proportional sample | Weekly | BS ISO 17378-1 BS ISO 17378-2 BS EN 26595 ISO 6595 |
| | | Copper | 10 µg/l | 24-hour flow proportional sample | Weekly | BS 6068-2.29 ISO 8288 |
| | | Total suspended solids | No limit set | 24-hour flow proportional sample | Weekly | BS EN 872 |
| | | Dissolved Organic Carbon | No limit set | 24-hour flow proportional sample | Weekly | BS EN 1484 |
| | | Calcium | No limit set | 24-hour flow proportional sample | Weekly | Inductively Coupled Plasma Spectrometry 1996, Test 37. |
| | | Cadmium | No limit set | 24-hour flow proportional sample | Weekly | Inductively Coupled Plasma Mass Spectrometry (ICP-MS) (SX M ICPMS Low level) |
| | | Lead | No limit set | 24-hour flow proportional sample | Weekly | Inductively Coupled Plasma Mass Spectrometry (ICP-MS) (SX M ICPMS) |

| | | | | | | |
|--|--------------------------|---------------------------------|--------------------------------------|----------------------------------|------------|---|
| | | | | | | Low level) |
| | | Manganese | No limit set | 24-hour flow proportional sample | Weekly | Inductively Coupled Plasma Spectrometry 1996, Test 37. |
| | | Iron | No limit set | 24-hour flow proportional sample | Weekly | Inductively Coupled Plasma Spectrometry 1996, Test 37. |
| | | Aluminium | No limit set | 24-hour flow proportional sample | Weekly | EPA 200.8 Version 4, 1989 Determination of Trace Elements in Waters and Wastes by ICPMS, Test 33. |
| | | Zinc | No limit set | 24-hour flow proportional sample | Weekly | BS 6068-2.29 ISO 8288 |
| | | Nickel | No limit set | 24-hour flow proportional sample | Weekly | BS 6068-2.29 ISO 8288 |
| Monitoring point F1 on site plan B in schedule 7 emission to outlet W1 into the Red River via Dolcoath Adit | Effluent Treatment Plant | Total daily volume of discharge | 25,000 m ³ /day Note 4 | 24-hour total | Continuous | MCERTS self-monitoring of effluent flow scheme |
| Monitoring point F2 on site plan B in schedule 7 emission to outlet W2 into the Red River via Tuckingmill | Effluent Treatment Plant | Total daily volume of discharge | 10,000 m ³ /day Note 4 | 24-hour total | Continuous | MCERTS self-monitoring of effluent flow scheme |
| <p>Note 1. Where no limit is set, the operator has identified warning and/or trigger levels required in the effluent monitoring and management plan referred to in table S1.2 submitted on 05/10/17. In the event of any of the operator's 'trigger' levels are exceeded the operator shall notify the Environment Agency as per condition 4.3.1 (b) of the permit.</p> <p>Note 2. If a new limit is approved under improvement condition IC1 that limit shall apply.</p> <p>Note 3. Use method(s) stated or another method agreed in writing by the Environment Agency.</p> <p>Note 4. The combined volume from F1 and F2 shall not exceed 25,000m³ per day.</p> | | | | | | |

| Table S3.3 Discharge points | | | |
|---|------------------------|----------------------------|------------------------------------|
| Effluent Name | Discharge Point | Discharge point NGR | Receiving water/Environment |
| AR1 Treated mine water effluent via Dolcoath Adit | Outlet W1 | SW 64828 41885 | Red River |
| AR1 Treated mine water effluent via Tuckingmill | Outlet W2 | SW 66236 40516 | Red River |

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

| Table S4.1 Reporting of monitoring data | | | |
|---|---|-------------------------|--|
| Parameter | Emission or monitoring point/reference | Reporting period | Period begins |
| Emissions to water Parameters as required by condition 3.5.1 | MPMW2, F1 and F2 | Every 3 months | 1 January, 1 April, 1 July, 1 October. |

| Table S4.2: Annual production/treatment | |
|--|---------------------|
| Parameter | Units |
| Volume of mine water treated | m ³ /day |
| Amount of sludge produced | Tonnes / day |

| Table S4.3 Performance parameters | | |
|--|--------------------------------|--------------|
| Parameter | Frequency of assessment | Units |
| Energy usage | Annually | MWh |
| Total raw material used by reagent type | Annually | tonnes |

| Table S4.4 Reporting forms | | |
|-----------------------------------|---|---------------------|
| Media/parameter | Reporting format | Date of form |
| Water and Land | Form water 1 or other form as agreed in writing by the Environment Agency | 19/10/17 |
| Energy usage | Form energy 1 or other form as agreed in writing by the Environment Agency | 19/10/17 |
| Other performance indicators | Form performance 1 or other form as agreed in writing by the Environment Agency | 19/10/17 |

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

| | |
|--------------------------------|------------------------------|
| Permit Number | EPR/PP3936YU |
| Name of operator | Western United Mines Limited |
| Location of Facility | |
| Time and date of the detection | |

| | |
|---|--|
| (a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution | |
| To be notified within 24 hours of detection | |
| Date and time of the event | |
| Reference or description of the location of the event | |
| Description of where any release into the environment took place | |
| Substances(s) potentially released | |
| Best estimate of the quantity or rate of release of substances | |
| Measures taken, or intended to be taken, to stop any emission | |
| Description of the failure or accident. | |

| | |
|---|--|
| (b) Notification requirements for the breach of a limit | |
| To be notified within 24 hours of detection unless otherwise specified below | |
| Emission point reference/ source | |
| Parameter(s) | |
| Limit | |
| Measured value and uncertainty | |
| Date and time of monitoring | |

| | |
|---|--|
| (b) Notification requirements for the breach of a limit | |
| To be notified within 24 hours of detection unless otherwise specified below | |
| Measures taken, or intended to be taken, to stop the emission | |

| | |
|---|----------------------------|
| Time periods for notification following detection of a breach of a limit | |
| Parameter | Notification period |
| | |
| | |
| | |

| | |
|--|--|
| (c) Notification requirements for the detection of any significant adverse environmental effect | |
| To be notified within 24 hours of detection | |
| Description of where the effect on the environment was detected | |
| Substances(s) detected | |
| Concentrations of substances detected | |
| Date of monitoring/sampling | |

Part B – to be submitted as soon as practicable

| | |
|--|--|
| Any more accurate information on the matters for notification under Part A. | |
| Measures taken, or intended to be taken, to prevent a recurrence of the incident | |
| Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission | |
| The dates of any unauthorised emissions from the facility in the preceding 24 months. | |

| | |
|-----------|--|
| Name* | |
| Post | |
| Signature | |
| Date | |

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“background concentration” means such concentration of that substance as is present in:

- for emissions to surface water, the surface water quality up-gradient of the site; or
- for emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission or background concentration limit.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Hazardous property” has the meaning in Annex III of the Waste Framework Directive.

“Hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

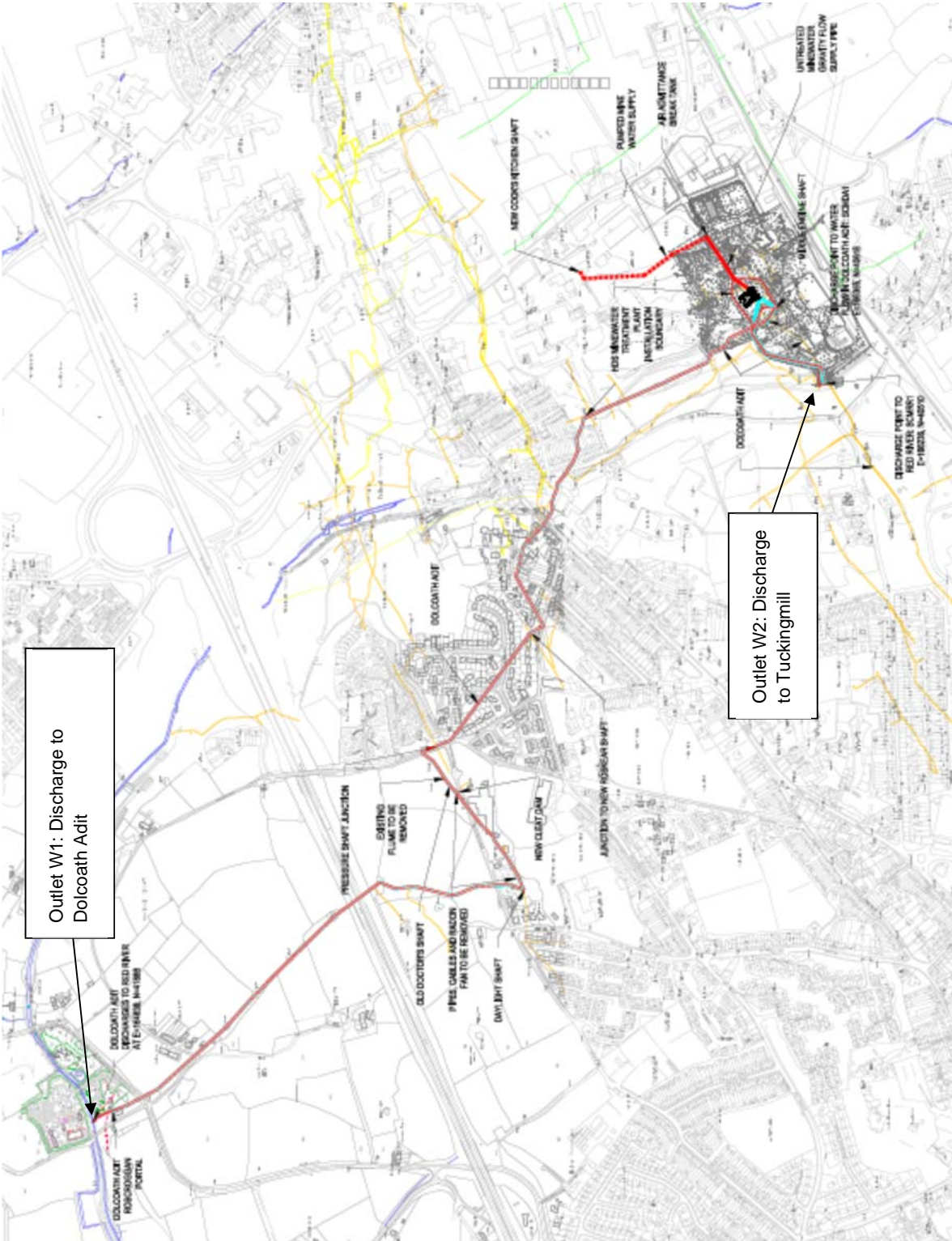
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

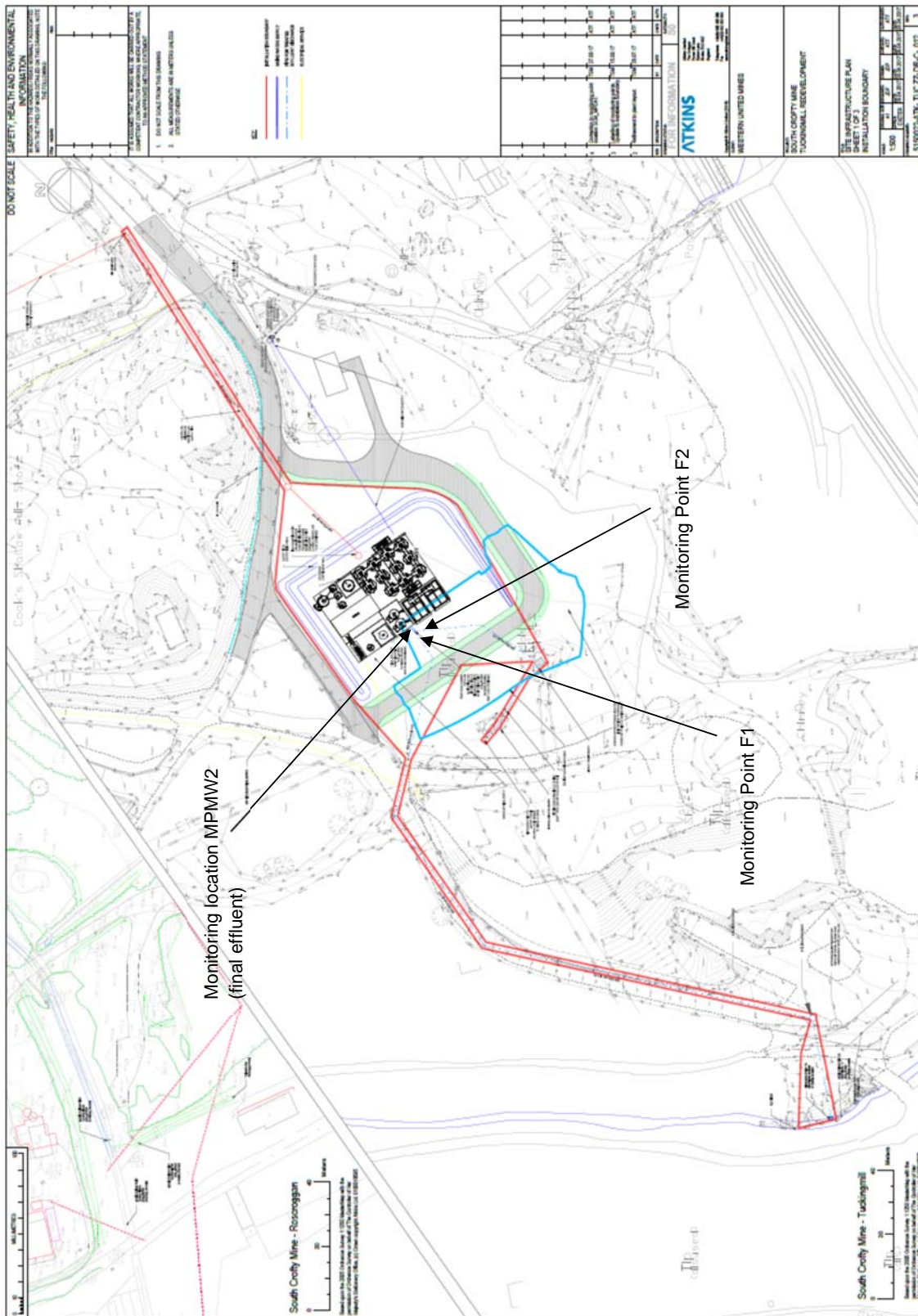
“year” means calendar year ending 31 December.

Schedule 7 – Site plan

Site Plan A – Installation Boundary & Outlets



Site Plan B – Monitoring Locations



©Crown Copyright. All rights reserved. Environment Agency, 100024198, 2017.

END OF PERMIT