Permitting Decisions- Variation

We have decided to grant the variation for Anochrome Limited operated by Anochrome Limited.

The variation number is EPR/BN0112IN/V004.

The permit was issued on 04/03/2026.

The variation is for the addition of a new surface treatment line and the removal of an existing surface treatment line. In addition, the remainder of the permit has been updated to reflect the activities currently undertaken onsite.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It

- highlights key issues in the determination
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

The key issues were:

- Directly associated activities (DAAs) that had not previously been included in the permit
- Existing gas burners that were not included in the permit and new gas burners that had not been assessed

- Accident management as there had been a recent major spill at the site, which had impacted the local wildlife site (Walsall Canal LWS)
- Emissions to air of HCl from the surface treatment activity
- Discharge of uncontaminated surface water to the local canal
- Discharge to sewer increasing in volume and additional pollutants

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has been made by the Operator.

We have accepted the claim for confidentiality.

The confidential information includes detailed layouts and chemicals used in specific tanks.

We consider that the inclusion of the relevant information on the public register would prejudice the applicant's interests to an unreasonable degree.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The comments and our responses are summarised in the consultation responses section.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- HSE
- UKHSA
- West Midlands Fire Brigade
- Local Authority – Planning and Environmental Permitting

The comments and our responses are summarised in the consultation responses section.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, Appendix 2 of RGN2 ‘Defining the scope of the installation’ and Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

The onsite effluent treatment plant (ETP) did not previously have a capacity limit stated in the permit. The Operator confirmed that the maximum daily capacity of the effluent treatment plant was 605m^3/d and that some of the water is re-used onsite. A hazard classification for the untreated effluent has not been undertaken. Onsite ETPs can be either regulated as a DAA or under Schedule 5.3 or 5.4 of EPR, depending on whether they undertake hazardous or non-hazardous waste treatment and depending on treatment capacity. If the effluent is non-hazardous, then as the water is partially re-used the activity would be classed as a DAA. A full assessment of whether the ETP activity is a DAA or scheduled activity will be undertaken at the next permit review, or if the ETP activity forms part of a permit variation.

Additional DAAs have been added in the activities table S1.1 that should have previously been included. These are; cathodic electrophoretic painting, hydrogen embrittlement relief, quality assurance of process parts and gas burners.

Powder coating is an activity that is carried out onsite and takes part both from the surface treatment activity and directly from external customers with no onsite surface treatment. It would usually be classed as a DAA, however it does not meet the primary user test as only 5% of the workpieces going into the powder coating activity are from the onsite surface treatment activity. The air emissions points have not been included (but are listed as A22 and A23 by the Operator).

The site

The operator has provided plans which we consider to be satisfactory.

These show the extent of the site of the facility including the discharge points.

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is not satisfactory. The decision was taken in accordance with our guidance on site condition reports.

The site condition report was not satisfactory as no intrusive investigations were undertaken below the newly permitted area. However, the Operator subsequently provided borehole monitoring data for 7 boreholes across the entire site, although not as part of this application, but instead in support of the investigation into their cyanide spill. The monitoring was for free cyanide, total cyanide, complex cyanide and dissolved zinc for October/November 2024 (BH01) and February 2025 (BH02-BH07). These provide an indication of the contamination in the soil/groundwater, however it is noted that due to the historical industrial nature of the location prior to the site being initially permitted then contamination is expected. It appears that no baseline was set when the site was first permitted.

There will continue to be a responsibility of the Operator to routinely monitor the site as part of the ongoing requirements of the permit.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

The Operator did not provide an assessment of emissions on these habitat sites, however we undertook assessments for emissions to air. We compared the Process Contribution (PC) for HCl at Bentley Mill Local Wildlife Site, along with maximum on the grid for NO_2 (assuming 50% conversion of NOx to NO_2). This was compared to the critical loads and levels at that location using the APIS tool and following the guidance in AQTAG 6, which showed no breaches of those critical loads or levels, as demonstrated in the table below.

Initial screening: acid deposition as a proportion of the Minimum CL Function (keq/ha/yr)

Minimum acid CL values feature
Unmanaged woodland

CLminN 0.357

CLmaxS 1.5042 **CLmaxN** 1.8612

Submit

Source	Sulphur deposition	Nitrogen deposition	Total acid deposition (S+N)	Acidity	% of CL function
Process contribution (PC)	0.086245918	0.0008631	0.08710902	No exceedance of CL function	4.7
Background **Grid average**	0.28	0.78	1.06	No exceedance of CL function	57
Predicted Environmental Concentration (PEC)	0.3662459	0.7808631	1.147109	No exceedance of CL function	61.6

Appropriate assessment (HRA) / significance test (planning / EIA): acid deposition as a proportion of the Maximum CL Function (keq/ha/yr)

Maximum acid CL values feature
Unmanaged woodland

CLminN 0.357

CLmaxS 1.5042 **CLmaxN** 1.8612

Submit

Source	Sulphur deposition	Nitrogen deposition	Total acid deposition (S+N)	Acidity	% of CL function
Process contribution (PC)	0.086245918	0.0008631	0.08710902	No exceedance of CL function	4.7
Background **Grid average**	0.28	0.78	1.06	No exceedance of CL function	57
Predicted Environmental Concentration (PEC)	0.3662459	0.7808631	1.147109	No exceedance of CL function	

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

The emission limits for HCl from emission points A2-A6 have been placed on the permit to protect the human health receptors, however they will also provide protection to the local wildlife sites that are present within 2km of the installation.

Limits for zinc and nickel from emission point S1 will be set/varied in the next permit variation.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator’s risk assessment is unsatisfactory and required additional Environment Agency assessment.

The assessment of emissions to air and water did not include the necessary substances, concentrations or emissions profiles. Following our request the operator provided the correct information, and an assessment was made of the impacts by the Agency from the emissions to air and sewer. The outcomes from these assessments are detailed in the emissions sections below.

New gas burners are being added that heat the surface treatment tanks. A range of existing gas burners are also present onsite. The new gas burners emit combustion products of oxides of nitrogen and carbon monoxide. The operator was unable to provide concentrations for those pollutants, however they provided the other emission profile data. We assumed that the emission limits would be in line with the Medium Combustion Plant ELVs for new plant and as such we used an emission limit of 95mg/Nm^3 for NOx and 10,000mg/Nm^3 for carbon monoxide in our assessment. At these concentrations the emissions screened out as insignificant. There are a number of existing gas burners onsite that have not been previously regulated or assessed, therefore an improvement condition has been included for the Operator to assess the impacts from those emission points. That assessment will include confirmatory monitoring of the new gas burner emission points.

The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment all emissions may be screened out as environmentally insignificant with the exception of HCl (emission to air) and cyanide, nickel and zinc (emissions to water).

Sources of substances in emissions to water:

- Copper and lead originate from components that have been brazed and then are surface treated.
- Cadmium is a minor contaminant in the zinc anodes.
- Mercury is a minor contaminant in the sodium hydroxide.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Some outdated operating techniques have been removed from Table S1.2.

Operating techniques for emissions that do not screen out as insignificant

Emissions of HCl to air and cyanide, nickel and zinc to sewer cannot be screened out as insignificant. We have assessed whether the proposed techniques are Best Available Techniques (BAT).

Emissions to air of HCl is passed through scrubbers from existing emission points A2 – A4 and a scrubber for the new emission point A6. There is no abatement for emission point A5, however this only contributes 42% of the total emissions (based on emitting at the emission limit). There is no risk of breach of EALs outside the site boundary, or at nearby receptors from HCl emissions. None of the critical loads or limits are breached at the nearby local wildlife sites.

Emissions to sewer are passed through an onsite effluent treatment plant prior to passing to sewer. For the substances that do not screen out as insignificant (zinc, cyanide and nickel) from emission point S1 limits will be set/varied in the next permit variation.

Operating techniques for emissions that screen out as insignificant

Emissions to air of oxides of nitrogen and carbon monoxide and emissions to sewer of cadmium, copper, lead, boric acid, 2-chlorobenzaldehyde, 4-phenylbutenone and chromium (III) have been screened out as insignificant, and so we agree that the applicant's proposed techniques are Best Available Techniques (BAT) for the installation.

We consider that the emission limits included in the installation permit reflect the BAT for the sector.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance, we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Updating permit conditions during consolidation

We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permits.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

We have included an improvement programme as below.

Improvement condition IC1 – this IC has been included because there was a major incident onsite, where hazardous chemicals leaked into the Walsall Canal Local Wildlife Site and caused a Category 1 fish kill. The surface water drain to the canal has since been closed off and the Operator has not been permitted to discharge beyond a sump located on a neighbouring property, with tankers being used to take the water to an appropriately permitted facility for treatment. An additional issue is the surface water has high levels of zinc, which the Operator considers to be coming from the land due to historical contamination. The Environment Agency has not confirmed this assumption; however, the focus of this IC is stopping spills from entering the canal if the Operator were to be permitted to discharge to the canal again by the Canal and Rivers Trust.

Improvement condition IC2 – this IC has been included as the Operator is not currently in line with BAT for use of low temperature cleaners and has not provided sufficient justification for not being compliant. This requires the Operator to investigate the use of low temperature cleaners, which should fulfil the main aim of the BAT requirement, which is a reduction in heat energy used in their surface treatment processes.

Improvement condition IC3 – this IC has been included as the Operator is not currently in line with BAT for re-circulation of rinse waters and has not provided sufficient justification for not being compliant. This requires the Operator to investigate the use of technologies to purify rinse waters for re-circulation, which should fulfil the main requirement of a reduction in water usage. It is noted that the Operator does treat and re-use some of the water onsite from the effluent treatment plant, which is considered to be BAT, however this is not the same as specifically targeting rinse waters for re-circulation.

Improvement condition IC4 – this IC has been included as the gas burners used for heating process solutions had not previously been included in the permit, nor previously assessed. It is likely that the emissions from these will form part of the background NOx concentration, however the site is located in an AQMA for NO_2, therefore understanding the impacts of the emissions to air at the receptors that bound the site is important, along with the impacts on the Local Wildlife Sites that

are sensitive to acid and nutrient nitrogen deposition. If emission limits are required, then they will need to be added to table S3.1 as part of a permit variation. This IC also requires monitoring, which will confirm the assumptions made in the air emissions risk assessment that the NOx and CO concentrations are in line with new MCP i.e. 95m/Nm^3 for NOx and 10,000mg/Nm^3 for CO.

Improvement condition IC5 – this IC has been included to ensure that the assumptions used in the emissions to water risk assessment are accurate. This covers the estimated emissions concentrations used for boric acid, cadmium, mercury, 2-chlorobenzaldehyde and 4-phenylbutenone. The other substances do not need to be included in this round of monitoring or reassessment as they have already been monitored and results supplied.

Improvement condition IC6 – this IC has been included to gather further supporting data to enable emission limits to be set for dissolved nickel, dissolved zinc and free cyanide.

Emission limits

Emissions to air

The Operator provided an assessment of emissions to air from HCl. This assessment did not use the emission limits set in the current permit; therefore, we undertook an assessment that used the current limits of 10mg/m^3 for emission points A2-A5 and the proposed emission limit of 2.5mg/m^3 for emission point A6. The assessment showed that the emissions were not insignificant, but there would be no breach of the EAL outside of the permit boundary.

The Operator also did not assess the impacts from the new burners for NOx or carbon monoxide. The operator was unable to provide concentrations for those pollutants; however, they provided the other emission profile data. We assumed that the emission limits would be in line with the Medium Combustion Plant ELVs for new plant and as such we used an emission limit of 95mg/Nm^3 for NOx and 10,000mg/Nm^3 for carbon monoxide in our assessment. At these concentrations the emissions screened out as insignificant.

Emission Limit Values (ELVs) have been added for the following substances:

- Emission point A6 – an emission limit value of 2.5mg/m^3 has been added in order to protect human health receptors.

Emission Limit Values (ELVs) have been deleted for the following substances:

- Emission point A1 – this emission point is no longer used and has been removed from the permit.

Emissions to sewer

The Operator confirmed that they wanted to increase their discharge to 750m^3/d, which had been agreed previously by the EA, but not subject to a permit variation, a decision which had been made as the Operator had a discharge consent from the sewage undertaker. This approach is not in line with our guidance and as such an assessment of emissions to sewer was made at the higher discharge rate of 750m^3/d.

Emissions of the following pollutants were required in addition to those already in the permit as these originate from the surface treatment process and would be discharged to sewer.

- Sodium p-cumenesulphonate
- Sodium benzoate
- 2-chlorobenzaldehyde
- 4-phenylbutenone
- Boric acid

There is no currently available conclusive evidence to support an aquatic toxicity classification for sodium p-cumenesulphonate and sodium benzoate, therefore no assessment was required for these pollutants being discharged to sewer.

The substances below are also discharged to sewer from the surface treatment activities but are not currently in the emissions to sewer table.

- Lead
- Nickel
- Copper

A number of the substances do not have an EQS, therefore an assessment using Predicted No Effect Concentrations (PNECs) for boric acid, 2-chlorobenzaldehyde and 4-phenylbutenone was required. The table below shows the estimated concentrations below and the PNECs used. The PNEC STP was used for 2-chlorobenzaldehyde and 4-phenylbutenone as those pollutants are biodegradable and pass through Minworth sewage treatment works, where biodegradation occurs. Boric acid is not biodegradable, therefore the PNEC is used.

Substance	Estimated Maximum Effluent Discharge Concentration µg/L	Estimated Average Effluent Discharge Concentration µg/L	PNEC STP	PNEC
2-chlorobenzaldehyde	53.58	26.79	1.32 mg/L	0.015 mg/L
4-phenylbutenone	53.58	26.79	3.83 mg/L	1.01 µg/L
Boric acid	3268.37	1634.19	10 mg/L	2.9 mg/L

To determine the PEC upstream data was taken from Bourn Brook at Pershore Road: 64632060. This was chosen as it was the nearest upstream sampling point with recent (circa 2016) sampling data that contained some of the substances being assessed. The background concentrations were taken as annual average from most recent 2 years of samples.

Substance	Background concentration (total) (µg/l)	Background concentration (dissolved) (µg/l)
Cyanide	None available, 50% EQS assumed (0.5 µg/l)	N/A
Chromium (III)	None available	1.4
Nickel	N/A	1.2
Zinc	N/A	10.3
Copper	Not required as screened out at test 2	Not required as screened out at test 2
Lead	Not required as screened out at test 2	Not required as screened out at test 2

2-chlorobenzaldehyde	Not required as screened out at test 1	Not required as screened out at test 1
4-phenylbutenone	Not required as screened out at test 1	Not required as screened out at test 1
Boric acid	Not required as screened out at test 2	Not required as screened out at test 2

Emissions limits have been amended and deleted as a result of this variation. It is considered that the numeric limits described below will prevent significant deterioration of receiving waters.

Emission Limit Values (ELVs) have been deleted for the following substances:

- Suspended solids – this substance has been removed in its entirety as this is a sanitary pollutant going to sewer. The wastewater treatment works is designed to remove suspended solids and there are associated limits in their discharge permit.
- Mercury – this limit has been removed as the substance screened out in the H1 assessment tool, however the annual limit remains as it is close to the maximum permitted annual mass limit of 1kg.
- Cadmium – this limit has been removed as the substance screened out in the H1 assessment tool, however the annual limit remains
- Chromium – this limit has been removed as the substance screened out in the H1 assessment tool.

Emission Limit Values (ELVs) have been amended for the following substances:

- Mercury – the annual emission limit has been amended to 0.92kg/annum as this is the estimated annual mass that will be emitted. This is close to the maximum permissible annual limit of 1kg..
- Cadmium – the annual emission limit has been amended to 1.1kg/annum as this is the estimated annual mass that will be emitted.
- The annual limits for mercury and cadmium have increased in line with expected emissions. Mercury comes from sodium hydroxide contamination and cadmium from zinc anode contamination.

We have included these limits based on non-statutory Environmental Quality Standards (EQS).

We have included a limit on the volume of the discharge.

Monitoring

We have decided that monitoring should be amended and deleted for the following parameters, using the methods detailed and to the frequencies specified:

Deleted:

- Total chromium as this substance screens out as insignificant.
- Suspended solids as this parameter has been removed from the table.

Amended:

- Flow (instantaneous) – this is not required as there is a daily limit and it is discharged to sewer.
- Cyanide – this has been amended to update the monitoring to modern methods.
- Mercury – this has been amended to update the monitoring to modern methods.
- Zinc – this has been amended to update the monitoring to modern methods.
- Emissions of mercury and cadmium were based upon a calculation of the contamination in the incoming zinc anodes and sodium hydroxide. This was a calculation based limit as it is likely that when the permit was originally issued the limit of detection (LOD) for the monitoring methods available at that time was not sufficiently low enough to detect the substance compared to the emission limit value. The applicable methods in Table 1 below have been compared to our current approach to limits of detection, where they should be 10% of the EQS. Methods with suitable limits of detection are marked with * and have been included in the emissions points table S3.3.
- Cadmium – this has been amended to update the monitoring to modern methods. For cadmium there are no suitable methods that have a low enough LOD to meet 10% of the EQS, or the LODs are unknown, however monitoring method BS EN 17294-2 should be able to detect cadmium within the effluent at the expected concentrations and will be able to ensure that the annual limit is adhered to. As the other monitoring methods are in line with our required monitoring standards, then these options will be included in the emissions table S3.3, however it is up to the Operator to determine if they provide a sufficient limit of detection to ensure compliance with their permitted limits.

Table 1 – Monitoring methods and limits of quantification

Substance	Method	10% of EQS (µg/l)	The mean limit of quantification (LOQ) (µg/l)
Mercury	*BS EN 12846	0.007	0.008
	*BS EN ISO 17852		0.001
Cadmium	BS EN ISO 5961	0.015	Unknown
	BS EN ISO 11885		Unknown
	BS EN ISO 17294-2		0.14
	BS EN ISO 15586		Unknown

These monitoring requirements have been included in order to ensure the emissions remain within the permitted limits.

Reporting

We have added, amended and deleted reporting in the permit for the following parameters:

Added:

- HCl from emission point A6 as this is the new emission point associated with the new surface treatment line and has an ELV.

Amended:

- Zinc – amended to be in line with monitoring requirements.
- Flow – amended to be annually only to be in line with other parameters reporting frequency.

Removed:

- HCl from emission point A1 as this is no longer operational.

- Suspended solids from S1 as this parameter has no monitoring or limit associated with it.
- Flow (instantaneous) – as this limit has been removed there is no monitoring is associated with this parameter.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from Walsall Council – Environmental Protection

Brief summary of issues raised: Incident involving the uncontrolled release of zinc cyanide into the Walsall Canal.

- Application documents state that all pipework and tanks will be within bunded areas, however this is not the case.
- There is no reference to the incident within the permit application.
- Onsite spill kits need to be proportionately sized to the risk posed by the facility.
- Recommend that all pipework and containment onsite is reviewed.
- Need further details on the two catchment tanks.
- Need to be able to manage any potential incidents like this in house and have management systems in place to support this approach.

Summary of actions taken:

- The bunding for the new line appears to be suitably constructed and follows our guidance on required volume.
- Overall, the major spill incident is not within the remit of this permit application, however the Operator has confirmed that all external pipework has been removed and the surface water discharge to the canal has temporarily been stopped.
- The accident management plan has been revised and included within the operating techniques table.
- An improvement condition has been included to review methods to stop contaminated surface water and firewater from entering the canal, which is to be agreed in writing with the Environment Agency.

Response received from UKHSA

Brief summary of issues raised: Incident involving the uncontrolled release of zinc cyanide into the Walsall Canal, emissions to sewer and emissions to air.

- Zinc cyanide incident

    - Need to review and reinforce mitigation and management measures that prevent spills from occurring and impacting surface water, sewerage system or land and groundwater.
- Emissions to air
    - H1 indicated that the emissions of HCl were not insignificant and therefore the consultants conclusions were not correct or in line with Environment Agency guidance.
- Emissions to sewer
    - H1 identified cyanide, nickel and zinc needed further investigation.
- Accidents
    - The environmental impact risk analysis does not appear to consider human health receptors. This should be considered and reflected in the sites accident management plan.

Summary of actions taken:

- Zinc cyanide incident – see summary of actions taken above for Walsall Council.
- Emissions to air – the emissions to air of HCl were assessed and shown to be not significant. There are unlikely to be any breaches of the EALs at human health receptors, nor breach of critical levels or loads at ecological receptors.
- Emissions to sewer – emission limits for nickel, cyanide and zinc will be added in the next permit variation.
- Accidents – it is unlikely that any incidents will impact upon human health apart from fires. Abatement failure has been covered in the accident management plan, along with the impact from fires as this aspect will be managed by the Fire Brigade.